

District Environment Plan



Prepared By



Environment Department, Government of Maharashtra



Maharashtra Pollution Control Board

Sangli

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 Sangli District is prepared.

2.0 Introduction

Sangli District is a district of Maharashtra State in west-central India. Sangli City is the district headquarters. The district is 25.11% urban. Sangli and Miraj are the largest cities.[citation needed] The industrial town of Kirloskarwadi is also located in the Sangli District. Industrialist Laxmanrao Kirloskar started his first factory here. It is known as the sugar bowl of India due to its high sugarcane productivity. Sangli District is one of the most fertile and highly developed districts in Maharashtra. The District is very popular as a political power house in the state. It has provided many politicians and bureaucrats and is often referred to as the Heaven of Farmers.

Sangli district location is shown in **Figure 1**.

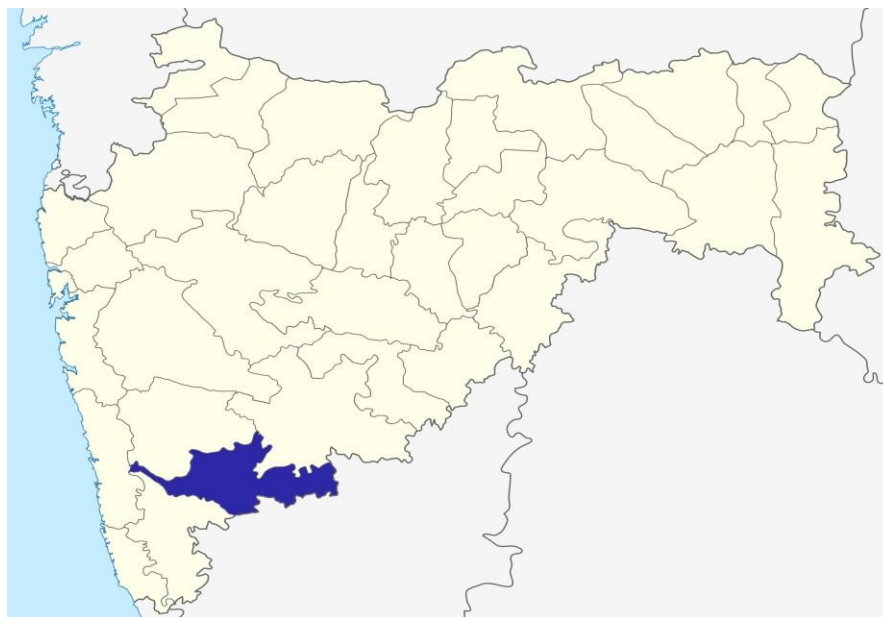


Figure 1 Location of Sangli District

3.0 Waste Management Plan

Urban India is facing an ever increasing challenge of providing for the incremental infrastructural needs of a growing urban population. 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 Sangli 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 11 Urban Local Bodies [ULBs] in Sangli district. **Table 2** represents the list of ULBs along with population. Following section gives insight about waste management of Sangli districts.

Table 1 Sangli District Profile

Sr. No.	Urban Local Bodies	Population
1.	Sangli-Miraj-Kupwad Municipal Corporetion	502793
2.	Ashta Municipal Council	37105
3.	Islampur Municipal Council	67391
4.	Jath Municipal Council	35336
5.	Tasgaon Municipal Council	37945
6.	Vita Municipal Council	48289
7.	Palus Municipal Council	26151
8.	Kavathemahankal Nagarapanchat	17390
9.	Kadegaon Nagar Panchayat	11824
10.	Khanapur Nagar Panchayat	6457
11.	Shirala Nagapanchayat	15665

Domestic Solid Waste Management Plan

Sangli district is having 11 ULBs with 129 Wards. Municipal Solid Waste [Dry & Wet] generated from each ULBs is given in the **Figure 2** and details of Other Types of Waste is presented in **Figure 3** due to its less quantity and for easy representation. As per collected data, total solid waste generation of Sangli district is 308.70MTD. In which, Dry Waste generation is 146.21MTD and Wet waste is 158.16MTD.

