



ENVIRONMENTAL SYNTHESIS REPORT OF ODISHA

**FOREST, ENVIRONMENT & CLIMATE CHANGE DEPARTMENT
GOVERNMENT OF ODISHA**

DISCLAIMER

This synthesis report has been prepared based on the district environment plans sent by the district to the state level nodal agency. CTRAN Consulting (*A subsidiary of EY LLP*) cannot vouch for the authenticity of the data and must be indemnified.

Acknowledgement

We CTRAN Consulting Limited (a subsidiary of EY LLP) acknowledge the unstinted support and guidance provided by Dr K Murugesan, IFS, Director, Environment cum-Special Secretary, Member, Odisha State Pollution Control Board, Dr. Simanchal Dash, Additional Chief Environmental Engineer, Dr K C Pal, Senior Scientist (E&E), Forest, Environment & Climate Change Department, Govt. of Odisha, Mr. Sujeet, and the scientists attached to the Forest, Environment & Climate Change Department for their coordination with district officials for data collection.

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Abbreviations

CPCB	Central Pollution Control Board
SPCB	State Pollution Control Board
PCC	Pollution Control Committee
ULB	Urban Local Body
HUDD	Housing and Urban Development Department
DHW	Domestic Hazardous Waste
BW	Bulk Waste
PW	Plastic Waste
HW	Hazardous Waste
C&D	Construction and Demolition
MRF	Material Recovery Facility
TSDf	Treatment, Storage, and Disposal Facilities
CBMWTF	Common Biomedical Waste Treatment and Disposal Facility
MCC	Micro Composting Centers
PRO	Producer Responsibility Organization
TPD	Tons Per Day
HCF	Health Care Facility
BMW	Bio-Medical Waste
PHC	Primary Health Centre
CHC	Community Health Centre
GPS	Global Positioning System
CHWTSDf	Common Hazardous Waste Treatment, Storage, and Disposal Facilities
MLD	Megaliters Per Day
STP	Sewage Treatment Plant
AQI	Air Quality Index
SOP	Standard Operating Procedures
SDG	Sustainable Development Goal
UNEP	United Nations Environment Programme

Executive Summary

Odisha State Synthesis Report of District Environmental Plan was prepared based on the data received from the Forest, Environment & Climate Change Department. Initially, the Forest, Environment & Climate Change Department has collected data from all the districts. Subsequently, a database was prepared. During compilation of data and preparation of synthesis report, if there were any anomalies in data received from the districts, follow up action was initiated. After the draft report was compiled, Forest, Environment & Climate Change Department assigned State Pollution Control Board (SPCB) to validate the data. Based on the inputs, the draft report was revised. After compilation of data received from State Pollution Control Board (SPCB), a final draft was prepared covering the specific thematic areas and was sent to districts for concurrence and suggestions

Solid Waste

The total solid waste produced daily in Odisha's 30 districts is 3063.562 MT/day. The districts of Khordha and Ganjam produces majority of solid wastes in Odisha. Solid waste is segregated in 28 districts of the state. Waste Transfer points are available in 10 districts of the state. Legacy Dumpsites are available in 11 districts of the state.

Plastic Waste

Total plastic waste collected from all districts of the state is 111.55 MT/Day. Out of all reporting districts, Khordha recorded highest quantity of quantity of Plastic waste at 37.43 MT/Day. Door to door collection of plastic waste is achieved in 25 districts of the state. There is a ban on use of polythene carry bags of any shape, thickness and size (excluding compostable).

C & D Waste

The total C&D waste generated in the state is 101.85 MT/Day. The district of Cuttack generates maximum amount of C&D waste at 17.9 MT/Day. C&D waste recycling facility is available in 9 districts of Odisha. Separate collection point for C&D Waste is available in 19 districts of the state. C&D Waste Deposition points available in 8 districts of the state. C&D waste recycling plant available in 7 districts of the state.

Biomedical Waste

The total Bio Medical Waste generated in the district is 15.71 MT/Day. The total number of Bedded & Non-bedded Health Care facilities in 30 districts of the state is 1547 and 2323 respectively. There are 12 Common Biomedical Waste Treatment and Disposal Facilities (CBWTFs) in the state.

Hazardous Waste

The total Hazardous waste generated in the state is 969261.60 MT/Annum. A total of 19 probable contaminated sited for Hazardous waste are present in the district. Treatment, storage, and disposal facility (TSDF) available in 3 districts of the state. A total of 4 TSDF's are present in the district. A single Standalone incinerator is available in the district of Sundargarh.

Detail	Incinerable HW(MT/Annum)	Land-fillable HW(MT/Annum)	Recyclable HW(MT/Annum)	Utilizable HW(MT/Annum)
State Total	429.975	57515.381	17599.426	893537.938
Highest District	Anugul	Jajapur	Jagatsinghapur	Jharsuguda

E-Waste

The Total E-waste generated in the district is 0.67 MT/day. The district of Sundargarh generates the highest amount of E-Waste. There are a total of 63 collection centers in all ULB's of the state. E-waste collection points are available in 12 districts of the state.

Air Quality Management

There are 254 automatic air quality monitoring stations present in the districts. 206 AQM stations are operated by industries in the districts and 11 AQM stations are operated by the government in the districts. There are a total of 5641 air polluting industries present in the district.

Water Quality Monitoring

A total of 22156 Lakes/Ponds are present in the districts. A total of 1522 Nalas/Drains/Creeks meets Rivers in the districts. A total of 70985 borewells reported in the districts. Action Plan on controlling riverside dumping of solid waste on riverbanks created in 11 districts of the state.

Domestic Sewage Management

A total of 22 STP's are installed in the districts of Odisha. Khordha has the highest no. of STP's installed. Partial Underground Sewage network is available in the districts of Puri, Sambalpur, Sundargarh, Bargarh and Cuttack. The total quantity of sewage generated from Class II towns is 367.5438 MLD. The total available treatment capacity in all the districts is 335.9 MLD.

Industrial Wastewater Management

There are 2466 red industries, 5466 orange industries, 2097 green industries and 11 white industries in the districts of Odisha. A total of 1714 industries generates 315.04 MLD wastewater. Inspection and monitoring of effluent's quality on discharge is done in 26 districts of the state. Necessary action plans initiated through SPCBs against 22 districts in the state. 23 districts in the state have compliant redressal system via mobile app or online systems.

Mining Activity Management

A total of 1405 licensed mining operations in the state. The total area covered in all the districts under sand mining are 652.30 sq. km. Periodic verification of compliance to environmental conditions by departments done in 26 districts of the state.

Noise Pollution Management

73 Noise measuring devices are available in the districts of the state. Noise level meters with various agencies available in 19 districts of the state. Ambient noise level monitoring station's installation required in 15 districts of the state. Public complain redressal system for noise pollution available in 19 districts of the state.

Wetland Management

The total area of wetlands in the district are 598082.057 Ha. Load based assessment of sewerage system is available in 15 districts of the state. De-siltation of the water bodies carried out in 22 districts of the state. Initiative/study is required for Flood Protection Zone Demarcation in 23 districts of the state. Inspection is done for removal of encroachment in 7 districts of the state.

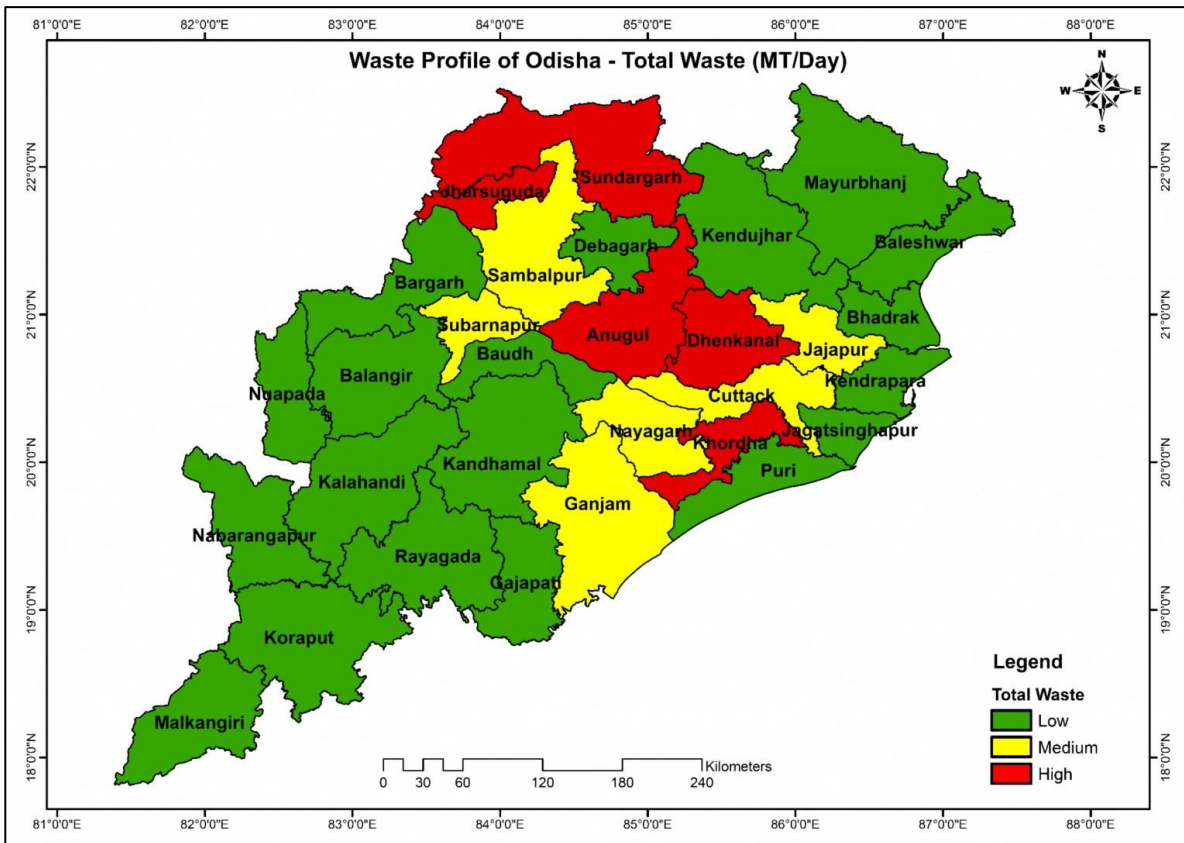


Figure A - Waste Profile of Odisha - Total Waste (MT/Day)

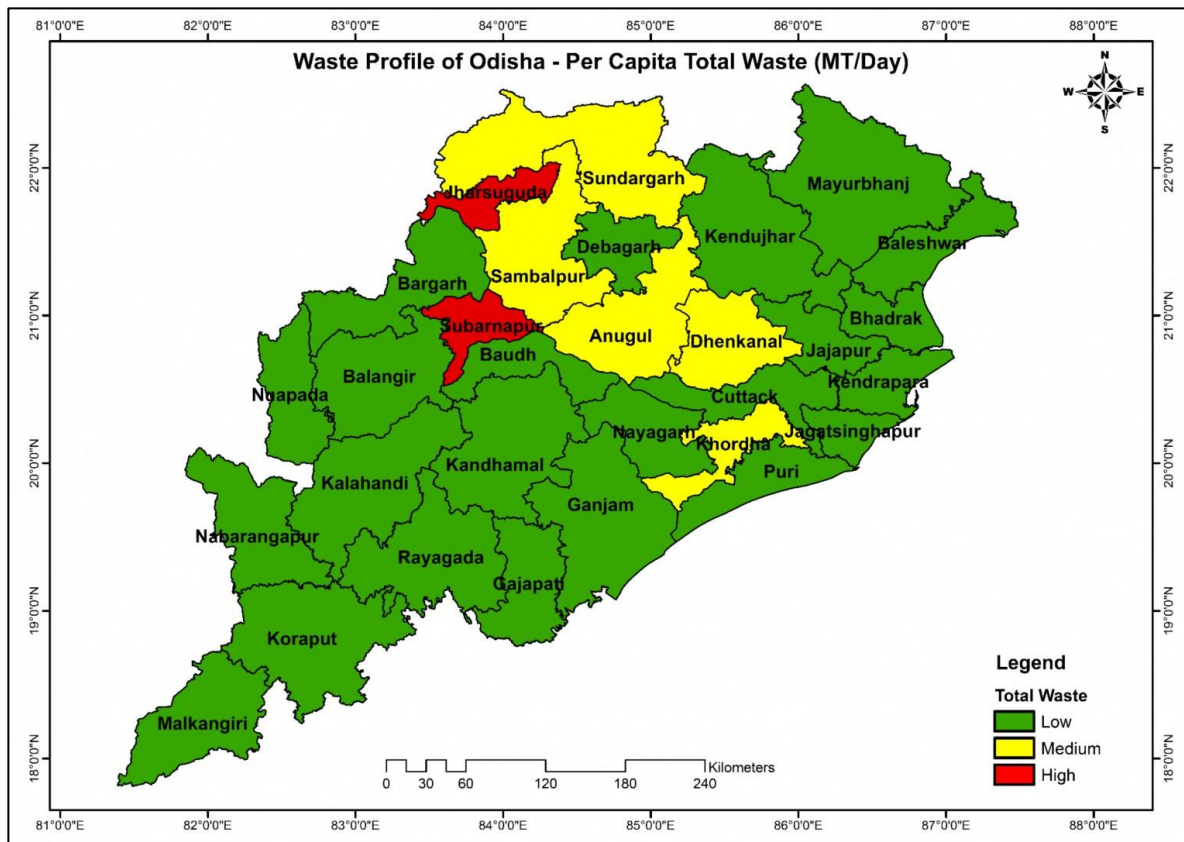


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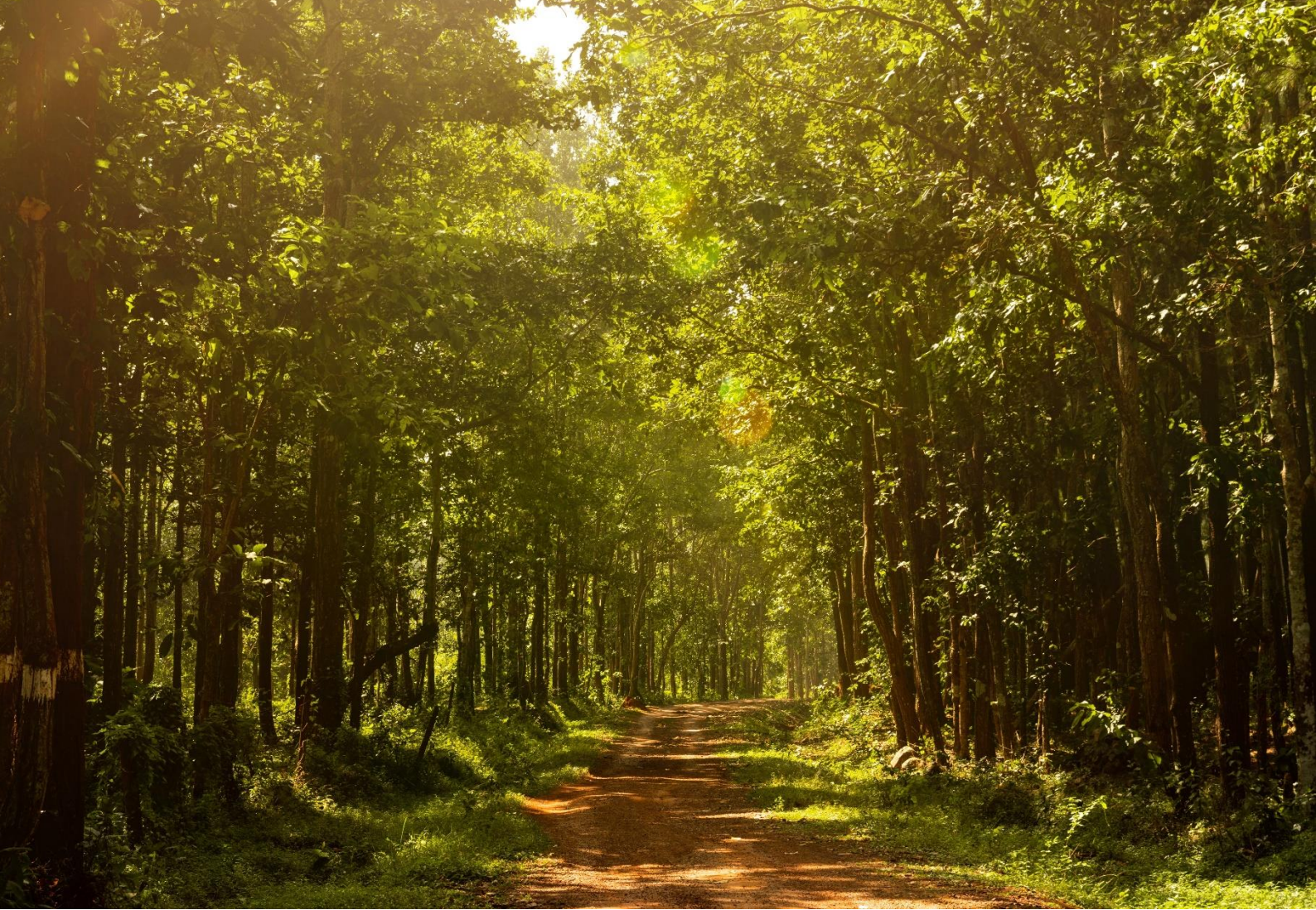
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SECTION I: INTRODUCTION

1.0 Introduction

The Department of Forest, Environment & Climate Change of Odisha has collected District Environmental Plans of all districts and has finalized the 'State Environment Plan' covering the specific thematic areas.

District Environment Plan is operated by a District Committee (as a part of District Planning Committee under Article 243 ZD) with representatives from Panchayats, Local Bodies, Regional Officers, State Pollution Control Board, and a suitable officer representing the administration, which in turn is chaired and monitored by the District Magistrate. Such District Environment Plans and Constitution of District Committee is placed on the website of Districts concerned and kept on such websites for a period of one year.

District Environment Plan is prepared according to the Model/Format suggested by CPCB published on its website. Suitable changes have been incorporated as per local requirements for all Districts and reported to concern Chief Secretaries to the Tribunal in O.A No. 606/2018.

The District Environmental plans cover the following thematic areas

Sl. No.	Area of operation
1.0	Waste Management Plan
(i)	Solid Waste Management Plan
(ii)	Plastic Waste Management
(iii)	C&D Waste Management
(iv)	Biomedical Waste Management
(v)	Hazardous Waste Management
(vi)	E-Waste Management
2.0	Air Quality Management Plan
3.0	Water Quality Management Plan
(i)	Water Quality Monitoring
(ii)	Domestic Sewage
4.0	Industrial Wastewater Management Plan
5.0	Mining Activity Management Plan
6.0	Noise Pollution Management Plan
7.0	Wetland Management Plan



SECTION II: SOLID WASTE

Key Findings:

- The total solid waste produced daily in Odisha's 30 districts is 3063.562 Mt/day. The districts of Khordha and Ganjam produces majority of solid wastes in Odisha. Least solid waste generated districts of Odisha are Boudh, Malkangiri, Nuapada. Khordha and Sambalpur have the highest per capita solid waste generation
- Solid waste is segregated in 28 districts of the state. Boudh do not segregate their solid waste while the data on Waste segregation was not available for Dhenkanal district. Khordha, Nayagarh and Keonjhar are 3 districts that have achieved 100% segregation. 4 districts, namely, Jajapur, Khordha, Nayagarh and Subarnapur are segregating hazardous waste. Khordha, Nayagarh and Keonjhar are 3 districts which have achieved 100% waste segregation.
- Khordha, Nayagarh and Keonjhar are 3 districts which have achieved 100% segregation. Bhadrak, Cuttack, Jajapur, Subarnapur have more than 80 per cent of waste segregation. Balangir, Bargarh, Deogarh, Gajapati, Ganjam, Jagatsinghapur, Kalahandi, Kendrapara, Koraput, Malkangiri, Nabarangpur, Rayagada and Sundargarh have achieved 50 - 80 per cent segregation. Data of waste segregation was not available for Anugul, Baleshwar, Boudh, Dhenkanal, Jharsuguda, Kandhamal, Mayurbhanj, Nuapada, Puri and Sambalpur.
- Gajapati district is the only district where manual sweeping is not done. Only 18 of the 29 districts where manual sweeping is done have PPE kits accessible. Only 7 out of the 18 districts where PPE kits are accessible have enough PPE supplies. Baleshwar, Bargarh, Bhadrak, Boudh, Cuttack, Deogarh, Jagatsinghapur, Kalahandi, Kendrapara, Keonjhar, Koraput, Malkangiri, Nabarangpur, Nayagarh, Nuapada, Rayagada, Subarnapur and Sundargarh had PPE kits for workers doing Manual Sweeping. However only seven districts namely - Nayagarh, Nuapada, Keonjhar, Kalahandi, Bhadrak, Boudh and Cuttack have adequate PPE Kits.
- Mechanical Road Sweeping systems are available only in the districts of Balangir, Bhadrak, Cuttack, Khordha, Sambalpur, Puri and Nayagarh. However, data on mechanical road sweeping systems of Baleshwar, Boudh, Jharsuguda were not available.
- Jharsuguda district is the only district that does not provide waste collection trolley with separate compartments.
- Jajapur, Jharsuguda and Boudh are 3 districts which do not provide mini collection trucks with separate compartments. Data of mini collection trucks with separate compartments for Boudh district not available.
- 14 districts in the state have Waste Deposition Centres and 15 districts doesn't have any waste deposition centres. Data of Waste Deposition Centres for Sambalpur district not available. A total of 88 waste deposition centres are required by the districts. 50 per cent of the districts do not have waste deposition centres.
- Waste Transfer points are available in 10 districts viz. Anugul, Baleshwar, Cuttack, Ganjam, Jharsuguda, Kandhamal, Keonjhar, Khordha, Nayagarh and Puri. Data of Waste Transfer points for Nuapada, Sambalpur, Boudh are not available.
- 47 per cent of the districts have 100 per cent collection of Solid Waste.
- 100 per cent waste collection in ULB's was seen in 19 districts. Data for percentage of Door-to-Door waste collection in ULB's was not available for 6 districts viz. Jharsuguda Kalahandi, Kandhamal, Kendrapara, Malkangiri and Mayurbhanj. Nabarangpur has the lowest per cent of door-to-door waste collection at 50 per cent, followed by Ganjam at 60 per cent. Balangir has door to door collection of waste at 70 per cent while Koraput and Rayagada has door to door collection of waste at 75 and 80 per cent respectively.

- 100 per cent waste collection in RLB's was seen in 6 districts. Data for Door-to-Door waste collection in RLB's was not available for 19 districts. Deogarh, Dhenkanal, Kalahandi, Kendrapara has the lowest per cent of door-to-door waste collection at 50 per cent, followed by Jagatsinghapur at 70 per cent.
- 37 per cent districts have available bulk waste generators, whereas 43 per cent district of the total districts didn't have any data on Availability of Bulk Waste Generators.
- Only 30% of districts have identified installation of bulk waste generators. Data on Bulk Waste Generators not available for 13 per cent of all districts.
- The district of Khordha with 172 onsite facilities for wet waste has the maximum number of onsite facilities in the state.
- 40% of the districts have central bio methanation centre / Composting of wet waste facilities
- MRF's are available in 28 districts of Odisha. Balangir doesn't have any MRF's. Data on availability of MRF's not available for Kandhamal District. A total of 94 MRF's exists in the 28 districts of Odisha. Cuttack has a total of 12 MRF's in the district which is highest of all districts in the state.
- Gajapati is the only district where waste to energy plant exists. Only 3 per cent of the total districts have access to Waste to energy plants. 50 per cent of the total districts doesn't have access to waste to energy plants.
- Sanitary landfills are available in 7 districts of Odisha viz. Baleshwar, Bhadrak, Gajapati, Kandhamal, Khordha, Nayagarh, and Puri
- Anugul, Baleshwar, Kandhamal, Keonjhar, Khordha, and Puri are 6 districts that have initiated remediation of legacy dump sites. Data on initiation of remediation of legacy dump sites not available for 5 districts viz. Cuttack, Jharsuguda, Mayurbhanj, Nayagarh and Sambalpur districts.
- Involvement of NGO's envisaged in 8 districts namely - Boudh, Jharsuguda, Kandhamal, Khordha, Nayagarh, Nuapada, Puri and Subarnapur, however in the remaining 22 districts involvement of NGOs not envisaged.
- By-laws are implemented in 90 per cent of the total districts. Data on By-laws implementation were not available for 7 per cent of the total districts.

2.0 Solid Waste Management Plan

The term "solid waste management" is used to describe the procedure for gathering and handling solid wastes. It also provides suggestions for recycling objects that don't belong in the trash or rubbish. Garbage or solid waste has been a problem for as long as there have been settlements and residential areas. Waste management is all about transforming solid waste into a useful resource. Every family, including business owners worldwide, should adopt solid waste management. Industrialization has delivered both good and evil things in large quantities. The production of solid waste is one of industrialization's negative repercussions. The goal of current treatment procedures is to recover and use as many of the components found in the discarded wastes as a resource as feasible while lowering the amount of solid waste that needs to be landfilled. The environment and human health could be endangered by the inappropriate treatment of solid wastes. Workers in this profession are most at risk for direct health dangers, hence it is important to prevent them from contact with wastes as much as possible.

Table 1 - Solid Waste Generation (MT/Day)

Sl. No.	District	Solid waste generated (MT/day)
1	ANUGUL	35.1
2	BALANGIR	53.62
3	BALESHWAR	59.13
4	BARGARH	58.43
5	BHADRAK	69.33
6	BOUDH	6
7	CUTTACK	227.84
8	DEOGARH	18.548
9	DHENKANAL	28.7
10	GAJAPATI	33.9
11	GANJAM	469.69
12	JAGATSINGHAPUR	23.81
13	JAJAPUR	20
14	JHARSUGUDA	78.27
15	KALAHANDI	43.3
16	KANDHAMAL	22.1
17	KENDRAPARA	29
18	KEONJHAR	71.5
19	KHORDHA	735.78
20	KORAPUT	64.682
21	MALKANGIRI	13.32
22	MAYURBHANJ	59.3
23	NABARANGPUR	23.84
24	NAYAGARH	213.38
25	NUAPADA	10
26	PURI	96.14
27	RAYAGADA	40.82
28	SAMBALPUR	229.818
29	SUBARNAPUR	42.43
30	SUNDARGARH	185.784
	TOTAL	3063.562

The total solid waste produced daily in Odisha's 30 districts is 3063.562 Mt/day. The districts of Khordha and Ganjam produces majority of solid wastes in Odisha. Least solid waste generated districts of Odisha are Boudh, Malkangiri and Nuapada.

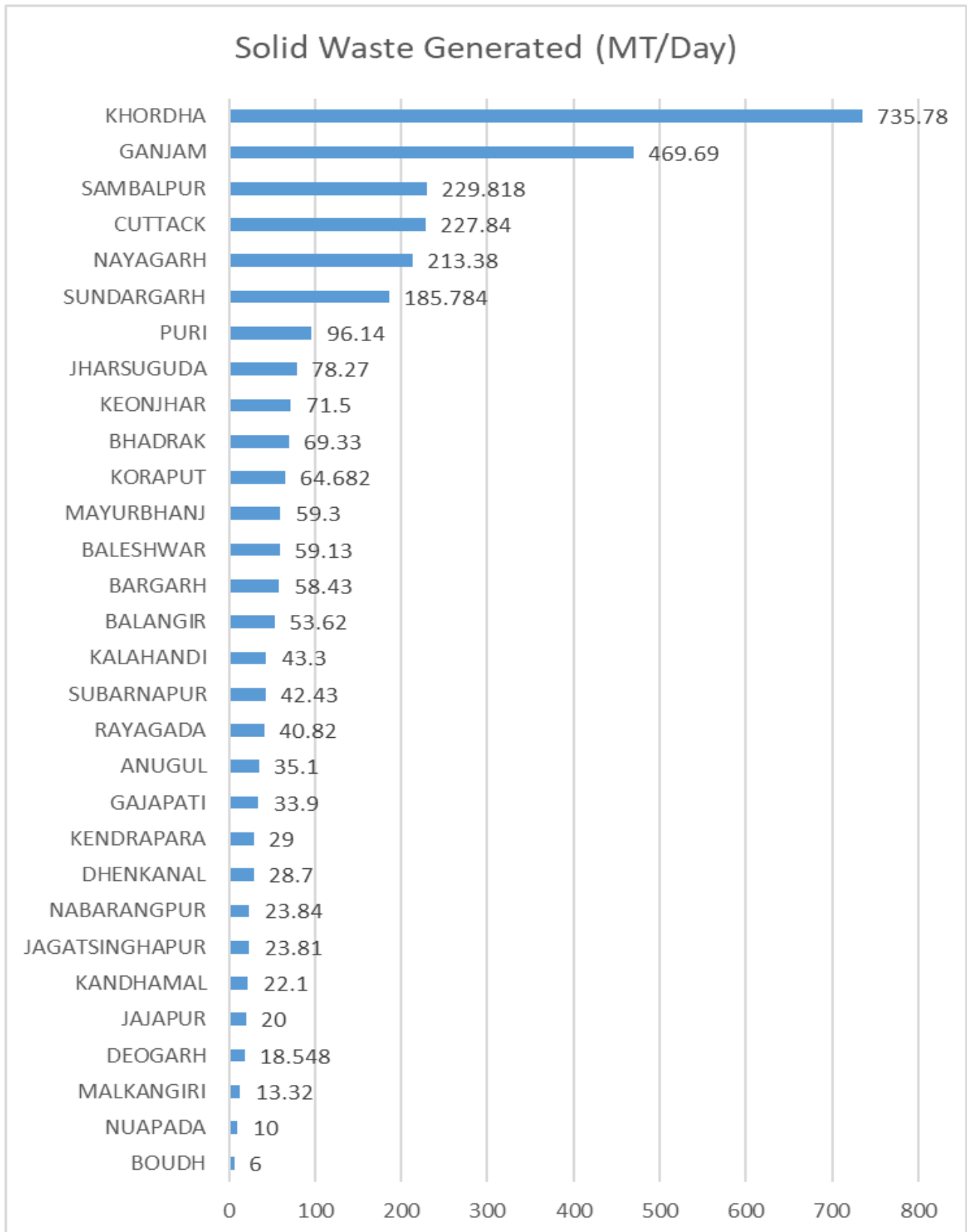


Figure 1 - Solid Waste Generated Per Day (MT/Day)

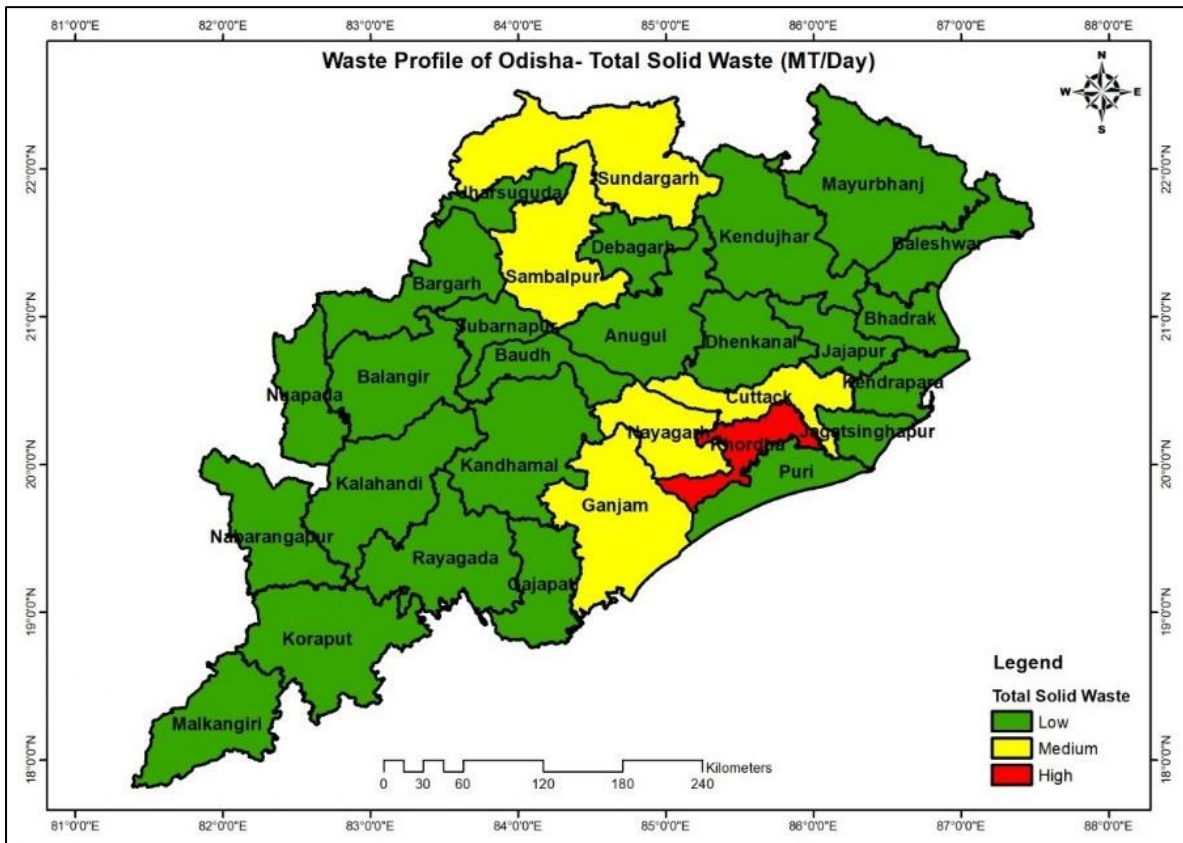


Figure 2: Total solid waste generation (MT/Day)

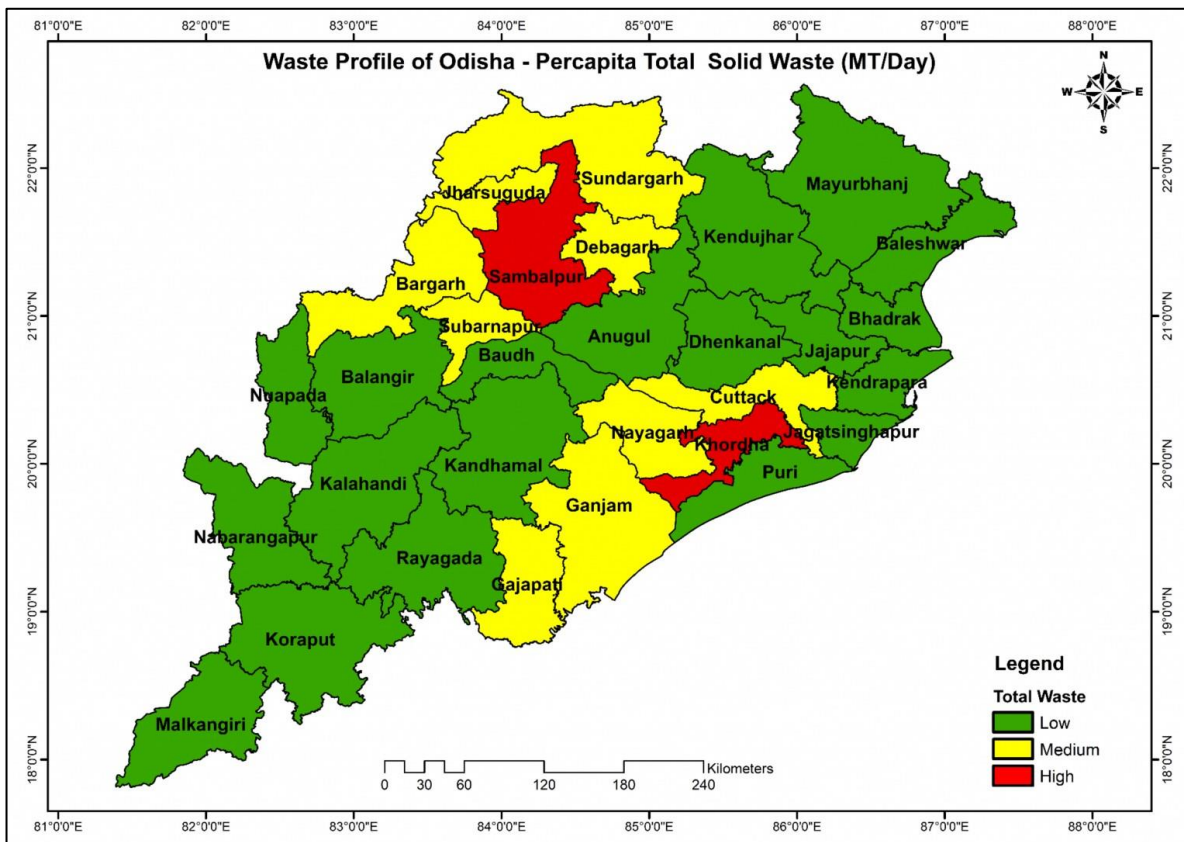


Figure 3: Total Per capita solid waste generation (MT/Day)

Khordha and Sambalpur have the highest per capita solid waste generation.

Table 2: Segregation of solid waste

Sl. No.	Districts	Response			Percentage of segregation	Segregation of Hazardous waste
		Yes	No	Not Available		
1	Anugul	1			Not Available	
2	Balangir	1			55%	
3	Baleshwar	1			Not Available	
4	Bargarh	1			55%	
5	Bhadrak	1			80%	
6	Boudh		1		Not Available	
7	Cuttack	1			80%	
8	Deogarh	1			55%	
9	Dhenkanal			1	Not Available	
10	Gajapati	1			60%	
11	Ganjam	1			55%	
12	Jagatsinghapur	1			60%	
13	Jajapur	1			90%	1
14	Jharsuguda	1			Not Available	
15	Kalahandi	1			60%	
16	Kandhamal	1			Not Available	
17	Kendrapara	1			60%	
18	Keonjhar	1			100%	
19	Khordha	1			100%	1
20	Koraput	1			60%	
21	Malkangiri	1			60%	
22	Mayurbhanj	1			Not Available	
23	Nabarangpur	1			60%	
24	Nayagarh	1			100%	1
25	Nuapada	1			Not Available	
26	Puri	1			Not Available	
27	Rayagada	1			60%	
28	Sambalpur	1			Not Available	
29	Subarnapur	1			90%	1
30	Sundargarh	1			60%	
Total		28	1	1		4
	% of Total	93%	3%	3%		13%

Solid waste is segregated in 28 districts of the state. Boudh do not segregate their solid waste while the data on Waste segregation was not available for Dhenkanal district. Khordha, Nayagarh and Keonjhar are 3 districts that have achieved 100% segregation. 4 districts, namely, Jajapur, Khordha, Nayagarh and Subarnapur are segregating hazardous waste. Khordha, Nayagarh and Keonjhar are 3 districts which have achieved 100% waste segregation



Figure 4: Segregation of Hazardous Waste

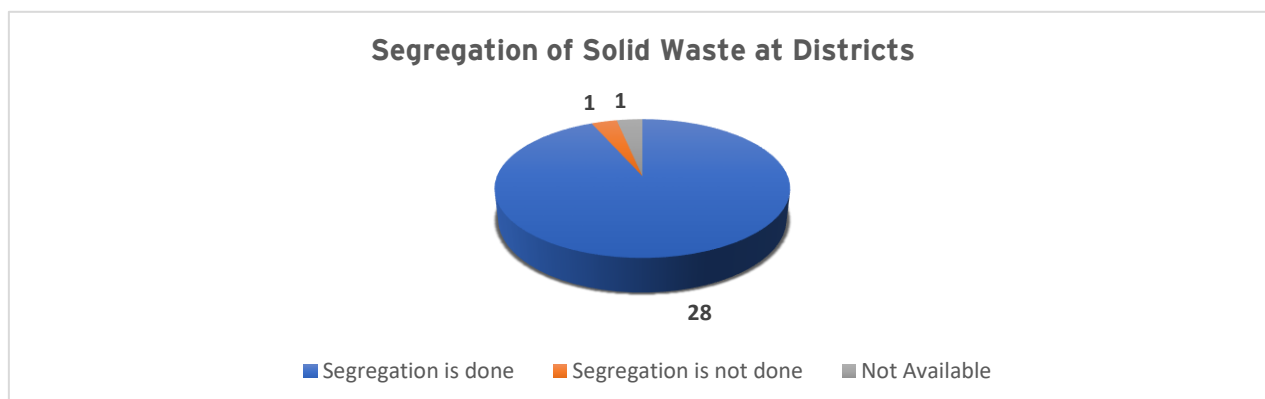


Figure 5: Segregation of Solid Waste at Districts

Table 3 - Percentage of Solid Waste Generation

Sl. No.	Districts	100%	80% to 100%	50% to 80%	Not Available
1	Anugul				1
2	Balangir			1	
3	Baleshwar				1
4	Bargarh			1	
5	Bhadrak		1		
6	Boudh				1
7	Cuttack		1		
8	Deogarh			1	
9	Dhenkanal				1
10	Gajapati			1	
11	Ganjam			1	
12	Jagatsinghapur			1	
13	Jajapur		1		
14	Jharsuguda				1
15	Kalahandi			1	
16	Kandhamal				1
17	Kendrapara			1	
18	Keonjhar	1			
19	Khordha	1			
20	Koraput			1	
21	Malkangiri			1	
22	Mayurbhanj				1
23	Nabarangpur			1	
24	Nayagarh	1			
25	Nuapada				1
26	Puri				1
27	Rayagada			1	
28	Sambalpur				1
29	Subarnapur		1		
30	Sundargarh			1	
	Grand Total	3	4	13	10
	% of Total	10%	13%	43%	33%

Khordha, Nayagarh and Keonjhar are 3 districts which have achieved 100% segregation. Bhadrak, Cuttack, Jajapur, Subarnapur have more than 80 per cent of waste segregation. Balangir, Bargarh, Deogarh, Gajapati, Ganjam, Jagatsinghapur, Kalahandi, Kendrapara, Koraput, Malkangiri, Nabarangpur, Rayagada and Sundargarh have achieved 50 - 80 per cent segregation. Data of waste segregation was not available for Anugul, Baleshwar, Boudh, Dhenkanal, Jharsuguda, Kandhamal, Mayurbhanj, Nuapada, Puri and Sambalpur.

Table 4 - Manual Sweeping, Availability & Adequacy of PPE Kits

Sl. No.	Districts	Yes	No	Availability of PPE kits	Adequacy of available PPE kits
1	Anugul	1			
2	Balangir	1			
3	Baleshwar	1		1	
4	Bargarh	1		1	
5	Bhadrak	1		1	1
6	Boudh	1		1	1
7	Cuttack	1		1	1
8	Deogarh	1		1	
9	Dhenkanal	1			
10	Gajapati		1		
11	Ganjam	1			
12	Jagatsinghapur	1		1	
13	Jajapur	1			
14	Jharsuguda	1			
15	Kalahandi	1		1	1
16	Kandhamal	1			
17	Kendrapara	1		1	
18	Keonjhar	1		1	1
19	Khordha	1			
20	Koraput	1		1	
21	Malkangiri	1		1	
22	Mayurbhanj	1			
23	Nabarangpur	1		1	
24	Nayagarh	1		1	1
25	Nuapada	1		1	1
26	Puri	1			
27	Rayagada	1		1	
28	Sambalpur	1			
29	Subarnapur	1		1	
30	Sundargarh	1		1	
Total		29	1	18	7

Gajapati district is the only district where manual sweeping is not done. Only 18 of the 29 districts where manual sweeping is done have PPE kits accessible. Only 7 out of the 18 districts where PPE kits are accessible have enough PPE supplies. Baleshwar, Bargarh, Bhadrak, Boudh, Cuttack, Deogarh, Jagatsinghapur, Kalahandi, Kendrapara, Keonjhar, Koraput, Malkangiri, Nabarangpur, Nayagarh, Nuapada, Rayagada, Subarnapur and Sundargarh had PPE kits for workers doing Manual Sweeping. Nayagarh, Nuapada, Keonjhar, Kalahandi, Bhadrak, Boudh and Cuttack have adequate PPE Kits.

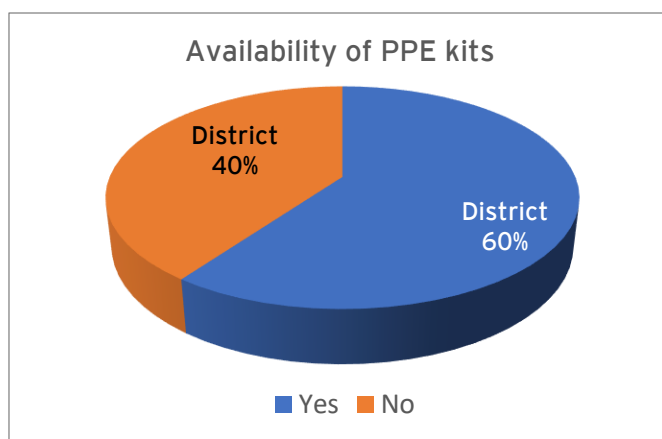


Figure 6: Availability of PPE Kits

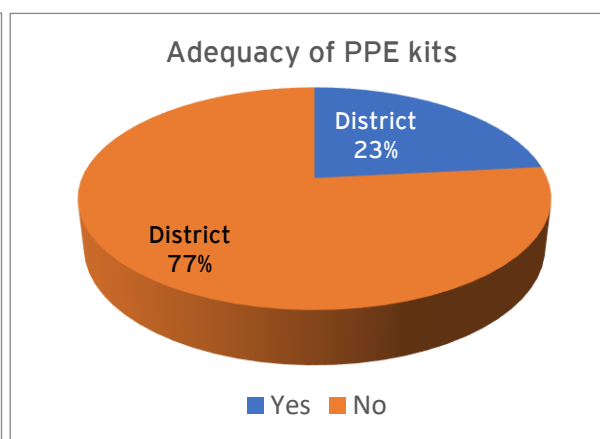


Figure 7: Adequacy of PPE Kits

PPE kits for manual sweeping is available at 60 per cent of the districts and remaining 40 per cent doesn't have access to PPE kits. However only 23 per cent of all the districts have adequate PPE kits.

