REPORT ON ACTION PLAN FOR CLEAN-UP OF POLLUTED STRETCH OF PEDHI RIVER

JUNE, 2019

CONTENTS

PEDHI RIVER (Narayanpur to Bhatkuli) 3
1.1 Executive Summary of Action Plan Restoration of Water Quality of Pedhi River 3
1.2 Status of Domestic Sewage Generation and Treatment 11
1.3 Drain out-falling into River Pedhi 13
1.4 Status of Water Quality 14
1.5 Status of Ground Water Quality 16
1.6 Status of Industrial Effluent Generation and Treatment 17
1.7 Waste Management 20
1.7.1 Solid Waste Management 20
1.7.2 Bio-medical waste Management 20
1.7.3 E-Waste management 20
1.7.4 Hazardous Waste Management 21
1.8 Dream Project of Government of Maharashtra (GOM), Namami Chandrabhaga 22
1.9 Involvement of Civil Society/Creation of awareness 23
1.10 Greenery Development Plan of Forest Department, Government of Maharashtra 30
1.11 Plan for Restoration of Water Quality 32

LIST OF TABLES

Table 1 Introduction of river stretch 10
Table 2 Status of Sewage generation & treatment in Amravati City 11
Table 3 Status of Sewage Treatment Plants in Amravati District 11
Table 4 Proposed Sewage Treatment Plants under Atal Mission for Rejuvenation and Urban Transformation (AMRUT) Scheme 11
Table 5 Funding Details for the proposed STPs 12
Table 6 Domestic sewage aspects on the river stretch 12
Table 7 Mean of Annual Performance of STPs in Amravati Region 13
Table 8 Particulars of drains falling into the river 14
Table 9 Status of water quality of the drains 14
Table 10 Water Quality at Pedhi village 15
Table 11 Water Quality Index for 156 locations (surface water & ground water) during 16
Table 12 Ground water quality in Amravati District 17

Table 13 Particulars of Industries situated in Amravati District 18
Table 14 Highly Polluting Industries as on 31/3/2018. 18
Table 15 Statistical Analysis Data for CETP Performance in Amravati Region. 19
Table 16 Status of Waste Management in Amravati 21
Table 17 Time bound action plan to improve water quality for Pedhi River 32
Table 18 Timelines for Implementation of Restoration Plan 34

LIST OF FIGURES

Figure 1 Stretch of Pedhi River 9
Figure 2 Map Showing Stretch of Pedhi River 10
Figure 3 Map Showing NWMP Station across the Stretch of Pedhi River 14

PEDHI RIVER (Narayanpur to Bhatkuli)

1.1 Executive Summary of Action Plan Restoration of Water Quality of Pedhi River

<table>
<tr><th>Sr. No.</th><th>Description of Item</th><th colspan="2">Details</th></tr>
<tr><td>1.</td><td>Name of the identified polluted river and its tributaries</td><td>:</td><td>Narayanpur to Bhatkuli</td></tr>
<tr><td>2.</td><td>Is river is perennial and total length of the polluted river</td><td>:</td><td>Non- perennial
Length- 3.20 Km</td></tr>
<tr><td>3.</td><td>Revised priority as per Jan. to Dec.2018 Analysis results</td><td>:</td><td>Priority III</td></tr>
<tr><td>4.</td><td>No of drains contributing to pollution and names of major drains</td><td>:</td><td>1) Drain from Village Narayanpur
2) Drain from Village Bhatkuli
3) Amba Nalla from Amravati City</td></tr>
<tr><td>5.</td><td>Major Towns on the banks of the river with population</td><td>:</td><td><table><tr><th>Local Body</th><th>Population</th></tr><tr><td>Narayanpur</td><td>296</td></tr><tr><td>Bhatkuli</td><td>8,361</td></tr><tr><td>Amravati</td><td>6,47,000</td></tr></table></td></tr>
<tr><td rowspan="3">6.</td><td>a. Sewage generation & Treatment in MLD</td><td>:</td><td>Total Sewage generation- 93 MLD
Total Sewage Treatment- 74.5 MLD</td></tr>
<tr><td>b. Total no. of existing STPs and proposed STPs with total capacities in MLD</td><td>:</td><td>Existing:
STP No. 1 with treatment capacity of 44 MLD
STP No. 2 with treatment capacity of 30.5 MLD
Proposed:
5 Nos with capacity- 50.5 MLD</td></tr>
<tr><td>c. Gaps in sewage treatment in MLD and no. of towns not having STPs</td><td>:</td><td>Gaps in treatment: 18.5 MLD of sewage remain untreated.</td></tr>
<tr><td rowspan="5">7.</td><td>Major industrial estates located with total no. of industries</td><td>:</td><td>09 industries</td></tr>
<tr><td>a. Total water consumption and total industrial effluent generation in MLD</td><td>:</td><td>Total water consumption: 30.59 MLD
Effluent Generation – 4.57 MLD
• MPCB does not allow any industry to discharge treated/partially treated effluent in to the river.</td></tr>
<tr><td>b. No. of industries having captive ETPs and their treatment capacity in MLD</td><td>:</td><td>09 Nos</td></tr>
<tr><td>c. No of CETP’s and their treatment capacity</td><td>:</td><td>1 CETP with treatment capacity of 5 MLD</td></tr>
<tr><td>d. Gaps in treatment of industrial effluent</td><td>:</td><td>None</td></tr>
<tr><td rowspan="2">8.</td><td>Waste Management</td><td>:</td><td></td></tr>
<tr><td>a. Solid Waste Generation & processing</td><td>:</td><td>• Solid waste generation-300 MT/day, Treatment-Nil
• MSW generated in Amravati City is disposed by dumping.</td></tr>
</table>

	b. Biomedical Waste Generation & treatment	:	Amravati: Total Biomedical waste generated: 487 Kg/day. Total Biomedical waste treated: 487 kg/day
	c. E-Waste Management Generation & treatment	:	E-waste generated by industries is sent to MPCB authorized E-waste reprocessor
	d. Hazardous waste Management	:	• There are 42 Hazardous waste generating industries in Amravati. These industries generated about 788.02 MT Hazardous waste in year 2017-18. • The HW from Amravati district is scientifically disposed through Maharashtra Enviro Power Ltd., MIDC Butibori, Dist. Nagpur • CHWTSDF capacity – Landfill – 60000 MT/A, Incineration – 3 TPH.
9.	Action plan includes mainly covering aspect such as (Proposal for utilization of sewage, ground water recharging or rain water harvesting, measures for regulating ground water use, protection and management of flood plain zone, maintaining minimum E-flows and water shed management, plantation on both sides of the river, setting up of bio-diversity parks etc., as per Hon'ble NGT Orders dated 20.09.2018 and 19.12.2018)	:	• RRC has already requested to Water Resource Dept, GoM for maintaining minimum E-flows and water shed management, plantation on both sides of the river, setting up of bio-diversity parks. • Water resource department, GoM has prepared integrated State Water Plan, which includes recycling of Treated sewage. • MPCB - Action plan for Utilization of Treated Sewage has been submitted to CPCB.
10.	Min. and Max. required time period for implementation of action plans		Maximum 2 Years from commencement of work
11.	Total estimated budget in crores towards implementation of proposed action plans with break-up (e.g. No. of STPs, capacity, total cost; No of CETPs, total capacity, Cost towards interception and diversion of sewage/effluent to STPs/CETPs etc.,)	:	• **No. of STPs**- 5 Nos. **Capacity**- 50.5 MLD • The Maharashtra Pollution Control Boards has also reserved Rs. 461.42Cr. for preparation of action plan for abetment & Control of Pollution of River Water due to sewage & solid waste disposal from B & C Municipal Councils (342Nos of Urban Local Bodies.), Nagar Panchyat & Gram Panchayat. These funds will be used for DPR preparation, development of infrastructure for sewage collection & treatment and development of infrastructure for Solid Waste Management. The DPR preparation & implementation of the same will be completed by year 2022 (i.e in next 3 years).
12.	Whether 'River Rejuvenation Committee (RRC) constituted by the State Govt./UT	:	River Rejuvenation Committee (RRC) constituted as per the Maharashtra Government G.R. issued by the

	Administration and If so, Date of constitution of 'RRC'.		Environment Dept, GoM vide No. NGT 2018/PC-2/TC-3 dtd.13.12.2018.
13.	Responsible Organisation (s) for implementation of proposed action plans	:	1. Water Resource Department, GoM 2. Urban Development Department 3. Amravati Municipal Corporation
14.	Expected deliverables w r to achieving Goals	:	1. To achieve 100% sewage collection and treatment 2. To achieve 100% MSW collection, transportation and treatment. 3. To achieve river water quality of Bathing standards by 2020. 4. Augmentation of River Flow and restoration of water quality-2022
15.	Initiatives taken by Govt. of Maharashtra and MPCB.	:	• Maharashtra Government through it's forest department has announced The Plantation Program in 2016 with the aim of planting 2 crore & planted 2.82 crore saplings. Forest Department has set the target of plantation of 4Crore, 13Crore and 33Crore saplings under the mission of 50Crore plantation which shall be accomplished in the three consecutive years viz. 2017, 2018 and 2019. • GOM, announced 'Namami Chandrabhaga Abhiyan' in year 2016. It is an initiative taken to revive and rejuvenate the river Chandrabhaga and to restore its historic glory. Government of Maharashtra has prepared a comprehensive plan for cleaning of the river on the lines of 'Namami Gange'. The aim of the mission is to make the Chandrabhaga river pollution free and conserve its purity and sanctity up to year 2022. • MPC Board will provide financial & technical assistance to villages in next three years to comply with sewage & waste management. • MPC Board has issued Direction to the local bodies to make 25% budgetary provision for scientific treatment and disposal of Sewage and Solid Waste. Accordingly, Municipal Corporations have passed resolution in their General Body meeting and reserved the funds. These funds are reserved and made mandatory to utilise for preparation of DPR, establishing treatment facility, O & M of treatment facility etc. The review of the same is taken from time to time by the Board. • MPC Board has issued directions to 08 Municipal Corporations to penalize to the tune of 1pais/litre of sewage generation under 'Polluter pays principle'.

