



DISTRICT SURVEY REPORT (DSR)

OF

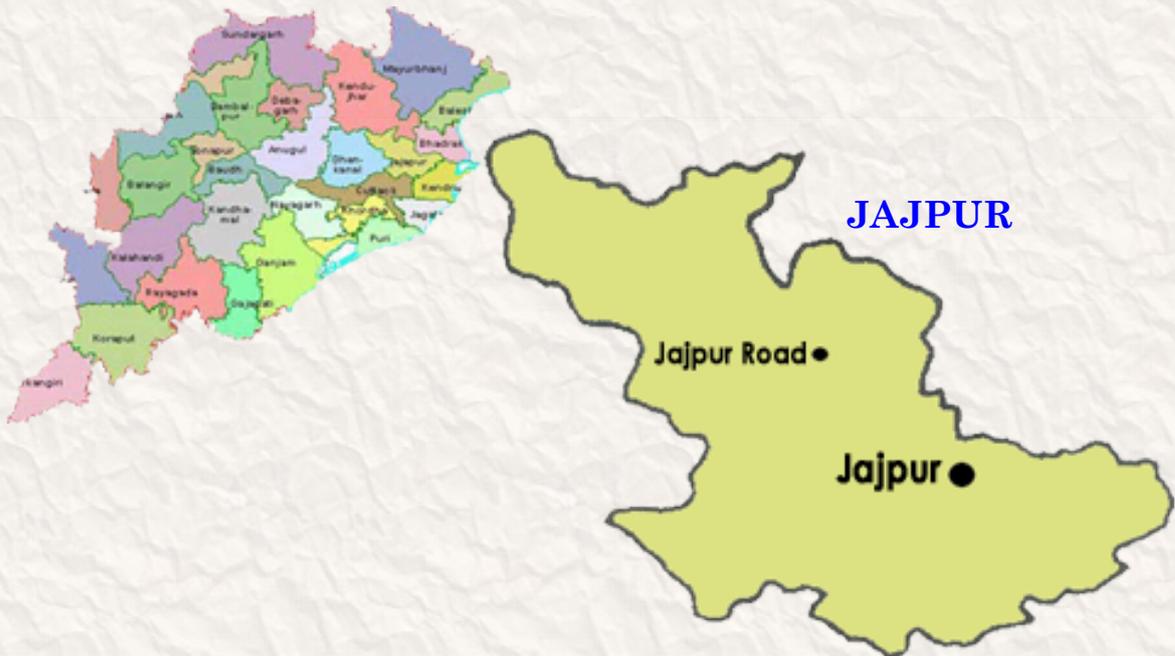
JAJPUR DISTRICT, ODISHA

FOR

RIVER SAND

**(FOR PLANNING & EXPLOITING OF MINOR
MINERAL RESOURCES)**

ODISHA



As per Notification No. S.O. 3611(E) New Delhi,
25th July, 2018
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE
(MoEF & CC)

COLLECTORATE, JAJPUR

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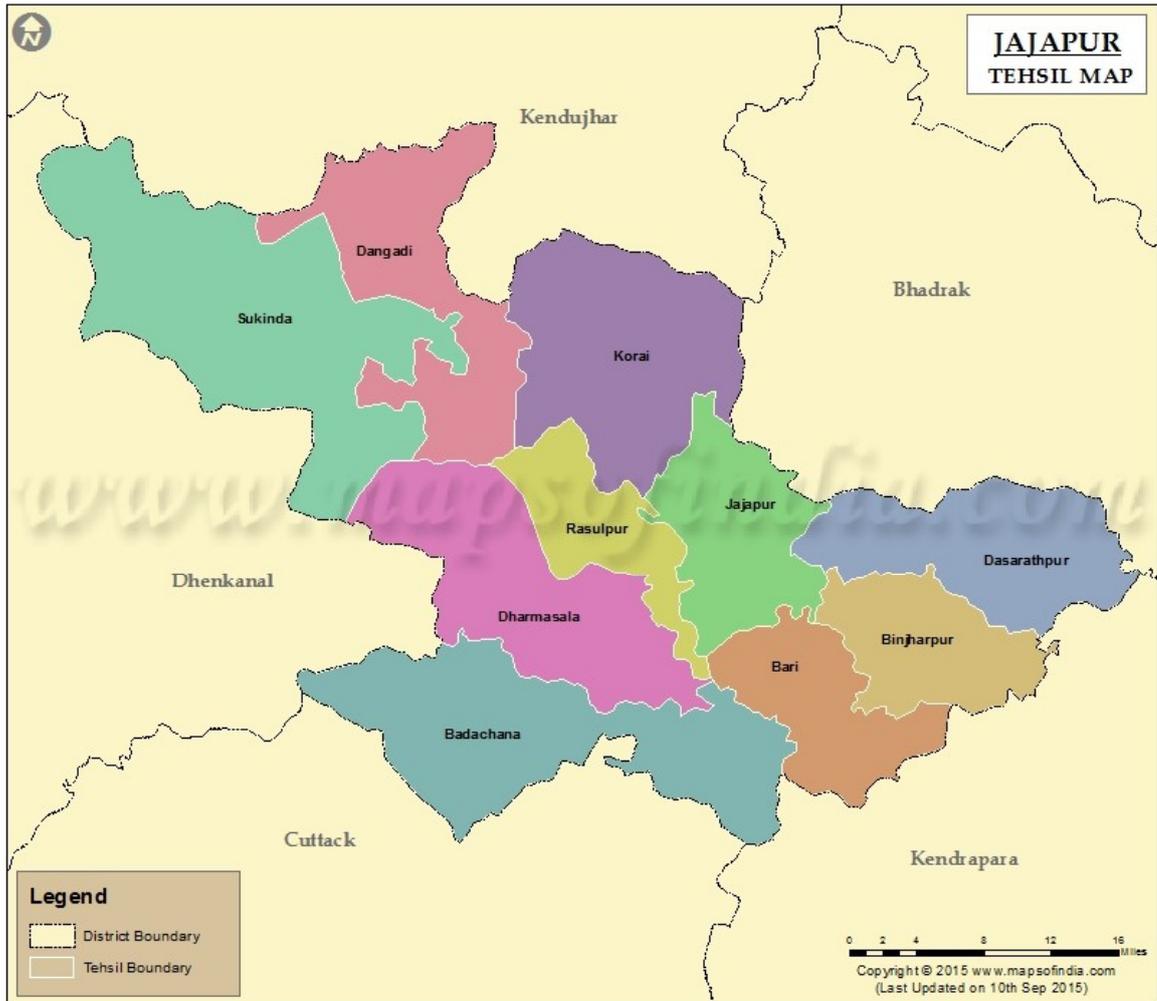
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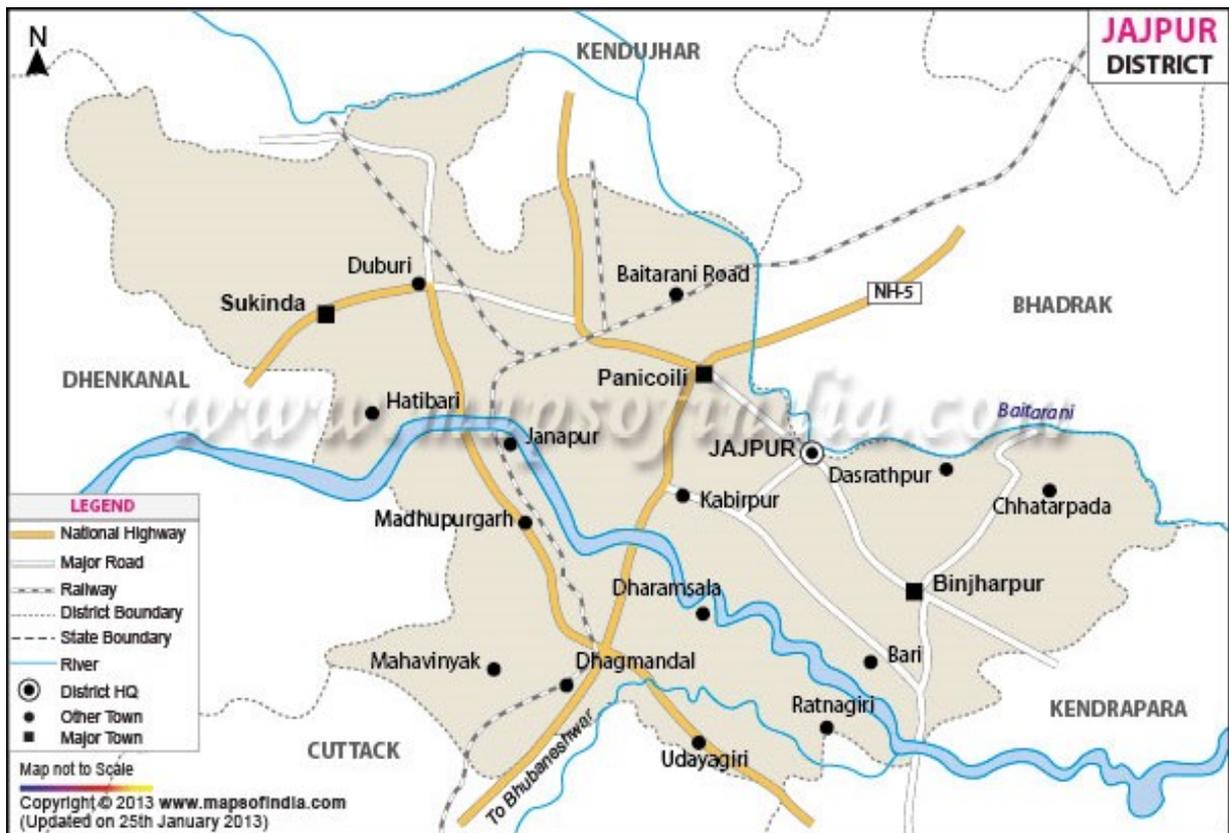
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MAP SHOWING THE TAHSILS OF JAJPUR DISTRICT