The mechanical sweeping system is adequate in the districts of Nayagarh and Puri only. Though mechanical sweepings systems are available in the districts of Balangir, Bhadrak, Cuttack, Khordha and Sambalpur, these systems are inadequate.

Table 5 - Provisions for Mechanical Road Sweeping Systems

SI. No.	Districts	Yes	No	Not Available
1	Anugul		1	
2	Balangir	1		
3	Baleshwar			1
4	Bargarh		1	
5	Bhadrak	1		
6	Boudh			1
7	Cuttack	1		
8	Deogarh		1	
9	Dhenkanal		1	
10	Gajapati		1	
11	Ganjam		1	
12	Jagatsinghapur		1	
13	Jajapur		1	
14	Jharsuguda			1
15	Kalahandi		1	
16	Kandhamal		1	
17	Kendrapara		1	
18	Keonjhar		1	
19	Khordha	1		
20	Koraput		1	
21	Malkangiri		1	
22	Mayurbhanj		1	
23	Nabarangpur		1	
24	Nayagarh	1		
25	Nuapada		1	
26	Puri	1		
27	Rayagada		1	
28	Sambalpur	1		
29	Subarnapur		1	
30	Sundargarh		1	
Total		7	20	3
	% of Total	23%	67%	10%

Mechanical Road Sweeping systems are available only in the districts of Balangir, Bhadrak, Cuttack, Khordha, Sambalpur, Puri and Nayagarh. However, data on mechanical road sweeping systems of Baleshwar, Boudh, Jharsuguda were not available.

Table 6 - Adequacy of Mechanical Road Sweeping Systems

SI. No.	Districts	Yes	Adequacy of system
1	Anugul		
2	Balangir	1	Not Adequate
3	Baleshwar		
4	Bargarh		
5	Bhadrak	1	Not Adequate
6	Boudh		
7	Cuttack	1	Not Adequate
8	Deogarh		
9	Dhenkanal		
10	Gajapati		
11	Ganjam		

Sl. No.	Districts	Yes	Adequacy of system
12	Jagatsinghapur		
13	Jajapur		
14	Jharsuguda		
15	Kalahandi		
16	Kandhamal		
17	Kendrapara		
18	Keonjhar		
19	Khordha	1	Not Adequate
20	Koraput		
21	Malkangiri		
22	Mayurbhanj		
23	Nabarangpur		
24	Nayagarh	1	Adequate
25	Nuapada		
26	Puri	1	Adequate
27	Rayagada		
28	Sambalpur	1	Not Adequate
29	Subarnapur		
30	Sundargarh		
Total		7	2
	% of Total	23%	7%

Mechanical Road Sweeping systems are available only in the districts of Balangir, Bhadrak, Cuttack, Khordha, Sambalpur, Puri and Nayagarh, however Nayagarh and Puri were the only districts whose mechanical road sweeping systems were adequate. Mechanical Road Sweeping systems are adequate in 7 per cent of all the total districts. Data for adequacy of Mechanical sweeping are represented in Table 6 and graphical representation in the form of pie chart in **Error! Reference source not found.**

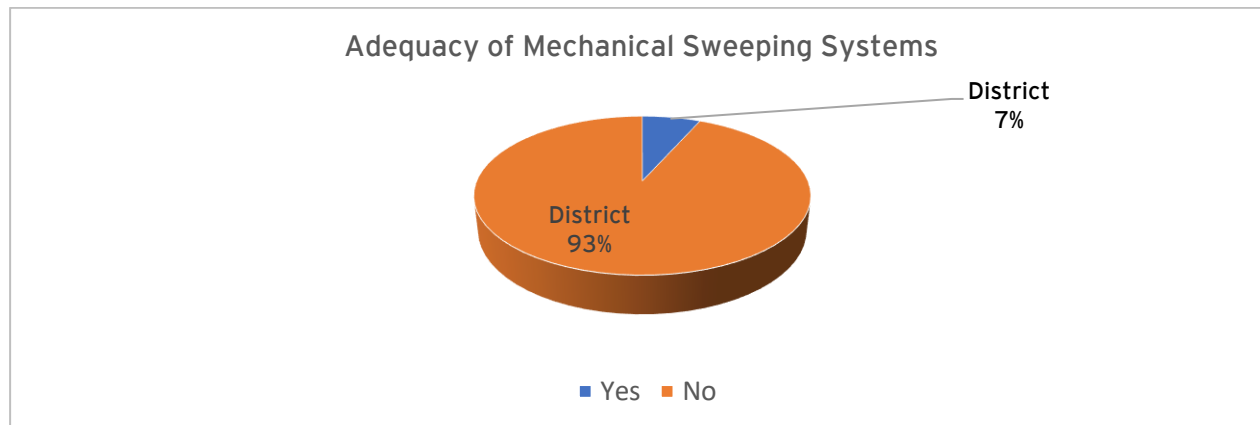


Figure 8: Adequacy of Mechanical Road Sweeping Systems

Table 7 - Provision of Waste Collection Trolley

Sl. No.	Districts	No	Yes
1	Anugul		1
2	Balangir		1
3	Baleshwar		1
4	Bargarh		1
5	Bhadrak		1
6	Boudh		1
7	Cuttack		1
8	Deogarh		1
9	Dhenkanal		1
10	Gajapati		1
11	Ganjam		1

Sl. No.	Districts	No	Yes
12	Jagatsinghapur		1
13	Jajapur		1
14	Jharsuguda	1	
15	Kalahandi		1
16	Kandhamal		1
17	Kendrapara		1
18	Keonjhar		1
19	Khordha		1
20	Koraput		1
21	Malkangiri		1
22	Mayurbhanj		1
23	Nabarangpur		1
24	Nayagarh		1
25	Nuapada		1
26	Puri		1
27	Rayagada		1
28	Sambalpur		1
29	Subarnapur		1
30	Sundargarh		1
Total		1	29

Jharsuguda district is the only district that does not provide waste collection trolley with separate compartments.

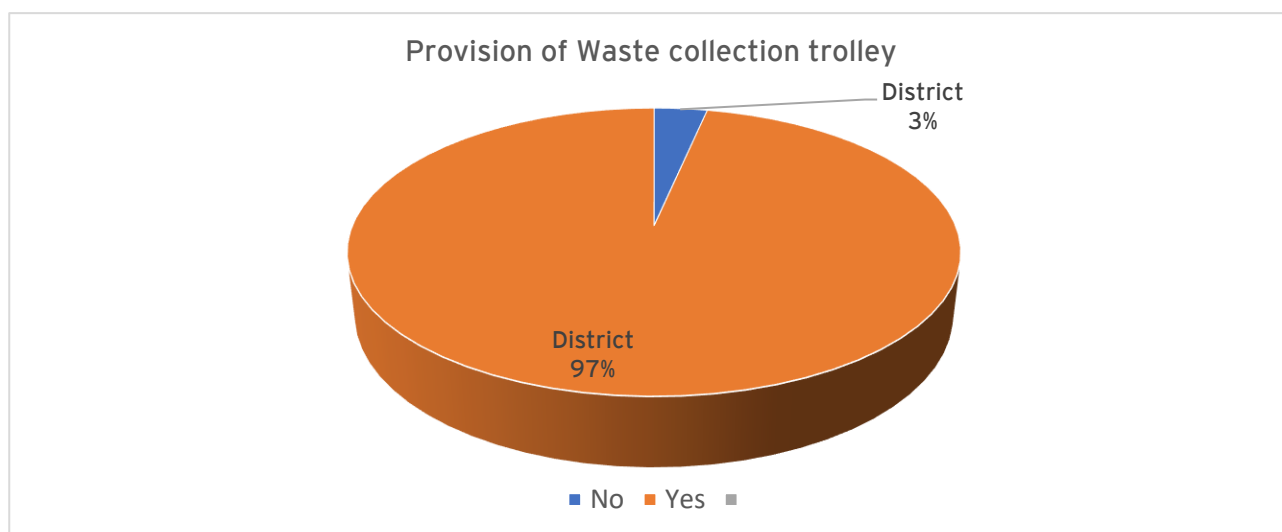


Figure 9: Provision of waste collection trolleys

97 per cent of the districts has provisions for Waste Collection Trolley.

Table 8 - Provision of Mini Collection Trucks

Sl. No.	Districts	Yes	No	Not Available
1	Anugul	1		
2	Balangir	1		
3	Baleshwar	1		
4	Bargarh	1		
5	Bhadrak	1		
6	Boudh			1
7	Cuttack	1		
8	Deogarh	1		
9	Dhenkanal	1		
10	Gajapati	1		
11	Ganjam	1		
12	Jagatsinghapur	1		

Sl. No.	Districts	Yes	No	Not Available
13	Jajapur		1	
14	Jharsuguda		1	
15	Kalahandi	1		
16	Kandhamal	1		
17	Kendrapara	1		
18	Keonjhar	1		
19	Khordha	1		
20	Koraput	1		
21	Malkangiri	1		
22	Mayurbhanj	1		
23	Nabarangpur	1		
24	Nayagarh	1		
25	Nuapada	1		
26	Puri	1		
27	Rayagada	1		
28	Sambalpur	1		
29	Subarnapur	1		
30	Sundargarh	1		
Total		27	2	1

Jajapur, Jharsuguda and Boudh are 3 districts which do not provide mini collection trucks with separate compartments. Data of mini collection trucks with separate compartments for Boudh district not available.

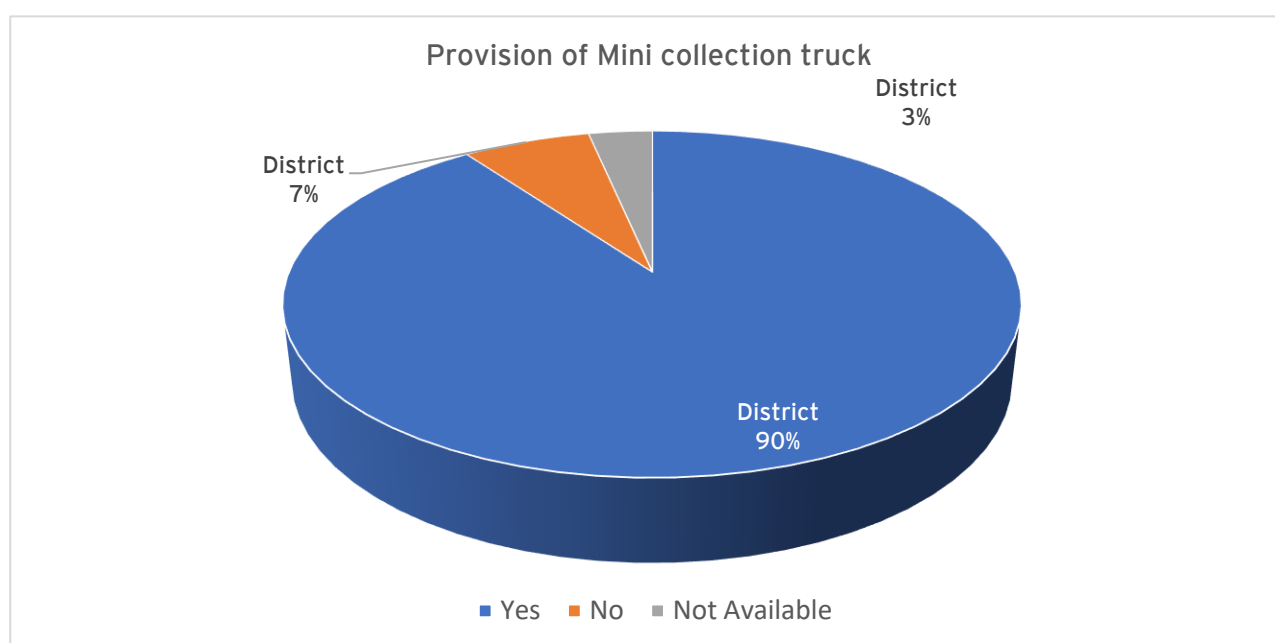


Figure 10 - Provision for Mini Collection Trucks

Provision of Mini Collection Truck was available for 90 per cent districts.

Table 9 - Availability of Waste Deposition Centers

Sl. No.	Districts	Yes	No	Not Available	No. of waste deposition centres required
1	Anugul	1			0
2	Balangir	1			0
3	Baleshwar	1			1
4	Bargarh		1		10
5	Bhadrak		1		0
6	Boudh	1			0
7	Cuttack		1		0
8	Deogarh		1		2
9	Dhenkanal		1		12

10	Gajapati	1			1
11	Ganjam	1			0
12	Jagatsinghapur		1		4
13	Jajapur		1		0
14	Jharsuguda	1			0
15	Kalahandi		1		9
16	Kandhamal	1			0
17	Kendrapara		1		4
18	Keonjhar	1			0
19	Khordha	1			0
20	Koraput		1		8
21	Malkangiri		1		11
22	Mayurbhanj	1			0
23	Nabarangpur		1		5
24	Nayagarh	1			2
25	Nuapada	1			0
26	Puri	1			0
27	Rayagada		1		6
28	Sambalpur			1	0
29	Subarnapur		1		3
30	Sundargarh		1		10
Total		14	15	1	88

14 districts in the state has Waste Deposition Centres and 15 districts doesn't have any waste deposition centres. Data of Waste Deposition Centres for Sambalpur district not available. A total of 88 waste deposition centres are required by the districts.

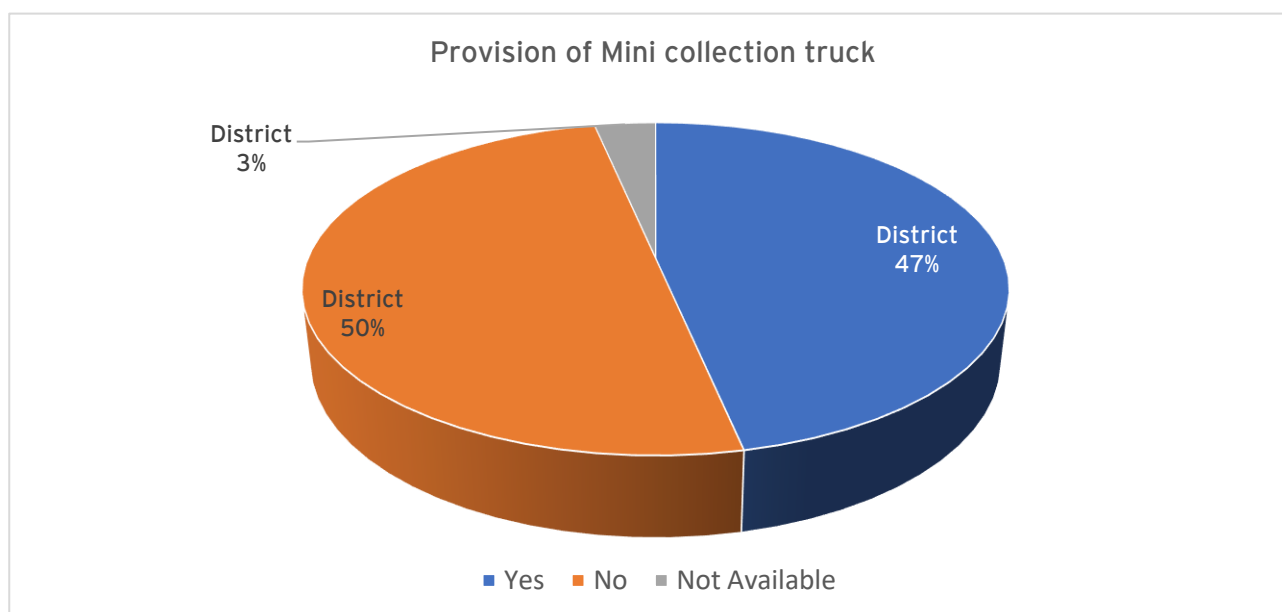


Figure 11 - Provision of Mini Collection Truck

50 per cent of the districts do not have waste deposition centres. Data for waste deposition centres are not available for 3 per cent of the districts.

Table 10 - Availability of Waste Transport Facilities

Sl. No.	District	Yes
1	Anugul	1
2	Balangir	1
3	Baleshwar	1
4	Bargarh	1
5	Bhadrak	1

Sl. No.	District	Yes
6	Boudh	1
7	Cuttack	1
8	Deogarh	1
9	Dhenkanal	1
10	Gajapati	1
11	Ganjam	1
12	Jagatsinghapur	1
13	Jajapur	1
14	Jharsuguda	1
15	Kalahandi	1
16	Kandhamal	1
17	Kendrapara	1
18	Keonjhar	1
19	Khordha	1
20	Koraput	1
21	Malkangiri	1
22	Mayurbhanj	1
23	Nabarangpur	1
24	Nayagarh	1
25	Nuapada	1
26	Puri	1
27	Rayagada	1
28	Sambalpur	1
29	Subarnapur	1
30	Sundargarh	1
Total		30
	% of Total	100%

Waste Transport Facilities are available in all the 30 districts of Odisha

Table 11 - Adequacy of Waste Transport Facilities

Sl. No.	District	Adequate	Not Adequate	Not Available
1	Anugul			1
2	Balangir		1	
3	Baleshwar	1		
4	Bargarh		1	
5	Bhadrak		1	
6	Boudh			1
7	Cuttack	1		
8	Deogarh		1	
9	Dhenkanal		1	
10	Gajapati		1	
11	Ganjam		1	
12	Jagatsinghapur		1	
13	Jajapur	1		
14	Jharsuguda			1
15	Kalahandi		1	
16	Kandhamal	1		
17	Kendrapara		1	
18	Keonjhar			1
19	Khordha		1	
20	Koraput		1	
21	Malkangiri		1	
22	Mayurbhanj	1		
23	Nabarangpur		1	
24	Nayagarh		1	
25	Nuapada	1		
26	Puri	1		
27	Rayagada		1	
28	Sambalpur	1		
29	Subarnapur		1	

Sl. No.	District	Adequate	Not Adequate	Not Available
30	Sundargarh		1	
Total		8	18	4
	% of Total	27%	60%	13%

Baleshwar, Cuttack, Jajapur, Kandhamal, Mayurbhanj, Nuapada, Puri, Sambalpur has adequate waste transport facilities. Data of adequate waste transport facilities not available for 4 districts viz. Anugul, Boudh, Jharsuguda, Keonjhar.

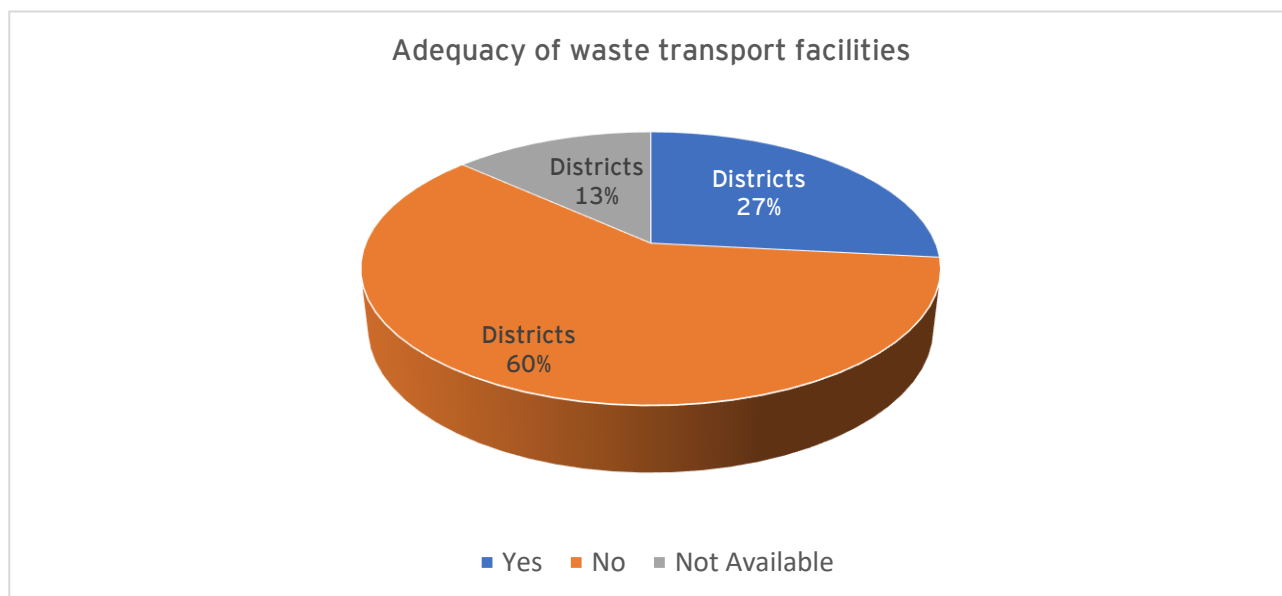


Figure 12 - Adequacy of Waste Transport Facilities

27% of all districts have adequate waste transport facilities. Data of Waste Transport facilities for 13 per cent of all districts not available.

Table 12 - Availability of Bulk Waste Trucks

Sl. No.	District	Yes	No	Not Available
1	Anugul	1		
2	Balangir		1	
3	Baleshwar	1		
4	Bargarh		1	
5	Bhadrak	1		
6	Boudh			1
7	Cuttack		1	
8	Deogarh		1	
9	Dhenkanal		1	
10	Gajapati		1	
11	Ganjam	1		
12	Jagatsinghapur		1	
13	Jajapur		1	
14	Jharsuguda			1
15	Kalahandi		1	
16	Kandhamal	1		
17	Kendrapara		1	
18	Keonjhar	1		
19	Khordha	1		
20	Koraput		1	
21	Malkangiri		1	
22	Mayurbhanj	1		
23	Nabarangpur		1	
24	Nayagarh	1		
25	Nuapada			1

Sl. No.	District	Yes	No	Not Available
26	Puri	1		
27	Rayagada		1	
28	Sambalpur	1		
29	Subarnapur		1	
30	Sundargarh		1	
Total		11	16	3
	% of Total	37%	53%	10%

Bulk Waste Trucks are available in 11 districts. Data for Bulk Waste trucks not available for 3 districts viz. Boudh, Nuapada, Jharsuguda.

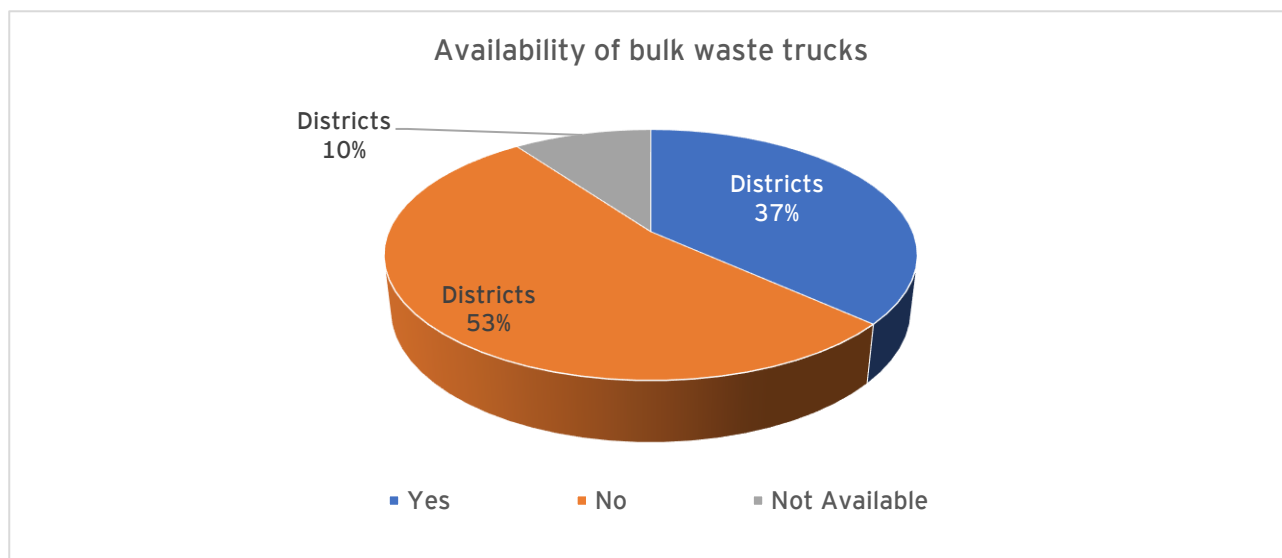


Figure 13 - Availability of Bulk Waste Trucks

Bulk waste trucks are available only in 37% districts of the state. Data on Bulk waste trucks are not available for 10 per cent of the total districts.

Table 13 - Availability of Waste Transfer Points

Sl. No.	District	Yes	No	Not Available
1	Anugul	1		
2	Balangir		1	
3	Baleshwar	1		
4	Bargarh		1	
5	Bhadrak		1	
6	Boudh			1
7	Cuttack	1		
8	Deogarh		1	
9	Dhenkanal		1	
10	Gajapati		1	
11	Ganjam	1		
12	Jagatsinghapur		1	
13	Jajapur		1	
14	Jharsuguda	1		
15	Kalahandi		1	
16	Kandhamal	1		
17	Kendrapara		1	
18	Keonjhar	1		
19	Khordha	1		
20	Koraput		1	
21	Malkangiri		1	
22	Mayurbhanj		1	
23	Nabarangpur		1	

Sl. No.	District	Yes	No	Not Available
24	Nayagarh	1		
25	Nuapada			1
26	Puri	1		
27	Rayagada		1	
28	Sambalpur			1
29	Subarnapur		1	
30	Sundargarh		1	
Total		10	17	3
Total		33%	57%	10%

Waste Transfer points are available in 10 districts viz. Anugul, Baleshwar, Cuttack, Ganjam, Jharsuguda, Kandhamal, Keonjhar, Khordha, Nayagarh and Puri. Data of Waste Transfer points for Nuapada, Sambalpur, Boudh are not available.

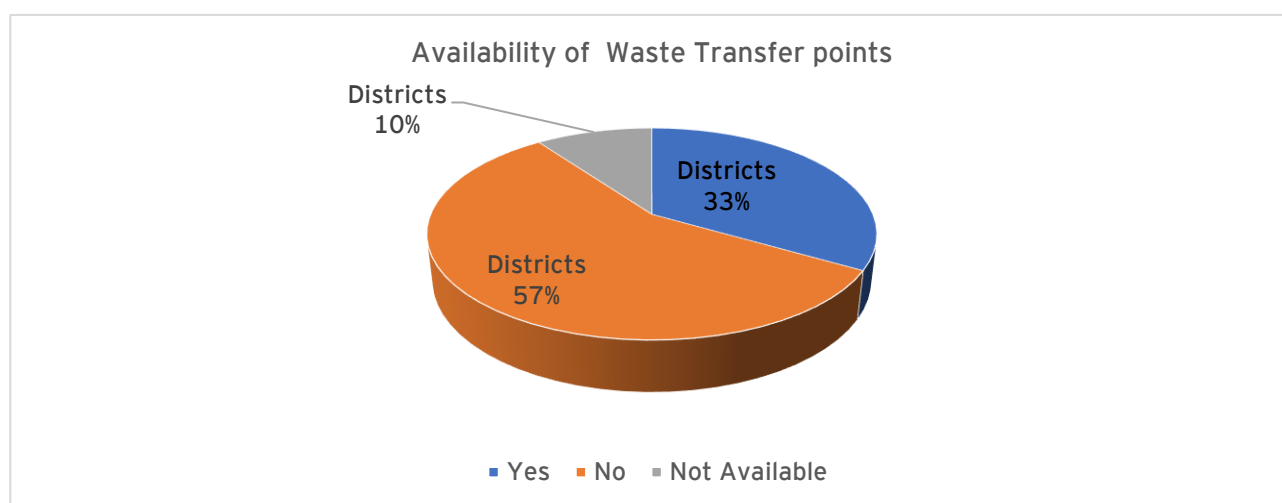


Figure 14 - Availability of Waste Transfer Points

Only 33 per cent of the districts have waste transfer points. Data of Waste Transfer points not available for 33 per cent of total districts.

Table 14 -Arrangement of 100 % Door to Door Collection

Sl.No.	Row Labels	Yes	No	Percentage of door-to-door collection in ULB	Percentage of door-to-door collection in RLB
1	Anugul	1		100%	100%
2	Balangir		1	70%	Not Available
3	Baleshwar	1		100%	Not Available
4	Bargarh	1		100%	Not Available
5	Bhadrak	1		100%	Not Available
6	Boudh	1		100%	Not Available
7	Cuttack	1		100%	Not Available
8	Deogarh	1		100%	50%
9	Dhenkanal	1		100%	50%
10	Gajapati	1		100%	Not Available
11	Ganjam		1	60%	Not Available
12	Jagatsinghapur	1		100%	70%
13	Jajapur	1		100%	Not Available
14	Jharsuguda		1	Not Available	Not Available
15	Kalahandi		1	Not Available	50%
16	Kandhamal	1		Not Available	Not Available
17	Kendrapara		1	Not Available	50%
18	Keonjhar	1		100%	100%
19	Khordha	1		100%	Not Available
20	Koraput		1	75%	Not Available
21	Malkangiri	1		Not Available	Not Available

Sl.No.	Row Labels	Yes	No	Percentage of door-to-door collection in ULB	Percentage of door-to-door collection in RLB
22	Mayurbhanj	1		Not Available	Not Available
23	Nabarangpur		1	50%	Not Available
24	Nayagarh	1		100%	100%
25	Nuapada	1		100%	Not Available
26	Puri	1		100%	100%
27	Rayagada		1	80%	Not Available
28	Sambalpur	1		100%	100%
29	Subarnapur	1		100%	100%
30	Sundargarh	1		100%	Not Available
Total		22	8		
	% of Total	73%	27%		

The districts of Anugul, Baleshwar, Boudh, Gajapati, Kandhamal, Keonjhar, Khordha, Mayurbhanj, Nayagarh, Nuapada, Puri, Sambalpur, Subarnapur and Sundargarh has 100 % collection of Solid Waste. 47 per cent of the districts has 100 per cent collection of Solid Waste.

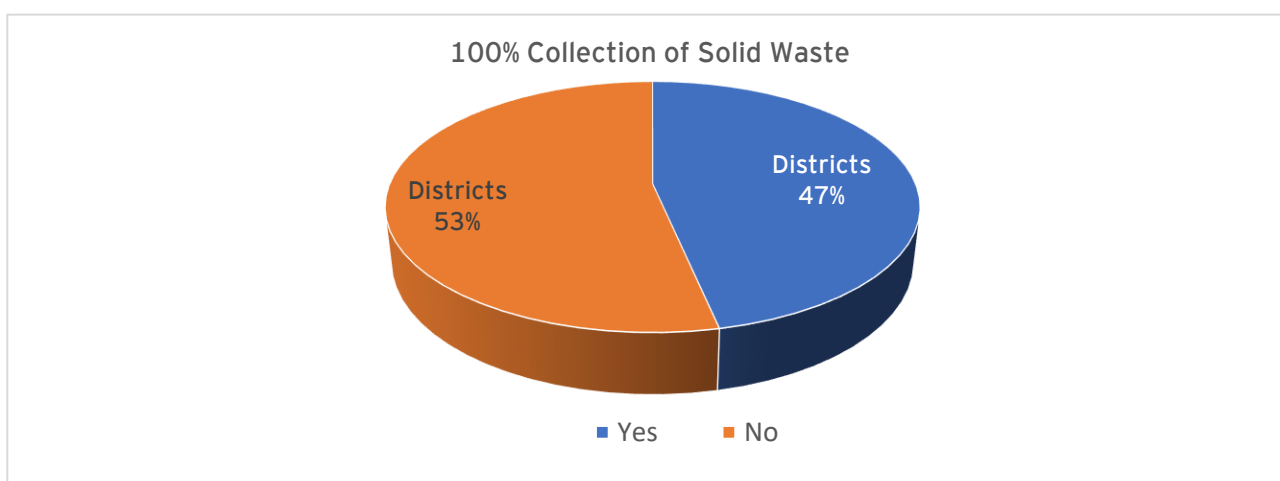


Figure 15 - 100 % Collection of Solid Waste

47 per cent of the districts has 100 per cent collection of Solid Waste.

Table 15 - Arrangement of 100% door to door collection

Sl. No.	Row Labels	Yes	No
1	Anugul	1	
2	Balangir		1
3	Baleshwar	1	
4	Bargarh	1	
5	Bhadrak	1	
6	Boudh	1	
7	Cuttack	1	
8	Deogarh	1	
9	Dhenkanal	1	
10	Gajapati	1	
11	Ganjam		1
12	Jagatsinghapur	1	
13	Jajapur	1	
14	Jharsuguda		1
15	Kalahandi		1
16	Kandhamal	1	
17	Kendrapara		1
18	Keonjhar	1	
19	Khordha	1	
20	Koraput		1
21	Malkangiri	1	

Sl. No.	Row Labels	Yes	No
22	Mayurbhanj	1	
23	Nabarangpur		1
24	Nayagarh	1	
25	Nuapada	1	
26	Puri	1	
27	Rayagada		1
28	Sambalpur	1	
29	Subarnapur	1	
30	Sundargarh	1	
Total		22	8
	% of Total	73%	27%

Arrangement of 100 per cent door to door collection is seen in 73 per cent of the total districts.

Table 16 - Percentage of Door-to-Door waste collection in ULB's

Sl. No.	Row Labels	Percentage of door-to-door collection in ULB's
1	Anugul	100%
2	Balangir	70%
3	Baleshwar	100%
4	Bargarh	100%
5	Bhadrak	100%
6	Boudh	100%
7	Cuttack	100%
8	Deogarh	100%
9	Dhenkanal	100%
10	Gajapati	100%
11	Ganjam	60%
12	Jagatsinghapur	100%
13	Jajapur	100%
14	Jharsuguda	Not Available
15	Kalahandi	Not Available
16	Kandhamal	Not Available
17	Kendrapara	Not Available
18	Keonjhar	100%
19	Khordha	100%
20	Koraput	75%
21	Malkangiri	Not Available
22	Mayurbhanj	Not Available
23	Nabarangpur	50%
24	Nayagarh	100%
25	Nuapada	100%
26	Puri	100%
27	Rayagada	80%
28	Sambalpur	100%
29	Subarnapur	100%
30	Sundargarh	100%

100 per cent waste collection in ULB's was seen in 19 districts. Data for percentage of Door-to-Door waste collection in ULB's was not available for 6 districts viz. Jharsuguda, Kalahandi, Kandhamal, Kendrapara, Malkangiri and Mayurbhanj. Nabarangpur has the lowest per cent of door-to-door waste collection at 50 per cent, followed by Ganjam at 60 per cent. Balangir has door to door collection of waste at 70 per cent while Koraput and Rayagada has door to door collection of waste at 75 and 80 per cent respectively.

Table 17 - % of Solid Waste Collection in RLB's

Sl. No.	Row Labels	Percentage of door-to-door collection in RLB's
1	Anugul	100%
2	Balangir	Not Available
3	Baleshwar	Not Available

Sl. No.	Row Labels	Percentage of door-to-door collection in RLB's
4	Bargarh	Not Available
5	Bhadrak	Not Available
6	Boudh	Not Available
7	Cuttack	Not Available
8	Deogarh	50%
9	Dhenkanal	50%
10	Gajapati	Not Available
11	Ganjam	Not Available
12	Jagatsinghapur	70%
13	Jajapur	Not Available
14	Jharsuguda	Not Available
15	Kalahandi	50%
16	Kandhamal	Not Available
17	Kendrapara	50%
18	Keonjhar	100%
19	Khordha	Not Available
20	Koraput	Not Available
21	Malkangiri	Not Available
22	Mayurbhanj	Not Available
23	Nabarangpur	Not Available
24	Nayagarh	100%
25	Nuapada	Not Available
26	Puri	100%
27	Rayagada	Not Available
28	Sambalpur	100%
29	Subarnapur	100%
30	Sundargarh	Not Available
Total		
% of Total		

100 per cent waste collection in RLB's was seen in 6 districts. Data for Door-to-Door waste collection in RLB's was not available for 19 districts. Deogarh, Dhenkanal, Kalahandi, Kendrapara has the lowest per cent of door-to-door waste collection at 50 per cent, followed by Jagatsinghapur at 70 per cent.

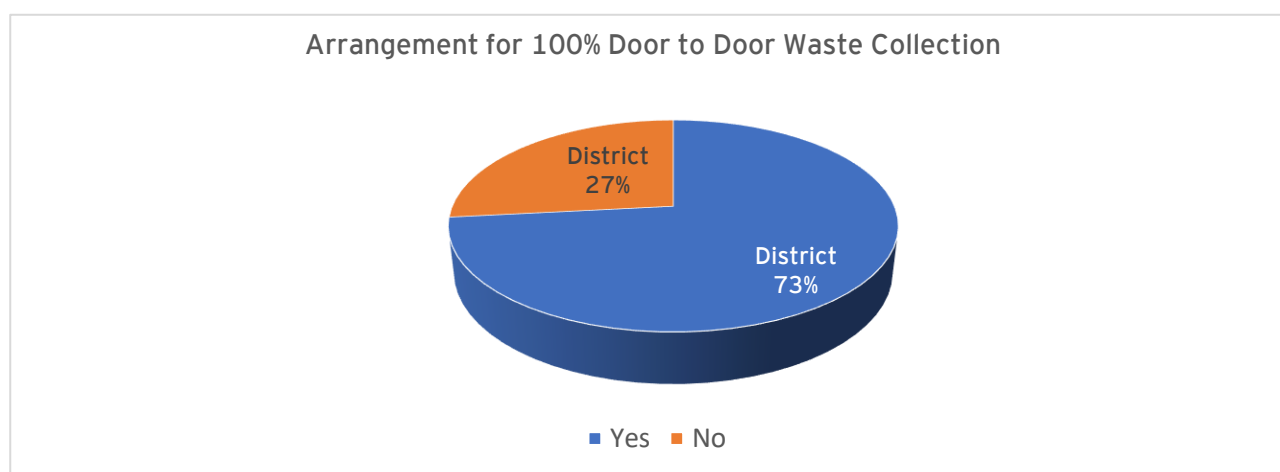


Figure 16 - Arrangement for 100 per cent door to door waste collection

Arrangement for 100% Door to Door waste Collection available in 73% districts.

Table 18 - Availability of Bulk Waste Generators

Sl. No.	District	Yes	No	Not Available
1	Anugul	1		
2	Balangir		1	
3	Baleshwar		1	

Sl. No.	District	Yes	No	Not Available
4	Bargarh			1
5	Bhadrak			1
6	Boudh			1
7	Cuttack	1		
8	Deogarh		1	
9	Dhenkanal			1
10	Gajapati			1
11	Ganjam		1	
12	Jagatsinghapur			1
13	Jajapur			1
14	Jharsuguda	1		
15	Kalahandi			1
16	Kandhamal	1		
17	Kendrapara	1		
18	Keonjhar		1	
19	Khordha	1		
20	Koraput			1
21	Malkangiri	1		
22	Mayurbhanj	1		
23	Nabarangpur		1	
24	Nayagarh	1		
25	Nuapada	1		
26	Puri	1		
27	Rayagada			1
28	Sambalpur			1
29	Subarnapur			1
30	Sundargarh			1
Total		11	6	13
	% of Total	37%	20%	43%

Bulk Waste Generators are available in Anugul, Cuttack, Jharsuguda, Kandhamal, Kendrapara, Khordha, Malkangiri, Mayurbhanj, Nayagarh, Nuapada and Puri.

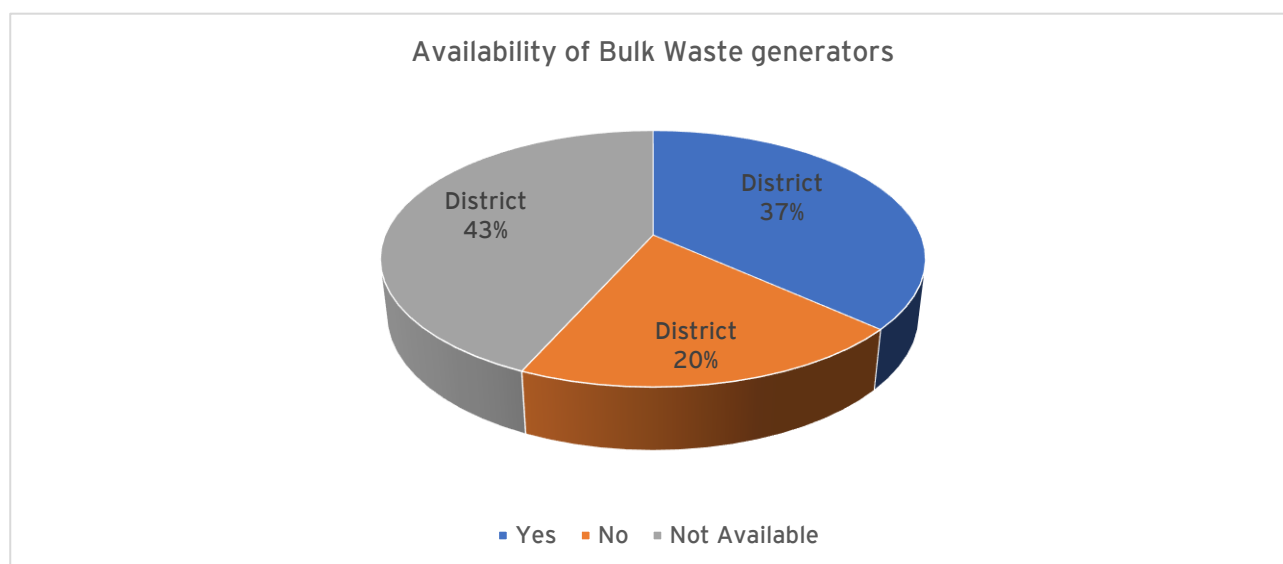


Figure 17 - Availability of Bulk Waste Generators

37 per cent districts have available bulk waste generators, whereas 43 per cent district of the total districts didn't have any data on Availability of Bulk Waste Generators.

Table 19 - Identification of Bulk Waste Generators

Sl. No.	District	Yes	No	Not Available
1	Anugul		1	
2	Balangir		1	
3	Baleshwar			1
4	Bargarh		1	
5	Bhadrak		1	
6	Boudh	1		
7	Cuttack	1		
8	Deogarh		1	
9	Dhenkanal		1	
10	Gajapati	1		
11	Ganjam			1
12	Jagatsinghapur		1	
13	Jajapur		1	
14	Jharsuguda		1	
15	Kalahandi		1	
16	Kandhamal	1		
17	Kendrapara		1	
18	Keonjhar		1	
19	Khordha	1		
20	Koraput		1	
21	Malkangiri	1		
22	Mayurbhanj		1	
23	Nabarangpur		1	
24	Nayagarh	1		
25	Nuapada	1		
26	Puri	1		
27	Rayagada			1
28	Sambalpur			1
29	Subarnapur		1	
30	Sundargarh		1	
Total		9	17	4
% of Total		30%	57%	13%

Identification of Bulk Waste Generators are done for the districts of Boudh, Cuttack, Gajapati, Kandhamal, Khordha, Malkangiri, Nayagarh, Nuapada and Puri. Data on Identification of Bulk Waste Generators are not available for Baleshwar, Ganjam, Rayagada and Sambalpur.

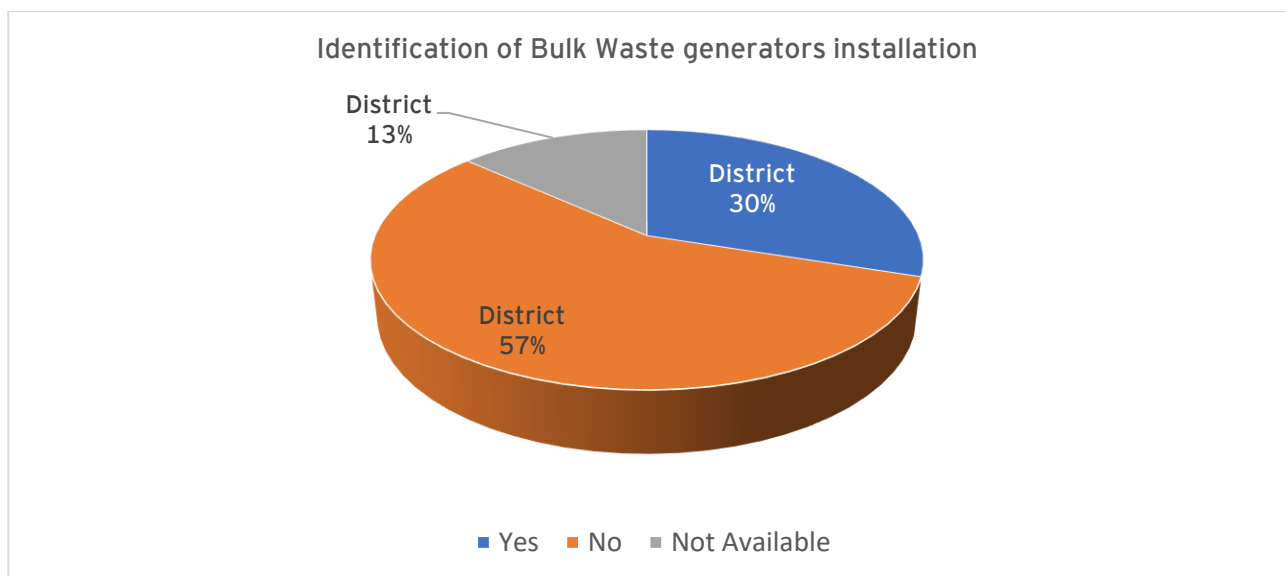


Figure 18: Availability of Bulk Waste Generators

Only 30% of districts have identified installation of bulk waste generators. Data on Bulk Waste Generators not available for 13 per cent of all districts.

