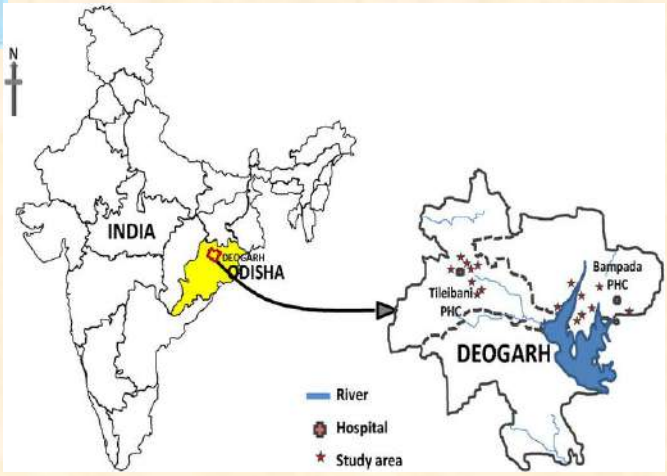
DISTRICT SURVEY REPORT(DSR)
OF
DEOGARH DISTRICT, ODISHA
FOR
RIVER SAND

(FOR PLANNING & EXPLOITATION OF MINOR MINERAL RESOURCES)



As per Notification No. S.O. 3611(E) New Delhi

dated 25th July 2018 of

Ministry of Environment, Forest & Climate Change

(MoEF & CC)

COLLECTORATE DEOGARH

CONTENT

PREAMBLE

In pursuance of MoEF & CC Notification S.O. 141(E) dated 15th Jan. 2016, District level Expert Appraisal Committee (DEAC) has been formed for Category –B2 Minor Minerals having area less than or equal to 5 ha. Prior to the formation of Odisha Minor Mineral Concession Rule 2004, (OMMCR -2004) the mining operation for minor mineral were carried out in unscientific manner. Identifying this fact in exercise of power, Conferred by Section 15 by Mines and Minerals (Development and Regulation) Act 1957 as amended in 2015 and all other powers enabling it in that behalf, the industry Mines & Geology Department, Govt. of Odisha framed the aforementioned rule, which has been amended with period of times in the year 2014, 2015 and 2016.

Keeping in view of experience gained in period of decade, the MoEF & CC came out with Environmental Impact Assessment Notification S.O.-1533(E) dated 14th Sept. 2006. It has been made mandatory to obtain environmental clearance for different kinds of development projects as listed in Scheduled -I of notification. Further, pursuance of the order of Hon' ble Supreme Court Petition (C) No. 19628- 19629 of 2009, dated 27th Feb. 2012 In the matter of Deepak Kumar etc., Vs State of Haryana and others etc., Prior Environmental Clearance has now become mandatory for mining of Minor Minerals irrespective of the area of Mining Lease. And also in view of the Hon' ble National Green Tribunal, order dated the 13th Jan. 2015 the matter regarding Sand, Road metal, & Burrowed Earth cutting for Road Construction has to take prior E.C. for Mining Lease irrespective of the fact that whether the area involved is more or less than 5 hectares. They also suggested to make a policy on E.C for minor minerals lease in cluster.

Subsequently, Hon'ble Supreme Court vide their order dt. 18.01.2022 in connection with Civil Appeal Nos. 3661-3662 of 2020, the State of Bihar and others Vrs- Pawan Kumar and others at Paragraph 14 " We therefore find it appropriate to substitute the directions issued by Tribunal vide judgment and order dated 14th October-2020 with the following directions,

(i). The exercise of preparation of DSR for the purpose of mining of the State of Bihar in all the Districts shall be under taken afresh. The Draft DSRs shall be prepared by the Sub-Divisional Committees consisting of the Sub-Divisional Magistrate, Officers from Irrigation Department, State Pollution Control Board or Committee, Forest Department, Geological or Mining Officer. The same shall be prepared by undertaking site visits and also using by modern technology. After the Draft DSRs are prepared the District Magistrate of the concerned District shall forward the same

for examination and evaluation by the SEAC. The same shall be examined by the SEAC and its report shall be forwarded to SEIAA. The SEIAA will thereafter consider the grant of approval such DSRs.

(ii). Needless to state that while preparing DSRs and appraisal thereof by SEAC and SEAII. It should be ensured that a strict adherence to the procedure and parameters laid down in the policy of January-2020 should be followed.

The District Survey Report will form the basis for application for Environmental Clearance, preparation of reports and appraisal of projects. District Survey Reports are to be reviewed once in every five years as per statue.

In lieu of above guideline and orders of Hon'ble Supreme Court and in compliance to the orders of Hon'ble NGT, EZ, Kolkata, in connection with O.A No. 63/2020, the Member Secretary, SEIAA, Bhubaneswar issued a Letter on 27th December, 2022 to Collector & District Magistrate, Deogarh with a direction " the DSR is to be signed afresh by the Collector and District Magistrate, along with members of the designated sub-committee consisting of Sub-Divisional Magistrate, and District Level Officers from Irrigation Department, State Pollution Control Board, Forest Department, Geology and /or Mining Department. Keeping in view of the orders of Hon'ble Supreme Court, Hon'ble NGT and directions of SEIAA, Bhubaneswar a fresh DSR has been prepared observing all formalities in the year,2023

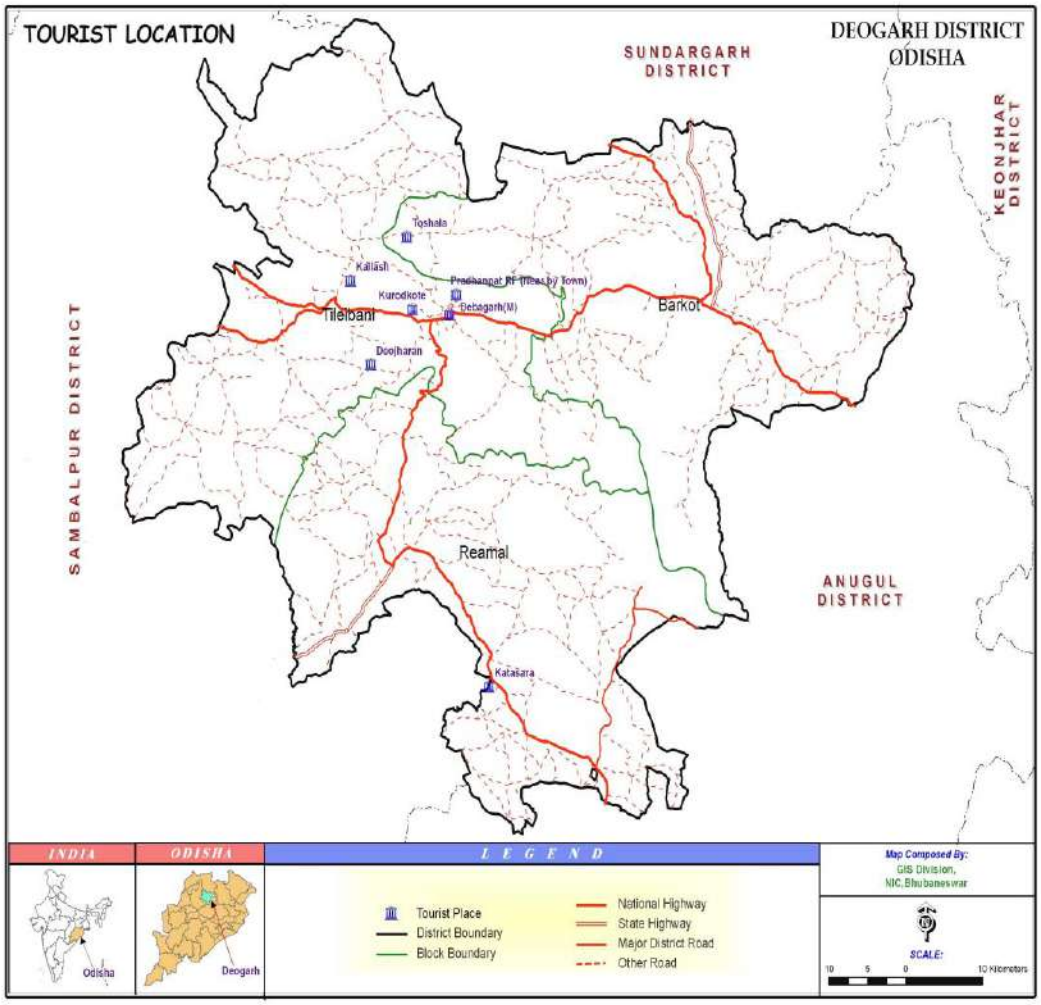
The Main objective of the preparation of District Survey Report is to ensure the following: -

1. Identification of Mineral Resources in the District.
2. Identification of areas of minor minerals having the potentiality where mining can be allowed.
3. Identification of area and proximity to infrastructure and installations where mining should be prohibited.

1.0 INTRODUCTION
Deogarh at a Glance:
1.1 Location and Geographical Area:

Deogarh District is an administrative District of Odisha state in Western India. The District is named after the town of Debagarh, which is the District headquarters. It came into existence on 1st January 1994. Its another name is Debagarh. This District is bounded by Sundargarh District on the north, Anugul District of Odisha in the east, Sambalpur District on the west. It is located at 21°.11' to 21°.43'N Latitude and 84°.28' to 85°.15'ELongitude. The Deogarh District covers an area of 6702 Sq.Km. with geographical area of 2, 94,000 Hect. The total population of the District is 3,12,164 with total male population as 1,58,017 and female population as 1,54,147.Total SC Population of the District is 42,117 whereas the total ST population is 92,103.Total OBC Population is 22,265. The Deogarh District has got two sub division namely Deogarh & Madhupur. There are 03 Tahasils and 03 blocks and 774 villages functioning in the District. One Municipality, One NAC, 05 Police stations, 70 Gram Panchayats are there in the Deogarh District. The climate of this District is generally hot and dry summer, moist winter and distributed rains during the South-West monsoon season. Winter season commences from late November and lasts until the end of February. Summer season lasts from mid-March to mid-June. The South West monsoon hits Deogarh district during mid-June and rains continue up to late September. The months of October and November constitute the post monsoon season followed by the harvesting period. The rainfall during June to October constitutes at least 86% Percent of the actual rainfall of this District. Agriculture is the main source of income of the District. Paddy is grown as the main crop in Kharif covering approximately 94 Percent of the total cultivable area. The district is also endowed with abundant water resources. Rivers like the Brahmani and Tikira and the reservoirs like Rengali and Gohira dams have immensely contributed to the livelihood of the people. Many people earn their livelihood through mining and quarrying by raising minor mineral and construction materials. As per District's economy is concerned Deogarh District does not have any large scale industries, the 18 small scale industries and 144 cottage industries based on forest produce and other available natural resources provide employment and livelihood to a large number of people. In Deogarh district, agriculture, horticulture and forestry have good potential of growth and development for providing a diversified livelihood pattern to the people. Government programmes are trying to strengthen these activities to make them sustainable sources of livelihoods. There are many historical places and monuments to visit in the Deogarh District. Sri Jagannath temple is famous for Jagannath, Balabhadra & Subhadra Temple. Baba