MAP SHOWING THE MAJOR ROADS OF JAJPUR DISTRICT



PREFACE

In compliance to the notification issued by the Ministry of Environment and Forest and Climate Change Notification no. S.O.3611 (E) New Delhi dated 25-07-2018, the preparation of district survey report of road metal/building stone mining has been prepared in accordance with Clause II of Appendix X of the notification. Every effort has been made to cover Sand mining locations, future potential areas and overview of road metal mining activities in the district with all its relevant features pertaining to geology and mineral wealth. This report will act as a compendium of available mineral resources, geological set up, environmental and ecological set up of the district and is based on data of various departments like Revenue, Water Resources, Forest, Geology and Mining in the district as well as statistical data uploaded by various state Government departments. The main purpose of preparation of District Survey Report is to identify the mineral resources and developing the mining activities along with other relevant data of the District.

1. INTRODUCTION

Jajpur District was formed by 'Jajati Keshari', the Somavanshi King in early 10th Century. The District takes its name from its head quarter town, Jajpur.

The history of Jajpur dates back to the prehistoric times. The name Jajpur itself a testimony to this. Some scholars attribute it to the word Yajnapura , while others opine that the name originated from Jajatipura Sasanas in Jajpur area. Jajati is also said to have made Jajatipur as his capital and renamed the city as Jajapura. King Jajati, it is said, had organized a great yajna called Daswamedha at this place. For this, he brought 10,000 Brahmins from North India and got them settled in various localities later on. Preceding this event, Jajpur finds mention in ancient Indian mythology texts and the Puranic literatures alike where it is referred to as Viraja and Baitarini Tirtha, one of the most important tirthas of India. The place has also been described in the Kapilasamhita, Brahmanda Purana, Vayu Purana, Brahma Purana, Tantrachintamani, Astapithamahatmaya and Chaitanya Charitamrita. The place holds great significance among the Hindus as it is considered to be one of the Sakti Pithas where the amputated corpse of Sati, the consort of Shiva, fell having been

chopped off by Lord Vishnu. Thus Jajpur is referred to as Parvati Tirth sometimes. Jajpur has also been mentioned in the Mahabharat where it is stated that, at the Viraja in the banks of Baitarani, the Pandava brothers had taken holy dip along with the saint Lomash. Historical anecdotes about the place can however be found only after 7th century A.D with the rise of the Bhaumkaras who ruled over Odisha with Guheswar Patak near Viraja as their Capital.

Earlier Jajpur was a breeding ground for both Buddhism and Jainism. Accounts from Hieun Tsang in 639 A.D. go on to prove the existence of Puspagiri Vihar in the precincts of Jajpur. Tantrayan sprang upon the decadence of Buddhism towards the 8th century. The Kubija Tantra describes Viraja as the Maheswari of Uddiyan.

A great revival of Brahmanism in India and Odisha happened with the emergence of the imperial Guptas. Royal houses encouraged Brahminism by getting Brahmins en masse from Banaras and other north Indian township and making them settled in their provinces. Accordingly Kings were known to perform yajnas to preserve their strength and reputation. In all probability Jajati Keshari also performed the Daswamedha yajna under Brahmanical on the banks of the Baitarani river. He is in fact known to have performed a series of different yajnas on the banks of the river.

Virajakshetra is triangular. In each corner we find a Siva temple at equal distance. These are Bileswar, Khiltateswar and Baruneswar. The first two temples have received land grants from king Anangabhimadeva, as is evident from Madalapanji. Beautiful ancient Buddhist and Jain images are found in the architectural programme of the temples. The Brahma Purana says that there were one less to one crore Sivalingas in Jajpur area, which indicates the religious importance of the place.

Much of the architectural pomp of the place was destroyed in later periods as Jajpur was subject to constant attacks by the Muslim invaders. It was witness to many politically significant battles. One of the battles that changed the course of Odisha history by transferring power to the Afghans was also fought near Jajpur at Gohira Tikiri between the reigning king Mukundadeva Harichandan and Ramachandra Bhanja.

Few people of Jajpur in Odisha know that the writer of the national song, Bankim Chandra Chatterjee was working as the Deputy Magistrate from 1882 to 1884 in Jajpur. Bankim worked as a deputy magistrate in Jajpur for about two years during

his three decade long stint as a deputy magistrate in Bengal and Odisha as during that period Odisha was under the Bengal province. Bankim Chandra joined as a deputy magistrate in 1859 and retired in 1891. Jajpur became a sub-division in 1859. The noted writer savoured the tranquility of the riverside in his official residence at Jajpur and penned 'Devi Chaudharani' based on a real story . It was published in 1884.

Earlier Jajpur was part of undivided Cuttack district. On 1st April 1993 it got its separate administrative identity. The district consists of 10 Blocks, 09 tahasils, 280 GPs, 4286 wards. Now Jajpur is poised as country's largest steel hub with many major units starting production and yet others are trying to find their place in its rich industrial scenario. Ever a land of fertile soil and rich mineral resources, Jajpur is also known as a melting pot of many religions, faiths and beliefs steadily holding in its rich mosaic the essence of fraternity and peace.

The District is bounded by Keonjhar and Bhadrak Districts on its North, Cuttack on its South, Dhenkanal District on its East and Kendrapada District on its West.

The Jajpur District located in between 20 degree 30' to 21 degree 10' North Latitude and 85 degree 40' to 86 degree 44' East Longitude. The District covering an area of 2887.69 sq km is moderately populated having total population of 18,26,275 as per 2011 census.

2. OVERVIEW OF MINING ACTIVITIES IN THE DISTRICT.

Minerals found in the district include iron ore, chromite, quartzite, pyroxenite apart from minor minerals like buildingstone, sand, laterite, morrum and brick earth.

The concessions granted within the district for different minerals/ores other than minor minerals are as below:

Name of ore/mineral	No of concessions	Tent Area covered in Ha
Chromite	14	4112
Quartzite,	3	20

Pyroxenite	1	10
Iron ore	1	1813
Total		5955

Other than the above mentioned minerals, minor minerals such as river sand, laterite slabs, building stone/black stone/road metals, morrum, brick earth etc. are also available in the district. Most of the building stone/black stone/road metals potentials are located in Dharmasala, and Sukinda Tahasils of the district. Others like laterite, morrum, sand and earth are distributed in almost all tahasils.