Table 20 - Availability of Wet Waste Composting

Sl. No.	District	Yes	No	Not Available	No. of onsite facilities for wet waste
1	Anugul		1		0
2	Balangir		1		0
3	Baleshwar	1			2
4	Bargarh		1		0
5	Bhadrak		1		0
6	Boudh	1			1
7	Cuttack		1		0
8	Deogarh	1			2
9	Dhenkanal		1		0
10	Gajapati		1		0
11	Ganjam		1		0
12	Jagatsinghapur		1		0
13	Jajapur	1			0
14	Jharsuguda	1			0
15	Kalahandi		1		0
16	Kandhamal			1	0
17	Kendrapara	1			2
18	Keonjhar	1			3
19	Khordha	1			172
20	Koraput		1		0
21	Malkangiri		1		0
22	Mayurbhanj			1	0
23	Nabarangpur	1			2
24	Nayagarh		1		0
25	Nuapada	1			1
26	Puri	1			13
27	Rayagada		1		0
28	Sambalpur	1			9
29	Subarnapur		1		0
30	Sundargarh		1		0
Total		12	16	2	207
% of Total		40%	53%	7%	

Facilities for composting of wet waste is available in the districts of Baleshwar, Boudh, Deogarh, Jajapur, Jharsuguda, Kendrapara, Keonjhar, Khordha, Nabarangpur, Nuapada, Puri and Sambalpur. Data on Facilities for composting of wet waste of Kandhamal and Mayurbhanj districts not available.

Table 21 - No. of Onsite facilities for wet waste

Sl. No.	District	Yes	No. of onsite facilities for wet waste
1	Anugul		0
2	Balangir		0
3	Baleshwar	1	2
4	Bargarh		0
5	Bhadrak		0
6	Boudh	1	1
7	Cuttack		0
8	Deogarh	1	2
9	Dhenkanal		0
10	Gajapati		0
11	Ganjam		0
12	Jagatsinghapur		0
13	Jajapur	1	0
14	Jharsuguda	1	0
15	Kalahandi		0

Sl. No.	District	Yes	No. of onsite facilities for wet waste
16	Kandhamal		0
17	Kendrapara	1	2
18	Keonjhar	1	3
19	Khordha	1	172
20	Koraput		0
21	Malkangiri		0
22	Mayurbhanj		0
23	Nabarangpur	1	2
24	Nayagarh		0
25	Nuapada	1	1
26	Puri	1	13
27	Rayagada		0
28	Sambalpur	1	9
29	Subarnapur		0
30	Sundargarh		0
Total		12	207
	% of Total	40%	

The district of Khordha with 172 onsite facilities for wet waste has the maximum number of onsite facilities in the state.

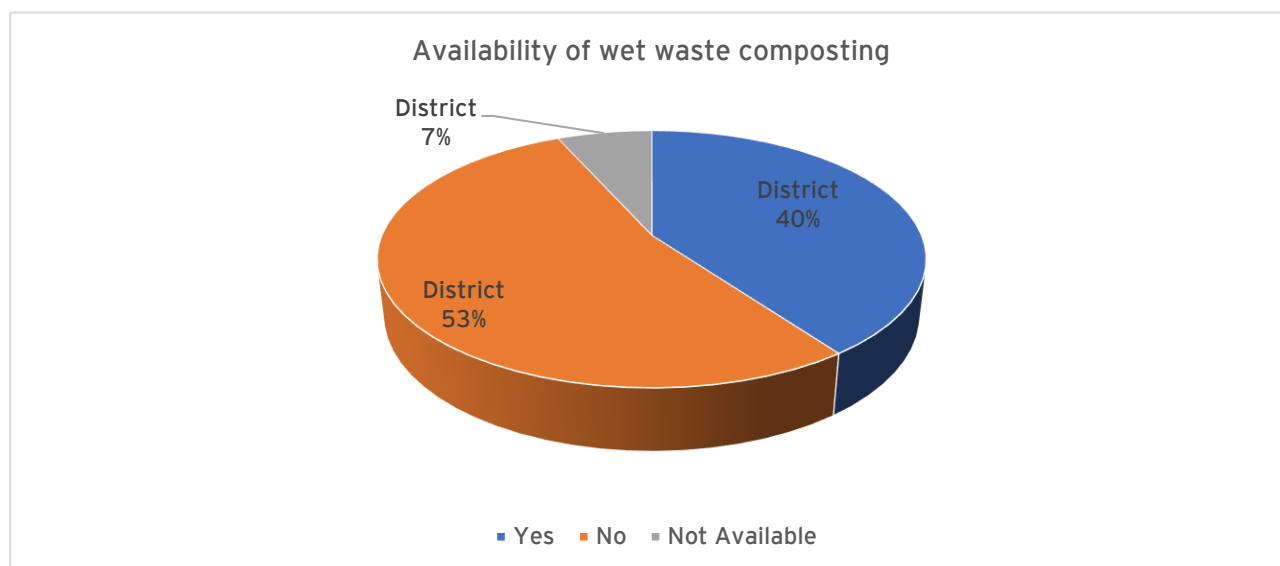


Figure 19 - Availability of Wet Waste Composting

40% of the districts have central bio methanation centre/ Composting of wet waste facilities. Data on Facilities for composting of wet waste not available for 7 per cent of the total number of districts.

Table 22 - Availability of MRF's

Sl. No.	District	No. of MRF exists
1	Anugul	6
2	Balangir	0
3	Baleshwar	0
4	Bargarh	5
5	Bhadrak	2
6	Boudh	1
7	Cuttack	12
8	Deogarh	1
9	Dhenkanal	6
10	Gajapati	2
11	Ganjam	0
12	Jagatsinghapur	2

Sl. No.	District	No. of MRF exists
13	Jajapur	2
14	Jharsuguda	1
15	Kalahandi	5
16	Kandhamal	0
17	Kendrapara	2
18	Keonjhar	2
19	Khordha	4
20	Koraput	4
21	Malkangiri	2
22	Mayurbhanj	0
23	Nabarangpur	2
24	Nayagarh	4
25	Nuapada	3
26	Puri	7
27	Rayagada	3
28	Sambalpur	8
29	Subarnapur	5
30	Sundargarh	3
Total		94
% of Total		

MRF's are available in 28 districts of Odisha. Balangir doesn't have any MRF's. Data on availability of MRF's not available for Kandhamal District. A total of 94 MRF's exists in the 28 districts of Odisha. Cuttack has a total of 12 MRF's in the district which is highest of all districts in the state.

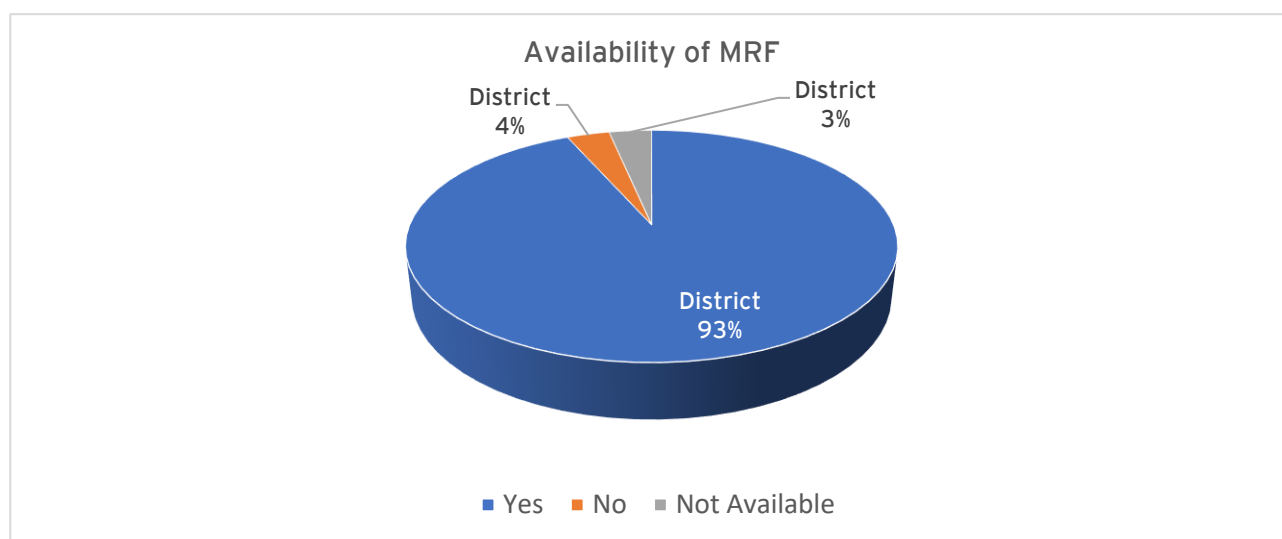


Figure 20 - % Availability of MRF's

93 per cent of the districts have MRF's. Data on availability of MRF's are not available in 3 per cent of the total districts.

Table 23 - Availability of Waste to Energy Plants

Sl. No.	District	Yes	No	Not Available
1	Anugul			1
2	Balangir			1
3	Baleshwar			1
4	Bargarh		1	
5	Bhadrak			1
6	Boudh			1
7	Cuttack			1
8	Deogarh		1	
9	Dhenkanal		1	

Sl. No.	District	Yes	No	Not Available
10	Gajapati	1		
11	Ganjam			1
12	Jagatsinghapur		1	
13	Jajapur		1	
14	Jharsuguda			1
15	Kalahandi		1	
16	Kandhamal			1
17	Kendrapara			1
18	Keonjhar		1	
19	Khordha		1	
20	Koraput		1	
21	Malkangiri		1	
22	Mayurbhanj			1
23	Nabarangpur		1	
24	Nayagarh			1
25	Nuapada		1	
26	Puri			1
27	Rayagada		1	
28	Sambalpur			1
29	Subarnapur		1	
30	Sundargarh		1	
Total		1	15	14
% of Total		3%	50%	47%

Gajapati is the only district where waste to energy plant exists. 15 districts don't have waste to energy plant. Data on availability of waste to energy plant not available for 14 Districts.

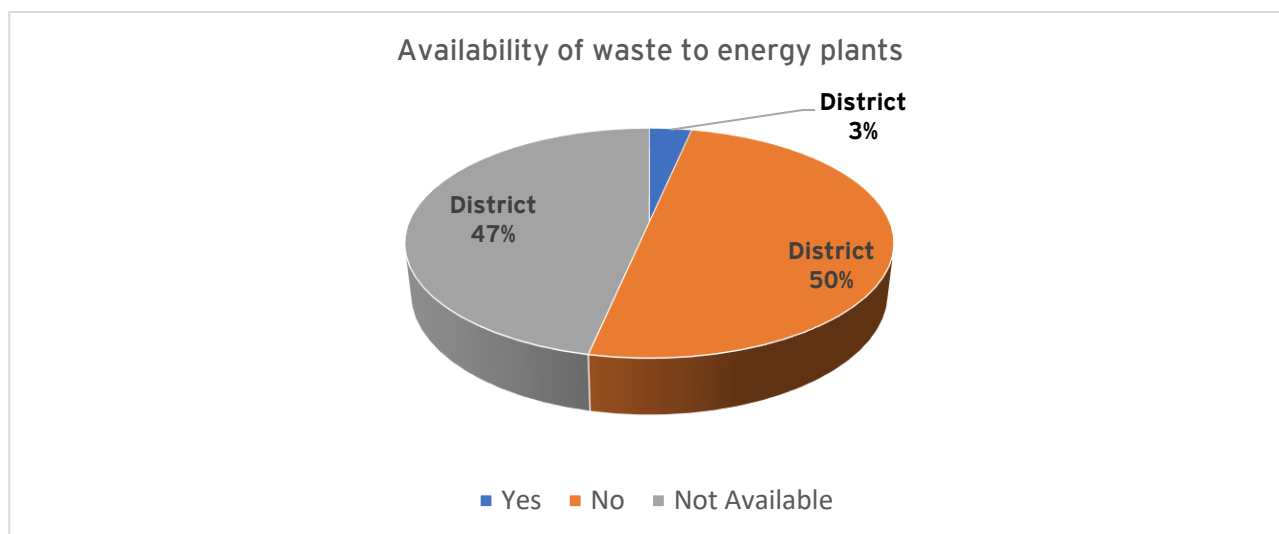


Figure 21 - Availability of Waste to Energy Plants

Only 3 per cent of the total districts have access to Waste to energy plants. 50 per cent of the total districts doesn't have access to waste to energy plants.

Table 24 - Availability of Proper Sanitary Landfill

Sl. No.	District	Yes	No	Not Available
1	Anugul		1	
2	Balangir		1	
3	Baleshwar	1		
4	Bargarh		1	
5	Bhadrak	1		
6	Boudh		1	
7	Cuttack		1	

Sl. No.	District	Yes	No	Not Available
8	Deogarh		1	
9	Dhenkanal		1	
10	Gajapati	1		
11	Ganjam		1	
12	Jagatsinghapur		1	
13	Jajapur		1	
14	Jharsuguda		1	
15	Kalahandi		1	
16	Kandhamal	1		
17	Kendrapara		1	
18	Keonjhar		1	
19	Khordha	1		
20	Koraput		1	
21	Malkangiri		1	
22	Mayurbhanj		1	
23	Nabarangpur		1	
24	Nayagarh	1		
25	Nuapada		1	
26	Puri	1		
27	Rayagada		1	
28	Sambalpur			1
29	Subarnapur		1	
30	Sundargarh		1	
Total		7	22	1
	% of Total	23%	73%	3%

Sanitary landfills are available in 7 districts of Odisha viz. Baleshwar, Bhadrak, Gajapati, Kandhamal, Khordha, Nayagarh, and Puri, however 22 districts doesn't have sanitary landfills. Data on Sanitary landfills not available for Sambalpur District.

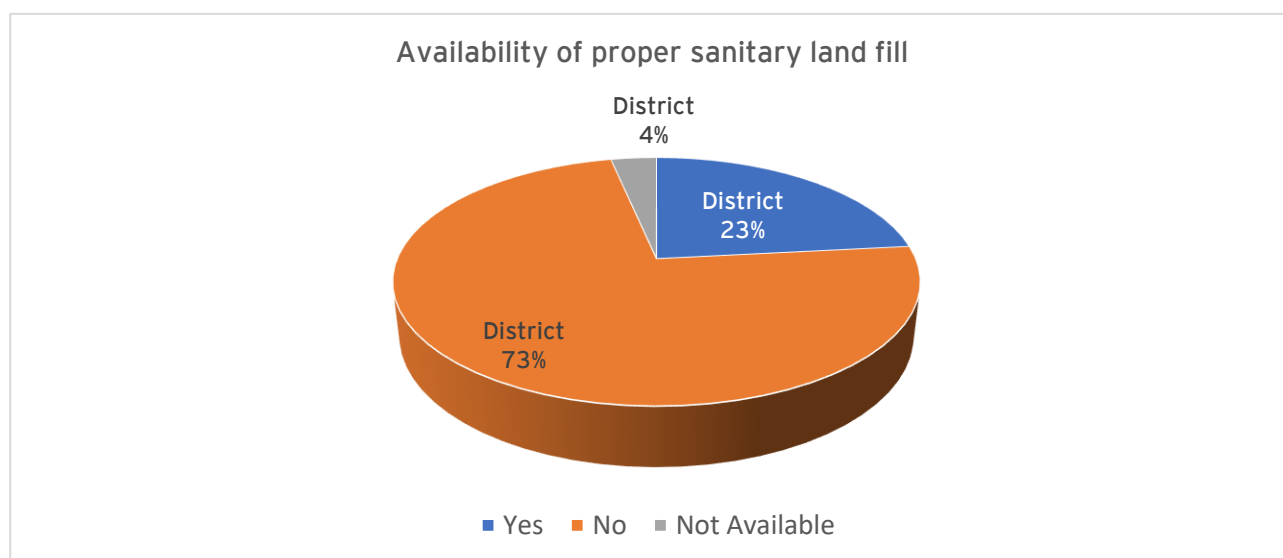


Figure 22: Availability of proper sanitary land fill

Sanitary Landfills were not available in 73 per cent of all districts.

Table 25 - Existence of Plans for Constructing Sanitary Landfill

Sl. No.	District	Yes	No	Not Available	Total
1	Anugul	1			1
2	Balangir	1			1
3	Baleshwar	1			1
4	Bargarh	1			1
5	Bhadrak		1		1

Sl. No.	District	Yes	No	Not Available	Total
6	Boudh			1	1
7	Cuttack	1			1
8	Deogarh	1			1
9	Dhenkanal	1			1
10	Gajapati	1			1
11	Ganjam	1			1
12	Jagatsinghapur	1			1
13	Jajapur		1		1
14	Jharsuguda	1			1
15	Kalahandi	1			1
16	Kandhamal	1			1
17	Kendrapara	1			1
18	Keonjhar		1		1
19	Khordha		1		1
20	Koraput	1			1
21	Malkangiri	1			1
22	Mayurbhanj		1		1
23	Nabarangpur	1			1
24	Nayagarh			1	1
25	Nuapada		1		1
26	Puri		1		1
27	Rayagada	1			1
28	Sambalpur	1			1
29	Subarnapur	1			1
30	Sundargarh	1			1
Total		21	7	2	30
% of Total		70%	23%	7%	100%

Jajapur, Keonjhar, Mayurbhanj, and Nuapada are 4 districts that do not have proper sanitary landfills and also do not have a plan to construction of a sanitary landfill

Table 26 - Availability of Legacy Dumpsites

Sl. No.	District	Yes	No	Not Available
1	Anugul		1	
2	Balangir	1		
3	Baleshwar	1		
4	Bargarh		1	
5	Bhadrak	1		
6	Boudh		1	
7	Cuttack		1	
8	Deogarh		1	
9	Dhenkanal		1	
10	Gajapati	1		
11	Ganjam		1	
12	Jagatsinghapur		1	
13	Jajapur	1		
14	Jharsuguda			1
15	Kalahandi		1	
16	Kandhamal	1		
17	Kendrapara		1	
18	Keonjhar	1		
19	Khordha	1		
20	Koraput		1	
21	Malkangiri		1	
22	Mayurbhanj	1		
23	Nabarangpur		1	
24	Nayagarh			1
25	Nuapada	1		
26	Puri		1	
27	Rayagada	1		

Sl. No.	District	Yes	No	Not Available
28	Sambalpur			1
29	Subarnapur		1	
30	Sundargarh		1	
Total		11	16	3
% of Total		37%	53%	10%

Legacy Dumpsites are available in 11 districts viz. Balangir, Baleshwar Bhadrak, Gajapati, Jajapur, Kandhamal, Keonjhar, Khordha, Mayurbhanj, Nuapada and Rayagada. Data on Legacy Dumpsites are not available for the districts of Jharsuguda, Nayagarh and Sambalpur.

Table 27 - Status of Initiative on remediation of legacy dumpsites

Sl. No.	District	Yes	No	Not Available
1	Anugul	1		
2	Balangir		1	
3	Baleshwar	1		
4	Bargarh		1	
5	Bhadrak		1	
6	Boudh		1	
7	Cuttack			1
8	Deogarh		1	
9	Dhenkanal		1	
10	Gajapati		1	
11	Ganjam		1	
12	Jagatsinghapur		1	
13	Jajapur		1	
14	Jharsuguda			1
15	Kalahandi		1	
16	Kandhamal	1		
17	Kendrapara		1	
18	Keonjhar	1		
19	Khordha	1		
20	Koraput		1	
21	Malkangiri		1	
22	Mayurbhanj			1
23	Nabarangpur		1	
24	Nayagarh			1
25	Nuapada		1	
26	Puri	1		
27	Rayagada		1	
28	Sambalpur			1
29	Subarnapur		1	
30	Sundargarh		1	
Total		6	19	5
% of Total		20%	63%	17%

Anugul, Baleshwar, Kandhamal, Keonjhar, Khordha, and Puri are 6 districts that have initiated remediation of legacy dump sites. Data on initiation of remediation of legacy dump sites not available for 5 districts viz. Cuttack, Jharsuguda, Mayurbhanj, Nayagarh and Sambalpur districts.

Table 28 - Plans on involving NGO's

Sl. No.	District	Yes	No
1	Anugul		1
2	Balangir		1
3	Baleshwar		1
4	Bargarh		1
5	Bhadrak		1
6	Boudh	1	
7	Cuttack		1
8	Deogarh		1

Sl. No.	District	Yes	No
9	Dhenkanal		1
10	Gajapati		1
11	Ganjam		1
12	Jagatsinghapur		1
13	Jajapur		1
14	Jharsuguda	1	
15	Kalahandi		1
16	Kandhamal	1	
17	Kendrapara		1
18	Keonjhar		1
19	Khordha	1	
20	Koraput		1
21	Malkangiri		1
22	Mayurbhanj		1
23	Nabarangpur		1
24	Nayagarh	1	
25	Nuapada	1	
26	Puri	1	
27	Rayagada		1
28	Sambalpur		1
29	Subarnapur	1	
30	Sundargarh		1
Total		8	22
% of Total		27%	73%

Involvement of NGO's envisaged in 8 districts namely - Boudh, Jharsuguda, Kandhamal, Khordha, Nayagarh, Nuapada, Puri and Subarnapur, however in the remaining 22 districts involvement of NGOs not envisaged.

Table 29 - Authorization of Waste Pickers

Sl. No.	District	Yes	No
1	Anugul	1	
2	Balangir		1
3	Baleshwar	1	
4	Bargarh	1	
5	Bhadrak	1	
6	Boudh	1	
7	Cuttack	1	
8	Deogarh	1	
9	Dhenkanal	1	
10	Gajapati	1	
11	Ganjam	1	
12	Jagatsinghapur	1	
13	Jajapur	1	
14	Jharsuguda	1	
15	Kalahandi		1
16	Kandhamal	1	
17	Kendrapara	1	
18	Keonjhar	1	
19	Khordha	1	
20	Koraput	1	
21	Malkangiri	1	
22	Mayurbhanj	1	
23	Nabarangpur	1	
24	Nayagarh	1	
25	Nuapada	1	
26	Puri	1	
27	Rayagada	1	
28	Sambalpur	1	
29	Subarnapur	1	
30	Sundargarh	1	

Sl. No.	District	Yes	No
Total		28	2
% of Total		93%	7%

Authorizations of waste pickers done in 28 Districts, however 2 districts namely - Balangir and Kalahandi has not done authorizations of waste pickers.

Table 30 - Notification of By-laws

Sl. No.	District	Initiated	Not Initiated	Not Available
1	Anugul	1		
2	Balangir	1		
3	Baleshwar	1		
4	Bargarh	1		
5	Bhadrak	1		
6	Boudh	1		
7	Cuttack	1		
8	Deogarh	1		
9	Dhenkanal	1		
10	Gajapati		1	
11	Ganjam	1		
12	Jagatsinghapur	1		
13	Jajapur	1		
14	Jharsuguda			1
15	Kalahandi	1		
16	Kandhamal	1		
17	Kendrapara	1		
18	Keonjhar	1		
19	Khordha	1		
20	Koraput	1		
21	Malkangiri	1		
22	Mayurbhanj	1		
23	Nabarangpur	1		
24	Nayagarh	1		
25	Nuapada	1		
26	Puri	1		
27	Rayagada	1		
28	Sambalpur			1
29	Subarnapur	1		
30	Sundargarh	1		
Total		27	1	2
% of Total		90%	3%	7%

Notification on own by-laws initiated by 27 districts. Gajapati have not initiated notification of own by-laws. Data on notification of by-laws not available for the districts of Jharsuguda and Sambalpur.

Table 31 - Implementation of By-laws

Sl. No.	District	Yes	No	Not Available
1	Anugul	1		
2	Balangir	1		
3	Baleshwar	1		
4	Bargarh	1		
5	Bhadrak	1		
6	Boudh	1		
7	Cuttack	1		
8	Deogarh	1		
9	Dhenkanal	1		
10	Gajapati		1	
11	Ganjam	1		
12	Jagatsinghapur	1		
13	Jajapur	1		

Sl. No.	District	Yes	No	Not Available
14	Jharsuguda			1
15	Kalahandi	1		
16	Kandhamal	1		
17	Kendrapara	1		
18	Keonjhar	1		
19	Khordha	1		
20	Koraput	1		
21	Malkangiri	1		
22	Mayurbhanj	1		
23	Nabarangpur	1		
24	Nayagarh	1		
25	Nuapada	1		
26	Puri	1		
27	Rayagada	1		
28	Sambalpur			1
29	Subarnapur	1		
30	Sundargarh	1		
Total		27	1	2
% of Total		90%	3%	7%

By-Laws were implemented in 27 districts. The district of Gajapati did not implement by-laws. Data on By-laws implementation were not available for the districts of Jharsuguda and Sambalpur.

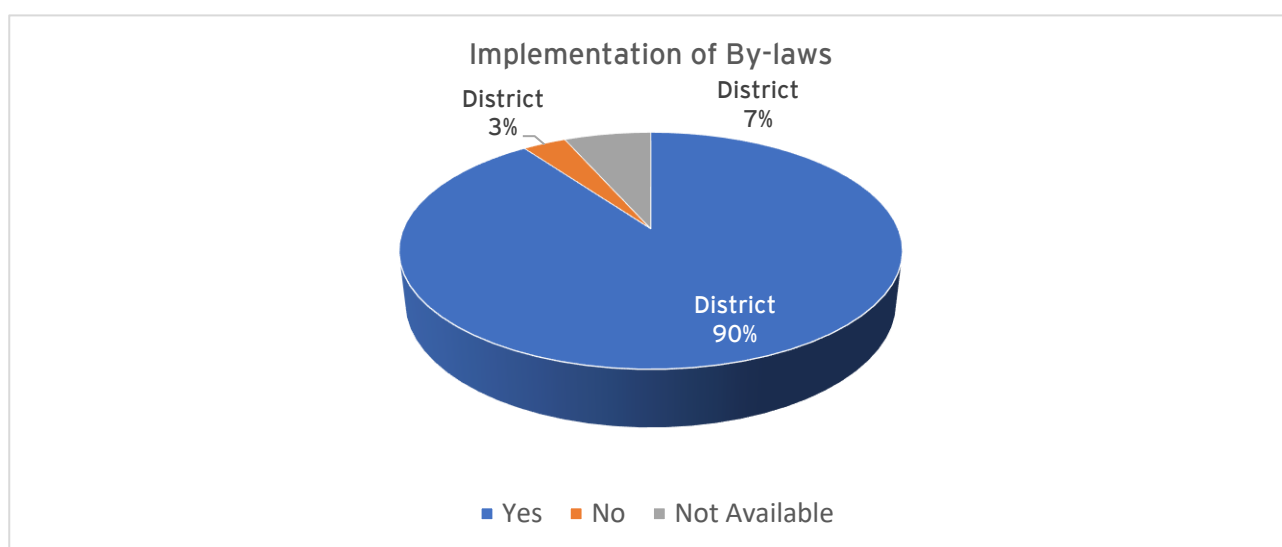


Figure 23: Percentage Implementation of By-laws

By-laws are implemented in 90 per cent of the total districts. Data on By-laws implementation were not available for 7 per cent of the total districts.



SECTION III: PLASTIC WASTE

Key Findings:

- The total plastic waste generated in the state is 111.55 MT/Day. Khordha generates the highest amount of Plastic waste at 37.43 MT/Day.
- Door to Door collection of Plastic waste is achieved in 25 districts of the state. Data on Door-to-Door collection of Plastic waste not available for 5 districts namely - Bargarh, Jagatsinghapur, Kendrapara, Koraput and Sambalpur.
- Door to door collection of Plastic waste is achieved in 83% of the districts. Data on Door-to-Door collection of Plastic waste not available for 17 per cent of the total districts.
- Transfer points and Material recovery facility are available at 19 districts of the state. Deogarh, Gajapati, Jajapur, Rayagada, and Subarnapur are 5 districts where transfer points and material recovery facility are not available.
- Data on Transfer points and Material recovery facility are not available for the districts of Sambalpur, Koraput, Kendrapara, Jharsuguda, Jagatsinghapur and Bar
- 63% of the districts have transfer points and material recovery facilities. 17 per cent of the districts don't have transfer points and material recovery facilities. Data on transfer points and material recovery facilities not available for 20 per cent of the districts.
- Linkage with PW recyclers done in 9 districts of the state. Waste pickers are registered in 14 districts of the state. Involvement of informal sector/NGO are involved in 7 districts of the state.
- Plastic Waste recycling facilities are available at 13 districts. The districts of Anugul, Jajapur, Kalahandi, Malkangiri, Puri, Rayagada, and Sundargarh have no access to plastic waste recycling facilities. Data on Plastic Waste recycling facilities are not available for 10 districts.
- PW utilization facilities are available in 9 districts and the PW disposal facilities available in 8 districts of the state.

3.0 Plastic Waste Management

The plastic waste assessment is a tedious process and the ULBs have provided their best estimate. Plastic is practically unreplaceable since it is affordable, durable, light, and corrosion resistant. Plastic is most frequently used in building materials like piping and packaging. Plastic is frequently essential for contamination and infection control in the medical sector. Syringes, pipettes, and gloves used in biomedical research and healthcare cannot be used again. While the overuse of plastic packaging is alarming, it is frequently necessary to employ some sort of packing to preserve food's sanitation or freshness or to protect a product's integrity during transport.

The following table gives the district estimates of Plastic waste:

Table 32 - Estimated quantity of Plastic waste generated per day (MT/Day)

Sl. No.	Districts	Estimated quantity of Plastic waste generated per day (MT/Day)
1	ANUGUL	0.012
2	BALANGIR	3.833
3	BALESHWAR	7.009
4	BARGARH	3.262
5	BHADRAK	0.392
6	BOUDH	0.030
7	CUTTACK	16.427
8	DEOGARH	0.182
9	DHENKANAL	4.031
10	GAJAPATI	0.176
11	GANJAM	8.280
12	JAGATSINGHAPUR	10.511
13	JAJAPUR	0.068
14	JHARSUGUDA	0.812
15	KALAHANDI	3.190
16	KANDHAMAL	0.116
17	KENDRAPARA	0.356
18	KEONJHAR	1.176
19	KHORDHA	37.433
20	KORAPUT	0.283
21	MALKANGIRI	0.247
22	MAYURBHANJ	0.130
23	NABARANGPUR	0.005
24	NAYAGARH	3.819
25	NUAPADA	1.068
26	PURI	1.744
27	RAYAGADA	0.004
28	SAMBALPUR	0.118
29	SUBARNAPUR	0.020
30	SUNDARGARH	6.816
	Total	111.55

The total plastic waste generated in the state is 111.55 MT/Day. Khordha generates the highest amount of Plastic waste at 37.43 Mt/day.

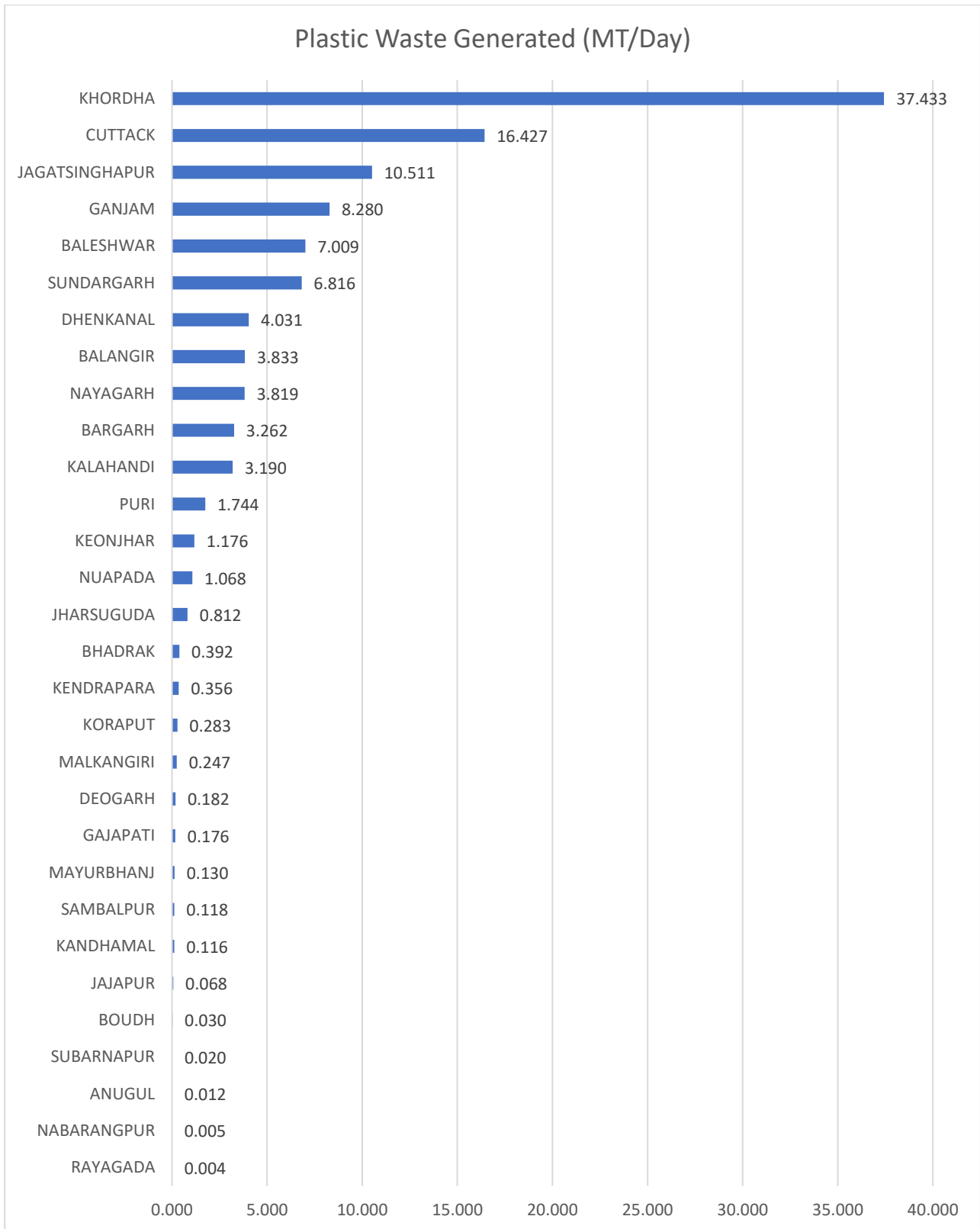


Figure 24: Estimated quantity of Plastic waste generated per day (MT/Day)

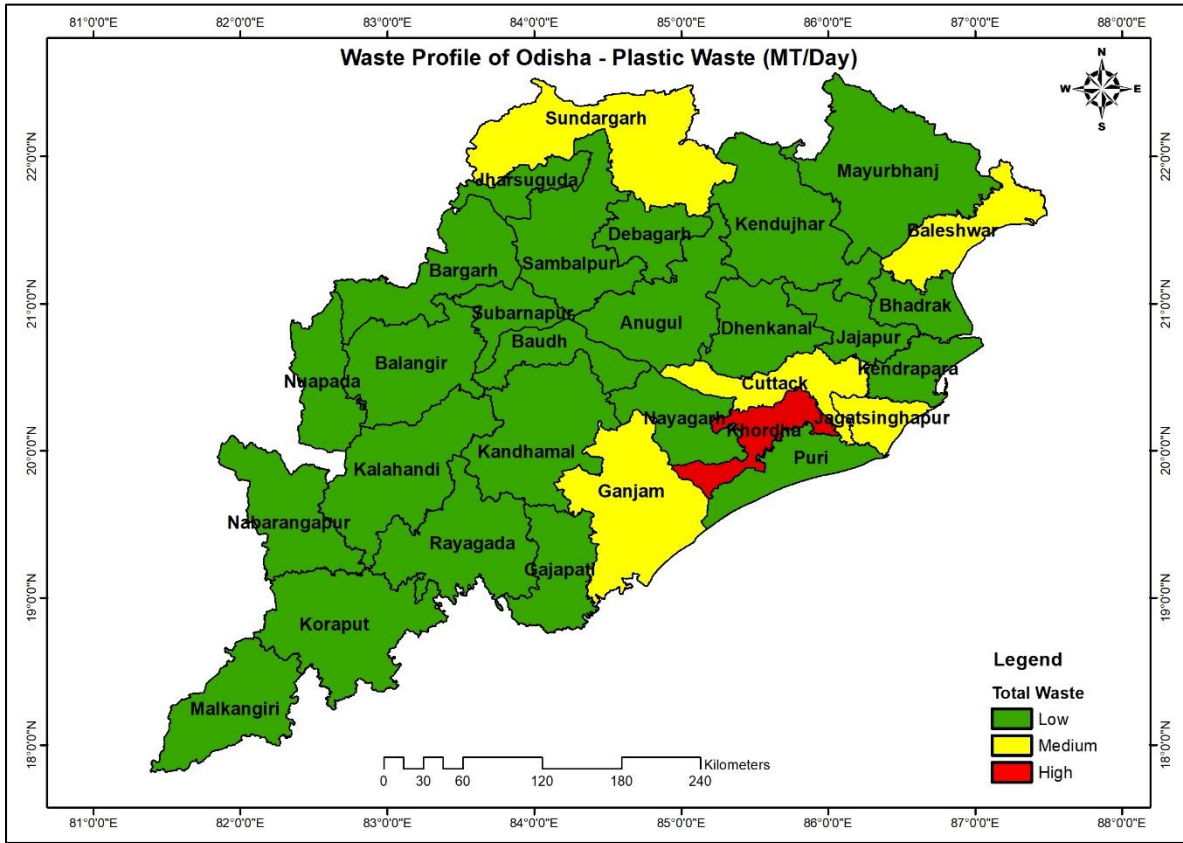


Figure 25: Waste Profile of Odisha - Plastic Waste (Mt/Day)

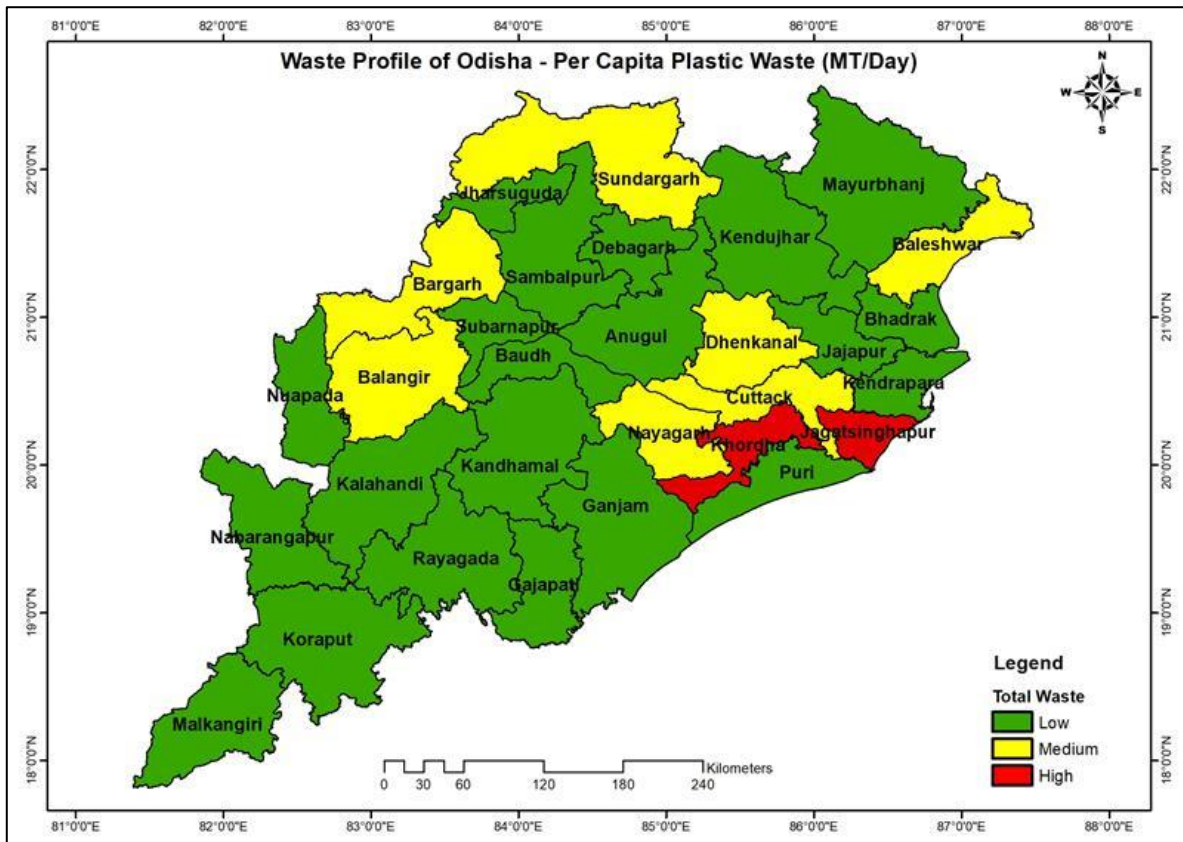


Figure 26: Waste Profile of Odisha - Per Capita Plastic Waste (MT/Day)

Table 33: Waste Profile of Odisha - Plastic Waste (Mt/Day)

Sl. No.	District	Yes	Not Available
1	Anugul	1	
2	Balangir	1	
3	Baleshwar	1	
4	Bargarh		1
5	Bhadrak	1	
6	Boudh	1	
7	Cuttack	1	
8	Deogarh	1	
9	Dhenkanal	1	
10	Gajapati	1	
11	Ganjam	1	
12	Jagatsinghapur		1
13	Jajapur	1	
14	Jharsuguda	1	
15	Kalahandi	1	
16	Kandhamal	1	
17	Kendrapara		1
18	Keonjhar	1	
19	Khordha	1	
20	Koraput		1
21	Malkangiri	1	
22	Mayurbhanj	1	
23	Nabarangpur	1	
24	Nayagarh	1	
25	Nuapada	1	
26	Puri	1	
27	Rayagada	1	
28	Sambalpur		1
29	Subarnapur	1	
30	Sundargarh	1	
Total		25	5
	% of Total	83%	17%

Door-to-Door collection of Plastic waste is achieved in 25 districts of the state. Data on Door-to-Door collection of Plastic waste not available for 5 districts namely - Bargarh, Jagatsinghapur, Kendrapara, Koraput and Sambalpur.

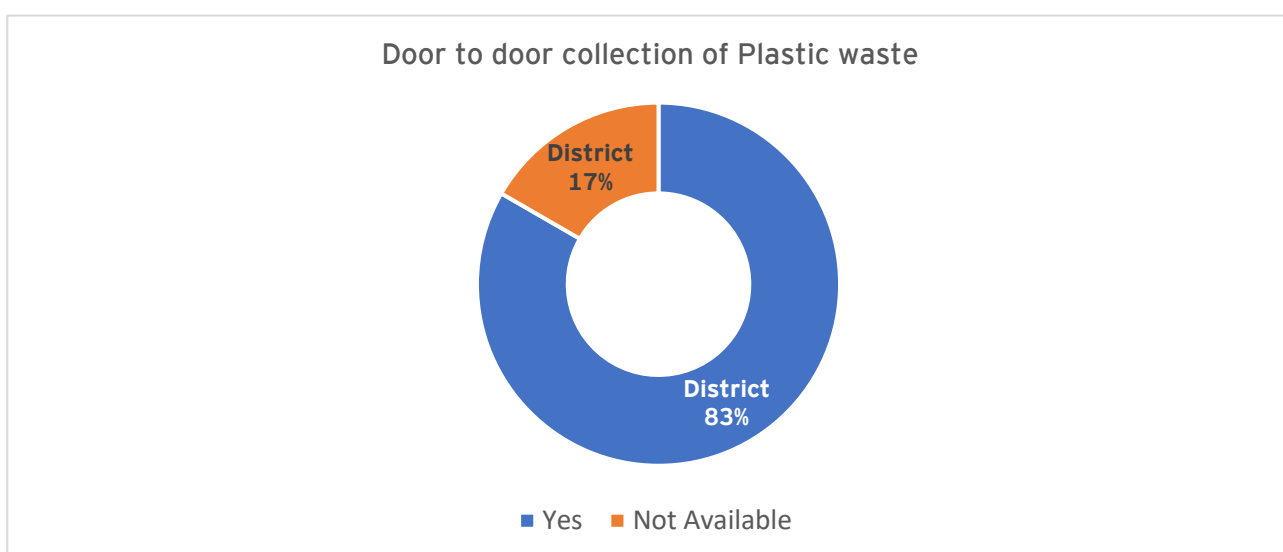


Figure 27 - Percentage of Door-to-Door Collection of Plastic waste

Door to door collection of Plastic waste is achieved in 83% of the districts. Data on Door-to-Door collection of Plastic waste not available for 17 per cent of the total districts.

Table 34 - Availability of Transfer points and Material Recovery Facility

Sl. No.	District	Yes	No	Not Available
1	Anugul	1		
2	Balangir	1		
3	Baleshwar	1		
4	Bargarh			1
5	Bhadrak	1		
6	Boudh	1		
7	Cuttack	1		
8	Deogarh		1	
9	Dhenkanal	1		
10	Gajapati		1	
11	Ganjam	1		
12	Jagatsinghapur			1
13	Jajapur		1	
14	Jharsuguda			1
15	Kalahandi	1		
16	Kandhamal	1		
17	Kendrapara			1
18	Keonjhar	1		
19	Khordha	1		
20	Koraput			1
21	Malkangiri	1		
22	Mayurbhanj	1		
23	Nabarangpur	1		
24	Nayagarh	1		
25	Nuapada	1		
26	Puri	1		
27	Rayagada		1	
28	Sambalpur			1
29	Subarnapur		1	
30	Sundargarh	1		
Total		19	5	6
% of Total		63%	17%	20%

Transfer points and Material recovery facility are available at 19 districts of the state. Deogarh, Gajapati, Jajapur, Rayagada, and Subarnapur are 5 districts where transfer points and material recovery facility are not available. Data on Transfer points and Material recovery facility are not available for the districts of Sambalpur, Koraput, Kendrapara, Jharsuguda, Jagatsinghapur and Bargarh.

