

District Environment Plan



Prepared By



Environment Department, Government of Maharashtra



Maharashtra Pollution Control Board

Ratnagiri

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 Ratnagiri District is prepared.

2.0 Introduction

Ratnagiri is a port city on the Arabian Sea coast in Ratnagiri District in the southwestern part of Maharashtra, India. The district is a part of Konkan division of Maharashtra.

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

Table 1 Ratnagiri District Profile

| Description | Details |
|-----------------------|---|
| Average Climate | Summer: 22°C To 41°C. Winter :8°C TO 25°C. Rainfall: 2500 mm. |
| Geographical Location | This district comes between 16.30 to 18.04 north latitudes and 73.02 to 73.53 east longitude.It has an average elevation of 11 meters (36 feet). The Sahyadri mountains border Ratnagiri to the east. |
| Area | 8208 Sq. km. |

| Description | Details |
|------------------------|--|
| Boundaries | Sahyadri hills surround it in the east beyond which there are Satara, Sangli and Kolhapur districts, Raigad district in the north, the Arabian Sea in the west and Sindhudurg district in the south. |
| Languages Spoken | Marathi, Hindi, English are major languages but all Indian languages are spoken |
| Population | Total: 1,615,069 Male: 761,121 Female: 853,948 [According to 2011 Census Report] Population shared in Excel sheet is not matching with District Population disclosed in 2011 Census |
| Population Density | 197 Per Sq. km. |
| Literacy Rate | 82.18 |
| Rivers | Washishi, Jagbudi, Savitri, Baw, Ratnagiri, Mukchundi, Jaitapur |
| ULBs | 16 Numbers + 9 Municipality |
| Municipal Corporations | 9 Numbers <ol style="list-style-type: none">1. Chiplun Municipality2. Dapoli Municipality3. Devrukh Municipality4. Guhagar Municipality5. Khed Municipality6. Lanja Municipality7. Rajapur Municipality8. Mandangad Municipality9. Ratnagiri Municipality |
| Cantonment Boards | 3 Numbers Pune, Dehu Road and Khadki |
| Sub districts | 3 Numbers |
| Villages | 1543 Numbers |
| Statutory Towns | 16 Numbers |
| Tahsils | 9 Numbers Mandangad, Dapoli, Khed, Chiplun, Guhagar, Ratnagiri, Sangameshwar, Lanja and Rajapur. |
| Pin code | 224125 |

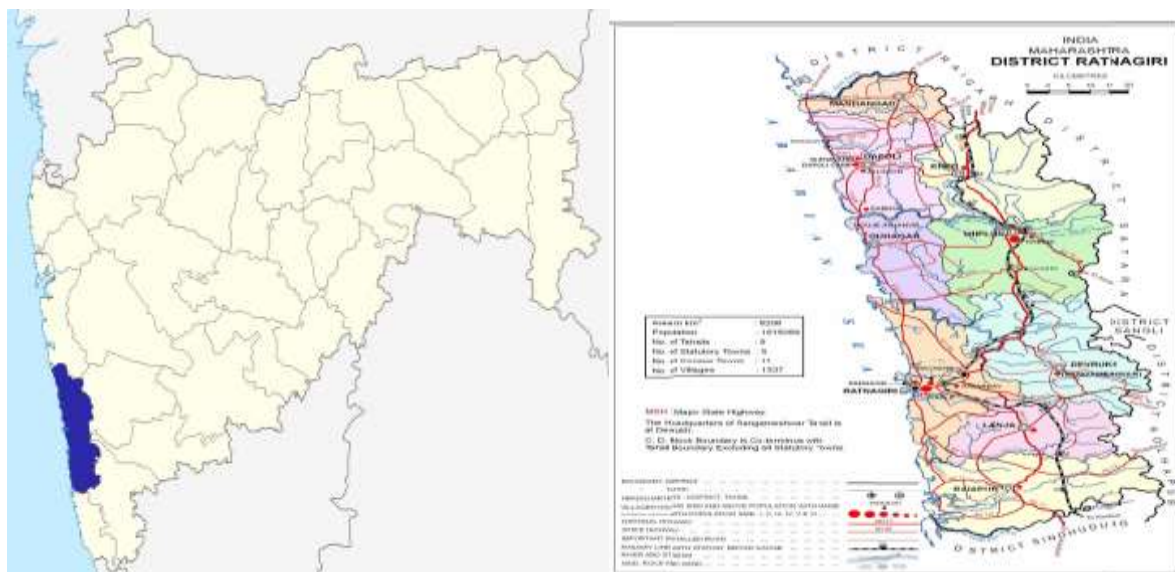


Figure 1 Location of Ratnagiri District

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 Ratnagiri 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 9 Urban Local Body [ULB] in Ratnagiri district.

3.1 Domestic Solid Waste Management Plan

As per collected data, total solid waste generation of Ratnagiri district is 61.9MTD. Wherein, Dry Waste generation is 27.855MTD and Wet waste is 34.045MTD. 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 42.2MTD treated while 19.7MTD of waste is dumped daily. District has different types of MSW Processing facility like Vermicomposting, 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 85 in 1 ULB whereas 100% segregated waste transport for all other ULB's. Segregated wet waste is further processed with composting with 1 ULB having biomethanation facility.