3. LIST OF LEASES WITH LOCATION, AREA AND PERIOD OF VALIDITY

Enclosed as Annexure I

4. DETAILS OF ROYALTY COLLECTED (Rs)

Sl.No.	Name Of Tahasil	2015-16	2016-17	2017-18	2018-19
1	Jajpur	0	6572350	11631300.00	9717125
2	Bari	192000	192000	192000	0
3	Vyasanagar	0	1066000	1189000	1216000
4	Binjharpur	0	236742	580212	568212
5	Dasarathpur	4480467	3811217	1204376	0
6	Danagadi	1166793	1645862	1884483	2405764
7	Rasulpur	174,600	186040	370475	697236
8	Darpan		1000000		
9	Dharmasala	37060500	37422370	37602287	38079662
10	Sukinda	0	0	0	0
	TOTAL	43074360	52132581	54654133	52683999

5. DETAILS OF PRODUCTION OF SAND (cum)

Sl.No.	Name Of Tahasil	2015-16	2016-17	2017-18	2018-19
1	Jajpur	0	22738	21523	33994
2	Bari	3000	3000	3000	0
3	Vyasanagar	27550	27655	27775	27902
4	Binjharpur	14800	14800	14800	14800
5	Dasarathpur	00	2350	4043	4143
6	Danagadi	118060	118195	118060	118195
7	Rasulpur	12353	12576.5	12754	13040.5
8	Darpan	35100	35010	34940	35030
9	Dharmasala	58524	59666	60673	61648
10	Sukinda	0	0	0	0

TOTAL	269387	295990.5	297568	308752.5
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6. PROCESS OF DEPOSIT OF SEDIMENTS IN THE RIVERS

The drainage of the district is mainly controlled by rivers like Brahmani, Kharasuhan, Birupa, Baitarani & Kelua. Being a coastal district the river basins are much wider and the sand sources are very much suitable for construction purposes. Being highest order of streams the energy of the streams is less and the suspensions including the river sand are deposited through sedimentation. Generally, it is observed that river sand gets deposited after high flood within the rivers.

7. GENERAL PROFILE

a. Administrative set up:

SI No	Item	Unit	Magnitude
1	Location		
	Longitude	Degree	85°40' to 86°44' East
	Latitude	Degree	20° 33' to 21°10' North
2	Geographical area	Sq.Km.	2899
3	Sub-division	Numbers	1
4	Tahasils	Numbers	10
5	C D Blocks	Numbers	10
6	Towns	Numbers	2
7	Municipalities	Numbers	2
8	NACs	Numbers	0
9	Police Stations	Numbers	21
10	Gram Panchayats	Numbers	311
11	Villages	Numbers	1783
	Inhabited	Numbers	1598
	Uninhabited	Numbers	185
12	Parliament constituencies	Numbers	21
13	Assembly constituencies	Numbers	147

b. Area and Population:

The district has an area of 2899 sq.kms and 18.27 lakhs of population as per 2011 census. The district accounts for 1.86 percent of the states territory and shares 4.35 percent of the state's population. The density of population of the district is 630 per sq. kms. as against 270 person per sq.km of the state. As per 2011 census the schedule caste population is 433387 (23.7%) and schedule tribe population 151432 (8.3%). The literacy percentage of the district covers 80.1 against 72.9 of the state.

c. Climate :

The climate condition of the district is generally hot with high humidity during April and May and cold during December and January The monsoon generally breaks during the month of July.

d. Economy:

The District of Jajpur being rich in mineral deposit and having skilled human resources there is huge potential for establishment of SMEs. This is the only sector next to agriculture which can provide maximum employment to the unemployed mass. In the decreasing trend to employment in Govt. and public sector under taking the only option left for our young mass is for establishment of self ventures. The state Govt.'s present policy of employment mission will be successful through SMEs mostly.

e. Industry:

No. of MSME units set up	Investment (In Rs. crores)	Employment Generated				Employment of women
		SC	ST	General	Total	
2240	13038.95	1112	148	4813	6073	933

Apart from these the heavy industries within the district are:

SI No	Name of the Industry	Location	Production Items	Capacity	Status
1	Nilachal Ispat Nigam Ltd	Kalingnagar	Pig iron	492000MT	Working

Sl No	Name of the Industry	Location	Production Items	Capacity	Status
2	Tata Steel Ltd	Duburi	steel	No Information	Working
3	Jindal Industries	Kalinganagar	Stainless Steel	1600000MT	Working
4	VISA Steel	Jakhapura	Mid steel	320000MT	Working
5	Rohit ferro tech ltd	Kalinga Nagar	Ferro Alloys	80,000MT	Working
6	K.J. Ispat Limited	Kalinganagar	Sponge iron	30000MT	Working
7	IDCOL ferrocrome	Jajpur Road	High carbon	18000MT	Working
8	Maithan Ispat Ltd	Kalinganagar	Sponge iron	740000MT	Working
9	MESCO	KHURUNTI	Pig Iron	600000MT	Working
10	Dinabandhu steel and Power	Kalinganagar	Steel	250000MT	Working

f. Agriculture:

During the year 2017-18, the net area sown was 124 thousand hectares against 5356 thousand hectares of the state. The production of paddy was 223.75 thousand MT, 0.20 thousand MT wheat, 5.06 thousand MT maize, 11.73 thousand MT mung, 7.31 thousand MT biri, 3.05 thousand MT kulthi, and 0.29 thousand MT til, 46.33 thousand MT groundnuts, 1.29 thousand MT mustard, 8.40 thousand MT potatoes, 7.57 thousand MT jute and 86.09 thousand MT sugarcane. During 2017-18, the total fertilizers used in Jajpur district is about 19420 MT with a breakage of 11011 MT nitrogenous, 4896 MT phosphatic and 3513 MT pottasic and the consumption of fertilizer per hectare is 90.36kg.

g. Power:

Consumption of electricity in Jajpur district during the year covers 82 million units per month and villages so far electrified as on 30.08.2019 is 1619 which constitutes almost 100% to the total villages of the district.

h. Transport & Communication:

Railway route length (14-15) km	131.66
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No of Rly stations and PH(14-15)	17
Forest road (17-18) km	42
National Highway (16-17) km	202.02
State Highway (17-18) km	31.447
Major district road (17-18) km	56.334
Other dist road (17-18) km	901.021
Rural road(17-18) km	14352.264
Inter village road (16-17) km	886.349
Intra village road (16-17) km	1471.24

i. Health:

The medical facilities are provided by different agencies like Govt., Private individuals and voluntary organizations in the district.

Govt. Allopathic medical institutions	75 No
Beds facilities	14 No
Homoeopathic dispensaries	20 No
Ayurvedic dispensaries	23 No

j. Tourist places:

There are 13 nos. of tourist center such as Ashokjhan, Baruneswarpitha, Chandikhol, Chhatia, Gokarnika, Jajpur, Kuransa, Mahavinayak, Patharajpur, Ratnagiri & Udayagiri, Satyapira, Singhapur and Vyasa Sarovar identified by department of Tourism and Culture, Odisha.

k. Forest areas:

Category of forest	Area in sq km
Reserve Forest	6.35
Unclassified Forest	0.01
Demarcated Protected Forest (DRF)	299.32
Undemarcated Protected Forest	0

Other forest under Revenue Dept	419.59
Total	725.27

I. Education:

Primary School (2017-18)	No. of Schools	1413
	Enrolment (No)	165963
	Pupil Teacher Ratio	21.05
Upper Primary School 2017-18	No. of Schools	992
	Enrolment (No)	92696
	Pupil Teacher Ratio	17.75
General College 2017-18	Junior	72
	Degree	44
Secondary School	No. of Schools	486
	Enrolment (No)	57511
	Pupil Teacher Ratio	25.53
Literacy Rate, 2011	Male	86.8
	Female	73.3
	Total	80.1

m. Culture & Heritage:

Once Jajpur District was a great centre of art and culture in ancient Odisha. This district is declared as a heritage district 'Biraja Khetra' is one of the ancient cities of Odisha rich in archaeological remains .It is reputed to be one of the important Tantra Khetras in the state. The ancient monuments like Biraja Temple, Lord Baraha Temple, Daswasamedhaghat, Jagannath Temple, Trilochaneswar Temple, Ratnagiri, and Udayagiri and so many other places of historical importance add tourist attraction. Jaipur is also known as Navigaya. People all over the state and neighboring state come here to offer SRADDHA on the Bank of River Baitarini.

A land of rich and diverse artistic achievement, Jajpur's art and culture are the product of a long historical process in which the spiritual, philosophical and the humane dimensions have merged to yield the finest effects of culture and civilized life.The cultural heritage of Jajpur is reflected in its vibrant Art forms.

