

Executive summary for Environment
management plan of Gondia District
Sand Ghats

(Area of sand ghats- 1-4.99 Ha)

For 31 sand ghats Public Hearing

Project Proponent

District Mining Officer, Gondia

Environmental Consultant



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1.0 INTRODUCTION

Gondia District Collector is planning to auction the sand spots in the district for the year 2021-22 as sand is the major material for the infrastructural development. As per EIA notification 2006 prior environmental clearance is needed for start of mining, so as a procedure of EC Public hearing is primary stage.

As per Maharashtra sand policy 03/09/2019, District mining officer is project proponent initially and after auction of sand ghats environmental clearance will be transferred to successful bidder. Total 68 sand ghats are surveyed but 31 ghats are finalized for EC by Taluka level Technical Committee headed by Tahsildar and team members are Dy. Engineer Irrigation department, Junior Geologist appointed by Directorate of Geology and Mining, Junior Geologist from G.S.D.A. Gondia and representative of Maharashtra Pollution Control Board. Manual method of mining will be adopted for scooping of sand from designated area of River bed.

1.1 SALIENT FEATURES OF THE PROPOSED SAND GHATS

The mining will be carried out manually with opencast method of mining by engaging labours with help of crow bars, hand shovel, pick axes and baskets. Loading is proposed to be carried out manually and transportation of mineral from the mine to the depot is proposed through tractor with trolley arrangement. As the mineral is dry, loose in nature, no drilling and blasting are required and hence it is not proposed. Sand excavated manually, will be loaded directly into vehicles.

Mining of sand is proposed to be carried out by the manual method. It involves following steps

- i. River Bed Mining activities do not involve top soil excavation.
- ii. Excavation of sand is done by using spade and bucket.
- iii. Drilling and blasting is not required.
- iv. Mining will be carried out during Auction allotted period or as per EC letter.
- v. Transport of sand from the river bed to destination will be carried out by tractor-trolley
- vi. No machinery will be used during mining operations
- vii. No pumping of water from river bed is envisaged as the proposed sand ghat is completely dry and their approach roads are also dry and accessible.

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- viii. The deposits occur at the middle/bottom of the river. During the entire lease period, the deposit will be worked from the top surface to permissible maximum mineable depth suggested by Joint survey of Taluka committee.
- ix. The entire quantity of sand excavated will be transported and will be used for infrastructure development purpose. Thus, there will not be generations of any solid waste from mining activity, only very small amount of solid waste generated by the use of plastic wrappers of food items which is consumed by labors but it will be collected separately and disposed of at common waste treatment area nearby.
- x. Mining will be carried out as per the approved Mining Plan.
- xi. It is proposed to employ the local people wherever possible in the proposed project activities. Direct employment from these proposed sand ghat is mentioned in the list attached herewith.

Details of sand ghats are attached in **Table 01**:

2.0 IMPACT ON SURROUNDING ENVIRONMENT& MITIGATION MEASURES

2.1 GENERAL:

Mining projects may have likely impacts on the various environmental components viz. Air, Water, Noise, Land, Biological Environment and Socio-economics. The magnitude of impact of sand ghat projects and their mitigation measures are provided as follows.

2.2 LAND ENVIRONMENT:

Deviation from planned mining procedure can lead to bank erosion /cutting and thereby river channel shifting degradation of land, causing loss of properties and degradation surrounding of landscape.

Mitigation Measures:

- Sand will be mined out in lease area as per the mining plan.
- The mining will remain confined to river bed only and in no case disturb any surface area outside which may affect topography or drainage.
- No stream should be diverted for the propose of sand mining.
- All the provisions stipulated in the Maharashtra Minor Mineral Extraction (Development and Regulation) Rules, 2013, will be meticulously followed.

It is ensured to compliance of the various point mentioned in sustainable

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Sand Mining Guidelines issued by MoEF&CC.

2.3 WATER ENVIRONMENT

Disturbance of natural drainage, flow of water and ground water table due to excavation of sand from river in absence of scientific mining. If excess excavation of sand done in the project area then depletion of ground water level causes the drought in summer season & effect on public life in all respect like farming, drinking water issue etc. Adverse Effect on aquatic life like fish, prawn and other living organism.

Mitigation Measures:

- In the projects, it is not proposed to divert or truncate any stream.
- No proposal is envisaged for pumping of water either from the river or tapping the ground water.
- In the lean months, the proposed sand mining will not expose the base flow of the river and hence, there will not be any adverse impact on surface hydrology and ground water regime due to this project.
- The proponent will adhere all guidelines and rules for proper and scientific method of mining during the period of extracting the sand.
- Sand mining will be carried out in dry river bed portion only.
- The excavation of sand will be scientifically carried out up to the permissible thickness of sand in line with Joint Survey Report. There will not be any intersection with ground water table.

