

District Environment Plan



Prepared By



Environment Department, Government of Maharashtra



Maharashtra Pollution Control Board

Satara

1.0 Preamble

Hon'ble National Green Tribunal vide order dated 26/09/2019 in O.A. No. 360 of 2018 filed by Shree Nath Sharma Vs Union of India and Others directed that CPCB shall facilitate the District Magistrates in preparation of District Environmental Plan by placing Model plan on its website. This model plan may be adopted as per local requirements by all Districts under supervision of District Magistrate.

The said Order also directs that Department of Environment in respective States / UTs should collect district plans to prepare State Environment Plan, which shall be monitored by respective Chief Secretaries of State/UT by 15/12/2019.

Based on State Environmental plans, CPCB and Ministry of Environment, Forest & Climate Change shall prepare National Environmental Plan, under the supervision of Secretary, MoEF&CC and Chairman, CPCB by 31/01/2020. The National Action Plan needs to be submitted before Hon'ble NGT 15/02/2020.

In compliance to above directions, CPCB has prepared a model District Environment Plan (DEP) that covers following thematic areas;

In compliance to above directions and as per the model DEP prepared by CPCB, Environment Action plan for Satara District is prepared.

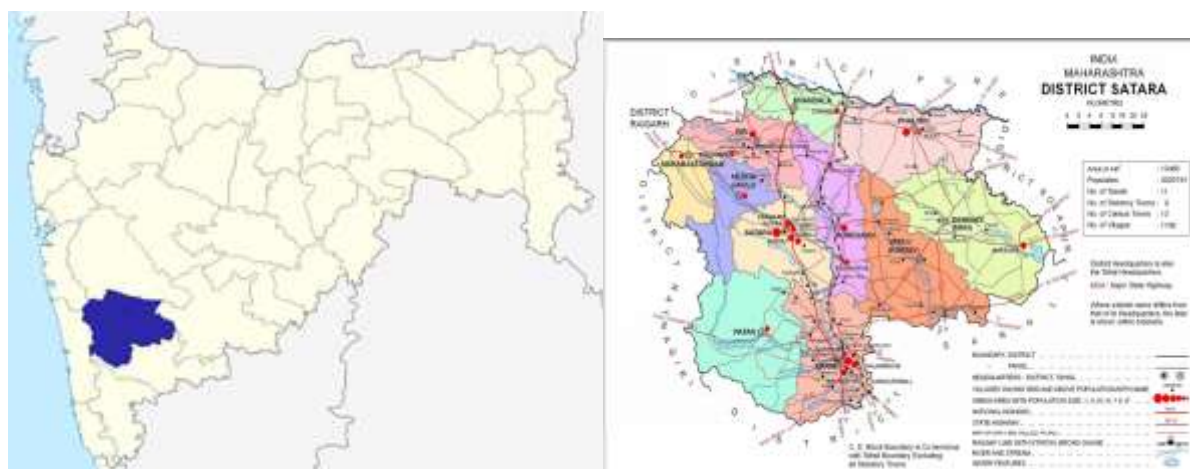
2.0 Introduction

Satara district is situated in the river basins of the Bhima and Krishna river. The physical settings of Satara shows a contrast of immense dimensions and reveals a variety of landscapes influenced by relief, climate and vegetation. The variation in relief ranges from the pinnacles and high plateaus of main Sahyadrians range having height over 4500 feet above mean sea level to the subdued basin of the Nira river in Phaltan tahasils with the average height of about 1700 feet above mean sea level. The climate ranges from the rainiest in the Mahabaleshwar region, which has an average annual all of over 6000 mm to the driest in Man tahsil where the average annual rainfall is about 500 mm. The vegetal cover too varies from the typical monsoon forest in the western parts to scrub and poor grass in the eastern parts.

General Satara district profile is presented in the **Table 1** and location is shown in **Figure 1**.