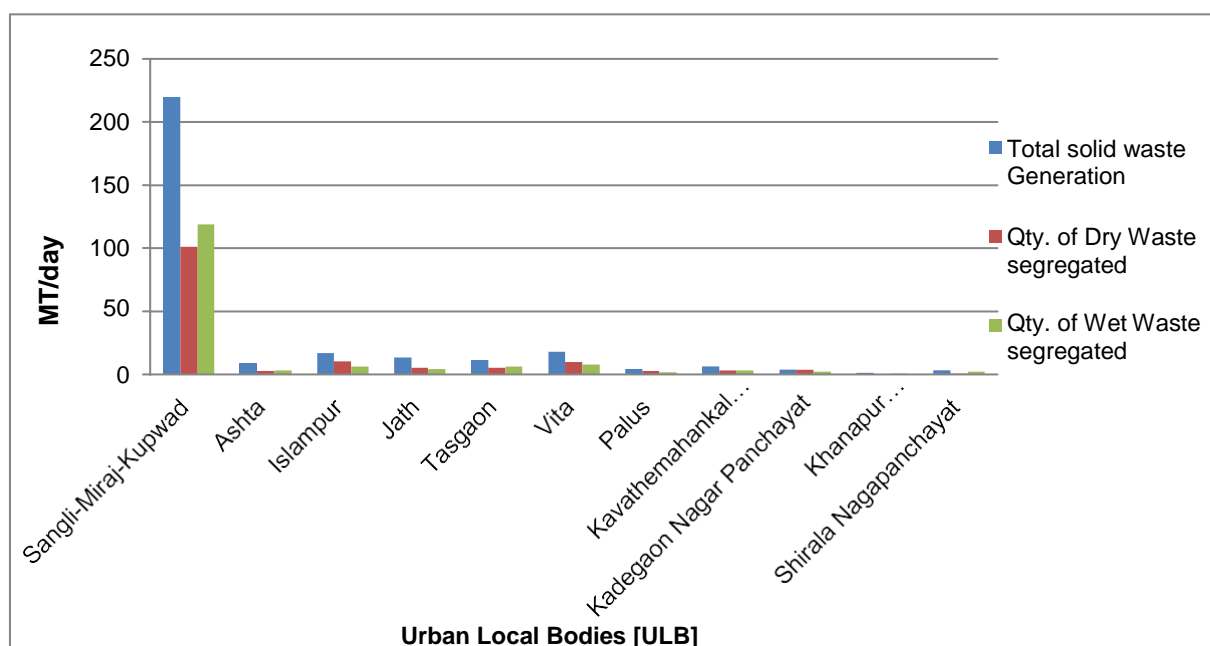


Figure 2 Solid Waste Generation of Sangli District

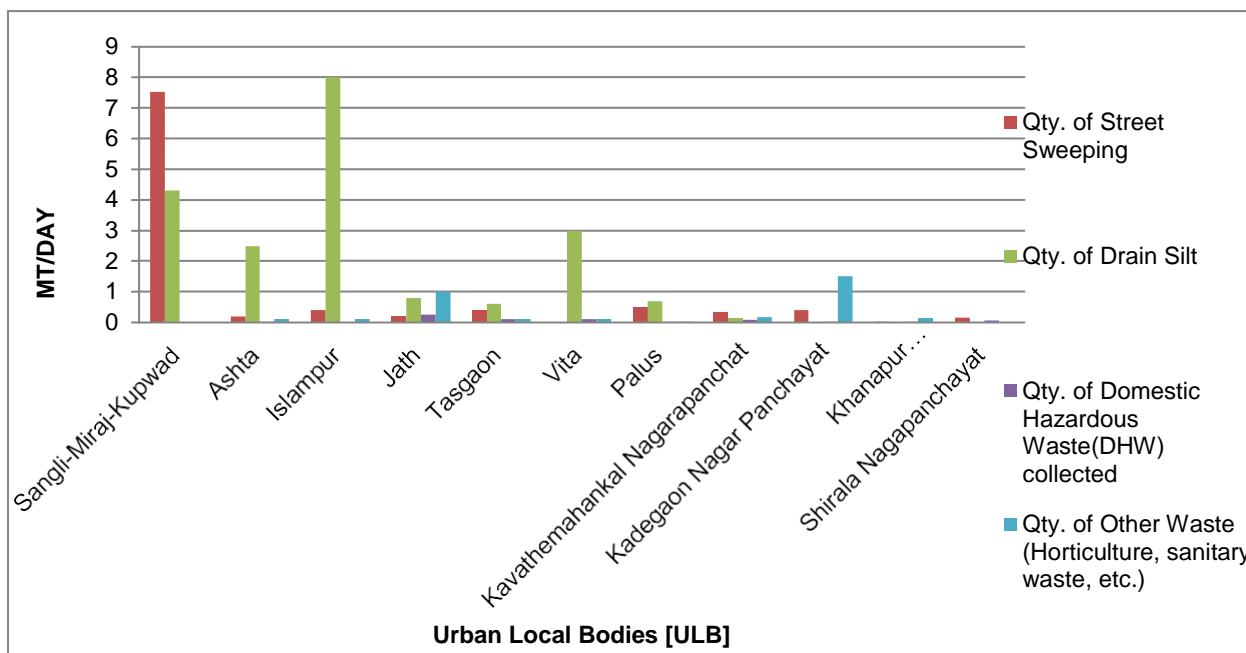


Figure 3 Details of Domestic Solid Waste Generation

It seems that Dry waste comprises of approximately 45.9% of total waste generated of the district and Wet waste contributes 54.09%. Sangli-Miraj-Kupwad stands on top with the highest quantity i.e. 220MTD out of which dry waste is 110MTD and wet waste is 119MTD. Khanapur nagar panchayat generates lowest quantity i.e. 1.36MTD out dry waste is 0.53MTD and wet waste is 0.82MTD. It is observed that quantity of solid waste generation is in line with the respective population of ULBs.

As per the data presented in the **Figure 3**, details of other types of waste generation is presented as below;

A] Street Sweeping Waste: Sangli district generates 10.11MTD of Street Sweeping Waste. Maximum quantity of Street Sweeping Waste is generated by Sangli-Miraj-Kupwad Municipal Corporation with total quantity of 7.53MTD and Shirala Nagar panchayat stands lowest with 0.14MTD. Data of Street Sweeping Waste is not estimated for Vita Municipal Council.

B] Drain Silt Waste: Total quantity of Drain Silt Waste generated is 20.06MTD. It seems that maximum quantity of Drain Silt Waste is generated by Islampur Municipal Council with total quantity of 8MTD followed by Sangli-Miraj-Kupwad Municipal Corporation

with 4.3MTD. Kadegaon Nagar Panchayat & Shirala Nagar nearly generates 0MTD of waste. It is observed that quantity of Drain Silt waste is not estimated for Khanapur Nagar Panchayat.

C] Domestic Hazardous Waste (DHW): Total DHW quantity generated is 0.65MTD. Maximum quantity of DHW is generated by Jath Municipal Council with total quantity of 0.25MTD and Palus Municipal Council stands lowest with 0.01MTD.

D] Other Waste (Horticulture, sanitary waste, etc.): Total Quantity of Horticulture, Sanitary and other waste is 3.205MTD. 5 UIBs in Sangli district generates nearly same Qty. of other waste that is 0.1MTD each.

