

ଜିଲ୍ଲାପାଳ-ତଥା-ଜିଲ୍ଲା ମାଜିଷ୍ଟ୍ରେଟଙ୍କ କାର୍ଯ୍ୟାଳୟ, କେନ୍ଦ୍ରାପଡ଼ା

ସର୍ବସାଧାରଣ ନୋଟିସ

ସଂଖ୍ୟା ୪୭୩ ରାଜସ୍ୱ / ତାରିଖ ୯-୦୩-୨୨

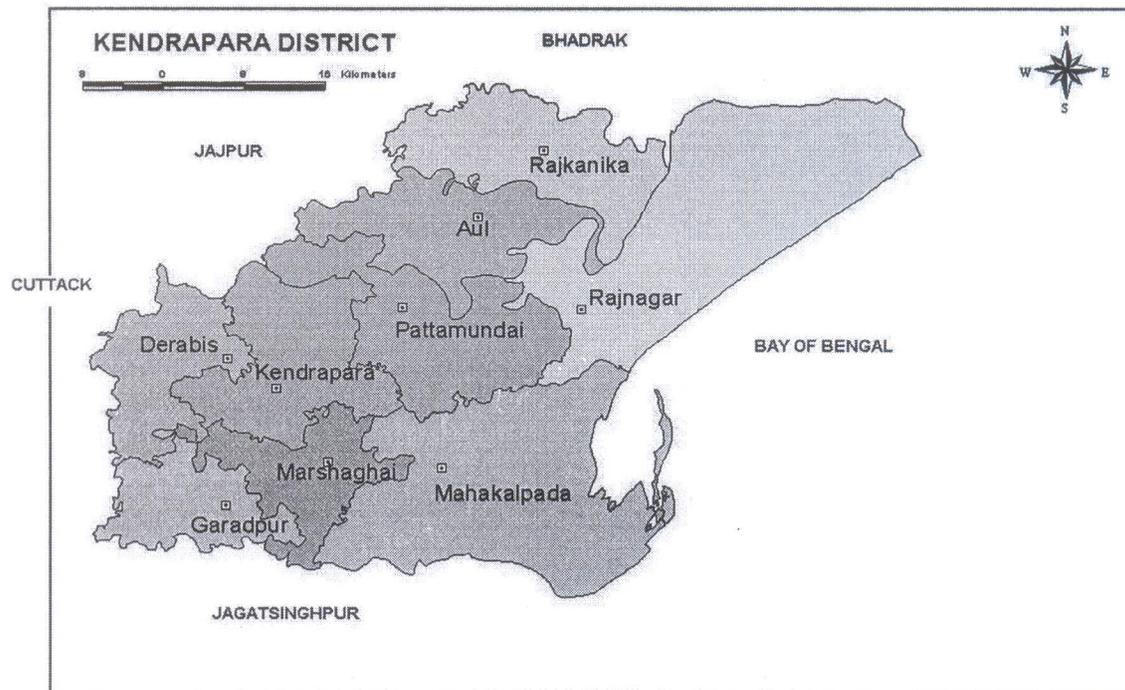
ଏତଦ୍ୱାରା ସର୍ବସାଧାରଣ ଅବଗତ ନିମନ୍ତେ ଜଣାଇ ଦିଆଯାଉଛି ଯେ, ସରକାରୀ ଉଚ୍ଚ ସମ୍ପତ୍ତି କେନ୍ଦ୍ରାପଡ଼ା ଜିଲ୍ଲାର ସର୍ଭେ ରିପୋର୍ଟ କେନ୍ଦ୍ରାପଡ଼ା ଜିଲ୍ଲା ସ୍ୱେଚ୍ଛାସିଦ୍ଧ [www.kendrapara.nic.in](http://www.kendrapara.nic.in) ରେ ଏବଂ ଉଚ୍ଚ କାର୍ଯ୍ୟାଳୟର ନୋଟିସ ବୋର୍ଡରେ ବହୁଳ ପ୍ରଚାର ଓ ପ୍ରସାର ନିମନ୍ତେ ପ୍ରେରଣ କରାଗଲା । ଯଦି ଏଥିରେ କାହାର କିଛି ଆପତ୍ତି / ଅଭିଯୋଗ/ ପ୍ରସ୍ତାବ / ସୁପାରିଶ ଥାଏ, ତେବେ ଏହି ନୋଟିସ ପ୍ରକାଶ ପାଇବାର ୨୧ ଦିନ (ତା.୩୧.୦୩.୨୦୨୨ ରିଖ ସନ୍ଧ୍ୟା ୫.୩୦) ମଧ୍ୟରେ ଜିଲ୍ଲା କାର୍ଯ୍ୟାଳୟର ରାଜସ୍ୱ ଉପବିଭାଗରେ ଲିଖିତ ଆକାରରେ ଦାଖଲ କରିପାରିବେ । ଧାର୍ଯ୍ୟ ତାରିଖ ଗତେ କୌଣସି ଅଭିଯୋଗ ଗ୍ରହଣ କରାଯିବ ନାହିଁ ।

ଦ୍ରୁତ ପ୍ରସ୍ତାବ ମହାଶୟୀ  
ଅତିରିକ୍ତ ଜିଲ୍ଲାପାଳ, କେନ୍ଦ୍ରାପଡ଼ା  
Addl. Dist. Magistrate (Rev.)  
Kendrapara



# District Survey Report (D.S.R.)

in respect of Minor Mineral (Sand) of Kendrapara district, Odisha prepared as per Notification No.141(E) Dated 15<sup>th</sup> January, 2016 and S.O.3611(E) Dated 25.07.2018 of the Ministry of Environment, *Forest & Climate Change (MoEF & CC)*, Govt. of India.



**2021**

# District Survey Report (D.S.R)

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## **01. INTRODUCTION**

The provisions incorporated in Gazette Notification No. S.O.141 (E) dated 15.01.2016 and S.O.190 (E) dated 20.01.2016 & S.O. 3611 (E) Dated 25.07.2018 issued by the Ministry of Environment, Forest & Climate Change, Govt. of India has given birth to DEIAA (District Environment Impact Assessment Authority) & DEAC (District Expert Appraisal Committee) which needs to be constituted by the Revenue Divisional Commissioner in each district under their respective jurisdiction. The primary functions of these above two bodies are to grant Environmental Clearance (EC) for category of B2 Projects prior to the quarry / mining of Minor Minerals in whole district. The main purpose of preparation of District Survey Report is to identify the mineral resources and mining activities along with other relevant data of district. This report contains details of Lease, Sand mining and Revenue which comes from minerals in the district. This report is prepared on the basis of data collected from different concern departments. A survey is carried out by the members of DEIAA with the assistance of other line departments in the district.

## **02. BRIEF HISTORY OF THE DISTRICT**

The place Kendrapara finds description in the mythological texts like 'Mahabharat', 'Tulasi Purana' and 'Tulasi Khestra Mahatmya'. In these scriptures Kendrapara is variously identified as 'Tulasi Kshetra', 'Bramha Kshetra', 'Gupta Kshetra' and 'Kandara Palli". The place has the rare distinction of being acclaimed as one of the sacred Pancha Kshetras of Odisha. The very designation of Kendrapara as 'Bramha Kshetra' speaks of its spiritual importance from mythological perspectives. It is also asserted by Hindu Purans that salvation cannot be full-circled, if a devotee does not visit Tulasi-kshetra to pray for the blessings of Baldevjew before or after he visits Sri Jagannath at Puri.

As per the description contained in the purans, during the age of Dwapara, Lord Baldev while on his pilgrimage (Tirthayatra) came across a tyrant and oppressive demon, Kandarasura near Lalitgiri. Now the place is in a border strip between Kendrapara and Jajpur districts after the reorganization of the districts in 1993. There he fought with the demon, killed him and threw different parts of his body into different directions. The various places where the parts of his body were dropped were named accordingly. The places like Angulei, Madhyakhanda, Khadiana, Katikata etc. in the district of Kendrapara justify such puranic tales. The daughter of the cruel demon bearing the name Tulasi was a virtuous maiden who could please Lord Baladev by dint of her heavenly qualities. Being pleased with her devotion and prayer, Lord Baldev married her and established his abode at Ichhapur. As such, the place came to be known as Tulasi kshetra.

The sacred soil of Tulasi Kshetra has been a meeting ground of diverse cultures and a melting pot of all the divergent religious cults harmoniously synchronizing the Buddhist, Saiva, Sakta, Soura, Ganapatya, Natha Vaishnava and Islamic monuments as an invincible beehive of cultural noninterference and a safe paradise of peaceful coexistence. Lord Baladevjew, who is known in eighteen variegated names according to Amarakosa of 4th century A.D., is the symbolic representation of such religious cultural syncretism.

(Source: Kendrapara District Gazetteer)

### **03. POPULATION**

As per 2011 Census the total population of Kendrapara is 14, 40,361 having a total household of 3, 21,934, the population of this district is 3.43% of the total population of the State. It was ranked 14<sup>th</sup> in the state as far as total population is concerned.

Looking at the population of 1981 to 1991, 1991 to 2001 & 2001 to 2011 it is found that the population growth of the district from 1981 to 1991 was 17.51%. Between 1991 to 2001 the population growth was 13.27%. Between 2001 to 2011 the rate of growth of population is 10.59%. The growth of population in the district in the last 10 years is 10.06%.