3.2 C&D Waste Management Plan

The Construction and Demolition Waste [C&D Waste] generated by Ratnagiri district is about 277.7MTA. Amount of waste recycled or disposed is about 200.75MTA by landfilling without processing or filling low lying area. Total 74.8MTA of waste is dumped illegally in Ratnagiri. There is 6 Storage Facilities for C&D Waste Storage at Ratnagiri district. 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 Ratnagiri district is 1.63MTD. Ratnagiri have almost 100% door to door collection system and 100% of segregation system in its major ULBs. District has no Plastic Waste Collection Centre. No Authorization for waste pickers is granted in the District. District has no Plastic Manufacturer whereas 8 Waste recyclers are there. For Treatment and recycling of generated plastic waste, there are no Pyrolysis Oil Plant though 1 of the ULBs processes 45MT/M in cement kilns. 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 Ratnagiri.

3.4 Biomedical Waste Management

Ratnagiri district generate in total 219kg/d of BMW waste which is completely treated with its treatment facility provided. Segregation of waste is complied throughout the facilities. The facility located in Kolhapur is utilized to cover the area of Ratnagiri.

3.5 Hazardous Waste Management

There is no estimated domestic HW data available for thr ULB's & thereby facility for handling the same is also not available.

3.6 E Waste Management

There is no data provided/ estimated for E-waste in any of the ULB's. Nor does any recycler or processors are located in this area as per the information provided.

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 considered | <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 ▪ Quadrate sampling methodology to be adopted in order to reduce quantity as well as quality | Immediate |
| Collection System& | <ul style="list-style-type: none"> ▪ Some of the places, efficiency of the | <ul style="list-style-type: none"> ▪ Ideally most proven method of SWM is 3 Tier System with door | Short to Mid Term |

| Sectors | Gaps | Action Points | Priority |
|------------------|--|--|-----------------------|
| Transport System | collection system is not up to the mark | to door, community and transfer station approach <ul style="list-style-type: none"> ▪ 100% efficiency to be achieved | |
| 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 alternative treatment such as bio-Methanation may 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 effectively handled ▪ Treatment facility lacks implementation of 2016 Notification in line with CPCB audited report | <ul style="list-style-type: none"> ▪ Regular Inventorization through automatic / digital platform to be developed ▪ Up-gradation of existing facility to meet 2016 CPCB norms ▪ Additional at least 1-2 facilities to cover the of umbrella zone along with increasing burden on the existing coverage area to be planned | Very High & Immediate |

| Sectors | Gaps | Action Points | Priority |
|-----------------|--|--|-----------------------|
| | <ul style="list-style-type: none"> ▪ Limited Inventorization | <ul style="list-style-type: none"> ▪ Collection mechanism to be strengthened 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 2 Rivers in Ratnagiri district nor any coastline. ULB generate about 23.9MLD of sewage with no provision of STP leaving a deficit of 100%. Most of the deficit is accounted due to lack of sewage conveyance system which in most of the ULBs range to the tune of 100%. However, it is also many a time the deficit as a representative of treatment capacity / capability. 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 | <ul style="list-style-type: none"> ▪ Thorough Mapping of resources to be taken up | High |

| | | | |
|----------|--|---|-----------------------|
| | <p>resources in terms of quantity</p> <ul style="list-style-type: none"> ▪ Limited Inventorization of quantity, usage, availability exploitation etc. ▪ Limited Rejuvenation / remediation of water bodies | <ul style="list-style-type: none"> ▪ 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 and treatment facility especially in remote area ▪ Often polluting water resources ▪ No established reuse options / reuse network | <ul style="list-style-type: none"> ▪ Digital Platform to accommodate water budgeting / reuse potential ▪ Approximately 24MLD 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 treated wastewater | Very high & Immediate |

| | | | |
|------------|---|--|--|
| 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 Ratnagiri 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 2 manuals and no CAAQM stations across the district.

PM10 is Ambient Air is one of the prime reason of the concern and historically Ratnagiri has been in the centre of controversy with regards its air quality management. An exceedence 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 prima facie 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 advisory 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 minimum one location to include parameters of 2009 CPCB notification and meteorological | High |

| | | | |
|--|--|---|--|
| | | <p>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. Ratnagiri district has Sand mining and stone mining activities carried out among its local bodies. Ratnagiri district has not estimated its mining activity details for any of its ULBs.

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 are noise measuring devices with district administration to monitor the noise levels along with SPCBs. No other data for Noise monitoring is collected in the district.

Table 5 provides 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 | <ul style="list-style-type: none"> ▪ Noise monitoring is not carried out in the district. | <ul style="list-style-type: none"> ▪ Noise mapping to be carried out for zonation purposes at source control using physical or natural attenuation methods to be adopted ▪ 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 | Immediate |