E] Bulk Waste Generator: Sangli district is having total 11 bulk Waste Generator with the highest numbers in Tasgaon Municipal Council and Palus Municipal Council. Total number of onsite facility provided for treatment of wet waste is 11.

Compliance in Segregated Waste Collection

Total Waste generation from Sangli district is 308.4MTD and almost all waste is being segregated.

A] Waste Management Operations

Door to Door Collection

Out of 18 ULBs, Each ULB have provided 100% door to door collection facility.

Mechanical Road Sweeping

None of the ULBs have not provided Mechanical Road Sweeping facility instead every ULB has adopted Manual Road Sweeping Methodology.

B] Segregated Waste Transport

Almost 96% of waste is being transport through segregated waste transport system

C] Composting Operation

Sangli district generates approximately 308.4MTD of wet waste and Out of which 77.7%% is treated through composting.

D] MRF Operation

All 11 ULBs, is using Multi Re Use Facility to separate and prepare recyclable material.

E] Use of Sanitary Landfill

None of the ULBs have provision of Sanitary Landfill

F] Reclamation of old dumpsites

11 ULBs have started reclamation of old dump site using through bio mining process

G] Linkage with Waste to Energy Boilers / Cement Plants

No ULBs have its Linkage with Waste to Energy Boilers / Cement Plant to dispose of the waste generated.

H] Linkage with Recyclers

8 ULBs have initiated the process to link with recycler whereas 3 ULBs have not started the process yet.

I] Authorization of waste pickers

Authorization of waste pickers is not done in Sangli district.

J] Linkage with TSDF / CBMWTF

3 ULBs have linkage with TSDF / CBMWTF except other 8 ULBs.

Adequacy of Infrastructure

Availability of infrastructure to handle the waste generated from the Sangli district is presented in **Figure 4**.