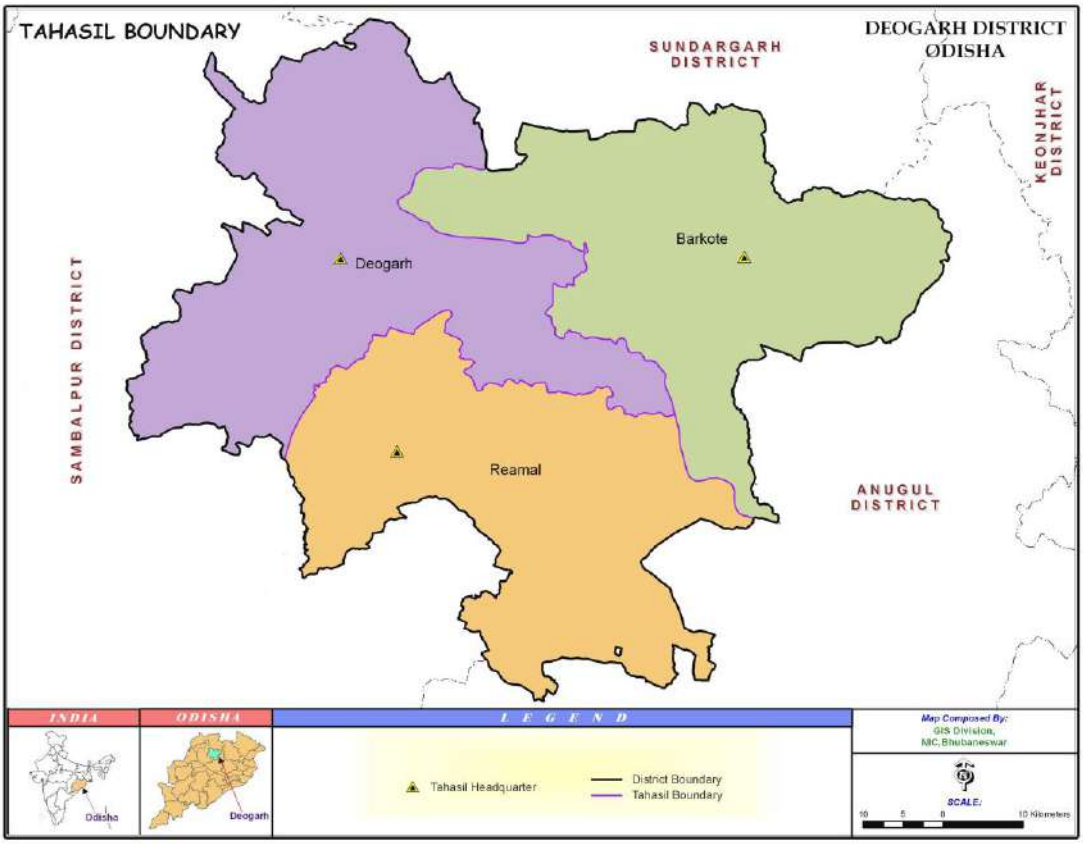
Jhadeswar shiv Temple is one of the most visited temples of Deogarh District. Kailash Palace mainly indicated the Historical landmark. Pradhanpat waterfall is the most popular waterfall present in this district.



(Tourist location Map Deogarh District)

1.2 Administrative Units:-

Deogarh is the administrative headquarter of Deogarh district. It is located at a distance of 247 km from Bhubaneswar, state capital of Odisha. It has 774 villages covering 03 Blocks, 03 Tahasils. The district is divided into 03 Blocks & Tehasils, namely i) Barkote N ii) Reamal iii) Tileibani. The population of the district 3, 12,144 according to the 2011 Census. As per provisional reports of Census India, population of Deogarh in 2011 is 3, 12,144; of which male and female are 1, 58,017 and 1, 54,147 respectively. Although Deogarh city has population of 3, 12,520; its urban / metropolitan population is 22,265 of which 11,564 are males and 10,826 are females.

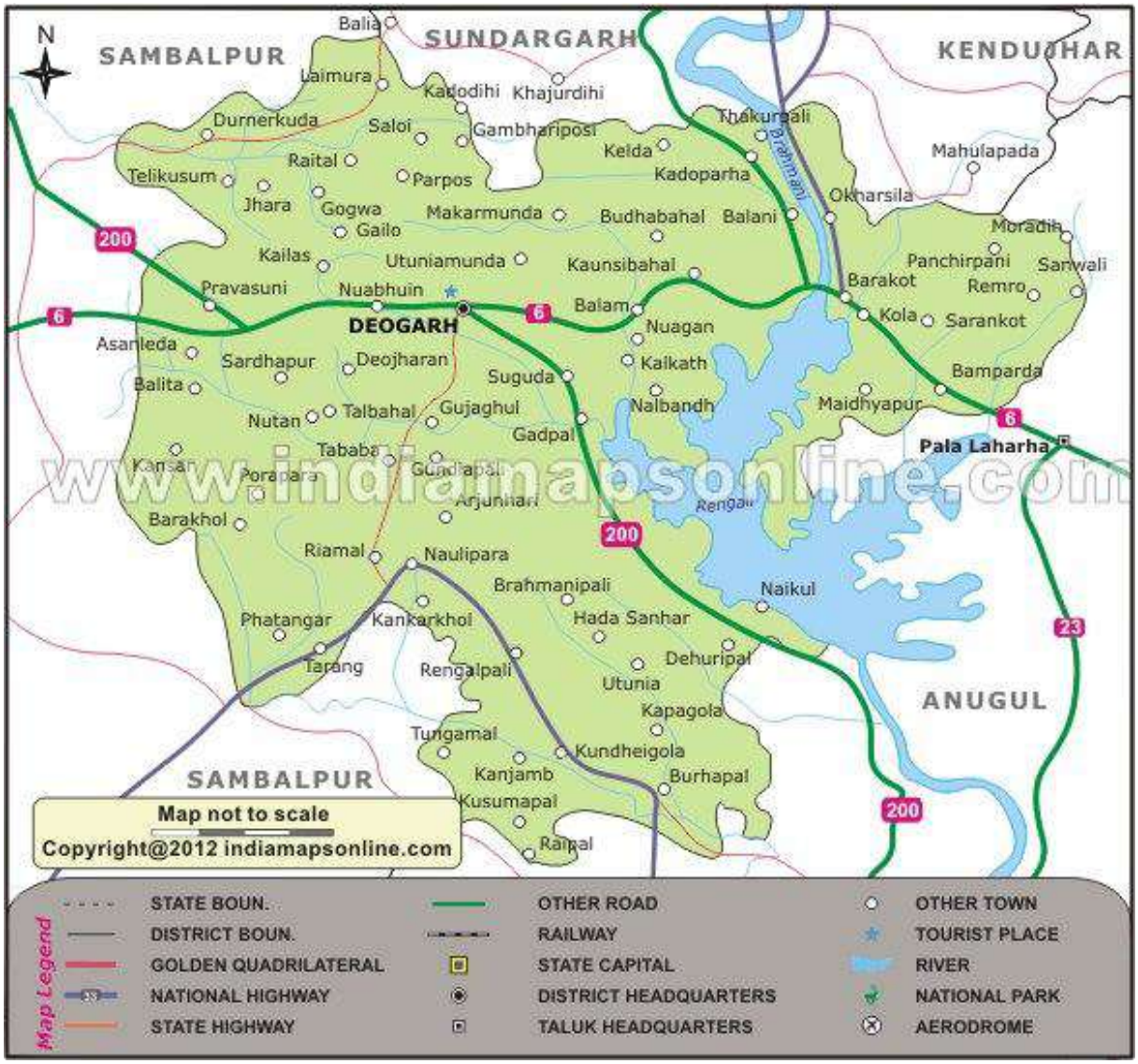


(Tahasil Boundary of Deogarh District)

1.3 Connectivity facilities:-

Road Network

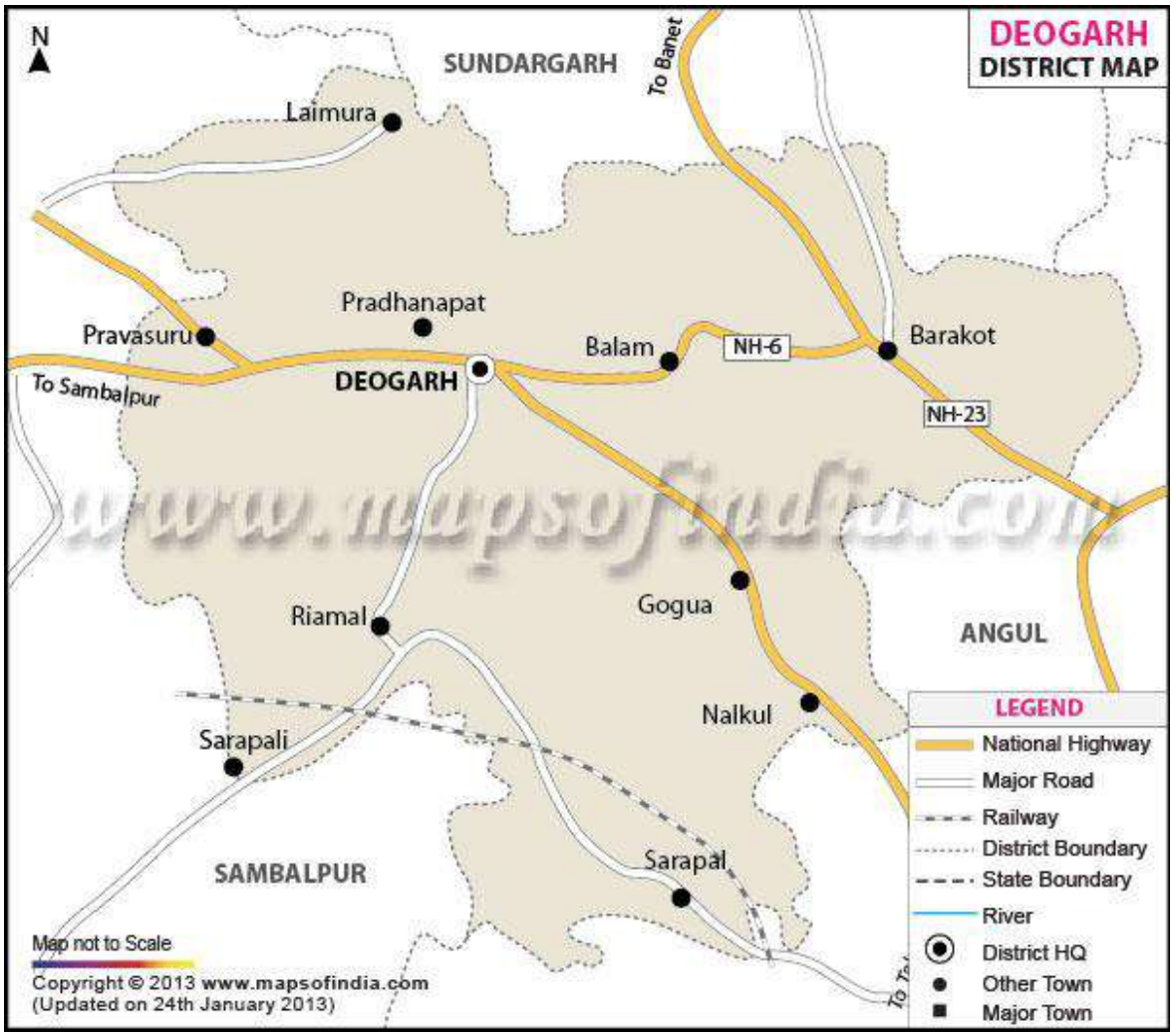
The district is well served by a network of good roads and has been called the motorists paradise. The chief roads emanating from Deogarh town are NH-49 and NH-53 passes the district. Deogarh is 252 Kms from Baripada, 344 Kms from Kharagpur, 268 Kms from Jamshedpur 227 Kms from Cuttack, 244Kms from Bhubaneswar. It is also connected with other cities such as Sambalpur, Sundargarh, Kendujhar, Bhubaneswar, Cuttack, Angul, and Kolkata via Odisha State Road Transport Corporation and some private travel services.