			• MPC Board has issued directions to non-complying CETPs to penalize to the tune of 2 paisa/litre for remediation & upgradation to comply with the consented standards.
	Budget Estimates & Pooling of Resources from Local Bodies, State Pollution Control Board, State Government & Central Government		• Maharashtra Government has already received proposal of Rs. 1104.54Cr. Under State River Conservation Program & form this amount State Government will provide necessary funds in next 3 years i.e. by 2022 for Sewage management • The Maharashtra Pollution Control Boards has also reserved Rs. 461.42Cr. for preparation of action plan for abetment & Control of Pollution of River Water due to sewage & solid waste disposal from B & C Municipal Councils (342Nos of Urban Local Bodies.), Nagar Panchyat & Gram Panchayat for reducing polluted stretches in compliance with Hon'ble NGT, principal bench directions w.r.t. "More River Stretches are now Critically Polluted". The said funds will be used for DPR preparation, development of infrastructure for sewage collection & treatment & development of infrastructure for Solid Waste Management. The DPR preparation & implementation of the same will be completed by year 2022 (i.e in next 3 years). • The Maharashtra Government through Urban Development Department has approved DPR of all 388 Urban Local Bodies for Solid Waste Management. The funds for the same amounting to Rs. 2560.0Cr has been already approved by Government & the said DPRs will be implemented & Solid Waste Management issues will be resolved by December'2019.

Preamble -

In the matter of OA No. 673 of 2018-"More river stretches are critically polluted now: CPCB", the Hon'ble NGT has passed order dated 20.09.2018 for constitution of River Rejuvenation Committee (RRC) and Special Environment Surveillance Task Force (SESTF). The report comprises 351 polluted river stretches in India out of which 53 polluted river stretches are in Maharashtra. In the state, 9 polluted stretches in priority I & 6 polluted stretches in priority II. It has been mandated to prepare Action Plan for River Stretches and make them pollution free. In compliance of the orders of the Hon'ble NGT, the State Government has constituted RRC.

River Rejuvenation Committee (RRC) constituted as per the Maharashtra Government G.R. issued by the Environment Dept, GoM vide No. NGT 2018/PC-2/TC-3 dtd.13.12.2018 with 5 members under the

guidance of Principal Secretary for preparation of action plans and to monitor the implementation of these action plans. The members of RRC are as mentioned under:

1. Commissioner / Director, Directorate of Municipal Administration
2. Chief Executive Officer – Maharashtra Industrial Development Corporation
3. Director (Environment)
4. Director (Industries)
5. Member Secretary – Maharashtra Pollution Control Boards- Member & Co-ordinator of RRC

Further State Government also constituted District Level Special Task Force comprising of the following:

1. Representative of District Collector
2. Representative of District Superintendent of Police
3. Representative of Regional Officer, MPCB
4. Representative of the District Judge of the concerned District

Meetings of the RRC Committee:

- 1st Meeting of River Rejuvenation Committee (RRC) convened on 14.12.2018.
  RRC reviewed draft action plans of polluted river stretches of Priority I prepared by Maharashtra PCB. It was decided by the all the committee members, to take review of local bodies and accordingly to communicate the outcomes of the meeting to the Hon'ble NGT, Principal Bench. Maharashtra PCB submitted nine draft action plans of polluted river stretches of Priority I to CPCB along with minutes of 1st meeting of RRC and submitted progress report of polluted river stretches to Hon'ble NGT on 15.12.2018

- 2nd Meeting of River Rejuvenation Committee (RRC) convened on 09.01.2019.
  RRC reviewed draft action plans of polluted river stretches of Priority II prepared by Maharashtra PCB. It was decided in the meeting to add in the draft action plans funding details like source, name of scheme, timeline etc for proposed STPs by concern local bodies.

- 3rd Meeting of River Rejuvenation Committee (RRC) convened on 23.01.2019.
  RRC reviewed and finalised draft action plans of polluted river stretches of Priority I, II, III, IV and V prepared by Maharashtra PCB. RRC also decided to call the local bodies and review the timelines proposed in action plans from time to time.

- Maharashtra PCB submitted 53 draft action plans of polluted river stretches of Priority I, II, III, IV and V to CPCB along with minutes of 2nd & 3rd meeting of RRC and submitted progress report of polluted river stretches to Hon'ble NGT on 31.01.2019.

- CPCB Task Team on Polluted River Stretches called MPCB to give presentation on Action Plan for Priority-I & II polluted river stretches on 12.02.2019. Accordingly, the presentations were reviewed by Task team & few improvements in the action plan were suggested.

- 4th Meeting of River Rejuvenation Committee (RRC) held on 16/02/2019 & it was decided to communicate with Water Resource Department to maintain e-flow in the rivers of Maharashtra adopting good irrigation practices, protection & management of flood plain zone (FPZ), rain water harvesting, ground water charging, planation on both sides of river, Setting up of biodiversity parks on flood plains by removing encroachments and Urban Development department communicated to take necessary steps to provide adequate funds to urban local bodies for installation of sewage treatment & MSW processing facilities in a time bound manner so as to comply with the Hon'ble NGT.

- 5th Meeting of River Rejuvenation Committee (RRC) held on 25/06/2019. It was decided that Director Environment will communicate with Water Resource Department and Urban Development Department regarding provision of funds in time bound manner for installation of STPs & MSWM facilities. RRC reviewed and approved Action Plans for restoration of polluted river stretches in priority III, IV & V.

Achievable goal:

The objective/goal of the action plan is that the quality of river water should meet with the required value as given under:-

Quality Parameter	Standard to be achieved
BOD	3.0 mg/l.
Dissolved Oxygen (DO)	More than 5.0 mg/l.
Faecal Coliform	Less than 500 MPN/100ml.

1.2 Background

Pedhi River rises in hills near Rithpur in Morshi Tehsil. The Pedhi flows in easterly direction, after crossing the district it turns westwards and north-westwards to join the Purna River. It is one the water-supply source to the city of Amravati.