(Source: District Statistical Hand Book, Kendrapara, 2001,2007,2011)

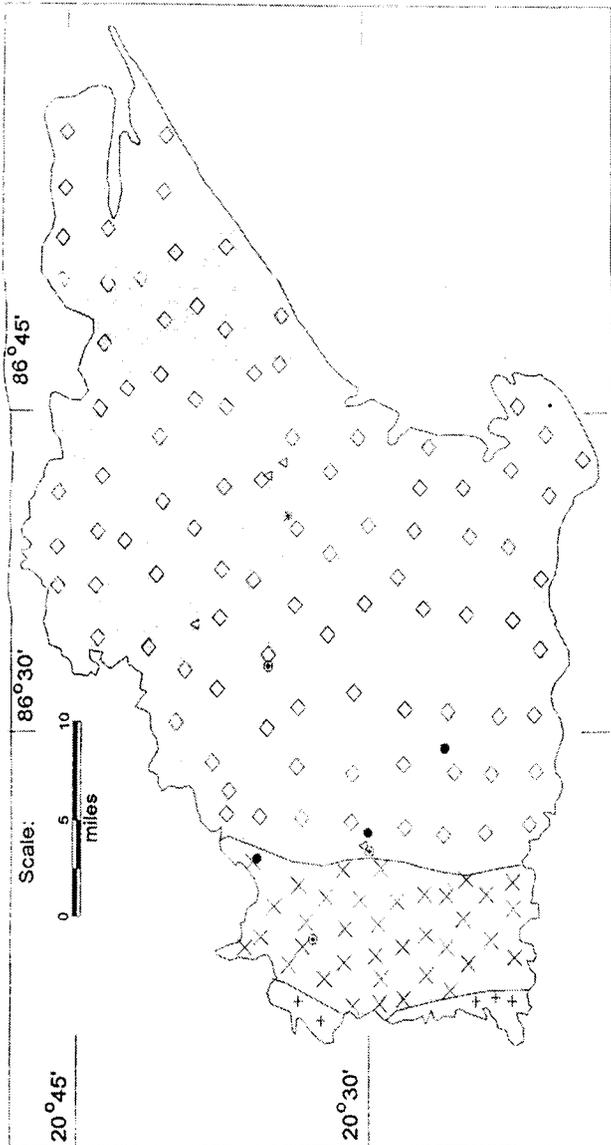
### **04. Hydrology**

The hydrological survey for the entire district has been covered by the hydrologists of central Ground water Board from time to time. The major river like Mahanadi & Brahmani along with their tributaries like Chitrotpala, Luna, Paika, Birupa & Kharasrota form an anastomosing and alluring drainage pattern of nature. The river Brahmani roughly bisects the district into two parts.

A total area of 34986 hectares of land irrigated through different major, medium, minor & lift irrigation projects in 6 Tahasils namely Derabish, Garadpur, Kendrapara, Marshaghai, Mahakalapara and Pattamundai. The most important among them are Mahanadi—Chitrotpala irrigation system, Pattamundai Canal, Marshaghai Jamboo canal systemetc.

# HYDROGEOLOGICAL MAP OF KENDRAPARA DISTRICT

Plate-IV



## LEGENDS

Age Group	Lithology	Index	Hydrogeological conditions
Recent	Alluvium underlain by older alluvium and mio-pliocene sediments		Fairly thick and regionally extensive unconfined to confined aquifers down to more than 300m depth
			Fresh water aquifers all through
			Fresh water occurs above and below saline zone. Thickness of top fresh zone vary from 15/20m in north to 60/70m in south.
			Fresh ground waters overlain by saline ground water barring few meters at top.

Discharge Range of Bore Holes	
●	< 25 lps
+	25 - 50 lps
Δ	50 - 70 lps
+	> 70 lps

### 05. Ground water scenario

The brief description of the district Aquifer system will be worthy to describe the ground water scenario. The aquifer system may be broadly classified into

- (i) Shallow aquifer
- (ii) Deeper aquifer

### I. Shallow Aquifer

The thickness of the shallow aquifers varies widely due to salinity. Normally the thickness of fresh shallow aquifers varies from 15m to 20m or more within the saline hazard tract lying west of Indupur- Kendrapara- Karilopatna section & east of this section the thickness generally attains almost negligible thickness of 2m to 3m. The top fresh water bearing zones extends down to 90m or 95m depth in the south western part of the district.

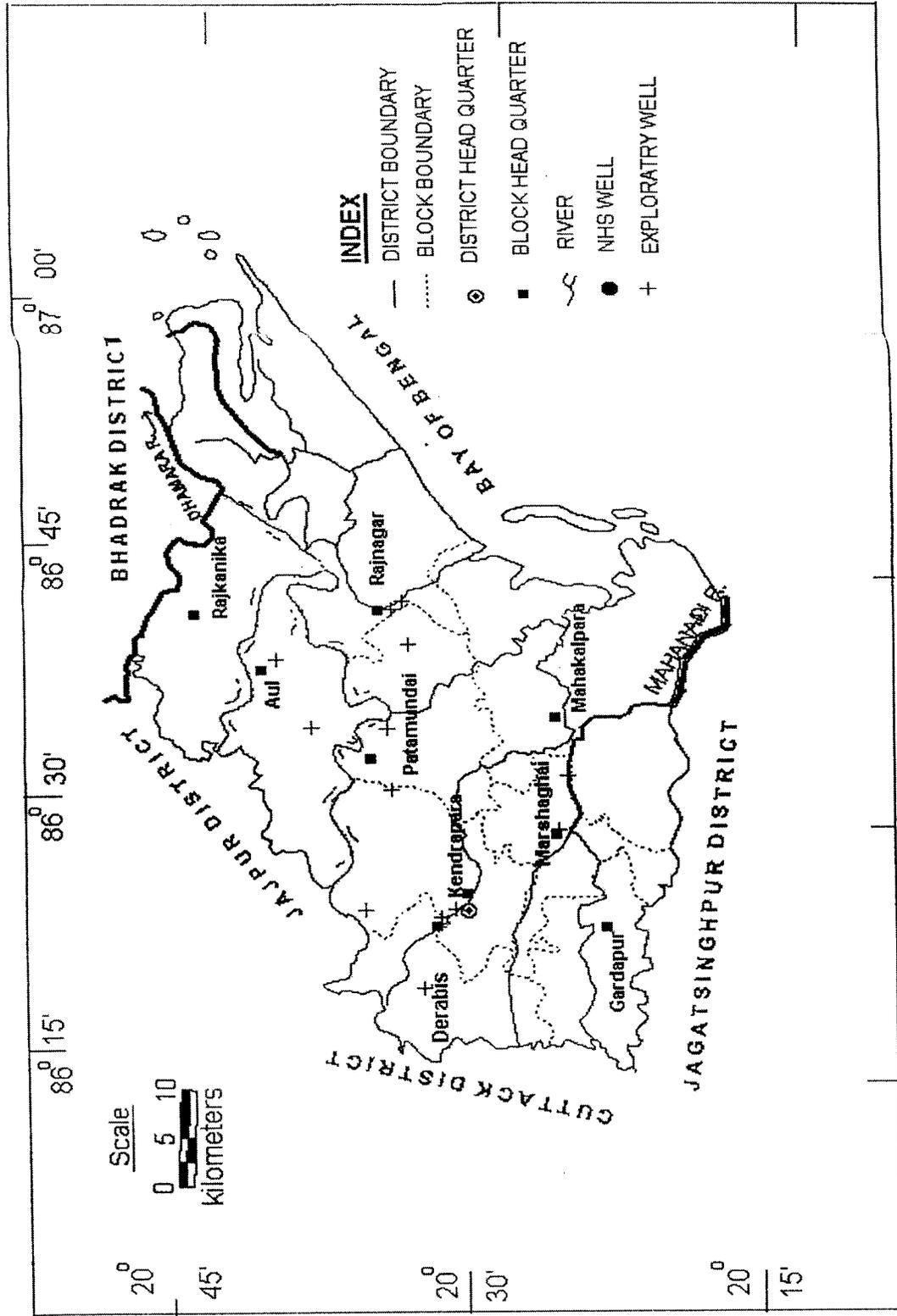
### II. Deeper Aquifers

The occurrence of fresh water bearing deeper aquifer is identified from available borehole data down to a maximum depth of 612m. In the major part of the district the depth of boreholes are restricted to 300m. Generally the deeper fresh water bearing zones are sand- witted between saline water bearing zones. The cumulative thickness of the aquifers that have been tapped by the deep tube wells varies from 20 to 69 m with the average value ranging from 30 to 40. The yield of these tube wells varies from 22 to 71 ltrs per second.

The information of PH value infers that the shallow ground water in the district is alkaline in nature and is suitable for drinking purpose. However the higher concentration of fluoride, chloride & Nitrate has been found in some local pockets. Like shallow ground water the deeper ground water is also alkaline in nature & no pollutants like nitrate and fluoride have been found beyond permissible limit, thus suitable for domestic purpose.

# INDEX MAP OF KENDRAPARA DISTRICT. ORISSA

PLATE-I



## 06. TRANSPORT

The Regional Transport Office, Kendrapara is functioning since Dated 01-06-2009 at Kendrapara since the bifurcation from the Regional Transport Office, Chandikhole vide Commerce and Transport Department Notification No.3858/T Dated 27.05.2009. It covers the entire Kendrapara Revenue District. The RTO is functioning in its own Govt. building at Juidaspur near Duhuria Chhaka adjacent to National Highway 5-A since 02.02.2016.

After the creation of this District, the road conditions gradually developed. After development of district roads, the people of this district are using vehicles to travel from one place to another place smoothly. Since then, the lengths of all categories of roads have further increased. The District at present is served by National Highway and State Highway, Major District Roads, other District roads and classified village roads, apart from municipal and village roads. The State Highway No.9 (A) is known as the Cuttack Chandbali road. It starts from Jagatpur near Cuttack and passes through Kendrapara District, i.e. Kendrapara, Derabish, Pattamundai, Aul and Rajkanika, leaves for Chandabali of Bhadrak District after crossing the river Baitarani.