Table 1 Satara District Profile

Description	Details
Average Climate	Summer: 22°C To 41°C. Winter :8°C TO 25°C. Rainfall: 650 To 700 mm.
Geographical Location	It lies between 17.5 to 18.11 North Latitude and 73.33 to 74.54 East Longitude. Satara District is district of Maharashtra state in western India with an area of 10,480 km ² and a population of 3,003,741 of which 14.17% were urban.
Area	10,480 Sq. km.
Languages Spoken	Marathi, Hindi, English are major languages but all Indian languages are spoken
Population	Total: 3,003,741; Male: 1,510,842; Female: 1,492,899 [According to 2011 Census Report]
Population Density	287 Per Sq. km.
Literacy Rate	82.87
Rivers	Koyna and Krishna
ULBs	15 Numbers
Municipal Corporations	10 Numbers 1. Municipality of Mahabaleshwar 2. Municipality of Mhaswad 3. Municipality of Rahmatpur 4. Municipality of Lonanda 5. Municipality of Satara 6. Municipality of Karad 7. Municipality of Koregaon 8. Municipality of Khandala 9. Municipality of Dahiwadi 10. Municipality of Panchgani
Sub districts	7 Numbers
Villages	1719 Numbers
Tahsils	11 Numbers Satara, Karad, Wa, Wai, Mahabaleshwar, Phaltan, Man,Khatav, Koregaon, Patan, Jaoli, Khandala.
Pin code	415001

**Figure 1 Location of Satara District**

3.0 Waste Management Plan

According to the 2011 census, the population of India was 1.21 billion; of this 31% live in cities. It is further projected that by 2050 half of India's population will live in cities. With this increasing population, management of Municipal Solid Waste (MSW) in the country has emerged as a severe problem not only because of the environmental and aesthetic concerns but also because of the sheer quantities generated every day.

Solid waste management is among the basic essential services provided by municipal authorities in the country to keep cities clean. In Satara District primary sources of solid waste are local households, commercial establishments, hospitals, hotels, restaurants, and markets. Local Bodies are responsible for collection, storage, segregation, transportation and disposal of all solid waste generated in the city. There are 15 Urban Local Body [ULB] in Satara district.

3.1 Domestic Solid Waste Management Plan

Satara district is having 15 ULB. As per collected data, total solid waste generation of Satara district is 195.05MTD. Wherein, Dry Waste generation is 82.71MTD and Wet waste is 107.27MTD.

It seems that Dry waste comprises of approximately 45% of total waste generated of the district and were else Wet waste contributes 55%.

Total treated qty. of Solid waste comprises to 109.11MTD treated while 85.94MTD of waste is dumped daily. District have different types of MSW Processing facility like Vermicomposting, Biomethanization, Pit composting, etc.

3.1.1 Collection and Transport

In line with the total Solid waste generated, District have 80-100 percent of collection system.

All ULB's have facility of door to door collection of Solid waste. Some of the local bodies have not initiated Mechanical Road Sweeping facility however, district has 100 percent Manual Road sweeping facility too.

The district has 80 - 100 percent segregated waste transport for all ULB's. Segregated wet waste is further utilized for composting.

3.2 C&D Waste Management Plan

The Construction and Demolition Waste [C&D Waste] generated by Satara district is about 58.4MTA from 2 local bodies. No waste is recycled nor is disposed by landfilling without processing or filling low lying area. Total generated waste is dumped illegally in Satara. There is no Storage Facilities for C&D Waste. Non availability of data will not help in preparing ingenuous and executable plan for waste management of the district hence local bodies must ensure proper sampling and factual measurement of the various types of waste being generated. Issuance of Permissions by ULB is been already initiated. C & D Waste is not used in Sanitary landfill (for solid waste) as per Schedule III. No Municipal magistrates are appointed for taking penal action for non-compliance with C & D rules

3.3 Plastic Waste Management

Plastics are integral part of society and have varied application. Total Plastic waste generated by Satara district is 4.60MTD.

Satara have 100% door to door collection system and 70 - 100% of segregation system in its major ULBs. District have 2 Plastic Waste Collection Centre. 73nos. of Authorization for waste collection centres is developed in District. District has no Plastic Manufacturer whereas, 4 Waste recyclers. For Treatment and recycling of generated plastic waste, 1.08MTM is recycled through Plastic Pyrolysis. 1.032MTM is recycled in road making. PW Management Rules, 2016 is implemented in the ULBs. MRF is not initiated in many of its ULBs.

District has implemented the PW Management Rules, 2016 in its 6 ULB's resulting in Sealing of units producing < 50-micron plastic, prohibiting sale of carry bags < 50 micron followed by Ban on Carry bags and other single use plastics as notified by State Government.