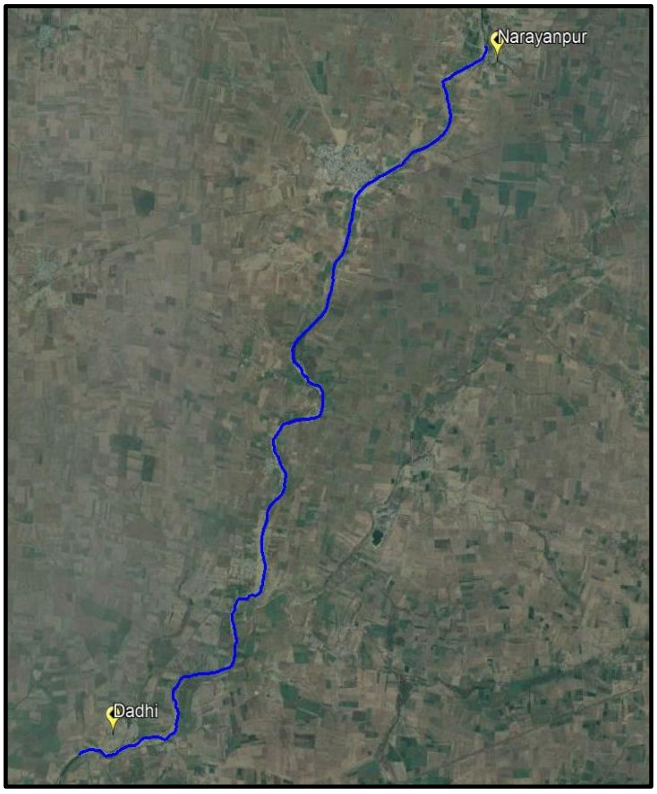


Figure 1 Stretch of Pedhi River

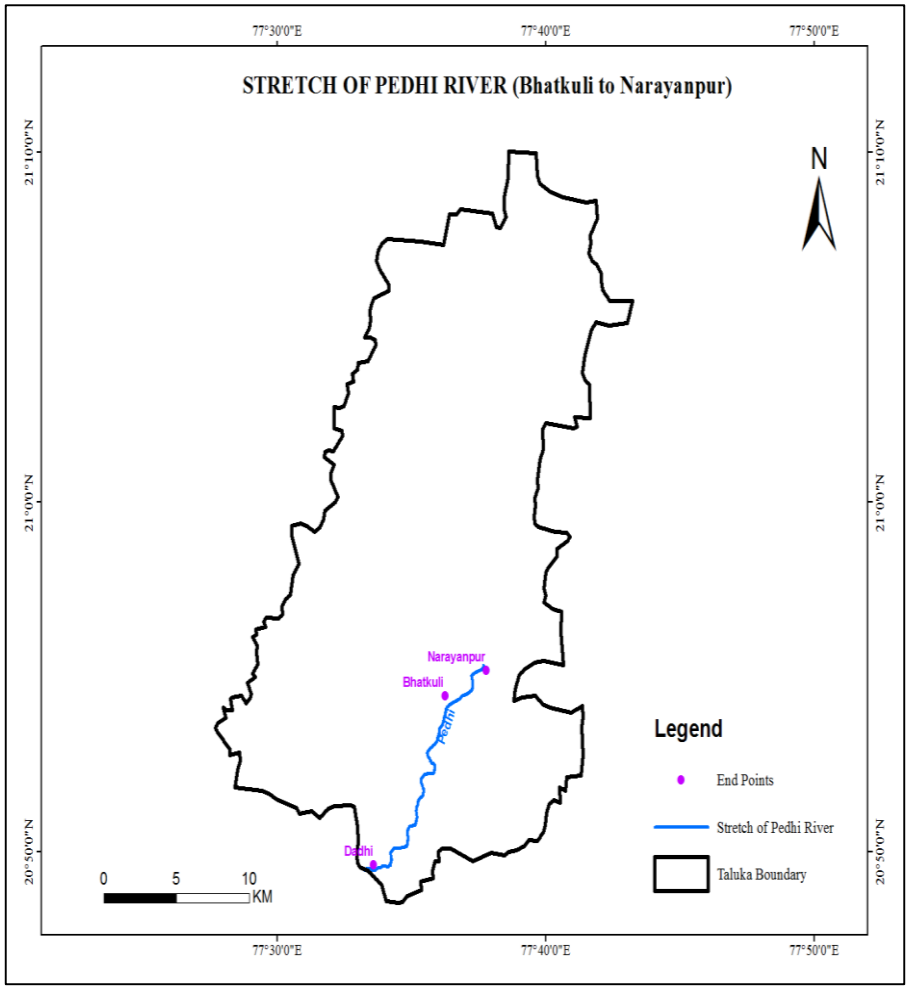


Figure 2 Map Showing Stretch of Pedhi River

The river stretch extends from Narayanpur to Bhatkuli. The length of this stretch is 3.2 km. Amravati is situated on the banks of the river. The population along this stretch is 6.5 lacs as per 2011 Census.

The current status of the river as per the monthly sampling conducted between January to December 2018 reveals that water quality of the river falls in Priority III i.e. max BOD 14 mg/l.

Table 1 Introduction of river stretch

Sr. No.	Description of item	Details
1	Approx. length of stretch	3.2 Km
2	Major Towns located on the bank along with Population	**Local Body** – **Population** Narayanpur – 296 Bhatkuli – 8,361 Amravati – 6,47,000
3	Stretch of River Perennial or Non Perennial	Non-perennial.
4	Current status of polluted river stretch (Jan – Dec 2018)	Priority-III

1.3 Status of Domestic Sewage Generation and Treatment

The water quality deteriorates due to discharge of domestic sewage from the villages along the river. Rithpur, Walgaon & Bhatkuli are few villages at banks of the river. It is observed that sewage generation from Walgaon & Bhatkuli Gram Panchayat discharges into the Pedhi River without any treatment. The Sewage generation from Amravati district is given in the table below:

Table 2 Status of Sewage generation & treatment in Amravati City

Sr. No.	City	Total Sewage Generated (MLD)	STP capacity (MLD)	Total effective Treatment Capacity (MLD)	Gap in Treatment (MLD)
1	Amravati	93	74.5	74.5	18.5

Table 3 Status of Sewage Treatment Plants in Amravati District

City/ Town	STP Location	Status (Operational/Non-Operational/Under Construction)	STP Installed Capacity (MLD)	STP utilization capacity (MLD)	Technology (UASB/ASP/OP/ SBR/MBR/FAB etc.)	Disposal (land, River, Sea or any other)
Amravati	Lalkhedi, Tal. & Dist. Amravati.	Operational	30.5	30.5	ASP	Into River after treatment
	Lalkhedi, Tal. & Dist. Amravati.	Operational	44	44	ASP	-

Table 4 Proposed Sewage Treatment Plants under Atal Mission for Rejuvenation and Urban Transformation (AMRUT) Scheme

Type of Zone	Designed Capacity (MLD)	Status
Amravati		
Proposed (Zone No. 1,2 & 6)	14.50	Proposed
Proposed (Zone No. 3)	8.0	Proposed
Proposed (Zone No. 7)	10.5	Proposed
Proposed (Zone No. 8)	5.5	Proposed
Proposed (Zone No. 1 & 2 Badnera)	12.0	Proposed
Total	**50.5**	

Table 5 Funding Details for the proposed STPs

Name of ULB	Name and Address of STP	Designed Capacity (MLD)	Fund Allocation Details				Time line for various stages of work Completion	Target date of Completion
			Source of Funds	Allocation Status	Utilization status	Present Status of the work		
Amravati Municipal Corporation	Not Finalized	14.50	---	---	---	Land location is not yet finalized	DPR will be finalized up to Dec 2020 for further approvals	---
	Only location is Finalized	8.00	---	---	---	Only location is Finalized		---
	Land & Location is not yet finalized.	10.5	---	---	---	Land & Location is not yet finalized. The planning and budget is under preparation.		---
		5.5						---
		12.0						---

Table 6 Domestic sewage aspects on the river stretch

Sr No	Particular	Remarks
1	Details of drainage system/sewerage network present/proposed	Current Drainage Network - 250 Km Proposed Drainage Network – about 750 Km
2	Proposal for utilization of sewage	• Water resource department, GoM has prepared integrated State Water Plan, which includes recycling of Treated sewage. • MPCB has submitted Action plan for Utilization of Treated Sewage to CPCB, in which it is mandated to utilize treated sewage for different class of users like Thermal Power Plants, Industrial Units, Construction activities, non-potable municipal uses, Agriculture-Irrigation, etc. depending on its availability. • The Infrastructure Projects are mandated by MPCB to recycle 60% of treated sewage for secondary use by providing duel pipeline. • The Local Bodies will be encouraged to reuse treated sewage for various purposes including to Thermal Power Plants wherever possible. e.g. Koradi TPS is receiving 100 MLD of treated sewage from Nagpur city.
3	STP sludge management	STP sludge is disinfected and used as manure.

4	Proposal for ground water recharging/rain water harvesting	• The EC has mandated rainwater harvesting for projects above 20,000 Sq.m. • G.S.D.A. is engaged in the development and management of groundwater resources in the State through various schemes. The main aim is to provide safe and potable drinking water to the community. • The G.S.D.A. is engaged, in the exploration, development and augmentation of groundwater resources in the State through various schemes. This mainly includes, drilling of bore wells/tube wells under Rural Water Supply Programme, rendering technical guidance under minor irrigation programme by locating suitable dug well sites, strengthening of groundwater sources by water conservation measures, artificial recharge projects for induced groundwater, specific studies related to the periodic status of groundwater availability, protecting the existing groundwater resources through technical assistance under Groundwater Act etc.
5	Adopting good irrigation practices	Agriculture Department, GoM & Water Resource Department, GoM is requested for implementation.
6	Protection and management of Flood Plain Zones (FPZ)	Water Resource Department, GoM is requested for implementation.
7	Plantation on both sides of the river	Water Resource Department, GoM is requested for implementation.
8	Setting up of biodiversity parks on flood plains by removing encroachment	Water Resource Department, GoM is requested for implementation.

There are two STPs under Amravati Municipal Corporation with respective treatment capacities of 30.5 MLD and 44 MLD. The total domestic effluent generated in Amravati during the year 2017-18 was 93.062 MLD and the total quantity of effluent treated was 74.5 MLD. The mean of annual performance and analysis of all STPs provided in Amravati Region are represented in following Table 7.

Table 7 Mean of Annual Performance of STPs in Amravati Region

Location	Parameters (mg/l)					
	pH		BOD (Mean)		S.S. (Mean)	
	Inlet	Outlet	Inlet	Outlet	Inlet	Outlet
Amravati Municipal Corporation STP at Lalkhadi, Taluka & District Amravati.	7.06	7.04	13	6.8	18	16

It can be observed from above Table that outlet value of BOD at the STP under Amravati Municipal Corporation was within the standards for domestic effluent discharge prescribed in the E (P) Rules, 1986 in Schedule – VI.

1.4 Drain out-falling into River Pedhi

There are two drains that fall into Pedhi River. The details of these drains are given in the table below:

Table 8 Particulars of drains falling into the river

Sr. No.	Location	Name of the drain	Discharge		Length (km)	Width (m)	Depth (m)
			Min	Max			
1	Amba Nalla Confluence with Pedhi river at village Haturna	Amba Nalla	About 20 MLD	About 93 MLD	11.75	15	2.5
2	Drain from Nimba Gut Grampanchayat & Narayanpur Village Meets at Narayanpur village to Pedhi river	Drain from Nimba Gut	About 0.02 MLD	About 0.1 MLD	0.13	2	1

Table 9 Status of water quality of the drains

Sr. No.	Major Drain	BOD (mg/l)	COD (mg/l)
1	Amba Nalla	11.76	34.8
2	Drain from Nimba Gut Grampanchayat & Narayanpur Village Meets at Narayanpur village to Pedhi river	-	-

1.5 Status of Water Quality

Water quality of River Pedhi is assessed at one location. It is observed that Dissolved Oxygen range between 0.8 – 7.5 mg/1 putting together data of three years (2016-2018) which is not meeting the criteria limit of at least 4 mg/l. The Bio-chemical Oxygen Demand (BOD) varies between 3.5 – 25.2 mg/1 for similar years which is exceeding the desired level of 3 mg/1. The Chemical Oxygen Demand (COD) values ranged between 8.0-56.0 mg/l indicating moderate level of industrial pollution. The Faecal and Total Coliform numbers respectively for the years referred are in the range of 46-900 MPN/100ml and 90-1600 MPN/100ml indicating significant contribution of untreated sewage. The details of parameter specific concentration are provided in Table 5.