Paradeep-Haridaspur railway link Project in Kendrapara District has covered 39 k.ms with an area of Ac 827.720 dec. The Land Acquisition work of all 47 villages has already been completed & handed over possession to East Coast Railway, Bhubaneswar. The Railway Authority also completed construction work and goods train has also been running from Aug-2020. It is also good-sine for this district for MOU with state Govt. by industrialist and the passenger train may be running in this line very soon.

**07. OVERVIEW OF MINING ACTIVITIES IN THE DISTRICT WITH LOCATION, AREA AND PERIOD OF VALIDITY**

Sl. No	Name of the Tahasil	Name of the Sand Sairat sources	Land Schedule					Period of validity
			Village	Khata No.	Plot No.	Area (in Ac.)	Area (in Ha.)	
1	2	3	5	6	7	8	9	10
1	Aul	Kharasrota nadi sand Daltaripur to Padanipal	Padanipal	688	970/P, 970/250 6/P	12.00	4.856	5 Years
2	Aul	Kharasrota nadi sand Panapentha to Desahi	Hinjal, Panapentha Ketuapal & Desahi	557	1/P,	12.00	4.856	5 Years
3	Aul	Kharasrota nadi sand Gobindpur to Juania	Gobindapur & Juania	963	1587, 1541	11.48	4.645	5 Years
4	Aul	Brahmani nadi sand Gangadharpur	Gangadharpur	240	342/P	11.50	4.653	5 Years
5	Aul	Brahmani nadi sand Nuapada	Nuapada	712	2990/P	12.00	4.856	5 Years
6	Aul	Kharasrota river sand Aragal	Aragal	1131	1/P	11.50	4.653	5 Years
7	Derabish	Mangalpur Birupa river sand sairat	Mangalpur	814	1961, 1977	12.152	4.919	5 Years
8	Derabish	Basupur Luna river sand sairat	Basupur	439	1099	12.226	4.947	5 Years
9	Derabish	Aratamula Luna river sand	Artamul	582	646	12.103	4.898	5 Years
10	Derabish	Bhagabatpur Luna river sand	Bhagabatpur & Suanlo	321, 221	600, 359	12.23	4.949	5 Years
11	Garadpur	Luna River sand sairat Sathilo	Sathilo	241	50, 56 & 58	13.00	5.261	5 Years
12	Garadpur	Chitrotpala River sand sairat, Korua	Korua	885	3128	11.64	4.71	5 Years
13	Garadpur	Chitrotpala River sand sairat Panadia	Panadia	376	1208	12.60	5.101	5 Years
14	Garadpur	Chitrotpala River sand sairat Arakhakuda	Arakhakuda	343	1308	12.49	5.058	5 Years
15	Garadpur	Chitrotpala River sand sairat Talakusuma	Talakusuma	910	252	12.50	5.06	5 Years
16	Garadpur	Chitrotpala River sand sairat Haridaspur	Haridaspur	458	1/1888, 1/1887	12.50	5.06	5 Years

17	Garadpur	Chitrotpala River sand sairat Ramachandrapur	Ramachandrapur	195	526	12.50	5.06	5 Years
18	Garadpur	Paika River Sand Sairat, Pundilo	Pundilo	474	1602	11.63	4.71	5 Years
19	Kanika	Baitarani river sand Kanapur to Manapur	Kanpur	187	239 826	11.24	4.552	5 Years
20	Kanika	Kharasrota river sand sairat of Charapada	Charapada	1417	4100,38 00/4167	12.00	4.856	5 Years
21	Marshaghai	Luna river sand sairat of Tulasipur	Tulasipur	309	338/P	12.31	4.985	5 Years
22	Marshaghai	Luna river sand sairat of Pakshyot	Pakshyot	431	429	12.20	4.937	5 Years
23	Marshaghai	Chitrotpala river sand sairat of Akhuadakhini	Akhuadakhini	239	1	12.20	4.937	5 Years
24	Marshaghai	Karandia river sand sairat of Goudagaon	Goudagaon	640	1302	12.20	4.937	5 Years
25	Mahakalapa ra	Naladia sand quarry in river Mahanadi	Naladia	3	9	11.39	4.613	5 Years
26	Pattamundai	Amrutamanohi Brahaamani nadi sand	Amrutamanohi	771	385	12.00	4.856	5 Years
27	Pattamundai	Taradipal Brahmani nadi sand	Taradiapal	1504	5006	12.00	4.856	5 Years
28	Pattamundai	Penthapala Amrutamanohi Brahmani nadi sand	Penthapal	1227 & 771	4161 & 65	8.20	3.318	5 Years
29	Pattamundai	Alapua Brahmani nadi sand (Alapua)	Alapua	913	3506	12.00	4.856	5 Years
<b>Total</b>						<b>345.791</b>	<b>139.955</b>	

#### 8. DETAILS OF ROYALTY OR REVENUE COLLECTED IN LAST 3 YEARS

Sl. No.	Name of the Tahasil	Name of the Sand Sairat sources	Collection of royalty / revenue made in last 3 years (in Rs.)		
			2018-19	2019-20	2020-21
1	2	3	4	5	6
1	Aul	Kharasrota nadi sand Daitaripur to Padanipal	260784	260784	260784
2		Kharasrota nadi sand Panapentha to Desahi	201057	249311	206057
3		Kharasrota nadi sand Gobindpur to Juania	186842	186842	186842
4		Brahmani nadi sand Gangadharpur	118602	118602	118602

5		Brahmani nadi sand Nuapada	124555	124555	124555
6		Kharasrota river sand Aragal	162528	162528	162528
7	Derabish	Mangalpur Birupa river sand sairat	351732	351732	0
8		Basupur Luna river sand sairat	1678890	1678890	0
9		Aratamula Luna river sand	543203	547683	0
10		Bhagabatpur Luna river sand	1151814	1151814	0
11	Garadpur	Luna River sand sairat Sathilo	1533536	1533536	0
12		Chitrotpala River sand sairat Korua	220526	279692	279692
13		Chitrotpala River sand sairat Panadia	94802	94802	0
14		Chitrotpala River sand sairat Arakhakuda	86939	86939	86939
15		Chitrotpala River sand sairat Talakusuma	227726	80771	227726
16		Chitrotpala River sand sairat Haridaspur	408446	347546	0
17		Chitrotpala River sand sairat Ramachandrapur	295046	43046	0
18		Paika River Sand Sairat, Pundilo	0	0	0
19	Kanika	Baitarani river sand Kanapur to Manapur	151641	124732	0
20		Kharasrota river sand Sairat, Charapada	161227	161227	161227
21	Marshaghai	Luna river sand sairat of Tulasipur	3016178	3654426	0
22		Luna river sand sairat of Pakshyot	574413	810936	0
23		Chitrotpala river sand sairat of Akhuadakhini	138375	195750	0
24		Karandia river sand sairat of Goudagaon	672840	946960	0
25	Mahakalapara	Naladia sand quarry in river Mahanadi	557023	1000000	1080835
26	Pattamundai	Amrutamanohi Brahaamani nadi sand	255000	255000	255000

27	Pattamundai	Taradipal Brahmani nadi sand	0	404118	213272
28	Pattamundai	Penthapala Amrutamanohi Brahmani nadi sand	651376	1430612	1040995
29	Pattamundai	Alapua Brahmani nadi sand (Alapua)	536855	650000	1661965
<b>TOTAL</b>			<b>14361956</b>	<b>16932834</b>	<b>6067019</b>

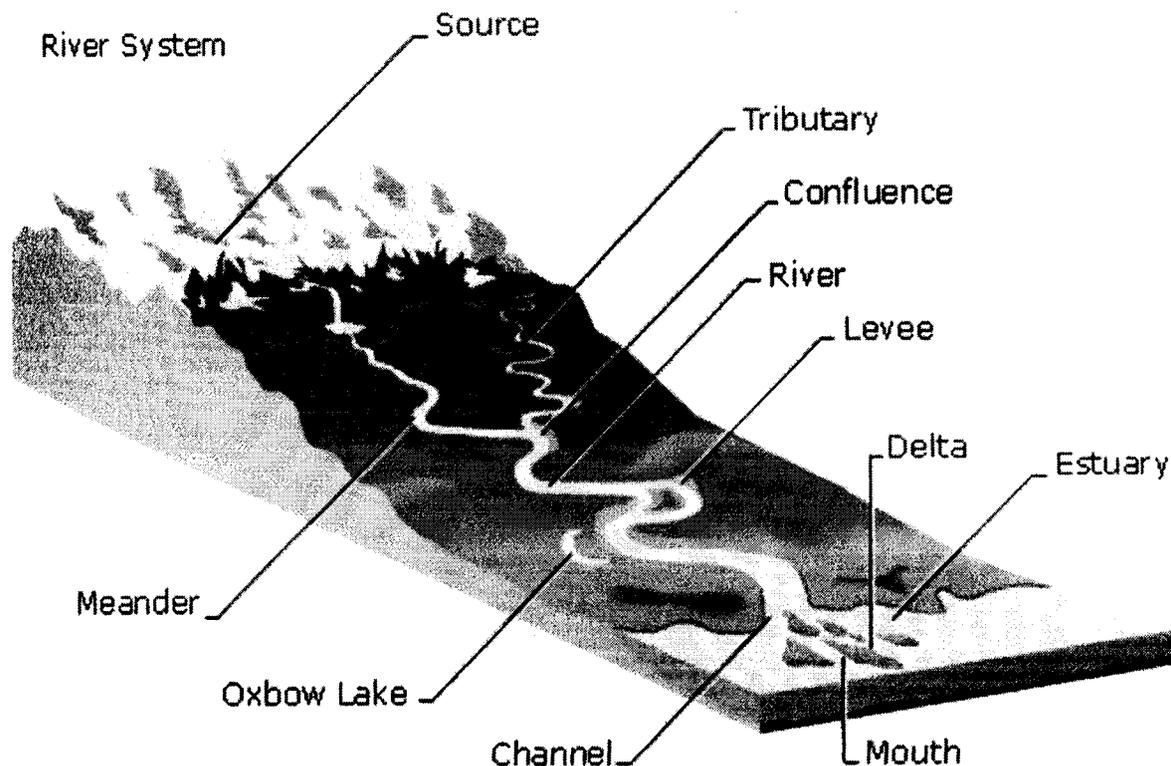
#### 09. DETAILS OF PRODUCTION OF SAND IN LAST 3 YEARS

