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

JUNE, 2019

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KOLAR RIVER (Along Koradi)

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<tr><td>2.</td><td>Is river is perennial and total length of the polluted river</td><td>:</td><td>Non- perennial
Length- 3.4 km</td></tr>
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2) Chicholi Village Major Drain. Length 0.3 km, width 1 m
3) Drain coming from side pond No. 3 Koradi TPS. Length 1.3 km. Width: 3.3 m</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>Koradi</td><td>21,485</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- 1.36 MLD
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<tr><td>a. Total water consumption and total industrial effluent generation in MLD</td><td>:</td><td>Total industrial water consumption: 190.94 MLD
Total industrial effluent generation: 95.812 MLD</td></tr>
<tr><td>b. No. of industries having captive ETPs and their treatment capacity in MLD</td><td>:</td><td>01 No.</td></tr>
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<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- Nagpur: 1100 MT/day</td></tr>
</table>

			Treatment: 200 MT/day by composting and RDF
	b. Biomedical Waste Generation & treatment	:	Nagpur: Total Biomedical waste generated: 3660 kg/day. Total Biomedical waste treated: 3660 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 299 Hazardous waste generating industries in Nagpur. These industries generated about 20552.1 MT Hazardous waste in year 2017-18. • The HW from is scientifically disposed through Maharashtra Enviro Power Ltd., MIDC Butibori, Nagpur • CHWTSDF capacity – Landfill: 60,000 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.
10.	Min. and Max. required time period for implementation of action plans		Min Max
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.,)	:	-
12.	Whether 'River Rejuvenation Committee (RRC) constituted by the State Govt./UT Administration and If so, Date of constitution of '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.
13.	Responsible Organisation (s) for implementation of proposed action plans	:	1. Water Resource Department, GoM 2. Urban Development Department 3. Nagpur 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 its 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 utilize 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

The Kolar River rises near the Madhya Pradesh border in the Chorkhairi West Reserved Forest in the north-east corner of the Katol taluka at an elevation of approximately 600 meters. It flows southeast for about ten kilometers passing through the Pilkapar range and then past the village of Pipla on its right. The river then turns east for four kilometers toward the village of Tidangi, where it enters the Kolar Dam Reservoir. Past the Kolar Dam it continues east for about four kilometers before turning southeast again just before the village of Hetisurla. Another seven kilometers brings the Kolar River to the center of the town of Saoner to its juncture with the Kanhan River. The Kolar River forms the boundary between Saoner taluka and Ramtek taluka.