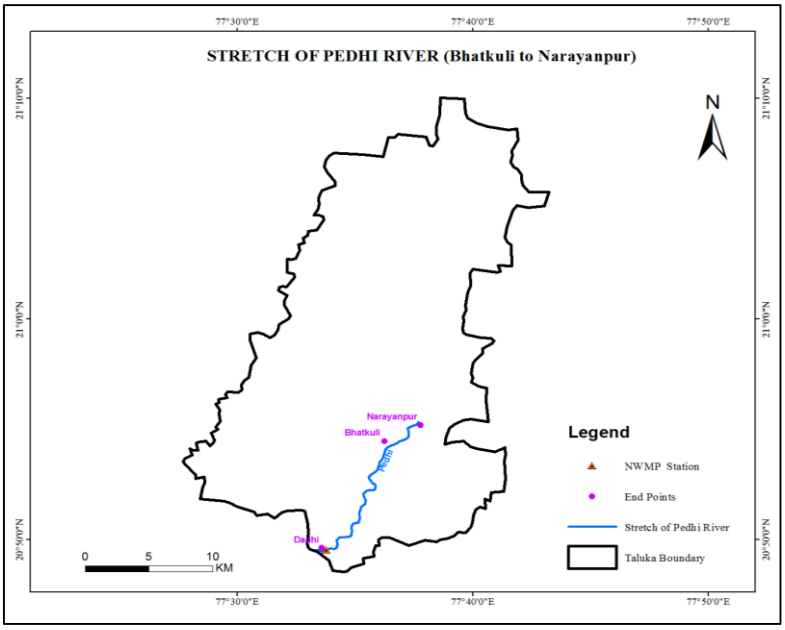


Figure 3 Map Showing NWMP Station across the Stretch of Pedhi River

Table 10 Pedhi River near road bridge at Dadhi- Pedhi village, Village Pedhi, Taluka- Bhatkuli, District- Amravati.

Month	Year	pH	DO (mg/L)	BOD (mg/L)	FC MPN /100ml	TC MPN /100ml	Water Quality Criteria of Bathing
January	2017	8.2	1.2	11.2	130	240	Non Complying
	2018	7.7	5.3	7.7	63	220	Non Complying
	2019	8.23	6.31	4.5	39	280	Non Complying
February	2017	8	7.5	5	170	350	Non Complying
	2018	7.4	1.7	18.9	63	350	Non Complying
	2019						
March	2017	7.7	6.0	7.0	120	210	Non Complying
	2018	7.74	5.25	5.2	94	220	Non Complying
	2019						
April	2017	7.5	5.3	4.8	94	220	Non Complying
	2018	7.6	5.4	9.8	110	280	Non Complying
May	2017	7.8	4.2	9.0	94	210	Non Complying
	2018	8.3	5.52	7.2	94	220	Non Complying
June	2017	7.2	3.0	20.0	46	170	Non Complying
	2018	7.2	1.3	25.2	170	540	Non Complying
July	2017	7.7	4.9	11.6	94	220	Non Complying
	2018	7.1	6.62	19.3	90	500	Non Complying
August	2017	7.8	5.35	8.6	110	220	Non Complying
	2018	7.5	4.09	15.1	80	500	Non Complying
September	2017	8	6.3	4.0	94	220	Non Complying
	2018	6.92	1.42	15.1	80	350	Non Complying
October	2017	7.9	6.3	5.2	63	220	Non Complying
	2018	8.1	5.0	14.0	97	350	Non Complying
November	2017	7.2	4.74	13.4	94	220	Non Complying
	2018	8.0	5.4	8.0	34	300	Non Complying
December	2017	6.7	0.83	12.6	70	220	Non Complying
	2018	8.1	6.4	5.2	34	300	Non Complying

It is observed from the above table that the maximum BOD values recorded at Pedhi river near road bridge at Dadhi, Pedhi village do during the years 2016, 2017 and 2018 do not comply with the bathing standard of 3 mg/l. This may be due to non-availability of the dilution water at disposal location in the

river bed. The necessary dilution will be achieved by way of discharging necessary water quantum required to maintain e-flow from dam in a periodical manner. The usual water cycle of the release of water is mostly for irrigation and domestic purposes from interval of 21 days to 45days. The continuous e-flow will be achieved subject to availability of the water in the dam.

1.5 Status of Ground Water Quality

Maharashtra Pollution Control Board (MPCB) regularly monitors the water quality across 250 Water Quality Monitoring Stations (WQMS) for both surface (155 on rivers, 34 on sea/creeks, 10 on drains, 1 dam) and ground water (24Borewells, 24Dugwell, 1 Handpumps, 1 Tubewell) under two programs of NWMP (National Water Monitoring Programme) project titled GEMS (Global Environment Monitoring System) and MINARS (Monitoring of Indian National Aquatic Resources). Surface water samples are monitored every month whereas the ground water samples are monitored every six months.

WQI for ground water

MPCB monitors ground water quality once in six months. Based on the stringency of the parameters and its relative importance in the overall quality of water for drinking purposes each parameter has been assigned specific weightage by CPCB. These weights indicate the relative harmfulness when present in water. Nine parameters (pH, Total Hardness, Calcium Hardness, Magnesium Hardness, Chloride, Total Dissolved Solids, Fluoride, Nitrate, Sulphate) are considered for calculating Water Quality Index of ground water.

Water Quality Index - Ground Water		
WQI	**Water Quality**	**Colour Code**
<50	Excellent	
50-100	Good Water	
100-200	Poor Water	
200-300	Very Poor Water	
>300	Water Unsuitable for drinking	

Table 11 Water Quality Index for 156 locations (surface water & ground water) during January - 2019

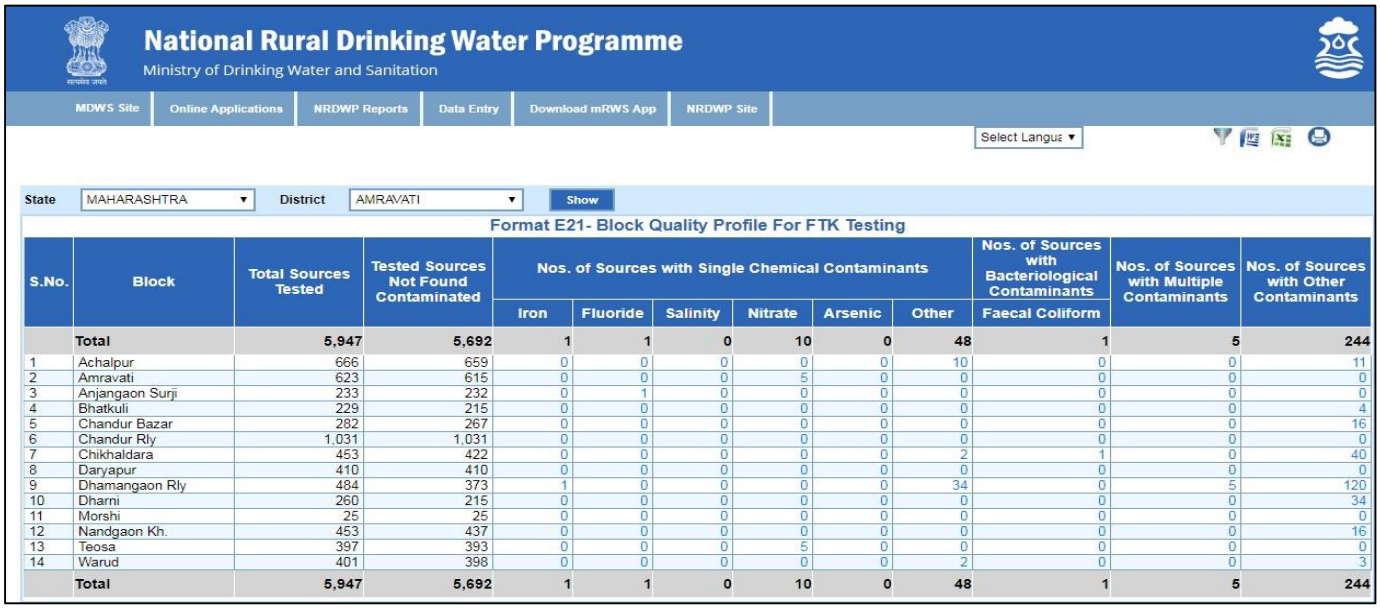
WQI Category	WQI	Number of WQI values in different category	
		No. of WQI	**% of WQI**
Good to Excellent	63-100	98	73.68
Medium to Good	50-63	12	9.02
Bad	38-50	9	6.77
Bad to Very Bad	38 and less	14	10.53
Total WQI values		133	100

Summary:

1. 110 WQI values or 82.70 % values are in category of Good to Excellent and Medium to Good.

2. 9 WQI values or 6.77 % are in category of Bad.
3. 14 WQI values or 10.53 % are in category of Bad to Very Bad.