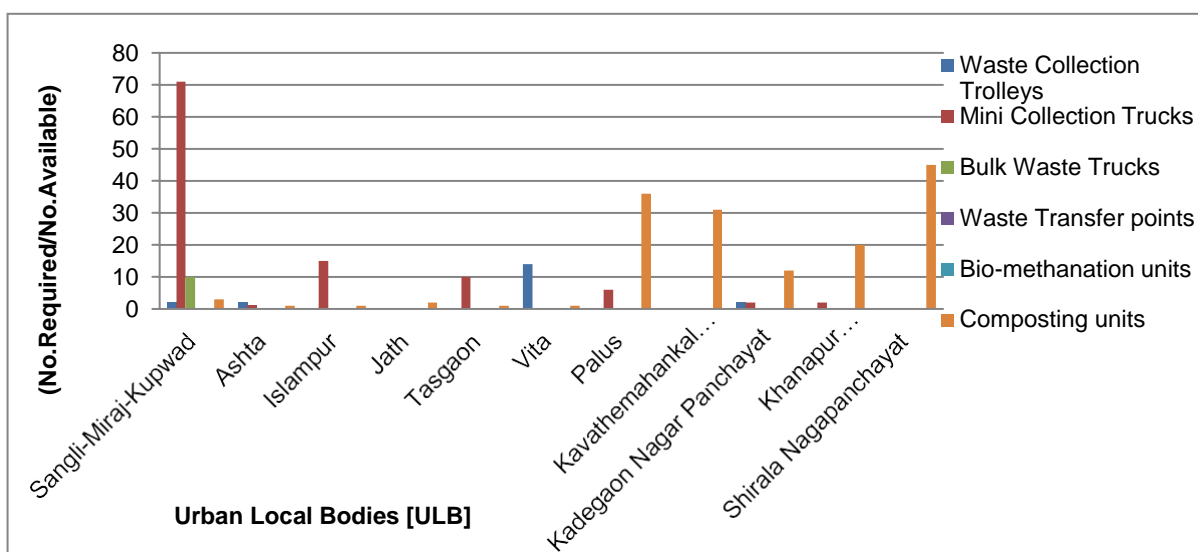


Figure 4 Adequacy of SW Infrastructure

It is observed that There are no waste Transfer points in Sangli district however, there are nearly 17 waste collection trolleys still demanding 7 more to collect the waste, Mini collection trucks 6 numbers and Bulk transport trucks 18. No Bio - Methanation units are present in Sangli district. 27 nos. of Composting units available to treat wet waste are 158.16. As per record, all 11 ULBs, has implemented the Solid Waste Management Rules.

C&D Waste Management Plan

The Construction and Demolition Waste [C&D Waste] generated by Sangli district is about 2761.5MTD. Ashta Municipal Council contribute maximum share of C&D waste to the tune of 300MTD. Least C&D waste is generated by Tasgaon Municipal Council with the quantity of 0.5MTD. 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.

Plastic Waste Management

Total Plastic waste generated by Sangli district is 9.15MTD. With 5MTD quantity, Sangli-Miraj-Kupwad Municipal Corporation is the highest plastic waste generator of plastic waste.

In almost all ULBs, door to door collection and segregation system is implemented with 37 Plastic Waste Collection Centre. There are 497 Plastic Waste Pickers with the authorization for waste collection. District has 0 Plastic Manufacturer and 6 Waste recyclers. For Treatment and recycling of generated plastic waste, there are no any Pyrolysis Oil Plant nor is the waste plastic used in the process of Road making. PW Management Rules, 2016 is implemented in all the ULBs. Estimated generation details from all local bodies are presented in below **Figure. 6**