(Road connectivity map of Deogarh district)

Rail Network

Deogarh district is well connected by rail link to different places, Deogarh railway station is an important station on the Jharsuguda-Barkote main line of the North Eastern Railway. The distance to Kolkata is approximately 272km, while the distance to Bhubaneswar is about 260 km; the city of Deogarh is well connected to many places in India like Sundargarh, Sambalpur, Anugul, Kendujhar, Bhubaneswar and Cuttack.



(Rail Network map of Deogarh district)

Air Network

At present, Deogarh has no connection by airway. The site selection for aerodrome is presently under process. Nearest airport is Rourkela Airport, Rourkela, 135Kms from Deogarh. Netaji Subhas Chandra Bose International Airport in Kolkata is 272 Kms from Deogarh.

2.Overview of Mining Activities in the District:

Deogarh district is a transition land features of both coastal plain and hilly region. Most of the mining activity in the district is only restricted to minor minerals i.e. of sand, granite stone, and brick clays. Altogether there are leases have been granted to the district is regulated as per minerals concession rules of Odisha. No minerals in large quantity which can be explored in commercial purpose found in the district. This district is divided in to three zones according to its soil condition.1 Sandy Soil, 2 Loamy Soil & 3 Clay & Salty Soil. This district is naturally divided into two well-designed tracks.1 As per the agro climatic condition of the district the areas may be divided into four zones.

3.The List of Mining Leases in the District with locations, area and period of Validity

Table-1

Tahasil	Sl No	Name of the Quarry Lease	Village, Khata No, Plot No & Kisam	Latitude	Longitude	Total Area recommended for Mineral concession (in Sq. Meter/ Ha.)	Name of the Lesse with address despatch	Period of Lease		Captive /Non-Captive	Status of working or non working /Temp permit working for
								From	To		
1	2	3	4	5	6	7	8	9	10	11	12
Barkote											
Barkote	1	SINGURI SAND BED	KHATA NO :76, PLOT: 1158 KISSAM :NADI, MOUZA-SINGURI	N21°37"05.3"TO21°37’11.7"N	E84°59' 19.8" TO 84°59"24.3"E	2.023	Smita Ranjan Kar At-Singuri Tahasil-Barkote	01.07.2021	30.06.2026	Non-Captive	Running
Barkote	2	CHATIAPALI(SINGSHAL)SAND BED	VILLAGE-CHATIAPALI KHATA NO :31, PLOT: 82 KISSAM :NADI,	N21°37"37.29"TO21°37 46.26"N	E84°59' 29.79" TO 84°59"36.88"E	5	Sri Narottam Sahoo At-Jhimiripali Po- Dimiria PS- Pallahara Dist-Angul	12.03.2022	13.03.2027	Non-Captive	Running
Barkote	3	AMBAGAON-MASINITA SAND BED	KHATA NO :276,102, PLOT: 686,2 KISSAM :NADI, MOUZA-AMBAGAON-MASINITA	N21°39"37.81548"TO21°39’37.60344"N	E84°58' 47.87184" TO 84°58"44.40972"E	5	Bajrangi Construction At-Jagmara Bhubaneswar	Nil	Nil	Non-Captive	Not-Running(Auctioned)

Barkote	4	GURJUNGASAND BED	VILLAGE-GURJUNGA KHATANO :54, PLOT: 802 KISSAM :NADI, Mouza - Gurujanga	N21°40"28.53264"TO21°40 26.98500"N	E84°58' 14.12364" TO 84°58"15.08232"E	4.978	Urmila Builders Pvt.Ltd Prop-Sri Dillip Kumar jena At-Bhubaneswar,Dist-Khordha	Nil	Nil	Non-Captive	Not-Running(Auctioned)
Reamal											
Reamal	1	KUNDHEIGOLA(KHA) SAND QUARRY	VILLAGE-KUNDHEAIGOLA KHATANO:304, PLOT: 406(P),769/3226(P)/1 & 769/3226(P)/2),KISSAM :NADI	21°12'32.92"N TO 21°12'55.19"N,	84°47'36.89"E TO 84°48'02.08"E	4.997	Saroj Kumar Behera AT/PO- Derang PS-Kanhia Dist- Angul	03.10.2021	04.10.2026	Non-Captive	Running
Reamal	2	KARLAGA SAND QUARRY	KHATANO :202, PLOT: 2425(P) & 2455 (P) KISSAM :NADI,	21° 14' 14.86" TO 21 14 29.97" N	84° 52" 58.03" TO 84° 53 09.03" E	4.977	NIL	NIL	NIL	Non-Captive	Non-Working
Reamal	3	LOHARAKOTE SAND QUARRY	VILLAGE-LOHARAKOTE KHATANO :50, PLOT: 452(P), KISSAM :NADI,	21° 08' 50.2" TO 21° 08 59.45" N	84° 5459.02" TO 84° 55 20.3"	4.046	NIL	NIL	NIL	Non-Captive	Non-Working
Reamal	4	PARA SAND QUARRY	VILLAGE-PARA KHATANO :122, PLOT: 271(P), KISSA	21°10'01.34"N TO 21°10'12.11",	84°53'51.74"E TO 84°54'08.34"E	4.997	Soubhagya Chandra Jena AT/PO- Bajrakota PS-Rengali Dist-Angul	NIL	NIL	Running	Running

			M :NADI,								
Reamal	5	GADIAPAL SAND QUARRY	VILLAGE-GADIAPAL KHATA NO: 80, PLOT: 732(P), KISSAM :NADI,	N21° 10 21.56" - N21° 10 31.01"	E84° 51"38.61" - E84° 51' 49.40	4.997	Sabyasachi Balsamant Plot No-N19 Part A Sahid Nagar, Bhubaneswar	20.04.2023	19.04.2028	Non-Captive	Running
Reamal	6	SHAMAPALI SAND QUARRY	VILLAGE-SHAMAPALI KHATA NO: 22, PLOT: 346 KISSAM :NADI	N21° 15' 30.80" - N21° 15 41.23",	E84° 35'50.19" - E84° 36 13.64".	4.006	NIL	NIL	NIL	Non-Captive	Non-Working(Auctioned)
Reamal	7	KUNDHEIGOLA SAND QUARRY	VILLAGE-KUNDHEIGOLA KHATA NO :304, PLOT: 3150(P), KISSAM :NADI	21°11'53.33"N TO 21°12'06.74",	84°49'05.87"E TO 84°49'30.26"E	4.997	Anil Kumar Sahu VIP-26, Nayapalli, IRC Village,PO/PS-Nayapalli Bhubaneswar	03.02.2025	01.04.2027	Non-Captive	Running

4. Details of Royalty or Revenue received in last three years:-

Table-2 Year-wise Calculation of Royalty (Rs.) of River Sand

SL No.	Name of the Tahasil	Name of Source & location	Royalty Revenue in last three years (in Cum)			
			2021-22	2022-23	2023-24	Total amount in Rupees
A1	BARKOTE	SINGURI SAND BED	₹ 82,96,200.00	₹ 17,40,000.00	₹ 8,00,000.00	₹ 1,08,36,200.00
A2		CHATIAPALI(SINGSHAL) SAND BED	NIL	₹ 90,00,000.00	₹ 22,88,425.00	₹ 1,12,88,425.00
A3		AMBAGAON-MASINITA SAND BED	NIL	NIL	NIL	NIL
A4		GURJUNGASAND BED	NIL	NIL	NIL	NIL
B1	REAMAL	KUNDHEIGOLA(KHA) SAND QUARRY	NIL	₹ 3,00,000.00	NIL	₹ 3,00,000.00
B2		KARLAGA SAND QUARRY	NIL	NIL	NIL	NIL
B3		LOHARAKOTE SAND QUARRY	NIL	NIL	NIL	NIL
B4		PARA SAND QUARRY	NIL	₹ 15,10,000.00	NIL	₹ 15,10,000.00
B5		GADIAPAL SAND QUARRY	NIL	NIL	₹ 34,29,899.00	₹ 34,29,899.00
B6		SHAMAPALI SAND QUARRY	NIL	NIL	NIL	NIL
B7		KUNDHEIGOLA SAND QUARRY	NIL	₹ 51,30,000.00	₹ 38,02,049.00	₹ 89,32,049.00

5. Details of Production of Sand in last three years:-

Table-3 Year-wise Calculation of Production (cum.) of Sand

SL No.	Name of the Tahasil	Name of Source & location	Production in last three years (in Cum)			
			2021-22 MGQ	2022-23 MGQ	2023-24 MGQ	Total Quantity in CUM
A1	BARKOTE	SINGURI SAND BED	1000	500	14	1514
A2		CHATIAPALI(SINGSHAL)SAND BED	10,000	10,000	333	20,333

A3		AMBAGAON-MASINITA SAND BED	15000	15000	15000	45000
A4		GURJUNGASAND BED	20,000	20,000	20,000	60,000
B1	REAMAL	KUNDHEIGOLA(KHA) SAND QUARRY	NIL	4120	4200	8300
B2		KARLAGA SAND QUARRY	5000	5000	5000	15,000
B3		LOHARAKOTE SAND QUARRY	2000	2000	2000	6000
B4		PARA SAND QUARRY	2580	2580	NIL	5160
B5		GADIAPAL SAND QUARRY	6000	6000	6000	18000
B6		SHAMAPALI SAND QUARRY	NIL	NIL	NIL	NIL
B7		KUNDHEIGOLA SAND QUARRY	5000	5000	5000	15,000