2.4 AIR ENVIRONMENT:

In river bed mining activities, vehicle is the source of both particulate and gaseous pollutants while the dust particles of sand act as particulate pollutants especially during loading and transportation. In general SPM (Suspended particulate matters PM10) and to a limited extent of Sulphur dioxide (SO₂) and Nitrous Oxides (NO_x) will be due to fossil fuel-based vehicles, in the region which may be within the permissible limits, as it is a small-scale quarrying. The dust liberated in mining and other related operations is injurious to health if inhaled. The fugitive dust generation during mining and transportation requires some mitigation.

Mitigation Measures:

- Proper mitigation measures like water sprinkling on haul roads approaching the lease area and up to river bank will be adopted to control fugitive dust emission.
- Over loading of tractor trollies and consequent spillage on the roads will be avoided.
- Measures such as covering tarpaulins over the loaded trollies will

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prevent spreading of sand.

- It will be ensured that all transportation vehicles will carry a valid PUC certificate.
- Plantation of trees along the roads to help reduce the impact of dust in the nearby villages.
- Periodic air monitoring will be proposed to monitor the ambient air quality.

2.5 NOISE ENVIRONMENT

Sand mining will be done by manual method, so no noise generated during mining, however noise will be generated at Ghat from movements of tractors which is used for transportation.

Mitigation Measures

- Manual excavation is allowed in project site, No Machinery will be deployed inside the river bed.
- Noise arising out due to transportation shall be abated and controlled at source to keep within permissible limit.
- Restricted working hours. Sand mining operation has to be carried out between 6 am to 6 pm.

2.6 BIOLOGICAL ENVIRONMENT

Excessive and unscientific riverbed sand mining results in the destruction of aquatic and riparian habitat through large changes in the channel morphology.

➤ Terrestrial Ecology

Flora: The area is completely barren and devoid of any significant vegetation in the river. The lease area is totally covered by sand and not having any tree species, only some grasses observed in patches. So, there is no chance of cutting of any tree due to mining operation

Fauna: As there is no forest cover in sand ghat area, no significant wild life observed in this area. Thus, there will be no significant impact of the river quarry mining project on the biological environment in lease area.

➤ Aquatic Ecology

No adverse impacts will be envisaged on the existing aquatic fauna, on downstream side (away from site) as the mining confined to above water

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level only and not disturbing the water table.

Mitigation Measures:

- No mining will be carried out during the monsoon season i.e. from 10th June to 30th September to minimize impact on aquatic life, which is mainly breeding season.
- Mining will be carried out on the dry part of the river bed to avoid disturbance to the aquatic habitat and movement of fish species.
- No adverse impacts will be envisaged on the existing aquatic fauna, on downstream side (away from site) as the mining confined to above water level only and at all touching/disturbing water table.

2.7 PLANTATION

The entire mining area falls within river course and gets flooded during monsoons; therefore, no plantation is possible within this area. Plantation will mainly be done along the haulage road and along the length of the river bank or approach road to depot or places as recommended by Gram Panchayat. Number of trees will be planted with various types of species. Native plants like Mango, Neem, Eucalyptus, Peepal, Gulmohar, and other local species will be selected in suitable combination, so that they can grow fast and also have good leaf cover.

2.8 OCCUPATIONAL HEALTH

1. Occupational health surveillance program for workers is undertaken periodically.
2. First Aid Facility at the proposed mining Site.

3.0 OTHER SAFETY PRECAUTIONS

1. Fencing of approach road for avoiding un-authorized entry to the active sand ghat.
2. Provision of Boards displaying all information as regards to mining of sand including quantity, period of mining activity and details of project proponent.
3. Display of warning signal boards at prominent locations.
4. Maintenance of approach road to sand ghat.
5. Deployment of adequate security arrangement.
6. Provision of safety equipment to workers.
7. Strict prohibition of use of any fuel for cooking or burning of waste or any other material.

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8. Adequate provision for collection and disposal of domestic solid waste.
9. Awareness for safety and health to the workers deployed at sandghat.

4.0 STATUTORY REQUIREMENTS

It is accepted that effective resource management cannot be done in isolation. The Department therefore vigorously pursues approaches towards coordination and integration where possible, so as to lead to coordinated regulatory systems.

A regulatory system consists of both statutory and non-statutory components. In the Sectoral-specific strategy for prospecting and mining, the Department participates within an integrated environmental management system which is administered in terms of the Acts and Rules. Other Acts dealing with matters relating to the conservation and protection of the environment and which a holder of a mining authorization must also take cognizance of, include inter alia, the following:

- Maharashtra State Sand Policy 2019
- Sustainable sand mining and management guidelines, MoEF & CC, 2016
- Maharashtra Minor Mineral Extraction Development and Regulation) Rules, 2013.
- The Environment (Protection) Act, 1986
- Enforcement and Monitoring Guidelines for Sand mining, MoEF & CC, 2020
- Hon. NGT's decisions and Hon. Supreme Court of India's Decisions.