The district has village tradition of painting, architectures, sculpture, and handicrafts. The Jajpur school of painting has three streams such as Jhoti, Chita and Muruja.

8. LAND UTILISATION PATTERN

SI No	Landuse	Area in '000Ha
1	Forest Area	72
2	Misc. trees & Grooves	4
3	Permanent Pasture	4
4	Culturable Waste	4
5	Land put to Non Agril Use	41
6	Barren & Unculturable Land	5
7	Current Fallow	21
8	Other Fallow	5
9	Net Area Sown	124
10	Mining	10
	Geographical Area	281

9. PHYSIOGRAPHY

Geologically the district can be broadly divided into four sectors. The northwestern and southwestern hilly areas comprise the meta-sediments of Gorumahisani Group and Eastern Ghat Supergroup with basic and ultramafic intrusions. The laterite covers the central and northwestern part of the district. The horizontally disposed Quaternary sediments occupy the southeast, east and northern part of the district. The Eastern Ghat Supergroup consists of quartz-feldspar-garnet-sillimanite \pm graphite schist/gneiss, garnetiferous quartzite, calcsilicate and charnockites. All these rocks have undergone intensive migmatization. The Gorumahisani Group comprises banded hematite/magnetite quartzite, banded hematite jasper, banded chert, quartzite, ferruginous shale, fuchsite quartzite, conglomerate, gritty quartzite, ortho quartzite. These are associated with metavolcanics, pyroxinite and chromiferous ultramafics. Granite and granophyres are intrusive into these rocks. The meta-sedimentaries and ultramafics have undergone intensive lateritization and the thickness varies from 5m to 15m. These rocks are overlain by Quaternary sediments of sub-recent to recent period. These sediments constitute transported laterite at the base, sandy clay with kankar, black clay and present flood plain deposits consisting of coarse to fine sand.

10. RAINFALL

The district is generally hot with high humidity during April and May and cold during December and January. The monsoon generally breaks during the month of July and continues till end of October. The temperature goes as high as up to 45°C in the summer and up to 7^o-8^o C during peak winter.

The rainfall statistics of the district for last four years is given below:

Year/ Month	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MARCH	TOTAL
15-16	96.40	74.60	186.60	495.50	142.40	146.60	30.10	0.20	10.90	-	31.90	11.40	1266.60
16-17	15.30	130.80	177.20	345.20	336.16	290.70	71.89	38.38	-	-	-	70.91	1504.58
17-18	2.55	86.73	189.45	227.46	249.26	135.67	250.12	74.29	15.79	-	-	-	1231.32
18-19	106.99	157.60	218.50	496.88	261.39	604.30	239.12	-	6.84	-	14.81	30.48	2136.19
AVG	53.31	112.43	192.93	391.37	264.05	294.29	147.80	28.36	8.38	-	12.43	28.91	1534.67

11. GEOLOGY AND MINERAL WEALTH

12. The meta-sediments of Eastern Ghat Supergroup have undergone polyphase deformation. The axis of first generation of folds is represented by NE-SW trend; the second generation is represented by NW-SE trend and the youngest one by the N-S trend. The axial planes of these folds are highly sheared and faulted. The Gorumahisani Group of meta-sediments has undergone three phases of deformation. The first and second generation of folds are co-axial and trend in N70°E-S70°W direction. The second generation of folds is of open type and plunges towards west. These folds are cross folded along N-S axis and are represented by broad warps.

13. STRATIGRAPHY:

14. The geological succession in the district is as follows:

Age	Supergroup	Group	Formation	Lithounit
Late Holocene			Brahmani	Fine Sand
Middle to Late Holocene			Bankigarh	Brownish Silty Clay (Upper Deltaic Facies) Black Clay (Lower Deltaic Facies)

Early Holocene to Late Pleistocene		Kaimundi	Clay with calcareous concretions
Early Pleistocene to Late Tertiary		Bolgarh	Laterite/ Latosol (Insitu)
Proterozoic		Intrusive	Granophyre Hornblende granite Basic lava Pyroxenite, Ultramafics Bonai granite Ortho quartzite Gritty quartzite Conglomerate Fuchsite quartzite/ andalusite quartz- schist / ferruginous shale Banded chert (q _{2c})/ BMQ, BHQ (q _{2h}), BHJ (q _{2j}) Quartzite
Archaean	Gorumahisani	Charnockite	Granetiferous granite and gneiss
	Eastern Ghat	Khondalite	Acid and intermediate charnockite Quartz-Feldspar-Garnet-Sillimanite ± Graphite Schist/ Gneiss Calc silicate

Minerals found within the district:

Chromite: Chromite deposits are located in the Sukinda Ultramafic complex around Bhimtangar, Kaliapani, Sukarangi, Saruabil and Surjang areas. The total reserve of chromite is estimated in the order of 164.24 million tonnes with 30% Cr₂O₃.

Nickel: Nickel ore is associated with chromite bodies within the Sukinda Ultramafic Complex and found around Kansa sector, Kamarda-Saruabil sector, Kaliapani sector and at Tisco sector. The total reserve of all grades (high + low) of Nickel ore is estimated in the order of 140 million tonnes.

Iron ore: Iron ore occurs at Daitari and Mahagiri hill ranges.

Platinum group of elements (PGE): The PGE occurs in dunite, peridotite and granite occurring in Sukinda valley area. The PGE values vary from 2ppb to 12ppb in these rocks and 50ppb in chromite and is relatively high, i.e. 60ppb to 500ppb in chromite horizons at places.

Red ochre: Small occurrences of red ochre are observed in Daitari hill ranges.

Plastic clay: The non swelling plastic clay occurs in north of Bhimtangar.

Soapstone: Small occurrences of soapstone are reported to the north of Brahmani River around 292m hill.

- Detail of river/stream/other sand source- Sand mining in the district is confined to rivers like Baitarani, Brahmani, Kharsuhan, Birupa and Kelua.
- Availability of sand or gravel or aggregate resources- sand- 45,63,250 cum (Please refer Annexure II), Gravel- Nil, Aggregate- Nil. This is the maximum volume of sand which can be quarried out from the sources of the district and has been calculated as 60% of the quantity derived by multiplying the area of the source with 3m thickness as the exact resource of sand is not possible to calculate due to the monsoon period.
- Detail of existing mining leases of sand and aggregates- For sand pl refer Annexure I. Aggregate- Nil

DRAINAGE SYSTEM AND DESCRIPTION OF SALIENT FEATURES OF MAIN RIVERS AND STREAMS-

The drainage of the district is mainly controlled by rivers like Brahmani, Kharasuhan, Birupa, Baitarani & Kelua. Detail of the river system is narrated below.

Sl. No.	Name of the river	Place of origin	Altitude at origin	Total length in the district (in km)	Area drained (Sq. Km)	% Area drained in the district	Process of deposition of sediments	Volume of sand deposited in last 4 yrs (Year-wise)				Any important note related to leasing of sand quarry within the river
								2015-16	2016-17	2017-18	2018-19	
A	B	C	D	E	F	G	H	I	J	K	L	M
1	Brahmani	Bedavyasa-Rourkela	22-14-45-N	68.5	28.4	30%	Flord water	45400 00 Cum	464 000 0	318 000 0	404 200 0	
2	Kharasuhan	Pankpal	20-82-12-N	26.5	12.34	30%	Flord wate	41100 0 Cum	412 000	330 000	357 000	
3	Kelua	Bedapur	20-76-41-N	20.1	8.04	12%	Flord Water	21100 0 Cum	212 000	182 000	210 000	

4	Birupa	Jobra	20-3-20-n	13.38	0.9	55	Flord Water	28000 Cum	300 00	286 00	385 00	
5	Tangigh ala	Hasinpu r	20-72- 57-N	28	1.94	40%	Flord Water	-	-	-	-	
6	Baitara ni	Gonasika	900 mts (3000 Ft)	78	13482	23%	Due to settlement of sand particulars	The volume of sand is not maser able				The sand quarrying close to the river bank at meandering to reach and where the river embakment is very close to the bank is not safe both for the river bank and embakment
7	Kharsuh an	Jokadia	-	45 km from NH-5 to Singhpu r	-	15%	Due to settlement of sand particulars	The volume of sand is not maser able				