6. Process of Deposition of Sediments in the rivers of the District:-

Table-4

Sl. No.	Name of the River	Financial Year	Process of Deposition of Sediments
Total Volume of Sand in three years			
1	Brahmani	2021-22	moderate
		2022-23	moderate
		2023-24	moderate
Total Volume of Sand in three years			
2	Tikira	2021-22	moderate
		2022-23	moderate
		2023-24	moderate
Total Volume of Sand in three years			
3	Hinjuli	2021-22	moderate
		2022-23	moderate
		2023-24	moderate
Total Volume of Sand in three years			
Grand Total			

Table-5

Sl No	Tahasil	Name of the river or stream	Name of the Quarry Lease	Area (in Sq. Meter/Ha.)	Replenishment Volume/Mineable Volume in Cum	Remarks
1	Barkote	Brahmani	SINGURI SAND BED	2.023	12886	Replenishment study report has been done
2	Barkote	Brahmani	CHATIAPALI(SINGSHAL)SAND BED	5.00	41018	Replenishment study report has been done
3	Barkote	Brahmani	AMBAGAON-MASINITA SAND BED	5.00	9000	Auctioned
4	Barkote	Brahmani	GURJUNGASAND BED	4.978	12000	Auctioned
5	Reamal	Tikira	KUNDHEIGOLA(KHA) SAND QUARRY	4.997	30230	Replenishment study report has been done
6	Reamal	Hinjuli	KARLAGA SAND QUARRY	4.977	23808	Non-Operational
7	Reamal	Tikira	LOHARAKOTE SAND QUARRY	4.046	26170	Non-Operational
8	Reamal	Tikira	PARA SAND QUARRY	4.997	40499	Replenishment study report has been done
9	Reamal	Tikira	GADIAPAL SAND QUARRY	4.997	58890	Replenishment study report has been done
10	Reamal	Tikira	SHAMAPALI SAND QUARRY	4.006	26305	Auctioned
11	Reamal	Tikira	KUNDHEIGOLA SAND QUARRY	4.997	42352	Replenishment study report has been done

7.0 GENERAL PROFILE OF THE DISTRICT:

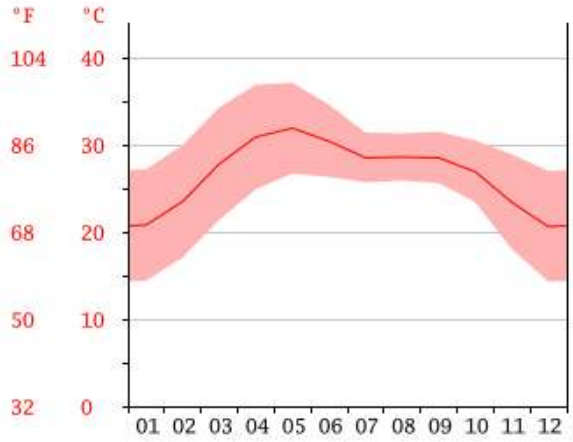
7.1 Demography:

Table-6

Census - 2011	
Geographical Area	2,94,000 Sq. Km.
Total population	3,12,164
Male Population	1,58,017
Female Population	1,54,147
Male Literacy	81.92
Female Literacy	63.05
Rural Population	2,89,899
Urban Population	22,265
Schedule Cast Male	26,343
Schedule Cast Female	25,769
Schedule Tribe Male	55,126
Schedule Tribe Female	55,274

7.2 Climate:

Deogarh district experiences tropical monsoon climate with three distinct seasons during the year, namely, oppressive hot summer, moderate winter, high humidity and well distributed monsoonic rainfall. Winter commencing from last week of November till February with maximum temperature of 30.5°C and minimum temperature of 15.5°C. March to June is the summer season with mean maximum temperature of 40.5°C and mean minimum temperature of 24.4°C. Average annual rainfall during the last four years (2012-2015) of the district is 1362.75 millimeters. Minimum average annual rainfall of 655 mm was observed at Barkote block during the year 2013 and maximum rainfall amount 1656.2 mm was observed at Tileibani block during the year 2012. Average annual rainfall in all the 3 (three) district during last four years were below district annual normal rainfall.



8.0 LAND UTILIZATION PATTERN IN THE DISTRICT:

8.1 Forest and Non-Forest Land

The forest of this division of Deogarh district covers almost pure mangrove forest and its few associates. The important species present including plantations are Avicennia alba, Ipomoea pes-carpae, Canavalia maritime, Hydrophlyx maritime, Sesuvium portulacastrum, Cascuta reflexa, Avicennia marina, Avicennia officinalis, Sonneratia alba, Sueda maritime, Sesuvium portulacastrum, Casuarina equistifolium, Azadirachata indica, Pongamia pinnata, Opuntia stricta, Ficus bengalensis, Calotropis gigantia, Ziziphus oenoplia, Acacia auriculiformis, Tamarindus indica, Borassus flabellifer, Sueda nudiflora, Vernonia cinera, Tylophora tenuissima, Ipomoea tuba etc. A wide range of carnivorous & herbivorous wild animals also available in this forest. The district has no Wildlife Sanctuaries. The mangroves support rich marine life including crabs, prawns, mudskippers and variety of fishes which form the base of biological pyramid. Besides, mangrove sustains a wide range of reptiles like water monitor lizards, pythons, king cobras, kraits, other snakes and mammals such as fishing cat, mongoose, otter etc. The mangrove wetland serve as a potential habitat for variety species of birds. Apart from that, the rivers like Baitarani, Mantei and Salandi supports fauna like crocodiles.

Table-7

District-wise Forest Cover Area in Odisha (Area in Km^2)

2023 Assessment								
District	Geographical	Very	Open	Mod.	Total	Percentof	Change	Scrub
Angul	6,375	371.01	1,031.62	1,380.00	2,782.63	43.65	27.63	84.18
Bolangir	6,575	70.00	841.26	224.00	1,135.26	36.64	4.26	143.16
Balasore	3,806	23.00	226.18	133.38	382.56	5.82	2.56	46.59
Bargarh	5,873	175.01	501.31	374.14	1,050.46	27.60	19.46	40.57
Bouda	3,098	262.911	465.99	562.04	1,290.94	51.53	1.94	57.39
Bhadrak	2,505	0.00	69.30	8.70	78.00	1.34	3.00	0.00
Cuttack	3,932	53.00	525.38	226.00	804.38	20.46	8.38	67.80
Deogarh	2,940	191.00	618.75	667.41	1,477.16	50.23	5.16	14.08
Dhenkanal	4,452	173.99	851.24	420.38	1,445.61	32.47	28.61	83.88
Gajapati	4,325	84.16	947.12	1,490.09	2,521.37	58.30	1.37	262.88
Ganjam	8,206	164.39	866.69	1,074.32	2,105.40	25.66	2.40	655.000
Jagatsinghpur	1,668	0.00	131.64	4.64	136.28	8.17	0.28	0.00
Jajpur	2,899	6.00	228.09	71.99	306.08	10.56	3.08	49.78
Jharsugada	2,114	3.00	155.82	173.82	332.64	15.74	10.64	29.21
Kalahandi	7,920	361.64	1,323.97	734.19	2,419.80	30.55	1.80	371.69
Kandhamal	8,021	660.95	2,143.53	2,593.23	5,397.71	65.01	5.71	285.51
Kendrapada	2,644	83.40	139.36	88.54	311.30	3.88	6.30	1.99
Keonjhar	8,303	288.78	1,513.31	1,420.07	3,222.16	121.87	10.16	53.24
Khorda	2,813	21.00	260.09	186.00	467.09	16.60	10.09	90.47
Koraput	8,807	94.48	1,263.38	740.41	2,098.27	23.83	9.27	947.86
Malkangiri	5,791	158.00	1,465.41	712.76	2,336.17	40.34	5.83	45.90
Mayurbhanj	10,418	1,334.95	1,041.98	1,717.24	4,094.17	39.30	14.17	37.57
Nabarangpur	5,291	172.63	527.08	447.04	1,146.75	29.48	43.75	48.62
Nayagarh	3,890	189.00	559.75	965.00	1,713.75	44.49	3.75	171.36
Nuapada	3,852	86.01	706.76	481.69	1,274.46	24.09	1.46	108.82
Puri	3,479	0.00	165.36	59.73	225.09	6.47	11.09	10.79
Rayagada	7,073	419.54	1,873.55	853.42	3,146.51	44.49	20.51	359.9
Sambalpur	6,624	498.99	1,096.98	1,696.32	3,292.29	49.70	12,29	40.55
Subarnapur	2,337	2.00	161.85	187.00	350.85	15.01	0.85	29.22
Sundargarh	9,712	1,020.87	1,394.12	1,858.38	4,273.37	44.00	9.37	88.89
Grand Total	**1,55,707**	**6,969.71**	**23,096.87**	**21,551.93**	**51,618.51**	**33.15**	**273.51**	**4,326.91**

The very less portion of the district is covered by forest (50.07 % of TGA) and has scattered settlement pattern .The forest is full of variety of medicinal plants, kendu leaves, bamboo, sal, teak and other timber species .The district has considerable flat land, which provide

suitable site for agricultural use .The hilly areas are mostly under forest with patches of cultivation on scarp areas .Major crops grown in the district are rice and pulses.

Table-8

Tahasil	Forest Area	Misc Tree	Permanent Pasture	Cultivated waste	Non Agricultural uses	Barren land	Current Fallow	Other Fallow	Net area shown
Barkote	19456	195	1053	1979	3338	6566	1593	0	20925
Reamal	30331	286	2372	1703	3559	11056	258	0	24200
Tileibani	22330	185	1568	3906	2993	7621	2212	0	21825
Total	72117	666	4993	7588	9890	25243	4063	0	66950

8.2 Mining Land: Deogarh district in Odisha is not particularly rich in mineral resources compared to some other districts in the state like Keonjhar, Sundargarh, or Angul. However, it does have some limited and localized mineral occurrences that support certain industries and local needs. Sand and Clay (Most Abundant) River sand from the Brahmani, Tikira,Hinjuli rivers is extensively used in construction. Clay deposits are found in several areas, useful for making bricks and pottery. Laterite and morrum are found in small patches, primarily used for road construction and embankments. Gravel and stone chips are quarried in limited quantities for local infrastructure work.