Sl. No.	Name of the Tahasil	Name of the Sand Sairat sources	Production of sand in last 3 years (in Cubic meter)		
			2018-19	2019-20	2020-21
1	2	3	4	5	6
1	Aul	Kharasrota nadi sand Daitaripur to Padanipal	336	336	336
2		Kharasrota nadi sand Panapentha to Desahi	230	230	230
3		Kharasrota nadi sand Gobindpur to Juania	220	220	220
4		Brahmani nadi sand Gangadharpur	72	72	72
5		Brahmani nadi sand Nuapada	76	76	76
6		Kharasrota river sand Aragal	200	200	200
7	Derabish	Mangalpur Birupa river sand sairat	4500	6057	1650
8		Basupur Luna river sand sairat	27552	26885	34823
9		Aratamula Luna river sand	10749	14003	4500
10		Bhagabatpur Luna river sand	25969	25528	14550
11	Garadpur	Luna River sand sairat Sathilo	34825	34825	34825
12		Chitrotpala River sand sairat Korua	4200	4200	4200
13		Chitrotpala River sand sairat Panadia	1224	1224	1224
14		Chitrotpala River sand sairat Arakhakuda	1463.7	1463.7	1463.7
15		Chitrotpala River sand sairat Talakusuma	3240	3240	3240
16		Chitrotpala River sand sairat Haridaspur	12600	12600	12600
17		Luna River sand Sairat Ramachandrapur	5250	5250	5250
		Paika River Sand Sairat, Pundilo	0	0	0
18	Kanika	Baitarani river sand Kanapur to Manapur	1400	1400	1400
19		Kharasrota river sand Sairat, Charapada	521	521	521
20	Marshaghai	Luna river sand Sairat of Tulasipur	64174	64174	0
21		Luna river sand Sairat of Pakshyot	11263	11263	0
22		Chitrotpala river sand sairat of Akhuadakhini	3375	3375	0
23		Karandia river sand sairat of Goudagaon	12460	12460	0
24	Mahakalapara	Naladia sand quarry in river Mahanadi	6695	6695	2100

25	Pattamundai	Amrutamanohi Brahaamani nadi sand	3520	3520	1020
26	Pattamundai	Taradipal Brahmani nadi sand	6123	6123	0
27	Pattamundai	Penthapala Amrutamanohi Brahmani nadi sand	9435	3145	3145
28		Alapua Brahmani nadi sand (Alapua)	693	762	838
<b>TOTAL</b>			<b>252366</b>	<b>249848</b>	<b>128483.7</b>

## 10. PROCESS OF DEPOSITION OF SEDIMENTS IN THE RIVERS OF THE DISTRICT

Rivers are the most powerful agent of sedimentation process which includes Erosion, transportation and deposition of the eroded materials. Generally the eroded materials comprise of rocks, organic matters etc. The processes of sedimentation in the district are being done by the fluvial action of the major rivers like Brahmani, Mahanadi and its tributaries. The sedimentation process is seen to be highest in the rainy season between mid-June to mid-September. The size of the sediments so deposited varies from fine gravel to very fine sand and in some places silt and clay are also found. At their lower end these rivers form numerous estuaries, small islands in Mahakalapada and Rajnagar area. The alluvial deposits done by the rivers in their bank are very fertile utilized for cultivation of various vegetables, cereals, and cash crops like jute etc.



## 11. General Profile of the District

Kendrapara District was created on 1st of April 1993 covering an area of 2,644 Sq. Km. District Head Quarters, Kendrapara - 85 Km from State Capital

No. of Subdivision	-	1
No. of Tahasil	-	9
No. of R.I Circles	-	92
No. of Blocks	-	9 i.e. Kendrapara, Aul, Marshaghai, Rajkanika, Pattamundai, Mahakalapara, Rajnagar, Garadpur, Derabish.
No. of Municipalities	-	2 i.e Kendrapara& Pattamundai.
No. of Assembly constituency-		5 i.e. Kendrapara (SC), Patkura, Rajnagar, Mahakalapara, Aul
No. of G.Ps	-	249
No. of Revenue Villages	-	1592
No. of Police Station	-	15
No. of Out Posts	-	6
No. of ICDS Projects	-	9

## 12. Land Utilization Pattern in the District

1) Geographical Area	2,29,762 Ha.
2) Area under Forest	2946 Ha.
3) Misc. tree crops and groves not included in the net area shown	1787 ha.
4) Permanent Pastures and other grazing land	11818 Ha
5) Cultivable Waste	2565 Ha
6) Land put to non-agricultural uses	45546 Ha.
7) Current fallow	12224 Ha.
9) Other fallows	8832 Ha.
10) Net area Sown	143912 Ha.
11) Total Cultivated Area	152000 ha
12. Gross cropped Area.	231849 Ha.

2) Cultivated Area

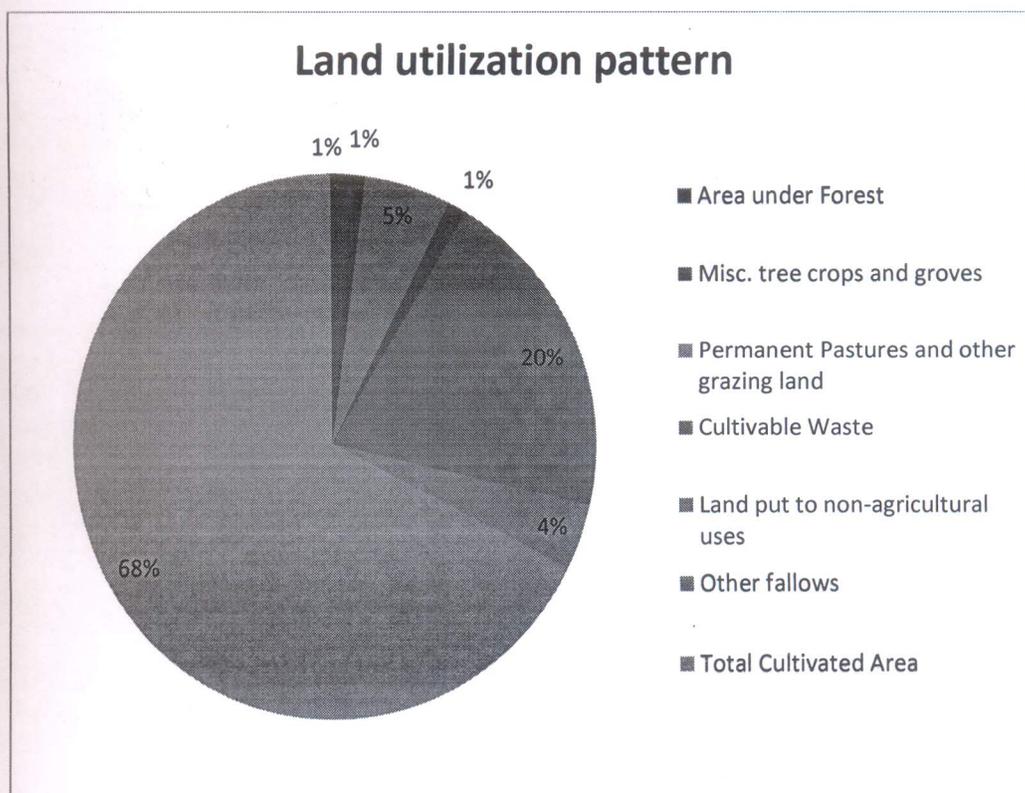
a) High land	31,081 Ha.
b) Medium land	71890 Ha.
c) Low land	<u>49029 Ha.</u>
<b>Total</b>	<b>1,52,000 Ha.</b>