Table 12 Ground water quality in Amravati District



National Rural Drinking Water Programme
Ministry of Drinking Water and Sanitation

MDWS Site | Online Applications | NRDWP Reports | Data Entry | Download mRWS App | NRDWP Site

State: MAHARASHTRA District: AMRAVATI Show

Format E21- Block Quality Profile For FTK Testing

S.No.	Block	Total Sources Tested	Tested Sources Not Found Contaminated	Nos. of Sources with Single Chemical Contaminants						Nos. of Sources with Bacteriological Contaminants	Nos. of Sources with Multiple Contaminants	Nos. of Sources with Other Contaminants
				Iron	Fluoride	Salinity	Nitrate	Arsenic	Other	Faecal Coliform		
	Total	**5,947**	**5,692**	**1**	**1**	**0**	**10**	**0**	**48**	**1**	**5**	**244**
1	Achalpur	666	659	0	0	0	0	0	10	0	0	11
2	Amravati	623	615	0	0	0	5	0	0	0	0	0
3	Anjangaon Surji	233	232	0	1	0	0	0	0	0	0	0
4	Bhatkuli	229	215	0	0	0	0	0	0	0	0	4
5	Chandur Bazar	282	267	0	0	0	0	0	0	0	0	16
6	Chandur Rly	1,031	1,031	0	0	0	0	0	0	0	0	0
7	Chikhaldara	453	422	0	0	0	0	0	2	1	0	40
8	Daryapur	410	410	0	0	0	0	0	0	0	0	0
9	Dhamangaon Rly	484	373	1	0	0	0	0	34	0	5	120
10	Dharni	260	215	0	0	0	0	0	0	0	0	34
11	Morshi	25	25	0	0	0	0	0	0	0	0	0
12	Nandgaon Kh.	453	437	0	0	0	0	0	0	0	0	16
13	Teosa	397	393	0	0	0	5	0	0	0	0	0
14	Warud	401	398	0	0	0	0	0	2	0	0	3
	Total	**5,947**	**5,692**	**1**	**1**	**0**	**10**	**0**	**48**	**1**	**5**	**244**

1.6 Status of Industrial Effluent Generation and Treatment

Maharashtra is one of the most highly industrialized states in India. With a rise in industrial estates in the State, areas like Mumbai, Thane, Navi Mumbai, Kalyan, Nashik, Pune and Pimpri-Chinchwad that have a large number of pollution-prone industries are facing chronic industrial pollution. 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.

Industrial Statistics in Amravati region is demonstrated in following Table.

Amravati		
LSI	MSI	SSI
220	6	4315
94	10	1920
80	42	321
White – 122		

Major crops of this area are cotton, Tur, Mung, gram, Jawar & oil seeds like Soyabeen, Kardi. Therefore most of the industries based on agro products like cotton ginning/pressing, oil mills, Engineering units are established and operating in this region. There is one coal based thermal power plant & Textile Park (Additional MIDC, Nandgaon Peth) industries are also in operation. As the major industrial estates consisting of small scale industries having less water pollution potential and there is no direct industrial discharge into Pedhi river.

The main source of river pollution is Domestic effluent generated from Municipal Corporation area Amravati.

The Amba Nalla carrying domestic effluent from municipal corporation area meets Pedhi river at village Haturna. The domestic effluent generation from Municipal corporation Amravati area is 93 MLD out of which 74.5 MLD is treated in existing STP (2 nos) of capacities 30.5 MLD & 44.0 MLD. The remaining effluent 18.5 MLD as well as treated effluent 74.5 MLD is discharges in to Amba Nalla. Maximum quantum of the effluent in Amba Nalla is lifted for agriculture purpose.

Table 13 Particulars of Industries situated in Amravati District

Sr No	Particulars	Remarks
1	Particulars of Industries in Amravati District	Total 09 industries
2	No. of Directions issued to Industries	2 Nos
3	Total water consumption and total industrial effluent generation	Total water consumption: 30.59 MLD Total effluent generation: 4.57 MLD
4	No. of industries having captive ETPs and their treatment capacity in MLD	9 effluent generating industries have captive ETPs and total capacity of the captive ETPs is 2.133 MLD
5	No. of CETPs existing in the catchment of the polluted river stretch and the treatment capacity	One CETP with treatment capacity of 5 MLD exists in the catchment of the polluted river stretch
6	No. of Industries that are members of the CETPs	06 Nos (Textile Industries)
7	Gaps in treatment of industrial effluent	No gaps in the treatment of industrial effluent
8	OCEMS installation Status by Industries	One industry has installed OCEMS
9	Status of Hazardous Waste Generation and Treatment	Hazardous waste generation during the year 2017-18: 788.02 MT Quantity of HW recycled: 0.02 MT Quantity of HW disposed in secured landfill: 761 MT Quantity of HW disposed through incinerator: 27 MT

To monitor compliance of Consent conditions, performance of ETP, ECS and other measures, the Board officials inspect industries regularly. There are 489 industries identified under “Highly Polluting Industries”. Table 5.33 shows region-wise details of these highly polluting industries.

Table 14 Highly Polluting Industries as on 31/3/2018.

Industry	Amravati	Aurangabad	Chandrapur	Kalyan	Kolhapur	Mumbai	Nagpur	Nashik	Navi Mumbai	Pune	Raigad	Thane	Grand Total
Cement	-	-	5	-	1	-	1	-	-	-	-	-	7
Distillery	1	15		-	17	-	1	22	-	36	-	-	92
Dyes and Dye-intermediates	-	-	2	3	2	-	1	-	1	-	7	2	18

Fertilizer	1	2	-	-	-	1	1	4	-	1	3	-	13
Integrated Iron and Steel	-	-	1	-	1	-	4	-	-	1	2	-	9
Oil Refinery	-	-	-	-	-	2	-	-	-	-	-	-	2
Pesticide	-	-	-	1	5	-	-	1	3	-	3	3	16
Pharmaceuticals	-	13	-	12	4	-	-	2	15	9	14	23	92
Pulp & Paper	-	-	1	-	-	-	-	-	-	1	-	-	2
Sugar	1	55	2	-	41	-	5	35	-	63	-	-	202
Tannery		1	-	-	-	-		-	-	-	-	-	1
Thermal Power Plant	2	1	7	-	2	1	12	3	-	-	-	1	29
Petro-chemical	-	-	-	-	-	-	-	-	1	-	5	-	6
Grand Total	5	87	18	16	73	4	25	67	20	111	34	29	489

There is one CETP in Amravati Region. Total amount of effluent generated and treated in this Region during the year 2017-18 is 21.4 MLD. The treatment capacity of this CETP is 5 MLD. Data on the quantity of effluent treated by this CETP is not currently available. The annual performance of the CETP for the year 2017-18 is represented in **Table 15.**

Table 15 Statistical Analysis Data for CETP Performance in Amravati Region.

Parameters (mg/l)			**Location**
			Additional Amravati Industrial Area
Inlet	**BOD (mg/l)**	**Min.**	0
		Max.	384
		Mean	143
		SD.	128
	COD (mg/l)	**Min.**	NA
		Max.	1064
		Mean	397
		SD.	351
Outlet	**BOD (mg/l)**	**Min.**	4
		Max.	222
		Mean	54
		SD.	74
	COD (mg/l)	**Min.**	12
		Max.	556
		Mean	141
		SD.	180

From above table it can be observed that the reduction in BOD at the CETP at Additional Amravati Industrial Area was 62% whereas the COD was being reduced with 64% efficiency. The parameters for the treated effluent were within the prescribed discharge standards of 100 mg/l and 250 mg/l for BOD and COD respectively. At present the CETP is not discharging treated industrial effluent on land. The CETP is being operated on ZLD principle.

1.7 Waste Management

1.7.1 Solid Waste Management

In the state of Maharashtra there are total 271 local bodies , comprising of 27 Municipal Corporations, 16- 'A' Class Municipal Council, 54- 'B' Class Municipal Council, 154- 'C' Class Municipal Council, 14- Nagar Panchayat, 06-Cantonment Board generating about 22897.83 MT of municipal solid waste every day, of which the Contribution in terms of percentage by the corporation is 84.72 %, by A class council is 4.25 %, by B class council is 5.04 % , by C Class Council is 5.07 % and by Others is 0.96 %. The overall percentage of treatment is 34.70 % i.e. 7945.544 MT/day quantity is treated and the remaining is disposed in an unscientific manner. Out of 27 Municipal corporations, 24 Corporations have obtained Authorization from MPCB for 22 Nos of approved sites having processing & disposal facilities and same are in operations. 109 Nos. of Municipal Councils having partially processing & disposal facilities.

Total generation of MSW from Amravati city is about 300 MT/month. All MSW generated is disposed by dumping without treatment.

1.7.2 Bio-medical waste Management

Total Bio-medical waste generation in Amravati is 747 kg/day. 487 kg/day waste is collected, transported and treated at CBMWTSDF located at Mouje Badnera, Dist. Amravati. The CBMWTSDF has installed capacity of Incinerator 100 Kg/Hr and Autoclave with installed capacity of 50 litre/cycle.

1.7.3 E-Waste management

- Maharashtra Pollution Control Board awarded work order to M/s. IRG Systems South Asia Pvt. Ltd. to carry out inventorisation of E-Waste generation in the State of Maharashtra.
- Interim inventorisation report is submitted to MPCB and final report will be ready within one month.
- As per the Interim inventory report submitted to MPCB, the E-Waste generation for the year 2015 is approx. 6,46,509 MT.