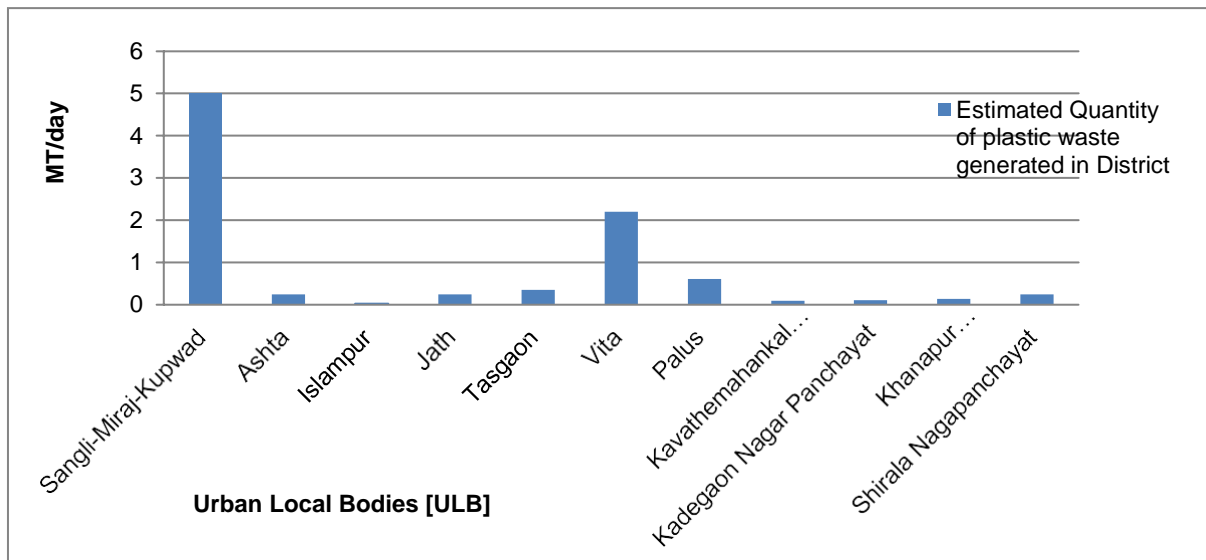


Figure 6 Estimated Quantity of plastic waste generated in District

Biomedical Waste Management

The 1384 Clinics present in the Sangli district. Bedded hospital are 712 numbers. 1585 are non-bedded hospitals, 1384 Clinics and 19 Veterinary hospitals. Fig 7 shows the graphical representation of Inventory of Bio medical waste generation .

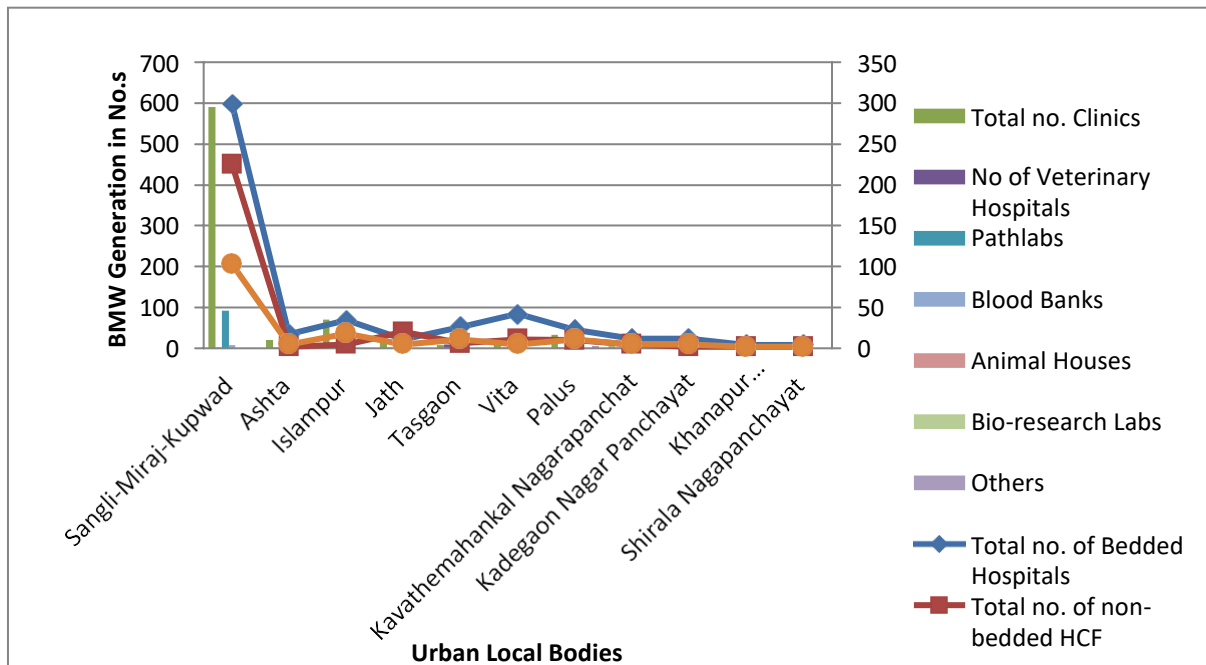


Figure 7 Inventory of Biomedical Waste Generation

There are 1 Common Facility available for treatment and disposal of BMW and average BW taken by these facilities are 1201 kg/day.

