District Environment Plan

Prepared By

Environment Department, Government of Maharashtra

Maharashtra Pollution Control Board

Gondia

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 Gondia District is prepared.

2.0 Introduction

Gondia district was carved out by division of Bhandara district. Gondia district is situated on North-Eastern side of Maharashtra state having state borders of Madhya Pradesh and Chattisgarh. General Gondia district profile is presented in the **Table 1** and location is shown in **Figure 1**.

Table 1 Gondia District Profile

Description	Details
Average Climate	The average annual temperature is 26.7°C in Gondia. The average annual rainfall is 1418 mm.
Geographical Location	21.4549° N, 80.1961° E
Area	5431 Sq. km.
Boundaries	The district is surrounded by Balaghat district of Madhya Pradesh in the north and Rajnandgaon district of Chhattisgarh in the east.
Languages Spoken	Marathi, Hindi, English are major languages but all Indian languages are spoken
Population	Total: 1322507 [*According to 2011 Census Report*]

Description	Details
Population Density	270 Per Sq. km.
Literacy Rate	84.95%
Rivers	Wainganga river is the largest and most important river. Rivers like Bagh, Chulbandh, Gadhavi and Bavanthadi are the tributaries of river Vainganga.
ULBs	8
Tahsils	Gondia, Tiroda, Goregaon, Deori, Amgaon, Salekasa, Arjuni Morgaon, Sadak Arjuni
Pin code	441614

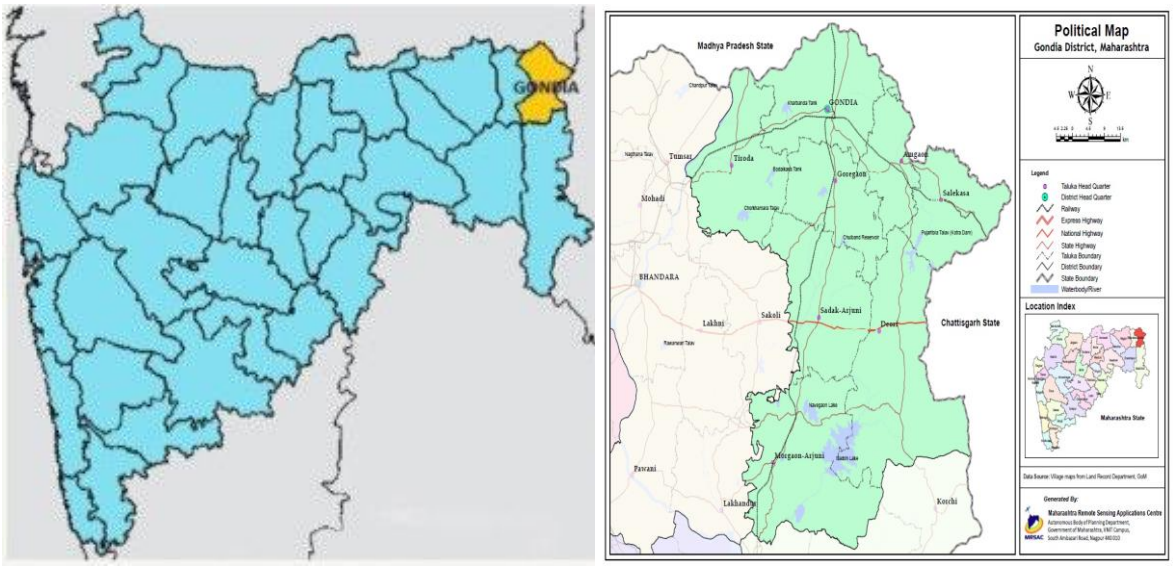

Figure 1 Location of Gondia District

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 Gondia city 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 8 Urban Local Bodies [ULBs]. in Gondia district. **Table 2** represents the list of ULBs along with population. Following section gives insight about waste management of Gondia districts.

Table 2 Gondia District Profile

Sr. No.	Urban Local Bodies	Population
1.	Municipal Council Gondia	132813
2.	Municipal Council Tirora	25181
3.	Municipal Council Amgaon	34564
4.	Nagarpanchayat Deori	14579
5.	Nagarpanchayat Goregao	8766
6.	Nagarpanchyat Sadak Arjuni	5975
7.	Nagarpanchyat Arjuni Morgaon	9472
8.	Nagarpanchyat Salekasa	8220

3.1 Domestic Solid Waste Management Plan

Gondia district is having 8 ULBs with 122 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 Gondia district is 89.17 MTD wherein, Dry Waste generation is 34.42MTD and Wet waste is 36.85 MTD.