- **Number of authorized dismantlers/ recyclers in the state of Maharashtra**

Present Status of E-Waste dismantling and recycling capacity			
1	E-Waste Dismantlers	70	77525 MTA
2	E-waste Recyclers	08	
	Total	78	

- E-Waste Treated (Recycled/Dismantled)
  - Year 2015-16 : 4041.72 MT

- Year 2016-17 : 6720.69 MT
- Year 2017-18 : 7031.5 MT

- CPCB has approved EPR of 261 producers for Maharashtra. The list of the producers is enclosed here.
- Annual report for the year 2017-18 is submitted.

Action Taken by MPCB

- MPCB is undertaking regular monitoring of EPR Authorization conditions and regular inspection of the collection points/ centers mentioned in EPR Plan.
- MPCB has issued Directions u/s 5 of the Environment (Protection) Act, 1986 read with E-waste (Management) Rules, 2016 to all Municipal Corporations in Maharashtra on 06/12/2018 for provision of collection centres.
- Co-ordination with Various State Government Departments
- Co-ordination with Urban Local Bodies (Municipal Committee /Council /Corporation).
- Awareness through Public Notice

Constraints:

- Channelization E-waste from informal sector to formal sector.
- Awareness about impact of E-waste on Environment and Rules of E-waste is required.
- Authorized collections and Segregation centers are required to be established by Local Bodies.

1.7.4 Hazardous Waste Management

The state of Maharashtra has four Common Hazardous Waste Treatment, Storage and Disposal Facilities. These facilities are located at MIDC Taloja, Trans-Thane Creek Industrial Area, MIDC Ranjangaon, Pune and MIDC Butibori, Nagpur. These facilities collectively handle 340,847 MT of Hazardous waste per annum.

There are 42 Hazardous waste generating industries in Amravati district. These industries generated about 788.02 MT of Hazardous waste in year 2017-18. The HW from Amravati district is scientifically disposed through CHWTSDF at Maharashtra Enviro Power Ltd., MIDC, Butibori, Dist. Nagpur having capacity – Landfill –60,000 MT/A and Incinerable – 3 TPH.

Out of the 788.02 MT generation in 2017-18, 761 MT was Landfillable, 27 MT was Incinerable and 0.02 MT was Recyclable.

Table 16 Status of Waste Management in Amravati

Sr. No	Particular	Remarks
1	Total MSW Generation	Total generation of MSW – 300 MT/day. Total quantity of treated MSW:- Nil
2	Existing MSW treatment and disposal facilities	300 MT/day MSW disposed through dumping

3	Bio-medical waste Management	Hospitals are joined to CBMWTSDF-PASCCO Environmental Solution ltd. Total generation: 487 kg/day collection and treatment: 487 kg/day
4	E-Waste management	E-waste generated by industries is sent to MPCB authorized E-waste reprocessor.
5	Hazardous Waste Management	• There are 42 Hazardous waste generating industries in Amravati. These industries generated about 788.02 MT of Hazardous waste in year 2017-18. • The HW from Amravati district is scientifically disposed through CHWTSDF - Maharashtra Enviro Power Ltd., MIDC, Butibori, Dist. Nagpur • CHWTSDF capacity – Landfill – 60,000 MT/A Incineration – 3 TPH

1.8 Dream Project of Government of Maharashtra (GOM), Namami Chandrabhaga

GOM, has announced Namami Chandrabhaga Abhiyan on 18/03/2016 in the Budgetary Assembly Session of 2016-17. Namami Chandrabhaga is an initiative taken to revive and rejuvenate the river Chandrabhaga and to restore its historic glory. Considering the religious, social and economic importance of the river Chandrabhaga, the Government of Maharashtra has decided to prepare a comprehensive plan for cleaning of the river on the lines of 'Namami Gange'. Hon'ble Finance Minister, GOM, directed to issue the GR about finalization of working System of the Abhiyan, vide letter dt. 07/04/2016. The aim of the Namami Chandrabhaga Abhiyan is to make the Chandrabhaga river pollution free and conserve its purity and sanctity up to year 2022 and others are as mentioned below:

- To maintain the permanent minimum continuous flow of water in the river bed.
- To construct weirs in the river bed for maintaining water level.
- To maintain & keep minimum environmental flow of water.
- To make available sufficient public bathrooms & toilets as well as mobile bio-toilets to the publics during Pandharpur yatras.
- To install STP's for treatment of domestic wastes and scientific disposal facilities for solid waste generated from the villages & cities located on the bank of Chandrabhaga river.
- To carry out the beautification & forestation of river banks.
- To make reuse/recycle of treated industrial water generated from the industries and industrial estates located in the catchment area of Chandrabhaga river.
- As per the local need to work for public participation and development of pilgrimage area.

"Namami Chandrabhaga Pradhikaran"

Established under the Chairmanship of Hon'ble Chief Minister, GoM & Co-Chairmanship of Hon'ble Finance Minister, GoM, having Divisional Commissioner, Pune as Member Secretary.

"High Power Committee"

Established under the Chairmanship of Hon'ble Chief Secretary, GoM of Maharashtra having Divisional Commissioner, Pune as Member Secretary.

In this context, the Government has identified CSIR National Environmental Engineering Research Institute (CSIR-NEERI) as 'Nodal Technical Expert Agency' the project. Bhima river originates in Bhimashankar in Pune district. But when it reaches Pandharpur, it appears like a crescent moon, thus deriving the name Chandrabhaga. It flows in a 370-km stretch between Pune and Solapur districts. CSIR-NEERI was already involved by the Maharashtra Government to provide technological solutions for sanitation and sewage treatment at important cities and pilgrim centers like Nashik and Pandharpur. Furthermore, is retained CSIR-NEERI for technological interventions during the execution of the Project 'Namami Chandrabhaga'. The Maharashtra Government intends to cleanse and make the holy river Chandrabhaga pollution free by the year 2022.

Similarly, on the line of Namami Chandrabhaga Maharashtra Government is in process of undertaking various projects for clean-up of other rivers in the State.

1.9 Involvement of Civil Society/Creation of awareness

For sustainable development it is necessary to promote and create environmental awareness among communities, businesses and governments. Therefore the Board organizes various environmental awareness programs across the State of Maharashtra. During the year 2017-18 the following programs on environmental awareness were conducted by the Board.

Month	Subject	Details
22nd April 2017	World Earth Day	Public awareness messages published in leading newspapers namely Dainik Samna, Sakaal, Divya Marathi, Loksatta, Indian Express, Lokmat, Maharashtra Times of India, DNS, Hindustan Times and Midday on the occasion of World Earth Day.
5th June 2017	World Environment Day celebration	The main event was organized at the Yashwantrao Chavan Auditorium, Mumbai on 5th June, 2017 on occasion of World Environment Day. Hon'ble Chief Minister of Maharashtra, Shri Devendra Fadnavis, Hon'ble Minister of Environment, Shri Ramdas Kadam and Member Secretary of MPCB, Dr. P. Anbalagan attended this event. During this event, award ceremony for Vasundhara Award competition organized for industries, municipal corporations and CETPs was carried out. On the occasion of World Environment Day, Vasundhara Short Film Competition based on the environment was announced by Hon'ble Chief Minister of Maharashtra at the main event. This competition will be organized for professionals as well as amateurs. During this event, the award ceremony for Photothon 2017 took place. This ceremony was presented by Member Secretary of MPCB, Dr. P. Anbalagan. Villages which had participated in the water conservation activity 'Jalsanvardhan Panchayat – Ek Lok

		Chalwal' organized by Maharashtra Pollution Control Board, Vanrai Pune and Zee 24 Taas were awarded at the hands of Hon'ble Chief Minister of Maharashtra for their exceptional performance. During this event, a short film festival related to the environment was organized for three days at Yashwantrao Chavan Centre, Mumbai with assistance from Enviro-Vigil and as a joint effort by MPCB and Environment Department, Government of Maharashtra. A large number of environmentalists attended this festival. At this time, discussion sessions with directors, producers, environment experts and analysts were also organized.

Hon'ble Shri Devendra Fadnavis, Chief Minister, GoM lighting the lamp during inauguration of the World Environment Day program held at Y. B. Chavan Auditorium, Mumbai on 5th June 2017. Hon'ble Shri Ramdasji Kadam, Minister for Environment, GoM, Shri Sumit Mallik (IAS), Chief Secretary, GoM and Dr. P. Anbalagan (IAS), Member Secretary graced the occasion with their august presence.

