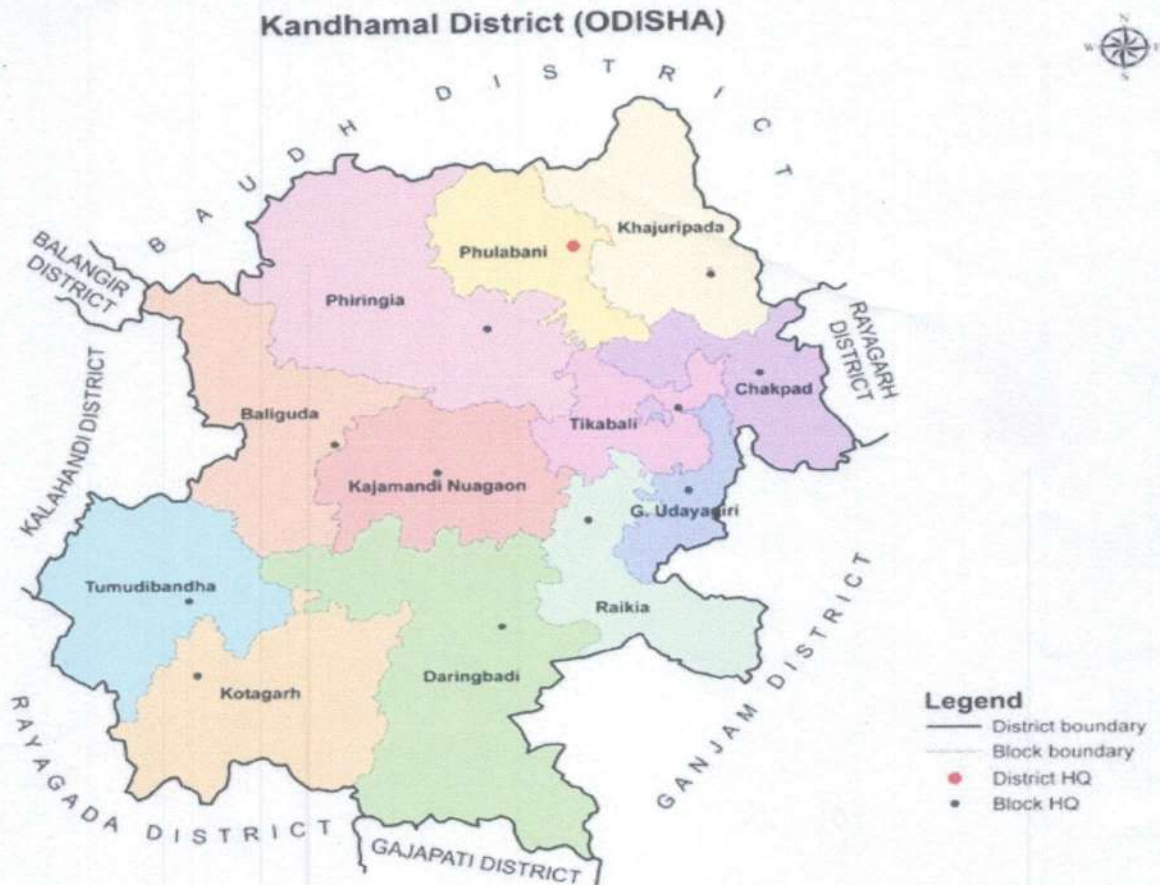




## DISTRICT ENVIRONMENT PLAN FOR KANDHAMAL DISTRICT

### Kandhamal District (ODISHA)



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## DISTRICT ENVIRONMENT PLAN OF KANDHAMAL DISTRICT

### 1.0 District Profile

The present Kandhamal district is made up with some segments of erstwhile principalities of Boudh, Ghumsar and Khemundi, reigned by Bhanjas and the Gangas from ancient times until British rule in the 19<sup>th</sup> Century. Kandhamal remained a Tahasil from 1855 to 1891 and it was administered under the direct control and supervision of the superintendent of the Tributary Mahals of Cuttack. In 1891, it was upgraded to sub-division and tagged with Angul District. When the new province of Orissa was formed in 1936 and Ganjam was merged with Orissa from the Madras Presidency, Kandhamal became a sub-division of Ganjam. In the wake of amalgamation of the princely states with Orissa in January 1948, Boudh and Kandhamal district constituted with headquarters at Phulbani. Balliguda Sub-division was added on 1.1.1949. With the secession of Boudh from Kandhamal district as a separate district, only Balliguda and Kandhamal Sub-division remained in Phulbani District which was later rechristened as Kandhamal in June, 1994,

Kandhamal District lies between 19 degree 34' to 20 degree 36' North Latitude and 83 degree 34' to 84 degree 34' East Longitude. The Geographical area of the district is 8021 Sq.Kms and area-wise the district rank is 6<sup>th</sup> among the districts of Odisha. It is bounded by Boudh District on North, Rayagada and Gajapati districts in the South and Nayagarh and Ganjam districts in East and Kalahandi District in the West. The total land area is 5.15% of the state.

### Position of the District in the State ( Geographical area as per 2011 census)

Geographical area (in Sq.KM)	Distribution of land area( in %)	Rank in State
8021	5.15	06

## TOPOGRAPHY

Phulbani Sub-Division of the district forms a broken plateau of about 518 meters above the sea level, gridded almost continuously by high ranges. In the north east and west these range quite visibly rise abruptly from the plains of Boudh district and on the south they merge in the outlines of the Eastern Ghats of Balliguda Sub-division. The high plateau lying within these ranges is broken up by numerous smaller ranges. The uplands and slopes leading from the foot of the hills are utilized for growing periodical crops. The area of cultivated land is small.