3) A. Paddy Area

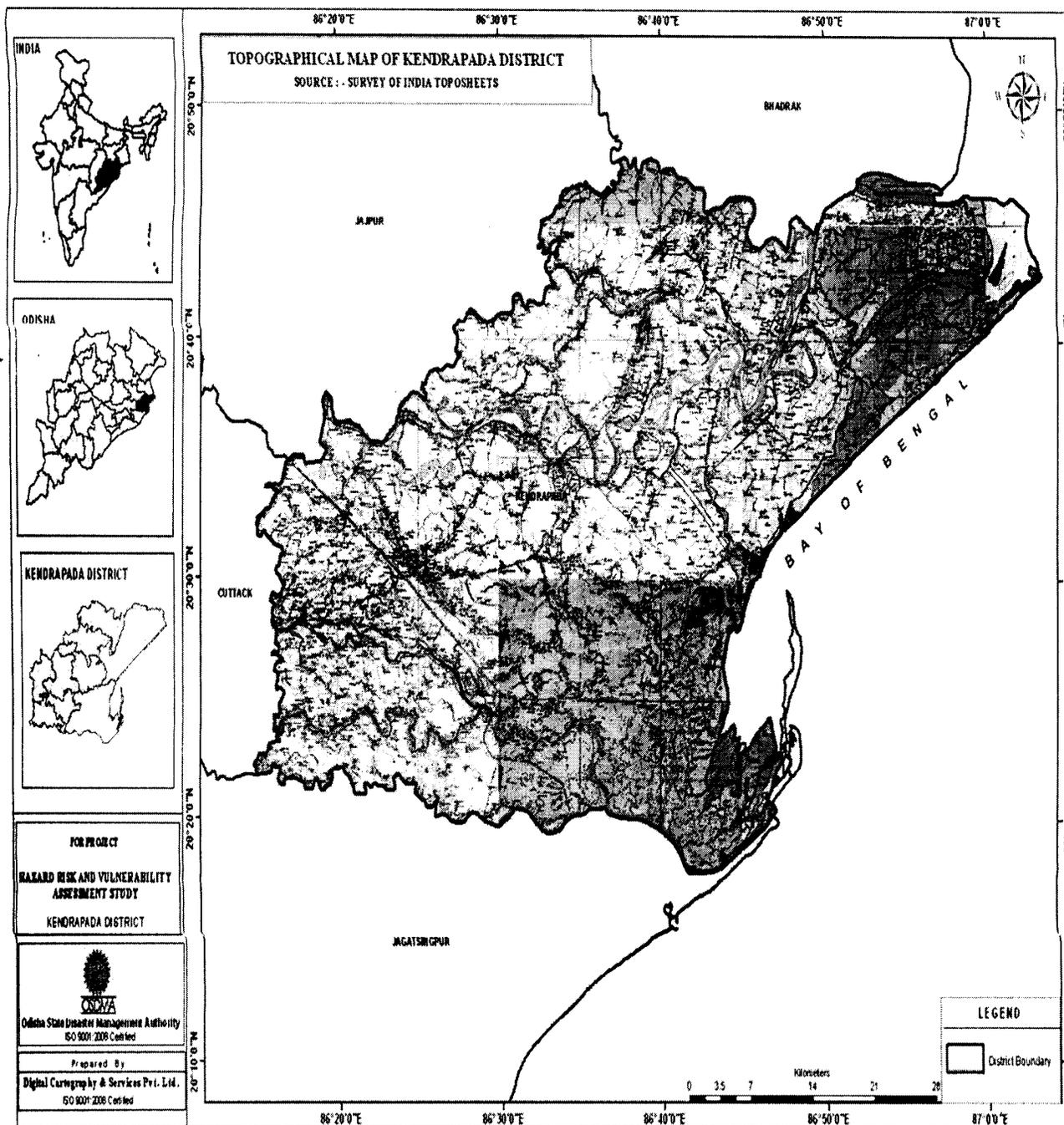
a) High land	10,562 Ha.
b) Medium land	64,381 Ha.
c) Low land	<u>49,029 Ha.</u>
<b>Total</b>	<b>1,23,972 Ha.</b>

B. Non- paddy Area

28,028 Ha



## Topographic map of Kendrapara



### 13. PHYSIOGRAPHIC OF THE DISTRICT

Physiographically the district can broadly be divided into two distinct units, viz.

- i. The saline marshy tract along the coast
- ii. The very gently sloping plain

The saline marshy tract forms a long and narrow strip along the coast. The width of this tract varies from 3 to 15 m and is intersected by tidal streams and covered by shrubby vegetation. The gently sloping alluvial plains with the altitudes varying between 10.5 m amsl in the north western part to 2.15 m amsl in the east occurs in the west of the marshy saline tract and form most fertile part of the district. The general slope of the district is towards east and southeast and varies from 5m/km in the west to 1.6 m/km in the eastern part.

#### **14. RAIN FALL**

The southwest monsoon is the principal source of rainfall in the district. The district is characterized by a tropical monsoon climate having three distinct seasons in a year viz. winter, summer and rainy seasons. The Bay of Bengal, which forms the eastern boundary of the district, plays a vital role in controlling the climate of the district.

**Average rainy days/ Annum:78 days**

#### **The month wise rainfall data of Kendrapara District (last 4 years)**

F. Year / Month	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	Total
17-18	2.67	30.53	142.83	343.24	330.92	148.02	228.89	146.16	48.93	0.00	0.00	0.00	1422.19
18-19	18.42	100.89	251.89	383.84	270.07	653.04	204.89	0.00	2.78	0.00	0.00	33.89	1919.71
19-20	24.22	78.00	127.67	236.81	388.28	343.72	249.67	100.89	0.00	11.22	16.44	84.89	1661.81
20-21	148.22	161.56	150.89	134.00	755.44	81.33	343.00	0.56	0.00	0.00	1.00	0.00	1776.00
AVG	48.38	92.74	168.32	274.47	436.17	306.52	256.61	61.90	12.92	2.80	4.36	29.69	1694.92

**Climatic Condition:** Kendrapara district has a moderate climate. The maximum mean temperature of the region can go up to 37<sup>o</sup> Celsius in summer whereas in winter it can drop to 13<sup>o</sup> Celsius. During the year on 11.04.2016 maximum temperature in Kendrapara district was 43.7<sup>o</sup> Celsius. The average normal rainfall measured in the district is about 1556 mm.

#### **FOREST:**

The entire district of Kendrapara comes under two forest Divisions, i.e. Mangrove Forest Division(wildlife), Rajnagar and Cuttack Forest Division, Cuttack. Kendrapara, Derabish, Marshaghai, Garadpur blocks come under jurisdiction of Cuttack Forest Division whereas Rajnagar, Pattamundai, Mahakalapada, Aul, Rajkanika blocks come under Mangrove Forest Division(wildlife), Rajnagar. The natural vegetation in the district varies from dry deciduous Forest to tidal mangrove swampy forest. The flora of the former forest includes mangrove, bamboo, mango, jackfruit, guava, eucalyptus, acacia, neem tree, chakunda tree, burflower (kadamba), etc. Apart from that, about 62 mangrove species occur in the Bhitarkanika wildlife National park including Avicenna, Brugiera, Heritiera and Rhizophora.

## BHITARKANIKA NATIONAL PARK

An area of 145 Sq.kms. have been notified as Bhitarkanika National Park vide Notification No.19686/F&E dated 16.9.1998 of Forests & Environment department, Govt. of Orissa. It obtained the status of a Ramsar site on 19.08.2002. It has much significance with regard to ecological, geomorphological and biological background which includes mangrove forests, rivers, creeks, estuaries, back water, accreted land and mud flats. Bhitarkanika National Park is the core area of Bhitarkanika Sanctuary.

## BHITARAKANIKA SANCTUARY

Bhitarkanika Wildlife Sanctuary was declared vide notification No.6958/FF AH Dtd. 22.04.1975 over an area of 672 square kilometres. The Sanctuary comprising Mangrove Forests meandering rivers, innumerable criss-crossed tidal inundated creeks provide last refuge to the already endangered salt water Crocodile (*Crocodile Porosus*). Besides estuarine Crocodile, the Sanctuary is rich in avifauna mammalian and reptilian population. These Mangrove forests are good habitat for King Cobra, Indian Python & Water Monitor Lizard. A large number of water birds visit Bagagahan heronry which is an area of approximately 4 hectare within the Bhitarkanika Forest Block near Suajore creek from the month of June to October. Most of the Birds are Asian open bill. Egrets, Black Ibis, Cormorants, Darters & etc. The Details of forest are given below.

### Reserved Forest:

Sl. No	Name of the Division	Name of the range	Name of the R.F	Name of Forest Block	Area in Ha.	Area in Ac.	Notification No. & Date.
1	2	3	4	5	6	7	8
1	Mangrove Forest Division (Wildlife) Rajnagar	Mahakala para	Hukitola	Hukitola	555.00	1371.40	FS-187/78-12490 dated 13.02.1979 of Govt. of Orissa, Revenue Dept.
2		-	Bhitar Kharinasi (A)	Bhitar Kharinasi	583.84	1442.68	FS-300/79-68619, dated 19.09.1979 of Govt. of Orissa, Revenue Dept.
3		-	Bhitar Kharinasi (B)	Bhitar Kharinasi (B)	187.80	464.06	FS-31/77-91153, dated 26.12.1977 of Govt. of Orissa, Revenue Dept.
4		-	Kantilo	Kantilo	139.40	344.46	SRO-29/77-dated 05.01.1977 of Govt. of Orissa, Revenue Dept.
			<b>Total</b>	<b>04 Nos.</b>	<b>1466.04</b>	<b>3622.6</b>	

## 2. Village Forest:

No village Forest is existed in Mangrove (WL) Division, Rajnagar.