Figure 1 Stretch of Kolar River

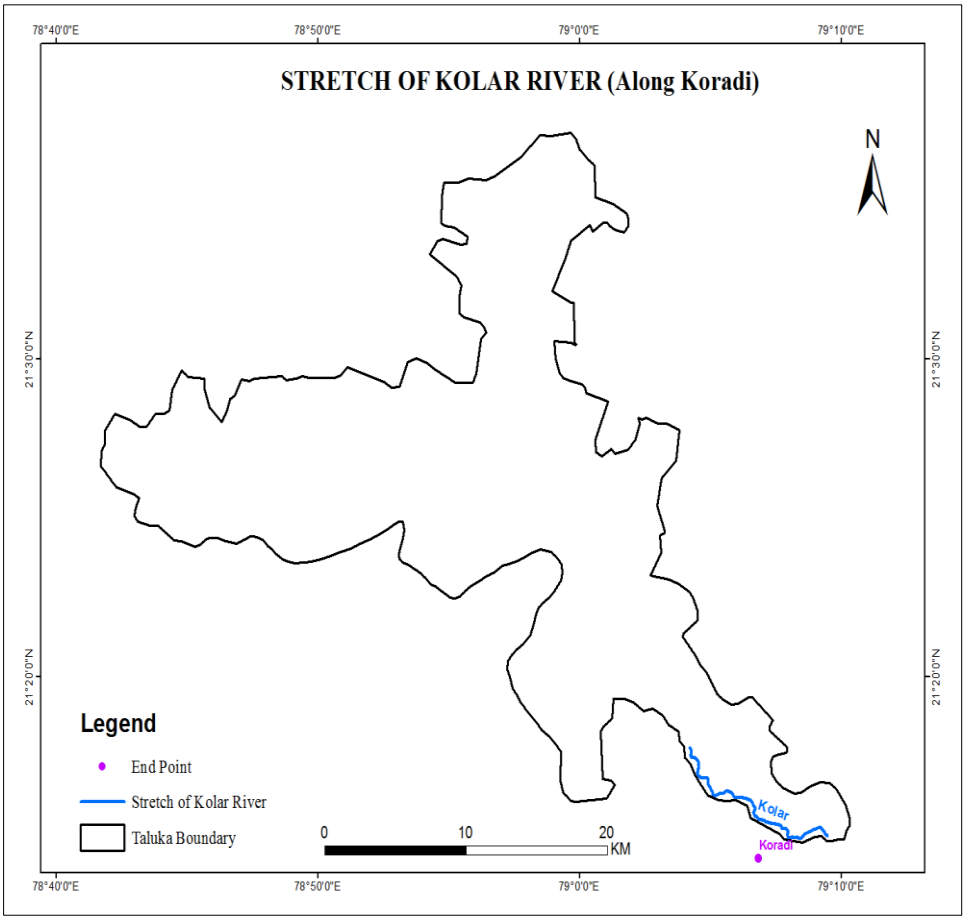


Figure 2 Map Showing Stretch of Kolar River

The river stretch extends along Koradi. The length of this stretch is 3.4 km. Koradi is situated on the banks of the river. The population along this stretch is 21,485 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 18 mg/l.

Table 1 Introduction of river stretch

Sr. No.	Description of item	Details
1	Approx. length of stretch	3.4 km
2	Major Towns located on the bank along with Population	**Local Body** / **Population**: Koradi / 21,485
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

Kolar River is tributary of Kanhan River meeting at Village Tola near Kamptee. Kolar River is non-perennial river and flows mostly confine to monsoon and some part of post monsoon. The river flowing besides the thermal plants (Khaparkheda TPS and Koradi TPS) and some villages in the downstream are located on the bank of this river and receiving effluents and domestic water. Koradi is a village having population of 6321 & is situated within the boundary of kamptee taluka having population of 86,793.

Drainage from Mahadula Nagar Panchayat having population about 21485 souls discharging sewage into kolar River through natural Drains.

Table 2 Domestic sewage aspects on the river stretch

Sr No	Particular	Remarks
1	Details of drainage system/sewerage network present/proposed	Local bodies proposed to provide sewers in unsewered area
2	Proposal for utilization of sewage	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.

1.4 Drains out-falling into River Kolar

There are three drains that fall into this polluted stretch of the Kolar River.

Table 3 Particulars of drains falling into the river

Sr. No.	Location	Name of the drain	Discharge (min/max)	Length (km)	Width (m)	Depth (m)
1	Chandkapur village	Chandkapur village sub drain	0.5	0.3 KM	1.0 M	stagnant
2	Chicholi village	Chicholi village Major drain	0.3	0.3 KM	1.0 M	stagnant
3	Mahadula Village	Drain coming from side pond No. 3, Koradi TPS	0.7	1.3 KM	3.30 M	stagnant