8.3 Agriculture Land:

The primary objective of Agriculture Department is increase of production as well as productivity of major crops like paddy, groundnut, mustard, Mung, Biri & vegetables which is widely covered in this District in both Kharif & Rabi season. Another key objective is the all round development of the farming community of the District. At present the district has one Deputy Director, 2 District Agriculture Officers (DAO) and 119VAWs to implement to supervise agricultural programme of the district. Before at became a separate district, Deogarh was an agricultural district since 2010. A Krushi Vigan Kendra has been established in this district since 2004 for taking farm testing, demonstration and production of quality seeds and awareness program. Rice is the principal crop grown in this district, followed by other cereals, pulses, oilseeds, vegetables, spices and sugarcane. The agricultural statistics for the district is shown in subsequent tables below:

Table-9

Sl.No	Agricultural land use	Area ('000 ha)	Cropping intensity %
1	Net sown area	62	175
2	Area sown more than once	46.53	
3	Gross cropped area	108.53	

8.4 Horticulture Land – Deogarh District, Odisha

The primary objective of Horticulture Department to increase the production as well as productivity of major fruits like Mango, Guava, Citrus etc. which is widely covered in this District. Another key objective is the all round development of the farming community of the District. The Deputy Director of Horticulture is the head of office. The horticulture statistics for the district is shown in subsequent tables below:

Table-10

Horticulture crops-Fruits	Total Area (hectares)
Mango	2.41
Litchi	0.61
Sweet orange	0.42
Banana	0.24
Guava	0.10
Papaya	0.03
Sapota	0.03

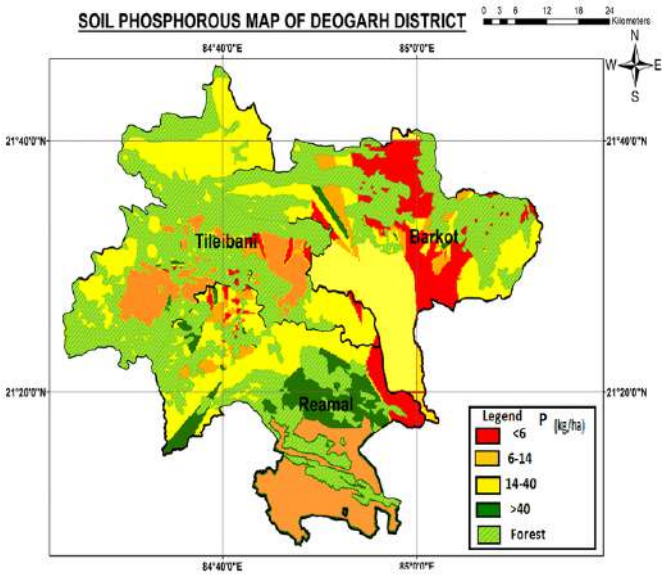
Horticulture crops-Vegetables	Total Area (hectares)
Onion	0.58
Chilli	1.69
Sweet potato	0.67
Potato	0.31
Vegetables	7.07
Water melon	0.35

Horticulture crops-Flowers	Total Area (hectares)
Marigold	35.0
Rose	25.0
Gladioli	30.0
Tuberose	9.0

9. Physiography of the District;

The District of Deogarh is having unique physiographic setup. It is bounded by Sundargarh District on the north, Sambalpur District on the west & Anugul District on the east part it is marked by a set of hillocks and mounds. In the northern part of district east – west trending Khajuria hill range is ther in Badbar area attaining a maximum height of 745 meters above mean sea level and Pradhanpat & Kaidanta hill ranges having maximum heights of 743 and 816 meters above mean sea level. In the eastern side of Brahmani river Pawri hill range with a maximum height of 678 meters above mean sea level.

The Ushakothhi and Kansar hill ranges with elevations of 610 and 762 meters above mean sea levels. Weathered and fractured zones in granite gneiss rocks of Khondalites and Charnockites constitute pheartic and confined aquifers respectively. Hydrogeological characteristics wise wells sited in favourable locations in weathered residium and fractured zones of granite gneiss rocks yield from 2 to 25 liters per second specific capacity of vary from 6 to 286 lpm/meter. Charnockitic rocks are rather less weathered and bear poor prospects for ground water development barring in highly fractured and joined zones giving rise to secondary porosity. Semi consolidated lower gondwana sandstones occurring in small patch in southern parts of district have limited yield with depth to water level ranging from 3 to 10 mbgl. Laterite and alluvium of quaternary to recent age also occur in very limited extent forming shallow aquifers tapped mostly through dugwells.



(Physiography map of Deogarh district)

10. Rainfall of the district;

10.1 Month wise rainfall

Rainfall variation is more important for assessing need for irrigation. Majority of the annual rainfall in Deogarh district is caused mainly from south western monsoon, occurring mostly during middle of june to September months. About 2 to 5% of rainfall is also contributed by winter showers occurring in the months of December to February. Average annual rainfall of the district is 1,014.2 millimeters. Whenever the rain fall is less, drought or drought-like situation is created in rain-fed areas thereby causing loss of crops and fall in production. The annual rainfall for all 3 blocks in the years 2021 to 2024 is given in the below table.

Average rainfall (in mm)

Table-11

Block	Annual Rainfall (in mm.)				
	2020-2021	2021-2022	2022-2023	2023-2024	4 Year average
Barkote	1476.8	1651.7	655.2	1095.8	1219.9
Tileibani	1351.5	1567.3	1109.5	1656.2	1421.1
Reamal	1437.0	1531.6	1414.0	1406.4	1447.3
Grand Total	4265.3	4750.6	3178.7	4158.4	00
Monthly Avg.	118.5	132.0	88.3	115.5	113.6
Annual Avg.	1421.8	1583.5	1059.6	1386.1	1362.8

The Data inputted as per Special relief Commissioner Website.

11. Geology and Minerals Wealth of District: -

11.1 Regional Geology:

Odisha is one of the 28 states in the Republic of India. Odisha is located in the eastern part of the Indian peninsula and the Bay of Bengal lies to its East while Chhattisgarh shares its border in the west and north-west. The state also shares geographic boundaries with West Bengal in the north-east, Jharkhand in the north and Andhra Pradesh in the south. The western and northern portions of the state are part of the ChotaNagpur plateau. The coasts composed of fertile alluvial plains and the valleys of the Mahanadi, Brahmani, and Baitarani rivers, which empty into the Bay of Bengal. The coastal tract of Orissa is underlain by the Tertiary and Quaternary Formations. Weathered and fractured zones in

granite gneiss rocks of Khondalites and Charnockites constitute pheartic and confined aquifers respectively. Hydrogeological characteristics wise wells sited in favourable locations in weathered residium and fractured zones of granite gneiss rocks yield from 2 to 25 liters per second specific capacity of vary from 6 to 286 lpm/meter. Charnockitic rocks are rather less weathered and bear poor prospects for ground water development barring in highly fractured and joined zones giving rise to secondary porosity. Semi consolidated lower gondwana sandstones occurring in small patch in southern parts of district have limited yield with depth to water level ranging from 3 to 10 mbgl. Laterite and alluvium of quaternary to recent age also occur in very limited extent forming shallow aquifers tapped mostly through dugwells. Granitic gneiss, Quartzite, Syenite, Nepheline-syenite. Deogarh is a unique district in Odisha with varied geology, of these the Tertiaries are least exposed on the surface, whereas the Quaternaries are extensively developed along the coast and further inland. The Pre-Cambrian crystallines occur as hills and mounds in the west just outside the present area. Exploratory drilling reveals that in the subsurface the warped Pre-Cambrian basement is overlain by Miocene marine sediments, Mio- Pliocene estuarine sediments, laterites and alluvium. The Mio-Pliocene sediments and alluvial sections contain the principal ground water reservoirs. The marine sediments are dominantly composed of finer elastics and non-clastics (Bhatnagar et al, 1970). Lithology refers to an individual rock type, which is a basic geologic unit. The role of lithology in groundwater studies needs no emphasis. In the unconsolidated/semi consolidated sediments and some rocks which have primary porosity and permeability, the lithology exercises major control on the ground water regime. Under favourable morphologic and recharge condition they form very good aquifers. Remote sensing provides the basis for discrimination and differentiation of rock types. Though, direct identification is limited to a few contrasting rock types, many of the rocks can be discriminated based on their spectral and morphological characteristics. Once rock types are identified, their physical continuity of individual rock units could be easily traced and the exact shape, size and geometry can be identified and mapped more accurately by using satellite imagery. According to lithologic unit some other types of rock are Biotite-granite gneiss, Charnockite, Khondalite, Sandstone, Conglomerate.

11.2. Geomorphology

Deogarh is a predominantly hilly and undulating district created form bifurcation of Sambalpur district in the year 1994.It is situated in western portion of Orrisa. The District of Deogarh is having unique physiographic setup. It is bounded by Sundargarh District on the north, Sambalpur District on the west & Angul District on the east part it is marked by a set of hillocks and mounds. Deogarh district in Odisha is characterized by a hilly terrain with four main ranges: Khajuria, Pradhanpat, Kaidanta, and Pawri, with elevations ranging from 610 to 816 meters above sea level. In the northern part of district east – west trending Khajuria hill range is ther in Badbar area attaining a maximum height of 745 meters above mean sea level and Pradhanpat & Kaidanta hill ranges having maximum heights of 743 and 816 meters above mean sea level. In the eastern side of Brahmani river Pawri hill range with a maximum height of 678 meters above mean sea level.

The Ushakothhi and Kansar hill ranges with elevations of 610 and 762 meters above mean sea levels. Weathered and fractured zones in granite gneiss rocks of Khondalites and Charnockites constitute pheartic and confined aquifers respectively. Hydrogeological characteristics wise wells sited in favourable locations in weathered residium and fractured zones of granite gneiss rocks yield from 2 to 25 liters per second specific capacity of vary from 6 to 286 lpm/meter. The identification and characterisation of various landforms and structural features in the study area was very important from geomorphological study point of view. Many of these features are favourable for occurrence and recharge of groundwater and are classified in terms of groundwater recharge potentiality. Geomorphologic units are delineated based on the image characteristics such as tone, texture, shape, colour and associations. By overlapping the base map over the geocoded FCC image, the geomorphologic units and landforms, the structural information and structural trend lines are incorporated. Structural hills are observed on South and west part of the study area, which are the linear or acute hills exhibiting definite trend lines and mostly act as runoff zones due to its sloping topography. This shows poor potentiality for groundwater occurrence and recharge. Valleys are low lying depressions formed longitudinally along the streams or amongst the ridge portions, which shows excellent potential for groundwater occurrence and recharge.

11.3. Stratigraphy:

The Following table shows the Stratigraphy of Deogarh district,

Table-12

Age	Group/Formation	Lithology
Proterozoic	Eastern Ghat Supergroup	Khondalite, Charnockite, Quartzite, Leptynite, Garnet-Sillimanite Schist, Gneiss,Granulites.
Proterozoic (Iron ore group-IOG)	Badampahar-Gorumahisani-Suleipat Belt	Banded Iron Formation (BIF), Ferruginous Quartzite,phyllite,Amphibolites.
Proterozoic	Bonai Granite & Granitoids	Granite,Gneiss,Migmatite.
Archean-Proterozoic	Singhbhum Granite Complex	Granite,Quartzite,Schist,Gneisses,Pegmatites.