SAND SAIRATS ALREADY LEASED OUT AND EXECUTED

Sl. No.	Name of Tahasil	River or stream and Name of Village & date of Registration of lease deed	Portion of the River or Stream leased for mineral concession (GPS co-ordinates or Khata & Plot No) (Sketch map to be attached)	Length of area leased for mineral concession (in km)	Average width of area leased for mineral concession (in km)	Area leased for mineral concession (in sq m)	Mineable mineral potential as per approved mining plan (in cum)
A	B	C	D	E	F	G	H
1	Jajpur	BUDHA RIVER SAND BED AT MALLIKA PUR	VILL-MAKLIKAPUR KHATA -407(AAA) PLOT -126 AREA12.50	0.75	0.06	45000	10000 cum
2	Jajpur	BUDHA RIVER SAND BED AT ADANGA PURASTAM PUR	VILL-PURASTAMPUR KHATA -993(AAA) PLOT -2057 AREA- AC4.58 PLOT -2058 AREA AC1.00 PLOT -1991 AREA AC9.12	0.31	0.17	52000	31375 cum
3	Jajpur	BUDHA RIVER SAND BED AT MALANDA PUR	VILL-MALANDAPUR PLOT -31 AREA12.50	0.36	0.14	50600	31890 cum
4	Jajpur	BUDHA RIVER SAND BED AT NATHASAH I	VILL-NATHASAH I KHATA NO-881 PLOT -240(P) AREA-AC1.00 PLOT -241(P) AREA-AC0.95	0.42	0.22	52000	34048 cum

			PLOT -242(P) AREA-AC1.00				
5	Jajpur	BUDHA RIVER SAND BED AT BHAGATPUR	VILL-BHAGATPUR KHATA NO-169 PLOT -48 AREA-AC1.85 PLOT -51 AREA-AC0.60 PLOT -50 AREA-AC1.90	0.16	0.11	17600	22062 cum
6	Jajpur	KHARASHROTA RIVER SAND BED AT KACHERIGAON	VILL-KACHERIGAON KHATA NO-929 PLOT -1472 PLOT -1473 PLOT -1474 PLOT -1475 TOTAL AREA-AC2.00	0.11	0.08	8090	18232 cum
7	Jajpur	Baitarani River Sand Bed at Devigada	Unit -II Khata No-23 Plot No- 15 (P) AC- 2.00	0.11	0.08	8090	8782 cum
8	Jajpur	Baitarani River Sand Bed at Ballavighat	Khata No-23 Plot No- 42 AC- 2.00	0.11	0.08	8090	13886 cum
9	Bari	Birupa River Sand, Batitanki	Khata No-99 Plot No. - 1	0.52 km	0.12 KM	52609	3000
10	Vyasanagar	River- Baitarani Village- Barapada	Khata No.226 Plot No.1023	0.485	0.104	0.05	100000
11	Vyasanagar	River- Baitarani Village- Sanla	Khata No.301 Plot No.2/2488 & 02	0.270	0.185	0.05	6424
12	Vyasanagar	River- Baitarani Village- Makundapur	Khata No.1029 Plot No.01	0.243	0.206	0.05	32500
13	Binjharpur	Kharasrota River	Khata - 753 (AAA)	0.462	0.123	50990.386	4400

		Sand At-Goudasahi, Binjharpur	Plot-3458 (P)				
14	Binjharpur	Kharasrota River Sand At-Sayedpur-I	Plot- 1744 (P) Khata -298 (AAA)	0.374	0.11	51799.757	4000
15	Binjharpur	Kharasrota River Sand At-Sayedpur- II	Khata -298 (AAA) Plot- 1743 (P)1744 (P)	0.572	0.066	54632.556	2400
16	Binjharpur	Kharasrota River Sand At- Ghantiali	Khata-386 (AAA) Plot-2316(P)	0.4	0.11	5585.6023	4000
17	Dasarathpur	Baitarani river sand bed Odei Udaypur 04.04.2016	Khata-422 Plot-152 A 2.44	1.3 k.m	0.09k.m	50569 sq.m	41037 cum
18	Dasarathpur	Baitarani river sand bed bamdevpur 03.01.2017	Khata-261 Plot-1 A2.50	0.41 k.m	0.08k.m	10110 sq.m	7094 cum
19	Dasarathpur	Baitarani river sand bed Hirapur 03.01.17	Khata-649 Plot-2256 Ac5.00	0.66 k.m	0.08k.m	20325 sq.m	543 cum
20	Danagadi	Brahmani River Pankapal (Sand quarry -I) 10/5/2015	Area:-18.00 Hect:-7.284 Kahta No.224 Plot No.1075(p) Plot No.1089(p)	0.364Km	0.2km	72800sq.m trs	36000cum
21	Danagadi	Brahmani River Pankapal (Sand quarry -II) 12/14/2016	Area:-15.00 Hect:-6.070 Kahta No.224 Plot No.1075(p)	0.3km	0.2km	60000sq.m trs	24570Cum
22	Danagadi	Brahmani River Digamberpur	Area:-Ac.18.00 Hect:-6.070	0.356km	0.205km	72980sqm	72300Cum

		(Sand quarry) 2/4/2017	Kahta No.5 Plot No.131(p)				
23	Rasulpur	River-Bramhani Village- Durgapurkud -I Reg. Dt- 10.02.2016	Khata No -256 Plot No - 354/1044 Area : Ac 12.50	0.5	0.01	50000	9968
24	Rasulpur	River-Bramhani Village- Durgapurkud -II Reg. Dt- 04.02.2017	Khata No -256 Plot No - 354/1044 Area : Ac 12.50	0.25	0.2	50000	14881
25	Rasulpur	River-Bramhani Village-Karajanga Reg. Dt- 29.04.2017	Khata No -324 Plot No - 1236 Area : Ac 12.50	0.25	0.2	50000	16450
26	Rasulpur	River-Bramhani Village- Badachapoi Reg. Dt- 04.05.2017	Khata No -402 Plot No - 21 Area : Ac 12.50	0.25	0.2	50000	9300
27	Rasulpur	River-Bramhani Village-Jabara Reg. Dt- 13.05.2019	Khata No -466 Plot No - 3236 Area : Ac 12.50	0.25	0.02	50000	10350
28	Rasulpur	River-Bramhani Village-Daneipur Reg. Dt-NIL	Khata No -189 Plot No - 1043 Area : Ac 12.50	0.405	0.125	50625	28905
29	Darpan, Dhanmandal	Birupa River Sand bed at Saudia	Khata No.1415(AJA), Plot No.4108, Plot No.4180, Area Ac.20.00dec., Kissam- Nadi	0.44	0.182	80200	

30	Dharmasala	Brahamani River send Marjitapur	Khata No-640 Plot No- 1(P) A 12.50	0.24	0.18	0.2249	18680
31	Dharmasala	Brahamani River send Brundadeipur	Khata No. 931 Plot No- 7(P) A12.50	0.26	0.2	0.2249	44610
32	Dharmasala	Brahamani RiverSand Jenapur	Khta No.864 Plot No- 2(P) A 12.50	0.27	0.21	0.2249	44230
33	Dharmasala	Brahamani River & Raichhanda	Khata No. 481 Plot No- 2 (P) Ac 20.00	0.37	0.25	0.2845	215484

ANNEXURE II

Potential of river sand in the district

Sl. No.	Name of Tahasil	River or stream	Portion of the River or Stream recommended for mineral concession (GPS co-ordinates or Khata & Plot No) (Sketch map to be attached)	Name of village	Length of area recommended for mineral concession (in km)	Average width of area recommended for mineral concession (in km)	Area recommended for mineral concession (in sq m)	Maximum Mineable sand (in cum) (60% of total potential)
A	B	C	D	E	F	G	H	I
1	Jajpur	BUDHA RIVER SAND BED AT-Kalindrabad	KHATA NO-509(AJA) PLOT NO-122 AC8.03 (P) AC.80 PLOT NO-110 AC4.00 (p) AC0.40,	KALINDRA BAD	0.2KM	0.2KM	4000	7200
2	Jajpur	BUDHA RIVER SAND AT-UASAHI	KHATA NO-385(AAA) PLOT NO-1 AC2.650/OAC0.95 PLOT NO-16 AC2.05 (P) AC1.05,	UASAHI	0.2KM	0.04	8000	12000
3	Jajpur	KHARASROTA RIVER SAND BED AT-MARKANDPUR	KHATA NO- 927 PLOT NO-3554 AC15.32(P)AC3.00	MARKAND APUR	0.3KMS	0.50MTRS	15000	18000
4	Jajpur	KHARASROTA RIVER SAND BED AT-BANDHAMUNDA	KHATA NO- 632 PLOT NO-2431 AC33.62(P)AC2.00	BANDHAM UNDA	0.2KM	0.04KM	80000	12000
5	Jajpur	BRAMHANI RIVER SAND BED AT-KAKUDIKUDA	KHATA NO-739(AJA) PLOT NO - 2	KAKUDIKUDA	0.02KM	0.005KM	1000	12000