On the eve of World Environment Day on 5th June 2017, Hon'ble Shri Devendra Fadnavis, Chief Minister, GoM giving away Vasundhara Awards to the entrepreneurs who have introduced best environment-friendly practices in their industry, at Y. B. Chavan Auditorium, Mumbai.		
5th June 2017	World Environment Day	On the occasion of World Environment Day (5th June, 2017) public awareness messages were published in Maharashtra Times, Time of India, Loksatta, Indian Express, DNA, Hindustan Times, Midday (Gujarati, Urdu and English), Lokmat, Dainik Sakaal, Samna, Divya Marathi and in other leading newspapers. Information about various control measures adopted for pollution control was published in this section on behalf of MPCB.
5th June 2017	World Environment Day	On the occasion of World Environment Day (5th June, 2017) public awareness programs related to the environment, canvas paintings with messages about the environment, brainstorming on public awareness and various other activities were organized by We Love India on 5th June, 2017 at Bandra. Famous movie artists, sportspersons and Hon'ble Environment Minister for State were present during these activities.
4th July 2017	'Paryavaranachi Vaari Pandharichya Daari'	An environmental public awareness campaign namely 'Paryavaranachi Vaari Pandharichya Daari' was organized on the occasion of Aashadhi Ekadashi and the foot pilgrimage to Pandharpur. As environmental issues are equally detrimental to urban and rural areas, fundamental messages such as plastic waste removal, proper use of water, electricity and natural resources, use of limited electrical power for agriculture, use of organic fertilizers, proper waste management of wet waste and dry waste were spread among the 10 lakh devotees who had gathered for the Pandharpur pilgrimage. These messages were made public through folk art, popularly known as Kirtan, Bharud, and Povada. In this 15 day long pilgrimage, Sangeet Natak Academy award winner, Smt. Chandabai Tiwari, famous Shahir Shree Devanand Mali and Hari Bhakta Parayan Shri Dnyaneshwar Maharaj Wabale created public awareness through Bharud, Povada and Kirtan respectively. This year's Pandharpur pilgrimage was inaugurated at Pune by Hon'ble Minister of State of Environment, Shri Ramdas Kadam. Honorable dignitaries such as Member Secretary of MPCB, Dr. P. Anbalagan and Hon'ble Mayor of Pune were present at this event. Guidance for this pilgrimage was sought from Dr. Prakash Khandge, a well-known researcher of folk arts. The conclusion of this pilgrimage was organized on the eve of Aashadhi Ekadashi in the presence of Hon'ble Chief Minister, Shri Devendra Fadnavis, Mrs. Amruta Fadnavis, Cabinet Minister (Solapur), Shri Vijay Deshmukh, Minister of Water

		and Sanitation, Shri Babanrao Lonikar, Senior Cabinet Minister, Shri Mahadev Jankar, Member Secretary of MPCB, Dr. P. Anbalagan and other honorable dignitaries.
 **Hon'ble Shri Devendra Fadnavis, Chief Minister addressing pilgrims on the eve of environment public awareness campaign at Pandharpur on 4th July 2017, in the presence of Dr. P. Anbalagan (IAS), Member Secretary, GoM.**		
August 2017	92.7 Big FM Big Green Ganesha	The Big Green Ganesha activity was co-organized by 92.7 Big FM and MPCB in the city of Mumbai. During this activity, the Big Green Ganesha van encouraged citizens at various locations to celebrate an eco-friendly Ganesh festival and to donate newspaper scrap for the even. During Ganesh festival a special studio was set up at Lalbaghcha Raja in Mumbai city for 10 days. At this time, Hon'ble Chief Minister of Maharashtra, Hon'ble Minister for Environment, Hon'ble State Minister for Environment and film celebrities spread messages for public awareness.
August 2017	Zee 24 Taas Eco-Friendly Household Ganesh Festival Competition	The Household Eco-friendly Ganesh Festival Competition was organized at the state level as a joint venture by MPCB and Zee 24 Taas. This competition has a large number of participants. Citizens celebrating household in a unique way had participated in this competition from all over the state. Response to this competition has been increasing over the years.
August 2017	ABP Maza Eco-Friendly Ganesh Festival Competition	A special public awareness campaign regarding celebrating an eco-friendly Ganesh festival in housing societies in major cities in the State was organized by MPCB and ABP Maza, a news channel. News about eco-friendly Ganesh festival celebrated in housing societies at cities such as Mumbai, Pune, Nashik and Nagpur was broadcast through the channel. Special programs on eco-friendly Ganesh festival celebrations at housing societies were also broadcast on the ABP Maza television channel. Well-known celebrities from Marathi film industry, Sayali Sanjeev and Rushi Saxema advertised the competition organized for

		celebrating an eco-friendly Ganesh festival through promos. Winners in this competition were awarded certificates by MPCB and Prasad. Public relations officer of MPCB was present at this time. These celebrities visited MPCB's Mantralaya. Special news regarding the event was broadcast by ABP Maza television channel.
August 2017	Household Eco-Friendly Ganesh Festival Competition 2017 organized by Loksatta and MPCB.	Eco-friendly household Ganesh festival decoration competition was organized jointly by MPCB and Loksatta at 6 divisions of Loksatta newspaper at Mumbai, Pune, Nashik, Nagpur, Ahmednagar and Aurangabad. More than 2000 people competed in this event. Prize distribution of this competition took place at Yashwantrao Chavan Pratishthan at the hands of Hon'ble Minister for Environment, Shri Ramdas Kadam, State Minister for Environment, Shri Pravin Pote-Patil and Member Secretary of MPCB, Dr. P. Anbalagan. A special column regarding this event was published in all editions of Loksatta newspaper.
August 2017	Eco-Friendly Ganesh Festival UFO Digital Movies financial assistance.	Public awareness messages by celebrities from Marathi and Hindi film industry were publicized at 205 digital theatres by UFO Digital Movies for two weeks to promote an eco-friendly Ganesh festival.
August 2017	Financial assistance for DNA Eco Ganesha public awareness campaign organized by DNA and MPCB.	To celebrate an environment friendly Ganesh festival, eco-friendly Ganesh idols based on the five natural elements were installed in selected malls in Mumbai city on behalf of the MPCB and DNA. MPCB played the role of co-convener in this campaign organized by DNA. Prominent celebrities from the Hindi film industry participated in this campaign.
August 2017	Financial assistance for public awareness activity, Times Green Ganesha.	Eco-Green Ganesha competition was organized jointly by Environment Department of MPCB, Government of Maharashtra and Times of India group for public Ganesh festival organizations and housing societies in Mumbai and Pune. During this campaign, public awareness activities were conducted in various malls, movie theatres and colleges. Eco-friendly Ganesh festival workshops were conducted for school students. Various activities and cleanliness campaigns were conducted by college students for the eco-friendly Ganesh ambassador during Ganesh idol immersion at Girgaon Chowpati, Juhu beach and Versova beach at Mumbai. This campaign was launched by popular actor, Vidyut Jammwal and Hollywood Director, Chuck Russel at Lala Lajpat Rai College. A special film for public awareness had been created by Times group for this campaign. A dedicated column for this campaign

		was published for 10 consecutive days in the newspaper, Times of India.
August 2017	Eco-Ganesha Public awareness campaign organized by Dainik Samna and MPCB.	Eco-friendly public Ganesh festival was organized at Mumbai, Pune and Aurangabad with assistance from the newspaper, Dainik Samna. The prize distribution event was conducted in the presence of Hon'ble Minister for Environment, Shri Ramdasbhai Kadam and Member Secretary, MPCB, Dr. P. Anbalagan.

Hon'ble Shri Ramdasji Kadam, Minister for Environment, GoM giving away prizes to the participants on the eve of Eco-friendly Ganesha Public awareness campaign in the presence of Dr. P. Anbalagan (IAS), Member Secretary, MPCB

August 2017	Public awareness messages about eco-friendly Ganesh festival displayed on Times OOH BEST bus stop shelters.	Public awareness message of 'Celebrate a pollution-free Diwali' by Hon'ble Chief Minister, Hon'ble Minister for Environment and Hon'ble State Minister for Environment were displayed on bus stops in Mumbai city for a period of 15 days.
August 2017	Eco-friendly Dahi Handi 2017.	Eco Friendly Dahi Handi Festival 2017 was organized in association with IDEAL Book Company and MPCB. In this program, anti-noise pollution awareness rally was organized by famous Marathi film industry celebrities on the Open Deck Bus Service of Best Transport Service. Notable film and TV celebrities were present at this rally. On the eve of Dahi Handi, this rally was organized in the presence of street-play celebrities in Dadar, Lalbagh area. Eco-friendly Dahi Handi was smashed in the presence of young celebrities from Zee TV and ETV. At the time, in front of Chhabildas High School in Dadar, the noise-free eco-friendly Dahi Handi was smashed along with

		celebrities from the film and theatre industry. Public Relations Officer, MPCB was present during this event.

Anti-noise pollution awareness rally on the eve of Dahi-handi (Gopalkala) festival was organized with participation of famous Marathi film industry celebrities on the Open Deck Bus Service of Best Transport Service in the month of August 2017.

Anti-noise pollution awareness rally on the eve of Dahi-handi (Gopalkala) festival was organized with participation of famous Marathi film industry celebrities on the Open Deck Bus Service of Best Transport Service in the month of August 2017.

October 2017	Public Awareness message for Diwali on television.	A public awareness message saying 'Celebrate a pollution-free Diwali' by celebrities from the film industry was broadcast by the television channels Zee 24 Taas, ABP Maza, IBN Lokmat, Star Pravah, Mi Marathi, TV9 Maharashtra, Saam TV, Jay Maharashtra and Maharashtra One.
October 2017	Public Awareness message for Diwali on FM radio.	A public awareness message saying 'Celebrate a pollution-free Diwali' was broadcast on leading FM Radio channels in the State.