Kandhamal District experiences sub -tropical hot and dry climate in summer, dry and cold climate in winter. The maximum temperature recorded in the District is 45.5 degree C and minimum temperature is 2.0 degree C. The average annual rainfall recorded is 1522.95 mm

The district is bestowed with the beauty of nature. It has wild life, scenic beauty, healthy climate, and serpentine ghat roads for the tourists. It has attractions, like panoramic coffee gardens, pine jungles, Ghat roads, hills and waterfalls, virgin forest and typical tribal village life. Almost 66 percent of the land area of the District is covered with dense forests and towering mountains rich in green meadows at the attitude of 2000 feet to 3000 feet, the terraced valleys thronged with these colorful tribal in their natural heritage, dancing and sporting has its own appeal.

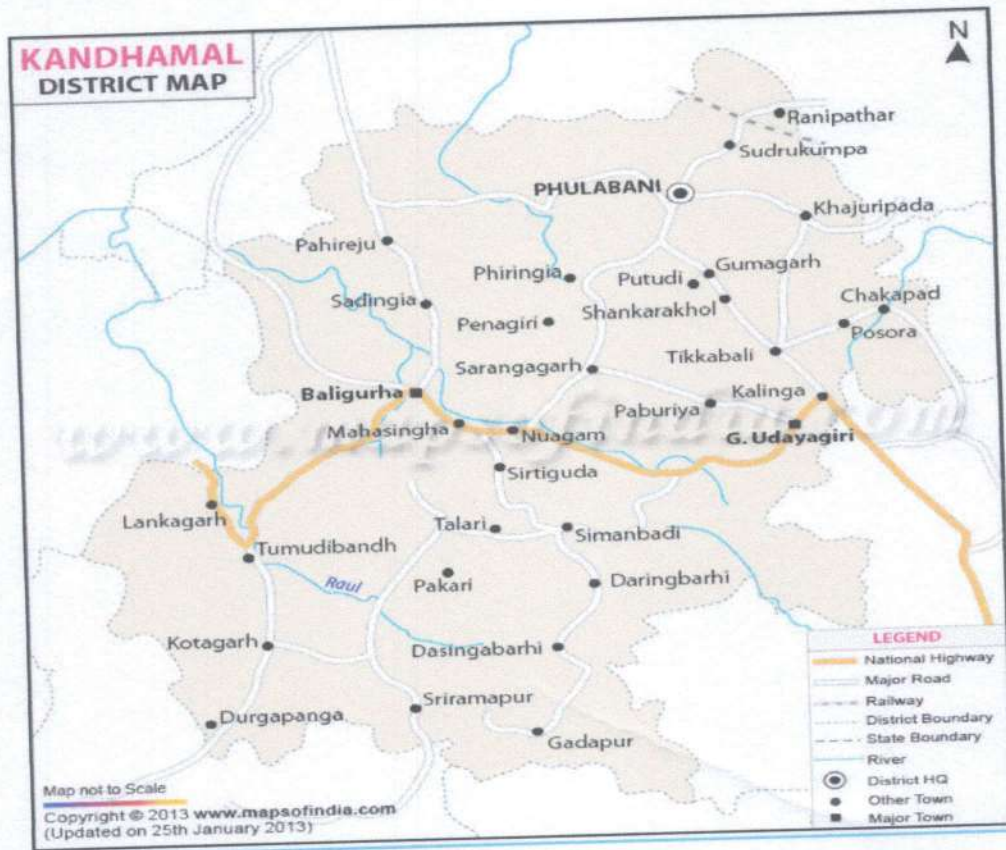
The soil in the District is mostly Red- laterite group, having organic matters contents. As such, the water holding capacity is very low. The PH value of the soil varies from 5.3 to 6.5, which is acidic in nature. The big chunk of land consists of red-laterite sandy loam soils being exposed to constant soil erosion and run off devoid of humus contents render infertile and turn into barren wastelands. The important crops grown in the District during Kharif season is Paddy and Maize. In irrigated areas, crops like Potato, Vegetable and Mustard are grown.

Kandhamal is endowed with vast minor forest and agricultural produces which incidentally form the basis of its industry. The District has many cottage and agro based industry that process forest and agricultural produce. Forest produce of economic importance mainly consists of Bamboo, Kendu Leaf, Tamarind, Mahua Flower & seeds, Sal Seeds etc.

The language spoken is Odia besides some tribal people speak in *Kui* dialect in Rural areas.

As on the year 2019-20 there are 203.00 Kms of National Highways, 231.87 Kms. of state highways, 76.98 Kms. of Major district roads, 415.96 Kms of other district roads, 332.18 kms of forest roads, 3759.19 kms of Inter-village roads, 3076.47 kms of Intra-village road and 1191.49 Kms of village roads are operating in the district. No rail line has been laid yet.

## Administrative set up in Kandhamal District



Name	Value
Area	8021 Sq. Km.
Population	7,33,110
Sub Division	2
Tahasil	12
CD Block	12
Gram Panchayat	171
Assembly Constituency	3
Villages	2587
Municipal Corporation	1
NAC	2
Schedule Caste Population	2,86,580
% of SC Population	18.2
Schedule Tribe Population	4,49,456
% of ST Population	28.5
Literacy Rate	64.13 %
CD Block	12
Govt. Hospital	56
Police Station	18
Fire Station	12
No.of Forest Division	02
No.of Forest Range	14

## LOCAL INSTITUTIONS

1	No. of Primary Schools	1096
2	No. of Upper Primary Schools	711
3	No. of Secondary Schools	229
4	No. of Junior College	31
5	No. of Degree College	15
6	No. of Polytechnic Schools	02
7	No. of Medical College/District Head Quarter Hospital	1
8	Sub-Divisional & other Hospital	5
9	No. of Community Health Centre	14
10	No. of Primary Health Centre	36
11	No. of Post Office	267
12	No. of Bank Branches	73
13	No. of Animal Husbandry Hospital & Dispensaries	20
14	Live Stock Aid Centres	94
15	No. of Sanctuary	01



## Natural Resources

### 1. Water Bodies

The district is divided into two Forest Divisions i.e. Phulbani Forest Division and Balliguda Forest Division. The major rivers flow in Phulbani Forest Division are Salunki, Khadaga and Baghanadi . The rivers are flowing from the Southern part of the division towards the north. In Chakapad block area tributary nalas of river Brutanga runs towards neighbouring Nayagarh District.