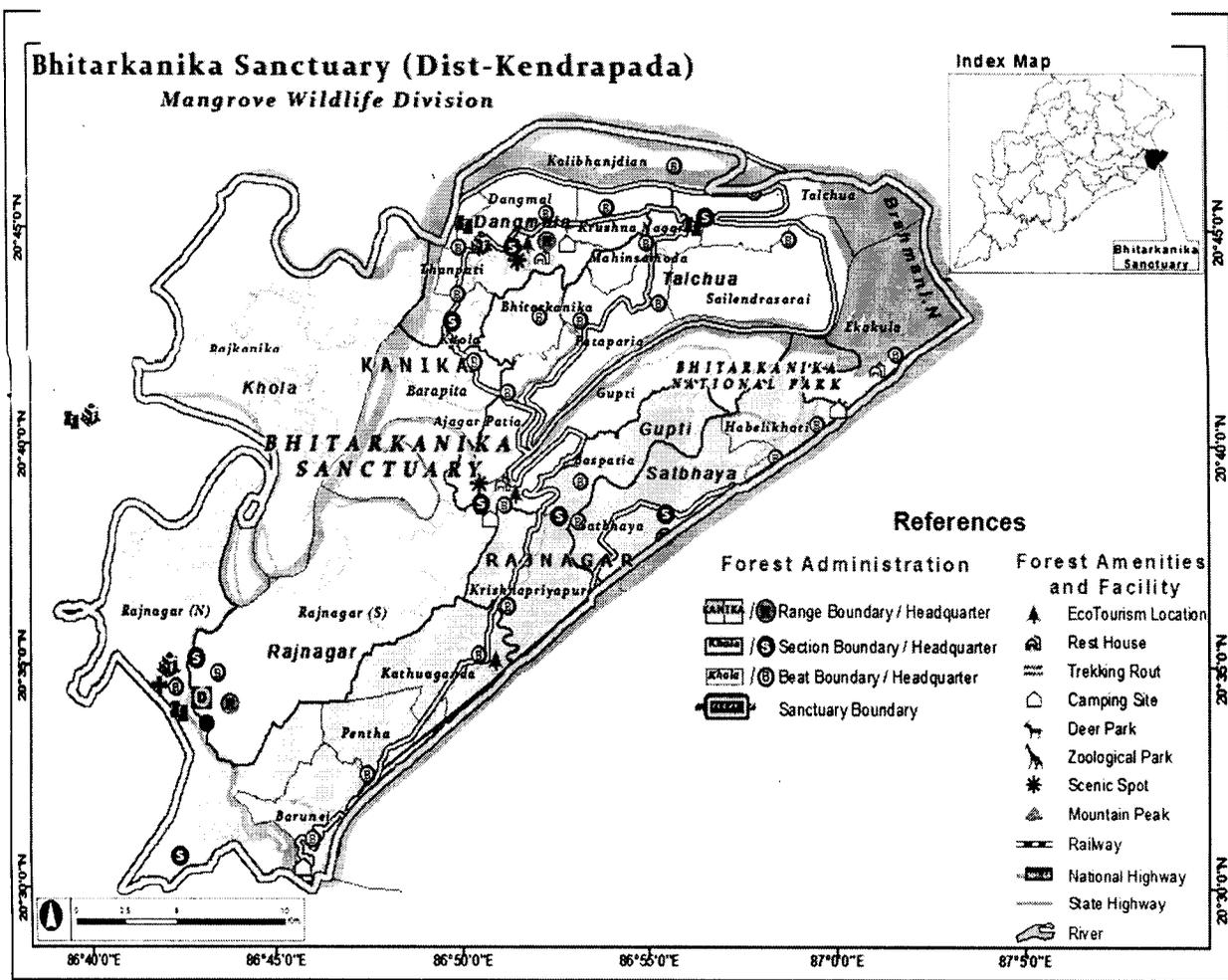
## 3. Protected Forest:

Sl. No.	Name of Division	Name of Range	Name of P.F	Name of Forest Block	Area in Ha.	Area in Ac.	Notification No. & Date
1	2	3	4	5	6	7	8
1	Mangrove Forest Division (Wildlife) Rajnagar	Rajnagar	East-Habalaganda	East-Habalaganda	720.36	1780	Letter No. 33233 Dt.04.10.1961 of Govt. of Orissa, Rev. (Forest) Dept. (As per Register)
2	-do-	-do-	Sunei-Rupe	Sunei-Rupe	505.87	1250	-do-
3	-do-	-do-	Barahipur	Barahipur	518.01	1280	-do-
4	-do-	-do-	West Orasahi	West Orasahi	518.01	1280	-do-
5	-do-	-do-	Singarpurdia	Singarpurdia	128.29	317	-do-
6	-do-	-do-	Barunei-Gahirmatha	Barunei-Gahirmatha	396.60	980	-do-
7	-do-	-do-	Thakurdia	Thakurdia	275.19	680	-do-
8	-do-	-do-	Angari	Angari	225.01	556	-do-
9	-do-	-do-	Mahakuldia	Mahakuldia	164.12	405.55	-do-
10	-do-	-do-	Goja	Goja	20.91	51.67	-do-
11	-do-	Kanika	Kalibhanjadia	Kalibhanjadia	885.27	2187.5	-do-
12	-do-	Kanika	Dangmal	Dangmal	643.46	1589.99	-do-
13	-do-	Kanika	North Mahisamada	North Mahisamada	679.89	1680	-do-
14	-do-	Kanika	Kantiakhai	Kantiakhai	647.51	1600	-do-
15	-do-	Kanika	Kanchira	Kanchira	68.80	170	-do-
16	-do-	Kanika	Routa	Routa	46.54	115	-do-
17	-do-	Kanika	Sapuadia	Sapuadia	44.1	109	-do-
18	-do-	Mahakalapara	Jambo	Jambo	369.90	914.02	Letter No. 33237 Dt.06.10.1961 of Govt. of Orissa, Rev. (Forest) Dept. (As per Register)
19	-do-	-do-	Kaunsiapal	Kaunsiapal	97.10	239.94	-do-
			<b>Total</b>	<b>19 Nos.</b>	<b>6954.95</b>	<b>17185.67</b>	

**D. Proposed Reserve Forest:**

Sl. No.	Name of Division	Name of Range	Name of P.R.F	Name of Forest Block	Area in Ha.	Area in Ac.	Notification No. & Date	Remarks
1	2	3	4	5	6	7	8	9
1	Mangrove Forest Division (Wildlife) Rajnagar	Mahakalapara	Saralikuda	Saralikuda	263.33	650.69	SRO-531/70 Dt.27.06.70 Govt. of Orissa, Rev. Dept.	As per Govt. Notification
2	-do-	-do-	Suniti	Suniti	238.49	589.31	SRO-525/70 Dt.27.06.70 Govt. of Orissa, Rev. Dept.	As per Register
3	-do-	-do-	Hetamundia	Hetamundia	1168.86	2888.26	SRO-529/70 Dt.27.06.70 Govt. of Orissa, Rev. Dept.	-do-
4	-do-	-do-	Barakolikhola	Barakolikhola	12	29.63	SRO-528/70 Dt.05.06.70 Govt. of Orissa, Rev. Dept.	-do-
5	-do-	-do-	Petchhela	Petchhela	259.73	641.8	SRO-479/70 Dt.05.06.70 Govt. of Orissa, Rev. Dept.	-do-
6	-do-	-do-	Bagagahan	Bagagahan	12.41	30.67	SRO-476/70 Dt.05.06.70 Govt. of Orissa, Rev. Dept.	-do-
7	-do-	-do-	Badatubi	Badatubi	28.83	71.25	SRO-533/70 Dt.27.06.70 Govt. of Orissa, Rev. Dept.	-do-
8	-do-	-do-	Nipania	Nipania	77.98	92.69	SRO-519/70 Dt.27.06.70 Govt. of Orissa, Rev. Dept.	-do-
9	-do-	-do-	Batighar	Batighar	166.2	410.67	SRO-517/70 Dt.27.06.70 Govt. of Orissa, Rev. Dept.	-do-
10	-do-	-do-	Kansaridia	Kansaridia	1411.52	3487.87	SRO-318/68 Dt.27.06.70 Govt. of Orissa, Rev. Dept.	-do-
11	-do-	-do-	Kandarpatia	Kandarpatia	106.98	264.35	SRO-81/70 Dt.05.06.70 Govt. of Orissa, Rev. Dept.	-do-
12	-do-	-do-	Jogidhankud	Jogidhankud	392.14	968.98	19697 Dt.07.05.1969 Govt. of Orissa, Rev. Dept.	Copy of Notification not available

13	-do-	-do-	Sanatubi	Sanatubi	594.68	1469.47	SRO-515/70 Dt.27.06.70 Govt. of Orissa, Rev. Dept.	As per Register
14	-do-	Rajnagar	Kakarnasi	Kakarnasi	313.63	774.98	SRO-908/70 Dt.27.06.70 Govt. of Orissa, Rev. Dept.	-do-
15	-do-	-do-	Bagulidia	Bagulidia	549.17	1357	SRO-882/70 Dt.17.11.1970 Govt. of Orissa, Rev. Dept.	-do-
16	-do-	-do-	Magarkanda	Magarkanda	1023.87	2529.99	SRO-974/70 Dt. 17.11.1970 Govt. of Orissa, Rev. Dept.	-do-
17	-do-	-do-	Ranahansua	Ranahansua	1072.44	2650	FS-457/70- 63698/R Dt- 17.11.1970 Govt. of Orissa, Rev. Dept.	-do-
18	-do-	-do-	West Habalaganda	West Habalaganda	445.16	1100	FS-27507 SRO 292/85 Dt- 23.05.85 Govt. of Orissa, Rev. Dept.	Copy of Notificati on not available
19	-do-		East Orasahi	East Orasahi	485.63	1200	SRO-14/85- 27511/R Dt.27.05.85 Govt. of Orissa, Rev. Dept.	-do-
20	-do-	Kanika	Ragadapatia	Ragadapatia	333.87	825	SRO-531/70 Dt.27.06.70 Govt. of Orissa, Rev. Dept.	As per Register
21	-do-	Kanika	Bhitarkanika	Bhitarkanika	1733.2	4282.74	SRO-911/70 Dt. 17.11.1970 Govt. of Orissa, Rev. Dept.	-do-
22	-do-	Kanika	Kantika	Kantika	97.13	240	SRO-553/70 Dt.27.06.70 Govt. of Orissa, Rev. Dept.	-do-
23	-do-	Kanika	South Mahisamada	South Mahisamada	1064	2629.14	SRO-531/85R Dt.29.07.1987 Govt. of Orissa, Rev. Dept.	-do-
24	-do-	Gahir matha	Sasanpeta	Sasanpeta	1515.18	3744.01	SRO-320/70 Dt- 28.04.1970 Govt. of Orissa, Rev. Dept.	As per Register
			<b>Total</b>	<b>24 Nos.</b>	<b>13366.43</b>	<b>32928.50</b>		



**GAHIRMATHA MARINE SANCTUARY**

Gahirmatha was declared a turtle sanctuary vide notification No.18805 dated. 27.09.1997 over an area of 1435 square kilometres by Odisha Government after considering its ecological importance and as part of efforts to save the sea turtles. It is the World's largest nesting spot of Olive Ridley Sea Turtles in Indian Ocean region and the only turtle sanctuary in Odisha. Every year they travel across the south pacific to breed on the coast of Gahirmatha. They usually nest during night time. The sanctuary is also home to variety of flora and fauna.