1.5 Status of Water Quality

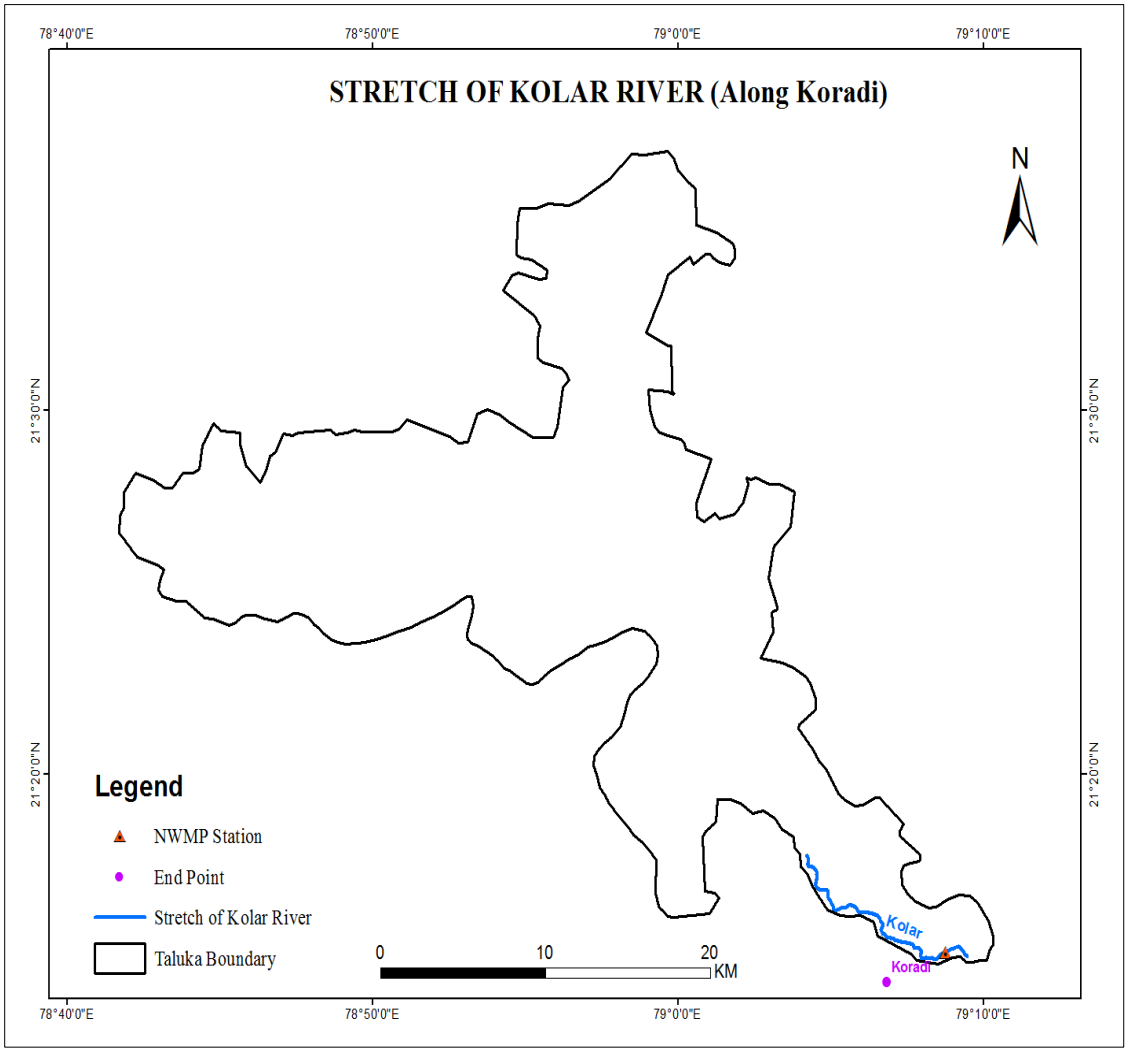


Figure 3 Map Showing NWMP Station across the stretch of Kolar River

Water quality of River Kolar is assessed at one location. It is observed that Dissolved Oxygen range between 3.3 – 8.7 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 3.2 – 18.1 mg/1 for similar years which is exceeding the desired level of 3 mg/1. The Chemical Oxygen Demand (COD) values ranged between 8.0-59.0 mg/l indicating low level of industrial pollution. The Faecal and Total Coliform numbers respectively for the years referred are in the range of 23-500 MPN/100ml and 43-900 MPN/100ml indicating significant contribution of untreated sewage. The details of parameter specific concentration are provided in the table below:

Table 4 Status of Water Quality for Kolar River

Month	Year	pH	DO (mg/L)	BOD (mg/L)	FC MPN /100ml	TC MPN /100ml	Water Quality Criteria of Bathing
January	2017	8.6	8.0	5.6	84	210	Non Complying
	2018	8.1	6.3	5.6	110	280	Non Complying
February	2017	8	8.7	4.8	33	70	Non Complying
	2018	7.2	3.3	18.1	110	350	Non Complying
March	2017	7.9	5.8	9.6	70	110	Non Complying
	2018	8.1	5.6	6.4	110	350	Non Complying
April	2017	7.4	6.20	4.2	70	170	Non Complying
	2018	7.8	5.97	7.3	110	280	Non Complying
May	2017	8.3	6.30	3.0	49	170	Complying
	2018	8.5	5.2	8.2	110	350	Non Complying
June	2017	7.7	4.90	18.0	46	210	Non Complying
	2018	8	6.2	4.9	170	540	Non Complying
July	2017	6.9	6.2	3.8	70	220	Non Complying
	2018	7.58	4.9	7.7	50	500	Non Complying
August	2017	8	6.57	4.2	110	280	Non Complying
	2018	7.7	5.7	8.7	80	500	Non Complying
September	2017	8	6.1	3.8	94	220	Non Complying
	2018	8.25	6.13	6.4	33	220	Non Complying
October	2017	7.88	6.53	4.7	110	280	Non Complying
	2018	8.0	6.0	4.2	39	280	Non Complying
November	2017	7.8	6.01	13.8	94	220	Non Complying
	2018	8.1	6.2	5.2	40	280	Non Complying
December	2017	7.7	6.18	5.8	70	210	Non Complying
	2018	8.1	6.7	5.0	33	220	Non Complying

It is observed from the above analysis that most maximum BOD values recorded during 2017 and 2018 do not comply with the bathing standards of 3mg/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.

1.6 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	

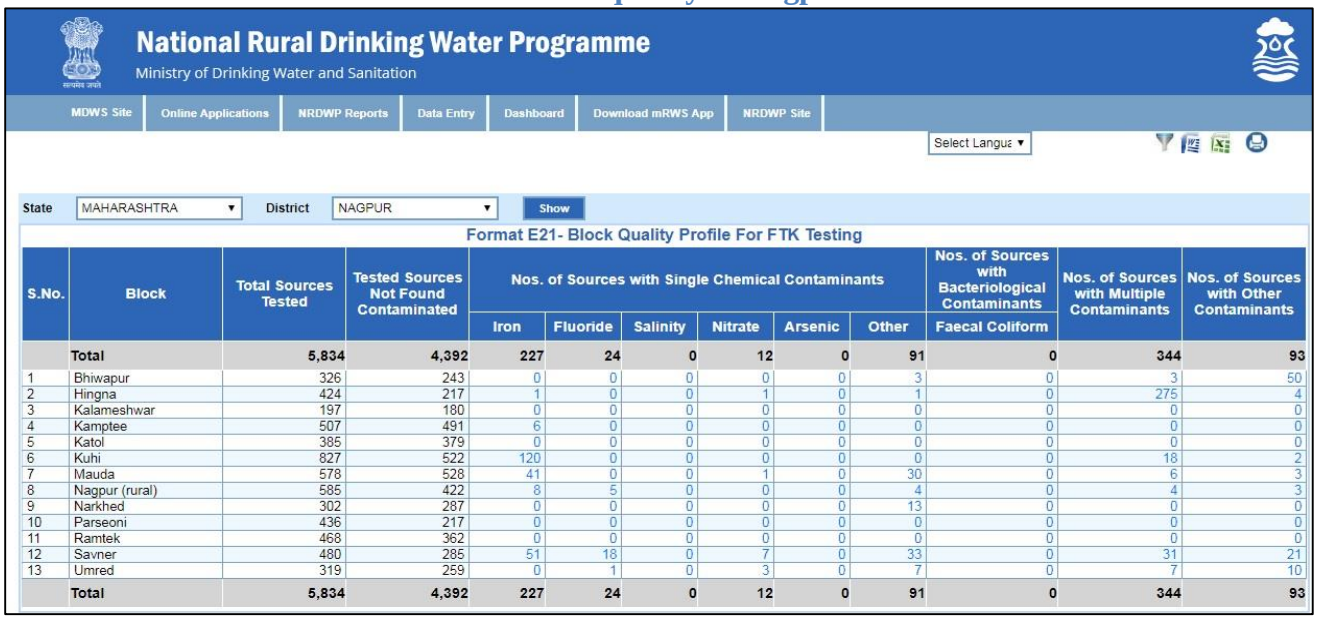
Table 5 Water Quality Index for 1 locations (surface water & ground water) during January - 2019

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 6 Ground water quality in Nagpur District