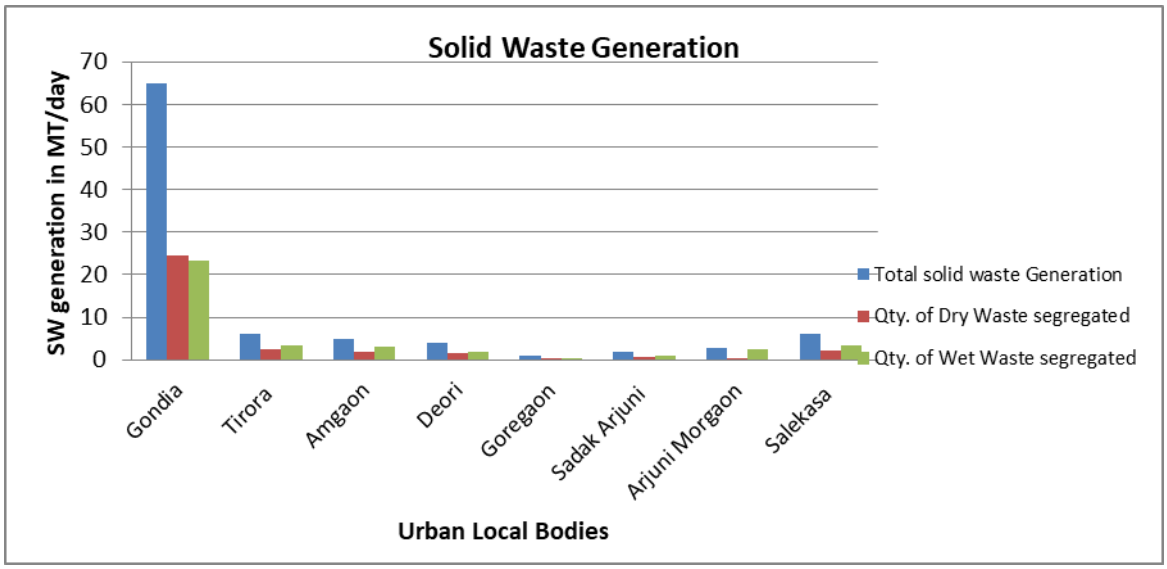

Figure 2 Details of Domestic Solid Waste Generation

It seems that Wet waste comprises of approximately 49% of total waste generated of the district and Dry waste contributes 41%. Municipal Council Gondia stands on top with the highest quantity i.e. 65.07MTD out of which dry waste is 27.3 MTD and wet waste is 32.3 MTD. Nagarpanchyat Sadak Arjuni generates lowest quantity i.e. .34MTD out dry waste is

0.55MTD and wet waste is 0.6MTD. 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;

Gondia district generates 2.51 MTD of Street Sweeping Waste. Maximum quantity of Street Sweeping Waste is generated by Municipal Council Gondia with total quantity of 1.4MTD followed by Municipal Council Tirora & Amgaon w Municipal Council Salekasa stands lowest with 0.02MTD. Total quantity of Drain Silt Waste generated is 1.47MTD. It seems that maximum quantity of Drain Silt Waste is generated by Municipal Council Gondia 1.0 MTD& Lowest by Municipal Council Salekasa 0.02MTD.