**15 Drainage System**

Kendrapara district is being drained by three important rivers and their tributaries/streams as follows.

Sl. No.	Name of river or stream	Area of drainage in Sq. Km.	% of area drained in the district
1	Gobari Drain	1305.92	49.39
2	Mahula kandha-Aganasi Dr. cut	147.09	5.56
3	Mangalpur canal road-Harijanasahi Dr. cut	18.70	0.71
4	Godhi jora Dr. cut	8.00	0.30
5	Baghuni Dr. cut	153.95	5.82
6	Ashrukhala Dr. cut	246.39	9.32
7	Belar Nuagaon to Purusottampur Dr. cut	57.85	2.19
8	Gadaromita-Singitalia DC	2.50	0.09
9	Badakul-Karanja Dr. cut	3.50	0.13
10	Gokhapada Dr. cut	3.00	0.11
11	Ashram Balikuda DC	2.00	0.08
12	Indalopata Dr. cut	4.00	0.15
13	Subala Dr. cut	1.00	0.04
14	Kani Dr. cut	30.45	1.15
15	Narendrapur to Baladevjewpatana Dr. cut	3.00	0.11
16	Chandibaounsamula to Gupti Dr. cut	45.70	1.73
17	Mahulia to Haarisapur Dr. cut	49.98	1.89
18	Jali Bhitragada Dr. cut	36.00	1.36
19	Belpal Dr. cut	65.80	2.49
20	Sunamuhi drainage cum creek	19.21	0.73
21	Brahmanijodi drainage cum creek	7.33	0.28
22	Johania Mahara Dr. cut	3.50	0.13
23	Baramania Dr. cut	10.57	0.40
24	Mahubadajore Dr. cut	20.50	0.77
25	Chadaikhia Dr. cut	21.63	0.82
26	Sanagara Naranpur Dr. cut	40.34	1.53
27	Old Brahmani Dr. cut	19.00	0.72
28	Baghamari drainage cum creek	3.18	0.12
29	Sanakantia drainage cum creek	2.80	0.11
30	Dighijunusnagar drainage cum creek	3.42	0.13

31	Bengamari drainage cum creek	2.58	0.09
32	Mandapokhari to Benakantia Dr. cut	4.85	0.18
33	Kanduanalijore Krushnanagar Dr. cut	2.52	0.09
34	Rajendranagar sluice to Talachua Dr. cut	2.95	0.11
35	Keruapal to Harinapokhari Rangani Dr. cut	4.50	0.17
36	Gumurajore to Pattaparia Dr. cut	4.83	0.18
37	Chandakola Rautajore	1.30	0.05
38	Dangamal Dhodhijore	1.20	0.05
39	Old Kani Dr. cut	11.00	0.42
40	Jagadandi Dr. cut	9.00	0.34
41	Taradipal DC	4.50	0.17
	<b>TOTAL</b>	<b>2385.54</b>	

## **16.GEOLOGY**

The distribution of different soil types in the district depends much on its physiographic and lithologic variations. Based on the physical and chemical characteristics, mode of origin and occurrence, soils of the district may be classified into three groups namely Alfisols, Aridisols and Entisols.

**Alfisols:** This includes deltaic alluvial soils and this type of soils occupies nearly 90% of the entire district area. The deltaic alluvial soils are generally deficient in phosphate (P<sub>2</sub>O<sub>5</sub>) and nitrogen (N). Both the total and available potassium are fairly adequate and PH varies between 6.5 and 7.3.

**Aridisols:** These are saline and saline alkali soils and occur in small pockets in the north eastern and south eastern corner of the district near coast. These are rich in calcium, magnesium and also consist of half decomposed organic matter.

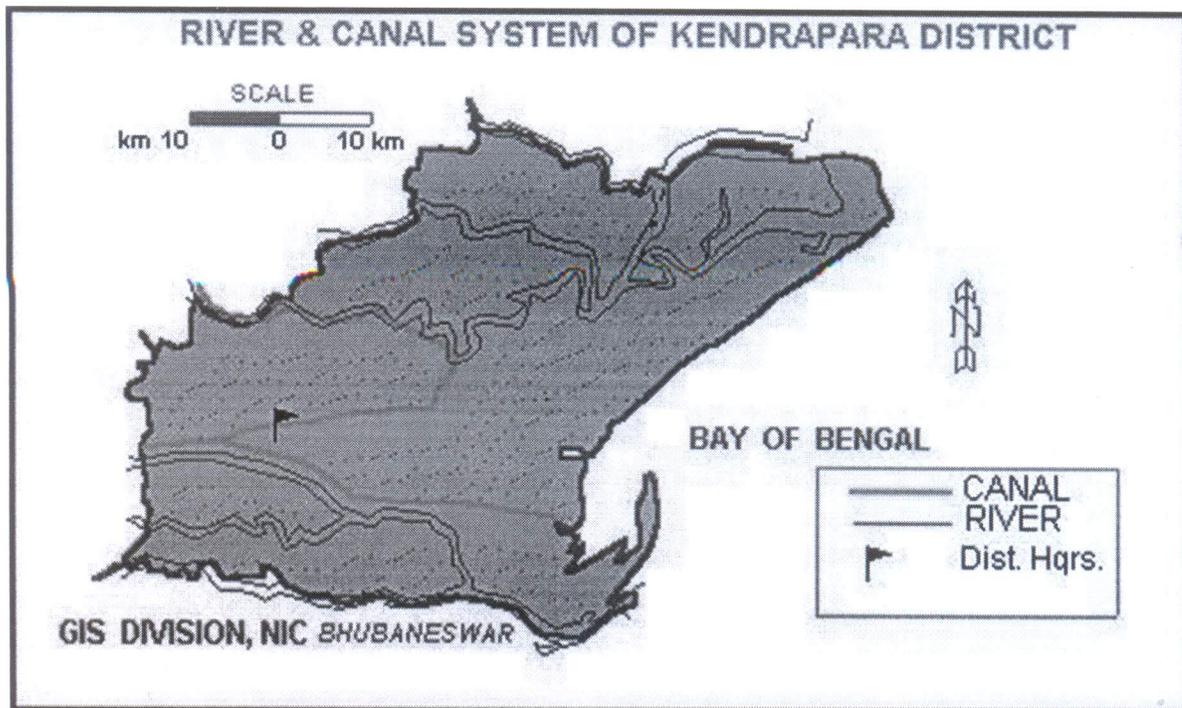
**Entisols:** These include coastal sandy soils and occur as narrow elongated ridge along the coastline. The soils are deficient in nitrogen, phosphoric acid and humus, but not in potash and lime.

## **17.Salient features of River Systems**

There are three major river systems in this District. They are:

1. The Mahanadi system
2. The Brahmhani system
3. The Baitarani system

Cultivable alluvial plains are formed from the deposits of the above river systems and contribute to agricultural prosperity of the district. The district is bisected by rivers like the Mahanadi, the Brahmani and the Baitarini and many other streams and their tributaries like Luna, Chitrotpala, Karandia, Govari, Kharashuan, Dhamara, Meinpura, Kani and Birupa.



#### The Mahanadi System:

The **MAHANADI** originates from Maikal range in Chhatisgarh popularly known as the Amar Katak Plateau and enters into Odisha through Sambalpur and flows through Dhenkanal, Cuttack, Jagatsinghpur and enters Kendrapara district in south at Raipur of Mahakalpada Block. Then it passes through Khursia, Kulla and embraces the river Luna at Chaumuhani. Then it makes its passage to Bahukud, Hetamundia and finally meets the Bay of Bengal near the False Point at  $20^{\circ}, 18' N.$  and  $86^{\circ}, 43' E.$  longitude.

The **CHITROTPALA** flows from Mahanadi at Bisharpur in Cuttack district and makes its passage to this district at Madhusasan of Garadpur block. The Mahanadi after crossing Cuttack town moves eastward and splits into Chitrotpala, Paika and Mahanadi. Chitrotpala after flowing some distance parallel to Luna joins the Mahanadi at Badapada of the district. After flowing through Garadpur and Patkura touches the river Luna at Kuanarpala in Marsaghai Block.

The river **LUNA** flows from the river Chitrotpala at Sunaria in Cuttack district and enters into Kendrapara district at Girigola of Derabish block. Then it traverses through Danpur (Derabsih Block), Baspur, Kalapada (Marsaghai Block) and joins Chitrotpala at Kuanarpala. Afterwards, it proceeds in the east direction towards Balikuda in Mahakalapada

block. At this point, the river again gets bifurcated and passes through both sides of Dasmouji Gheri to rejoin at Teragan Samantasingharpur in Mahakalpada Block. After that, it proceeds towards Gojabandha, Gokhakhati and joins Mahanadi at Choumuhani in Mahakalpada Block.