In Balliguda Forest Division major rivers namely Khadaga, Chauladhua, Raul, Budanai and Kalipen are the main perennial source of water.

### 2. Minerals

Geologically the area forms part of the Eastern Ghats Super Group and is divided into Khondalite Group, Charnockite Group and migmatite group. The main minerals available in Phulbani Forest division area are Iron, Manganese, Aluminium, Graphite, Quartz, limestones, Granites . But the quantity is very low for which can't be exploited commercially. A number of graphite deposits have been founds in the north west of Tumudibandha area covering. Madaguda Bargaon, Dhursi, Mahabali . A Survey conducted by the ORSAC has discovered large scale Coal deposits in the area stretching from Katringia on Phulbani-Gochhapada Road to Sambalpur District. A latest survey has revealed large-scale coal deposits in the area stretching from Katringia on Phulbani-Gochapada road to Sambalpur district. Besides coal, bauxite deposits have also been discovered in some parts of the district.

### 3. Availability of water resources

a. A number of Tanks and ponds are available in Phulbani Forest Division for supply of water. Also, number of soil conservation check dams and minor irrigation projects have been formed, which are supplying water for the requirement of the local people. Also, a number of tube wells have been dug up to supply water to the local people. Pipe line water supplies have been installed in urban areas of Phulbani, Khajuripada, Tikabali, Gumagarh, Phiringia, G.Udayagiri, Raikia etc. Also, in certain remote areas like Chakapad pipe line water supply is available.

Sl. No.	Name of the Block	Minor Irrigation. Proj		LIP		W.H.S		Borewell		Dug Well		Other source	% of irrigation
		Nos	Pote	Nos	Pote	Nos	Pote	Nos	Pote	Nos	Pote		
1	Khajuripada	7	448	20	400	60	374	87	174	652	261	812	42.01
2	Phiringia	7	466	73	1498	42	377	92	184	630	252	2212	31.63
3	Phulbani	7	714	35	704	65	485	100	200	446	178	873	45.2
4	Chakapad	6	840	27	544	76	447	77	154	406	162	127	23.53
5	G.Udayagiri	5	648	3	60	42	471	0	0	312	125	128	17.52
6	Raikia	5	404	11	228	82	457	15	30	298	119	334	11.66
7	Tikabali	3	290	25	518	31	207	17	34	456	182	352	13.84
	Total	40	3810	194	3952	398	2818	388	776	3200	1279	4838	185.39

**N.B:- Pote=Potential**

b. In Balliguda Forest Division there are 82 natural water bodies in the form of rivers, nala, pond, check dams and small wet lands present in 23 forest blocks of this division. Till now 48 number of water holes, 4 check dams, 106 water bodies, 5 water harvesting structures and 5 game tanks were created in different forest blocks of this division under various schemes.

#### 4. Forest Coverage

As per Indian State of Forest Report (ISFR) Date 2021, forest cover of Kandhamal District is mentioned below:-

District	Geo-graphical (GA) in Sq.Km	2021 ASSESSMENT				% GA in Sq.Km.	Change wrt 2019 assessment in Sq.Km	Scrub in Sq.Km
		Very Dense Forest in Sq.Km	Mod. Dense Forest in Sq.Km	Open Forest in Sq.Km	Total in Sq.Km			
Kandhamal	8021	661.73	2,607.29	2,134.78	5,403.8	67.37	6.09	552.36

## D .Geography and Demography

### Position of the District in the State (as per Odisha census 2011)

Total Population	Schedule caste population	% of SC Population to total population	Schedule Tribe population	% of ST Population to total population
733110	115544	15.8	392820	53.6

### District-wise Sex Ratio among all categories, SC & ST by residence as per 2011 Census

SC			ST			All Category		
Rural	Urban	Total	Rural	Urban	Total	Rural	Urban	Total
1028	1024	1028	1060	1120	1062	1043	984	1037

### Population by sex, density & growth rate

Sex ratio (females per 1000 males)		Density population		Decadal Growth Rate(2001-2011)
2001	2011	2001	2011	
1008	1037	81	91	13.1

### District-wise Literacy Rate ( 2011 Census)

Rural			Urban			All Category		
Male	Female	Total	Male	Female	Total	Male	Female	Total
75	48.8	61.5	93.3	80.3	86.8	76.9	51.9	64.1

### Decennial variation in population growth

Census year	Persons	Variation		Males	Females
		Absolute	Percentage		
2001	6,48,201	+1,01,920	+18.66	3,22,799	3,25,402
2011	7,33,110	+84,909	+13.10	3,59,945	3,73,165

### No. of Household Data (as per census year 2011)

No. of Household	No. of Village		
	Inhabited	Un-Inhabited	Total
1,72,022	2417	170	2587

### Land use pattern in Kandhamal district (Area in ha.)

Year	Forest area	Non-agricultural area	Barren land	Pasture Land	Area having Misc. tree growth
2019-20	157500	17073	117796	14166	839

## 5. Climate

A significant change in the Climate of Kandhamal district in recent years is noticed as noticed below:-

- Late monsoon onset and more premonsoon rainfall.
- Reduced post monsoon and winter rainfall.
- Increased day and night temperatures
- Maximum increase in temperature in post-monsoon followed by summer.
- Extended summer up to June.
- Warm and short winter with fewer cold nights.