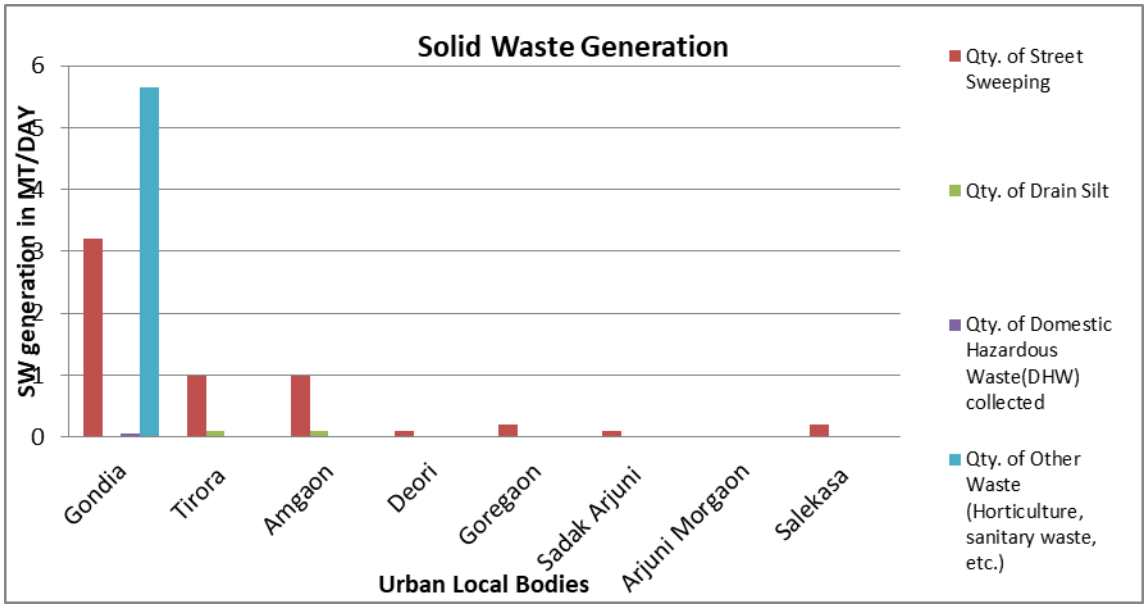

Figure 3 Other Waste Generation of Gondia District

Total DHW quantity generated is 0.151MTD. Maximum quantity of DHW is generated by Municipal Council Gondia with total quantity of 0.055MTD and Nagarpanchyat Goregaon stands lowest with 0.001MTD.

Total Quantity of Horticulture, Sanitary and other waste is 1.8 MTD. Maximum quantity of Other Waste is generated by Municipal Council Gondia with total quantity of 1.0MTD and Nagar Panchayat Sadak Arjuni generates lowest quantity i.e. 0.01MTDGondia district is having total 6 bulk Waste Generator with the highest numbers in Municipal Council Gondia and total number of onsite facility provided for treatment of wet waste is 5.

3.1.1 Compliance in Segregated Waste Collection

Total Waste generation from Gondia district is 89.17MTD and almost all waste is being segregated.

3.1.2 Adequacy of Infrastructure

All 8 ULBs of have provided 100% door to door collection facility. Nil ULB have implemented Mechanical Road Sweeping and rest of other ULBs have not provided Mechanical Road Sweeping facility. Almost 70% of waste is being transport through segregated waste transport system

Gondia district generates approximately 43.85 MTD of wet waste and Out of which 50% is treated through composting. Out of 8 ULBs, 4 ULBs is using MRF to separate and prepare recyclable material whereas 4 ULBs have not installed MRF facility. 2ULBs have initiated reclamation of old dump sites. No ULB have linkage with waste to energy boiler / cement plant. All ULBs have initiated authorization of waste pickers.