		RIVER	AC59.37(P)AC2.00					
6	Jajpur	KHARASROTA RIVER SAND BED AT-JAGATPUR	KHATA NO-181(AJA) PLOT NO - 961 AC28.10(P)AC2.00	JAGATPUR	4.480KM	0.8KM	1250	1200
7	Jajpur	BAITARANI RIVER SAND BED AT-BALIPOKHARI	KHATA NO- 269 PLOT NO - 104 AC27.25(P)AC2.00	BALIPOKHARI	0.2KM	0.04KM	8000	1200
8	Jajpur	BAITARANI RIVER SAND BED AT-UNIT-2	KHATA NO- 23 PLOT NO - 2 AC8.025(P)AC2.30 PLOT NO - 10 AC10.00(P)AC2.60	UNIT-2	4.KM	0.098KM	19600	2940
9	Jajpur	BUDHA RIVER SAND BED AT-TIPARA	KHATA NO-116(AAA) PLOT NO - 25 AC31.40(P)AC2.00	TIPARA	0.2KM	0.04KM	8000	3600
10	Jajpur	KHARASROTA RIVER SAND BED AT-BASANTAPUR	KHATA NO-130(AAA) PLOT NO - 340 AC6.75(P)AC2.00	BASANTAPUR	0.2KM	0.1KM	20000	3600
11	Jajpur	KHARASROTA RIVER SAND BED AT-RISHIPUR	KHATA NO-735(AAA) PLOT NO - 1 AC21.35(P)AC2.00	RISHIPUR	0.25KM	0.1KM	25000	3600
12	Jajpur	BUDHA RIVER SAND BED AT-SIMIMIA	PLOT NO - 3150 AC13.70(P)AC2.00	SIMILIA (NOT FINAL)	0.2KM	0.05KM	10000	3600
13	Jajpur	BUDHA RIVER SAND BED AT-GOUDA SAHI GOBINDAPUR	PLOT NO - 702 AC7.65(P)AC2.00	GOUDA SAHI GOBIOND APUR (NOT FINAL)	0.2KM	0.05KM	10000	3600
14	Jajpur	KHARASROTA RIVER SAND BED AT-KACHERIGAON	KHATA NO-929 PLOT NO - 1474(P)AC0.20	KACHEIRIGAON	0.1KM	0.08KM	8000	14400

			PLOT NO - 1475(P)AC1.80					
15	Jajpur	KHARASROTA RIVER SAND BED AT-KALASPUR	KHATA NO-291 PLOT NO - 1028(P)AC2.00	KALASPUR	0.1KM	0.08KM	8000	14400
16	Jajpur	BUDHA RIVER SAND BED AT MALLIKA PUR	VILL-MAKLIKAPUR KHATA -407(AAA) PLOT -126 AREA12.50	MALLIKA PUR	0.75	0.06	45000	
17	Jajpur	BUDHA RIVER SAND BED AT ADANGA PURASTAM PUR	VILL- PURASTAMPUR KHATA -993(AAA) PLOT -2057 AREA- AC4.58 PLOT -2058 AREA AC1.00 PLOT -1991 AREA AC9.12	PURASTA M PUR	0.31	0.17	52000	
18	Jajpur	BUDHA RIVER SAND BED AT MALANDA PUR	VILL-MALANDAPUR PLOT -31 AREA12.50	MALAND A PUR	0.36	0.14	50600	
19	Jajpur	BUDHA RIVER SAND BED AT NATHASAH	VILL-NATHASAH KHATA NO-881 PLOT -240(P) AREA-AC1.00 PLOT -241(P) AREA-AC0.95 PLOT -242(P) AREA-AC1.00	NATHASA HI	0.42	0.22	52000	
20	Jajpur	BUDHA RIVER SAND BED AT BHAGATPUR	VILL-BHAGATPUR KHATA NO-169 PLOT -48 AREA-AC1.85 PLOT -51 AREA-AC0.60 PLOT -50 AREA-AC1.90	BHAGAT PUR	0.16	0.11	17600	

21	Jajpur	KHARASHROTA RIVER SAND BED AT KACHERIGAON	VILL- KACHERIGAON KHATA NO-929 PLOT -1472 PLOT -1473 PLOT -1474 PLOT -1475 TOTAL AREA- AC2.00	KACHERI GAON	0.11	0.08	8090	
22	Jajpur	Baitarani River Sand Bed at Devigada	Khata No-23 Plot No- 15 (P) AC- 2.00	Devigada	0.11	0.08	8090	
23	Jajpur	Baitarani River Sand Bed at Ballavighat	Khata No-23 Plot No- 42 AC- 2.00	Ballavighat	0.11	0.08	8090	
24	Bari	Brahmani River Sand	Khata No. 189 Plot No. 2141	Shupada	0.2 KM	0.04KM	8000 Sqm	4800 cum
25	Bari	Brahmani River Sand,	Khata No. 1373 Plot No. 905	Jampada	0.14 KM	0.05 KM	7000 Sqm	4200 cum
26	Bari	Brahmani River Sand,	Khata No. 1126 Plot No. 11	Kalakhand a	0.15 KM	0.08 KM	12000 Sqm	7200 cum
27	Bari	Brahmani River Sand	Khata No. 1373 Plot No. 14	Jampada	0.12 KM	0.075 KM	9000 Sqm	5400 cum
28	Bari	Kharasrota River Sand,	Khata No. 592 Plot No. 1	Madhusud anpur	0.22 KM	0.04 KM	8800 Sqm	5280 cum
29	Bari	Kharasrota River Sand,	Khata No. 358 Plot No. 1	Sundarpur	0.2 KM	0.1 KM	20000 Sqm	12000 cum
30	Bari	Kharasrota River Sand,	Khata No. 348 Plot No. 675	Dihabaring	0.125 KM	0.065 KM	8120 Sqm	4872 cum
31	Bari	Brahmani River Sand,	Khata No. 740 Plot No. 2868	Sarangpur	0.08 Km	0.04 Km	3200 Sqm	1920 cum
32	Bari	Brahmani River Sand, Jagannathpur	Khata No. 834 & 836 Plot No. 348, 409 &441	Jagannath pur	0.2 KM	0.06 KM	12000 Sqm	7200 cum
33	Bari	Brahmani River Sand,	Khata No. 484 Plot No. 172	Rampur	0.2 KM	0.07 Km	14000 Sqm	8400 cum

34	Bari	Brahmani River Sand	Khata No. 780 Plot No. 1	Seraur	0.25 Km	0.08 KM	20000 Sqm	4000 cum
35	Bari	Birupa River Sand, Batitanki	Khata No-99 Plot No. - 1	Batitanki			52609	3000
36	Bari	Brahmani River Sand bed at Ishanpur	Khata No-1479 Plot No-1121 Ac 7.15	Ishanpur	0.52	0.095	7.15	24000
37	Bari	Brahmani River Sand bed at Bhanra	Khata No-793 Plot No- 973 AC 13.45	Bhanra	0.67	0.08	13.45	1500
38	Bari	Brahmani River Sand bed at Anikana	Khata No-406 Plot No- 01 AC 10.50, Plot no 1041 Ac 2.04	Anikana	0.5	0.101 km	50600	
39	Sukinda	Pandara River Sand bed at Pandara	Khata No-114 Plot No-1 Ac 8.33	Pandara	0.6km	0.004km	0.024	60679
40	Vyasanagar	River- Baitarani	Khata No.221 Plot No.1055	Salaba	0.380	0.132	50000	90000
41	Vyasanagar	River- Baitarani	Khata No.1029 Plot No.3078	Makundapur	0.256	0.198	50000	90000
42	Vyasanagar	River- Baitarani	Khata No.301 Plot No.02	Sanla	0.595	0.840	50000	90000
43	Vyasanagar	River- Baitarani	Khata No.384 Plot No.1471	Ranapal	0.400	0.125	50000	90000
44	Vyasanagar	River- Baitarani Village- Barapada	Khata No.226 Plot No.1023	Barapada	0.485	0.104	0.05	
45	Vyasanagar	River- Baitarani Village- Sanla	Khata No.301 Plot No.2/2488 & 02	Sanla	0.270	0.185	0.05	
46	Vyasanagar	River- Baitarani Village- Makundapur	Khata No.1029 Plot No.01	Makundapur	0.243	0.206	0.05	
47	Darpan, Dhanmandal	Birupa River Sand bed at Ramdaspur	Khata No.1451 Plot No- 4980 Ac- 5.00	Ramdaspur	0.02km	0.01km	Ac 5.00	60000
48	Darpan,	Birupa River Sand	Khata No.1451	Ramdaspu	0.01km	0.01km	Ac 2.5	30000