### Month – wise Average Rainfall / Temperature in Kandhamal District. (During 2019)

Month	Rainfall (in MM)	Temperature (in <sup>o</sup> Centigrade)	
		Max	Min
January	0.4	26.5	7.7
February	30.6	30.8	11.6
March	31.6	NA	NA
April	21.1	NA	NA
May	66.3	39.4	NA
June	106.4	35.3	NA
July	284.8	30.3	23.5
August	614.0	28.6	23.1
September	361.2	29.7	23.2
October	144.1	30.1	21.2
November	9.5	28.5	14.6
December	1.8	26.3	10.3
Total	1671.8		

Source : Special Relief Commissioner, Odisha, Bhubaneswar (Rainfall Data)  
Source : Director, Meteorological Centre, Bhubaneswar (Temp. Data)

## 2.0 Indicative Gap Analysis and Action Plans for complying with Waste Management Rules

### (i) Solid Waste Management

#### a. Current status related to solid Waste management

Sl. No.	Urban Local bodies	No of Wards	No of Households	Population	Solid Waste Generated per day( In MT)
1	Phulbani Municipality	13	8754	37319	3.447
2	G.Udaygiri NAC	13	2674	11296	2.721
3	Balliguda NAC	13	4419	18667	1.814

Sl. No.	Local Bodies	No.of village Panchayat/ Blocks	No.of Households	Population	Solid Waste Generated per day ( In MT)
1	Block/Taluk/Tahasil	12	172022	733110	9.162
2	Village/Gram Panchayat	2587 / 171	-		

#### b. Identification of gaps and Action Plan

Sl. No	Action points for villages/blocks/town/ municipalities/city /corporation	Identification gap	Action Plan	Responsible agencies	Time line for completion of action plan
<b>1</b>	<b>Segregation</b>				
(i)	Segregation of waste at source	Yes, segregation at source practiced by households and other waste generators	Action plan for incentive Awareness programme,	1.Phulbani Municipality 2.NAC G.Udaygiri 3.NAC ,Balliguda	Achieved
<b>2</b>	<b>Sweeping</b>				
(i)	Manual sweeping	100% road covered for regular sweeping. Sweepers engaged as per requirement		1.Phulbani Municipality 2.NAC G.Udaygiri 3.NAC ,Balliguda	Achieved
(ii)	Mechanical road sweeping & Collection	All roads covered by manual sweeping		1.Phulbani Municipality 2.NAC G.Udaygiri ,Balliguda	Achieved through manual sweeping

<b>3</b>	<b>Waste Collection</b>				
(i)	100% collection of Solid waste	100% in all three Urban bodies		1.Phulbani Municipality	Target achieved
(ii)	Arrangement for door to door collection	Yes		2.NAC G.Udaygiri	Target achieved
(iii)	Waste Collection Trolleys for separate compartments	Yes		3.NAC ,Balliguda	Target achieved
(iv)	Mini collection truck for separate compartment	Yes			Target achieved
(v)	Waste Deposition centres for domestic hazardous waste	Yes			Target achieved
<b>4</b>	<b>Waste Transport</b>				
(i)	Review existing infrastructure for waste transport	Yes, Existing fleet is adequate		1.Phulbani Municipality 2.NAC G.Udaygiri 3.NAC ,Balliguda	Achieved
(ii)	Bulk waste trucks	Available		Phulbani/ G.Udaygiri	Achieved
(iii)	Waste Transfer points	Non –recyclable waste transported to Bargarh Cement Factory		Phulbani Municipality	Achieved
<b>5</b>	<b>Waste Treatment and Disposal</b>				
(i)	Wet waste Management on-site composting by bulk waste generators	MCC Plant is available		Phulbani Municipality/ G.Udaygiri	Available
(ii)	Wet waste management Facility for central Bio-Methanation/ Composing of wet waste	MCC Plant is available		Phulbani Municipality	Available
(iii)	Dry waste management material recovery for dry waste fraction	Non –recyclable waste transported to Bargarh Cement Factory		Phulbani Municipality	Available
(iv)	Disposal of inert and non-recyclable waste/Sanity land fill	Yes	Sanitary land fill shall be developed	Phulbani Municipality	December 2022
(v)	Remediation of historic/legacy dumpsite	Yes		Phulbani Municipality	Achieved
(vi)	Involvement of NGO	Yes		Phulbani Municipality	Available

(vii)	EPR of Producers linkage with Producers / Brand owners		Action Plan shall be prepared	Phulbani Municipality	December 2022
(viii)	Authorisation of Waste Pickers	Yes	Phulbani-2 Balliguda-2 G.Udaygiri-2	Phulbani/ Balliguda/ G.Udaygiri	Achieved
(ix)	Preparation of own by-laws to comply with SWM Rules 2016	Yes	Bye-law Prepared	1.Phulbani Municipality 2.NAC G.Udaygiri 3.NAC ,Balliguda	Achieved

**(ii) Plastic Waste Management**

**a. Current status related to Plastic Waste Management**

	Urban Local bodies	Estimated quantity of Plastic waste generated Per day(in MT)
1	Phulbani Municipality	0.12 MT
2	G.Udaygiri NAC	0.019 MT
3	Balliguda NAC	0.0109MT
	<b>Local bodies</b>	<b>Estimated quantity of Plastic waste generated Per day</b>
	<b>Block/Taluk/Mandal Tahsil</b>	
1	Balliguda Block	0.0635 MT
2	Village/Gram Panchayat	



### b. Identification of gaps and Action Plan

Sl. No	Action points for village Panchayats/ Blocks /Municipalities/Corporations	Identification gap	Action Plan	Agencies responsible	Target time for compliance
1	Door to door collection of dry waste including plastic waste	100%		Phulbani Municipality/ Balliguda NAC/ G.Udaygiri NAC	Achieved
2	Facilitate organized collection of plastic waste transfer point or materials recovery facility		MRFs are functional in all Urban Local bodies	Phulbani Municipality/ Balliguda NAC/ G.Udaygiri NAC	Achieved
3	Plastic waste collection centres		Collected at MRFs	Phulbani Municipality/ Balliguda NAC/ G.Udaygiri NAC	Achieved
4	Awareness and education programme implementation		Campaigning in every streets	Phulbani Municipality Balliguda NAC G.Udaygiri NAC	Achieved
5	Access to Plastic waste disposal facilities		Non - recyclable waste sent to Baragarh Cement Factory & others are being re-used	Phulbani Municipality Balliguda NAC G.Udaygiri NAC	Achieved