National Rural Drinking Water Programme
Ministry of Drinking Water and Sanitation

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

Select Langua

State: MAHARASHTRA District: NAGPUR 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	**5,834**	**4,392**	**227**	**24**	**0**	**12**	**0**	**91**	**0**	**344**	**93**
1	Bhiwapur	326	243	0	0	0	0	0	3	0	3	50
2	Hingna	424	217	1	0	0	1	0	1	0	275	4
3	Kalameshwar	197	180	0	0	0	0	0	0	0	0	0
4	Kamptee	507	491	6	0	0	0	0	0	0	0	0
5	Katol	385	379	0	0	0	0	0	0	0	0	0
6	Kuhi	827	522	120	0	0	0	0	0	0	18	2
7	Mauda	578	528	41	0	0	1	0	30	0	6	3
8	Nagpur (rural)	585	422	8	5	0	0	0	4	0	4	3
9	Narkhed	302	287	0	0	0	0	0	13	0	0	0
10	Parseoni	436	217	0	0	0	0	0	0	0	0	0
11	Ramtek	468	362	0	0	0	0	0	0	0	0	0
12	Savner	480	285	51	18	0	7	0	33	0	31	21
13	Umred	319	259	0	1	0	3	0	7	0	7	10
	Total	**5,834**	**4,392**	**227**	**24**	**0**	**12**	**0**	**91**	**0**	**344**	**93**

1.7 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 Nagpur region is demonstrated in following Table.

Nagpur		
LSI	**MSI**	**SSI**
127	7	1665
126	26	2216
441	34	1280
White - 42		

- There is only one major polluting industry established & commissioned within stretch namely M/s Maharashtra State Power Generation Co ltd, Koradi Thermal Power Plant having total capacity of 2400 MW.
- Said industry is consented. Applied for renewal of consent and under consideration of the Board.
- Total Water Consumption for industrial purpose is 190938 CMD whereas for Domestic water consumption is 13378 CMD.
- Total Industrial Effluent Generation is 95812 CMD whereas sewage generation is 3144 CMD.
- Industry Authority has provided full-fledged Effluent Treatment Plants and Sewage Treatment Plant for treatment of Industrial and Domestic sewage respectively.
- Treated industrial effluent is recycled back into ash sluicing activity completely. Treated Domestic effluent used for plantation within premises partly and remaining used for ash disposal.
- Industry authority has provided online Effluent monitoring system and connected to the CBCB & MPCB server.
- There is no CETP within river stretch area.

There is no Direct & indirect intrusions of any kind of Solid waste in the River Body whereas Following is the complying status.

- Total Fly ash generation is 4908420 Mt per Year. As per Environmental Clearances & Consent granted, Fly ash shall be disposed as per Fly ash Notification. Present ash disposal rate is about 16.0 % which is not complying with the Conditions stipulated in EC & Consent.

Table 7 Particulars of Industries situated in Nagpur District

Sr. No.	Particulars	Remarks
1	Particulars of Industries in Nagpur District	There is only one major polluting industry established & commissioned within stretch namely M/s Maharashtra State Power Generation Co ltd, Koradi Thermal Power Plant having total capacity of 2400 MW
2	No. of Directions issued to Industries	
3	Total water consumption and total industrial effluent generation	Total water consumption – Domestic: 133.78 MLD, Industrial: 190.4 MLD. Total effluent generation – Domestic: 3.144 MLD, Industrial: 95.812 MLD
4	No. of industries having captive ETPs and their treatment capacity in MLD	01 No

5	No. of CETPs existing in the catchment of the polluted river stretch and the treatment capacity	No CETP
6	No. of Industries that are members of the CETPs	NA
7	Gaps in treatment of industrial effluent	NA
8	OCEMS installation Status by Industries	Industry authority has provided online Effluent monitoring system and connected to the CBCB & MPCB server.
9	Status of Hazardous Waste Generation and Treatment in Nagpur District	Total hazardous waste generation: 20552.1 MT Total hazardous waste treatment: 20552.1 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". The table below shows region-wise details of these highly polluting industries.

Table 8 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

1.8 Waste Management

1.8.1 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 Nagpur is about 1100 MT/day. 200 MT/day of the total MSW generated in Nagpur is disposed by composting and RDF.