On other hand, there are no producers associated with ULB's to produce Plastic nor any Infrastructure is supported by Producers / Brand owners to ULBs.

There's no Implementation of Extended Producers Responsibility (EPR) through Producers / Brand owners in Satara.

3.4 Biomedical Waste Management

Bio-medical waste refers to any waste, which is generated during the diagnosis, treatment or immunisation of human beings or animals or research activities pertaining there to or in the production or testing of biological or in health camps,etc

Satara district generate in total 2054kg/d of BMW waste which is completely treated with its treatment facility provided.

3.5 Hazardous Waste Management

There are 138 Hazardous Waste generating industries in Satara District from where 331.32 MT/Annum of Hazardous waste is generated. 140.86MT/A qty of waste is Incinierable waste while 190.45MT/A qty of waste is land-fillable waste. Based on the type of waste it is further sent for treatment i.e either landfilling or Recyclable/Utilizable waste. Due to unavailability of Hazardous waste disposal site, the generated waste is sent to CHWTSDF of other district within state. 24 industries have linkage with TSDF MEPL, Ranjangaon .

3.6 E Waste Management

No Collection Centres are established by ULBs neither any ULBs have established by Producer under EPR scheme. There are no authorized E-Waste recyclers / Dismantler nor any Authorized E-Waste collectors. 1 Collection centre is established by ULB in District Citizens are not able to deposit or provide E-Waste through Toll-free Numbers in the District. The top class mobile companies have provided their collection centres from where the discarded mobiles are collected. There is no E-waste recycler nor the local bodies have linked up for same with anyone.

3.7 Action Plan

As per the above mentioned observation, it seems that almost all ULBs are handling solid waste generated as per the Municipal Solid Waste Management Rules, however there are certain issues that needs to be addressed for 100% implementation of the rules as mentioned in **Table 2**.

Table 2 Action Plan for Solid Waste Management

Sectors	Gaps	Action Points	Priority
Domestic Solid Waste			
Quantification	<ul style="list-style-type: none"> ▪ Methodology for solid waste quantification should be ascertained ▪ Quantification based on Income group, culture affluence and technology to be 	<ul style="list-style-type: none"> ▪ Mechanism for graded weighing system either through intermediate transfer station or at the common receiving station to be created. Usually one weigh bridge at any treatment / disposal location required 	Immediate

Sectors	Gaps	Action Points	Priority
	considered	<ul style="list-style-type: none"> ▪ Quadrate sampling methodology to be adopted in order to reduce quantity as well as quality 	
Collection System & Transport System	<ul style="list-style-type: none"> ▪ Some of the places, efficiency of the collection system is not up to the mark 	<ul style="list-style-type: none"> ▪ Ideally most proven method of SWM is 3 Tier System with door to door, community and transfer station approach ▪ 100% efficiency to be achieved ▪ Approximately 36 Ghanta Gadi would be required 	Short to Mid Term
Infrastructure	<ul style="list-style-type: none"> ▪ Mostly composting is the main treatment methodology with about 80% coverage 	<ul style="list-style-type: none"> ▪ Intermediate / Transfer station based decentralized waste treatment facility to be evaluated ▪ Additional 20% alternative treatment such as bio-Methanation can be explored 	
Plastic Waste	<ul style="list-style-type: none"> ▪ Lack of SOP for not only quantification but also life cycle analysis [LCA] ▪ Limited understanding / interpretation of EPR / PRO ▪ Only two ULBs lacking implementation of PW notification 	<ul style="list-style-type: none"> ▪ Strengthening surveillance of life cycle assessment for type and quantity of Plastic Waste ▪ Effective EPR Policy ▪ Initiation of 100% compliance to PW Rules at the earliest 	High & Immediate
C&D Waste	<ul style="list-style-type: none"> ▪ 2-3 of the ULB need to establish C&D Waste management system 	<ul style="list-style-type: none"> ▪ Minimum 1 such facility at each of the ULB to be established ▪ System for utilization of recovered material and processed C&D waste to be effectively implemented and monitored 	High
Biomedical Waste	<ul style="list-style-type: none"> ▪ Rooting and effective collection within 48hrs from the time of generation to be 	<ul style="list-style-type: none"> ▪ Regular Inventorization through automatic / digital platform to be developed ▪ Up-gradation of existing facility to 	Very High & Immediate