(iii) C & D Waste Management

a. Current Status related to C& D Waste

Details of Data Requirement	Present Status		
	Phulbani	G.Udaygiri	Balliguda
Construction & Demolition waste generation in MT per day	0.4 MT	0.239 MT	0.299 MT
Does the District has access to C&D Waste recycling facility	No	No	No

B Identification of gaps and Action Plan

Sl. No	Action Points for blocks/town municipalities/City Corporations	Identificati on of Gaps	Action Plan	Responsible Agency	Time line for completion of action plan
1	Arrangement for separate collection of C&D waste to C& D waste deposition point	Yes		Phulbani Municipality	Achieved
				Balliguda NAC	
				G.Udaygiri NAC	
2	Whether local authority have fixed user fee on C& D waste and introduced permission system for bulk waste generators who generate more than 20 tons or more in one day or 300 tons per project in a month	Yes		Phulbani Municipality Balliguda NAC G.Udaygiri NAC	Achieved
3	C& D recycling facility	Not available	To be complete by December 2022	Phulbani Municipality	December 2022

4	Usage of re-cycled C&D waste in non-structural concrete, paving blocks ,lower layers of road pavements, colony and rural roads	Not available	To be complete by December 2022	Phulbani Municipality Balliguda NAC G.Udaygiri NAC	December 2022
5	IEC on C& D waste management	Yes	Ongoing activities relate to awareness	Phulbani Municipality G.Udaygiri NAC Balliguda NAC	Achieved

(iv) **Biomedical Waste Management**

a. **Current status related to bio medical waste**

<b>Inventory of BMW in the District</b>	<b>Quantity</b>
Total no. of Bedded Healthcare Facilities	20 Nos
Total no. of non-bedded HCF	36 Nos
No. of HCFs authorized by SPCBs/PCCs	55 Nos (applied authorization pending for Jidubadi PHC)
No of Common Biomedical Waste Treatment and Disposal Facilities (CBWTFs)	NIL
Capacity of CBWTFs	NIL
No. of Deep burials for BMW if any	74 Nos
Quantity of biomedical waste generated per day	130 Kg
Quantity of biomedical waste treated per day	130 Kg

## b. Identification of gaps and Action Plan

Sl. No.	Action points	Gaps	Action Plan	Responsible agency	Timeline for completion of action plan
1	Inventory and Identification of Healthcare Facilities	All HCFs including clinics, hospitals, Ayush hospital, etc. generating biomedical waste area to be identified by SPCB/ PCCs	Out of 56, authorization of 55 HCFs is completed. Rest of 01 is under process. The inventory like Autoclave & Shredders are procured up to PHC level. Autoclaves are functional in all facilities. Shredders are not yet functional due to unavailability of 3 phase line. Already applied to the GED dept. for the same.	Authorization-SPCB. Inventory-OSMCL, Bhubaneswar.	November 2022
2	Adequacy of facilities to treat biomedical waste	Adequate (02nos of facilities) at SDH & DHH. District will shortly ensure the CBWTF after completion of DLCC meeting.	All the HCFs have their own captive plant for disposal of bio-medical waste. Now district has decided to dispose bio-medical waste through CBWTF(Common Bio Waste Treatment Facility) within the radius of 150 KMs from HCFs.	District BMW cell & Administration	November 2022
3	Tracking of BMW	Bar code system to be implemented by all HCFs and CBWTFs	Barcode system has not been implemented Yet. State BMW cell will provide software and machine for implementation of barcode.	State BMW cell	November 2022
4	Awareness and education of healthcare staff	Training to be Organized for all stakeholders	Every year BMW training is being provided to all health care (S.H) at the district level.	CDMO/ DPHO	Continuous
5	Adequacy of funds	Adequate funds to be allocated to Government health care facilities for bio-medical waste management by State Govt.	Adequate funds is allocated to Government health care facilities for bio medical waste management by State Govt.	Govt. of Odisha	Yes achieved

6	Compliance to Rules by HCFs and CBWTFs	Establishment of district level mechanism to monitor compliance by Hospitals / HCFs	Annual report is being submitted every year to SPCB.	CDMO/DPHO	Continuous
7	District Level Monitoring Committee	District Level Monitoring Committee is to be constituted and meetings are to be organized	Yes DLMC is formed under Chairmanship of District Collector & DM, Kandhamal	District Collector/CDMO/DPHO/Environmental Scientist & other committee member.	Next DLMC meeting will be held during end of October 2022.
8	Wastewater Treatment	HCFs are Required to install ETPs for waste water generated	Liquid Waste Management System is implemented across the district in all HCFs & perused to the higher authority to set up ETP at DHH, Phulbani. Financial approval obtained under NHM PIP 2021-22	CDM & PHO	March 2023

#### (v) Hazardous Waste Management

##### a. Current status related to Hazardous Waste Management.

Details of Data Requirement	Present Status
No of Industries generating HW	Nil
Quantity of HW in the district	Nil
(i) Quantity of Incinerable HW	Nil
(ii) Quantity of land-fillable HW	Nil
(iii) Quantity of Recyclable / utilizable HW	Nil
No of captive/common TSDF	Nos. of integrated TSDF- Nil. Nos of SLF- Nil, No of Standalone incinerators- Nil
Contaminated Sites or probable contaminated sites	Nil

b. Identification of gaps and action plan.