	Dhanmandal	bed at Ramdaspur	Plot No- 4980 Ac 2.5	r				
49	Darpan, Dhanmandal	Birupa River Sand bed at Dekuri	Khata No.412 Plot No-1 Ac 7.0	Dekuri	0.02km	0.06km	Ac 7.0	21600
50	Darpan, Dhanmandal	Birupa River sand bed at Saudia	Khata No.1415(AJA), Plot No.4108, Plot No.4180, Area Ac.20.00dec., Kissam- Nadi	Saudia	0.44	0.128	802000	
51	Danagadi	Brahmani River Pankapal (Sand quarry –I) 10/5/2015	Area:-18.00 Hect:-7.284 Kahta No.224 Plot No.1075(p) Plot No.1089(p)	Pankapal	0.364Km	0.2km	72800sq.mtrs	36000cum
52	Danagadi	Brahmani River Pankapal (Sand quarry –II) 12/14/2016	Area:-15.00 Hect:-6.070 Kahta No.224 Plot No.1075(p)	Pankapal	0.3km	0.2km	60000sq.mtrs	24570Cum
53	Danagadi	Brahmani River Digamberpur (Sand quarry) 2/4/2017	Area:-Ac.18.00 Hect:-6.070 Kahta No.5 Plot No.131(p)	Digamberp ur	0.356km	0.205km	72980sqm	72300Cum
54	Dasarathpur	Baitarani river sand bed Duduranta	Khata-761 Plot-1 Ac1.50	Duduranta	0.31 k.m	0.075k.m	6000 sq.m	
55	Dasarathpur	Baitarani river sand bed Naranagochha	Khata-1856 Plot-4266 4265(p) Ac1.50	Naranagoc hha	0.31k.m	0.075k.m	6000 sq.m	
56	Dasarathpur	Baitarani river sand bed Katikata	Khata-506 Plot-220 Ac5.00	Katikata	0.66 k.m	0.08k.m	20325 sq.m	
57	Dasarathpur	Baitarani river	Khata-422 Plot-1	Udaypur	1.3 k.m	0.09k.m	50569 sq.m	

		sand bed Odei Udaypur	52		Ac12.44			
58	Dasarathpur	Baitarani river sand bed bamdevpur	Khata-261 Plot-1	Bamdevpu r	0.41 k.m A2.50	0.08k.m	10110 sq.m	
59	Binjharpur	Kharasrota River Sand At- Goudasahi, Binjharpur	Khata - 753 (AAA) Plot-3458 (P)	Goudasahi	0.462	0.123	50990.386	
60	Binjharpur	Kharasrota River Sand At- Sayedpur-I	Plot- 1744 (P) Khata -298 (AAA)	Sayedpur-I	0.374	0.11	51799.757	
61	Binjharpur	Kharasrota River Sand At- Sayedpur- II	Khata -298 (AAA) Plot- 1743 (P)1744 (P)	Sayedpur- II	0.572	0.066	54632.556	
62	Binjharpur	Kharasrota River Sand At- Ghantiali	Khata-386 (AAA) Plot-2316(P)	Ghantiali	0.4	0.11	5585.6023	
63	Binjharpur	Kharasrota River Sand At- Guhali	Khata- 473(AAA) Plot- 2470(P)	Guhali	0.528	0.88	5585.6023	
64	Binjharpur	Kharasrota River Sand At- Oleichandanpur	Khata -1799, Plot- 2790, 2791, 2819	Oleichanda npur	0.880	0.110		
65	Binjharpur	Kharasrota River Sand At- Jari	Khata – 2069, Plot – 3729, 4676	Jari	0.792	0.088		
66	Rasulpur	River-Bramhani Village- Durgapurkud -I Reg. Dt- 10.02.2016	Khata No -256 Plot No - 354/1044 Area : Ac 12.50	Durgapurk ud -I	0.5	0.01	50000	
67	Rasulpur	River-Bramhani Village- Durgapurkud -II Reg. Dt- 04.02.2017	Khata No -256 Plot No - 354/1044 Area : Ac 12.50	Durgapurk ud -II	0.25	0.2	50000	
68	Rasulpur	River-Bramhani Village- Karajanga Reg. Dt-	Khata No -324 Plot No - 1236 Area : Ac 12.50	Karajanga	0.25	0.2	50000	

		29.04.2017						
69	Rasulpur	River-Bramhani Village-Badachapoi Reg. Dt-04.05.2017	Khata No -402 Plot No - 21 Area : Ac 12.50	Badachapoi	0.25	0.2	50000	
70	Rasulpur	River-Bramhani Village-Jabara Reg. Dt-13.05.2019	Khata No -466 Plot No - 3236 Area : Ac 12.50	Jabara	0.25	0.02	50000	
71	Rasulpur	River-Bramhani Village-Daneipur Reg. Dt-NIL	Khata No -189 Plot No - 1043 Area : Ac 12.50	Daneipur	0.405	0.125	50625	
72	Rasulpur	Brahmani River	Khata No-202 Plot No-834 Ac 10.00	Manapur	0.15	0.15	0.267	
73	Rasulpur	Kharasrota River	Khata No-178 Plot No-400 Ac. 7.00	Sarifabad	0.2	0.2	0.14	
74	Rasulpur	River-Kharasrota	Khata No-329 Plot No-942 Ac. 5.00	Sanatrilochanpur	0.2	0.2	0.1	
75	Rasulpur	River-Bramhani	Khata No-378 Plot No-1443 Ac 15.00	Bhagatpur	0.3	0.3	0.2	
76	Rasulpur	River-Bramhani	Khata No-336 Plot No-1 Ac 14.00	Brahmanbad	0.28	0.28	0.2	
77	Rasulpur	River-Bramhani	Khata No-400 Plot No-884 Ac 15.00	Nuahat	0.3	0.3	0.2	
78	Rasulpur	River-Bramhani	Khata No-682 Plot No-2 Ac 10.00	Chandapur	0.2	0.2	0.2	
79	Rasulpur	River-Bramhani	Khata No-425 Plot No-3537 Ac 4.30	Brahmabarada	0.17	0.17	0.1	
80	Dharmasala	Brahmani River & Raichhanda	Khata No. 481 Plot No-2(P)	Raichhanda	0.37	0.25	0.2845	