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

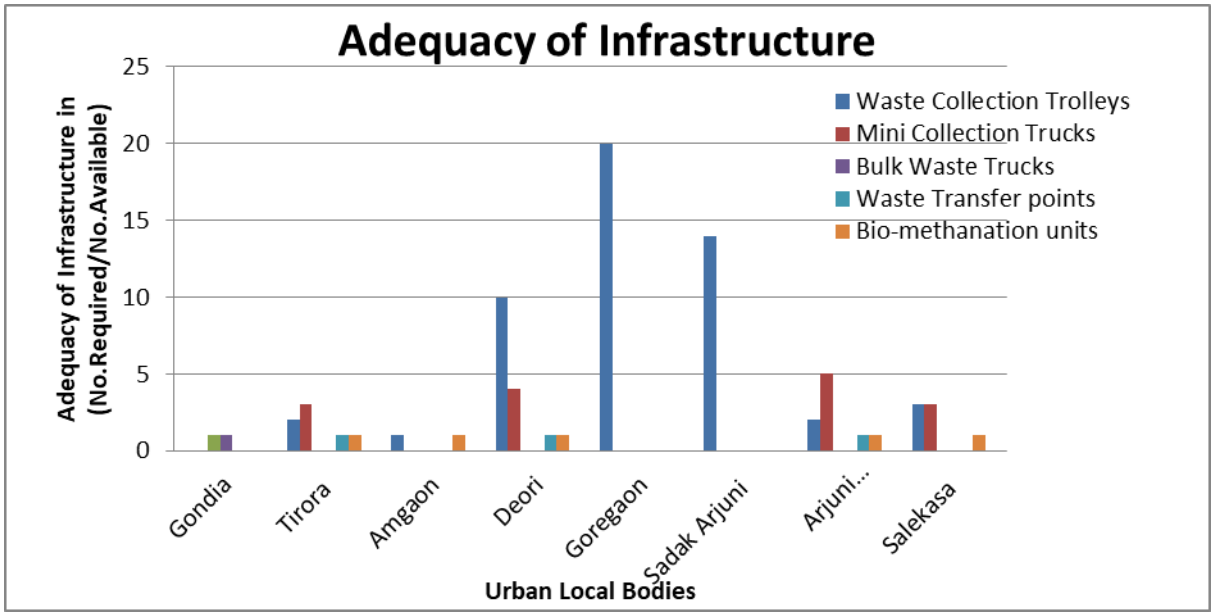

Figure 4 Adequacy of SW Infrastructure

It is observed that there are total 5 waste transfer points in Gondia district with waste trolley of 52, Mini collection trucks 11 numbers and Bulk transport trucks 2. Total numbers of Bio - Methanation units required are 8. Composting units available to treat wet waste are 2. As per record, All 8 ULBs have implemented the Solid Waste Management Rules.

3.2 C&D Waste Management Plan

The Construction and Demolition Waste [C&D Waste] generated by Gondia district is about 2.66MT/Day. C&D Waste generated by each ULBs**.** Again being with most populated corporation, Gondia council contribute maximum share of C&D waste to the tune of 2000Kg/Day. Least C&D waste is generated by Goregaon Council with the quantity of 10Kg/Day.

3.3 Plastic Waste Management

Total Plastic waste generated by Gondia district is 1.79 MTD. With 1MTD quantity, Municipal Council Gondia is the highest plastic waste generator and Nagarpanchyat Sadak Arjuni generates the least 0.01MTD of plastic waste.

In almost all ULBs, door to door collection and segregation system is implemented with 3 Plastic Waste Collection Centre. There are 58 Plastic Waste Pickers with the authorization for waste collection. District has 4 Plastic Manufacturer and 0 Waste recyclers. PW Management Rules, 2016 is implemented in all the ULBs.