The river **KARANDIA** flows from the river LUNA in its right side at Balipada of Kendrapara district and proceeds to Sathilo, Salar, Jalapoka, Ayatpur, Dhiabalarampur and rejoins Luna at village Karandia, creating an Island known as 'Luna Karandia Island'.

The river **PAIKA** flows from the river Mahanadi at Nainpur of Garadpur block in Kendrapara district. On the bank, it touches Bindha, Arabol, Basantpur, Narada, Kusumupura, Palasudha(Garadpur block), Lankapada (Tirtol block), Bhadilo, Pundilo, Patsura, Bamra, Sathula (Garadpur block), Pailo (Marshaghai block), Ambiri, Ergari, Arilo, Kesada, Ukusahi(Tirtol block), Ameipal, Tikhiri(Mahakalapara block) and it finally merges in Mahanadi at Tikhiri of Kendrapara district. The river forms almost a border line between the districts of Jagatsinghpur and Kendrapara.

The river **GOVARI** flows from Mahanadi-Birupa Island at Bahadulpur in Cuttack district, traverses through Jajpur district at Panchu Pandav in north-west direction,. The river forms almost a border line between the districts of Jajpur and Kendrapara. After entering into the district, it passes through Paripala (Derabish Block) Rajanga, Raghudeipur, Kurjanga, Kendrapara Municipality, Nagpura (Kendrapara Block), Endara, Madhukula, Bagachhelia, Chandipur (Mahakalapada Block) and finally merges with the Bay of Bengal at Batighara mouth near Jambu of Mahakalapada Block. The river traverses a total distance of 227.20 Kms out of which 149 Kms are in the district of Kendrapara.

The river **BIRUPA** flows from Mahanadi in Cuttack district, and enters in to Kendrapara district in the northwest at Benipur of Derabish block. Then it proceeds to Indupur (Kendrapara Block) and joins river Brahmani at Ghagara.

#### **The Bramhani System:**

The **BRAMHANI** originates as a combined stream of two small streams called Sankhua and Koel, originated from Chhotnagpur plateau, which meets at Vedavyas near Panposh in Sundergarh district. At-Jenapur, the river gets split into two major streams, the Brahmani and its distributary, the Kharasuan. Flowing a considerable distance through the delta, the river Kharasua falls into the mother stream and the enlarged river gets released into Bay of Bengal by two mouths, the Dhamara and Mianpora .

River **KHARASROTA** popularly known as **Kharasuan** enters in to the district of Kendrapara from Jajpur district at Bojarudiha in Aul Block in the northwest, flows through

Balijori, Giribandha, Ranipokhari, Balakati, Jamudanda and joins the river Brahmani at Dakshina Bedha in Rajnagar block.

River **KANI** enters into Kendrapara district from Jajpur district. It is near Arlio, Kantipur in Aul Block that the river penetrates into the district, makes its passage through Natara, Thakurpatna, Manpur, Aul and finally joins the river Kharasrota at Baulajori in Aul Block.

River **HANSUA**, a tributary of Mainpura has originated at Patrapur of Rajnagar block where Brahmani is being split into Dhamara and Mainpura. After flowing parallel to the Bay of Bengal, it meets the sea at Praharajpur, 9 Kms. away from Batighara.



The river **BAITARANI** originates in the up-lands of Keonjhar district located to the north-west of Kendrapara district. The southern branch of this river traverses through the district of Cuttack and touches the district of Kendrapara at Kanarpur in Rajkanika block. It flows as a border line between the district of Bhadrak and Kendrapara. On its banks, it touches Manapur, Paniki, Langalabandha, Matia, Ostia, Gualigaon, Bangarakua, Baradia, Mantapara, Upulei, Endulapur, Bajarpur and meets the river Brahmani at Nalitapatia (Rajnagar block). Subsequently it bears the name Dhamra River and proceeds towards east to finally merge in the sea at Dhamara mouth.

The river flows nearly 35 Kms in the district of Kendrapara up to Nalitapatia and then along with the water of river Brahmani, it flows about 16 Kms up to Dhamara mouth. On her way, she throws various creeks in to the district of Kendrapara such as: Chadheikhia Nala, Bagi Nala, Gopalpur Nala, Taila Nala, Kalikapur Nala, Baradia Jora, Betanasi Jora, Anantapur Jora & Nuagaon Jora.

Other minor rivers of the district which are locally known as Nallas , Joras and Gullias are (1) Gahiramatha Nalla, (2) Baunsagada Nalla, (3) Chitrotpala Nalla, (4) Kharanasi Nalla, (5) Hanumanta Nalla, (6) Papuli Nalla, (7) Bhitarkanika Nalla, (8) Sukhuamuhan Nalla, (9) Budhia Nalla, (10) Kani Nalla, (11) Chhedakani Nalla, (12) Singha Nalla,(13) Kendrapatia Nalla, (14) Jagarjora, (15) Manda Jora , (16) Kutha Jora, (17) Batighar Gallia , (18) Ramchandi Gallia, (19) Babar Gallia etc. Most of these minor rivers of the district are charged with tidal ingression during monsoon season and give rise to floods.

An overall survey of the district reveals that there are 16574 numbers of TANKS & PONDS covering a total geographical area of 2981.59 hectares; out of which 1611 tanks and ponds covering an area of 707.08 hectares are owned by Gram Panchyats, 1128 covering an area of 452.53 hectares are owned by revenue department, 13835 number of tanks and ponds covering an area of 1622.08 hectares are privately owned.

SI No.	Name of the River or Stream	Total length in the District ( in Km)	Place of origin	Altitude at origin (in Mtr.)
1	2	3	4	5
1	Mahanadi	19.840	Mahanangala, Block-Mahakalapada	(-) 6.20
2	Paika	23.844	Nayanpur, Block-Garadpur	1.73
3	Chitrotpala	34.050	Biswanatahpur, Block-Garadpur	2.29
4	Luna	47.800	Mukundapur, Block-Derabish	3.88
5	Dasamouzi gherry (Luna left wing)	8.900	Ashrambalikuda, Block-Mahakalapada	(-) 9.50
6	Birupa	13.700	Benipur, Block-Derabish	2.02
7	Brahmani	30.860	Indupur, Block-Derabish	0.50
8	Gobari	25.450	Sadanandapur, Block-Derabish	2.38

## 18. Mineral Potential

The main mineral wealth of Kendrapara district is Sand which is scheduled under O.M.M.C Rules as a "minor mineral". A total area of 139.85 Ha. has been marked of having potential of **1493058.1 MT** sand production, the detail of which is given below.

Sl. No.	Name of the Tahasil	Name of the Sand Sairat Source	Total reserved Sand (in MT)	Total Mineable Mineral Potential (in MT) as per Mining Plan
1	2	3	4	5
1	Aul	Kharasrota nadi sand Daitaripur to Padanipal	20675	16148
2	Aul	Kharasrota nadi sand Panapentha to Desahi	27985	21568
3	Aul	Kharasrota nadi sand Gobindpur to Juania	13830	9068
4	Aul	Brahmani nadi sand Gangadharpur	17040	12658
5	Aul	Brahmani nadi sand Nuapada	20428	17760

6	Aul	Kharasrota river sand Aragal	16620	11123
7	Derabish	Mangalpur Birupa river sand sairat	46139	38100
8	Derabish	Basupur Luna river sand sairat	48801	46361
9	Derabish	Aratamula Luna river sand	132510	109827
10	Derabish	Bhagabatpur Luna river sand	128472	98466
11	Garadpur	Luna River sand sairat Sathilo	43140	33084
12	Garadpur	Chitrotpala River sand sairat Korua	50580	44010
13	Garadpur	Chitrotpala River sand sairat Panadia	50272	40117
14	Garadpur	Chitrotpala River sand sairat Arakhakuda	50580	41820
15	Garadpur	Chitrotpala River sand sairat Talakusuma	25856	19061
16	Garadpur	Chitrotpala River sand sairat Haridaspur	50080	40390
17	Garadpur	Chitrotpala River sand sairat Ramachandrapur	51584	36059
18	Garadpur	Paika River Sand Sairat, Pundilo	0	0
19	Kanika	Baitarani river sand Kanapur to Manapur	140	70
20	Kanika	Kharasrota river sand sairat, Charapada	52.10	26.05
21	Marshaghai	Luna river sand sairat of Tulasipur	102678	513392
22	Marshaghai	Luna river sand sairat of Pakshyot	78358	391793
23	Marshaghai	Chitrotpala river sand sairat of Akhuadakhini	27000	135000
24	Marshaghai	Karandia river sand sairat of Goudagaon	39872	199360
25	Mahakalapara	Naladia sand quarry in river Mahanadi	22400	11200
26	Pattamundai	Amrutamanohi Brahmani nadi sand	334395	10100
27	Pattamundai	Taradipal Brahmani nadi sand	30615	30615
28	Pattamundai	Penthapala Amrutamanohi Brahmani nadi sand	47860	15175
29	Pattamundai	Alapua Brahmani nadi sand (Alapua)	15096	4444
		<b>District Total</b>	1493058.1	1946795.05

  
**Collector-cum-Chairperson,  
DEIAA, Kendrapara**

### References

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2. *District Disaster Management Plan*
3. *District Statistical Hand Book*
4. *Ground Water Information Booklet of Kendrapara district*
5. *Mining Plan of Sand Sairat Sources*
6. *Census Hand Book, 2011*
7. *From web portal i.e. <http://rainfall.nic.in>*
8. *Odisha Water Plan, Deptt. of Water Resources, Govt. of Odisha*
9. *Reports of Line Department Officers of Kendrapara district*