11.4. Mineral resources:

Minerals like minor minerals, stones, sands & Soils are available in the district. The deposits of granite stones provides tremendous scope for development of few more industries based on this resources. Except these, no other mineral deposits which can be explored for commercial purpose found in the district. As the district boundary are situated the adjacent to Sundargarh district, it mainly situated for the formation of Granite & Granite Gneiss. At present 1,000 persons are working in this unit. The basic raw materials of this industry is Granite which is procured from Boula Mines of Keonjhar Dist and Sukinda Valley Mines of Jajpur Dist. It is an Export oriented Industries and its product are being exported to the countries of Europe and Japan etc. However, it has not spawned any downstream industries. Some other minerals are also found in this district are Apatite, Biotite, Feldspar Group, Nepheline, Hornblende Group etc.

11.5. Soil

Major soil class in all the three districts is Mixed Grey Soil (Inceptisols), which cover about 92% of total area of the district. The main soil types of the district are sandy loam and red soils. On the basis of average annual rainfall, and soil types all the three blocks falls under agroecological (farming) situations-Low rainfall lateritic soils. Tileibani block has mixed grey soil (Inceptisols) coverage of almost 93.15% of total block area where as Reamal and Barkote block has 92.59% and 86.80% respectively. All three blocks are predominantly hilly and undulating terrain. The hills are thickly wedded and are intersected with valleys under cultivation. Analysis of terrain or slope of land in the district reveals that land under all slope classes starting from plain land to mountainous land above 25% slope are distributed in all 3 blocks.

The below table shows the % and Area of following types of soil:

Table-13

Sl.No	Major Soils(common names like red sandy loam deep soils (etc.,)*	Area ('000 ha)	Percent (%) of total
1	Red soil	85.72	46.02
2	Sandy soils	16.13	8.66
3	Sandy loamy soils	58.62	31.47
4	Black soils	1.44	2.0
5	Other soils (red and yellow, brown forest soil, alluvial soils)	24.34	12.67
Source: Strategic research and Extension Plan (SREP) of Deogarh district, 2008. pp 18-19			

a.0 DISTRICT WISE DETAILS OF RIVER OR STREAM AND OTHER SAND SOURCES:

a.1 DRAINAGE SYSTEM WITH DESCRIPTION OF MAIN RIVERS

The district has considerable flat land, which provide suitable site for agricultural use. The hilly areas are mostly under forest with patches of cultivation on scarp areas. Major rivers flowing in the district are Brahmani, Tikira. Major crops grown in the district are rice, only.16.35 percent area of agricultural use are net irrigated and major source of irrigations are wells and tube-wells. Most part of the district are drained by Brahmani river and its tributaries flowing from north to south direction.

River System

Major River: Brahmani

The Brahmani River is the second-largest river in Odisha. It is formed by the confluence of the Sankh and South Koel rivers at Vedavyasa near Rourkela in Sundargarh district. From there, it flows southeast through Deogarh, continuing through Angul, Dhenkanal, Jajpur, and Kendrapara districts before emptying into the Bay of Bengal at the Dhamra estuary . In Deogarh, the Brahmani River plays a vital role in the district's ecology and hydrology. The Pawri Hill Range lies on the eastern side of the Brahmani River, with elevations reaching up to 678 meters above mean sea level .

Tributaries and Streams

In addition to the Brahmani, Deogarh district features several smaller streams and tributaries that contribute to its river system. These include seasonal streams and nalas such as Balam Nala and Manibhanga Nala, particularly in areas like the Tileibani and Reamal blocks .

These water bodies are crucial for local agriculture, groundwater recharge, and maintaining the region's biodiversity.

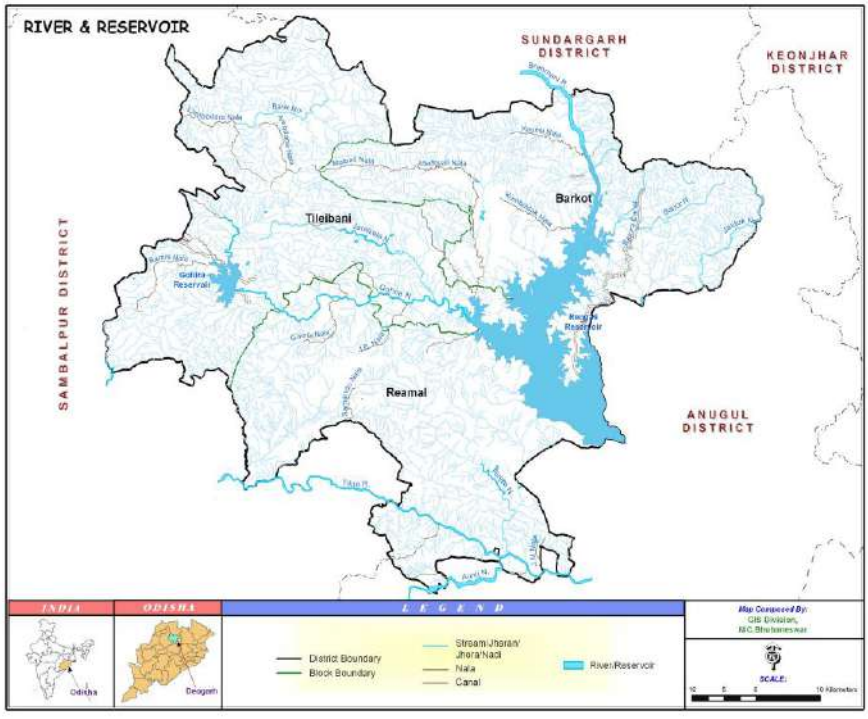


Table-14

Sl. No.	Name of the River	Area drained (Sq. Km.)	% Area drained in the District
1	Brahmani	40	10%
2	Tikira	10	10%
3	Hinjuli	10	10%

a.2 SALIENT FEATURES OF IMPORTANT RIVERS AND STREAMS

All the rivers have their source inside the State and thus they are midstreams and shortstreams. The main Rivers of the District are (1) Brahmani, (2) Tikira etc. The main distributaries river of Brahmani are Dhamra. Karo and Sankh are the tributaries of Tikira. Maps indicating river Brahmani and Tikira systems are at annexure. Brahmani rises among Sankh and South Koel rivers, and flows through the districts of Sundargarh, Deogarh, Angul, Dhenkanal, Cuttack, Jajapur and Kendrapara. After flowing in a winding easterly course across the delta, it marks the boundary line between Sundargarh and Anugul districts. After crossing National Highway, Brahmani branches out to a delta .Tikira also branches out to a delta. Some of the distributaries join together to form Salandi and Matai river. The pawri hill range on the eastern side of the Brahmani river which is 678 meters above mean sea level in height. Most part of the district are drained by Bhamhani river and its tributaries flowing from north to south direction. The Brahmani is a major seasonal river in the Odisha state of eastern India. The Brahmani is formed by the confluence of the Sankh and South Koel rivers, and flows through the districts of Sundargarh, Deogarh, Angul, Dhenkanal, Cuttack, Jajapur and Kendrapara. Mainly two types of river are generally flows in this district i.e Brahmani & Tikira.

Table-15

Sl. No.	Name of the river	Place of origin	Altitude at origin	Total length in the district (in km)	Portion of the River or Stream Recommended for mineral Concession	Length of Area recommended for Mineral concession (in meter)	Average width of Area recommended for Mineral concession(in Meter)	Total Area recommended for Mineral concession (in Sq. Meter / Ha.)	Mineable Mineral potential in Metric Tones/Cums(60% of Total Minerals/potential)
A	B	C	D	E	F	G	H	I	J
1	Brahmani	Confluence of Sankh and Sound Koel(from Chhota Nagpur plateau)	467mrl	40	SINGURI SAND BED CHATIAPALI(SINGSHAL)SAND BED AMBAGAON-MASINITA SAND BED GURJUNGASAND BED	970	450	17.001	74904
1	Tikira	Sambalpur District	300mrl	10	KUNDHEIGOLA(KHA) SAND QUARRY LOHARAKOTE SAND QUARRY PARA SAND QUARRY GADIAPAL SAND QUARRY SHAMAPALI SAND QUARRY KUNDHEIGOLA SAND QUARRY	4505	656	27.972 Ha	224246
2	Hijuli	ChotaNagpur Plateau	950mrl	10	KARLAGA SAND QUARRY	287	208	4.997Ha	23808

b.0 DISTRICT WISE AVAILABILITY OF SAND OR GRAVEL OR AGGREGATE RESOURCES

b.1 Mineral Potential

Table-16

Mineral Potential				
Name of the River or Stream	Boulder (MT)	Bajri (MT	Sand (MT)	Total Mineable Mineral Potential (MT)
Brahmani	Nil	Nil	39820	39820
Tikira	Nil	Nil	355543	355543
Hinjuli	Nil	Nil	23808	23808

b.2 Annual Deposition

Table-17

Annual Deposition				
Name of the River or Stream	Boulder (MT)	Bajri (MT	Sand (MT)	Total Mineable Mineral Potential (MT)
Brahmani	Nil	Nil	39820	39820
Tikira	Nil	Nil	355543	355543
Hinjuli	Nil	Nil	23808	23808

b.3

Table-18

The list of Portion of the River or Stream Recommended for Mineral Concession

Tahasil	Name of the Quarry Lease	Portion of the River or Stream Recommended for mineral Concession	Length of Area recommended for Mineral concesion (in Meter)	Average width of Area recommended for Mineral concession(in Meter)	Total Area recommended for Mineral concession (in Sq. Meter/Ha.)	Mineable Mineral potential in Metric Tones/Cums(60% of Total Minerals/ potential)
1	2	3	4	5	6	7
Barkote	SINGURI SAND BED	KHATA NO :76, PLOT: 1158 KISSAM :NADI, MOUZA- SINGURI	185	111	2.023	MR-12886
Barkote	CHATIAPALI(SINGSHAL)SAND BED	VILLAGE- CHATIAPALI KHATA NO :31, PLOT: 82 KISSAM :NADI,	265	185	5	MR-41018
Barkote	AMBAGAON-MASINITA SAND BED	KHATA NO :276,102, PLOT: 686,2 KISSAM :NADI, MOUZA-AMBAGAON-MASINITA	275	187	5	MR-9000
Barkote	GURUJANGASAND BED	VILLAGE-GURJUNGA KHATA NO :54, PLOT: 802 KISSAM :NADI	270	135	4.978	MR-12000
Reamal	KUNDHEIGOLA(KHA) SAND QUARRY	VILLAGE-KUNDHEAIGOLA KHATA NO:304, PLOT: 406(P),769/3226(P)/1 & 769/3226(P)/2),KISSAM :NADI	952	110	4.997	MR-30230
Reamal	KARLAGA SAND QUARRY	KHATA NO :202, PLOT: 2425(P) & 2455 (P) KISSAM :NADI,	287	208	4.977	MR-23808
Reamal	LOHARAKOTE SAND QUARRY	VILLAGE-LOHARAKOTE KHATA NO :50, PLOT: 452(P), KISSAM :NADI,	631	41	4.046	MR-26170
Reamal	PARA SAND QUARRY	VILLAGE- PARA KHATA NO :122, PLOT: 271(P), KISSAM :NADI,	570	92	4.997	MR-40499
Reamal	GADIAPAL SAND QUARRY	VILLAGE-GADIAPAL KHATA NO: 80, PLOT: 732(P), KISSAM :NADI,	321	195	4.997	MR-58890
Reamal	SHAMAPALI SAND QUARRY	VILLAGE- SHAMAPALI KHATA NO: 22, PLOT: 346 KISSAM :NADI	728	33	4.006	MR-26305
Reamal	KUNDHEIGOLA SAND QUARRY	VILLAGE-KUNDHEIGOLA KHATA NO :304, PLOT: 3150(P), KISSAM :NADI	402	133	4.997	MR-42352