October 2017	Diwali Bus Stop messages in Mumbai, Pune and Nagpur.	A public awareness message saying 'Celebrate a pollution-free Diwali' by Hon'ble Chief Minister of Maharashtra, Hon'ble Minister for Environment and Hon'ble State Minister for Environment were displayed on bus stops in the cities of Mumbai, Nagpur and Pune for a period of 15 days.
October 2017	Pollution-free Diwali Resolution Campaign Pledge 2017.	Pollution-free Diwali Resolution Campaign Pledge 2017 was organized at Mantralaya to promote celebration of a pollution-free Diwali. A pollution-free Diwali was pledged by students from schools and colleges from the entire State in the presence of Hon'ble Chief Minister of Maharashtra, Shri Devendra Fadnavis. Hon'ble Minister for Environment, Shri Ramdas Kadam, Hon'ble Minister of Water Resources & Irrigation, Shri Girish Mahajan, Hon'ble State Tourism Minister, Shri Jaykumar Rawal, Hon'ble Additional Chief Secretary of Environment Department, Shri Satish Gavai, Hon'ble Chairman of Maharashtra Pollution Control Board, Shri Milind Mhaiskar and Hon'ble Member Secretary of MPCB, Dr. P. Anbalagan attended this event. Students from various colleges in Mumbai also attended this event. Live telecast of this event was broadcast on leading news channels in the State. News about this event was published in leading newspapers in the State.
Marc 2018	Eco-Friendly Holi.	From the last few years, the widespread public awareness campaigns organized by Maharashtra Pollution Control Board to promote the celebration of an eco-friendly Holi have been receiving an increasing response. This year on behalf of the MPCB, eco-friendly colours were distributed for free to employees and officers from MPCB, Hon'ble Ministers from Mantralaya, Hon'ble Secretaries, Hon'ble Chairman, Hon'ble Speaker and Members of Legislative Assembly and Legislative Councils. Messages to promote the celebration of an eco-friendly Holi were broadcast on television and radio channels.

1.10 Greenery Development Plan of Forest Department, Government of Maharashtra

Government of Maharashtra has been instrumental in increasing tree and forest cover all over the State. GOM through its Forest Department has announced The Plantation Program in 2016 with the aim of planting 2Crore trees on 1st July 2016 was a resounding success with the final total reported figure of 2.82Crore saplings planted on a single day. After the successful implementation of 2Crore plantation program on 1st July, 20 16, the Government of Maharashtra has designed the 50Crore plantation program for 3 consecutive years viz. 4Crore, 13Crore and 33Crore for 2017, 2018 and 2019 respectively. 10% Bamboo, mangrove and medicinal plantation is also incorporated in this plantation drive.

In the Second Phase, though the target was of 4Crore plantation from 1st to 7th July, 2017, actually 5.43Crore seedlings were planted due to overwhelming response of Government employees and people at large. These saplings programs are driven with the involvement of 33 Government Departments along with Students of Schools and Colleges, NSS, NCC, CSR, NGOs, Railways, National Highways, Defense, NABARD and other stakeholders of Society.

"Limca Book of World Records" has taken cognizance of these remarkable achievements of Forest Department relating to plantation in 2016 and 2017 and felicitated with certificates. Thus Maharashtra is the first State in India who acquired the place three years consequently in "Limca Book of Records".

In the Third Phase, against the target of 13Crore plantation in 2018 between the period from 1st to 31st July 2018 we could plant 15.88Crore trees, again exceeding the said target. The response of the public was overwhelming.

GoM continued this good work for the protection, enrichment and secure environment through various Schemes and Programs. In the Fourth Phase, the year 2019 represents the most significant and important step in completing this Mission of 50 crore plantation. In this year it was intended to plant 33Crore saplings throughout Maharashtra. Preparation and Planning for the success of this year's target have been initiated from 3rd August, 2018 i.e. immediately after completion of 13Crore Plantation Program. Forest Officials along with Revenue machinery and all administrative departments are working extremely hard with the active support of all sections of the society. The details of this 2 Crore, 4Crore, 13Crore & 33Crore plantation program are attached as Annexure I, II, III & IV respectively.

In an attempt to boost conservation and protection of forests and wild life in Maharashtra, the State Forest Department has launched a drive aimed at roping in citizens to help the department in their massive 50Crore trees plantation drive. A dedicated website greenarmy.mahaforest.gov.in has been developed for registration of individuals and organizations as member of Green Army. I am happy to say that up-till now around 60 lakh members have been registered and we hope we could cross the 1Crore membership in near Future.

For maintaining the transparency, accountability and credibility, all the data relating to site selection for plantation with Geo-Tagging, development of Nurseries, digging of pits, availability of manpower, actual plantation and survival of the trees planted etc. is uploaded on the Digital Platform of Forest Department so that people can access the· data at any given point of time. This has helped to build confidence amongst the people and their ever increasing participation in the plantation programme.
For the registration of plantation by the individuals, private NGOs and other stakeholders of society the mobile application called "My Plants" has been developed. Similarly, the programs like "Saplings at the Door Step", "Digital visibility on social media", "publicity campaign" are being implemented for greater public participation.

In Marathwada region of the State having low forest cover, a dedicated "Eco-Battalion" has been established at Aurangabad for tree plantation and its protection under the Defense Ministry of GIO considering establishing two more companies of this force at Beed & Latur.

The Forest Department is trying it's level its level best to increase the Forest and Tree cover in the State by various innovative ideas by involvement of people in the plantation & its protection especially on Non-Forest areas as forest area is limited. Massive tree plantation program in urban & rural areas under the scheme "Nurturing Trees is Worshiping Nature" has been launched by the Govt. in line with Ranmala Village in Khed Taluka of Pune District.

The Tree based Agriculture under Mahatma Gandhi National rural Employment Guarantee Scheme (MG-NREGS) Kanya Van Samruddhi Yojana, Bhausaheb Phundkar Horticulture Plantation Programme in co-ordination with Agriculture Department, Sericulture Plantation in coordination with Textile Department, Riverside Plantation are some of scheme initiated for increasing green cover in the Non-Forest areas.

- Status report on Forest for 2017 at all India level has been published by "Forest survey of India" in February 2018 vis-a-vis status of forest & related sectors in 2015. As far as Maharashtra is concerned the findings are as follows:
- Tree cover on non-forest area has increased by 273Km.sq – Maharashtra is a leading state
- Mangrove cover has increased by 82Km.sq - Maharashtra is a leading state
- Water bodies in forest areas has gone up by 432 km.sq – Maharashtra is having higher rank
- Increase in the bamboo plantation area by 4462 km.sq – Eventually Maharashtra is placed highest in the country

1.11 Plan for Restoration of Water Quality

Table 17 Time bound action plan to improve water quality for Pedhi River

Sr. No.	Target/Action Plan Expected	Agency / Organization	Duration
1	Provide STP for treatment of sewage generation from Amravati City along the stretch of River Pedhi to avoid contamination of River water.	Amravati Municipal Corporation	2 Years
2	Effective operation, collection & treatment of MSW generated from the villages/towns located on the bank of river to avoid contamination of River Water	Concern Gram panchayat and Zilha Parishat	1.5 Years
3	To stop bathing in river water & open defecation at bank of river. proper disposal of human excreta and sewage	Local Body & Police Department	3-4 Month
4	To prevent growth of Algae/Cornea in river bed by installation of floating rafters and screen bars	Local Body & Irrigation Department.	Continuous
5	Organize awareness programs about promotion of organic farming on the River bank of villages. Restriction of chemical Pesticide, insecticide, fertilizer etc.	Agricultural department	1 month

1.13 Proposed plans for maintaining e-flow

River flows only in Monsoon season & whenever dam water is released. The amount water released from dam is such that, will not over flow form next weir at the downstream.

Recommendations:

1. All domestic sewage should be properly treated and its entry into river water should be prevented. The treatment can be carried out as follows:
    a. For small villages (population less than 1000) -– root zone technology, phytoremediation techniques can be used.
    b. For small villages or municipal councils (Population 1000 to 10000) – underground drainage system (100%) can be developed.
    c. For towns and cities (Population more than 10000) – underground drainage system (100%) can be developed.
2. All water polluting industries located in major industrial estate provided effluent treatment plant and treated industrial effluent shall be used on land for gardening purposes.
3. Isolated major water polluting industries have provided their own industrial effluent treatment plants and treated effluent shall being utilized on land for irrigation and discharge of industrial effluent is strictly prohibited.
4. Agricultural runoff
    a. Care should be taken to restrict the entry of banned chemical pesticides on the market.
    b. Agriculture department and MPCB should take necessary actions to control the use of chemicals in the fields.
    c. Awareness should be created among the farmers on the use of chemicals in the fields.
5. Installation of STP for treatment of sewage considering future population and Underground sewer line to entire council area and provide same in new developing area.
6. Local body should adopt in-situ nallah treatment like eco-bricks, phytoremediation on all nallah's as a short term measure. Identifying eco-friendly treatment technologies for in-situ river water clean-up and development of model for management of river water for sustainable utilization.
7. Human activities like cloth washing, vehicle washing & animals washing disposal deteriorating the river water quality shall be stopped immediately.
8. Reuse of treated water must be practiced so as to reduce overall water consumption.
9. Analysis of sediment and water quality at different locations for physico – chemical and biological monitoring as per the CPCB guidelines. Determination of enrichment of toxic metals in river water, sediment and flora.
10. Develop technology comparison methodology to compare and suggest most suitable technology for STP installation in cities and villages along the river.
11. Provision of Effective MSW treatment facility.
12. Mass awareness and public participation in the river cleaning programme.
13. Installation continuous online monitoring systems at outlet of Effluent Treatment plant & display on main gate of industry.
14. Increase the vigilance by MPCB for verifying the performance of Effluent Treatment Plant
15. Insist industries to adopt newly advanced technologies to achieve zero discharge.
16. Installation of online monitoring system for water quality & GIS platform for creating & maintaining database.

Table 18 Timelines for Implementation of Restoration Plan

Activities/Year	2017	2018	2019	2020	2021	2022
Reconnaissance Survey						
Water Quality Sampling						
Preparation of Action Plan						
Propose and Execution (Setting up of STPs & MSWM system)						
Augmentation of River Flow if any and restoration of water quality						