Sectors	Gaps	Action Points	Priority
	<p>effectively handled</p> <ul style="list-style-type: none"> ▪ Treatment facility lacks implementation of 2016 Notification in line with CPCB audited report ▪ Limited Inventorization 	<p>meet 2016 CPCB norms</p> <ul style="list-style-type: none"> ▪ Additional at least 1-2 facilities to cover the of umbrella zone along with increasing burden on the existing coverage area to be planned ▪ Collection mechanism to be strengthen with additional vehicles to cover vast area and scattered HCF [miniscule quantity] 	
Hazardous Waste	<ul style="list-style-type: none"> ▪ Domestic HW being mixed with solid waste posing threat ▪ No separate handling of domestic HW ▪ Not effective segregation at source 	<ul style="list-style-type: none"> ▪ Either decentralized 4 - 5 step segregation practices to be initiated or at least advisory for intermittent storage and collection of domestic HW to be initiated ▪ Inventory to be initiated and maintained 	Very High & Immediate
E Waste	<ul style="list-style-type: none"> ▪ Lack of inventory ▪ Limited understanding of E waste rule and management ▪ Neither segregation nor separate transfer / handling facility 	<ul style="list-style-type: none"> ▪ Detailed inventory for domestic e waste under 26 different categories ▪ Mass awareness campaign ▪ Every ULB to have at least one E waste management centre and minimum one collection / drop centre in a radius of 25-30km ▪ At least one e waste processing unit in a district 	Very High & Immediate

4.0 Water Quality Management Plan

There are 5 Rivers in Satara district of approx. Krishna River - 160 km, Konya river - 30 km, Venna river – 47 km, Nira River- 43 km & Urmodi River - 18 km. 13 nos. of Nallas/Drains meet rivers. ULB generate about 49.75 MLD of sewage with 21.5 MLD of STP. Most of the deficit is accounted due to lack of sewage conveyance system of only 41.83 KM which in

most of the ULBs. However, it is also many a time the deficit as a representative of treatment capacity / capability.

There are 85,562 nos. of estimated numbers of bore-wells to whom permissions is given for extraction of groundwater. 94,421 Ham of Groundwater available in Satara. Control measures for idol immersion.

1538 nos. of Industries generate 275.97MLD Effluent. Agro base/Metallurgical are prominent type of industries. 38 nos. of Industries meeting Standards

Detailed Issue based management action plan is provided in **Table 3**.

Table 3 Action Plan for Water Quality Management

Sectors	Gaps	Action Points	Priority
Water Resources	<ul style="list-style-type: none"> ▪ Limited information available on mapping of surface water resources in terms of quantity ▪ Limited Inventorization of quantity, usage, availability exploitation etc. ▪ Limited Rejuvenation / remediation of water bodies 	<ul style="list-style-type: none"> ▪ Thorough Mapping of resources to be taken up ▪ Extensive assessment of quality to be done ▪ Criticality indicators to be established for each water body/resource ▪ Extend water quality monitoring network to include representativeness ▪ Based on the criticality initiate Rejuvenation / remediation ▪ Online Monitoring system for surface water bodies to be established ▪ Protection methods to be developed for creative stoppage of dumping of solid waste in the surface water bodies 	
Domestic	<ul style="list-style-type: none"> ▪ Correlation between generation and treatment often misleading ▪ Water budgeting exercise often missing ▪ Computation of water footprint missing ▪ Surveillance /Inventorization in cradle to grave approach absolutely never applied ▪ Limited collection system 	<ul style="list-style-type: none"> ▪ Digital Platform to accommodate water budgeting / reuse potential ▪ Approximately 60MLD of STP needed ▪ In situ treatment for River stretches to be developed ▪ Strengthen the sewage collection network to cover 100% Population ▪ Policy for reuse / recycle of 	Very high & Immediate

	and treatment facility especially in remote area <ul style="list-style-type: none"> ▪ Often polluting water resources ▪ No established reuse options / reuse network 	treated wastewater	
Industrial	<ul style="list-style-type: none"> ▪ Industrial Effluent is not estimated. 	<ul style="list-style-type: none"> ▪ Data needs to be estimated. ▪ Digital compliance methodology to be developed ▪ Disposal system to be under constant surveillance 	

5.0 Air Quality Management

As Satara district being one of the most vibrant and outgrowing areas in Maharashtra, Air quality assessment and sectoral management needs are ought to be essentially planned and executed. Neither CPCB & MPCB through their NAMP & SAMP programme has set up no manual or CAAQM stations across the district.