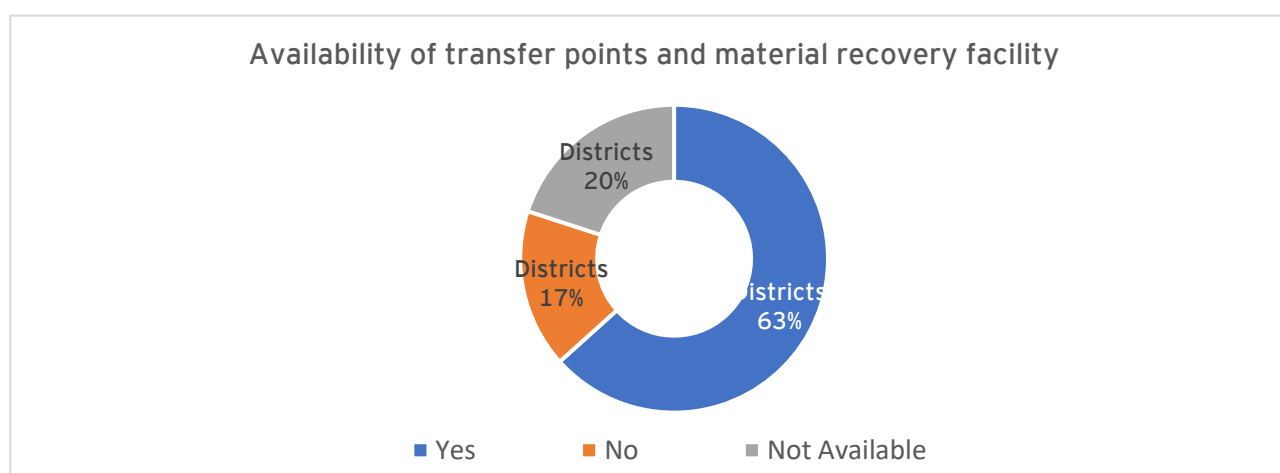


Figure 28 - Availability of Transfer Points and Material Recovery Facility

63% of the districts have transfer points and material recovery facilities. 17 per cent of the districts don't have transfer points and material recovery facilities. Data on transfer points and material recovery facilities not available for 20 per cent districts.

Table 35 - Involvement of informal sector/NGO

Sl. No.	Districts	Not Available	Yes	No
1	Anugul	1		
2	Balangir	1		
3	Baleshwar		1	
4	Bargarh	1		
5	Bhadrak	1		
6	Boudh			1
7	Cuttack	1		
8	Deogarh	1		
9	Dhenkanal		1	
10	Gajapati	1		
11	Ganjam			1
12	Jagatsinghapur	1		
13	Jajapur			1
14	Jharsuguda	1		
15	Kalahandi	1		
16	Kandhamal		1	
17	Kendrapara	1		
18	Keonjhar			1
19	Khordha		1	
20	Koraput	1		
21	Malkangiri			1
22	Mayurbhanj	1		
23	Nabarangpur			1
24	Nayagarh			1
25	Nuapada		1	
26	Puri		1	
27	Rayagada			1
28	Sambalpur	1		
29	Subarnapur	1		
30	Sundargarh		1	
	Total	15	7	8

Involvement of informal sector/NGO are involved in 7 districts of the state.

Table 36 - Waste pickers registration

Sl. No.	Districts	Not Available	Yes	No
1	Anugul	1		
2	Balangir	1		
3	Baleshwar		1	
4	Bargarh	1		
5	Bhadrak	1		
6	Boudh		1	
7	Cuttack		1	
8	Deogarh	1		
9	Dhenkanal		1	
10	Gajapati	1		
11	Ganjam		1	
12	Jagatsinghapur	1		
13	Jajapur		1	
14	Jharsuguda	1		
15	Kalahandi		1	
16	Kandhamal		1	
17	Kendrapara	1		
18	Keonjhar	1		
19	Khordha		1	

Sl. No.	Districts	Not Available	Yes	No
20	Koraput	1		
21	Malkangiri			1
22	Mayurbhanj	1		
23	Nabarangpur		1	
24	Nayagarh		1	
25	Nuapada		1	
26	Puri		1	
27	Rayagada	1		
28	Sambalpur	1		
29	Subarnapur	1		
30	Sundargarh		1	
	Total	15	14	1

Waste pickers are registered in 14 districts of the state.

Table 37 - Linkage with PW recyclers

Sl. No.	Districts	Not Available	Yes	No
1	ANUGUL	1		
2	BALANGIR	1		
3	BALESHWAR		1	
4	BARGARH	1		
5	BHADRAK	1		
6	BOUDH			1
7	CUTTACK		1	
8	DEOGARH	1		
9	DHENKANAL		1	
10	GAJAPATI	1		
11	GANJAM		1	
12	JAGATSINGHAPUR	1		
13	JAJAPUR			1
14	JHARSUGUDA	1		
15	KALAHANDI		1	
16	KANDHAMAL		1	
17	KENDRAPARA	1		
18	KEONJHAR			1
19	KHORDHA		1	
20	KORAPUT	1		
21	MALKANGIRI		1	
22	MAYURBHANJ	1		
23	NABARANGPUR			1
24	NAYAGARH			1
25	NUAPADA			1
26	PURI			1
27	RAYAGADA			1
28	SAMBALPUR	1		
29	SUBARNAPUR	1		
30	SUNDARGARH		1	
	Total	13	9	8

Linkage with PW recyclers done in 9 districts of the state.

Table 38 - Involvement of producers and brand-owners

Sl. No.	Districts	Not Available	Yes	No
1	Anugul	1		
2	Balangir	1		
3	Baleshwar		1	
4	Bargarh	1		
5	Bhadrak	1		
6	Boudh			1
7	Cuttack	1		

Sl. No.	Districts	Not Available	Yes	No
8	Deogarh	1		
9	Dhenkanal		1	
10	Gajapati	1		
11	Ganjam		1	
12	Jagatsinghapur	1		
13	Jajapur			1
14	Jharsuguda	1		
15	Kalahandi			1
16	Kandhamal		1	
17	Kendrapara	1		
18	Keonjhar			1
19	Khordha			1
20	Koraput	1		
21	Malkangiri			1
22	Mayurbhanj	1		
23	Nabarangpur			1
24	Nayagarh		1	
25	Nuapada			1
26	Puri		1	
27	Rayagada	1		
28	Sambalpur	1		
29	Subarnapur	1		
30	Sundargarh			1
	Total	15	6	9

Table 39 - Organizing awareness programs for minimizing and recycling plastic wastes

Sl. No.	Districts	Not Available	Yes	No
1	Anugul		1	
2	Balangir		1	
3	Baleshwar		1	
4	Bargarh	1		
5	Bhadrak		1	
6	Boudh		1	
7	Cuttack		1	
8	Deogarh	1		
9	Dhenkanal		1	
10	Gajapati	1		
11	Ganjam		1	
12	Jagatsinghapur		1	
13	Jajapur		1	
14	Jharsuguda		1	
15	Kalahandi		1	
16	Kandhamal		1	
17	Kendrapara		1	
18	Keonjhar		1	
19	Khordha		1	
20	Koraput	1		
21	Malkangiri			1
22	Mayurbhanj		1	
23	Nabarangpur		1	
24	Nayagarh		1	
25	Nuapada		1	
26	Puri		1	
27	Rayagada			1
28	Sambalpur		1	
29	Subarnapur		1	
30	Sundargarh		1	
	Total	4	24	2

Awareness programs for minimizing and recycling plastic wastes organized in 24 districts of the state.

Table 40 - Access to Plastic waste recycling facilities

Sl. No.	District	Yes	No	Not Available
1	Anugul		1	
2	Balangir	1		
3	Baleshwar	1		
4	Bargarh			1
5	Bhadrak			1
6	Boudh	1		
7	Cuttack	1		
8	Deogarh			1
9	Dhenkanal	1		
10	Gajapati			1
11	Ganjam	1		
12	Jagatsinghapur			1
13	Jajapur		1	
14	Jharsuguda			1
15	Kalahandi		1	
16	Kandhamal	1		
17	Kendrapara			1
18	Keonjhar	1		
19	Khordha	1		
20	Koraput			1
21	Malkangiri		1	
22	Mayurbhanj	1		
23	Nabarangpur			1
24	Nayagarh	1		
25	Nuapada	1		
26	Puri		1	
27	Rayagada		1	
28	Sambalpur			1
29	Subarnapur	1		
30	Sundargarh		1	
Total		13	7	10
% of Total		43%	23%	33%

Plastic Waste recycling facilities are available at 13 districts. The districts of Anugul, Jajapur, Kalahandi, Malkangiri, Puri, Rayagada, and Sundargarh have no access to plastic waste recycling facilities. Data on Plastic Waste recycling facilities are not available for 10 districts.

Table 41 - Access to PW utilization facility

Sl. No.	Districts	Not Available	Yes	No
1	Anugul			1
2	Balangir	1		
3	Baleshwar		1	
4	Bargarh	1		
5	Bhadrak	1		
6	Boudh	1		
7	Cuttack		1	
8	Deogarh	1		
9	Dhenkanal		1	
10	Gajapati	1		
11	Ganjam	1		
12	Jagatsinghapur	1		
13	Jajapur			1
14	Jharsuguda	1		
15	Kalahandi			1
16	Kandhamal		1	
17	Kendrapara	1		

Sl. No.	Districts	Not Available	Yes	No
18	Keonjhar		1	
19	Khordha	1		
20	Koraput	1		
21	Malkangiri			1
22	Mayurbhanj		1	
23	Nabarangpur	1		
24	Nayagarh		1	
25	Nuapada		1	
26	Puri			1
27	Rayagada			1
28	Sambalpur	1		
29	Subarnapur		1	
30	Sundargarh			1
	Total	14	9	7

PW utilization facilities are available in 9 districts of the state.

Table 42 - Access to PW disposal facility

Sl. No.	Districts	Not Available	Yes	No
1	Anugul			1
2	Balangir	1		
3	Baleshwar		1	
4	Bargarh	1		
5	Bhadrak	1		
6	Boudh	1		
7	Cuttack		1	
8	Deogarh	1		
9	Dhenkanal			1
10	Gajapati	1		
11	Ganjam	1		
12	Jagatsinghapur	1		
13	Jajapur			1
14	Jharsuguda	1		
15	Kalahandi			1
16	Kandhamal		1	
17	Kendrapara	1		
18	Keonjhar		1	
19	Khordha	1		
20	Koraput	1		
21	Malkangiri			1
22	Mayurbhanj		1	
23	Nabarangpur	1		
24	Nayagarh		1	
25	Nuapada		1	
26	Puri			1
27	Rayagada			1
28	Sambalpur	1		
29	Subarnapur		1	
30	Sundargarh			1
	Total	14	8	8

PW disposal facilities available in 8 districts of the state.



SECTION IV: C&D WASTE

Key Findings:

- C & D waste management Rule, 2016 shall apply to every waste generated from construction, re-modelling, repair, and demolition of any civil construction of individual or organization or activity that generate construction and demolition such as building materials, debris, rubbles etc. There are 114 ULBs in the state generating the construction and demolition waste
- Estimated total C&D waste collected in the state is 101.85 MT/Day. Cuttack recorded highest quantity of C&D waste collection across all districts.
- C&D waste recycling facility is available in 9 districts of Odisha viz. Anugul, Baleshwar, Cuttack, Ganjam, Keonjhar, Khordha, Nayagarh, Nuapada and Sambalpur. 17 districts don't have access to C&D Recycling facility. Data on access to C&D waste recycling facility is not available for the districts of Boudh, Deogarh, Dhenkanal and Jharsuguda.
- C&D waste recycling facility is available 30 per cent of the total districts of Odisha
- Separate collection point for C&D Waste is available in 19 districts of the state. Malkangiri, Nuapada, Rayagada and Gajapati do not possess separate collection point for C&D Waste. Data on Separate collection point for C&D Waste is not available in 7 districts.
- 17 districts of the state implemented schemes for permitting Bulk Waste Generators. Data on implemented schemes for permitting Bulk Waste Generators not available for 5 districts. 8 districts of the state have not implemented any schemes for permitting Bulk Waste Generators.
- 56 per cent of the total districts implemented schemes for permitting Bulk Waste Generators. 27 per cent districts of the districts has not implemented any schemes for permitting Bulk Waste Generators. Data on implemented schemes for permitting Bulk Waste Generators not available for 17 per cent of the total districts.
- 13 districts of the state implemented by-Laws. Data on implementation of By-laws not available for 10 districts. 7 districts of the state have not implemented by-laws.
- 43 per cent districts of the state implemented by-Laws. Data on implementation of By-laws not available for 34 per cent of the total districts. 23 per cent districts of the state has not implemented by-laws.

4.0 C&D Waste

C&D waste management shall apply to every waste resulting from construction, remodeling, repair & demolition of any civil structure of individual or organization or authority that generates Construction & Demolition Waste such as building materials, debris, and rubble. Construction and demolition waste (C&DW) is primarily a by-product of urbanization activities that take place quickly. The potential for recycling and reuse of C&DW materials is substantial. Despite its promise, landfilling remains the most popular type of disposal. Along with population growth, India's advancements, and redevelopment projects, as well as the subsequent rise in urbanization and industrialization, have caused the construction sector to grow significantly. However, the negative environmental effects from C & D waste are increasingly making it difficult to manage urban solid waste.

CPCB has come out with the detailed guidelines to act on dust mitigation measures for handling both on-site and offsite management of such waste in the cities and towns across India. Municipal Corporations in various parts of India have reported the "Construction and Demolition and De-silting Waste (Management and Handling) Rules, 2016."

Table 43 - C&D Waste Generation (MT/Day)

Sl. No.	District	C&D Waste Generated (MT/Day)
1	ANUGUL	10.35
2	BALANGIR	3.615
3	BALESHWAR	1.077
4	BARGARH	3.34
5	BHADRAK	1.27
6	BOUDH	0.25
7	CUTTACK	17.9
8	DEOGARH	1.9
9	DHENKANAL	1.7
10	GAJAPATI	1.7
11	GANJAM	15.3
12	JAGATSINGHAPUR	1.15
13	JAJAPUR	1
14	JHARSUGUDA	6.09
15	KALAHANDI	4.519
16	KANDHAMAL	1
17	KENDRAPARA	1.32
18	KEONJHAR	5.085
19	KHORDHA	9.35
20	KORAPUT	0.524
21	MALKANGIRI	1.02
22	MAYURBHANJ	1.35
23	NABARANGPUR	1.25
24	NAYAGARH	0.65
25	NUAPADA	1.3
26	PURI	0.424
27	RAYAGADA	2.2
28	SAMBALPUR	1.514
29	SUBARNAPUR	1.9
30	SUNDARGARH	1.8
	Total	101.848

C & D waste management Rule, 2016 shall apply to every waste generated from construction, re-modeling, repair and demolition of any civil construction of individual or organization or activity that generate construction and demolition such as building materials, debris, rubbles etc. The total C&D waste generated

in the state is 609.279 MT/Day. The district of Rayagada generates maximum amount of C&D waste at 184.2 Mt/Day.

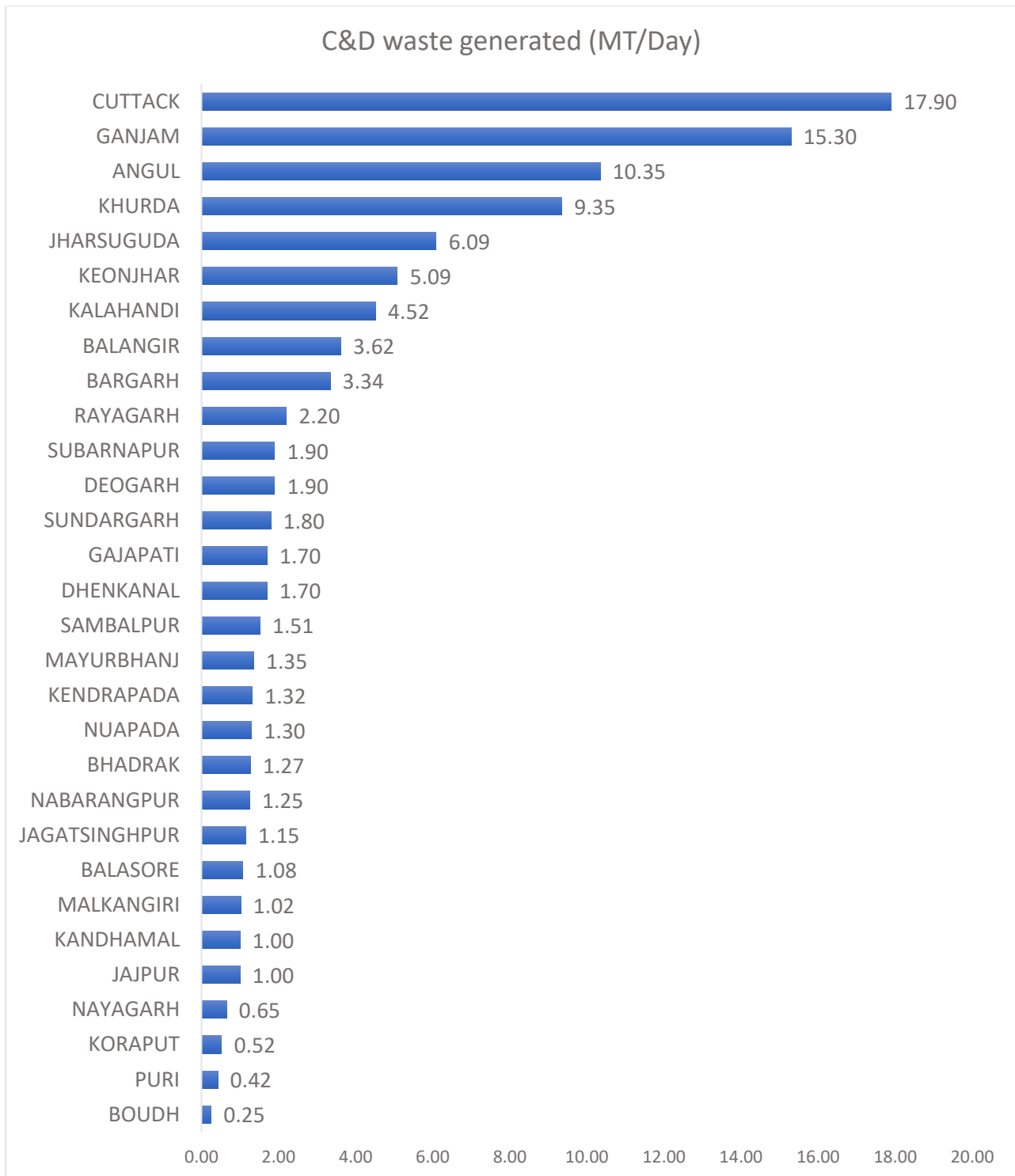


Figure 29: C&D Waste Generated (MT/Day)

The district of Cuttack generates maximum amount of C&D waste at 17.9 Mt/Day.

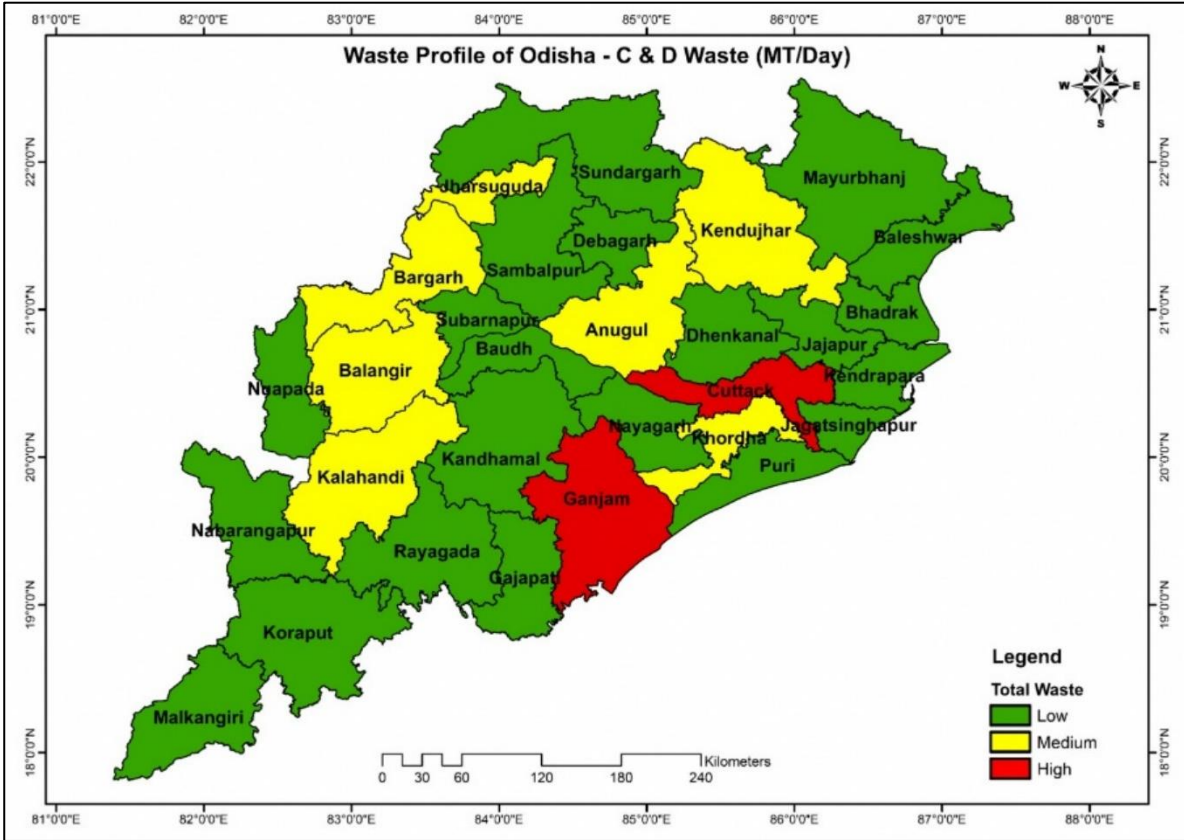


Figure 30: Waste Profile of Odisha - C&D Waste (Mt/day)

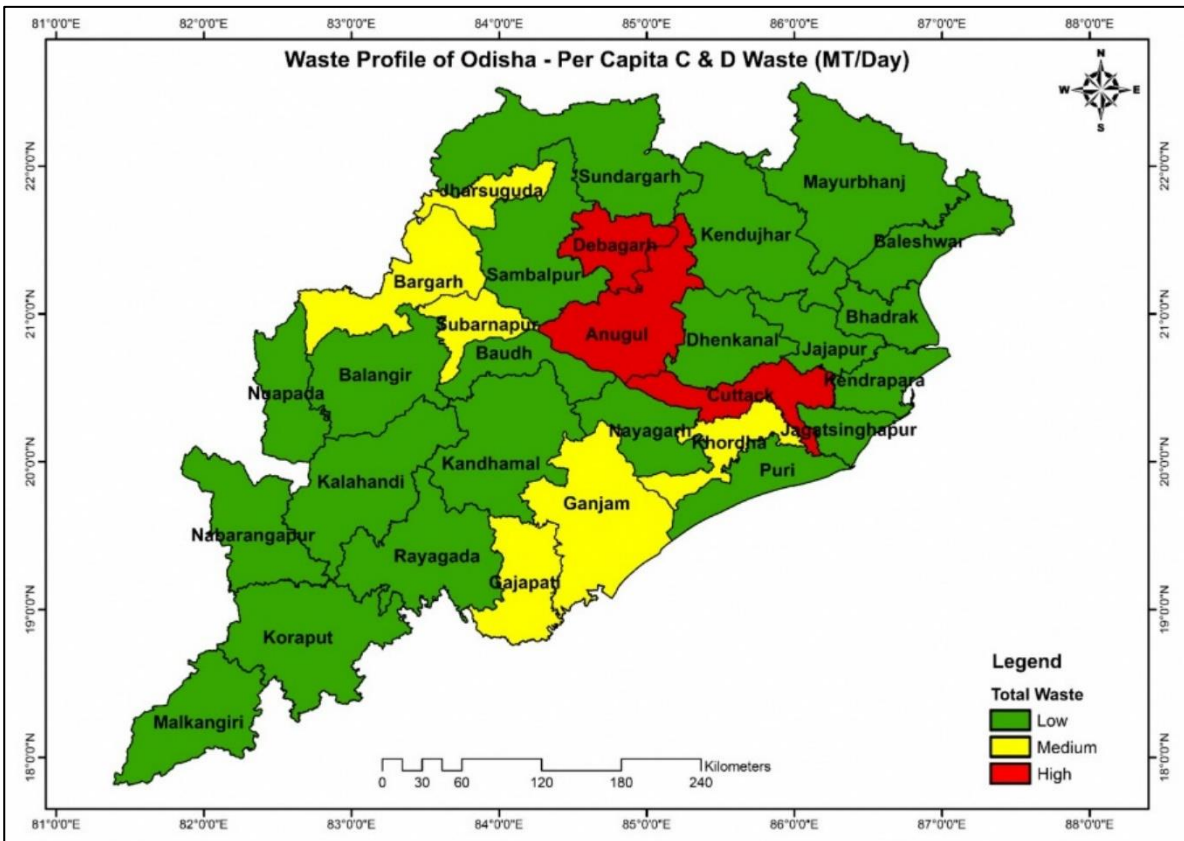


Figure 31: Per Capita C&D Waste (MT/Day)

Table 44 - District's access to C&D Waste Recycling facility

District	Not Available	Yes	No
Anugul		1	
Balangir			1
Baleshwar		1	
Bargarh			1
Bhadrak			1
Boudh	1		
Cuttack		1	
Deogarh	1		
Dhenkanal	1		
Gajapati			1
Ganjam		1	
Jagatsinghapur			1
Jajapur			1
Jharsuguda	1		
Kalahandi			1
Kandhamal			1
Kendrapara			1
Keonjhar		1	
Khordha		1	
Koraput			1
Malkangiri			1
Mayurbhanj			1
Nabarangpur			1
Nayagarh		1	
Nuapada		1	
Puri			1
Rayagada			1
Sambalpur		1	
Subarnapur			1
Sundargarh			1
Grand Total	4	9	17

C&D waste recycling facility is available in 9 districts of Odisha viz. Anugul, Baleshwar, Cuttack, Ganjam, Keonjhar, Khordha, Nayagarh, Nuapada and Sambalpur. 17 districts don't have access to C&D Recycling facility. Data on access to C&D waste recycling facility is not available for the districts of Boudh, Deogarh, Dhenkanal and Jharsuguda.

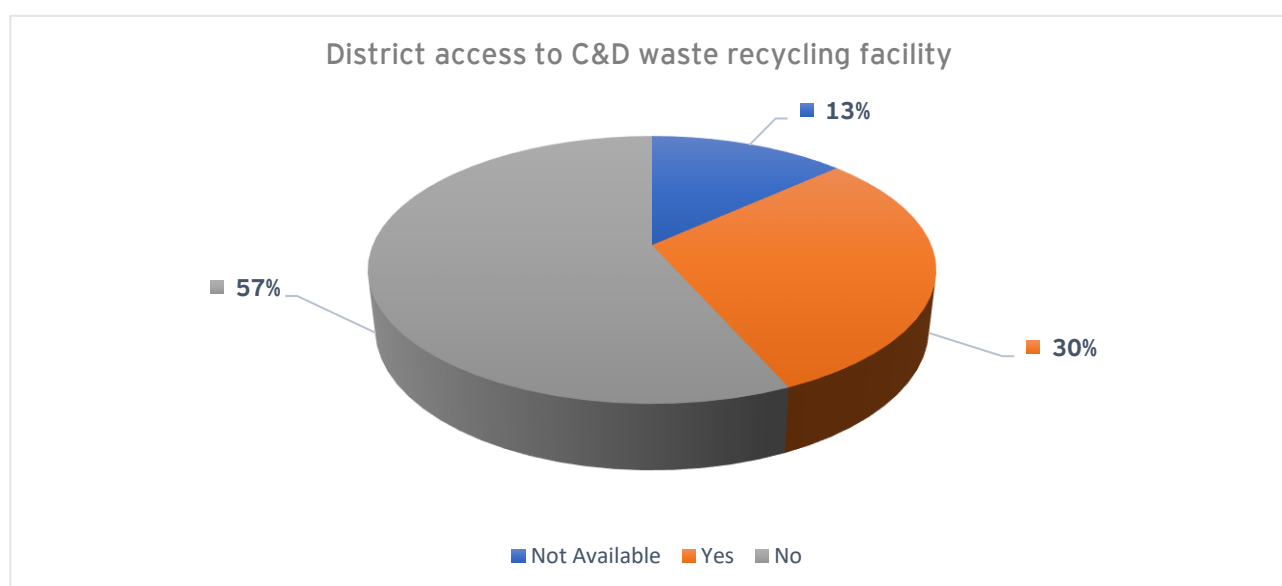


Figure 32: District access to C&D waste recycling facility

C&D waste recycling facility is available 30 per cent of the total districts of Odisha.

Table 45 - Separate Collection point for C&D waste

Sl. No.	District	Not Available	Yes	No
1	Anugul		1	
2	Balangir		1	
3	Baleshwar		1	
4	Bargarh	1		
5	Bhadrak	1		
6	Boudh		1	
7	Cuttack		1	
8	Deogarh	1		
9	Dhenkanal		1	
10	Gajapati			1
11	Ganjam		1	
12	Jagatsinghapur	1		
13	Jajapur		1	
14	Jharsuguda		1	
15	Kalahandi		1	
16	Kandhamal		1	
17	Kendrapara	1		
18	Keonjhar		1	
19	Khordha		1	
20	Koraput	1		
21	Malkangiri			1
22	Mayurbhanj		1	
23	Nabarangpur	1		
24	Nayagarh		1	
25	Nuapada			1
26	Puri		1	
27	Rayagada			1
28	Sambalpur		1	
29	Subarnapur		1	
30	Sundargarh		1	
	Total	7	19	4

Separate collection point for C&D Waste is available in 19 districts of the state. Malkangiri, Nuapada, Rayagada and Gajapati do not possess separate collection point for C&D Waste. Data on Separate collection point for C&D Waste is not available in 7 districts.

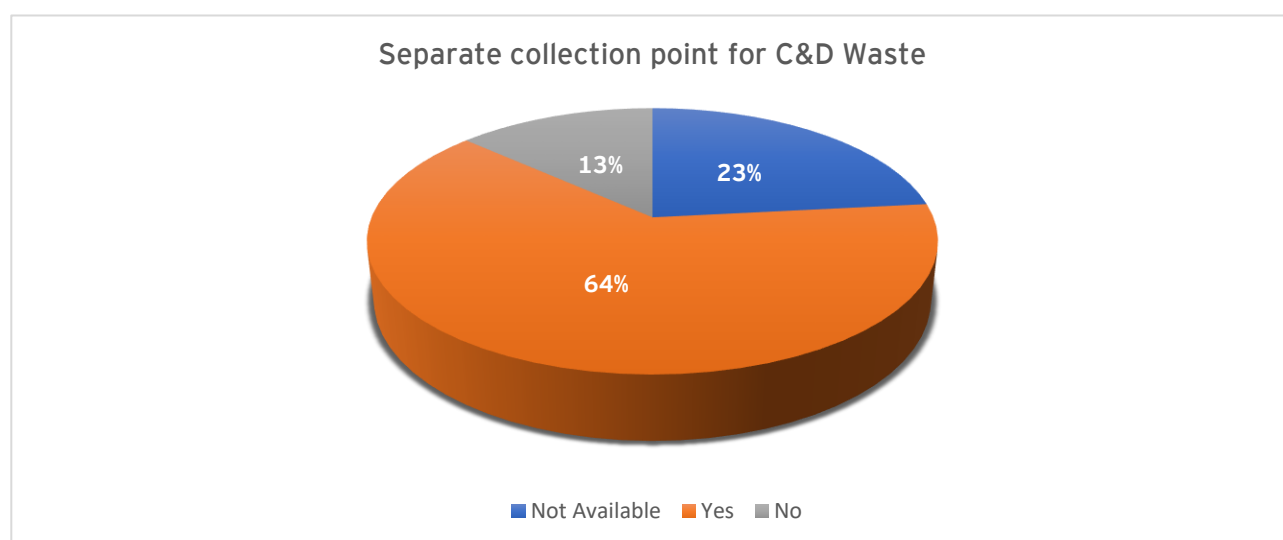


Figure 33: Update on separate collection point for C&D Waste

Separate collection point for C&D Waste is available in 64 per cent of the total districts. 13 per cent of the total districts don't have access to separate collection point for C&D Waste.

Table 46 - Availability of C&D waste deposition points

Sl. No.	District	Not Available	Yes	No
1	Anugul	1		
2	Balangir	1		
3	Baleshwar		1	
4	Bargarh	1		
5	Bhadrak	1		
6	Boudh	1		
7	Cuttack	1		
8	Deogarh	1		
9	Dhenkanal			1
10	Gajapati		1	
11	Ganjam	1		
12	Jagatsinghapur	1		
13	Jajapur		1	
14	Jharsuguda	1		
15	Kalahandi		1	
16	Kandhamal		1	
17	Kendrapara	1		
18	Keonjhar		1	
19	Khordha		1	
20	Koraput	1		
21	Malkangiri			1
22	Mayurbhanj			1
23	Nabarangpur	1		
24	Nayagarh	1		
25	Nuapada			1
26	Puri	1		
27	Rayagada	1		
28	Sambalpur	1		
29	Subarnapur	1		
30	Sundargarh		1	
	Total	18	8	4

C&D Waste Deposition points available in 8 districts of the state.

Table 47 - Scheme implemented for permitting Bulk Waste Generators

Sl. No.	District	Not Available	Initiated	Not Initiated
1	Anugul		1	
2	Balangir			1
3	Baleshwar		1	
4	Bargarh	1		
5	Bhadrak	1		
6	Boudh		1	
7	Cuttack		1	
8	Deogarh	1		
9	Dhenkanal			1
10	Gajapati			1
11	Ganjam		1	
12	Jagatsinghapur		1	
13	Jajapur		1	
14	Jharsuguda		1	
15	Kalahandi			1
16	Kandhamal		1	
17	Kendrapara	1		
18	Keonjhar		1	
19	Khordha		1	
20	Koraput			1
21	Malkangiri		1	
22	Mayurbhanj			1
23	Nabarangpur	1		

24	Nayagarh		1	
25	Nuapada		1	
26	Puri		1	
27	Rayagada			1
28	Sambalpur		1	
29	Subarnapur		1	
30	Sundargarh			1
	Grand Total	5	17	8

17 districts of the state implemented schemes for permitting Bulk Waste Generators. Data on implemented schemes for permitting Bulk Waste Generators not available for 5 districts. 8 districts of the state have not implemented any schemes for permitting Bulk Waste Generators.

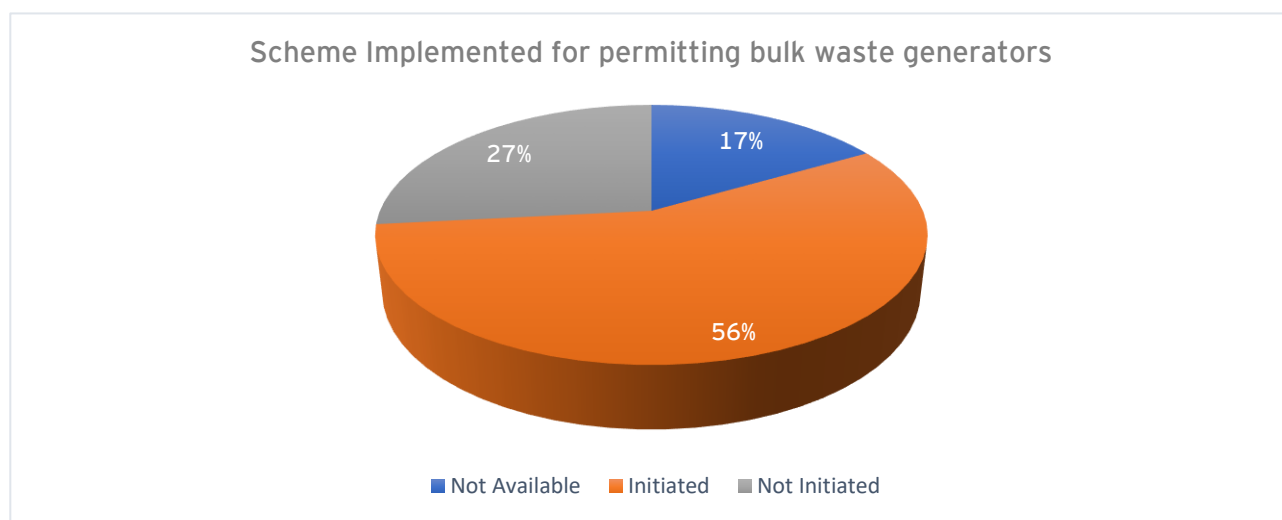


Figure 34 - Scheme implemented for permitting Bulk Waste Generators

56 per cent of the total districts implemented schemes for permitting Bulk Waste Generators. 27 per cent districts of the districts has not implemented any schemes for permitting Bulk Waste Generators. Data on implemented schemes for permitting Bulk Waste Generators not available for 17 per cent of the total districts.

Table 48 - Implementation of By-laws by authority

Sl. No.	District	Not Available	Yes	No
1	Anugul			1
2	Balangir			1
3	Baleshwar		1	
4	Bargarh	1		
5	Bhadrak	1		
6	Boudh		1	
7	Cuttack	1		
8	Deogarh	1		
9	Dhenkanal			1
10	Gajapati	1		
11	Ganjam		1	
12	Jagatsinghapur		1	
13	Jajapur		1	
14	Jharsuguda		1	
15	Kalahandi			1
16	Kandhamal		1	
17	Kendrapara	1		
18	Keonjhar		1	
19	Khordha		1	
20	Koraput	1		
21	Malkangiri	1		

Sl. No.	District	Not Available	Yes	No
22	Mayurbhanj	1		
23	Nabarangpur			1
24	Nayagarh		1	
25	Nuapada		1	
26	Puri		1	
27	Rayagada			1
28	Sambalpur	1		
29	Subarnapur			1
30	Sundargarh		1	
	Grand Total	10	13	7

13 districts of the state implemented by-Laws. Data on implementation of By-laws not available for 10 districts. 7 districts of the state have not implemented by-laws.

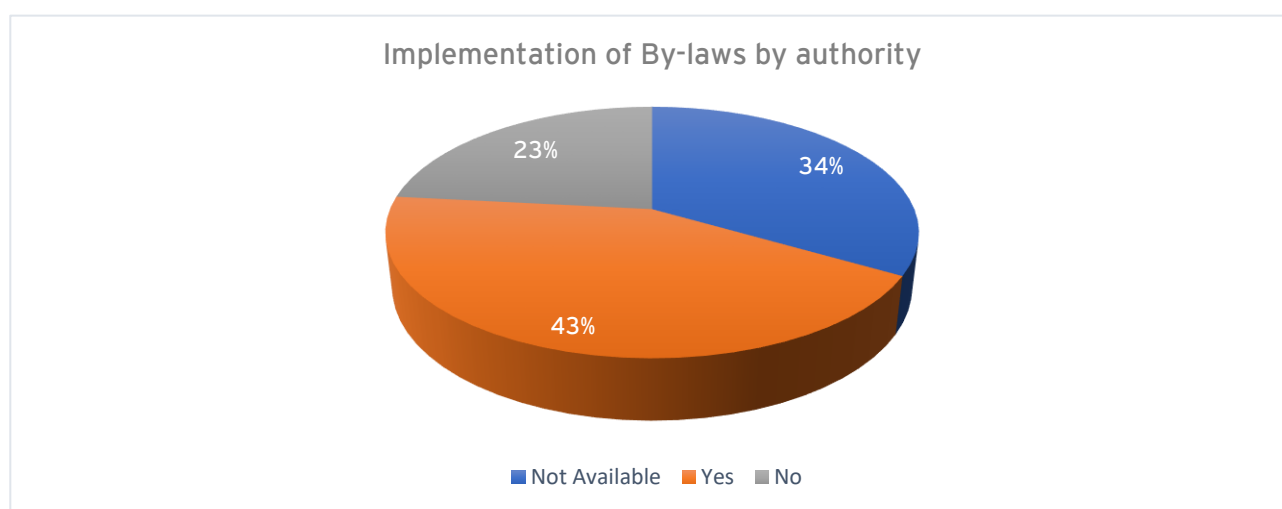


Figure 35 - Implementation of By-laws by authority

43 per cent districts of the state implemented by-Laws. Data on implementation of By-laws not available for 34 per cent of the total districts. 23 per cent districts of the state has not implemented by-laws.

Table 49 - Establishment of C&D Waste Recycling Plant

Sl. No.	District	Not Available	Yes	No
1	Anugul		1	
2	Balangir		1	
3	Baleshwar			1
4	Bargarh	1		
5	Bhadrak	1		
6	Boudh			1
7	Cuttack	1		
8	Deogarh	1		
9	Dhenkanal			1
10	Gajapati			1
11	Ganjam		1	
12	Jagatsinghapur	1		
13	Jajapur		1	
14	Jharsuguda	1		
15	Kalahandi			1
16	Kandhamal	1		
17	Kendrapara	1		
18	Keonjhar			1
19	Khordha		1	
20	Koraput	1		
21	Malkangiri			1
22	Mayurbhanj			1

Sl. No.	District	Not Available	Yes	No
23	Nabarangpur	1		
24	Nayagarh		1	
25	Nuapada			1
26	Puri		1	
27	Rayagada			1
28	Sambalpur			1
29	Subarnapur			1
30	Sundargarh			1
	Total	10	7	13

C&D waste recycling plant available in 7 districts of the state.

Table 50 - Policy update on usage and promotion of recycled C&D waste

Sl. No.	District	Not Available	Yes	No
1	Anugul		1	
2	Balangir	1		
3	Baleshwar		1	
4	Bargarh	1		
5	Bhadrak	1		
6	Boudh			1
7	Cuttack			1
8	Deogarh	1		
9	Dhenkanal		1	
10	Gajapati	1		
11	Ganjam	1		
12	Jagatsinghapur	1		
13	Jajapur		1	
14	Jharsuguda	1		
15	Kalahandi			1
16	Kandhamal	1		
17	Kendrapara	1		
18	Keonjhar			1
19	Khordha		1	
20	Koraput	1		
21	Malkangiri			1
22	Mayurbhanj	1		
23	Nabarangpur	1		
24	Nayagarh	1		
25	Nuapada			1
26	Puri		1	
27	Rayagada			1
28	Sambalpur	1		
29	Subarnapur			1
30	Sundargarh			1
	Total	15	6	9

Policy updates on usage and promotion of recycled C&D waste done in 6 districts of the state.

Table 51 - Awareness programs on C&D waste management

Sl. No.	District	Not Available	Yes	No
1	Anugul		1	
2	Balangir	1		
3	Baleshwar		1	
4	Bargarh	1		
5	Bhadrak	1		
6	Boudh		1	
7	Cuttack		1	
8	Deogarh	1		
9	Dhenkanal		1	
10	Gajapati		1	

Sl. No.	District	Not Available	Yes	No
11	Ganjam		1	
12	Jagatsinghapur	1		
13	Jajapur		1	
14	Jharsuguda		1	
15	Kalahandi		1	
16	Kandhamal		1	
17	Kendrapara	1		
18	Keonjhar		1	
19	Khordha		1	
20	Koraput	1		
21	Malkangiri			1
22	Mayurbhanj		1	
23	Nabarangpur		1	
24	Nayagarh		1	
25	Nuapada		1	
26	Puri		1	
27	Rayagada			1
28	Sambalpur	1		
29	Subarnapur		1	
30	Sundargarh			1
	Total	8	19	3

Awareness programs on C&D waste management conducted in 19 districts of the state.



SECTION V: BIO-MEDICAL WASTE

Key Findings:

- State Pollution Control Board is regulating both bedded and non-bedded HCFs under authorization administration as per Biomedical Waste Management Rules, 2016 which includes State Govt. and other than State Govt. HCFs (status as of March 2020)
- The total Bio Medical Waste generated in the district is 15.71 MT/Day. Khordha generates the highest quantity of Bio Medical Waste at 4.38 MT/Day followed by Cuttack with quantity of 3.07 MT/Day.
- There are 1547 number of bedded HCFs and 2323 number of non-bedded HCFs are covered under the authorization administration of the SPCB.
- Cuttack with 294 number of bedded healthcare facility has the highest number of bedded health care facility and 274 number of non-bedded healthcare facility has the highest number of non-bedded health care facility in the district.
- The total no. of HCF's authorization of SPCB's are 3870, whereas the total no. of healthcare facilities (bedded and non-bedded) HCF's in the 30 districts of the state are 3870 hence all the HCF's in the state which are authorized by SPCB's.
- There are 12 numbers of Common Biomedical Waste Treatment & Disposal Facility (CBWTF) available in Odisha.
- Adequate no. of Common Biomedical Waste Treatment and Disposal Facilities (CBWTFs) are present in 10 districts of the state and 8 districts don't have adequate no. of Common Biomedical Waste Treatment and Disposal Facilities (CBWTFs). However, data on Adequacy of no. of Common Biomedical Waste Treatment and Disposal Facilities (CBWTFs) were not available for 12 districts.
- Capacity of CBWTFs is adequate in 33% of the total districts in the state, whereas 27% of the total districts in the state don't have adequate capacity of CBWTFs. Data on Capacity of CBWTFs are not available for 40 per cent of the total districts in the state.
- The total no. of deep burials for BMW are 2865, out of which Ganjam has the highest no. of deep burials for BMW followed by Keonjhar. Kendrapara and Jagatsinghapur has no deep burials for BMW.
- There is a gap in treatment of Biomedical waste of 7.42 MT/Day.
- Tracking of Bio Medical waste is initiated in 12 districts of the state and not initiated in 11 districts of the state. Data on Tracking of Bio Medical waste not available in 7 districts of the state.
- Compliance to rules by HCFs and CBWTFs initiated in 12 districts of the state. 9 districts don't comply to rules by HCFs and CBWTFs. Data on Compliance to rules by HCFs and CBWTFs not available for 9 districts.
- District Level Monitoring committee is established in 18 districts and not formed in 4 districts. Data on District Level Monitoring committee not available for 8 districts.
- ETPs were installed for treating wastewater by HCFs in 16 districts and not installed in 3 districts. Data on ETPs installed for treating wastewater by HCFs not available in 11 districts.