Sl. No.	Action points	Identification of Gaps	Action Plan	Responsible agency	Timeline for completion of action plan
1.	Regulation of industries and facilities generating Hazardous Waste	All hazardous waste generating industries are to identified and authorized by SPCBs/PCCs	Delegation of power for grant of authorization to the Regional Offices of the Board in respect of Industries having investment less than 50 Crore and minor mineral mines with an objective to identify hazardous waste generating units operating in their jurisdiction and for better regulation/safe disposal of Hazardous Waste	SPCB, Odisha	March 2023
2	Establishment of collection centres	collection centers are to be established for hazardous wastes with linkage to common TSDFs / recyclers	Collection Centres are being provided by H&UD Dept. for collection, treatment and disposal of Municipal Solid Waste. Provision for collection and storage of Hazardous Waste generated from the domestic sources is being made in the Collection Centers of ULBs prior to disposal through recyclers and /in the common TSDF	H & UD Dept. and SPCB, Odisha	Ongoing
3.	Training of workers involved in handling / recycling / disposal of HW	facilities are to be identified / industries engaged in recycling / pre-processing / disposal of hazardous waste in the district.	SPCB, Odisha has identified all the actual users who are engaged in recycling/ pre-processing/ disposal of Hazardous Wastes in the State.	Labour and ESI Dept. & SPCB, Odisha	Ongoing
4.	Availability / Linkage with common TSDF or disposal facility	generators of HW have access to common TSDF in the State are to be ensured	<ul style="list-style-type: none"> <li>One common TSDF is operating in the district of Jajpur for collection, treatment, storage and disposal of Hazardous Wastes.</li> <li>Capacity of TSDF is 75,000 TPA and has been operating since 2010-11. The TSDF has access to all generators of the state for disposal of hazardous wastes.</li> </ul>	SPCB, Odisha	ongoing

5	Contaminated Sites	sites where soils / sediments/ groundwater contaminated due to dumping of industrial wastes	Action plan for identification of probable contaminated site, incidents of HW dumping, responsible parties for contaminated site etc. and to remediate contaminated sites...	SPCB, Odisha	ongoing
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## (VI) E-Waste Management

### a. Current Status related to E-Waste Management

Details of Data Requirement	Present Status
Inventory of E-Waste in MT/year	Collected on every Saturday of the week/ 1.5 Metric Ton /Year
Collection centers established by ULBs in the District	Yes,02 Nos Material Recovery Facilities (MRF)have been established by ULBs
Collection centers established by Producers or their PROs	Nil
No authorized E-Waste recyclers / Dismantler	Nil

## b. Identification of gaps and action Plan

Sl. No	Action points	Gaps in implementation	Action Plan	Responsible agency	Timeline for completion of action plan
1	Inventory / Generation of E-Waste / Bulk-waste generators	SPCB/PCC has to complete inventory of E-Waste in the District. Inventory of bulk waste generators	Completion of inventory	SPCB	March 2023
2	E-Waste collection points	Availability of E-Waste collection points / call centres / kiosks in villages - Blocks / towns / cities	ULBs will ensure in Material Recovery Facilities	ULBs/ SPCB	Continuous
3	Linkage among Stakeholders to channelize E-Waste	District administration to gather information on collection centres established by Producers / PROs & Administration should also identify authorized E-Waste recyclers in the district or in State to channelize E-waste collected in District.	ULBs will ensure in weekly collection and disposal of e-waste	District Administration Kandhamal & ULBs	Ongoing
4	Regulation of Illegal E- Waste recycling / dismantling	Prevalence of informal trading, dismantling, and recycling of E-waste is in District	Action plan in coordination with SPCBs/PCCs and District Administration to check this activity is being done	District Administration. Kandhamal & SPCB	December 2022
5	Integration of informal sector	Whether mechanism exists for bringing informal sector into main stream in collection and recycling of E-Waste	All ULBs will collect from door to door and submit to authorized collection centre/recycler	ULBs & SPCB	December 2022
6	Awareness and Education	Are there any programs at district level for awareness about E- waste management?	Awareness programme in every street is continuing	District Administration. Kandhamal & SPCB	Continuous



### 3.0 Air Quality Management

#### a. Current Status related to Air quality Management

Details of Data Requirement	Present Status
Number of Automatic Air Quality monitoring stations in the district. Operated by SPCB / State Govt / Central govt./ PSU agency:/ Operated by Industry:	Nil Nil
Number of manual monitoring States operated by SPCBs	01 No.
Name of towns / cities which are failing to comply with national ambient air quality stations	Nil
No of air pollution industries	18 Nos.
Prominent air polluting sources [Large Industry] / [Small Industry] / [Unpaved Roads] / [Burning of Waste Stubble] / [Brick Kiln] / [Industrial Estate] / [Others] (Multiple selection)	Small Industry/ Industrial Estate/ Others

#### b. Identification of gaps and action plan

Sl. No.	Action points	Indicative Action Plan	Responsible agency	Timeline for completion of action plan
1	Identification of prominent air polluting sources?	State Pollution control Board to carry out inventory of air pollution sources in District including hotspots or areas of concern pertaining to air pollution in association with SPCBs/PCCs may	District Administration, Kandhamal and RO, SPCB	December 2022
2	Ambient Air quality data?	SPCB to plan to get access to available air quality monitoring stations in the District operated by both Public and private Agencies.	SPCB	December 2022
3	Setting up of Continuous Ambient Air Quality Monitoring Station	01 no. of manual Air Quality Monitoring station is available in Phulbani Town and one 24 hrs. AAQ monitoring is being done by SPCB once in a month	District Administration, Kandhamal and RO, SPCB	Achieved
4	District Level Action Plan for Air Pollution	Street Campaign for promotion of public transport, use of green fuels, e-mobility, LPG based cooking, carpeting open areas /kerbs etc.is being done	ULBs and SPCB	Continuous

5	Hotspots of air pollution in District	Stubble burning ,illegal waste burning,unauthorized operations ,cluster activities,forest fire etc. and action for mitigation of the same is prepared	District Administration, Kandhamal	Continuous
6	Awareness on Air Quality	Developing Mobile App/Online portal for dissemination of air quality as well as to take complaints on local air pollution action plan is being done	ULBs	December 2022

## 4.0 Water Quality Management

### 4.1 Water Quality Monitoring

#### a. Current Status related to Water Quality Management

Details of Data Requirement	Present Status
Rivers	1.Salunki-85 KM 2.Khadag-142 KM 3.Pilasalunki-37 KM 4.Kalava-15 KM
Length of Coastline (if any)	Not available
Nalas/ Drains/Creeks meeting Rivers	Panaspadar/Luhurabali/Uleketa/Ganjimari/Orakajajhora/ Kusumpani/ Bausa/ Katramala Nala/ Lambagudri Nala/ Doni Nala/ Rangaguda/ Bhuktakonali/ Kuragadi/ Makarajhara/ Sakadi/ R.Nuagaon/Budajora/ Kerengajori/ Banangaii/ Daudamaska/ Natikibali
Lakes / Ponds	Not available
Total Quantity of sewage from towns and cities in District	Not available
Quantity of industrial wastewater	Nil