PM10 is Ambient Air is one of the prime reason of the concern and historically Satara has been in the centre of controversy with regards its air quality management. An exceedance factor reveals as per the monitored data that needs immediate attention as is the case in most of the areas of India. In view of the same the priamafece of every ULB shall be to establish at least one such Ambient Air Monitoring Station and coordinate / collaborate with other monitoring organisation to provide for visory to general public towards health associations and risk of exposure.

Inventory and policy formulation action plan is stated in **Table 4**.

Table 4 Action Plan for Air Quality Management

Sectors	Gaps	Action Points	Priority
Air	<ul style="list-style-type: none"> ▪ No CAAQMS to establish / corroborate inferences ▪ Sectoral action plans not effectively established 	<ul style="list-style-type: none"> ▪ Emission inventory and source apportionment supported with dispersion and health based iterative process for science based AQM strategy to be established ▪ Each ULB to have at least one urban and one rural CAAQMS or three manual stations at least to include criteria pollutants with 	

		<p>minimum one location to include parameters of 2009 CPCB notification and meteorological data including cloud cover</p> <ul style="list-style-type: none"> ▪ Fugitive emission control system for hot spot emission control to be installed ▪ Green barriers / Photo catalyst options to be evaluated ▪ Capacity building to be enhanced 	
--	--	---	--

6.0 Mining Activity Management plan

Mining waste is the high-volume material that originates from the processes of excavation, dressing and further physical and chemical processing of wide range of metalliferous and non-metalliferous minerals by opencast and deep shaft methods. Beed district has Sand mining and stone mining activities carried out among its local bodies.

142 nos. of ining licenses given in the District. 147.87 Hactare of area is covered under mining . River Bed is used sand Mining. Sand Mining Stone quarry mining are type of mining activites carried in district.

7.0 Noise Action Plan

The goal of noise management is to maintain low noise exposures, such that human health and well-being are protected. The specific objectives of noise management are to develop criteria for the maximum safe noise exposure levels, and to promote noise assessment and control as part of environmental health programmes.

There is noise 5 measuring devices with district administration to monitor the noise levels and 2 devices with SPCBs. Capability to conduct noise level monitoring by State agency / District authorities is available. Occational Implementation of Ambient noise standards in residential and silent zones. Noise monitoring study in district is not carried out. Sign boards in towns and cities in silent zones are installed.

Table 5 spells potential management plan that could be taken up on priority by ULBs.

Table 5 Action Plan for Noise Pollution Management

Sectors	Gaps	Action Points	Priority
Noise	▪ Most of the source related noise areas	▪ Noise mapping to be carried out	Immediate

	<p>show exposure beyond compliance</p> <ul style="list-style-type: none"> ▪ Excessive exposure during noise generating potential events/ festivals 	<p>for zonation purposes at source control using physical or natural attenuation methods to be adopted</p> <ul style="list-style-type: none"> ▪ In the path noise control methodologies using noise absorbers creating zone of inhibition / silence zone to be done ▪ End of the pipe measures such as PEs acoustic enclosures etc. to be adopted ▪ Event based noise control policy to be effectively implemented 	
--	---	---	--

8.0 Conclusion

There seems to be vast data gaps and a detailed exercise to collate and validate data gathered through this process needs to be urgently taken up in addition to the adopting a holistic & inclusive consultative process of gathering information, collating & converging it in order to be able to devise strategies of future. Also, it is equally important that projection for at least next 20 years be done in order to evaluate management plans for futuristic view to meet the objective of such vast exercise. Digital data availability needs to be one of the prime tasks of government & methods of its validation be created with scope for improvement in near future. The practise needs to be a continual one to be updated regularly in order to monitor progress and effectiveness of this process & shall be linked with financial allocations being designed to be promoted by government of the day. With regards to action plans, the priorities shall be aligned based on sustainability objectives.