1.8.2 Bio-medical waste Management

Total Bio-medical waste generation in is 3660 kg/day. 3660 kg/day waste is collected, transported and treated at CBMWTSDF located at Bhandewadi, Nagpur. The CBMWTSDF has installed capacity of Incinerator 100 Kg/Hr and Autoclave with installed capacity of 50 litre/cycle.

1.8.3 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.

1.8.4 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 299 Hazardous waste generating industries in Nagpur. These industries generated about 20552.1 MT of Hazardous waste in year 2017-18. The HW from Nagpur district is scientifically disposed through CHWTSDF at Maharashtra Enviro Power Ltd., MIDC, Butibori, Dist. Nagpur having capacity – Landfill –60,000 MT/A and Incinerable – 3TPH.

Out of the MT generation in 2017-18, 18,533 MT was Landfillable, 1,780 MT was Incinerable and 237.56 MT was Recyclable.

Table 9 Status of Waste Management in Nagpur District

Sr. No	Particular	Remarks
1	Total MSW Generation	Total generation of MSW: 1100 MT/day. Total quantity of Untreated MSW: 922 MT/day
2	Existing MSW treatment and disposal facilities	200 MT/day MSW treated by composting and RDF
3	Bio-medical waste Management	Hospitals are joined to CBMWTSDF-PASCCO Environmental Solution ltd. Total generation: 3660 kg/day Collection and treatment: 3660 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 299 Hazardous waste generating industries in Nagpur. These industries generated about 20552.1 MT of Hazardous waste in year 2017-18. • The HW from Nagpur district is scientifically disposed through CHWTSDF - Maharashtra Enviro Power Ltd., MIDC, Butibori, Dist. Nagpur • CHWTSDF capacity – Landfill – 60,000 MT/A Incineration –3 TPH

1.9 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.

1.10 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.

1.11 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 its 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

1.12 Plan for Restoration of water Quality

Table 10 Time Bound Action Plan for Kolar River

Sr. No.	Target/Action Plan Expected	Agency / Organization	Expected Duration for Implementation
1	Provide STP for treatment of sewage generation from villages along the river to avoid contamination of River	Mahadula Nagar Panchayt, Concern Gram Panchayats & Zilha Parishad	2 Years
2	Provide Effective MSW treatment Facility in the villages/towns located on the bank of river to avoid contamination of River	Gram Panchayats & Zilha Parishad	2 Year
3	To prevent growth of Algae/Eicchornia in river bed by installation of floating rafters and screen bars.	Local Body & Irrigation Department.	Continuous
4	Organize awareness programs about environment pollution	Gram Panchayats & Zilha Parishad	6 Months

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
    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. Religious and other activities causing pollution. Disposal of flowers and other materials directly into the river shall be prohibited.
3. For good health of every human kind, amendments are required for utilizing the river water, use of chemical fertilizer/pesticides etc.
4. Industries should also be note the same regarding treatment of wastewater plant & reuse the wastewater for their needs and drain treated water for societal domestic purposes.
5. Underground drainage system should be done in all areas (100%) for waste water.
6. Wastewater Treatment Plants should be constructed and operated calculating future population growth and to be constructed in capacity and operated.

7. All hospitals or groups should start treatment plants for domestic and solid waste.
8. Municipal Council/Corporation should be alert from biomedical solid waste, should not be mixed with domestic waste or wastewater.
9. Natural waste water treatment technologies like Phytorid-STP shall be implemented to reduce the cost factor & ecofriendly technology to treat sewage.
10. Compulsory application of water meter for consecutive use & installation online monitoring systems.
11. MPCB shall ensure that water supply to the industries shall be monitored and industries shall reuse the treated water.
12. Tertiary treatment shall be provided in the existing sewage treatment plants.
13. Treated water from sewage treatment plants shall be reused for various purposes
14. Encroachments, depositions, reclamation, constructions or any kind of development should be strictly prohibited on the banks or in the beds of streams, nallas and rivers up to minimum of 9 m distance from high flood line.
15. Installation of online monitoring system for water quality & GIS platform for creating & maintaining database.
16. Awareness campaign shall be arranged by the council.

Table 11 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						