MINERAL MAP OF JAJPUR DISTRICT

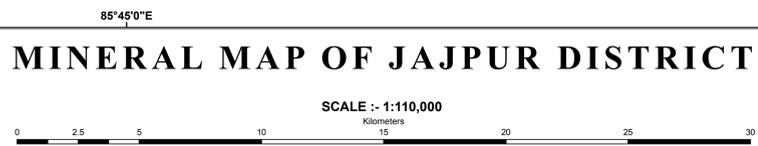
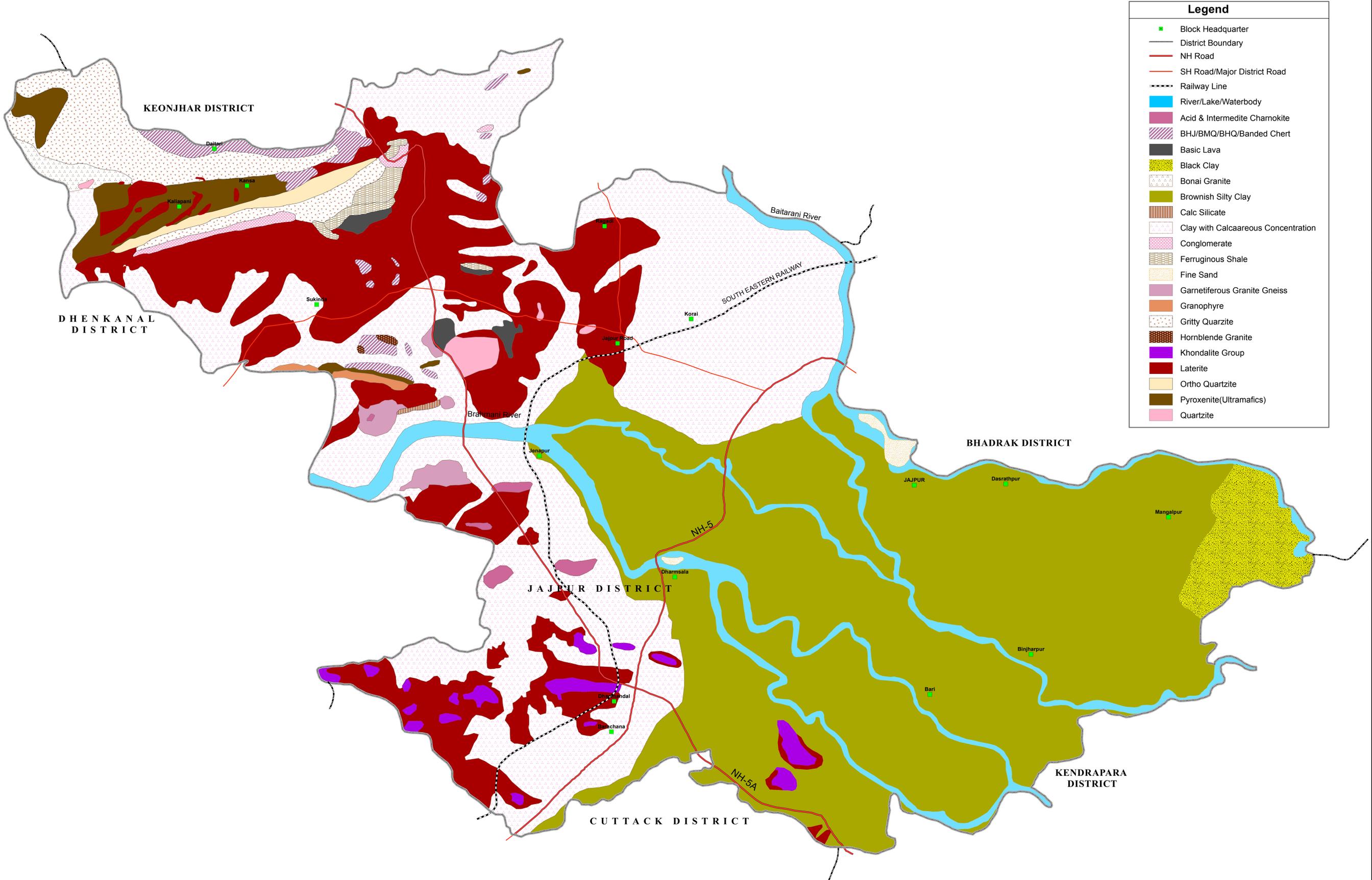


PLATE NO-4



Legend	
	Block Headquarter
	District Boundary
	NH Road
	SH Road/Major District Road
	Railway Line
	River/Lake/Waterbody
	Acid & Intermedite Charnokite
	BHJ/BMQ/BHQ/Banded Chert
	Basic Lava
	Black Clay
	Bonai Granite
	Brownish Silty Clay
	Calc Silicate
	Clay with Calcareous Concentration
	Conglomerate
	Ferruginous Shale
	Fine Sand
	Garnetiferous Granite Gneiss
	Granophyre
	Gritty Quartzite
	Hornblende Granite
	Khondalite Group
	Laterite
	Ortho Quartzite
	Pyroxenite(Ultramafics)
	Quartzite

21°00'N

21°00'N

20°45'N

20°45'N

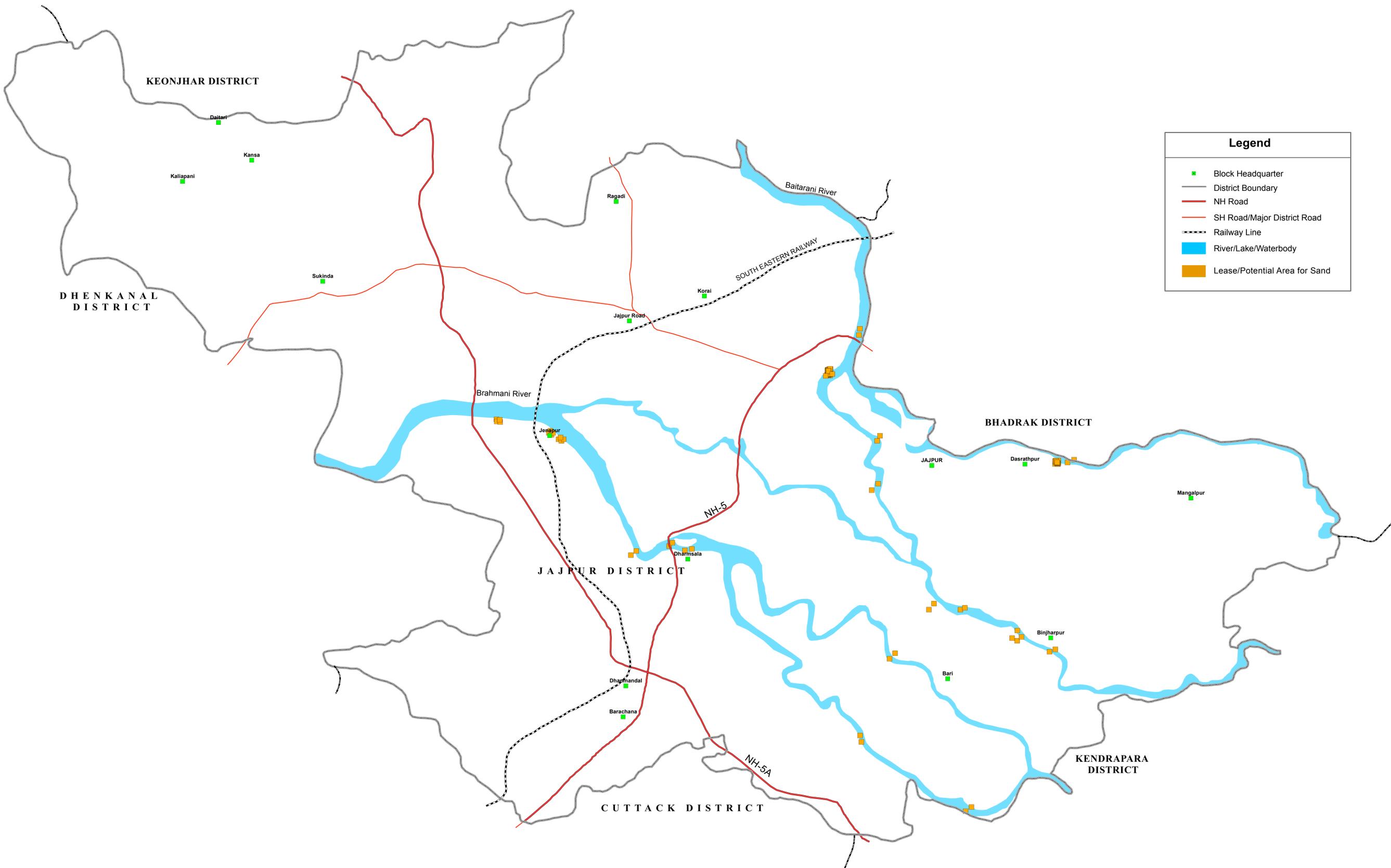
85°45'0"E 86°0'0"E 86°15'0"E 86°30'0"E

LEASE/POTENTIAL MAP OF SAND IN JAJPUR DISTRICT



PLATE NO-5

Legend	
	Block Headquarter
	District Boundary
	NH Road
	SH Road/Major District Road
	Railway Line
	River/Lake/Waterbody
	Lease/Potential Area for Sand



85°45'0"E

86°0'0"E

86°15'0"E

86°30'0"E

20°45'0"N

20°45'0"N

21°0'0"N

21°0'0"N

21°15'0"N

21°15'0"N