5.0 Biomedical Waste Management

Biomedical Waste generation inventories include Government & Private Clinical Labs, Veterinary Institutions & Animal Husbandry Centres, etc. Exposure to hazardous biomedical waste can cause disease or injury to human health. HIV, hepatitis B, and C are the three most spread viruses worldwide due to improper treatment of medical wastes. They are transmitted through injuries from contaminated syringes and needles. Doctors, nurses, and sanitation workers are amongst the most vulnerable to the harmful effects of biomedical waste. At a time of rapid emergence of new strains of the novel coronavirus, the importance of appropriate treatment of medical wastes cannot be more emphasized.

The Central Pollution Control Board (CPCB) has issued guidelines on biomedical waste disposal. As per the guidelines, the biomedical wastes are collected in yellow bags. The bags are then taken to Common Biomedical Waste Treatment Facility (CBWTF) or a waste-to-energy plant. There they are incinerated, autoclaved, or burnt to produce energy. Currently, there are around 200 authorized common biomedical waste treatment and disposal facilities in 28 states of India for the safe disposal of biomedical waste.

Table 52 - Bio Medical Waste Generated (MT/Day)

SL No	District	Bio Medical Waste Generated (MT/Day)
1	Anugul	0.41
2	Balangir	0.25
3	Baleshwar	0.34
4	Bargarh	0.15
5	Bhadrak	0.22
6	Boudh	0.03
7	Cuttack	3.07
8	Deogarh	0.05
9	Dhenkanal	0.22
10	Gajapati	0.09
11	Ganjam	1.00
12	Jagatsinghapur	0.88
13	Jajapur	0.26
14	Jharsuguda	0.17
15	Kalahandi	0.15
16	Kandhamal	0.10
17	Kendrapara	0.16
18	Keonjhar	0.26
19	Khordha	4.38
20	Koraput	0.20
21	Malkangiri	0.08
22	Mayurbhanj	0.32
23	Nabarangpur	0.11
24	Nayagarh	0.23
25	Nuapada	0.14
26	Puri	0.27
27	Rayagada	0.13
28	Sambalpur	0.68
29	Subarnapur	0.07
30	Sundargarh	1.29
	Total	15.71

The total Bio Medical Waste generated in the district is 15.71 MT/Day.

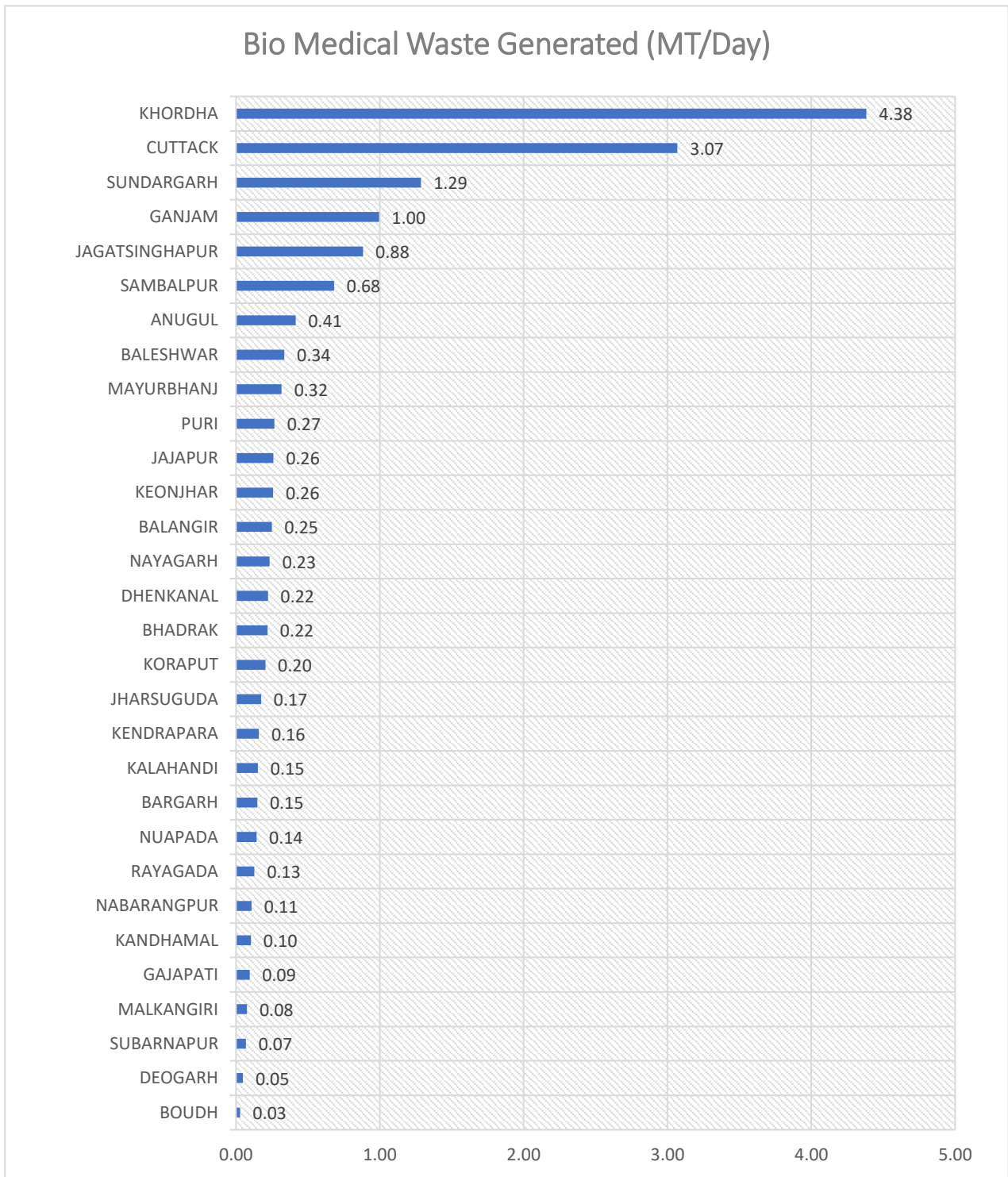


Figure 36 - Bio Medical Waste Generated (MT/Day)

Khordha generates the highest quantity of Bio Medical Waste at 4.38 MT/Day followed by Cuttack with quantity of 3.07 MT/Day.

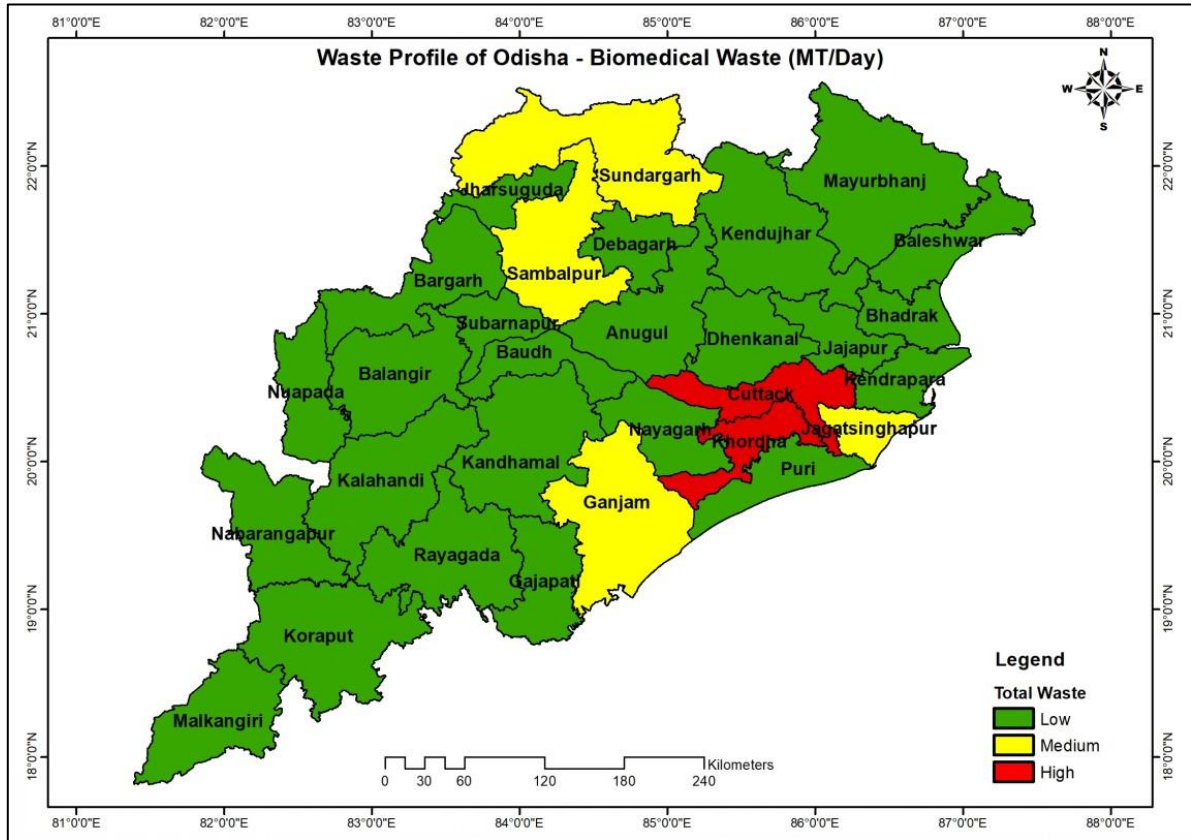


Figure 37: Total Bio-medical waste generated (MT/Day)

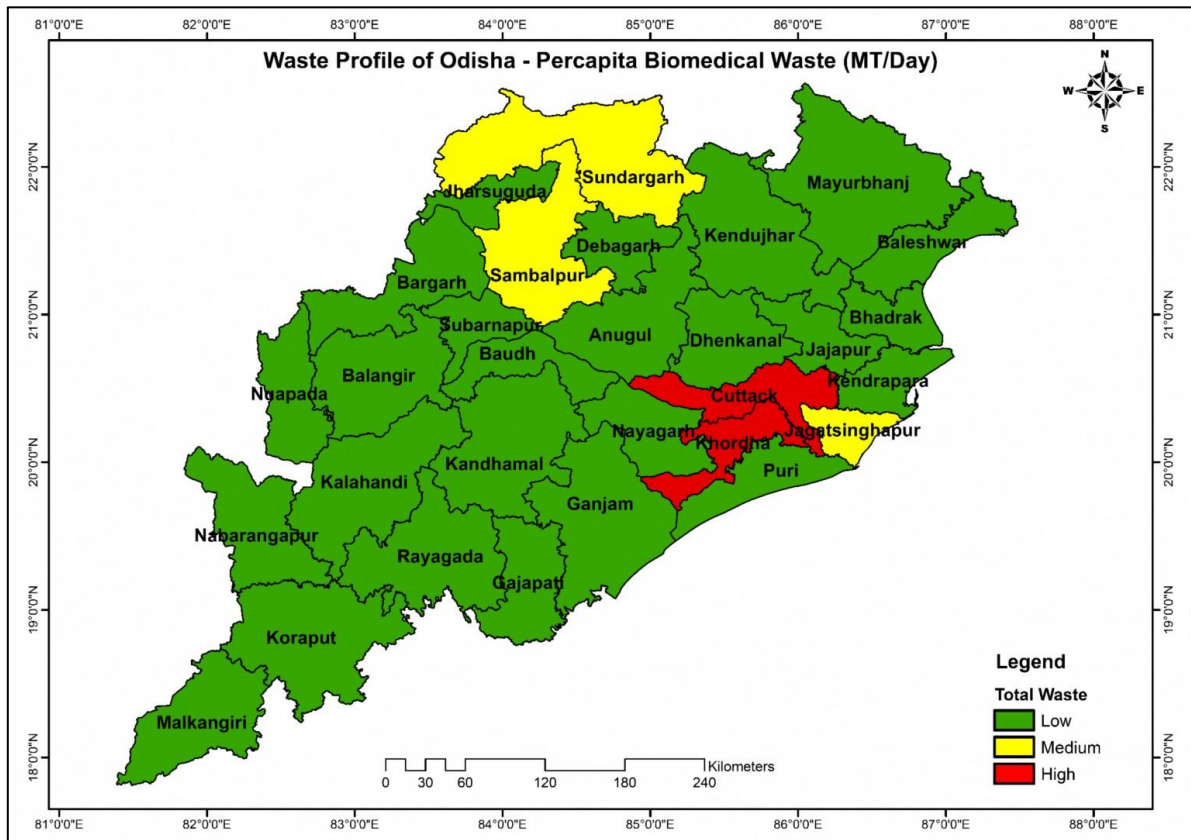


Figure 38: Per Capita Bio-medical waste generated (MT/Day)

Table 53 - No. of Bedded Healthcare Facility

Sl. No.	District	No. of Bedded healthcare facility
1	Anugul	59
2	Balangir	39
3	Baleshwar	60
4	Bargarh	48
5	Bhadrak	32
6	Boudh	6
7	Cuttack	294
8	Deogarh	7
9	Dhenkanal	48
10	Gajapati	17
11	Ganjam	128
12	Jagatsinghapur	27
13	Jajapur	47
14	Jharsuguda	33
15	Kalahandi	33
16	Kandhamal	19
17	Kendrapara	28
18	Keonjhar	56
19	Khordha	176
20	Koraput	28
21	Malkangiri	22
22	Mayurbhanj	49
23	Nabarangpur	14
24	Nayagarh	37
25	Nuapada	15
26	Puri	53
27	Rayagada	28
28	Sambalpur	62
29	Subarnapur	12
30	Sundargarh	70
	Total	1547

The total number of Bedded Health Care facilities in 30 districts of the state is 1547. Cuttack with 294 number of bedded healthcare facility has the highest number of bedded health care facility in the district.

Table 54 - No. of Non-bedded Health Care Facilities

Sl. No.	District	No. of Non-Bedded healthcare facility
1	Anugul	87
2	Balangir	60
3	Baleshwar	131
4	Bargarh	74
5	Bhadrak	56
6	Boudh	14
7	Cuttack	274
8	Deogarh	9
9	Dhenkanal	41
10	Gajapati	21
11	Ganjam	147
12	Jagatsinghapur	45
13	Jajapur	77
14	Jharsuguda	32
15	Kalahandi	85
16	Kandhamal	49
17	Kendrapara	59
18	Keonjhar	126
19	Khordha	199
20	Koraput	66
21	Malkangiri	22
22	Mayurbhanj	79

Sl. No.	District	No. of Non-Bedded healthcare facility
23	Nabarangpur	47
24	Nayagarh	57
25	Nuapada	27
26	Puri	77
27	Rayagada	58
28	Sambalpur	80
29	Subarnapur	23
30	Sundargarh	201
	Total	2323

The total number of non-bedded health care facilities in the district are 2323. Cuttack with 274 number of non-bedded health care facilities has the highest number of non-bedded health care facilities in the district.

Table 55 - No. of HCF's authorization of SPCB's

Sl. No.	District	No. of HCFS Authorization of SPCBs
1	Anugul	146
2	Balangir	99
3	Baleshwar	191
4	Bargarh	122
5	Bhadrak	88
6	Boudh	20
7	Cuttack	568
8	Deogarh	16
9	Dhenkanal	89
10	Gajapati	38
11	Ganjam	275
12	Jagatsinghapur	72
13	Jajapur	124
14	Jharsuguda	65
15	Kalahandi	118
16	Kandhamal	68
17	Kendrapara	87
18	Keonjhar	182
19	Khordha	375
20	Koraput	94
21	Malkangiri	44
22	Mayurbhanj	128
23	Nabarangpur	61
24	Nayagarh	94
25	Nuapada	42
26	Puri	130
27	Rayagada	86
28	Sambalpur	142
29	Subarnapur	35
30	Sundargarh	271
	Total	3870

The total no. of HCF's authorization of SPCB's are 3870, whereas the total no. of healthcare facilities (bedded and non-bedded) HCF's in the 30 districts of the state are 3870 hence all the HCF's in the state which are authorized by SPCB's.

Table 56 - No. of Common Biomedical Waste Treatment & Disposal Facilities

Sl. No.	District	No. of Common Biomedical Waste Treatment & Disposal Facilities
1	Anugul	0
2	Balangir	0
3	Baleshwar	0
4	Bargarh	0
5	Bhadrak	0
6	Deogarh	0

Sl. No.	District	No. of Common Biomedical Waste Treatment & Disposal Facilities
7	Dhenkanal	0
8	Jagatsinghapur	0
9	Jajapur	0
10	Jharsuguda	0
11	Kalahandi	0
12	Kandhamal	0
13	Kendrapara	0
14	Keonjhar	0
15	Koraput	0
16	Malkangiri	0
17	Mayurbhanj	0
18	Nayagarh	0
19	Nuapada	0
20	Puri	0
21	Rayagada	0
22	Subarnapur	0
23	Boudh	1
24	Cuttack	1
25	Gajapati	1
26	Khordha	1
27	Nabarangpur	1
28	Sambalpur	1
29	Sundargarh	1
30	Ganjam	5
	Total	12

The total no. of Common Biomedical Waste Treatment and Disposal Facilities (CBWTFs) in the state is 12. The district of Ganjam has the highest number of CBWTFs in the state.

Table 57 - Capacity of Common Biomedical Waste Treatment and Disposal Facilities (CBWTFs)

Sl. No.	District	Not Available	Adequate	Not Adequate
1	Anugul			1
2	Balangir	1		
3	Baleshwar	1		
4	Bargarh			1
5	Bhadrak			1
6	Boudh		1	
7	Cuttack		1	
8	Deogarh			1
9	Dhenkanal	1		
10	Gajapati		1	
11	Ganjam		1	
12	Jagatsinghapur		1	
13	Jajapur	1		
14	Jharsuguda		1	
15	Kalahandi			1
16	Kandhamal	1		
17	Kendrapara			1
18	Keonjhar	1		
19	Khordha		1	
20	Koraput	1		
21	Malkangiri	1		
22	Mayurbhanj			1
23	Nabarangpur	1		
24	Nayagarh			1
25	Nuapada		1	
26	Puri	1		
27	Rayagada	1		
28	Sambalpur		1	
29	Subarnapur	1		

Sl. No.	District	Not Available	Adequate	Not Adequate
30	Sundargarh		1	
	Total	12	10	8

Adequate no. of Common Biomedical Waste Treatment and Disposal Facilities (CBWTFs) are present in 10 districts of the state and 8 districts don't have adequate no. of Common Biomedical Waste Treatment and Disposal Facilities (CBWTFs). However, data on Adequacy of no. of Common Biomedical Waste Treatment and Disposal Facilities (CBWTFs) were not available for 12 districts.

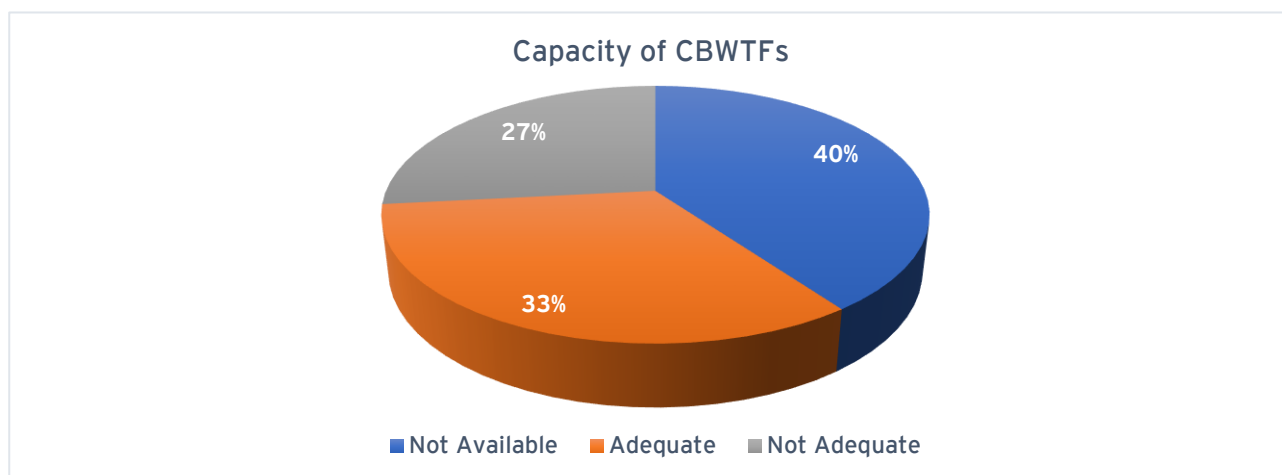


Figure 39 - Capacity of CBWTFs

Capacity of CBWTFs is adequate in 33 per cent of the total districts in the state, whereas 27 per cent of the districts in the state don't have adequate capacity of CBWTFs. Data on Capacity of CBWTFs are not available for 40 per cent of the total districts in the state.

Table 58 - No. of Deep Burials for BMW

Sl. No.	District	No. of Deep Burials for BMW
1	Jagatsinghapur	0
2	Kendrapara	0
3	Nabarangpur	1
4	Khordha	2
5	Puri	2
6	Balangir	9
7	Jharsuguda	9
8	Deogarh	11
9	Boudh	19
10	Sundargarh	21
11	Subarnapur	42
12	Nayagarh	48
13	Bargarh	53
14	Bhadrak	63
15	Sambalpur	63
16	Kandhamal	74
17	Cuttack	89
18	Gajapati	95
19	Malkangiri	97
20	Anugul	104
21	Baleshwar	112
22	Rayagada	126
23	Dhenkanal	151
24	Mayurbhanj	156
25	Nuapada	159
26	Jajapur	181
27	Koraput	214

Sl. No.	District	No. of Deep Burials for BMW
28	Kalahandi	233
29	Keonjhar	310
30	Ganjam	421
	Total	2865

The total no. of deep burials for BMW are 2865.

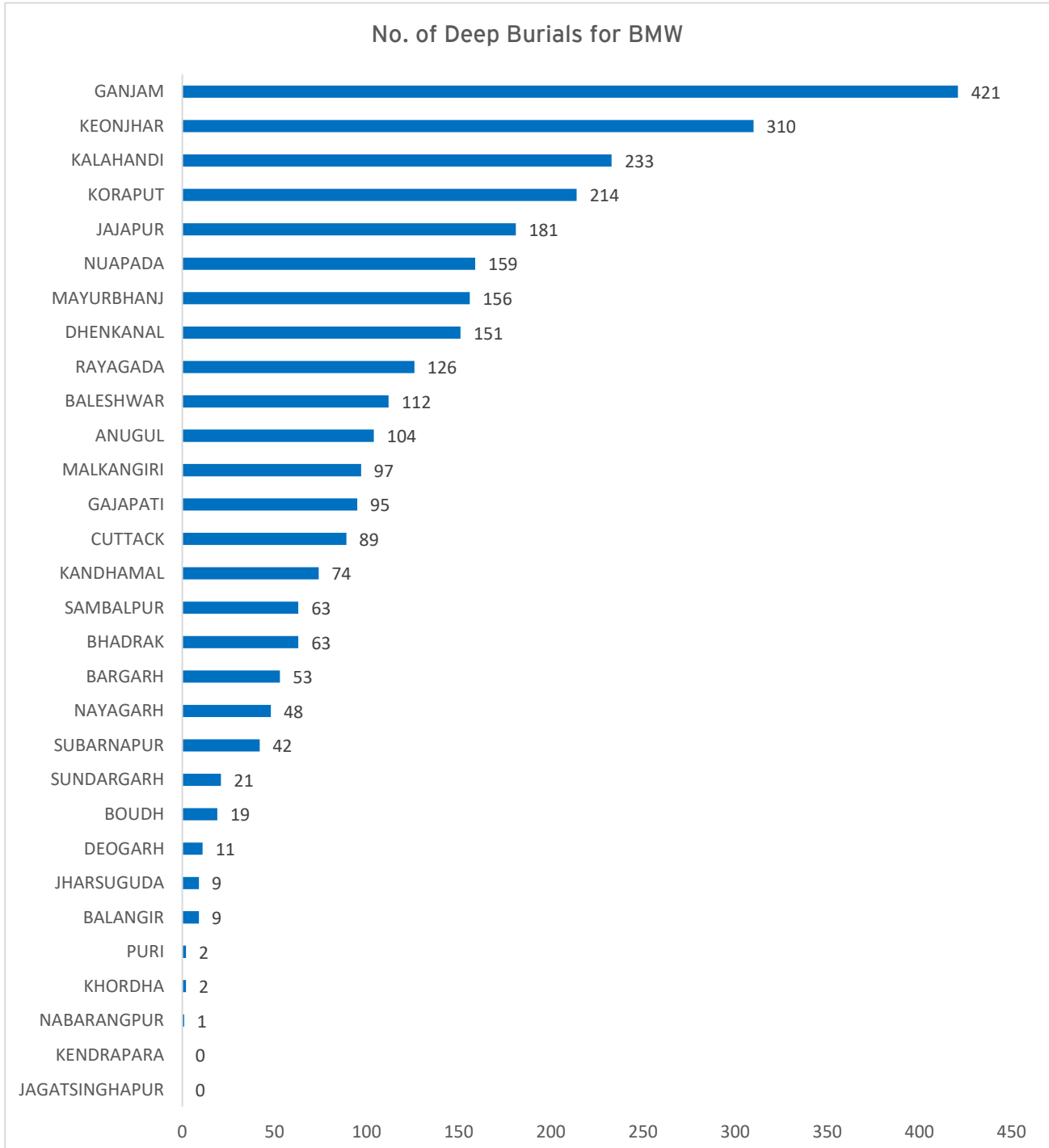


Figure 40 - No. of Deep Burials for BMW

Ganjam has the highest no. of deep burials for BMW followed by Keonjhar. Kendrapara and Jagatsinghapur has no deep burials for BMW.

Table 59 - Bio Medical Waste Generated (MT/Day)

Sl. No.	District	Bio Medical Waste Generated (MT/Day)
1	Boudh	0.03
2	Deogarh	0.05
3	Subarnapur	0.07
4	Malkangiri	0.08
5	Gajapati	0.09
6	Kandhamal	0.10
7	Nabarangpur	0.11
8	Rayagada	0.13
9	Nuapada	0.14
10	Bargarh	0.15
11	Kalahandi	0.15
12	Kendrapara	0.16
13	Jharsuguda	0.17
14	Koraput	0.20
15	Bhadrak	0.22
16	Dhenkanal	0.22
17	Nayagarh	0.23
18	Balangir	0.25
19	Keonjhar	0.26
20	Jajapur	0.26
21	Puri	0.27
22	Mayurbhanj	0.32
23	Baleshwar	0.34
24	Anugul	0.41
25	Sambalpur	0.68
26	Jagatsinghapur	0.88
27	Ganjam	1.00
28	Sundargarh	1.29
29	Cuttack	3.07
30	Khordha	4.38
	Total	15.71

The total Bio Medical Waste generated in the district is 15.71 MT/Day. Khordha generates the highest quantity of Bio Medical Waste at 4.38 MT/Day followed by Cuttack with quantity of 3.07 MT/Day.

Table 60 - Biomedical Waste Treated (MT/Day)

Sl. No.	District	Biomedical Waste Treated (MT/Day)
1	Baleshwar	0.0000
2	Bhadrak	0.0000
3	Deogarh	0.0000
4	Jagatsinghapur	0.0000
5	Kendrapara	0.0000
6	Nabarangpur	0.0000
7	Boudh	0.0200
8	Jharsuguda	0.0250
9	Bargarh	0.0342
10	Subarnapur	0.0360
11	Kalahandi	0.0600
12	Nuapada	0.0600
13	Dhenkanal	0.0650
14	Balangir	0.0800
15	Anugul	0.0850
16	Sambalpur	0.0960
17	Malkangiri	0.0978
18	Gajapati	0.1100
19	Sundargarh	0.1200
20	Kandhamal	0.1300
21	Rayagada	0.1826
22	Puri	0.2320

Sl. No.	District	Biomedical Waste Treated (MT/Day)
23	Nayagarh	0.2400
24	Mayurbhanj	0.3050
25	Jajapur	0.3500
26	Keonjhar	0.3500
27	Ganjam	0.3512
28	Koraput	0.5800
29	Cuttack	2.3276
30	Khordha	2.3550
	Total	8.2923

The Total Biomedical Waste Treated per day in the 30 districts of the state is 8.29 MT/Day. Khordha has the highest treatment of Biomedical waste in the state. The total Bio Medical Waste generated in the district is 15.71 MT/Day and the Total Biomedical Waste Treated per day in the 30 districts of the state is 8.29 MT/Day. Hence there is a gap in treatment of Biomedical waste of 7.42 MT/Day.

Table 61 - Tracking of Biomedical Waste

Sl. No.	District	No Data	Initiated	Not Initiated
1	Anugul			1
2	Balangir		1	
3	Baleshwar			1
4	Bargarh			1
5	Bhadrak	1		
6	Boudh			1
7	Cuttack		1	
8	Deogarh	1		
9	Dhenkanal			1
10	Gajapati			1
11	Ganjam			1
12	Jagatsinghapur		1	
13	Jajapur			1
14	Jharsuguda	1		
15	Kalahandi		1	
16	Kandhamal		1	
17	Kendrapara	1		
18	Keonjhar		1	
19	Khordha		1	
20	Koraput	1		
21	Malkangiri			1
22	Mayurbhanj		1	
23	Nabarangpur	1		
24	Nayagarh		1	
25	Nuapada	1		
26	Puri		1	
27	Rayagada			1
28	Sambalpur		1	
29	Subarnapur		1	
30	Sundargarh			1
	Total	7	12	11

Tracking of Bio Medical waste is initiated in 12 districts of the state and not initiated in 11 districts of the state. Data on Tracking of Bio Medical waste not available in 7 districts of the state.

Table 62 - Compliance to rules by HCFs and CBWTFs

Sl. No.	District	Not Available	Yes	No
1	Anugul		1	
2	Balangir		1	
3	Baleshwar			1
4	Bargarh		1	
5	Bhadrak	1		
6	Boudh		1	

Sl. No.	District	Not Available	Yes	No
7	Cuttack		1	
8	Deogarh	1		
9	Dhenkanal		1	
10	Gajapati			1
11	Ganjam	1		
12	Jagatsinghapur			1
13	Jajapur		1	
14	Jharsuguda	1		
15	Kalahandi		1	
16	Kandhamal		1	
17	Kendrapara	1		
18	Keonjhar	1		
19	Khordha			1
20	Koraput	1		
21	Malkangiri			1
22	Mayurbhanj			1
23	Nabarangpur	1		
24	Nayagarh			1
25	Nuapada	1		
26	Puri			1
27	Rayagada			1
28	Sambalpur		1	
29	Subarnapur		1	
30	Sundargarh		1	
	Total	9	12	9

Compliance to rules by HCFs and CBWTFs initiated in 12 districts of the state. 9 districts don't comply to rules by HCFs and CBWTFs. Data on Compliance to rules by HCFs and CBWTFs not available for 9 districts.

Table 63 - Construction of District Level Monitoring Committee

Sl. No.	District	No Response	Yes	No
1	Anugul		1	
2	Balangir		1	
3	Baleshwar		1	
4	Bargarh		1	
5	Bhadrak	1		
6	Boudh		1	
7	Cuttack		1	
8	Deogarh	1		
9	Dhenkanal		1	
10	Gajapati			1
11	Ganjam		1	
12	Jagatsinghapur		1	
13	Jajapur		1	
14	Jharsuguda	1		
15	Kalahandi		1	
16	Kandhamal		1	
17	Kendrapara	1		
18	Keonjhar	1		
19	Khordha		1	
20	Koraput	1		
21	Malkangiri			1
22	Mayurbhanj		1	
23	Nabarangpur	1		
24	Nayagarh		1	
25	Nuapada	1		
26	Puri			1
27	Rayagada			1
28	Sambalpur		1	
29	Subarnapur		1	

Sl. No.	District	No Response	Yes	No
30	Sundargarh		1	
	Total	8	18	4

District Level Monitoring committee is established in 18 districts and not formed in 4 districts. Data on District Level Monitoring committee not available for 8 districts.

Table 64: Installation of ETPs for generated wastewater by HCFs

Sl. No.	District	No Response	Yes	No
1	Anugul		1	
2	Balangir		1	
3	Baleshwar		1	
4	Bargarh		1	
5	Bhadrak	1		
6	Boudh		1	
7	Cuttack		1	
8	Deogarh	1		
9	Dhenkanal		1	
10	Gajapati			1
11	Ganjam		1	
12	Jagatsinghapur		1	
13	Jajapur		1	
14	Jharsuguda	1		
15	Kalahandi			1
16	Kandhamal		1	
17	Kendrapara	1		
18	Keonjhar	1		
19	Khordha	1		
20	Koraput	1		
21	Malkangiri		1	
22	Mayurbhanj		1	
23	Nabarangpur	1		
24	Nayagarh	1		
25	Nuapada	1		
26	Puri		1	
27	Rayagada		1	
28	Sambalpur		1	
29	Subarnapur			1
30	Sundargarh	1		
	Total	11	16	3

ETPs were installed for treating wastewater by HCFs in 16 districts and not installed in 3 districts. Data on ETPs installed for treating wastewater by HCFs not available in 11 districts.



SECTION VI: HAZARDOUS WASTE

Key Findings:

- Total 969261.60 MT/Annum quantity of hazardous waste is generated from industries in the state. Out of total waste, incinerable HW is 429.97 MT/Annum, land fillable HW is 57515.381 MT/annum and recyclable is 17599.42 MT/annum and utilizable HW is 893537.903 MT/annum.
- The District of Jharsuguda generates the maximum amount of Utilizable HW MT/Annum at 270920.419 MT/Annum.
- Treatment, storage, and disposal facility (TSDF) available in 3 districts of the state viz. Jajapur, Baleswar and Balangir. A total of 4 TSDF's are present in the district. A total of 9 SLF's are available in 4 districts of the state viz. Jagatsinghapur, Jharsuguda, Rayagada and Sundargarh. A single Standalone incinerator is available in the district of Sundargarh.
- A total of 19 probable contaminated sites for Hazardous waste are present in the districts of Anugul, Ganjam, Jagatsinghapur, Jajapur, Kalahandi, Koraput, Mayurbhanj and Sundargarh. The district of Anugul has 5 probable contaminated sites for Hazardous waste which is the highest in the state.
- Hazardous waste of industries identified by SPCBs/PCCs in 9 districts of the state and same no. of districts of the state engage in recycling of Hazardous waste.

6.0 Hazardous Waste Management

The destruction of natural resources, cancer and other ailments in humans and animals, rubbish in our parks and waterways, and indicators of animal mutation are some long-term repercussions of inappropriate hazardous waste disposal. Environmental pollution is causing insect numbers to decline faster than they can reproduce, including bee colonies, which are essential for maintaining plant fertility. The hazardous waste generated is either sold to re-processors, reused and rest disposed to CHWTSDF. Management of hazardous waste is very careful and tedious process.

Table 65 - Hazardous Waste generated in district (MT/Annum)

Sl. No.	District	Hazardous Waste generated in district (MT/Annum)
1	Anugul	188009.30
2	Balangir	13.30
3	Baleshwar	1636.22
4	Bargarh	7.03
5	Bhadrak	1158.40
6	Boudh	0.00
7	Cuttack	7472.47
8	Deogarh	0.00
9	Dhenkanal	171913.10
10	Gajapati	0.00
11	Ganjam	1855.08
12	Jagatsinghapur	19555.58
13	Jajapur	46797.85
14	Jharsuguda	283533.40
15	Kalahandi	64.34
16	Kandhamal	0.00
17	Kendrapara	0.00
18	Keonjhar	10387.03
19	Khordha	8014.37
20	Koraput	108.73
21	Malkangiri	12.00
22	Mayurbhanj	169.31
23	Nabarangpur	0.00
24	Nayagarh	0.00
25	Nuapada	0.00
26	Puri	0.00
27	Rayagada	2001.69
28	Sambalpur	127944.60
29	Subarnapur	0.00
30	Sundargarh	98607.81
	Total	969261.60

The total Hazardous waste generated in the state is 969261.60 MT/Annum. The District of Jharsuguda generates the maximum amount of Hazardous waste.

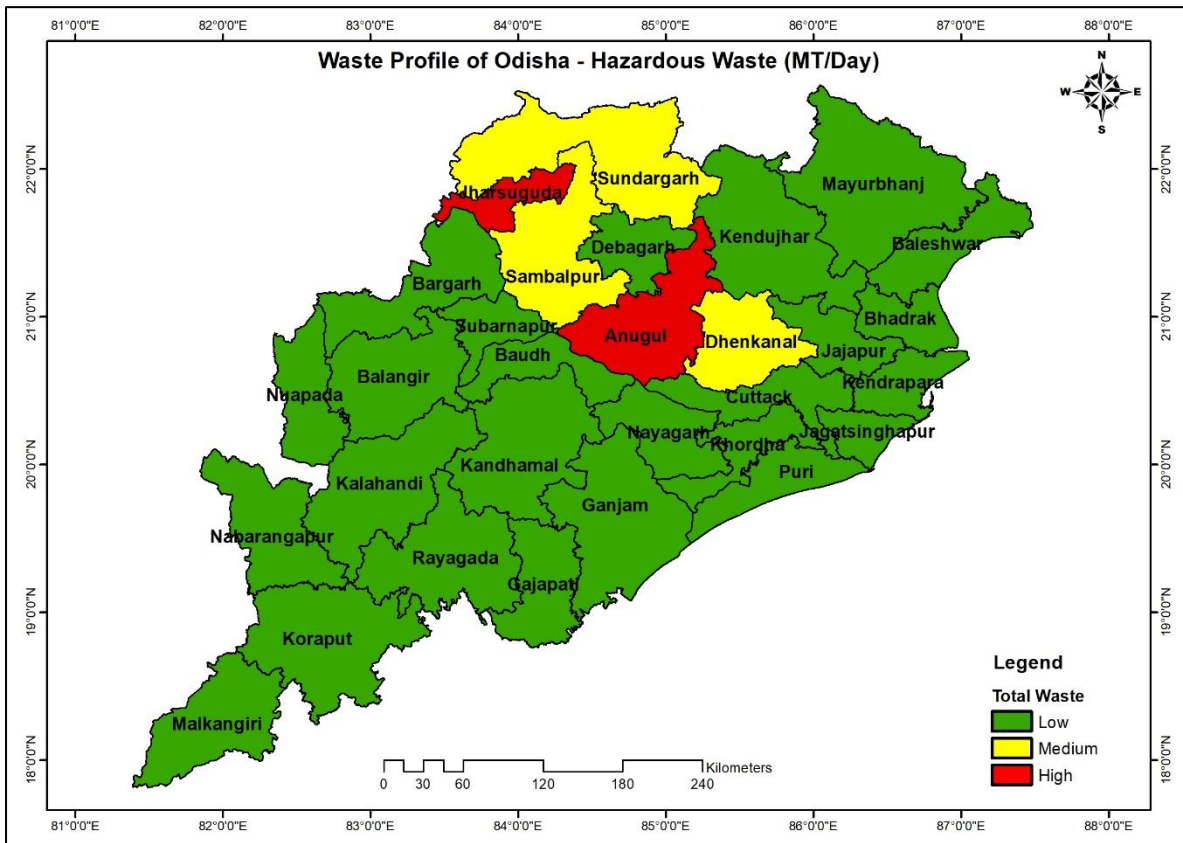


Figure 41 Total Hazardous waste generated (MT/day)

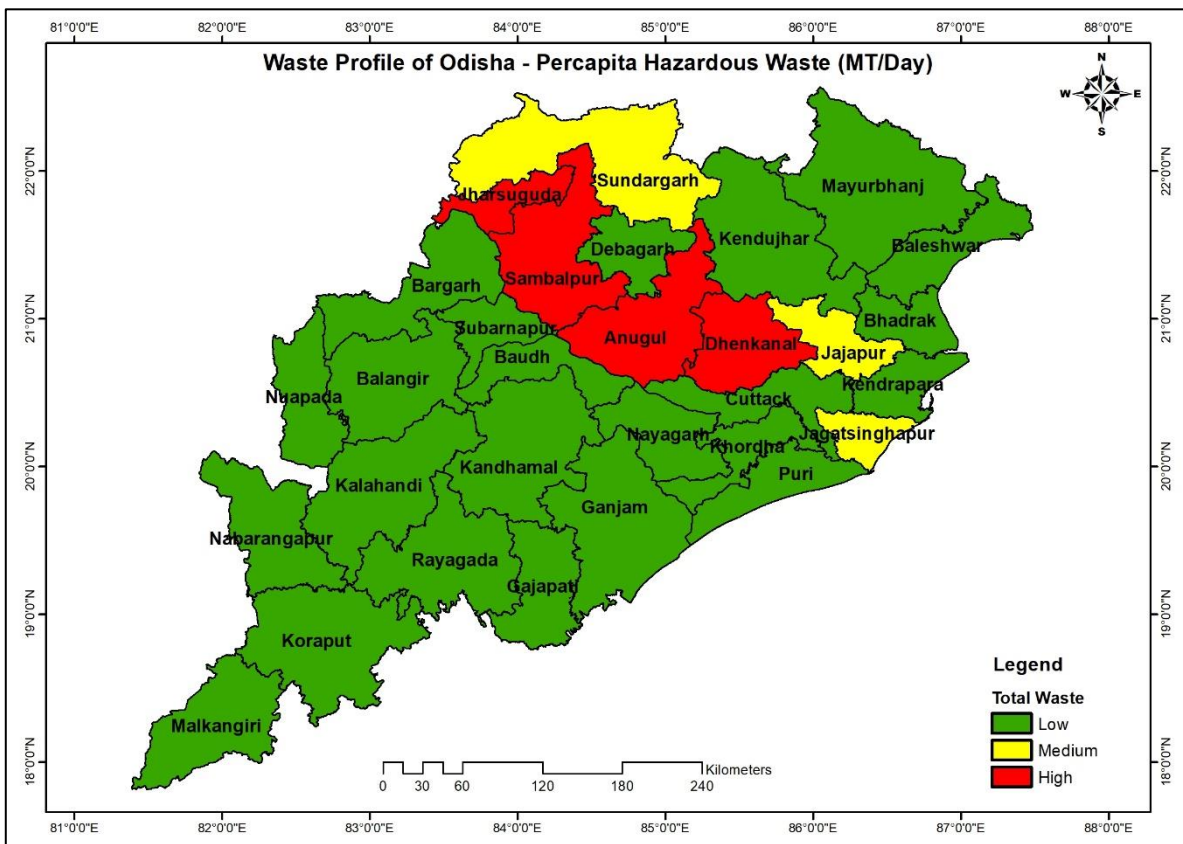


Figure 42 Per Capita Hazardous waste generated (MT/Day)

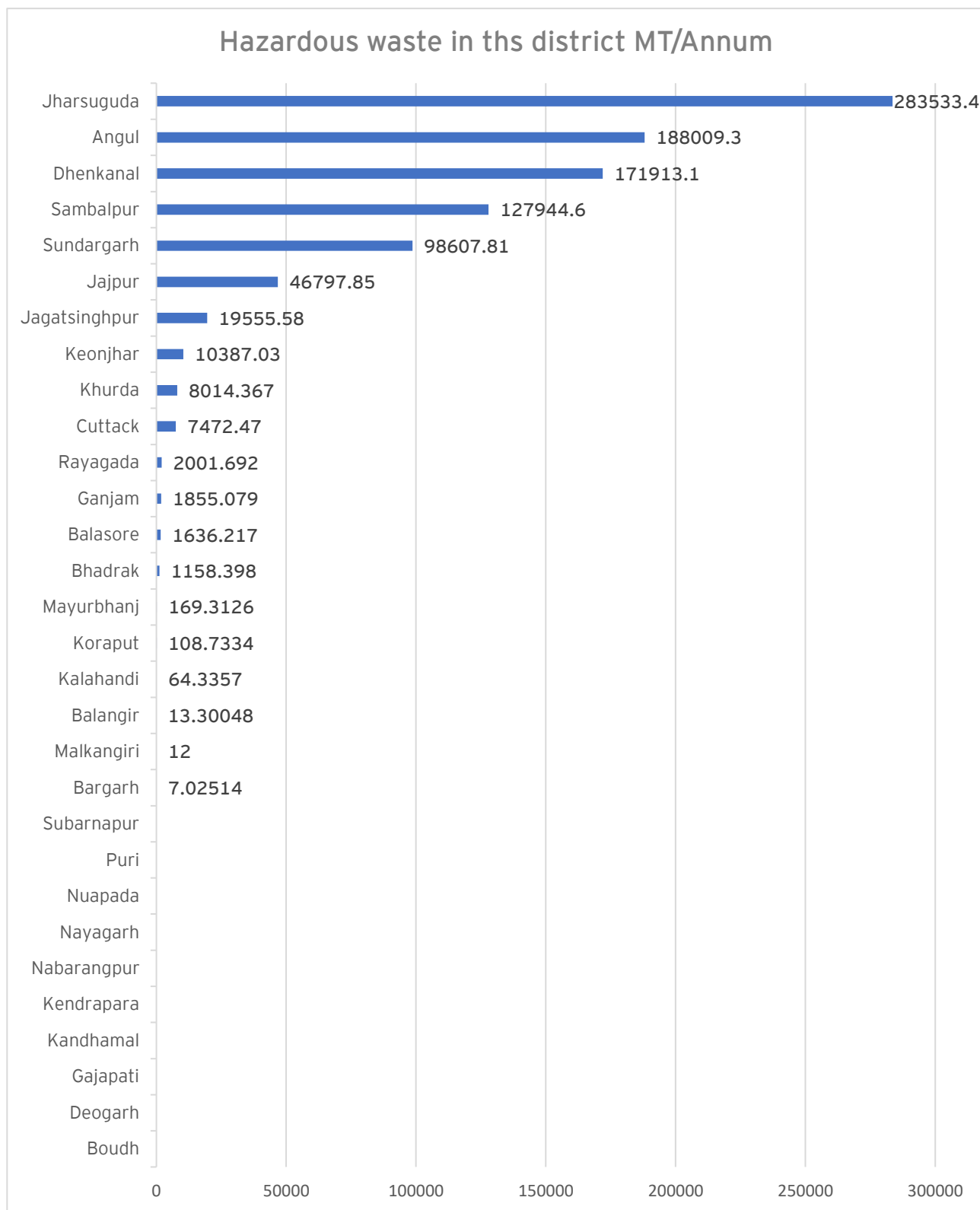


Figure 43: Hazardous waste generated in the district (MT/Day)

Table 66 - Categories of Hazardous waste in districts

Sl. No.	District	Incinerable HW(MT/Annum)	Land-fillable HW(MT/Annum)	Recyclable HW(MT/Annum)	Utilizable HW(MT/Annum)
1	Anugul	159.153	5138.858	1242.27	181451.1
2	Balangir	0	1.075	3.115	9.099
3	Baleshwar	7.374	11.431	18.73	1598.579
4	Bargarh	0.01	0	6.986	0
5	Bhadrak	1.6	0	1152.6	1.036
6	Boudh	0	0	0	0
7	Cuttack	7.5	14.18	36.045	7414.587
8	Deogarh	0	0	0	0
9	Dhenkanal	3.164	980.59	310.415	170615.4
10	Gajapati	0	0	0	0
11	Ganjam	3.201	0.157	685.625	1164.208
12	Jagatsinghapur	3.75	190.865	10059.34	9301.62
13	Jajapur	44.399	29259.87	575.63	16836.09
14	Jharsuguda	135.356	12088.788	354.329	270920.4
15	Kalahandi	0	0	45.88	18.33
16	Kandhamal	0	0	0	0
17	Kendrapara	0	0	0	0
18	Keonjhar	9.356	0	517.655	9858.579
19	Khordha	4.608	8.26	43.004	7958.342
20	Koraput	5.8	6.622	95.017	1
21	Malkangiri	0	0	0	12
22	Mayurbhanj	0	61.99	106.86	0
23	Nabarangpur	0	0	0	0
24	Nayagarh	0	0	0	0
25	Nuapada	0	0	0	0
26	Puri	0	0	0	0
27	Rayagada	3.747	0	157.396	1840.108
28	Sambalpur	0.628	8730.649	1552.014	117633.2
29	Subarnapur	0	0	0	0
30	Sundargarh	40.329	1022.046	636.515	96904.26
	Total	429.975	57515.381	17599.426	893537.938

Categories of Hazardous waste (HW) are Incinerable HW, Land-fillable HW, Recyclable HW and Utilizable HW (MT/Annum). Total Incinerable Hazardous waste generated in the state is 429.97 MT/Annum. The District of Anugul generates the maximum amount of Incinerable HW at 159.153 MT/Annum. Total Land-fillable HW generated in the district is 57515.381 MT/Annum. The District of Jajapur generates the maximum amount of Land-fillable HW at 29259.87 MT/Annum. Total Recyclable HW generated in the state is 17599.426 MT/Annum. The District of Jagatsinghapur generates the maximum amount of Recyclable HW at 10059.34 MT/Annum. Total Utilizable HW waste generated in the state is 893537.938 MT/Annum. The District of Jharsuguda generates the maximum amount of Utilizable HW MT/Annum at 270920.4 MT/Annum.