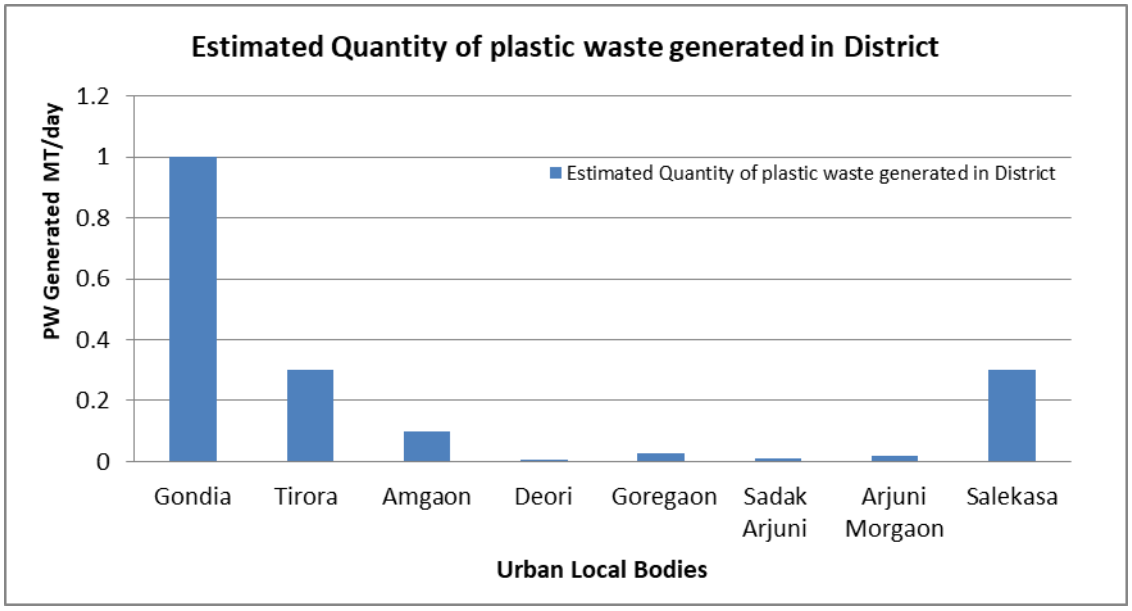

Figure 5 Details of Plastic Solid Waste Generation

3.4 Biomedical Waste Management

Total Bedded hospital in the Gondia district are 57 numbers, out of which only 57 HCF have taken authorization. 90 Clinics and 7 Veterinary hospitals. Total BMW generation from all above mentioned sources are to the tune of 480 kg/day.

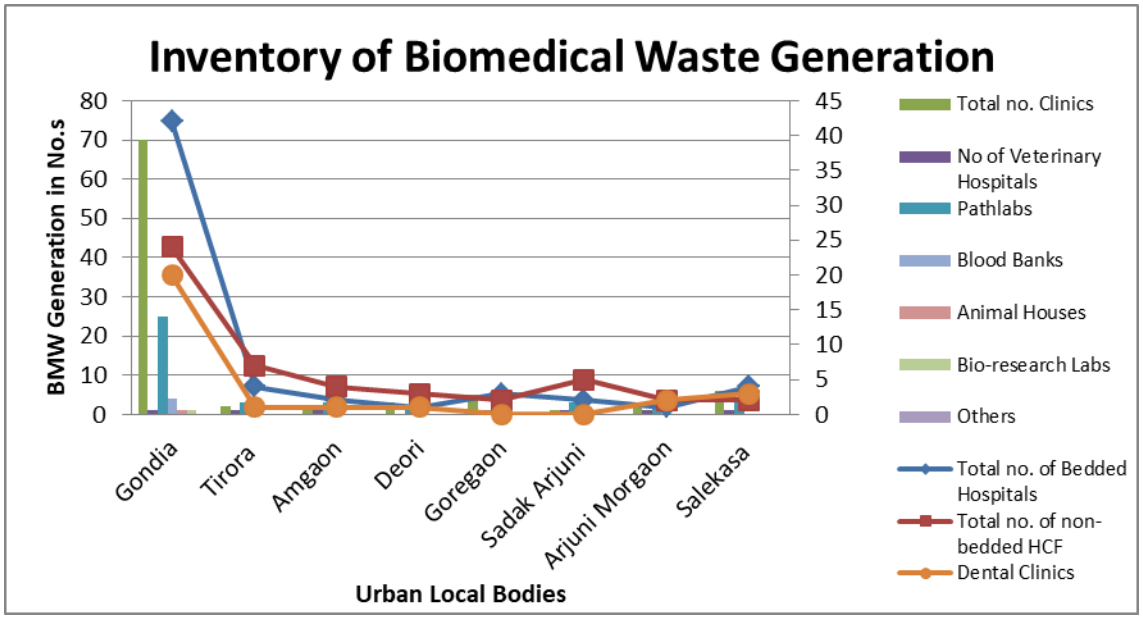

Figure 6 Details of Plastic Solid Waste Generation

There are no Common Facility available for treatment and disposal of BMW within the ULBs, however ULBs have linkage with other facilities. An average BW taken by these facilities are 438kg/day. There is requirement of at least one CBWTF in each ULB (Generated Bio Medical Waste sent to Other District CBMWTSDF for Scientifically Disposal of BMW). Inventory of BMW generating units are mentioned in the **Figure 7.** BMW is 100% pre segregated before given to disposal

3.5 Hazardous Waste Management

Only 2 Number of industry is established generating 2MT/Annually out of which 0.5MT is recyclable. One Common Treatment Storage Disposal Facility is present in other district of state.

3.6 E Waste Management

It is observed that there are no generators or recyclers in any ULBs

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 3**.