C. District wise details of Existing mining leases of sand and aggregates.

Table-19

Tahasil	Sl No	Name of the Quarry Lease	Village, Khata No, Plot No & Kisam	Latitude	Longitude	Total Area recommended for Mineral concession (in Sq. Meter/ Ha.)	Name of the Lesse with address despatch	Period of Lease		Captive /Non-Captive	Status of working or non working /Temp permit working for
								From	To		
1	2	3	4	5	6	7	8	9	10	11	12
Barkote											
Barkote	1	SINGURI SAND BED	KHATA NO :76, PLOT: 1158 KISSAM :NADI, MOUZA-SINGURI	N21°37"05.3"TO21°37’11.7"N	E84°59' 19.8" TO 84°59"24.3"E	2.023	Smita Ranjan Kar At-Singuri Tahasil-Barkote	01.07.2021	30.06.2026	Non-Captive	Running
Barkote	2	CHATIAPALI(SINGSHAL)SAND BED	VILLAGE-CHATIAPALI KHATA NO :31, PLOT: 82 KISSAM :NADI,	N21°37"37.29"TO21°37 46.26"N	E84°59' 29.79" TO 84°59"36.88"E	5	Sri Narottam Sahoo At-Jhimiripali Po- Dimiria PS- Pallahara Dist-Angul	12.03.2022	13.03.2027	Non-Captive	Running
Barkote	3	AMBAGAON-MASINITA SAND BED	KHATA NO :276,102, PLOT: 686,2 KISSAM :NADI, MOUZA-AMBAGAON-MASINITA	N21°39"37.81548"TO21°39’37.60344"N	E84°58' 47.87184" TO 84°58"44.40972"E	5	Bajrangi Construction At-Jagmara Bhubaneswar	Nil	Nil	Non-Captive	Not-Running(Auctioned)
Bark	4	GURJUNGASAND BED	VILLAGE-GURJUNGA	N21°40"28.53264"TO21°40 26.98500"N	E84°58' 14.12364" TO	4.978	Urmila Builders Pvt.Ltd Prop-Sri Dillip Kumar jena At-	Nil	Nil	Non-	Not-Running(A

ote			KHATA NO :54, PLOT: 802 KISSAM :NADI, Mouza - Gurujanga		84°58"15.08232"E		Bhubaneswar,Dist-Khordha			Captive	uctioned)
Reamal											
Reamal	1	KUNDHEIGOLA(KHA) SAND QUARRY	VILLAGE-KUNDHEAIGOLA KHATA NO:304, PLOT: 406(P),769/3226(P)/1 & 769/3226(P)/2),KISSAM :NADI	21°12'32.92"N TO 21°12'55.19"N,	84°47'36.89"E TO 84°48'02.08"E	4.997	Saroj Kumar Behera AT/PO- Derang PS-Kanhia Dist- Angul	03.10.2021	04.10.2026	Non-Captive	Running
Reamal	2	KARLAGA SAND QUARRY	KHATA NO :202, PLOT: 2425(P) & 2455 (P) KISSAM :NADI,	21° 14' 14.86" TO 21 14 29.97" N	84° 52" 58.03" TO 84° 53 09.03" E	4.977	NIL	NIL	NIL	Non-Captive	Non-Working
Reamal	3	LOHARAKOTE SAND QUARRY	VILLAGE-LOHARAKOTE KHATA NO :50, PLOT: 452(P), KISSAM :NADI,	21° 08' 50.2" TO 21° 08 59.45" N	84° 5459.02" TO 84° 55 20.3"	4.046	NIL	NIL	NIL	Non-Captive	Non-Working
Reamal	4	PARA SAND QUARRY	VILLAGE-PARA KHATA NO :122, PLOT: 271(P), KISSAM :NADI,	21°10'01.34"N TO 21°10'12.11",	84°53'51.74"E TO 84°54'08.34"E	4.997	Soubhagya Chandra Jena AT/PO- Bajrakota PS-Rengali Dist-Angul	NIL	NIL	Running	Running

Reamal	5	GADIAPAL SAND QUARRY	VILLAGE-GADIAPAL KHATA NO: 80, PLOT: 732(P), KISSAM :NADI,	N21° 10 21.56" - N21° 10 31.01"	E84° 51"38.61" - E84° 51' 49.40	4.997	Sabyasachi Balsamant Plot No-N19 Part A Sahid Nagar, Bhubaneswar	20.04.2023	19.04.2028	Non-Captive	Running
Reamal	6	SHAMAPALI SAND QUARRY	VILLAGE-SHAMAPALI KHATA NO: 22, PLOT: 346 KISSAM :NADI	N21° 15' 30.80" - N21° 15 41.23",	E84° 35'50.19" - E84° 36 13.64".	4.006	NIL	NIL	NIL	Non-Captive	Non-Working(Auctioned)
Reamal	7	KUNDHEIGOLA SAND QUARRY	VILLAGE-KUNDHEIGOLA KHATA NO :304, PLOT: 3150(P), KISSAM :NADI	21°11'53.33"N TO 21°12'06.74",	84°49'05.87"E TO 84°49'30.26"E	4.997	Anil Kumar Sahu VIP-26, Nayapalli, IRC Village,PO/PS-Nayapalli Bhubaneswar	03.02.2025	01.04.2027	Non-Captive	Running

14.Methodology adopted for calculation of Mineral Calculation:

The mineral potential is calculated based on field investigation and geology of the catchment area of the river or streams. As per the site conditions and location, depth of minable mineral is defined. The area for removal of the mineral in a river or stream can be decided depending on geo-morphology and other factors, it can be 50 % to 60 % of the area of a particular river or stream. For Example, in some hill States mineral constituents like boulders, river born Bajri, sand up to a depth of one meter are considered as resource mineral. Other constituents like clay and silt are excluded as waste while calculating the mineral potential of particular river or stream.

The District Survey Report shall be prepared in the district and its draft shall be placed in the public domain by keeping its copy in Collectorate and posting it on the district's website for twenty-one days. The comments received shall be considered and if found correct, shall be incorporated in the final Report to be finalized within six months by the State Environment Impact Assessment Authority.

The District Survey Report shall form the basis for application for environmental clearance, preparation of reports and appraisal of projects. The Report shall be updated once every five years.

CONCLUSION:

To meet the requirement of minerals in the present scenario, it is proposed to identify such potential areas at certain interval and get the data bank of DSR to be updated regularly. The insitu mining activity in any area is on one hand bring revenue and employment (Direct and indirect) and on other hand if not done properly potential pollution and ecological imbalance increases, the ability of the ecosystem can also be reduced. Particulate matter transported by the wind as a result of excavations, blasting, transportation of materials, heavy equipment used raise these particulate levels; and Gas emissions from the combustion of fuels in stationary and mobile sources, explosions, and mineral processing. All these activities indirectly affected the biodiversity of area. Larger potential and smaller areas have been identified in Deogarh District on the basis of geological study carried out during field observation, which can be considered for mining concession after all the parameters for statutory clearances are verified by consulting with concerned authorities.

Annexure-I

Details of Sand/M-Sand Sources

a. Rivers

SL NO	Name of the River or Stream	Total Length in the District in KM (approx.)	Type of River (Perennial or Non-Perennial)
1	2	3	4
1	Brahmani	40	Non-perennial
2	Tikira	10	Non-perennial
3	Hinjuli	10	Non-perennial

Patta Lands/ Khatedairi Land (Existing Proposed)

Owner	Sl No.	Area	District	Tahasil	Village	Total Reserve (MT)	Total Mineral to be mined (MT)	Existing/ proposed
Not applicable for Deogarh District								

De-Siltation Location (lakes/ Ponds/dams etc. (Existing & proposed)

1 | 2 | 3	5	6	7	8	9	10	11	
Name of reservoir /Dams	Maintain/ Collected by State Governm ent /PSU	location	District	Tahasil	Village	Size (Ha)	Quantity (MT / year)	Existing/ proposed
Not applicable for Deogarh District								

d)M-sand Plants:

Plant name	Owner	District	Tahasil	Village	Gee-location	Quantity Tonnes/Annu m	Existing /Proposed
Not applicable for Deogarh District							

Annexure- V

Sl No	Name of the river or stream	Name of the source	Khata, Plot, area, Mouza	Latitude	Longitude	Distance (in KM) from PA/BR/ WC/ Forest	Mining leases within 500 meters (if yes cluster area)	Total excavation in Tonnes /Annum considering digging depth max as 3 meters	Mineral to be mined in tonnes (Sand/ Bajri/ RBM etc.)	Existing/ Proposed
BARKOTE										
1	Brahmani	SINGURI SAND BED	KHATA NO :76, PLOT: 1158 KISSAM :NADI, MOUZA- SINGURI	N21°37"05.3"TO21°37’ 11.7"N	E84°59' 19.8" TO 84°59"24.3"E	RF- 85 KM	N0	6000	SAND	Existing
2	Brahmani	CHATIAPALI(SINGSHAL)SAND BED	VILLAGE- CHATIAPALI KHATA NO :31, PLOT: 82 KISSAM :NADI,	N21°37"37.29"TO21°37 46.26"N	E84°59' 29.79" TO 84°59"36.88"E	RF-83 KM	N0	30000	SAND	Existing
3	Brahmani	AMBAGAON-MASINITA SAND BED	KHATA NO :276,102, PLOT: 686,2 KISSAM :NADI, MOUZA- AMBAGAON-MASINITA	N21°39"37.81548"TO21°39’ 37.60344"N	E84°58' 47.87184" TO 84°58"44.40972"E	RF-87KM	NO	45000	SAND	Proposed
4	Brahmani	GURJUNGASAND BED	VILLAGE- GURJUNGA KHATA NO :54, PLOT: 802 KISSAM :NADI,	N21°40"28.53264"TO21°40 26.98500"N	E84°58' 14.12364" TO 84°58"15.08232"E	RF-79KM	NO	60000	SAND	Proposed
REAMAL										