Table 67 - No. of TSDFs, SLFs, Standalone Incinerators

Sl. No.	District	No. of TSDFs	No. of SLFs	No. of Standalone incinerators
1	Anugul	0	0	0
2	Balangir	1		
3	Baleshwar	2	0	0
4	Bargarh			
5	Bhadrak	0	0	0
6	Boudh	0		
7	Cuttack	0	0	0
8	Deogarh			
9	Dhenkanal	0	0	0
10	Gajapati	0	0	0
11	Ganjam	0	0	0
12	Jagatsinghapur	0	3	0

Sl. No.	District	No. of TSDFs	No. of SLFs	No. of Standalone incinerators
13	Jajapur	1	0	0
14	Jharsuguda		3	
15	Kalahandi	0	0	0
16	Kandhamal	0	0	0
17	Kendrapara	0	0	0
18	Keonjhar	0	0	0
19	Khordha			
20	Koraput	0	0	0
21	Malkangiri	0	0	0
22	Mayurbhanj			
23	Nabarangpur			
24	Nayagarh			
25	Nuapada			
26	Puri			
27	Rayagada	0	1	0
28	Sambalpur			
29	Subarnapur	0	0	0
30	Sundargarh	0	2	1
	Total	4	9	1

Treatment, storage, and disposal facility (TSDF) available in 3 districts of the state viz. Jajapur, Baleswar and Balangir. A total of 4 TSDF's are present in the district. A total of 9 SLF's are available in 4 districts of the state viz. Jagatsinghapur, Jharsuguda, Rayagada and Sundargarh. A single Standalone incinerator is available in the district of Sundargarh.

Table 68 - Probable contaminates sites of Hazardous waste

Sl. No.	District	No. of probable contaminated sited for HW	No. of districts with probable contaminated sited for HW
1	Anugul	5	5
2	Balangir	0	
3	Baleswar	0	
4	Bargarh	0	
5	Bhadrak	0	
6	Boudh	0	
7	Cuttack	0	
8	Deogarh	0	
9	Dhenkanal	0	
10	Gajapati	0	
11	Ganjam	3	3
12	Jagatsinghapur	2	2
13	Jajapur	2	2
14	Jharsuguda	0	
15	Kalahandi	1	1
16	Kandhamal	0	
17	Kendrapara	0	
18	Keonjhar	0	
19	Khordha	0	
20	Koraput	1	1
21	Malkangiri	0	
22	Mayurbhanj	1	1
23	Nabarangpur	0	
24	Nayagarh	0	
25	Nuapada	0	
26	Puri	0	
27	Rayagada	0	
28	Sambalpur	0	
29	Subarnapur	0	
30	Sundargarh	4	4
	Total	19	8 districts

A total of 19 probable contaminated sites for Hazardous waste are present in the districts of Anugul, Ganjam, Jagatsinghapur, Jajapur, Kalahandi, Koraput, Mayurbhanj and Sundargarh. The district of Anugul has 5 probable contaminated sites for Hazardous waste which is the highest in the state.

Table 69 - Identification of hazardous waste industries by SPCBs/PCCs

Sl. No.	Districts	Not Available	No	Yes
1	Anugul			1
2	Balangir		1	
3	Baleshwar			1
4	Bargarh	1		
5	Bhadrak	1		
6	Boudh			1
7	Cuttack			1
8	Deogarh	1		
9	Dhenkanal			1
10	Gajapati	1		
11	Ganjam		1	
12	Jagatsinghapur	1		
13	Jajapur	1		
14	Jharsuguda	1		
15	Kalahandi	1		
16	Kandhamal		1	
17	Kendrapara	1		
18	Keonjhar		1	
19	Khordha		1	
20	Koraput	1		
21	Malkangiri			1
22	Mayurbhanj			1
23	Nabarangpur	1		
24	Nayagarh		1	
25	Nuapada	1		
26	Puri	1		
27	Rayagada			1
28	Sambalpur		1	
29	Subarnapur	1		
30	Sundargarh			1
	Total	14	7	9

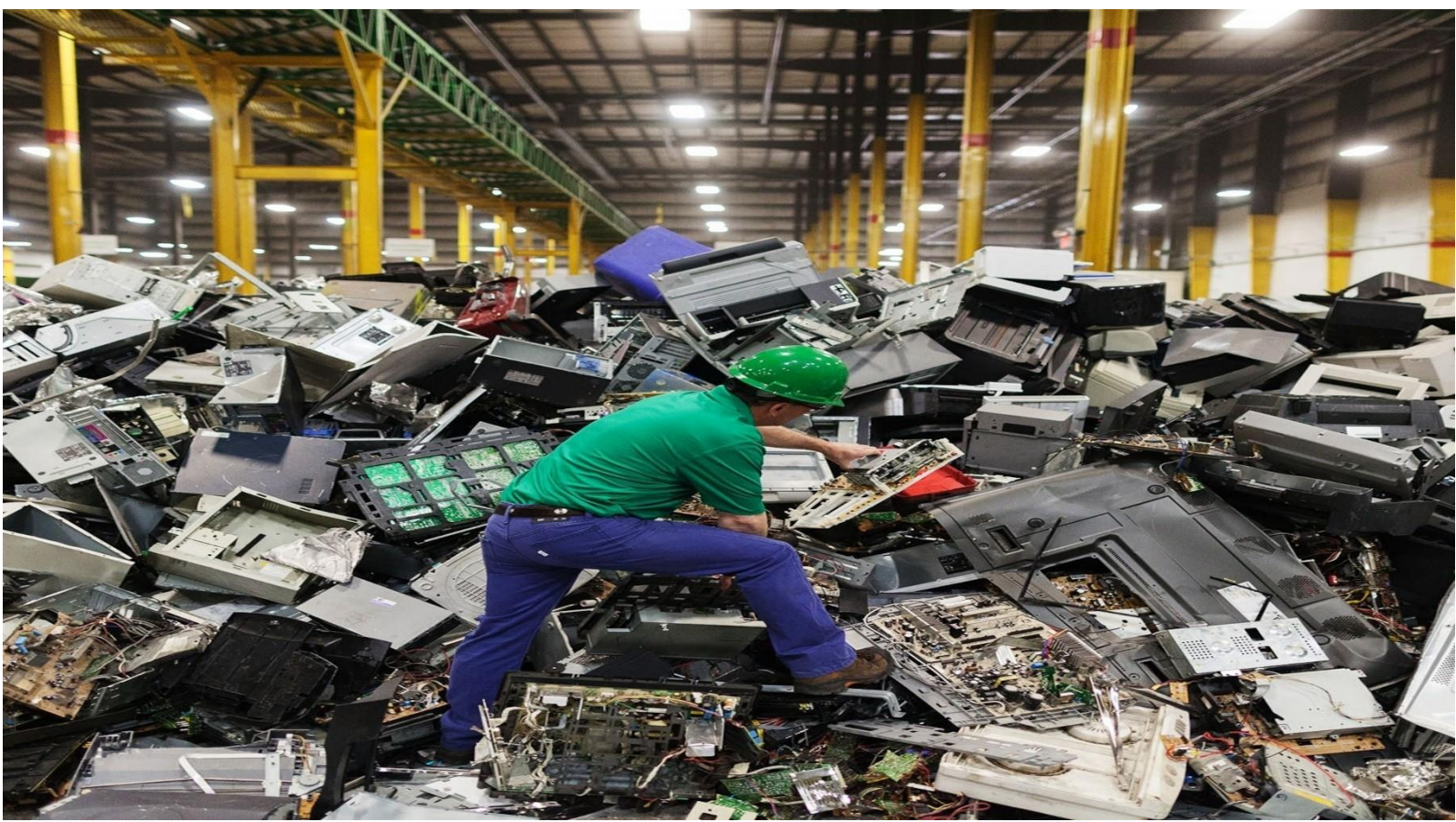
Hazardous waste of industries identified by SPCBs/PCCs in 9 districts of the state.

Table 70 - Industries engaged in recycling

Sl. No.	Districts	Not Available	No	Yes
1	Anugul			1
2	Balangir			1
3	Baleshwar	1		
4	Bargarh	1		
5	Bhadrak	1		
6	Boudh	1		
7	Cuttack			1
8	Deogarh	1		
9	Dhenkanal			1
10	Gajapati	1		
11	Ganjam			1
12	Jagatsinghapur	1		
13	Jajapur			1
14	Jharsuguda	1		
15	Kalahandi	1		
16	Kandhamal			1
17	Kendrapara	1		
18	Keonjhar	1		
19	Khordha	1		

Sl. No.	Districts	Not Available	No	Yes
20	Koraput	1		
21	Malkangiri	1		
22	Mayurbhanj	1		
23	Nabarangpur	1		
24	Nayagarh			1
25	Nuapada	1		
26	Puri	1		
27	Rayagada	1		
28	Sambalpur	1		
29	Subarnapur	1		
30	Sundargarh			1
	Total	21	0	9

Out of the 30 districts, only 9 districts of the state are engaged in recycling of Hazardous waste.



SECTION VII: E-WASTE

Key Findings:

- The total E-waste generated in the state is 0.67 MT/day with Sundargarh district generating the highest with 0.26 MT/Day.
- There are a total of 63 collection centers in ULB's. The District of Keonjhar has the maximum number of collection centers in the state.
- 18 districts of the state have collection centers for E-Waste. 12 districts in the state doesn't have any E-waste collection centers.
- Collection centers established by Producers are present in only 8 districts of the state. There are a total of 15 collection centers established by Producers in all the districts of Odisha. Keonjhar has the maximum no. of collection centers established by Producer.
- E-waste collection points are available in 12 districts of the state, however there are no E-waste collection points in 4 districts of the state. Data on E-waste collection points are not available for 14 districts of the state.
- District Level Awareness Programme on E-waste and related pollution conducted in 14 districts of the state and was not conducted in 7 districts of the state. Data on District Level Awareness Programme conducted on E-waste and related pollution not available for 9 districts.

7.0 E-Waste Management

The Ministry of Environment, Forest and Climate Change, Government of India has notified E-Waste (Management) Rules 2016 for safe handling and disposal of e-waste in the country.

When waste is not disposed of properly, the environment is harmed, which further impacts living things. In the same way, improper e-waste disposal degrades the ecosystem and is bad for the health of individuals who live there. E-waste contributes to air pollution, which is a problem. When electronic waste is disposed of informally by disassembly, destruction, or melting (to extract a metal like copper), harmful gases or fine dust particles are released that can travel hundreds of kilometers, damage the environment, and endanger living things. When e-waste is dumped in an unpermitted location or on public property. The ground and water beneath it are then contaminated by the e-waste. When a crop is grown on contaminated land, it develops a sensitivity to the toxins and is more likely to absorb them, which causes sickness and lower soil productivity. E-waste causes water contamination. Among other elements, mercury, lithium, lead, and barium are frequently discovered in e-waste. E-waste escapes into the groundwater because of being buried in the soil, tainting the water before it reaches ponds, streams, rivers, and lakes. They consequently cause harm to aquatic life, plants, people, and other living things. Toxic substances included in e-waste can be damaging to human health, including mercury, lithium, lead, and barium.

Table 71 - E-Waste Generation (MT/Day)

Sl. No.	District	Inventory of E-waste (MT/Day)
1	Anugul	0.05
2	Balangir	0.01
3	Baleshwar	0.02
4	Bargarh	0.00
5	Bhadrak	0.01
6	Boudh	0.00
7	Cuttack	0.01
8	Deogarh	0.00
9	Dhenkanal	0.00
10	Gajapati	0.00
11	Ganjam	0.00
12	Jagatsinghapur	0.00
13	Jajapur	0.00
14	Jharsuguda	0.01
15	Kalahandi	0.00
16	Kandhamal	0.00
17	Kendrapara	0.00
18	Keonjhar	0.04
19	Khordha	0.03
20	Koraput	0.00
21	Malkangiri	0.01
22	Mayurbhanj	0.00
23	Nabarangpur	0.01
24	Nayagarh	0.01
25	Nuapada	0.00
26	Puri	0.06
27	Rayagada	0.00
28	Sambalpur	0.19
29	Subarnapur	0.00
30	Sundargarh	0.26
	Total	0.67

The Total E-waste generated in the state is 0.67 MT/day.

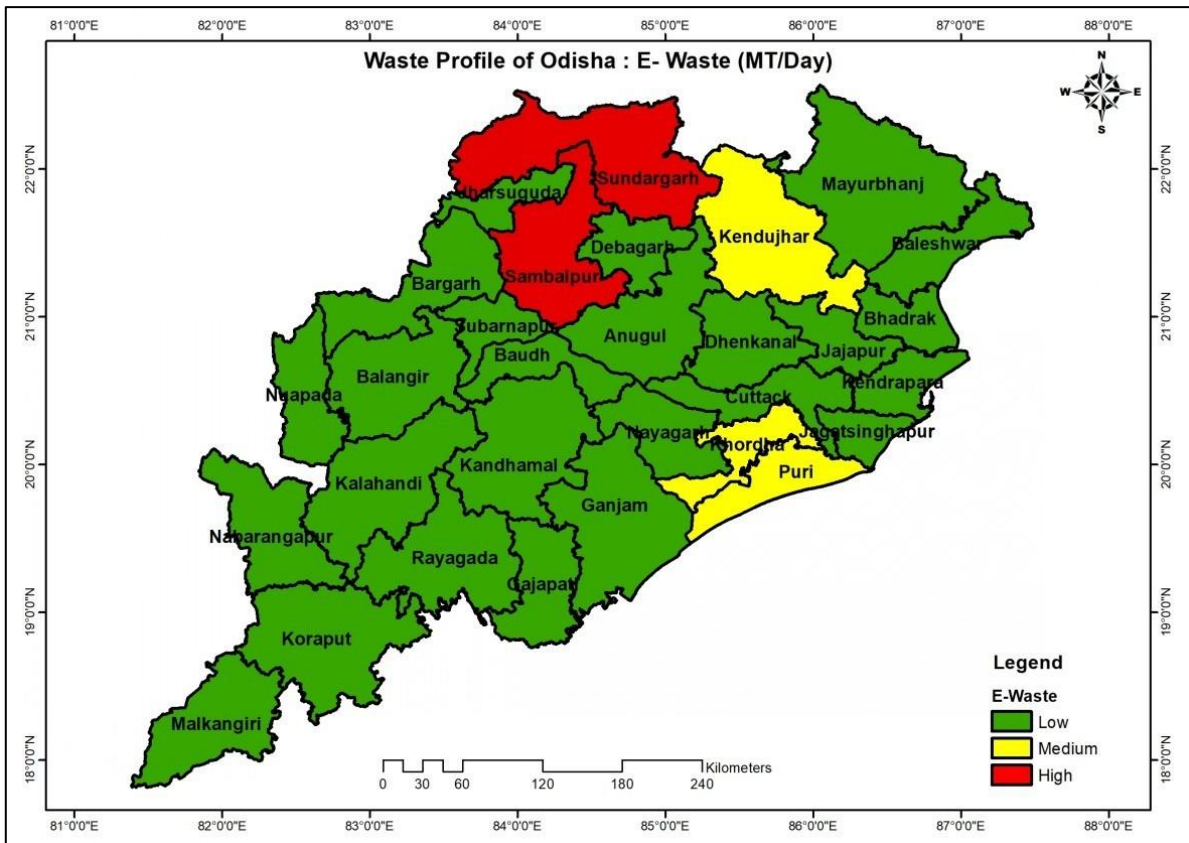


Figure 44: Total E-waste generated (MT/Day)

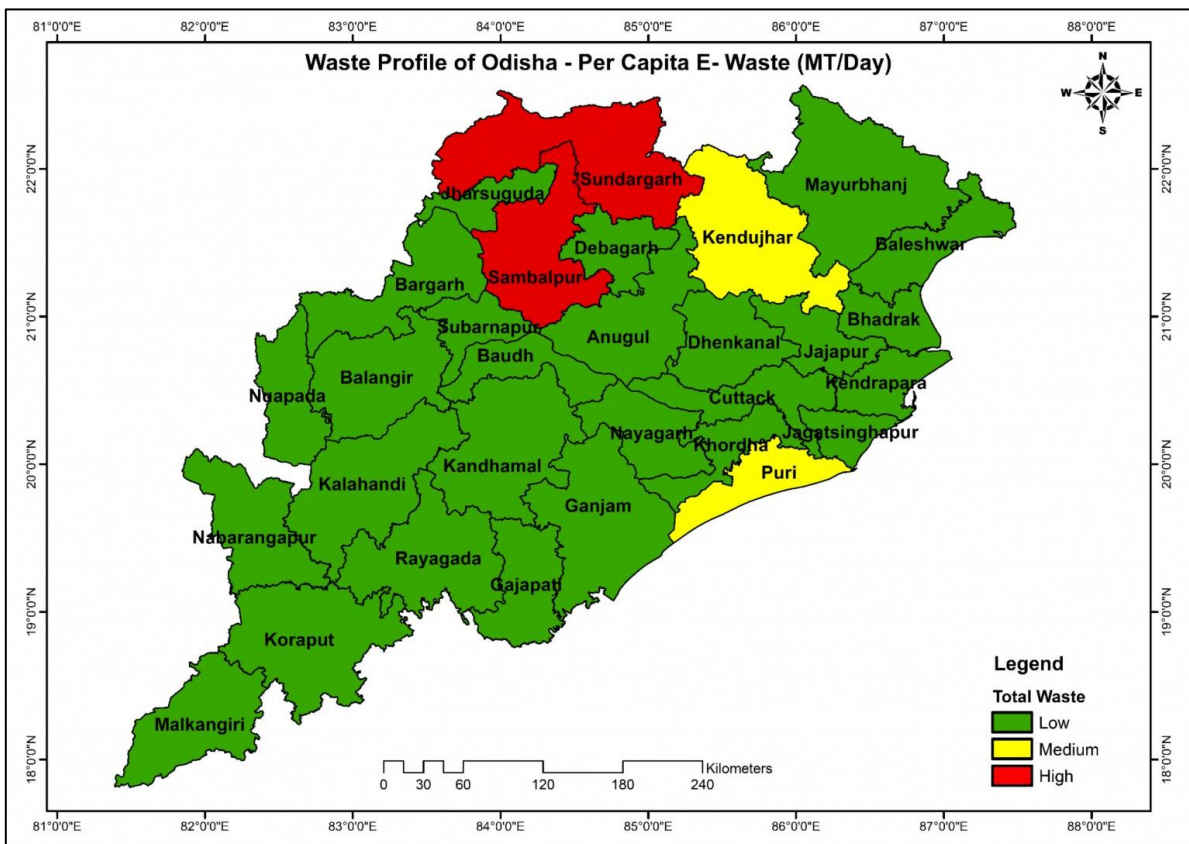


Figure 45: Total Per capita E-waste generated (MT/Day)

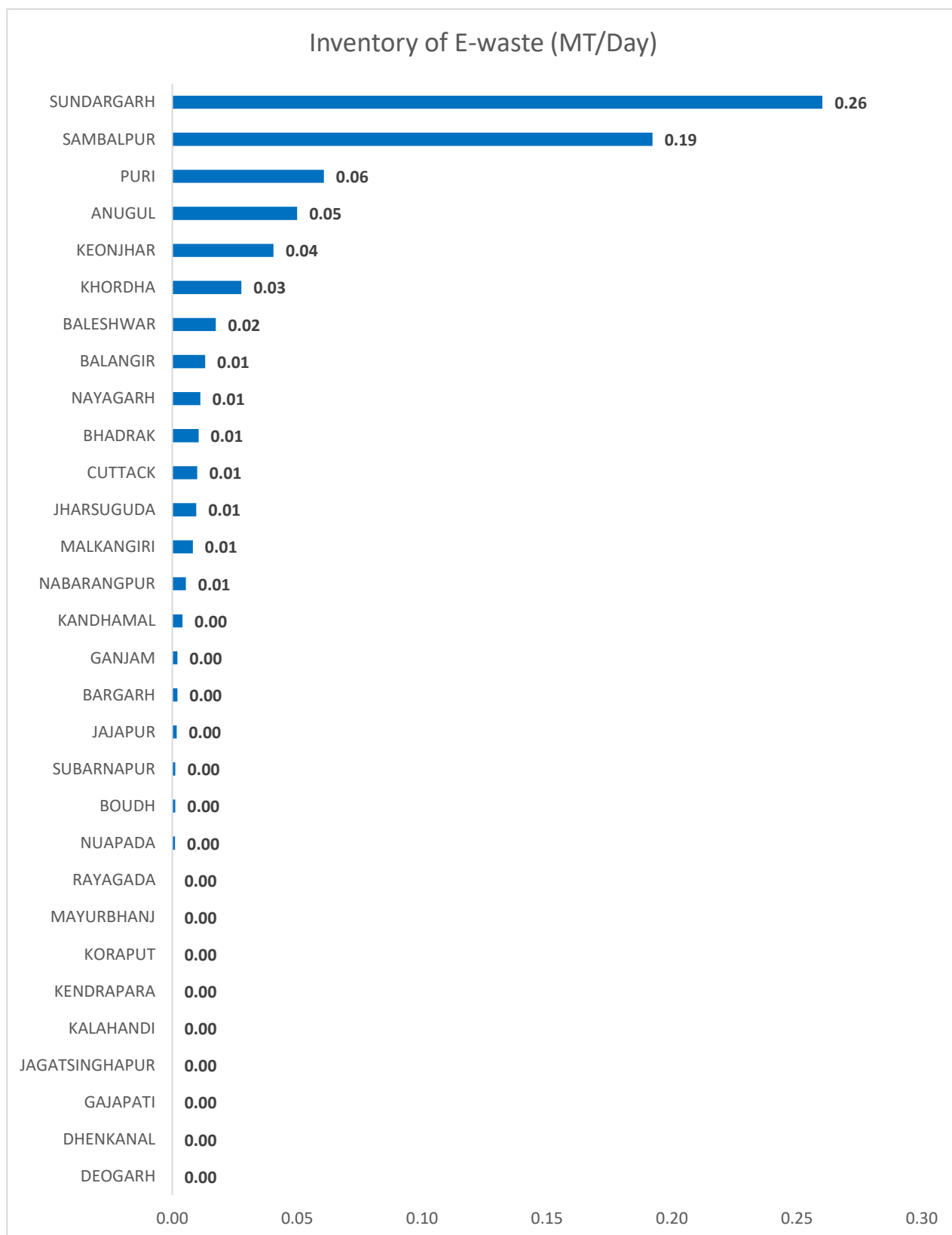


Figure 46 - E-Waste Generated (MT/Day)

The Total E-waste generated in the district is 0.67 MT/day. The district of Sundargarh generates the highest amount of E-Waste.

Table 72 - Collection Centers established by ULB's

Sl. No.	District	Collection Centres established by ULBs
1	Anugul	
2	Balangir	6
3	Baleshwar	7
4	Bargarh	
5	Bhadrak	4
6	Boudh	1
7	Cuttack	
8	Deogarh	
9	Dhenkanal	1
10	Gajapati	3
11	Ganjam	
12	Jagatsinghapur	
13	Jajapur	
14	Jharsuguda	1
15	Kalahandi	4
16	Kandhamal	3
17	Kendrapara	
18	Keonjhar	13
19	Khordha	5
20	Koraput	
21	Malkangiri	1
22	Mayurbhanj	
23	Nabarangpur	1
24	Nayagarh	
25	Nuapada	1
26	Puri	6
27	Rayagada	
28	Sambalpur	2
29	Subarnapur	1
30	Sundargarh	3
	Total	63

There are a total of 63 collection centers in ULB's. The District of Keonjhar has the maximum number of collection centers in the state. 18 districts of the state have collection centers for E-Waste. 12 districts in the state doesn't have any E-waste collection centers.

Table 73 - Collection Centers established by producers

Sl. No.	District	Collection Centres established by Producer
1	Anugul	
2	Balangir	
3	Bargarh	
4	Boudh	
5	Cuttack	
6	Deogarh	
7	Dhenkanal	
8	Gajapati	
9	Ganjam	
10	Jharsuguda	
11	Kalahandi	
12	Kandhamal	
13	Kendrapara	
14	Khordha	
15	Malkangiri	
16	Mayurbhanj	
17	Nayagarh	
18	Nuapada	
19	Puri	
20	Rayagada	
21	Subarnapur	

Sl. No.	District	Collection Centres established by Producer
22	Sundargarh	
23	Baleshwar	1
24	Jagatsinghapur	1
25	Jajapur	1
26	Koraput	1
27	Nabarangpur	1
28	Sambalpur	1
29	Bhadrak	4
30	Keonjhar	5
	Total	15

Collection centers established by Producers are present in only 8 districts of the state. There are a total of 15 collection centers established by Producers in all the districts of Odisha. Keonjhar has the maximum no. of collection centers established by Producer.

Table 74 - Availability of E-waste Collection Points

Sl. No.	District	No Response	Yes	No
1	Anugul		1	
2	Balangir		1	
3	Baleshwar	1		
4	Bargarh	1		
5	Bhadrak	1		
6	Boudh	1		
7	Cuttack			1
8	Deogarh	1		
9	Dhenkanal			1
10	Gajapati	1		
11	Ganjam	1		
12	Jagatsinghapur			1
13	Jajapur		1	
14	Jharsuguda	1		
15	Kalahandi	1		
16	Kandhamal		1	
17	Kendrapara	1		
18	Keonjhar		1	
19	Khordha		1	
20	Koraput	1		
21	Malkangiri	1		
22	Mayurbhanj		1	
23	Nabarangpur		1	
24	Nayagarh		1	
25	Nuapada	1		
26	Puri		1	
27	Rayagada			1
28	Sambalpur		1	
29	Subarnapur	1		
30	Sundargarh		1	
	Total	14	12	4

E-waste collection points are available in 12 districts of the state, however there are no E-waste collection points in 4 districts of the state. Data on E-waste collection points are not available for 14 districts of the state.

Table 75 - District level Awareness and Education Program

Sl. No.	District	No Response	Yes	No
1	Anugul		1	
2	Balangir		1	
3	Baleshwar		1	
4	Bargarh	1		
5	Bhadrak			1

Sl. No.	District	No Response	Yes	No
6	Boudh		1	
7	Cuttack			1
8	Deogarh	1		
9	Dhenkanal			1
10	Gajapati		1	
11	Ganjam			1
12	Jagatsinghapur		1	
13	Jajapur		1	
14	Jharsuguda	1		
15	Kalahandi	1		
16	Kandhamal		1	
17	Kendrapara	1		
18	Keonjhar		1	
19	Khordha		1	
20	Koraput	1		
21	Malkangiri	1		
22	Mayurbhanj			1
23	Nabarangpur	1		
24	Nayagarh		1	
25	Nuapada		1	
26	Puri		1	
27	Rayagada			1
28	Sambalpur		1	
29	Subarnapur	1		
30	Sundargarh			1
	Total	9	14	7

District Level Awareness Programme on E-waste and related pollution conducted in 14 districts of the state and was not conducted in 7 districts of the state. Data on District Level Awareness Programme conducted on E-waste and related pollution not available for 9 districts.



SECTION VIII: AIR QUALITY MANAGEMENT

Key Findings:

- There are approximately 254 automatic air quality monitoring stations present in the districts. Keonjhar with 54 automatic air quality monitoring stations is the highest of all the districts.
- Out of 254 stations, 206 AQM stations are operated by industries in the districts and 11 AQM stations are operated by the government in the districts.
- Only 32 towns/cities of the 30 districts of Odisha are failing to comply with the national ambient air quality stations.
- There are 5641 no. of air polluting industries present in the state out of which 1083 industries are present in the Cuttack being the district with highest no. of air polluting industries.
- Small industries, large industries and Industrial estates are major air polluting sources in the districts.
- Regular monitoring of Ambient Air Quality done in 67% districts of the state.
- Public awareness programs for access to SPCB & CPCB server for public views done in 22 districts of the state.
- Sites for installation of Continuous Ambient air Quality Monitoring Station identified in 14 districts of the state.
- Digital display board for air quality index at traffic square is installed in 6 districts of the state.
- Monitoring of air pollution hotspots done in 18 districts of the state.
- Usage of renewable sources of energy in all government offices, commercial establishments, Industrial sectors done in 12 districts of the state.
- Regular & continuous monitoring of AAQ in Industrial establishments & Mines done in 20 districts of the state.

8.0 Air Quality Management

A location's geographic characteristics, such as mountain ranges, coastlines, and human-modified land, can affect where air pollutants are concentrated or dispersed. The types and quantities of contaminants that enter the air, however, have a considerably greater effect on air quality. Some air pollutants come from natural sources like volcanic eruptions and dust storms, but most pollutants are caused by human activities. Examples of man-made air pollutants include exhaust from vehicles, smoke from coal-burning power plants, and hazardous gases from industry.

Along with the air, polluted air has harmful effects on the land and oceans. For the survival of healthy human, animal, and plant life on Earth, good air quality is essential. To prevent, control, and mitigate air pollution in the State, the State Pollution Control Board (SPCB) is tasked with carrying out the Air Act of 1981's requirements directly. The Central Pollution Control Board (CPCB) established the national ambient air quality monitoring network in 1984. Eight NAAQM stations have been set up in Odisha in various stages. The eight stations are all under observation. The State Ambient Air Quality Monitoring Network was also created by the Board (SAAQM). There are now 8 monitoring stations in the SAAQM network. The monitoring stations have been placed in several places, including commercial as well as residential or rural.

Table 76 - No. of Automatic Air Quality Monitoring Stations in district

Sl. No.	District	No. of Automatic Air Quality Monitoring Stations in district
1	Anugul	29
2	Balangir	0
3	Baleshwar	3
4	Bargarh	3
5	Bhadrak	0
6	Boudh	0
7	Cuttack	21
8	Deogarh	0
9	Dhenkanal	18
10	Gajapati	0
11	Ganjam	1
12	Jagatsinghapur	0
13	Jajapur	24
14	Jharsuguda	27
15	Kalahandi	6
16	Kandhamal	0
17	Kendrapara	0
18	Keonjhar	54
19	Khordha	
20	Koraput	0
21	Malkangiri	0
22	Mayurbhanj	2
23	Nabarangpur	0
24	Nayagarh	
25	Nuapada	0
26	Puri	
27	Rayagada	17
28	Sambalpur	18
29	Subarnapur	0
30	Sundargarh	31
	Total	254

There are 254 automatic air quality monitoring stations present in the districts. Keonjhar with 54 automatic air quality monitoring stations is the highest of all the districts.

Table 77 - AQM stations operated by government and industries

Sl. No.	District	AQM stations operated by Government	AQM stations operated by Industries
1	Anugul	1	28
2	Balangir	0	0
3	Baleshwar	0	3
4	Bargarh	0	3
5	Bhadrak	0	0
6	Boudh	0	0
7	Cuttack	1	20
8	Deogarh	0	0
9	Dhenkanal	0	18
10	Gajapati	0	0
11	Ganjam	0	1
12	Jagatsinghapur	0	0
13	Jajapur	0	24
14	Jharsuguda	1	26
15	Kalahandi	0	6
16	Kandhamal	0	0
17	Kendrapara	0	0
18	Keonjhar	4	13
19	Khordha		
20	Koraput	0	0
21	Malkangiri	0	0
22	Mayurbhanj	2	0
23	Nabarangpur	0	0
24	Nayagarh		
25	Nuapada	0	0
26	Puri		
27	Rayagada	0	17
28	Sambalpur	0	18
29	Subarnapur	0	0
30	Sundargarh	2	29
	Total	11	206

206 AQM stations are operated by industries in the districts and 11 AQM stations are operated by the government in the districts.

Table 78: Cities not complying NAAQS

Sl. No.	Districts	No. of cities/towns failing to comply with national ambient air quality stations
1	Anugul	2
2	Balangir	1
3	Baleshwar	3
4	Bargarh	1
5	Bhadrak	0
6	Boudh	1
7	Cuttack	1
8	Deogarh	0
9	Dhenkanal	0
10	Gajapati	0
11	Ganjam	0
12	Jagatsinghapur	0
13	Jajapur	1
14	Jharsuguda	2
15	Kalahandi	0
16	Kandhamal	0
17	Kendrapara	0
18	Keonjhar	5
19	Khordha	1
20	Koraput	0
21	Malkangiri	0
22	Mayurbhanj	0

Sl. No.	Districts	No. of cities/towns failing to comply with national ambient air quality stations
23	Nabarangpur	0
24	Nayagarh	1
25	Nuapada	1
26	Puri	7
27	Rayagada	0
28	Sambalpur	1
29	Subarnapur	1
30	Sundargarh	3
	Total	32

32 towns/cities are failing to comply with national ambient air quality stations.

Table 79 - No. of Air pollution industries present in the district

Sl. No.	Districts	No. of air pollution industries
1	Anugul	152
2	Balangir	227
3	Baleshwar	191
4	Bargarh	218
5	Bhadrak	43
6	Boudh	56
7	Cuttack	1083
8	Deogarh	39
9	Dhenkanal	298
10	Gajapati	164
11	Ganjam	1004
12	Jagatsinghapur	
13	Jajapur	367
14	Jharsuguda	102
15	Kalahandi	271
16	Kandhamal	18
17	Kendrapara	
18	Keonjhar	104
19	Khordha	38
20	Koraput	189
21	Malkangiri	32
22	Mayurbhanj	1
23	Nabarangpur	75
24	Nayagarh	89
25	Nuapada	71
26	Puri	0
27	Rayagada	200
28	Sambalpur	231
29	Subarnapur	20
30	Sundargarh	358
	Total	5641

There are a total of 5641 air polluting industries present in the state. Cuttack has the highest no. of air polluting industries in the district.

Table 80 - Prominent air polluting sources in the districts

Sl. No.	District	Large Industry	Small Industry	Unpaved Roads	Burning of Waste Stubble	Brick Kiln	Industrial estate	Others	Multiple Section
1	Anugul	1	1	1				1	
2	Balangir								1
3	Baleshwar								
4	Bargarh						1	1	
5	Bhadrak	1	1				1	1	
6	Boudh	1	1						
7	Cuttack	1			1	1	1		

Sl. No.	District	Large Industry	Small Industry	Unpaved Roads	Burning of Waste Stubble	Brick Kiln	Industrial estate	Others	Multiple Section
8	Deogarh								
9	Dhenkanal	1	1					1	
10	Gajapati		1				1	1	
11	Ganjam	1	1			1	1	1	
12	Jagatsinghapur	1	1				1		
13	Jajapur	1							
14	Jharsuguda								
15	Kalahandi	1	1				1	1	
16	Kandhamal		1				1	1	
17	Kendrapara		1						
18	Keonjhar	1	1						
19	Khordha								
20	Koraput	1	1						
21	Malkangiri		1				1	1	
22	Mayurbhanj	1						1	
23	Nabarangpur	1	1					1	
24	Nayagarh								
25	Nuapada							1	
26	Puri								
27	Rayagada	1	1						
28	Sambalpur	1	1					1	1
29	Subarnapur							1	
30	Sundargarh						1		
	Total	15	16	1	1	2	10	14	2

Small industries, large industries and Industrial estates are major air polluting sources in the districts.



Figure 47: Prominent air polluting sources in the districts

Table 81 - Regular Monitoring of Ambient Air Quality

Sl. No.	District	Not Available	Yes	No
1	Anugul		1	
2	Balangir	1		
3	Baleshwar	1		
4	Bargarh		1	
5	Bhadrak		1	
6	Boudh			1
7	Cuttack		1	
8	Deogarh		1	
9	Dhenkanal	1		
10	Gajapati		1	
11	Ganjam			1
12	Jagatsinghapur		1	
13	Jajapur		1	
14	Jharsuguda			1
15	Kalahandi		1	
16	Kandhamal	1		
17	Kendrapara		1	
18	Keonjhar			1
19	Khordha		1	
20	Koraput		1	
21	Malkangiri		1	
22	Mayurbhanj			1
23	Nabarangpur		1	
24	Nayagarh	1		
25	Nuapada		1	
26	Puri		1	
27	Rayagada		1	
28	Sambalpur		1	
29	Subarnapur		1	
30	Sundargarh		1	
	Total	5	20	5

Regular monitoring of Ambient Air Quality done in 20 districts of the state.

Table 82 - Public awareness programs for access to SPCB & CPCB server for public views

Sl. No.	District	Not Available	Yes	No
1	Anugul		1	
2	Balangir	1		
3	Baleshwar	1		
4	Bargarh		1	
5	Bhadrak		1	
6	Boudh			1
7	Cuttack		1	
8	Deogarh		1	
9	Dhenkanal	1		
10	Gajapati		1	
11	Ganjam			1
12	Jagatsinghapur		1	
13	Jajapur		1	
14	Jharsuguda	1		
15	Kalahandi		1	
16	Kandhamal		1	
17	Kendrapara		1	
18	Keonjhar			1
19	Khordha		1	
20	Koraput		1	
21	Malkangiri		1	
22	Mayurbhanj	1		
23	Nabarangpur		1	

Sl. No.	District	Not Available	Yes	No
24	Nayagarh		1	
25	Nuapada		1	
26	Puri		1	
27	Rayagada		1	
28	Sambalpur		1	
29	Subarnapur		1	
30	Sundargarh		1	
	Total	5	22	3

Public awareness programs for access to SPCB & CPCB server for public views done in 22 districts of the state.

Table 83 - Identification of sites for installation of Continuous Ambient air Quality Monitoring Station

Sl. No.	District	Not Available	Yes	No
1	Anugul		1	
2	Balangir		1	
3	Baleshwar	1		
4	Bargarh	1		
5	Bhadrak	1		
6	Boudh		1	
7	Cuttack		1	
8	Deogarh	1		
9	Dhenkanal		1	
10	Gajapati		1	
11	Ganjam			1
12	Jagatsinghapur	1		
13	Jajapur		1	
14	Jharsuguda	1		
15	Kalahandi			1
16	Kandhamal		1	
17	Kendrapara			1
18	Keonjhar		1	
19	Khordha		1	
20	Koraput			1
21	Malkangiri			1
22	Mayurbhanj		1	
23	Nabarangpur	1		
24	Nayagarh			1
25	Nuapada		1	
26	Puri		1	
27	Rayagada			1
28	Sambalpur		1	
29	Subarnapur			1
30	Sundargarh	1		
	Total	8	14	8

Sites for installation of Continuous Ambient air Quality Monitoring Station identified in 14 districts of the state.

Table 84 - Installation of digital display board at traffic square

Sl. No.	District	Not Available	Yes	No
1	Anugul	1		
2	Balangir	1		
3	Baleshwar	1		
4	Bargarh	1		
5	Bhadrak	1		
6	Boudh	1		
7	Cuttack		1	
8	Deogarh	1		
9	Dhenkanal			1

Sl. No.	District	Not Available	Yes	No
10	Gajapati	1		
11	Ganjam			1
12	Jagatsinghapur	1		
13	Jajapur	1		
14	Jharsuguda	1		
15	Kalahandi			1
16	Kandhamal		1	
17	Kendrapara		1	
18	Keonjhar			1
19	Khordha			1
20	Koraput			1
21	Malkangiri			1
22	Mayurbhanj	1		
23	Nabarangpur	1		
24	Nayagarh		1	
25	Nuapada		1	
26	Puri	1		
27	Rayagada			1
28	Sambalpur		1	
29	Subarnapur			1
30	Sundargarh			1
	Total	14	6	10

Digital display board at traffic square installed in 6 districts of the state.

Table 85 - Regular & continuous monitoring of AAQ in Industrial establishments & Mines

Sl. No.	District	Not Available	Yes	No
1	Anugul		1	
2	Balangir	1		
3	Baleshwar	1		
4	Bargarh		1	
5	Bhadrak		1	
6	Boudh	1		
7	Cuttack		1	
8	Deogarh		1	
9	Dhenkanal			1
10	Gajapati		1	
11	Ganjam			1
12	Jagatsinghapur		1	
13	Jajapur		1	
14	Jharsuguda	1		
15	Kalahandi		1	
16	Kandhamal		1	
17	Kendrapara		1	
18	Keonjhar			1
19	Khordha			1
20	Koraput		1	
21	Malkangiri		1	
22	Mayurbhanj	1		
23	Nabarangpur		1	
24	Nayagarh	1		
25	Nuapada		1	
26	Puri		1	
27	Rayagada		1	
28	Sambalpur		1	
29	Subarnapur		1	
30	Sundargarh		1	
	Total	6	20	4

Regular & continuous monitoring of AAQ in Industrial establishments & Mines done in 20 districts of the state.

Table 86 - Usage of renewable sources in all government offices, commercial establishments, Industrial sectors

Sl. No.	District	Not Available	Yes	No
1	Anugul	1		
2	Balangir	1		
3	Baleshwar	1		
4	Bargarh		1	
5	Bhadrak	1		
6	Boudh	1		
7	Cuttack			1
8	Deogarh			1
9	Dhenkanal			1
10	Gajapati		1	
11	Ganjam			1
12	Jagatsinghapur		1	
13	Jajapur		1	
14	Jharsuguda	1		
15	Kalahandi			1
16	Kandhamal		1	
17	Kendrapara		1	
18	Keonjhar			1
19	Khordha		1	
20	Koraput		1	
21	Malkangiri	1		
22	Mayurbhanj	1		
23	Nabarangpur		1	
24	Nayagarh	1		
25	Nuapada	1		
26	Puri	1		
27	Rayagada			1
28	Sambalpur		1	
29	Subarnapur		1	
30	Sundargarh		1	
	Total	11	12	7

Usage of renewable sources of energy in all government offices, commercial establishments, Industrial sectors done in 12 districts of the state.