Hazardous Waste Management

60 Number of industry is established generating 160.21MT/M which is Incinerable No waste is sent for land filling. One Common. As per standard norms each of these industries have displayed a board of Hazardous Waste generation in industry. Due to unavailability of Hazardous waste disposal site, the generated waste is sent to CHWTSDF of other district within state.

E Waste Management

It is observed that the district has no E-waste collection facility. District does not the citizen are 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. No campaigns are held for the awareness of people.

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 need 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 ▪ Quadrant sampling methodology to be adopted in order to reduce quantity as well as quality 	Immediate

Sectors	Gaps	Action Points	Priority
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 ▪ Almost 308.7MTD of waste is not collected at door to door 	<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 ▪ Intermediate ▪ Approximately 61 Ghanta Gadi would be required ▪ Additionally Compactors shall be sufficient for end to end collection and transfer 	Short to Mid Term
Infrastructure	<ul style="list-style-type: none"> ▪ Mostly composting is the main treatment methodology with about 80% coverage ▪ MRF facility is also available but limited to few ▪ Sanitary landfill are limited to 2-3 ULBs 	<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 	High
lastic 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

Sectors	Gaps	Action Points	Priority
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 ▪ Limited Inventorization 	<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 ▪ Collection mechanism to be strengthen with additional vehicles to cover vast area and scattered HCF [miniscule quantity] 	Very High & Immediate
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 ▪ Atleast one e waste processing unit in a district 	Very High & Immediate

4.0 Water Quality Management Plan

There are 6 Rivers in Sangli district with length details as 1) Krishna River-130.0 Km 2) Warana River-173.0 Km 3) Yerala River-85.0 Km 4) Agrani-85.0 Km 5) Man River-35.0 Km 6) Bor River-64.0 Km.

The 6 ULBs generate about 90MLD of domestic and 9.3 MLD of industrial waste. Of domestic waste 81MLD is treated and 9MLD is untreated/partially treated. Out of total industries currently 36 are meeting the discharge quality and balance 9 are not. 1 CETP system is present in the region which is yet to be commissioned.

Effort of sensitization and awareness at all level in order to formulate and implement successful water quality management strategy though the same is limited to some of ULBs as of now & a 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 ▪ Solid waste dumping i the river 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 	High

		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 ▪ 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"> ▪ Limited information of industries discharging wastewater in to the river ▪ 9 industries are Non-compliance of in terms of meeting discharge standards 	<ul style="list-style-type: none"> ▪ CETP needs to get commissioned. ▪ Digital compliance methodology to be developed ▪ Disposal system to be under constant surveillance 	High

5.0 Air Quality Management

As it is Sangli 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. Both CPCB & MPCB through their NAMP & SAMP programme has set up 3 manual & No CAAQM stations across the district.

It seems that PM10 is Ambient Air is one of the prime reason of the concern and historically Sangli 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 primaface 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"> ▪ Limited 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 data including cloud cover ▪ 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 	High

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. Sangli district has Building Stone Mining activities carried out among its local bodies. There are in total 55 Stone Quarry in the district. 96.7 Hectar of area is covered under mining activity.

It can be observed that all the 55 Mining areas are meeting Environmental Clearance Conditions. No any Mining operations are suspended for violations to environmental norms nor any odd directions are issued by SPCBs for the mining areas in the 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 are in Total 6 No. of noise measuring devices with district administration to monitor the noise levels while 1 noise measuring devices with SPCBs. There are No complaints received on noise pollution in last 1 year for Sangli district. District ocassionally implemnt ambient noise standards in residential and silent zones. No Noise monitoring study is carried out in district. Noise quality reveals mainly source specific noncompliance such as traffic related in most of the kerb side analysis. Though zoning categories and regulations therein are particularly specified, in limitation of noise regulations has always been challenge to the regulatory authority. **Table 5** spells potential management plan that could be taken up on priority by each of the ULBs.

Table 5 Action Plan for Noise Pollution Management

Sectors	Gaps	Action Points	Priority
Noise	<ul style="list-style-type: none"> ▪ Most of the source related noise areas show exposure beyond compliance ▪ Excessive exposure during noise generating potential events/ festivals ▪ 	<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 	High

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 device 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.