Percentage of untreated sewage	Nil
Details of bore wells and number of permissions given for extraction of groundwater	Not available
Groundwater polluted areas if any	Nil
Polluted river stretches if any	Nil

### b. Identification of gaps and action plan for water quality monitoring

Sl. No.	Action points	Gaps and Action Plan	Responsible agency	Timeline for completion of action plan
1	Inventory of water bodies	An environmental monitoring cell will be established to maintain data of all water bodies (rivers / canals / natural drains / creeks / estuaries / groundwater / ponds / lakes / etc including its water quality	State Pollution Control Board, Odisha.	December 2022
2	Quality of water bodies in the district	An environmental monitoring cell will be established to maintain data of all water bodies (rivers / canals / natural drains / creeks / estuaries / groundwater / ponds / lakes / etc including its water quality	Dist. Admn	December 2022
3	Hotspots of water contamination	An environmental monitoring cell will be established to maintain data of all water bodies (rivers / canals / natural drains / creeks / estuaries / groundwater / ponds / lakes / etc including its water quality	Dist Admn	December 2022
4	Protection of river / lake water front	Being executed in ULBs and Blocks	Dist Admn	Continuous
5	Inventory of sources of water pollution	FT is being prepared	Dist. Admn	December 2022
6	Oil spill disaster management (for coastal districts)	NIL	Not required	NIL

7	Protection of flood plains	Action plan is being prepared for protection of flood plains and prevention of encroachment	Dist Admn	December 2022
8	Rejuvenation of groundwater	Rain water Harvesting structures are constructed to catch rain water and charging ground water	Dist Admn/ULBs/RWS &S	December 2022
9	Complaints redress system	Availability of system based complaint redressing system based on Mobile App/Online	SPCB,Odisha	Available

## 4.2 Domestic Sewage

### a. Identification of gaps and action plan for treatment of domestic sewage

Details of Data Requirement	Present Status
No of Class-II towns and above	Nil
No of Class-I towns and above	NIL
No of Towns STPs installed	Zero
No of Towns needing STPs	NIL
No of ULBs having partial underground sewerage network	Zero
No of towns not having sewerage network	Nil
Total Quantity of Sewage generated in District from Class II cities and above	NA
Quantity of treated sewage flowing into Rivers (directly or indirectly)	NA
Quantity of untreated or partially treated sewage (directly or indirectly)	NA
Quantity of sewage flowing into lakes	NA
Total available Treatment Capacity	NA

**b. identification of gaps and action for treatment of domestic sewage.**

Sl. No.	Action points	Gaps and Action Plan	Responsible agency	Timeline for completion of action plan
1	Sewage Treatment (STPs)	No STP is available. No Class-II or above town is available in Kandhamal District.	Executive Officer Municipality/NACs	December 2022
2	Underground sewerage network	NA		NA

**5.0 Industrial waste water Management**

**a. Current Status related to industrial Waste water Management**

Number of Red, Orange, Green and White industries in the District	Red Categories Industries- Nil Orange Categories Industries-07 Nos. Green Categories Industries- Nil White Categories Industries-Exempted.
No of Industries discharging Waste water	07 Nos.
Total Quantity of industrial wastewater generated	0.05 MLD
Quantity of treated industrial wastewater discharged into Nalas / Rivers	Nil
Common Effluent Treatment Facilities	Nil
No of Industries meeting Standards	06 Nos.
No of Industries not meeting discharge Standards	01 No.

## b. Identification of gaps and action plan for industrial waste water

Sl. No.	Action points	Gaps and Action Plan	Responsible agency	Timeline for completion
1	Compliance to discharge norms by Industries	Identification of Industries not meeting the standards	SPCB, Odisha	Regular process.
2	Complaint redressal system	Installation of complaint redressing system based on Mobile App/Online	Complaint redressal system is available at SPCB website.  Mobile App and portal may be developed by District Administration, Kandhamal	Available.

## 6.0 Mining Activity Management Plan

### a. Current Status related to Mining Activity Management

Details of Data Requirement	Existing Mining operations
Type of Mining Activity	Sand Mining/ Stone Mining
No of licenced Mining operations in the District	Sand Mining-15 Nos-70.8044 Hectare Stone Mining-11 Nos=31.0884 Hectare <b>Total 101.8928 Hectare</b>
% Area covered under mining in the District	0.012 %
Area of Sand Mining (in Acre)	<b>Baliguda Tahasil</b> - Katarisahi-19.699/ Ganjupadi-12.355/ Sindirgam-20.559 <b>Chakapad Tahasil</b> – Purunagada-6.25 <b>Tikabali Tahasil</b> - Chhatijhar-15.468/ Jignagam-14.035/ Padhanpada-12.355/ Guitana-12.740 <b>Phulbani Tahasil</b> - Bigapadar-9.6/ Tudipaju-6.25/ Sainipadar-10.0/ Sartaguda-6.25/ Kumuriguda-6.75 <b>K.Nuagoan Tahasil</b> - Kudutuli-12.35/ Bagada-12.35

Area of sand Mining	31 river bed sites
Area of Stone Mining (in Acre)	<u>Tikabali Tahasil</u> - Bengasahi-2.557/ Rudabidingia-2.471 <u>Baliguda Tahasil</u> - Kutikia-6.059/ Madinata-5.189/ Iripiguda-31.431 <u>Tumudibandha Tahasil</u> - Dadanga-7.847 <u>Daringbadi Tahasil</u> - Dalibandh-2.106/ Kumbharamunda-3.720 <u>Raikia Tahasil</u> - Dadingia-7.413/ Alamramu-2.471/ Landabali-6.457