Table 87 - Monitoring of air pollution hotspots

Sl. No.	Districts	Not Available	Yes	No
1	Anugul			1
2	Balangir	1		
3	Baleshwar	1		
4	Bargarh		1	
5	Bhadrak		1	
6	Boudh	1		
7	Cuttack		1	
8	Deogarh		1	
9	Dhenkanal			1
10	Gajapati		1	
11	Ganjam			1
12	Jagatsinghapur		1	
13	Jajapur		1	
14	Jharsuguda	1		
15	Kalahandi		1	
16	Kandhamal		1	
17	Kendrapara		1	
18	Keonjhar	1		

Sl. No.	Districts	Not Available	Yes	No
19	Khordha	1		
20	Koraput		1	
21	Malkangiri		1	
22	Mayurbhanj	1		
23	Nabarangpur		1	
24	Nayagarh	1		
25	Nuapada		1	
26	Puri	1		
27	Rayagada		1	
28	Sambalpur		1	
29	Subarnapur		1	
30	Sundargarh		1	
	Total	9	18	3

Monitoring of air pollution hotspots done in 18 districts of the state.



SECTION IX: WATER QUALITY MANAGEMENT

Key Findings:

- There are approximately 307 rivers of total length 4399.16.km flowing through all districts of Odisha and 1522 nalas / drains are meeting those rivers. Effluents from sewage and industrial discharge mixes with rivers are assessed to be 411.15 ML/day.
- The district of Jajapur generates the highest quantity of Industrial Wastewater at 209.11 MLD
- In the district of Puri, Ganjam and Khordha largest saltwater lake of India “Chilika Lake” is present. Likewise, Water reservoir of Hirakud Dam Project is major source of water in Sambalpur, Jharsuguda and Bargarh districts.
- Total of 22156 Lakes/Ponds are present in the districts.
- The inventory of water bodies is available for 15 districts and no inventories of water bodies created for 10 districts. Data on inventory of water bodies not available for 5 districts.
- A total of 70985 borewells reported in the districts.
- Rayagada with 99% has the highest percentage of untreated waste.
- Water quality check of major waterbodies done in 37% districts of the state.
- Pollution Prone Water Bodies are identified in 8 districts of the state and not identified in 4 districts of the state. Data on Pollution Prone Water Bodies not available for 18 districts of the state.
- Action Plan on controlling riverside dumping of solid waste on riverbanks created in 11 districts of the state and not created in 4 districts of the state. Data on Action plan creation for controlling riverside dumping of solid waste on riverbanks not available for 15 districts.
- Master Plan for Rainwater harvesting created for 9 districts and not created for 3 districts. Data on Master Plan for Rainwater harvesting not available for 18 districts.

9.0 Water Quality Management

Water quality assessment is done in major rivers, ground water contamination areas in Odisha by SPCB. There is total 307 rivers (* rivulets/streams added in Ganjam) present. There is total 1522 nalas / drains meet rivers of Odisha. In the district of Puri, Ganjam and Khordha largest saltwater lake of India (Chilika) is present which occupies maximum area. In Sambalpur, Jharsuguda and Bargarh water reserve created due to Hirakud Dam Project is present.

The sewage and industrial discharges pollute the river water and has ill impacts on the biodiversity in and around the rivers. The water also loses the portability and affects the productivity of agricultural lands. The polluted discharges add turbidity, Calcium, Magnesium, Chloride, Sulphates, Nitrates and Fluorides to the water increasing the alkalinity of the water and turning it into hard water¹. It is, therefore, important to ensure the quantity and quality of sewage and industrial discharges that are introduced into the river. This is to reduce the environmental impacts of the polluted water and the health hazards to human and animals.

Table 88 - Coastline length of the districts

Sl. No.	District	Length (kms)
1	Anugul	
2	Balangir	
3	Baleshwar	87.96
4	Bargarh	
5	Bhadrak	52.61
6	Boudh	
7	Cuttack	
8	Deogarh	
9	Dhenkanal	
10	Gajapati	
11	Ganjam	60.85
12	Jagatsinghapur	58.95
13	Jajapur	
14	Jharsuguda	
15	Kalahandi	
16	Kandhamal	
17	Kendrapara	83.55
18	Keonjhar	
19	Khordha	
20	Koraput	
21	Malkangiri	
22	Mayurbhanj	
23	Nabarangpur	
24	Nayagarh	
25	Nuapada	
26	Puri	136.48
27	Rayagada	
28	Sambalpur	
29	Subarnapur	
30	Sundargarh	
	Total	480.4

The total length of the coastline in 6 districts of the state is 480.4 kms.

¹Subin M.P. and Husna A.H. An assessment on impact of waste discharge on water quality of Priya River lets in certain selected sites in Northern part of Ernakulum district in Kerala, India. Kerala India. 2013.

Table 89 - Nalas/ Drains/ Creeks meeting Rivers

Sl. No.	District	Nalas/ Drains/ Creeks meeting Rivers
1	Anugul	
2	Balangir	
3	Baleshwar	86
4	Bargarh	24
5	Bhadrak	35
6	Boudh	11
7	Cuttack	
8	Deogarh	31
9	Dhenkanal	
10	Gajapati	0
11	Ganjam	12
12	Jagatsinghapur	3
13	Jajapur	5
14	Jharsuguda	1
15	Kalahandi	1
16	Kandhamal	21
17	Kendrapara	8
18	Keonjhar	23
19	Khordha	
20	Koraput	52
21	Malkangiri	
22	Mayurbhanj	105
23	Nabarangpur	17
24	Nayagarh	
25	Nuapada	6
26	Puri	
27	Rayagada	29
28	Sambalpur	
29	Subarnapur	1020
30	Sundargarh	32
	Total	1522

A total of 1522 Nalas/Drains/Creeks meets Rivers in the districts.

Table 90 - No. of Lakes/Ponds present in the district

Sl. No.	District	Lakes/ponds district wise
1	Anugul	
2	Balangir	
3	Baleshwar	12747
4	Bargarh	662
5	Bhadrak	270
6	Boudh	563
7	Cuttack	1
8	Deogarh	
9	Dhenkanal	
10	Gajapati	1698
11	Ganjam	103
12	Jagatsinghapur	
13	Jajapur	2638
14	Jharsuguda	1
15	Kalahandi	104
16	Kandhamal	
17	Kendrapara	
18	Keonjhar	22
19	Khordha	
20	Koraput	55
21	Malkangiri	1762
22	Mayurbhanj	53
23	Nabarangpur	3

Sl. No.	District	Lakes/ponds district wise
24	Nayagarh	
25	Nuapada	3
26	Puri	
27	Rayagada	39
28	Sambalpur	412
29	Subarnapur	1020
30	Sundargarh	
	Total	22156

A total of 22156 Lakes/Ponds are present in the districts.

Table 91 - Quantity of Industrial Wastewater (MLD)

Sl. No.	District	Quality of Industrial Wastewater (MLD)
1	Anugul	-
2	Boudh	-
3	Deogarh	-
4	Dhenkanal	-
5	Gajapati	-
6	Ganjam	-
7	Jharsuguda	-
8	Kandhamal	-
9	Keonjhar	-
10	Malkangiri	-
11	Mayurbhanj	-
12	Nabarangpur	-
13	Kendrapara	0.70
14	Nuapada	0.95
15	Puri	1.85
16	Bhadrak	1.98
17	Subarnapur	2.30
18	Sundargarh	3.20
19	Balangir	3.29
20	Kalahandi	4.50
21	Nayagarh	4.56
22	Cuttack	6.25
23	Khordha	6.57
24	Bargarh	6.94
25	Sambalpur	12.96
26	Baleshwar	19.00
27	Jagatsinghapur	37.00
28	Rayagada	40.00
29	Koraput	50.00
30	Jajapur	209.11
	Total	411.15

The total quantity of Industrial Wastewater generated in the state is 411.15 ML/Day. The district of Jajapur generates the highest quantity of Industrial Wastewater at 209.11 MLD. Data on total quantity of Industrial Wastewater generated not available for 12 districts.

Table 92 - Inventory of Water bodies

Sl. No.	District	Not Available	Yes	No
1	Anugul		1	
2	Balangir	1		
3	Baleshwar		1	
4	Bargarh		1	
5	Bhadrak		1	
6	Boudh			1
7	Cuttack		1	
8	Deogarh		1	

Sl. No.	District	Not Available	Yes	No
9	Dhenkanal	1		
10	Gajapati		1	
11	Ganjam	1		
12	Jagatsinghapur			1
13	Jajapur			1
14	Jharsuguda		1	
15	Kalahandi		1	
16	Kandhamal	1		
17	Kendrapara		1	
18	Keonjhar	1		
19	Khordha		1	
20	Koraput			1
21	Malkangiri			1
22	Mayurbhanj			1
23	Nabarangpur			1
24	Nayagarh		1	
25	Nuapada		1	
26	Puri		1	
27	Rayagada			1
28	Sambalpur		1	
29	Subarnapur			1
30	Sundargarh			1
	Grand Total	5	15	10

The inventory of water bodies is available for 15 districts and no inventories of water bodies created for 10 districts. Data on inventory of water bodies not available for 5 districts.

Table 93 - Inventory of Borewells

Sl. No.	District	Details of bore wells district wise
1	Anugul	
2	Balangir	
3	Baleshwar	2096
4	Bargarh	
5	Bhadrak	86
6	Boudh	2707
7	Cuttack	
8	Deogarh	7050
9	Dhenkanal	
10	Gajapati	6765
11	Ganjam	1977
12	Jagatsinghapur	
13	Jajapur	29
14	Jharsuguda	1837
15	Kalahandi	21827
16	Kandhamal	
17	Kendrapara	150
18	Keonjhar	194
19	Khordha	
20	Koraput	
21	Malkangiri	1485
22	Mayurbhanj	157
23	Nabarangpur	
24	Nayagarh	975
25	Nuapada	26
26	Puri	
27	Rayagada	
28	Sambalpur	93
29	Subarnapur	8894
30	Sundargarh	14637
	Total	70985

A total of 70985 borewells reported in the districts.

Table 94 - Percentage of untreated sewage

Sl. No.	District	Percentage of untreated sewage (%)
1	Anugul	
2	Balangir	0.00%
3	Baleshwar	4.00%
4	Bargarh	0.00%
5	Bhadrak	
6	Boudh	
7	Cuttack	
8	Deogarh	
9	Dhenkanal	
10	Gajapati	0.00%
11	Ganjam	
12	Jagatsinghapur	
13	Jajapur	0.00%
14	Jharsuguda	
15	Kalahandi	
16	Kandhamal	0.00%
17	Kendrapara	
18	Keonjhar	0.00%
19	Khordha	
20	Koraput	98.00%
21	Malkangiri	0.00%
22	Mayurbhanj	
23	Nabarangpur	
24	Nayagarh	47.00%
25	Nuapada	0.00%
26	Puri	80.00%
27	Rayagada	99.00%
28	Sambalpur	0.00%
29	Subarnapur	
30	Sundargarh	40.00%

Rayagada with 99 per cent has the highest percentage of untreated waste.

Table 95 - Detailed inventory of water bodies

Sl. No.	District	No Response	Yes	No
1	Anugul		1	
2	Balangir	1		
3	Baleshwar		1	
4	Bargarh		1	
5	Bhadrak		1	
6	Boudh			1
7	Cuttack		1	
8	Deogarh		1	
9	Dhenkanal	1		
10	Gajapati		1	
11	Ganjam	1		
12	Jagatsinghapur			1
13	Jajapur			1
14	Jharsuguda		1	
15	Kalahandi		1	
16	Kandhamal	1		
17	Kendrapara		1	
18	Keonjhar	1		
19	Khordha		1	
20	Koraput			1
21	Malkangiri			1
22	Mayurbhanj			1

Sl. No.	District	No Response	Yes	No
23	Nabarangpur			1
24	Nayagarh		1	
25	Nuapada		1	
26	Puri		1	
27	Rayagada			1
28	Sambalpur		1	
29	Subarnapur			1
30	Sundargarh			1
	Total	5	15	10

Detailed inventory of waterbodies mapped in 15 districts of the state.

Table 96 - Water quality check of waterbodies

Sl. No.	District	No Response	Yes	No
1	Anugul		1	
2	Balangir	1		
3	Baleshwar	1		
4	Bargarh	1		
5	Bhadrak	1		
6	Boudh	1		
7	Cuttack		1	
8	Deogarh	1		
9	Dhenkanal		1	
10	Gajapati		1	
11	Ganjam	1		
12	Jagatsinghapur	1		
13	Jajapur		1	
14	Jharsuguda		1	
15	Kalahandi		1	
16	Kandhamal	1		
17	Kendrapara			1
18	Keonjhar		1	
19	Khordha		1	
20	Koraput	1		
21	Malkangiri	1		
22	Mayurbhanj			1
23	Nabarangpur			1
24	Nayagarh		1	
25	Nuapada	1		
26	Puri		1	
27	Rayagada			1
28	Sambalpur	1		
29	Subarnapur			1
30	Sundargarh	1		
	Total	14	11	5

Water quality check of major waterbodies done in 11 districts of the state.

Table 97 - Inventory of sewage and wastewater discharge points into waterbodies

Sl. No.	District	No Response	Yes	No
1	Anugul		1	
2	Balangir	1		
3	Baleshwar	1		
4	Bargarh	1		
5	Bhadrak	1		
6	Boudh		1	
7	Cuttack	1		
8	Deogarh	1		
9	Dhenkanal			1

Sl. No.	District	No Response	Yes	No
10	Gajapati			1
11	Ganjam	1		
12	Jagatsinghapur	1		
13	Jajapur	1		
14	Jharsuguda	1		
15	Kalahandi	1		
16	Kandhamal		1	
17	Kendrapara			1
18	Keonjhar		1	
19	Khordha	1		
20	Koraput		1	
21	Malkangiri	1		
22	Mayurbhanj	1		
23	Nabarangpur	1		
24	Nayagarh	1		
25	Nuapada	1		
26	Puri	1		
27	Rayagada			1
28	Sambalpur		1	
29	Subarnapur			1
30	Sundargarh	1		
	Total	19	6	5

Inventory on sewage and wastewater discharge points available for 6 districts in the state.

Table 98 - Identification of Pollution Prone Water Bodies

Sl. No.	District	No Response	Yes	No
1	Anugul		1	
2	Balangir	1		
3	Baleshwar	1		
4	Bargarh	1		
5	Bhadrak	1		
6	Boudh	1		
7	Cuttack	1		
8	Deogarh	1		
9	Dhenkanal		1	
10	Gajapati		1	
11	Ganjam	1		
12	Jagatsinghapur	1		
13	Jajapur			1
14	Jharsuguda	1		
15	Kalahandi	1		
16	Kandhamal	1		
17	Kendrapara			1
18	Keonjhar	1		
19	Khordha		1	
20	Koraput		1	
21	Malkangiri	1		
22	Mayurbhanj	1		
23	Nabarangpur	1		
24	Nayagarh		1	
25	Nuapada	1		
26	Puri		1	
27	Rayagada			1
28	Sambalpur		1	
29	Subarnapur			1
30	Sundargarh	1		
	Total	18	8	4

Pollution Prone Water Bodies are identified in 8 districts of the state and not identified in 4 districts of the state. Data on Pollution Prone Water Bodies not available for 18 districts of the state.

Table 99 - Action Plan on controlling river side dumping of solid waste on riverbanks

Sl. No.	District	Not available	Yes	No
1	Anugul		1	
2	Balangir	1		
3	Baleshwar	1		
4	Bargarh	1		
5	Bhadrak	1		
6	Boudh		1	
7	Cuttack		1	
8	Deogarh	1		
9	Dhenkanal		1	
10	Gajapati		1	
11	Ganjam	1		
12	Jagatsinghapur	1		
13	Jajapur			1
14	Jharsuguda	1		
15	Kalahandi	1		
16	Kandhamal		1	
17	Kendrapara			1
18	Keonjhar		1	
19	Khordha			1
20	Koraput		1	
21	Malkangiri		1	
22	Mayurbhanj	1		
23	Nabarangpur	1		
24	Nayagarh	1		
25	Nuapada	1		
26	Puri	1		
27	Rayagada		1	
28	Sambalpur		1	
29	Subarnapur			1
30	Sundargarh	1		
	Total	15	11	4

Action Plan on controlling riverside dumping of solid waste on riverbanks created in 11 districts of the state and not created in 4 districts of the state. Data on Action plan creation for controlling riverside dumping of solid waste on riverbanks not available for 15 districts.

Table 100 - Master Plan for Rainwater Harvesting

Sl. No.	District	Not Available	Yes	No
1	Anugul			1
2	Balangir	1		
3	Baleshwar	1		
4	Bargarh	1		
5	Bhadrak	1		
6	Boudh	1		
7	Cuttack	1		
8	Deogarh	1		
9	Dhenkanal	1		
10	Gajapati	1		
11	Ganjam		1	
12	Jagatsinghapur	1		
13	Jajapur		1	
14	Jharsuguda	1		
15	Kalahandi	1		
16	Kandhamal		1	
17	Kendrapara			1
18	Keonjhar	1		

Sl. No.	District	Not Available	Yes	No
19	Khordha			1
20	Koraput		1	
21	Malkangiri		1	
22	Mayurbhanj	1		
23	Nabarangpur	1		
24	Nayagarh	1		
25	Nuapada	1		
26	Puri	1		
27	Rayagada		1	
28	Sambalpur		1	
29	Subarnapur		1	
30	Sundargarh		1	
	Grand Total	18	9	3

Master Plan for Rainwater harvesting created for 9 districts and not created for 3 districts. Data on Master Plan for Rainwater harvesting not available for 18 districts.

Table 101 - Complaint redressing system based on mobile app/ online

Sl. No.	District	No Response	Yes	No
1	Anugul		1	
2	Balangir			1
3	Baleswar		1	
4	Bargarh	1		
5	Bhadrak		1	
6	Boudh		1	
7	Cuttack		1	
8	Deogarh		1	
9	Dhenkanal		1	
10	Gajapati		1	
11	Ganjam	1		
12	Jagatsinghapur		1	
13	Jajapur		1	
14	Jharsuguda	1		
15	Kalahandi		1	
16	Kandhamal		1	
17	Kendrapara		1	
18	Keonjhar			1
19	Khordha		1	
20	Koraput		1	
21	Malkangiri		1	
22	Mayurbhanj	1		
23	Nabarangpur		1	
24	Nayagarh		1	
25	Nuapada		1	
26	Puri		1	
27	Rayagada		1	
28	Sambalpur		1	
29	Subarnapur		1	
30	Sundargarh		1	
	Total	4	24	2

Complaint redressing system based on mobile app/online available in 24 districts of the state.



SECTION X: DOMESTIC SEWAGE MANAGEMENT

Key Findings:

- As reported, there are total 49 class-II towns and 6 class-I towns in the state with quantity of sewage generation 492.82 MT/day.
- Currently there are 16 functional STPs. Additional 53 STPs are required.
- Out of total sewage flowing into river every day in class-II towns, 367.54 ML/day are untreated sewage.
- Partial Underground Sewage network is available in the districts of Puri, Sambalpur, Sundargarh, Bargarh and Cuttack.
- A total of 40 towns in the districts of Sundargarh, Subarnapur, Sambalpur, Rayagada, Nayagarh, Koraput, Kendrapara, Jharsuguda, Jajapur, Dhenkanal, Boudh and Bhadrak don't have any access to sewerage network.
- Underground sewerage network is available in 4 districts and not available in 11 districts of the state. Data on Underground sewerage network not available for 15 districts of the state.
- Sewage treatment capacity available in the state is 335.9 MLD

10.0 Domestic Sewage Management

Domestic sewage management has been a big challenge for the districts due to unplanned growth and inadequate network. It has significant public health implication. Domestic wastewater is the wastewater that results from human activities such as bathing, washing clothes, cleaning dishes, using the garbage disposal, and using the toilet. Domestic wastewater typically contains only small amounts of contaminants, but even these small amounts of pollutants can have a significant negative impact on the environment.

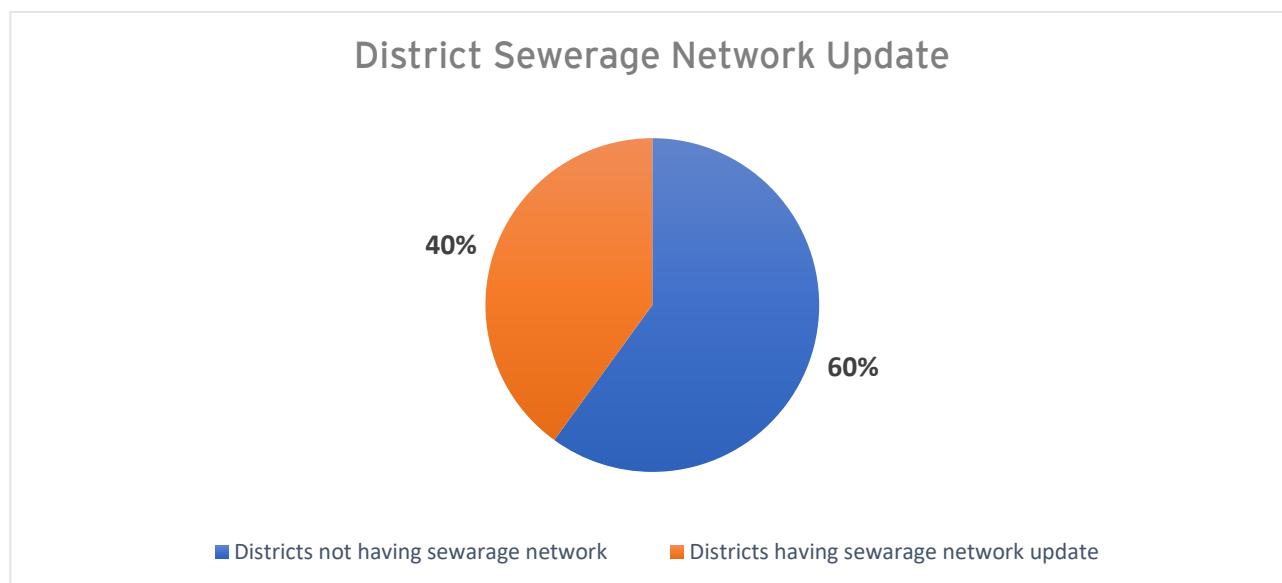


Figure 48: Update on District sewerage network

Therefore, the impact on ground water and surface water will be reduced by a properly installed and maintained domestic sewage treatment system for treating and disposing of household wastewater. Treatment of domestic wastewater is significant today. Domestic waste treatment makes ensuring that all sewage from homes is correctly handled to make it safe, hygienic, and ready to be released back into the air, water, or lakes. All the liquid waste produced by a house is treated by home sewage systems. Domestic wastewater may contain pathogenic bacteria, contagious viruses, common home chemicals, and excess nutrients like nitrate.

Out of the total districts of Odisha, 60% that is around 18 districts have the well-functioning sewerage networks. Still 12 districts of the state need to update to sewerage system as the day-by-day urbanization would require proper sewerage system.

Table 102 - No. of Class II Towns and above

Sl. No.	District	No. of class-II towns and above
1	Anugul	0
2	Balangir	
3	Baleshwar	4
4	Bargarh	4
5	Bhadrak	0
6	Boudh	1
7	Cuttack	0
8	Deogarh	0
9	Dhenkanal	1
10	Gajapati	0
11	Ganjam	18
12	Jagatsinghapur	0
13	Jajapur	2

Sl. No.	District	No. of class-II towns and above
14	Jharsuguda	2
15	Kalahandi	1
16	Kandhamal	0
17	Kendrapara	0
18	Keonjhar	2
19	Khordha	
20	Koraput	4
21	Malkangiri	0
22	Mayurbhanj	
23	Nabarangpur	
24	Nayagarh	2
25	Nuapada	0
26	Puri	2
27	Rayagada	1
28	Sambalpur	1
29	Subarnapur	1
30	Sundargarh	3
	Total	49

A total of 49 Class II towns and above are present in all the districts of Odisha. Ganjam district has the highest no. of Class II town and above among all the districts present in the state of Odisha.

Table 103 - No. of Class-I towns and above

Sl. No.	District	No. of class-I towns and above
1	Anugul	0
2	Balangir	
3	Baleshwar	0
4	Bargarh	1
5	Bhadrak	0
6	Boudh	0
7	Cuttack	1
8	Deogarh	0
9	Dhenkanal	0
10	Gajapati	0
11	Ganjam	0
12	Jagatsinghapur	0
13	Jajapur	0
14	Jharsuguda	0
15	Kalahandi	0
16	Kandhamal	0
17	Kendrapara	0
18	Keonjhar	0
19	Khordha	
20	Koraput	0
21	Malkangiri	0
22	Mayurbhanj	
23	Nabarangpur	
24	Nayagarh	0
25	Nuapada	0
26	Puri	1
27	Rayagada	0
28	Sambalpur	0
29	Subarnapur	1
30	Sundargarh	2
	Total	6

A total of 6 Class I towns and above are present in all the districts of Odisha. Sundargarh district has the highest no. of Class I town and above among all the districts present in the state of Odisha.

Table 104 - No. of STP's needed and No. of STP's installed

Sl. No.	Districts	STPs Installed	STPs Needed
1	Anugul	1	2
2	Balangir	0	0
3	Baleshwar	1	4
4	Bargarh	0	5
5	Bhadrak	0	4
6	Boudh	1	0
7	Cuttack	1	0
8	Deogarh	0	0
9	Dhenkanal	0	4
10	Gajapati	0	0
11	Ganjam	0	0
12	Jagatsinghapur	0	2
13	Jajapur	0	1
14	Jharsuguda	0	2
15	Kalahandi	1	1
16	Kandhamal	0	0
17	Kendrapara	0	2
18	Keonjhar	1	1
19	Khordha	4	0
20	Koraput	0	4
21	Malkangiri	0	2
22	Mayurbhanj	1	2
23	Nabarangpur	1	1
24	Nayagarh	0	2
25	Nuapada	0	0
26	Puri	2	2
27	Rayagada	2	7
28	Sambalpur	1	2
29	Subarnapur	2	1
30	Sundargarh	3	2
	Total	22	53

A total of 22 STP's are installed in the districts of Odisha. Khordha has the highest no. of STP's installed. A total of 53 STP's are needed in the districts for smooth treatment of domestic sewage. 16 districts of the state don't have access to STP's.

Table 105 - No. of ULB's having partial underground sewage network

Sl. No.	District	No. of ULB's having partial underground sewage network
1	Anugul	
2	Balangir	
3	Baleshwar	0
4	Bargarh	1
5	Bhadrak	0
6	Boudh	0
7	Cuttack	1
8	Deogarh	0
9	Dhenkanal	
10	Gajapati	0
11	Ganjam	0
12	Jagatsinghapur	0
13	Jajapur	0
14	Jharsuguda	0
15	Kalahandi	0
16	Kandhamal	0
17	Kendrapara	0
18	Keonjhar	0
19	Khordha	
20	Koraput	0
21	Malkangiri	0

Sl. No.	District	No. of ULB's having partial underground sewage network
22	Mayurbhanj	0
23	Nabarangpur	0
24	Nayagarh	0
25	Nuapada	0
26	Puri	6
27	Rayagada	0
28	Sambalpur	1
29	Subarnapur	
30	Sundargarh	1
	Total	10

Partial Underground Sewage network is available in the districts of Puri, Sambalpur, Sundargarh, Bargarh and Cuttack.

Table 106 - No. of Towns not having sewerage network

Sl. No.	Districts	No. of towns not having sewerage network
1	Anugul	
2	Balangir	
3	Baleshwar	
4	Bargarh	
5	Bhadrak	4
6	Boudh	1
7	Cuttack	
8	Deogarh	
9	Dhenkanal	1
10	Gajapati	
11	Ganjam	
12	Jagatsinghapur	
13	Jajapur	2
14	Jharsuguda	3
15	Kalahandi	
16	Kandhamal	
17	Kendrapara	2
18	Keonjhar	
19	Khordha	
20	Koraput	4
21	Malkangiri	
22	Mayurbhanj	
23	Nabarangpur	
24	Nayagarh	2
25	Nuapada	
26	Puri	
27	Rayagada	15
28	Sambalpur	2
29	Subarnapur	1
30	Sundargarh	3
	Total	40

A total of 40 towns in the Odisha state don't have any access to sewerage network.

Table 107 - Sewage Generated from Class II towns and above (MLD)

Sl. No.	Districts	Total Quantity of Sewage generated from Class II towns and above (MLD)
1	Anugul	
2	Balangir	
3	Baleshwar	31.8
4	Bargarh	20
5	Bhadrak	0
6	Boudh	5
7	Cuttack	80
8	Deogarh	0

Sl. No.	Districts	Total Quantity of Sewage generated from Class II towns and above (MLD)
9	Dhenkanal	
10	Gajapati	0
11	Ganjam	78
12	Jagatsinghapur	
13	Jajapur	17.2738
14	Jharsuguda	11.2
15	Kalahandi	0
16	Kandhamal	
17	Kendrapara	
18	Keonjhar	7.14
19	Khordha	12
20	Koraput	
21	Malkangiri	
22	Mayurbhanj	0
23	Nabarangpur	
24	Nayagarh	10.3
25	Nuapada	0
26	Puri	20.05
27	Rayagada	10
28	Sambalpur	56
29	Subarnapur	
30	Sundargarh	8.78
	Total	367.5438

The total quantity of sewage generated from Class II towns and above from the districts of Sundargarh, Sambalpur, Rayagada, Puri, Nayagarh, Khordha, Keonjhar, Jharsuguda, Jajapur, Ganjam, Cuttack, Boudh, Bargarh and Baleshwar is 367.5438 MLD.

Table 108 - Quantity of untreated or partially treated sewage (MLD)

Sl. No.	Districts	Quantity of untreated or partially treated sewage (MLD)
1	Anugul	0
2	Balangir	0
3	Baleshwar	4
4	Bargarh	40
5	Bhadrak	0
6	Boudh	5
7	Cuttack	52
8	Deogarh	0
9	Dhenkanal	0
10	Gajapati	0
11	Ganjam	66
12	Jagatsinghapur	0
13	Jajapur	17.2738
14	Jharsuguda	0
15	Kalahandi	0
16	Kandhamal	0
17	Kendrapara	0
18	Keonjhar	2
19	Khordha	108
20	Koraput	0
21	Malkangiri	0
22	Mayurbhanj	0
23	Nabarangpur	0
24	Nayagarh	0
25	Nuapada	0
26	Puri	0
27	Rayagada	8
28	Sambalpur	0
29	Subarnapur	0

Sl. No.	Districts	Quantity of untreated or partially treated sewage (MLD)
30	Sundargarh	0
	Total	302.2738

The total quantity of untreated or partially treated sewage (MLD) from the districts of Rayagada, Khordha, Keonjhar, Jajapur, Ganjam, Cuttack, Boudh, Bargarh and Baleshwar is 302.27 MLD.

Table 109 - Total Available Treatment Capacity (MLD)

Sl. No.	District	Total available Treatment Capacity (MLD)
1	Anugul	0
2	Balangir	
3	Baleshwar	
4	Bargarh	0
5	Bhadrak	0
6	Boudh	0
7	Cuttack	52
8	Deogarh	0
9	Dhenkanal	0
10	Gajapati	0
11	Ganjam	0
12	Jagatsinghapur	
13	Jajapur	0
14	Jharsuguda	2.2
15	Kalahandi	
16	Kandhamal	
17	Kendrapara	
18	Keonjhar	0
19	Khordha	183.5
20	Koraput	0
21	Malkangiri	
22	Mayurbhanj	
23	Nabarangpur	20
24	Nayagarh	2.2
25	Nuapada	0
26	Puri	16
27	Rayagada	0
28	Sambalpur	20
29	Subarnapur	
30	Sundargarh	40
	Total	335.9

The total available treatment capacity in all the districts is 335.9 MLD.

Table 110 - No. of STP's Available and No. of STPs needed in the district

Sl. No.	Districts	No. of STPs available	No. of STPs needed in the district
1	Anugul	1	
2	Balangir		
3	Baleshwar	0	
4	Bargarh	0	
5	Bhadrak	0	
6	Boudh		
7	Cuttack		
8	Deogarh	0	
9	Dhenkanal	0	
10	Gajapati	0	1
11	Ganjam		1
12	Jagatsinghapur	0	1
13	Jajapur	0	1
14	Jharsuguda		1
15	Kalahandi	2	2
16	Kandhamal	0	2

Sl. No.	Districts	No. of STPs available	No. of STPs needed in the district
17	Kendrapara	0	2
18	Keonjhar	3	2
19	Khordha	4	2
20	Koraput	0	2
21	Malkangiri	1	2
22	Mayurbhanj		2
23	Nabarangpur	0	2
24	Nayagarh	2	2
25	Nuapada	0	4
26	Puri	2	4
27	Rayagada	0	4
28	Sambalpur	1	4
29	Subarnapur	0	5
30	Sundargarh		7
	Total	16	53

The total no. of STPs available in the districts are 16 and additional 53 STPs are required.

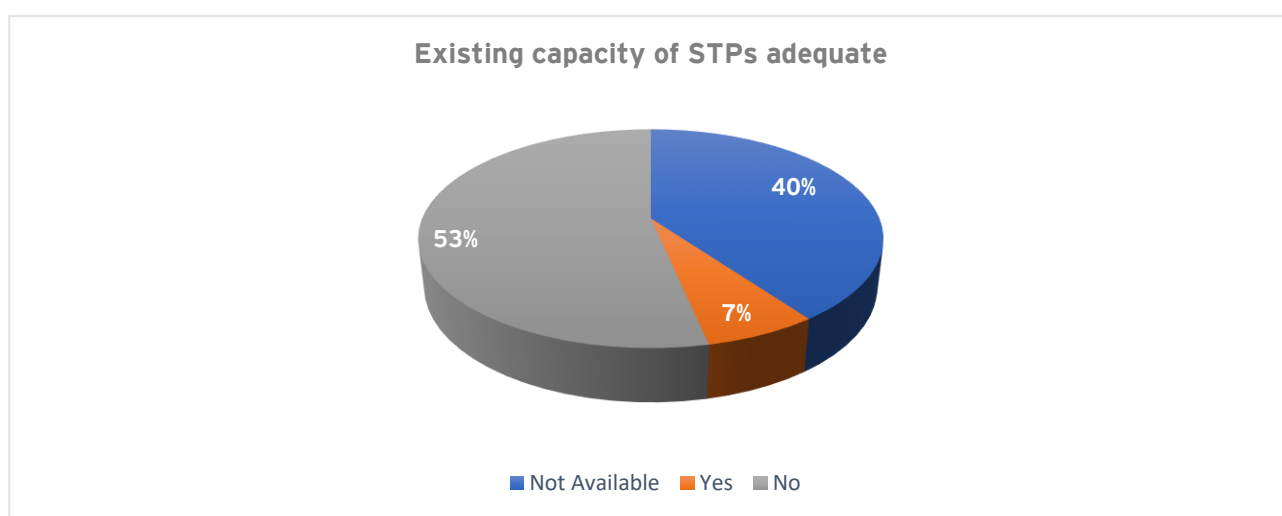


Figure 49 - Adequacy of existing STP's

STPs are adequate in only 7 per cent of the total districts and not adequate in 53 per cent of the districts. Data on adequacy of STPs not available in 40 per cent of the total districts.

Table 111 - Availability of Underground Sewerage Network

Sl. No.	Districts	Not Available	Yes	No
1	Anugul			1
2	Balangir	1		
3	Baleshwar	1		
4	Bargarh	1		
5	Bhadrak			1
6	Boudh	1		
7	Cuttack	1		
8	Deogarh	1		
9	Dhenkanal			1
10	Gajapati			1
11	Ganjam	1		
12	Jagatsinghapur	1		
13	Jajapur			1
14	Jharsuguda	1		
15	Kalahandi	1		
16	Kandhamal	1		
17	Kendrapara			1
18	Keonjhar			1

Sl. No.	Districts	Not Available	Yes	No
19	Khordha		1	
20	Koraput	1		
21	Malkangiri			1
22	Mayurbhanj	1		
23	Nabarangpur			1
24	Nayagarh	1		
25	Nuapada	1		
26	Puri			1
27	Rayagada		1	
28	Sambalpur		1	
29	Subarnapur			1
30	Sundargarh		1	
	Total	15	4	11

Underground sewerage network is available in 4 districts of the state viz. Rayagada, Sambalpur, Sundargarh and Khordha.



SECTION XI: INDUSTRIAL WASTEWATER MANAGEMENT

Key Findings:

- In total, 1714 industries are present in the state which discharge around 315.045 MLD of wastewater and treated around 290.616 MLD.
- Overall, 1709 industries met discharge standards and 81 industries didn't meet discharge standards.
- There are 2466 red industries, 5466 orange industries, 2097 green industries and 11 white industries in the districts of Odisha.
- Inspection and monitoring of effluent's quality on discharge is done in 87% districts of the state.
- Necessary action plans for Industrial wastewater management have been initiated through SPCBs against 22 districts in the state.
- Prominent types of industries contributing industrial wastewater discharge are agro based industries, power plants, mining & metallurgical industries.
- Common Effluent Treatment Facilities is not available in the state as reported.
- Overall, 900 (85%) industries meet the standards and 158 (15%) industries do not.
- There are 23 districts who have complaints redressal system via mobile app or online systems.

11.0 Industrial Wastewater Management

Diverse industries produce wastewater, which is released into the environment and into nearby bodies of water. Sometimes, this effluent was partially or completely untreated before release. The degradation of the environment because of industrialization in recent years is a serious concern in various nations. Several other microorganisms found in wastewater, including viruses, bacteria, protozoans, and algae, pose serious risks to the public's health because they are the root of several water-borne illnesses. Untreated wastewater has an impact on human health, water quality in bodies of water, and the trophic levels of the food chain. Some developing pollutants with endocrine-disrupting properties may be present in the wastewater discharge. There are occasions when toxins in discharged water that are not eliminated by the methods employed in that industry impair the environment and the general public's health.

The surface and groundwater bodies' degradation are caused by the quality of industrial wastewater effluents. This is because untreated or partially treated industrial wastewater effluents may lead to eutrophication in the receiving water bodies and create a favorable environment for microorganisms that can produce toxins in the water.

Table 112 - Red, Orange, Green and White Industries in the districts

Sl. No.	Districts	Red industries	Orange industries	Green industries	White industries
1	Anugul	229	345	44	
2	Balangir		161	41	
3	Baleshwar	504	501	136	
4	Bargarh	5	195	18	
5	Bhadrak	18	104	75	
6	Boudh	1	53	2	
7	Cuttack	192	445	446	
8	Deogarh	0	0	0	0
9	Dhenkanal	95	203	14	
10	Gajapati	39	104	77	
11	Ganjam	19	320	33	0
12	Jagatsinghapur				
13	Jajapur	182	183	56	0
14	Jharsuguda	75	70	30	
15	Kalahandi	8	201	15	0
16	Kandhamal	0	7	0	
17	Kendrapara				
18	Keonjhar	210	371	67	0
19	Khordha	203	573	340	
20	Koraput	8	112	85	0
21	Malkangiri	0	11	25	
22	Mayurbhanj	4	62	32	0
23	Nabarangpur	30	54	33	
24	Nayagarh				
25	Nuapada	1	71	1	0
26	Puri				
27	Rayagada	386	470	398	
28	Sambalpur	118	423	55	
29	Subarnapur				
30	Sundargarh	139	427	74	11
	Total	2466	5466	2097	11

There are 2466 red industries, 5466 orange industries, 2097 green industries and 11 white industries in the districts of Odisha.

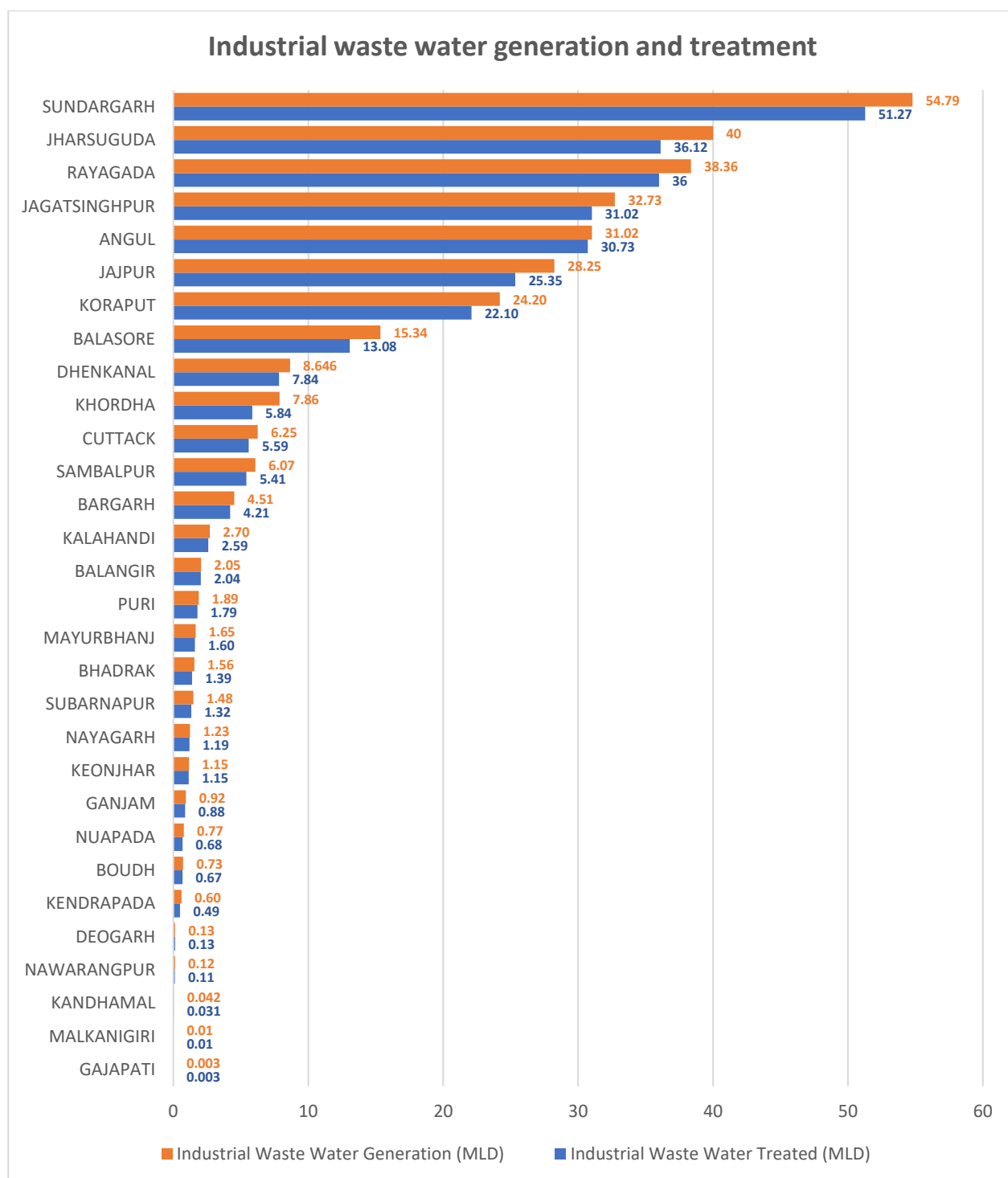


Figure 50: Total Industrial wastewater generated and treated (MLD)

Total industrial wastewater generated is around 315.044 MLD and treated is around 290.616 MLD in the state.

Table 113 - No. of Industries discharging wastewater and Industrial Wastewater generated (MLD) and treated (MLD)

Sl. No.	District	Industries Discharging Wastewater	Industrial Waste Generated (MLD)	Industrial Waste Treated (MLD)
1	Anugul	48	31.02	30.73
2	Balangir	116	2.05	2.04
3	Baleshwar	42	15.34	13.08
4	Bargarh	174	4.51	4.21
5	Bhadrak	44	1.56	1.39

Sl. No.	District	Industries Discharging Wastewater	Industrial Waste Generated (MLD)	Industrial Waste Treated (MLD)
6	Boudh	40	0.73	0.67
7	Cuttack	2	6.25	5.59
8	Deogarh		0.13	0.13
9	Dhenkanal	38	8.646	7.84
10	Gajapati	97	0.003	0.003
11	Ganjam	372	0.92	0.88
12	Jagatsinghapur	14	32.73	31.02
13	Jajapur	37	28.25	25.35
14	Jharsuguda		40	36.12
15	Kalahandi	126	2.70	2.59
16	Kandhamal	7	0.042	0.031
17	Kendrapara	15	0.60	0.49
18	Keonjhar	24	1.15	1.15
19	Khordha	69	7.86	5.84
20	Koraput	30	24.20	22.10
21	Malkangiri	4	0.01	0.01
22	Mayurbhanj	19	1.65	1.60
23	Nabarangpur	15	0.12	0.11
24	Nayagarh	35	1.23	1.19
25	Nuapada	37	0.77	0.68
26	Puri	22	1.89	1.79
27	Rayagada	40	38.36	36
28	Sambalpur	182	6.07	5.41
29	Subarnapur	64	1.48	1.32
30	Sundargarh	1	54.79	51.27
	Total	1714	315.044	290.616

A total of 1714 industries generates 315.04 MLD wastewater.

Table 114 - Compliance to Industries meeting discharge standards

Sl. No.	District	No. of industries meeting standards	Industries not meeting discharge standards
1	Anugul	47	0
2	Balangir	116	0
3	Baleshwar	33	9
4	Bargarh	174	0
5	Bhadrak	44	0
6	Boudh	40	0
7	Cuttack	50	0
8	Deogarh	22	0
9	Dhenkanal	38	0
10	Gajapati	79	18
11	Ganjam	325	47
12	Jagatsinghapur	14	0
13	Jajapur	37	0
14	Jharsuguda	82	0
15	Kalahandi	126	0
16	Kandhamal	6	1
17	Kendrapara	15	0
18	Keonjhar	24	0
19	Khordha	0	0
20	Koraput	30	0
21	Malkangiri	4	0
22	Mayurbhanj	19	0
23	Nabarangpur	15	0
24	Nayagarh	29	6
25	Nuapada	37	0
26	Puri	16	0
27	Rayagada	40	0

Sl. No.	District	No. of industries meeting standards	Industries not meeting discharge standards
28	Sambalpur	182	0
29	Subarnapur	64	0
30	Sundargarh	1	0
	Total	1709	81

Overall, 1709 industries met discharge standards and 81 industries didn't meet discharge standards.