Table 3 Action Plan for Solid Waste Management

Sectors	Gaps	Action Points	Priority
Domestic Solid Waste			
Quantification	▪ Methodology for solid waste quantification should be ascertained ▪ Quantification based on Income group, culture affluence and technology to be considered	▪ 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 & Transport System	▪ Some of the places, efficiency of the collection system is not up to the mark	▪ 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 122 Ghanta Gadi would be required	Short to Mid Term
Infrastructure	▪ 8 composting units required however, only 1 available ▪ MRF facility is also available but limited to few ▪ Sanitary landfill are not provided	▪ Intermediate / Transfer station based decentralized waste treatment facility to be evaluated ▪ Additional alternative treatment such as bio-Methanation can be explored	High
Plastic Waste	▪ Lack of SOP for not only quantification but also life cycle analysis [LCA] ▪ Limited understanding / interpretation of EPR / PRO	▪ 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	▪ Inventorization by ULB	▪ System for utilization of recovered	High

Sectors	Gaps	Action Points	Priority
	need to strengthen	material and processed C&D waste to be effectively implemented and monitored	
Biomedical Waste	▪ 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	▪ Regular Inventorization through automatic / digital platform to be developed ▪ Up-gradation of existing facility to meet 2016 CPCB norms ▪ 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	▪ Domestic HW being mixed with solid waste posing threat ▪ No separate handling of domestic HW ▪ Not effective segregation at source	▪ 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	▪ Lack of inventory ▪ Limited understanding of E waste rule and management ▪ Neither segregation nor separate transfer / handling facility	▪ 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 is no River in Gondia district. With respect to the data collated about 20.1 MLD of untreated /partially treated sewage & effluents flows in to the riverine length thereby posing challenges for attaining clean water in the river. There are total 65 nos. lake/ponds spread in area of 6045 Hectares. Also total 7788 no's of bore wells are there in the district, however only 2 have obtained permission for extraction of groundwater from these bore well.

The 8 ULBs generate about 21.68MLD of sewage and no treatment facility is provided. However, it is also many a time the deficit as a representative of treatment capacity / capability. Even though MPCB has been eying to formulate policy w.r.t. reuse treated sewage as a regulation, lack of reuse conveyance system and more often than not due to the limited options of reutilization of treated sewage worsened with consistent output quality of treated sewage only leads to complicated disposal options.

Industrial effluent is much more regulated wherein 35MLD from 2 numbers of industry, limited to the district are made to treat almost the entire effluent to the best possible norms as stipulated by their permits, monitored effectively and regularly.

A detailed issue based management action plan is provided in **Table 4**.

Table 4 Action Plan for Water Quality Management

Sectors	Gaps	Action Points	Priority
Water Resources	▪ 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 in the river bodies	▪ 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	High

		▪ Protection methods to be developed for creative stoppage of dumping of solid waste in the surface water bodies	
Domestic	▪ 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	▪ Digital Platform to accommodate water budgeting / reuse potential ▪ Approximately 25 MLD 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	▪ Limited information of industries discharging wastewater in to the river	▪ Digital compliance methodology to be developed ▪ Disposal system to be under constant surveillance	High

5.0 Air Quality Management

As it is Gondia district being one of the most outgrowing areas in Maharashtra, Air quality assessment and sectoral management needs are ought to be essentially planned and executed. It is observed that there are no CAAQM stations across the district.

It seems that PM10 is Ambient Air is one of the prime reason of the concern. An exceedance factor 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 prime facia 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 5.**

Table 5 Action Plan for Air Quality Management

Sectors	Gaps	Action Points	Priority
Air	▪ Most of the places PM10 seems to exceed by a factor of around 2 - 4 ▪ Limited CAAQMS to establish / corroborate inferences ▪ Sectoral action plans not effectively established	▪ 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

Being directly under the promissory control of District Collector, the total lease land and the mining in Gondia district is 24.98 Hectares. It is important to mention that the total sand mining in Gondia is 0.24Sq.kms with the due permission from respective authorities of MPCB and State Environment Department.

7.0 Noise Action Plan

Other than event base monitoring and special projects related / orders monitoring, MPCB carries out annual noise monitoring at 17 locations. It is observed that there are total 16 noise monitoring devices with district. Noise quality reveals mainly source specific non-compliance 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 6** spells potential management plan that could be taken up on priority by each of the ULBs.

Table 6 Action Plan for Noise Quality Management

Sectors	Gaps	Action Points	Priority
Noise	▪ Most of the source related noise areas show exposure beyond compliance ▪ Excessive exposure during noise generating potential events/ festivals	▪ 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.