1	TIKIRA	KUNDHEIGOLA(KHA) SAND QUARRY	VILLAGE-KUNDHEAIGOLA KHATA NO:304, PLOT: 406(P),769/3226(P)/1 & 769/3226(P)/2),KISSAM :NADI	21°12'32.92"N TO 21°12'55.19"N,	84°47'36.89"E TO 84°48'02.08"E	RF-59 KM	N0	8300	SAND	Existing
2	HINJULI	KARLAGA SAND QUARRY	KHATA NO :202, PLOT: 2425(P) & 2455 (P) KISSAM :NADI,	21° 14' 14.86" TO 21 14 29.97" N	84° 52" 58.03" TO 84° 53 09.03" E	RF-60 KM	N0	15000	SAND	Existing
3	TIKIRA	LOHARAKOTE SAND QUARRY	VILLAGE-LOHARAKOTE KHATA NO :50, PLOT: 452(P), KISSAM :NADI,	21° 08' 50.2" TO 21° 08 59.45" N	84° 5459.02" TO 84° 55 20.3"	RF-51 KM	N0	6000	SAND	Existing
4	TIKIRA	PARA SAND QUARRY	VILLAGE- PARA KHATA NO :122, PLOT: 271(P), KISSAM :NADI,	21°10'01.34"N TO 21°10'12.11",	84°53'51.74"E TO 84°54'08.34"E	RF-53 KM	N0	5160	SAND	Existing
5	TIKIRA	GADIAPAL SAND QUARRY	VILLAGE-GADIAPAL KHATA NO: 80, PLOT: 732(P), KISSAM :NADI,	N21° 10 21.56" - N21° 10 31.01"	E84° 51"38.61" - E84° 51' 49.40	RF-54 KM	N0	18000	SAND	Existing
6	TIKIRA	SHAMAPALI SAND QUARRY	VILLAGE-SHAMAPALI KHATA NO: 22, PLOT: 346 KISSAM :NADI	N21° 15' 30.80" - N21° 15 41.23",	E84° 35'50.19" - E84° 36 13.64".	RF-70 KM	N0	NIL	SAND	Proposed
7	TIKIRA	KUNDHEIGOLA SAND QUARRY	VILLAGE-KUNDHEIGOLA KHATA NO :304, PLOT: 3150(P), KISSAM :NADI	21°11'53.33"N TO 21°12'06.74",	84°49'05.87"E TO 84°49'30.26"E	RF-57 KM	N0	15000	SAND	Existing

Annexure- VI

List of Cluster & Contiguous Cluster

Clusters:

River Name	Cluster No.	Lease No.	Location (River Bed/Patta Land	Village	Area (in Ha.)	Total excavation (Cum)
No Cluster Situation available in respect of Deogarh District						

Contiguous Clusters:

River Name	Contiguous Cluster No.	Cluster No.	Number of leases in the cluster	Location (River Bed/Patta Land	Distance between clusters	Village	Area of cluster (in Ha.)	Tota I excavation (Ton)
No contiguous Cluster Situation available in respect of Deogarh District								

Annexure-VII

Name of the Tahasil	Name of the sand source	Lease No.	Transportation Route number	Whether runs on Govt. or Private Land	Details of village/Forest area/Agricultural land through which the approach road runs if any	Number of tippers *I* day of lease	Number of tippers *I* day of all the lease on route	Length of Route in K.M	Type of Road (Black Topped/ unpaved)	Recommendation for road (Black Topped/ unpaved	The road will be constructed by Government /Lease Owner	Route map and location
1	2	3	4	5	6	7	8	9	10	11	12	13
Barkote Tahasil												
Barkote	SINGURI SAND BED	NA	Village Road	Govt. Land	Singuri	8	12	5	Unpaved	Unpaved	Lease Owner	Map Attached in Plate-2
Barkote	CHATIAPALI(SINGSHAL)SAND BED	NA	Village Road	Govt. Land	Singshal	3	7	6	Unpaved	Unpaved	Lease Owner	Map Attached in Plate-2
Barkote	AMBAGAON-MASINITA SAND BED	NA	Village Road	Govt. Land	AMBAGAON-MASINITA	3	7	6	Unpaved	Unpaved	Lease Owner	Map Attached in Plate-2
Barkote	GURJUNGASAND BED	NA	Village Road	Govt. Land	GURJUNGA	3	7	6	Unpaved	Unpaved	Lease Owner	Map Attached in Plate-2
Reamal Tahasil												
Reamal	KUNDHEIGOLA(KHA) SAND QUARRY	NA	Village Road	Govt. Land	Kundheigola	4	7	6	Unpaved	Unpaved	Lease Owner	Map Attached in Plate-2
Reamal	KARLAGA SAND QUARRY	NA	Village Road	Govt. Land	Karlaga	5	9	5	Unpaved	Unpaved	Lease Owner	Map Attached in Plate-2
Reamal	LOHARAKOTE SAND QUARRY	NA	Village Road	Govt. Land	Loharakote	7	11	4	Unpaved	Unpaved	Lease Owner	Map Attached in Plate-2
Reamal	PARA SAND QUARRY	NA	Village Road	Govt.	Para	6	9	7	Unpave	Unpaved	Lease	Map

				Land					d		Owner	Attached in Plate-2
Reamal	GADIAPAL SAND QUARRY	NA	Village Road	Govt. Land	Gadiapal	8	14	5	Unpaved	Unpaved	Lease Owner	Map Attached in Plate-2
Reamal	SHAMAPALI SAND QUARRY	NA	Village Road	Govt. Land	Shamapali	9	16	7	Unpaved	Unpaved	Lease Owner	Map Attached in Plate-2
Reamal	KUNDHEIGOLA SAND QUARRY	NA	Village Road	Govt. Land	Kundheigola	9	15	8	Unpaved	Unpaved	Lease Owner	Map Attached in Plate-2

Cluster No.	Transportation Route number	Number of tippers / day of Cluster	Number of tippers / day of all the Cluster on route	Length of Route in K.M	Type of Road (Black Topped/ unpaved)	Recommendation for road (Black Topped/ unpaved	The road will be constructed by Government /Lease Owner	Route map and location
No Cluster Situation available in respect of Deogarh District								

Certification Regarding Preparation of DSR

The District Survey Report for River Sand (Minor Mineral) in respect of Deogarh District in accordance with Appendix-X, Para-7 (iii) (a) of S.O. 3611(E) dt. 25.07.2018 of Ministry of Environment, Forest and Climate Change, New Delhi, Enforcement & Monitoring Guideline for Sand Mining-2020 and in compliance with the orders of Hon'ble Supreme Court dt. 10.11.2021 in connection with C.A Nos. 3661-3662 of 2020. Before preparation of this report, a survey has been conducted by District Environment Impact Assessment Authority (DEIAA) with the assistance of Irrigation Department, Forest Department, Public Works Department, Mining Department, Ground Water Boards, Remote Sensing Department, Mining Departments. The DSR is being submitted to SEIAA, Odisha, Bhubaneswar for necessary evaluation and approval.

S.D.O, Irrigation Division,
Deogarh

Regional officer,
OSPCB, Deogarh

Mining Officer,
Deogarh Circle, Deogarh

Deputy Director of Mines,
Deogarh

Sub-Collector, Deogarh -Cum,
Sub-Divisional Committee, Deogarh,

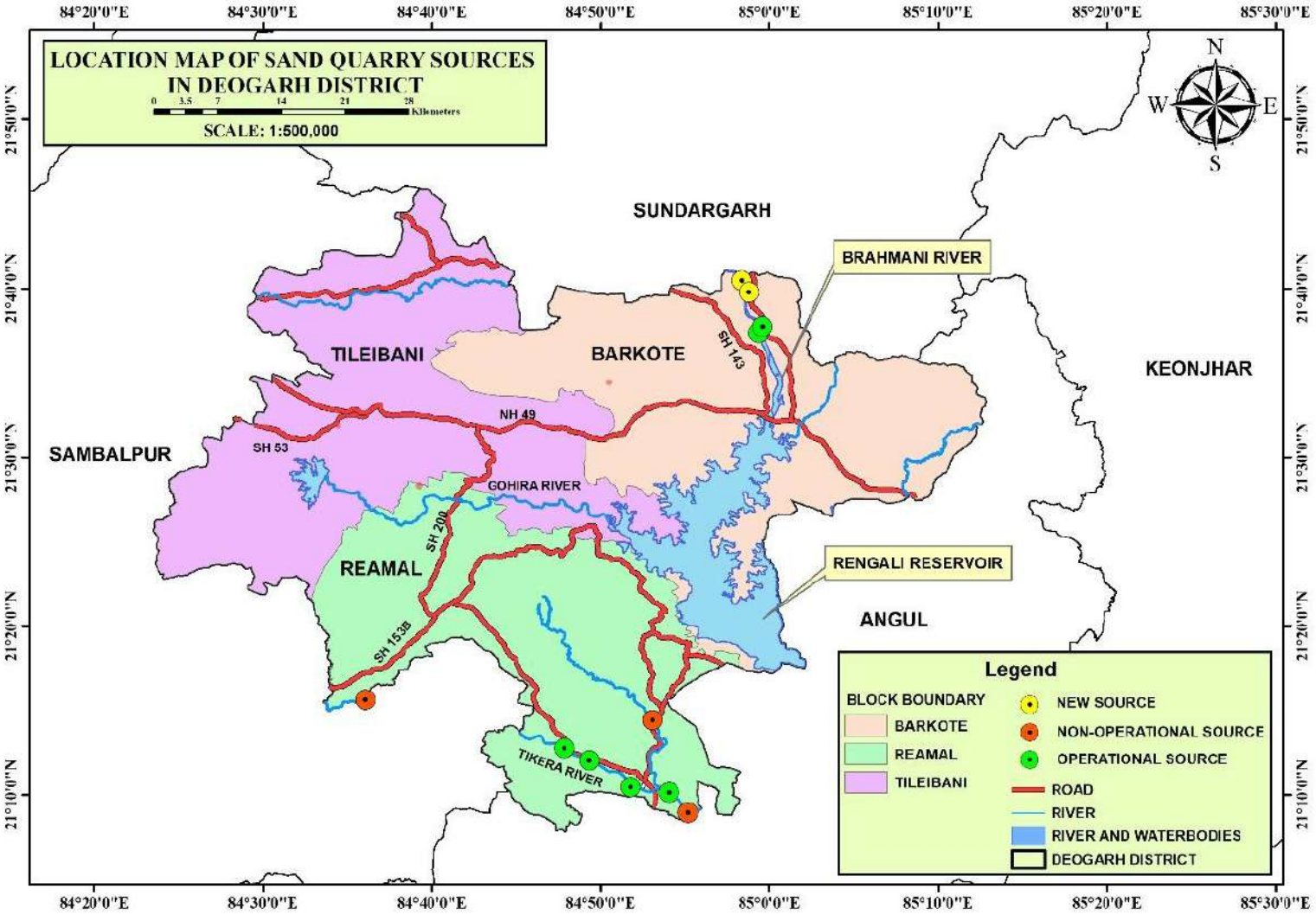
Divisional Forest Officer,
Deogarh

Superintending Engineer,Irrigation Division
Deogarh

Collector & Chairman,
Deogarh

LOCATION MAP OF SAND QUARRY SOURCES OF DEOGARH DISTRICT

PLATE-1



TRANSPORTING ROUTE MAP OF DEOGARH DISTRICT

PLATE-2