### b. Identification of gaps and action plan

Sl. No.	Action points	Gaps and Action Plan	Responsible agency	Timeline for completion
1	Monitoring of Mining activity	Joint inspection team/squad at both sub-division level and Tahasil level have been constituted to identify and monitor the mining activity with respect to Environment Compliance	District Administration, Kandhamal	Constituted
2	Inventory of illegal mining if any mining	The Team/Squad at Sub-division & Tahasil level are regularly monitoring the illegal mining activities. Fines/Penalty are levied and compensation is being enforced	District Administration, Kandhamal	Constituted
3	Environment compliance by Mining industry	Periodic verification of compliance to environmental conditions stipulated by SPCBs/PCC, MoEF&CC department of mines etc. SPCBs/PCC is being done.	District Administration, Kandhamal, Mining Department and SPCB	Continuing

## 7.0 Noise Pollution Management Plan

### a. Current Status related to Noise Pollution Management

Details of Data Requirement	Measurable Outcome
No. of noise measuring devices available with various agencies in district	R.O., SPCB, Berhampur-01 No

### b. Identification of gaps and action plan

Sl. No.	Action points	Gaps and Action Plan	Responsible agency	Timeline for completion of action plan
1	Availability of Sound/ Noise Level Meters.	R.O., SPCB, Berhampur has 01 no. Noise measuring Device and also District Police Administration, Kandhamal having noise measuring devices.  Time line to be decided	SPCB/ District Police Administration, Kandhamal	Continuing
2	Ambient Noise Level monitoring.	Ambient noise level monitoring stations will be installed in ULBs	District Administration, Kandhamal	December 2022
3	Signboards in Noise zones	Adequate number of sign boards will be installed in ULBs	District Administration, Kandhamal/ ULBs	November 2022
4	Complaint redressing system	Applications are being redressed at SHO level	District Administration, Kandhamal	Continuing



## 8.0 Wetlands Management Plan in Kandhamal District.

Wetlands are areas of land that are either temporarily or permanently covered by water. Thus a wetland is neither truly aquatic nor terrestrial; it is possible that wetlands can be both at the same time; depending on seasonal variability. Thus, wetlands exhibit enormous diversity according to their genesis, geographical location, water regime and chemistry, dominant plants and soil or sediment characteristics. Because of their transitional nature, the boundaries of wetlands are often difficult to define. Wetlands are indispensable for the host of ecosystem services that they provide to humanity, ranging from fresh water supply, food and building materials, and biodiversity, to flood control, ground water recharge and climate change mitigation. It is the presence of water for a significant period of time which is principally responsible for the development of a wetland. To conserve and manage wetland resources, it is important to have inventory of wetlands and their catchments.

The total wetland area is estimated to be 5865 ha out of which 113 nos wetland are > 2.25 ha covering 5139 ha and 726 nos wetland are < 2.25 ha covering 726 ha.

### Status of wet lands in Kandhamal District

(Area in Ha)

Sl. No	Wetland code	Wetland category	No. of wetlands	Area	% of wetland area to Geographical area	Open water	
						Post monsoon	Pre-monsoon
	<b>1100</b>	<b>Inland Wetland-Natural</b>					
1	1106	River/Stream	65	4455	0.55 %	4455	4455
	<b>1200</b>	<b>Inland water-man made</b>					
2	1201	Reservoir/barrage	33	620	0.077%	543	293
	1202	Tanks/Ponds	14	61	0.007%	51	51
	1203	Water logged	1	3	0.00037%	3	3
		<b>Total Inland</b>	<b>113</b>	<b>5139</b>		<b>5052</b>	<b>4802</b>

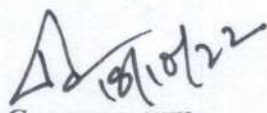
*Source: National Wetland Atlas, Odisha*


**MAJOR WATERBODIES/WETLANDS/RESERVOIRS IN KANDHAMAL DISTRICT**

Sl.No	Name of CD Block	Name of the Waterbody/Wet land/Reserv
1	Balliguda	Rebingia
2	Balliguda	Patrasahi
3	Balliguda	Barakhama
4	Balliguda	Pokharibandha
5	Tumudibandha	Belghar
6	Tumudibandha	Kurtam gada
7	K.Nuagaon	Jugapadar
8	K.Nuagaon	Pudutuli
9	K.Nuagaon	Bhramarbadi
10	K.Nuagaon	Naba jori
11	K.Nuagaon	Luha kuti
12	K.Nuagaon	Khajuri nala
13	Khajuripada	Siding
14	G.Udaygiri	Sirki
15	Phulbani	Manmunda
17	Phiringia	Ratanga
18	Chakapad	Paitagam
19	Chakapad	Botari

**b. Identification of gaps and action plan**

Sl. No.	Action points	Gaps and Action Plan	Responsible agency	Timeline for completion of action plan
1	Sewerage Discharge	Inadequate knowledge on water and aquatic land pollution Load based assessment of Sewerage and additional STP for treatment of sewerage	ULBs	March 2023
2	Disposal of Solid & Other Waste	Unscientific disposal of solid waste into Wetland . Load based assessment of Solid Waste & other Waste Identification of additional land-fill sites and promotion of SLF	ULBs	March 2023
3	Water Quality Testing	Initiative of monitoring of Water Quality of wetland by OSPCB. Sampling in every quarter for testing and provision of mobile Lab for onsite testing. Empanelment of private Testing Labs	SPCB	March 2023
4	Preventing Siltation	Afforestation measures & SMC are taken up to prevent soil erosion	Forest deptt. / Soil Conservation / RWSS	Continuing
5	Demarcation of flood protection Zone	No demarcation of flood protection zone	District Admn/Water Resources department	March 2023
6	Removal of Encroachment	Massive Encroachment found specially in urban area	Dist.Admn	March 2023

  
**Member Convenor-cum-Divisional Forest Officer**  
**Phulbani Forest Division**

  
**Chairman**  
**-cum-Collector & District Magistrate**  
**Kandhamal**