Table 115 - Inspection and Monitoring of effluent's quality on discharge

Sl. No.	Districts	No	Not Available	Yes
1	Anugul			1
2	Balangir			1
3	Baleshwar		1	
4	Bargarh			1
5	Bhadrak			1
6	Boudh			1
7	Cuttack			1
8	Deogarh			1
9	Dhenkanal			1
10	Gajapati			1
11	Ganjam		1	
12	Jagatsinghapur			1
13	Jajapur			1
14	Jharsuguda			1
15	Kalahandi			1
16	Kandhamal			1
17	Kendrapara			1
18	Keonjhar			1
19	Khordha			1
20	Koraput			1
21	Malkangiri			1
22	Mayurbhanj		1	
23	Nabarangpur			1
24	Nayagarh			1
25	Nuapada			1
26	Puri			1
27	Rayagada			1
28	Sambalpur			1
29	Subarnapur		1	
30	Sundargarh			1
	Total	0	4	26

Inspection and monitoring of effluent's quality on discharge is done in 26 districts of the state.

Table 116 - Update on action plans initiated through SPCB against industries

Sl. No.	Districts	No	Not Available	Yes
1	Anugul		1	
2	Balangir			1
3	Baleshwar		1	
4	Bargarh			1
5	Bhadrak			1
6	Boudh			1
7	Cuttack			1
8	Deogarh		1	
9	Dhenkanal			1
10	Gajapati			1
11	Ganjam		1	
12	Jagatsinghapur	1		
13	Jajapur			1
14	Jharsuguda			1
15	Kalahandi		1	

Sl. No.	Districts	No	Not Available	Yes
16	Kandhamal			1
17	Kendrapara	1		
18	Keonjhar			1
19	Khordha			1
20	Koraput			1
21	Malkangiri			1
22	Mayurbhanj			1
23	Nabarangpur			1
24	Nayagarh			1
25	Nuapada			1
26	Puri			1
27	Rayagada			1
28	Sambalpur			1
29	Subarnapur		1	
30	Sundargarh			1
	Total	2	6	22

Necessary action plans initiated through SPCBs against 22 districts in the state.

Table 117 - Update on Compliant redressal system

Sl. No.	Districts	No	Not Available	Yes
1	Anugul			1
2	Balangir	1		
3	Baleshwar		1	
4	Bargarh			1
5	Bhadrak		1	
6	Boudh			1
7	Cuttack			1
8	Deogarh			1
9	Dhenkanal			1
10	Gajapati			1
11	Ganjam		1	
12	Jagatsinghapur			1
13	Jajapur			1
14	Jharsuguda			1
15	Kalahandi		1	
16	Kandhamal			1
17	Kendrapara			1
18	Keonjhar	1		
19	Khordha			1
20	Koraput			1
21	Malkangiri			1
22	Mayurbhanj		1	
23	Nabarangpur			1
24	Nayagarh			1
25	Nuapada			1
26	Puri			1
27	Rayagada			1
28	Sambalpur			1
29	Subarnapur			1
30	Sundargarh			1
	Total	2	5	23

23 districts in the state have compliant redressal system via mobile app or online systems.



SECTION XII: MINING ACTIVITY MANAGEMENT

Key Findings:

- Sand mining is conducted in most of the districts. Other mining activities like stone quarrying, coal mining, limestone is found in several districts.
- Total 1405 licenses have been given for conducting mining activities out of which Jajapur has the highest no. of licensed mining at 257.
- 652.30 sq. km area is under sand mining operation.
- Sand mining activities are reported in 80% districts and most of them are from riverbed area.
- Sundargarh has the highest coverage of mining area at around 60 percent.
- District level team for monitoring of mining activity identified in 18 districts of the state.
- District-level task force for control of illegal mining activity identified in 13 districts of the state.
- Periodic verification of compliance to environmental conditions by departments done in 26 districts of the state.
- Illegal sand and mining activity are identified 53% districts of the state.

12.0 Mining Activity Management

The mining activities are necessary not only for economic growth of state or country but also for the community as they provide resources and employment. However, it also has health hazard and contributes to ecosystem depletion if poorly managed. The biological context of the mining sites has a significant bearing on how mining operations affect the surrounding area. The air borne emissions from mining activities adds particulate matter and poisonous gases and can lead to serious health hazards.

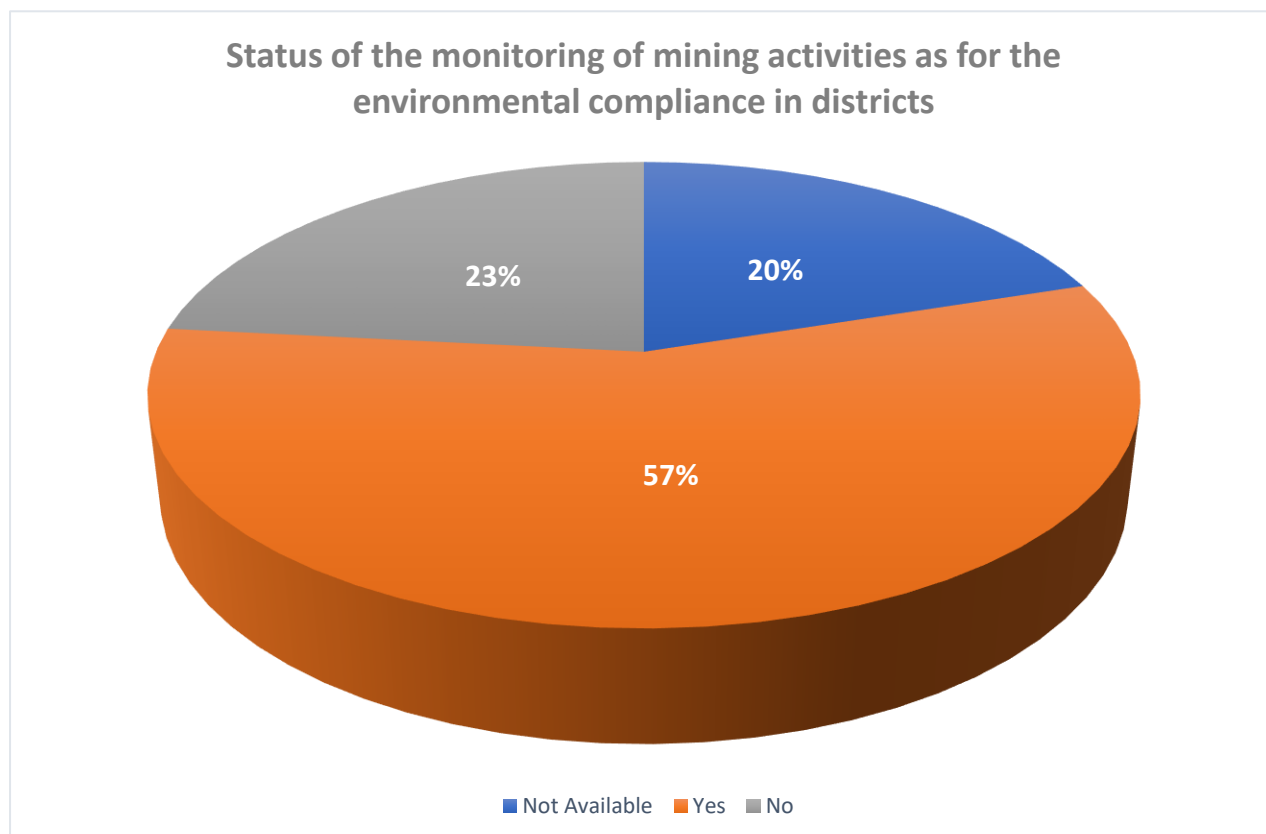


Figure 51: Status of Monitoring mining activities

17 districts have presented their status of monitoring if mining activities as for the environmental compliance.

The various mining processes such, as are excavations, blasting and transportations of materials along with wind erosion of dust piles, unpaved roads, and waste dumps². These pollutants are responsible for causing cancer, hinder with development of children, normal function of body organs and suppress immune system. There are other health hazards of mines and smelter plants like fibrosis, malignant mesothelioma, and sequel as well. In addition to this, the opencast mines can also be responsible for contamination of nearby water sources and aquatic ecosystems³. Carbon dioxide and other greenhouse gases are released when land is removed for mining because the flora and soils are destroyed. Given that some less concentrated mineral reserves necessitate proportionately higher energy consumption, another crucial factor to consider is the amount of greenhouse gases generated per mass of material mined. Therefore, the State Pollution Control Board issues guidelines to control the release of pollutants in the environment from mining activities. The license for mining and consent provided by SPCB ensures the pollution control in the mining areas.

²Mishra N. and Das N. Coal Mining and Local Environment: A study in Talcher Coalfields of India. 2017.

³Arzoo A. and Satapathy K.B. Socio-economic and environmental impacts of mining in Odisha, India. 2016.

Sand Mining

The sand mining is one of the major mining activities in the state. It also has adverse environment impact, if not controlled. Illegal or irresponsible mining of sand may lead to deepening of riverbed affecting dependent biodiversity in and around, coastal erosions decrease in aesthetic value of ecosystem, dust pollution and depletion of ecosystems⁴. Therefore, it is necessary for the government to streamline the process and keep a strict check on the mining activity in the state. The department of Steel and Mines is responsible for providing licenses and to keep the pollution under control due to mining activities, State Pollution Control Board ensures the Consent to Operate.

The sand mining is done in 24 districts that make up 80% of the total districts and 20% reported no sand mining activity.

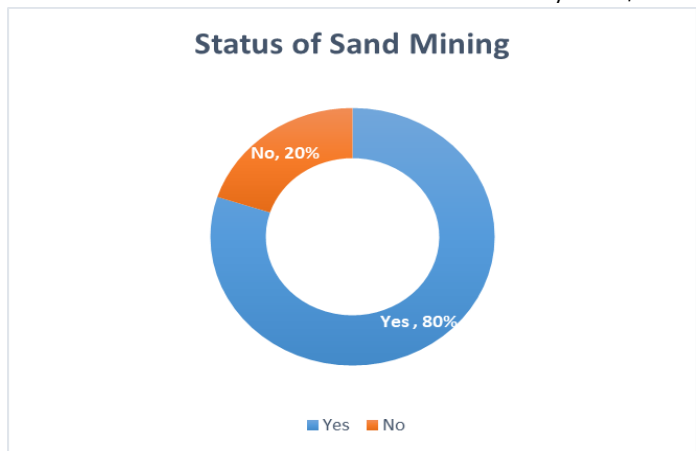


Figure 52 - Status of Sand Mining

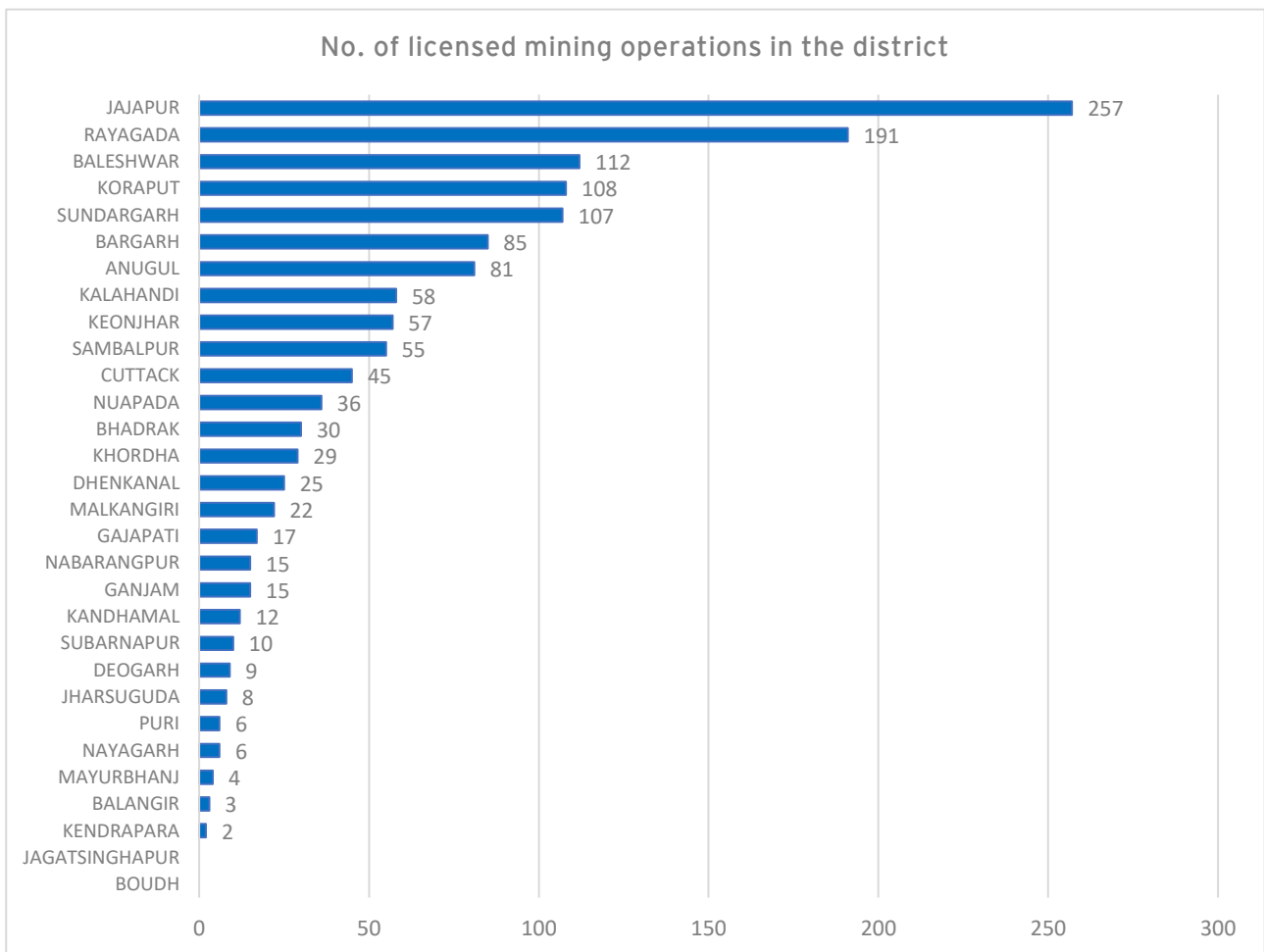


Figure 53: No. of Licensed mining operations in the district

A total of 1405 licensed mining operations in the state. Jajapur tops the list with 257 licensed mining operations in the state.

⁴Pitchaiah PS.Impacts of Sand Mining on Environment-A Review. Nagarjuna University, Andhra Pradesh.2017

Table 118 - Percentage area covered under mining in the district

Sl. No.	Districts	% Area covered under mining
1	Anugul	0%
2	Balangir	0.005%
3	Baleshwar	0%
4	Bargarh	0.0013%
5	Bhadrak	2%
6	Boudh	0.03%
7	Cuttack	1.12%
8	Deogarh	0%
9	Dhenkanal	0%
10	Gajapati	0.045%
11	Ganjam	0.033%
12	Jagatsinghapur	0%
13	Jajapur	0.018%
14	Jharsuguda	0%
15	Kalahandi	59%
16	Kandhamal	0.012%
17	Kendrapara	0.0001%
18	Keonjhar	0%
19	Khordha	0.03%
20	Koraput	0.256%
21	Malkangiri	0.2%
22	Mayurbhanj	0%
23	Nabarangpur	0%
24	Nayagarh	11.41%
25	Nuapada	0.09%
26	Puri	11.41%
27	Rayagada	0%
28	Sambalpur	0.22%
29	Subarnapur	4%
30	Sundargarh	60%

Sundargarh district has the highest coverage of mining area at 60 per cent.

Table 119 - Area under sand mining sq.km

Sl. No.	Districts	Area covered (Sq. km)
1	Anugul	0
2	Balangir	253
3	Baleshwar	0.946
4	Bargarh	2.31
5	Bhadrak	53
6	Boudh	0.13
7	Cuttack	2.09
8	Deogarh	0.1999
9	Dhenkanal	0.382
10	Gajapati	1.368
11	Ganjam	0
12	Jagatsinghapur	0
13	Jajapur	0.72
14	Jharsuguda	109.2
15	Kalahandi	2.4307
16	Kandhamal	0.716
17	Kendrapara	0.2561
18	Keonjhar	0.8042
19	Khordha	0.537
20	Koraput	0.811
21	Malkangiri	0.012
22	Mayurbhanj	11.1
23	Nabarangpur	0
24	Nayagarh	143.26
25	Nuapada	2.0198

Sl. No.	Districts	Area covered (Sq. km)
26	Puri	0.833
27	Rayagada	21.13
28	Sambalpur	0
29	Subarnapur	45.05
30	Sundargarh	0
	Total	652.3057

The total area covered in all the districts under sand mining are 652.30 sq. km. Balangir has the highest area covered under sand mining.

Table 120 - Identification of district level team for monitoring of mining activity

Sl. No.	Districts	No	Not Available	Yes
1	Anugul			1
2	Balangir			1
3	Baleshwar	1		
4	Bargarh		1	
5	Bhadrak	1		
6	Boudh	1		
7	Cuttack	1		
8	Deogarh		1	
9	Dhenkanal			1
10	Gajapati			1
11	Ganjam		1	
12	Jagatsinghapur		1	
13	Jajapur	1		
14	Jharsuguda			1
15	Kalahandi			1
16	Kandhamal			1
17	Kendrapara			1
18	Keonjhar			1
19	Khordha			1
20	Koraput			1
21	Malkangiri		1	
22	Mayurbhanj			1
23	Nabarangpur			1
24	Nayagarh			1
25	Nuapada			1
26	Puri			1
27	Rayagada	1		
28	Sambalpur			1
29	Subarnapur	1		
30	Sundargarh			1
	Total	7	5	18

District level team for monitoring of mining activity identified in 18 districts of the state.

Table 121 - Identification of district-level task force for control of illegal mining activity

Sl. No.	Districts	No	Not Available	Yes
1	Anugul			1
2	Balangir		1	
3	Baleshwar		1	
4	Bargarh		1	
5	Bhadrak		1	
6	Boudh			1
7	Cuttack	1		
8	Deogarh		1	
9	Dhenkanal			1
10	Gajapati			1
11	Ganjam		1	
12	Jagatsinghapur		1	
13	Jajapur		1	

Sl. No.	Districts	No	Not Available	Yes
14	Jharsuguda			1
15	Kalahandi			1
16	Kandhamal			1
17	Kendrapara	1		
18	Keonjhar		1	
19	Khordha			1
20	Koraput		1	
21	Malkangiri		1	
22	Mayurbhanj			1
23	Nabarangpur		1	
24	Nayagarh			1
25	Nuapada			1
26	Puri			1
27	Rayagada	1		
28	Sambalpur			1
29	Subarnapur	1		
30	Sundargarh	1		
	Total	5	12	13

District-level task force for control of illegal mining activity identified in 13 districts of the state.

Table 122 - Periodic verification of compliance to environmental conditions by departments

Sl. No.	Districts	No	Not Available	Yes
1	Anugul			1
2	Balangir			1
3	Baleshwar		1	
4	Bargarh			1
5	Bhadrak			1
6	Boudh		1	
7	Cuttack			1
8	Deogarh			1
9	Dhenkanal			1
10	Gajapati			1
11	Ganjam		1	
12	Jagatsinghapur			1
13	Jajapur			1
14	Jharsuguda			1
15	Kalahandi			1
16	Kandhamal			1
17	Kendrapara			1
18	Keonjhar			1
19	Khordha			1
20	Koraput			1
21	Malkangiri		1	
22	Mayurbhanj			1
23	Nabarangpur			1
24	Nayagarh			1
25	Nuapada			1
26	Puri			1
27	Rayagada			1
28	Sambalpur			1
29	Subarnapur			1
30	Sundargarh			1
	Total	0	4	26

Periodic verification of compliance to environmental conditions by departments done in 26 districts of the state.

Table 123 - Identification of illegal sand and mining activity in the districts

Sl. No.	Districts	Not Available	Yes	No
1	Anugul		1	
2	Balangir		1	
3	Baleshwar	1		
4	Bargarh	1		
5	Bhadrak	1		
6	Boudh		1	
7	Cuttack			1
8	Deogarh	1		
9	Dhenkanal		1	
10	Gajapati		1	
11	Ganjam	1		
12	Jagatsinghapur	1		
13	Jajapur			1
14	Jharsuguda		1	
15	Kalahandi		1	
16	Kandhamal		1	
17	Kendrapara			1
18	Keonjhar	1		
19	Khordha		1	
20	Koraput		1	
21	Malkangiri	1		
22	Mayurbhanj		1	
23	Nabarangpur		1	
24	Nayagarh		1	
25	Nuapada		1	
26	Puri		1	
27	Rayagada			1
28	Sambalpur		1	
29	Subarnapur			1
30	Sundargarh	1		
	Total	9	16	5

Illegal sand and mining activity are identified 16 districts of the state.



SECTION XIII: NOISE POLLUTION MANAGEMENT

Key Findings:

- Noise measuring devices are available with district administration in Jajpur (9) and Rayagada (8) district the highest and numbers 73 of noise pollution measuring devices are available with SPCB at district level.
- Noise level meters with various agencies available in 19 districts of the state.
- Overall, 13% districts have adequate noise level meters available and 33% of the districts don't have adequate noise level meters.
- Ambient sound levels comply with notified standards for residential, sensitive zones in 12 districts of the state.
- Total 15 districts required installation of ambient noise level monitoring stations.
- Signboards installed in sensitive zones in towns/cities are adequate in 20% districts of the state and action plan on installing signboards by authorities taken in 27% districts.
- Action plan taken by authority for signboards is done by 27% of the districts, Identification of no-horn zone in ULBs has been done in Koraput and Sambalpur districts.
- Public complain redressal system for noise pollution available in 63% districts that is 19 districts of the state.

13.0 Noise Pollution Management

Noise pollution has several health consequences and time and again restrictions have been imposed for unchecked noise pollution. Both on land and at sea, noise pollution can harm both people and wildlife's health. Loud or unavoidable noises can result in hearing loss, stress, and elevated blood pressure, from highway noise to rock concerts.

Table 124 - No. of Noise measuring devices available in district

Sl. No.	District	Number	%
1	Cuttack	2	3%
2	Deogarh	2	3%
3	Dhenkanal	1	1%
4	Gajapati	1	1%
5	Ganjam	1	1%
6	Jagatsinghapur	2	3%
7	Jajapur	9	12%
8	Kalahandi	2	3%
9	Kendrapara	2	3%
10	Keonjhar	2	3%
11	Khordha	4	5%
12	Koraput	2	3%
13	Malkangiri	2	3%
14	Mayurbhanj	1	1%
15	Nabarangpur	2	3%
16	Nuapada	4	5%
17	Puri	3	4%
18	Rayagada	8	11%
19	Subarnapur	0	0%
20	Sundargarh	1	1%
21	Anugul	1	1%
22	Balangir	8	11%
23	Baleshwar	1	1%
24	Bargarh	2	3%
25	Bhadrak	1	1%
26	Boudh	1	1%
27	Jharsuguda	2	3%
28	Kandhamal	1	1%
29	Nayagarh	4	5%
30	Sambalpur	1	1%
	Total	73	100%

73 Noise measuring devices are available in the districts of the state. Jajapur has the highest number of noise measuring devices available in the district. Subarnapur has no noise measuring devices.

Table 125 - Availability of noise level meters with various agencies

Sl. No.	District	Yes	No	Not Available
1	Anugul	1		
2	Balangir	1		
3	Baleshwar		1	
4	Bargarh			1
5	Bhadrak			1
6	Boudh			1
7	Cuttack	1		
8	Deogarh			1
9	Dhenkanal	1		
10	Gajapati	1		
11	Ganjam	1		
12	Jagatsinghapur	1		
13	Jajapur	1		
14	Jharsuguda			1

Sl. No.	District	Yes	No	Not Available
15	Kalahandi	1		
16	Kandhamal	1		
17	Kendrapara		1	
18	Keonjhar			1
19	Khordha			1
20	Koraput	1		
21	Malkangiri	1		
22	Mayurbhanj	1		
23	Nabarangpur	1		
24	Nayagarh	1		
25	Nuapada	1		
26	Puri	1		
27	Rayagada	1		
28	Sambalpur	1		
29	Subarnapur		1	
30	Sundargarh			1
Total		19	3	8
% of Total		63%	10%	27%

Noise level meters with various agencies available in 19 districts of the state.

Table 126 - Adequacy on availability of noise meters

Sl. No.	District	Yes	No	Not Available
1	Anugul		1	
2	Balangir			1
3	Baleshwar			1
4	Bargarh			1
5	Bhadrak			1
6	Boudh			1
7	Cuttack	1		
8	Deogarh			1
9	Dhenkanal		1	
10	Gajapati		1	
11	Ganjam			1
12	Jagatsinghapur		1	
13	Jajapur	1		
14	Jharsuguda			1
15	Kalahandi			1
16	Kandhamal	1		
17	Kendrapara		1	
18	Keonjhar			1
19	Khordha			1
20	Koraput			1
21	Malkangiri			1
22	Mayurbhanj		1	
23	Nabarangpur			1
24	Nayagarh	1		
25	Nuapada		1	
26	Puri			1
27	Rayagada		1	
28	Sambalpur		1	
29	Subarnapur		1	
30	Sundargarh			1
Total		4	10	16
% of Total		13%	33%	53%

Cuttack, Jajapur, Kandhamal and Nayagarh are 4 districts with adequate noise level meters available. 10 districts have reported inadequacy of noise level meters, while data is not available in 53% of the districts.

Table 127 - Compliance with notified standards of sound level

Sl. No.	Districts	No	Not Available	Yes
1	Anugul	1		
2	Balangir		1	
3	Baleshwar			1
4	Bargarh		1	
5	Bhadrak		1	
6	Boudh			1
7	Cuttack	1		
8	Deogarh		1	
9	Dhenkanal	1		
10	Gajapati	1		
11	Ganjam		1	
12	Jagatsinghapur		1	
13	Jajapur	1		
14	Jharsuguda		1	
15	Kalahandi	1		
16	Kandhamal		1	
17	Kendrapara	1		
18	Keonjhar			1
19	Khordha			1
20	Koraput			1
21	Malkangiri			1
22	Mayurbhanj			1
23	Nabarangpur	1		
24	Nayagarh			1
25	Nuapada			1
26	Puri		1	
27	Rayagada			1
28	Sambalpur			1
29	Subarnapur			1
30	Sundargarh		1	
	Total	8	10	12

Ambient sound levels comply with notified standards for residential, sensitive zones in 12 districts of the state.

Table 128 - Installation of ambient noise level monitoring stations required

Sl. No.	Districts	No	Not Available	Yes
1	Anugul			1
2	Balangir		1	
3	Baleshwar			1
4	Bargarh		1	
5	Bhadrak		1	
6	Boudh		1	
7	Cuttack	1		
8	Deogarh		1	
9	Dhenkanal			1
10	Gajapati			1
11	Ganjam		1	
12	Jagatsinghapur		1	
13	Jajapur			1
14	Jharsuguda		1	
15	Kalahandi		1	
16	Kandhamal		1	
17	Kendrapara			1
18	Keonjhar	1		
19	Khordha			1
20	Koraput	1		
21	Malkangiri			1
22	Mayurbhanj			1

Sl. No.	Districts	No	Not Available	Yes
23	Nabarangpur	1		
24	Nayagarh			1
25	Nuapada			1
26	Puri			1
27	Rayagada			1
28	Sambalpur			1
29	Subarnapur			1
30	Sundargarh		1	
	Total	4	11	15

Ambient noise level monitoring station's installation required in 15 districts of the state.

Table 129 - Adequacy of signboards installed in sensitive zones in town/cities

Sl. No.	Districts	No	Not Available	Yes
1	Anugul	1		
2	Balangir		1	
3	Baleshwar		1	
4	Bargarh		1	
5	Bhadrak		1	
6	Boudh			1
7	Cuttack	1		
8	Deogarh		1	
9	Dhenkanal	1		
10	Gajapati			1
11	Ganjam		1	
12	Jagatsinghapur		1	
13	Jajapur	1		
14	Jharsuguda		1	
15	Kalahandi		1	
16	Kandhamal		1	
17	Kendrapara	1		
18	Keonjhar		1	
19	Khordha			1
20	Koraput		1	
21	Malkangiri	1		
22	Mayurbhanj	1		
23	Nabarangpur	1		
24	Nayagarh			1
25	Nuapada			1
26	Puri	1		
27	Rayagada		1	
28	Sambalpur			1
29	Subarnapur	1		
30	Sundargarh		1	
	Total	10	14	6

Signboards installed in sensitive zones in towns/cities are adequate in 6 districts of the state.

Table 130 - Action plan taken by authority for signboards

Sl. No.	Districts	No	Not Available	Yes
1	Anugul	1		
2	Balangir		1	
3	Baleshwar		1	
4	Bargarh		1	
5	Bhadrak		1	
6	Boudh		1	
7	Cuttack	1		
8	Deogarh		1	
9	Dhenkanal	1		
10	Gajapati		1	
11	Ganjam		1	

Sl. No.	Districts	No	Not Available	Yes
12	Jagatsinghapur		1	
13	Jajapur		1	
14	Jharsuguda		1	
15	Kalahandi		1	
16	Kandhamal		1	
17	Kendrapara	1		
18	Keonjhar		1	
19	Khordha			1
20	Koraput			1
21	Malkangiri			1
22	Mayurbhanj	1		
23	Nabarangpur		1	
24	Nayagarh			1
25	Nuapada			1
26	Puri			1
27	Rayagada			1
28	Sambalpur			1
29	Subarnapur	1		
30	Sundargarh		1	
	Total	6	16	8

Action plan on installing signboards by authorities taken in 8 districts.

Table 131 - Identification of no-horn zone in ULB

Sl. No.	Districts	No	Not Available	Yes
1	Anugul	1		
2	Balangir		1	
3	Baleshwar		1	
4	Bargarh		1	
5	Bhadrak		1	
6	Boudh		1	
7	Cuttack	1		
8	Deogarh		1	
9	Dhenkanal	1		
10	Gajapati		1	
11	Ganjam		1	
12	Jagatsinghapur		1	
13	Jajapur		1	
14	Jharsuguda		1	
15	Kalahandi		1	
16	Kandhamal		1	
17	Kendrapara	1		
18	Keonjhar		1	
19	Khordha		1	
20	Koraput			1
21	Malkangiri	1		
22	Mayurbhanj	1		
23	Nabarangpur		1	
24	Nayagarh		1	
25	Nuapada	1		
26	Puri		1	
27	Rayagada		1	
28	Sambalpur			1
29	Subarnapur	1		
30	Sundargarh		1	
	Total	8	20	2

Identification of no-horn zone in ULB's set up in the districts of Koraput and Sambalpur.

Table 132 - Availability of public complain redressal system for noise pollution

Sl. No.	Districts	No	Not Available	Yes
1	Anugul			1
2	Balangir		1	
3	Baleshwar			1
4	Bargarh			1
5	Bhadrak			1
6	Boudh		1	
7	Cuttack			1
8	Deogarh			1
9	Dhenkanal			1
10	Gajapati			1
11	Ganjam		1	
12	Jagatsinghapur			1
13	Jajapur	1		
14	Jharsuguda		1	
15	Kalahandi			1
16	Kandhamal			1
17	Kendrapara			1
18	Keonjhar		1	
19	Khordha			1
20	Koraput			1
21	Malkangiri			1
22	Mayurbhanj	1		
23	Nabarangpur			1
24	Nayagarh	1		
25	Nuapada	1		
26	Puri		1	
27	Rayagada			1
28	Sambalpur			1
29	Subarnapur	1		
30	Sundargarh			1
	Total	5	6	19

Public complain redressal system for noise pollution available in 19 districts of the state.



SECTION XIV: WETLAND MANAGEMENT

Key Findings:

- Load based assessment of sewerage system is available in 50% the districts of the state.
- As for the data provided, 63% that is 19 districts of Odisha have observed activities of solid waste disposal into the wetlands.
- De-siltation of water bodies is carried out in 73% of the districts.
- The demarcation of flood protection is done in Nayagarh and Subarnapur districts of Odisha.
- Total 23 districts of Odisha, have already initiated the study and research work required for Flood protection zone demarcation.
- Out of 30 districts, 24 have already identified the encroachment areas found in their respective ULBs and 7 have started inspection for the removal of encroachment areas.

14.0 Wetland Management Plan

Wetlands are areas of land where water plays a significant role in controlling the nearby ecology, as well as the plant and animal species that it supports. There are two recognized general types of wetlands: inland or non-tidal wetlands and coastal or tidal wetlands. They grow in areas where the land is buried in water, the water table is at or near the surface, or both. Due to regional and local variations in soils, terrain, climate, hydrology, water chemistry, flora, and other factors, such as human disturbance, wetland types are highly variable.

Because they enable the degradation of habitats through nutrient loading and sedimentation, urban development and agriculture are among of the most quantitative sources of wetland destruction over time. When impermeable surfaces like parking lots, walkways, and roads are built, nutrient-rich runoff can be directed to these sensitive areas at rates that are greater than what nature is able to naturally control.

Table 133 - Inventory of all wetlands in the district

District	Ox-bow wetlands lakes	Riverine wetlands (Natural)	Waterlogged (Natural)	River/ Stream	Reservoirs/ Barrages	Tanks/ Ponds	Waterlogged (Man-made)	Total- Inlands	Wetlands (<2.25 ha)	Total Wetlands
Inland Wetlands (Naturals)				Inland Wetlands (Man-made)				Total		
Anugul		22		65	123	116	12	338	4399	4737
Balangir	5	28	78	85	94	996	2	1288	3748	2036
Baleshwar	6	13	19	76	9	34	1	158	3138	3536
Bargarh		4	86	44	169	4663	15	4981	2635	7616
Bhadrak	3	2	35	48		11	1	100	2038	2408
Boudh			58	37	52	158	1	309	958	1267
Cuttack	11	7	90	75	17	148		351	1489	1840
Deogarh	0	0	4	42	62	51	3	162	869	1031
Dhenkanal	1	3	8	26	25	225		288	3076	3364
Gajapati					82	1698		1780	76	1856
Ganjam		1	39	17	73	515	5		4088	4783
Jagatsinghapur	8	3	38	67		37		153	695	1055
Jajapur	5		127	100	8	132	7	379	2169	2548
Jharsuguda		1	36	25	23	273	2	359	964	1323
Kalahandi		1	4		34	104				4852
Kandhamal				65	33	14	1	113		
Kendrapara	8	2	62	102		32		206	1074	1600
Keonjhar		5	23	62	58	138		286	4390	4676
Khordha	2	4	3	10	5	1	3			28
Koraput	11	6	28	101	26	55	2	229	1404	1633
Malkangiri	0	3	29	32	31	126		221	2736	2956
Mayurbhanj					111	4412	333			4856
Nabarangpur				5	46	61		112		
Nayagarh			2	29	26	121	2		1925	2105
Nuapada					36	383				419
Puri	6	4	71	40		62	2	183	1489	1871
Rayagada										14
Sambalpur										
Subarnapur										
Sundargarh		3	34	56	144	246		483	2439	2922
Total	66	112	874	1209	1287	14812	392	12479	45799	67332

There are a total of 67332 wetlands in the districts of Odisha.

Table 134 - Data on wetland areas (in Ha)

District	Ox-bow wetlands lakes	Riverine wetlands	Waterlogged (Natural)	River/ Stream	Reservoirs / Barrages	Tanks/ Ponds	Waterlogged (Man-made)	Total- Inlands	Wetlands (<2.25 ha)	Total Wetlands
Inland Wetlands (Naturals)				Inland Wetlands (Man-made)				Total		
Anugul		185.2		12086.98	11907.03	419.94	186.19	24785.34	2791.09	27576.43
Balangir	31	191	580	9040	2483	4196	7	16528	3748	20276
Baleshwar	110	147	134	6375	124	148	31	7069	3138	19061
Bargarh		35	419	5953	17238	6697	68	30410	3516	33926
Bhadrak	30	22	278	4989		51	72	5442	2038	19017
Boudh			354	8458	657	569	4	10053	958	11011
Cuttack	91	35	2959	76.88	377	820		25249	1489	26738
Deogarh	0	0	20	2681	21264	182	9	24156	869	25025
Dhenkanal	10	26	81	7756	1736	978		10587	3076	13663
Gajapati					358.433	687		1045.433	334.404	1379.837

District	Ox-bow lakes	Riverine wetlands	Waterlogged (Natural)	River/Stream	Reservoirs / Barrages	Tanks/ Ponds	Waterlogged (Man-made)	Total Inlands	Wetlands (<2.25 ha)	Total Wetlands
	Inland Wetlands (Naturals)				Inland Wetlands (Man-made)			Total		
Ganjam		12	1051	6131	4689	2397	23		4088	29920
Jagatsinghapur	83	37	638	12153		427		13338	695	20435
Jajapur	66		2412	9720	354	896	97	13545	2169	15714
Jharsuguda	3	176	2407	37620	37620	1123	4	41333	964	42297
Kalahandi		10.93	55.21		853.56	1576.8				498.5
Kandhamal				4455	620	61	3	5139		
Kendrapara	47	6	589	17934		198		18774	1074	50932
Keonjhar		70	244	10200	5649	536		16699	4390	21089
Khordha	8906	500	208.25	1982.6	1110.5	18	212.18			12937.628
Koraput	83	39	181	4908	18833	841	18	24903	1404	26307
Malkangiri	0	13	126	5750	18689	483		25061	2735	27796
Mayurbhanj					6093.032	1128.84	1132			8353.872
Nabarangpur					530.4	933		1463.4		
Nayagarh			27	5301	1241	582	27		9185	7178
Nuapada					3202.3	1442.8				4645.1
Puri	69	36	659	6637		259	18		1489	98096
Rayagada										908.69
Sambalpur										
Subarnapur										12576
Sundargarh		15	1.38	11165	5854	1114		18286	2439	20725
Total	9529	1556.13	13423.84	191372.46	161483.25	28764.38	1911.37	333866.17	52589.49	598082.05

The total area of wetlands in the district are 598082.057 Ha.

Table 135 - Update on Load based assessment of sewerage systems

Sl. No.	District	Not Available	Yes	No
1	Anugul		1	
2	Balangir		1	
3	Baleshwar		1	
4	Bargarh		1	
5	Bhadrak		1	
6	Boudh		1	
7	Cuttack		1	
8	Deogarh		1	
9	Dhenkanal		1	
10	Gajapati		1	
11	Ganjam	1		
12	Jagatsinghapur		1	
13	Jajapur		1	
14	Jharsuguda		1	
15	Kalahandi	1		
16	Kandhamal	1		
17	Kendrapara	1		
18	Keonjhar	1		
19	Khordha	1		
20	Koraput		1	
21	Malkangiri	1		
22	Mayurbhanj	1		
23	Nabarangpur	1		
24	Nayagarh		1	
25	Nuapada	1		
26	Puri			1
27	Rayagada			1
28	Sambalpur	1		
29	Subarnapur			1
30	Sundargarh	1		
	Total	12	15	3

Load based assessment of sewerage system is available in 15 districts of the state.

Table 136 - Disposal of solid waste into wetlands

Sl. No.	District	Not Available	Yes	No
1	Anugul		1	
2	Balangir		1	
3	Baleshwar		1	
4	Bargarh		1	
5	Bhadrak		1	
6	Boudh		1	
7	Cuttack		1	
8	Deogarh		1	
9	Dhenkanal		1	
10	Gajapati		1	
11	Ganjam	1		
12	Jagatsinghapur		1	
13	Jajapur		1	
14	Jharsuguda		1	
15	Kalahandi	1		
16	Kandhamal	1		
17	Kendrapara	1		
18	Keonjhar	1		
19	Khordha	1		
20	Koraput		1	
21	Malkangiri		1	
22	Mayurbhanj		1	
23	Nabarangpur	1		
24	Nayagarh		1	
25	Nuapada	1		
26	Puri		1	
27	Rayagada		1	
28	Sambalpur	1		
29	Subarnapur	1		1
30	Sundargarh	1		
	Total	11	19	1

Disposal of solid waste into wetlands observed in 19 districts of the state

Table 137 - De-siltation of the water bodies

Sl. No.	District	Not Available	Yes	No
1	Anugul		1	
2	Balangir		1	
3	Baleshwar		1	
4	Bargarh		1	
5	Bhadrak		1	
6	Boudh		1	
7	Cuttack		1	
8	Deogarh		1	
9	Dhenkanal		1	
10	Gajapati		1	
11	Ganjam	1		
12	Jagatsinghapur		1	
13	Jajapur		1	
14	Jharsuguda		1	
15	Kalahandi		1	
16	Kandhamal	1		
17	Kendrapara		1	
18	Keonjhar		1	
19	Khordha		1	
20	Koraput		1	
21	Malkangiri	1		
22	Mayurbhanj	1		
23	Nabarangpur	1		
24	Nayagarh		1	

Sl. No.	District	Not Available	Yes	No
25	Nuapada	1		
26	Puri		1	
27	Rayagada			1
28	Sambalpur		1	
29	Subarnapur	1	1	
30	Sundargarh	1		
	Total	8	22	1

De-siltation of the water bodies carried out in 22 districts of the state.

Table 138 - Demarcation of Flood Protection Zone

Sl. No.	District	Not Available	Yes	No
1	Anugul			1
2	Balangir			1
3	Baleshwar			1
4	Bargarh			1
5	Bhadrak			1
6	Boudh			1
7	Cuttack			1
8	Deogarh			1
9	Dhenkanal			1
10	Gajapati			1
11	Ganjam	1		
12	Jagatsinghapur			1
13	Jajapur			1
14	Jharsuguda			1
15	Kalahandi			1
16	Kandhamal	1		
17	Kendrapara			1
18	Keonjhar			1
19	Khordha	1		
20	Koraput			1
21	Malkangiri			1
22	Mayurbhanj			1
23	Nabarangpur			1
24	Nayagarh		1	
25	Nuapada	1		
26	Puri			1
27	Rayagada			1
28	Sambalpur			1
29	Subarnapur	1	1	
30	Sundargarh	1		
	Total	6	2	23

Demarcation of Flood Protection Zone done in Nayagarh and Subarnapur.

Table 139 - Initiative/study is required for such Flood Protection Zone Demarcation

Sl. No.	District	Not Available	Yes	No
1	Anugul		1	
2	Balangir		1	
3	Baleshwar		1	
4	Bargarh		1	
5	Bhadrak		1	
6	Boudh		1	
7	Cuttack		1	
8	Deogarh		1	
9	Dhenkanal		1	
10	Gajapati		1	
11	Ganjam	1		
12	Jagatsinghapur		1	
13	Jajapur		1	

Sl. No.	District	Not Available	Yes	No
14	Jharsuguda		1	
15	Kalahandi		1	
16	Kandhamal	1		
17	Kendrapara		1	
18	Keonjhar		1	
19	Khordha		1	
20	Koraput		1	
21	Malkangiri		1	
22	Mayurbhanj		1	
23	Nabarangpur			1
24	Nayagarh		1	
25	Nuapada	1		
26	Puri	1		
27	Rayagada	1		
28	Sambalpur		1	
29	Subarnapur	1	1	
30	Sundargarh	1		
	Total	7	23	1

Initiative/study is required for Flood Protection Zone Demarcation in 23 districts of the state.

Table 140 -No. of Encroachment areas found in ULBs

Sl. No.	District	Not Available	Yes	No
1	Anugul		1	
2	Balangir		1	
3	Baleshwar		1	
4	Bargarh		1	
5	Bhadrak		1	
6	Boudh		1	
7	Cuttack		1	
8	Deogarh		1	
9	Dhenkanal		1	
10	Gajapati		1	
11	Ganjam	1		
12	Jagatsinghapur		1	
13	Jajapur		1	
14	Jharsuguda		1	
15	Kalahandi		1	
16	Kandhamal	1		
17	Kendrapara		1	
18	Keonjhar		1	
19	Khordha		1	
20	Koraput		1	
21	Malkangiri		1	
22	Mayurbhanj		1	
23	Nabarangpur		1	
24	Nayagarh			1
25	Nuapada	1		
26	Puri		1	
27	Rayagada		1	
28	Sambalpur		1	
29	Subarnapur	1		1
30	Sundargarh	1		
	Total	5	24	2

A total of 24 encroachment areas found in ULBs of different districts.

Table 141 - Inspection of encroachment areas

Sl. No.	District	Not Available	Yes	No
1	Anugul			1
2	Balangir			1

3	Baleshwar			1
4	Bargarh			1
5	Bhadrak			1
6	Boudh			1
7	Cuttack			1
8	Deogarh			1
9	Dhenkanal			1
10	Gajapati			1
11	Ganjam	1		
12	Jagatsinghapur			1
13	Jajapur			1
14	Jharsuguda			1
15	Kalahandi		1	
16	Kandhamal	1		
17	Kendrapara		1	
18	Keonjhar		1	
19	Khordha		1	
20	Koraput		1	
21	Malkangiri			1
22	Mayurbhanj			1
23	Nabarangpur			1
24	Nayagarh		1	
25	Nuapada	1		
26	Puri			1
27	Rayagada			1
28	Sambalpur		1	
29	Subarnapur	1		1
30	Sundargarh	1		
	Total	5	7	19

Inspection is done for removal of encroachment in 7 districts of the state.