Table No. 1: Details of sand ghats

Sr.No.	Name of tahsil	Name of Village/sand ghat	River	Riverbed Adjacent Gut Survey No.	Details of sand ghats					Quantity in Cum	Quantity in Brass	Transportation route details		Total trees	Tractors	Manpower	Total water req. KLD	EMP Cost Rs.
					Length m.	Width m.	Depth m.	Area in Sq.m	Area in Ha			Length m	Width m					
1	Gondia	Kinhi	Wainganga	1394, 1397, 1398, 1399	410	120	0.8	49200	4.92	39360	13908	1740	4	1945	29	149	25.59	17,44,500/-
2	Gondia	Dhangurli	Wainganga	837 to 840	520	95	0.9	49400	4.94	44460	15710	1904	4.5	2164	33	169	28.42	18,44,100/-
3	Gondia	Tedhva	Wainganga	280, 281, 282, 285	120	90	0.5	10800	1.08	5400	1908	670	3.5	730	4	21	8.47	6,89,500/-
4	Gondia	Pujaritola (Kasa)	Wainganga	302, 303, 306, 273, 83, 293, 295, 296, 297	450	100	0.5	45000	4.5	22500	7951	1270	4.5	1495	16	83	18.23	12,42,500/-
5	Gondia	Mahalgaoon	Wainganga	171, 215, 285, 287, 290	400	100	1	40000	4	40000	14134	214	4	414	29	149	8.77	9,92,100/-
6	Gondia	Murdada (Saitola)	Wainganga	123, 126, 127, 128, 129	330	100	0.5	33000	3.3	16500	5830	238	4.5	403	12	62	5.78	7,03,200/-
7	Gondia	Murdada (Parvati ghat)	Wainganga	131, 442, 443	300	130	0.5	39000	3.9	19500	6890	252	4	402	14	73	6.23	7,14,300/-
8	Gondia	Deori	Wainganga	352, 211, 215	300	70	1	21000	2.1	21000	7420	282	3.5	432	15	78	6.73	7,51,800/-
9	Gondia	Banathar	Bagh	378, 397	300	90	0.3	27000	2.7	8100	2862	1406	4.5	1556	6	31	17.45	12,10,900/-
10	Gondia	Birsola	Bagh	1291, 1293, 1366	480	70	0.5	33600	3.36	16800	5936	726	4	966	12	62	11.60	9,23,400/-
11	Gondia	Satona (Gaonghat-2)	Bagh	207	210	50	0.3	10500	1.05	3150	1113	468	3.5	573	2	11	6.16	5,40,200/-
12	Gondia	Jirutola	Bagh	253, 254, 255, 256, 258, 259	280	40	0.3	11200	1.12	3360	1187	672	3.5	812	2	11	8.62	6,64,300/-
13	Tiroda	Ghatkuroda-1	Wainganga	1	470	100	1.35	47000	4.7	63450	22420	580	3	815	46	240	16.19	15,39,800/-
14	Tiroda	Ghatkuroda-2	Wainganga	1	495	100	1.35	49500	4.95	66825	23613	289	3.5	537	49	255	13.59	14,24,300/-
15	Tiroda	Chandori Bu.	Wainganga	1	200	80	0.5	16000	1.6	8000	2827	388	4	488	6	31	5.95	6,23,700/-
16	Tiroda	Biroli	Wainganga	1	450	80	1.3	36000	3.6	46800	16537	138	3	363	34	174	8.96	11,04,200/-
17	Tiroda	Mandvi	Wainganga	235	310	100	0.5	31000	3.1	15500	5477	329	3.5	484	11	57	6.54	7,65,100/-
18	Tiroda	Kawalewada	Wainganga	180	160	70	0.5	11200	1.12	5600	1979	236	3	316	4	21	3.81	5,23,900/-
19	Tiroda	Bondrani	Wainganga	583	290	90	1.2	26100	2.61	31320	11067	684	3.5	829	23	118	12.52	10,54,600/-
20	Tiroda	Pipariya	Wainganga	2,13,3	360	90	0.7	32400	3.24	22680	8014	536	3.5	716	17	88	10.06	8,96,400/-
21	Sadak Arjuni	Kodamedhi	Chulbandh	105, 280, 279	460	22	0.3	10120	1.012	3036	1073	530	3.5	760	2	11	7.60	6,15,500/-
22	Sadak Arjuni	Ghatbori teli	Chulbandh	63 to 66, 711, 712	350	30	0.3	10500	1.05	3150	1113	93	3	268	2	11	2.46	3,71,700/-
23	Sadak Arjuni	Sawangi -1	Sashikaran Nala	590, 702, 703, 704	350	30	0.3	10500	1.05	3150	1113	200	3	375	2	11	3.64	4,66,500/-
24	Sadak Arjuni	Sawangi -2	Chulbandh	24	370	30	0.5	11100	1.11	5550	1961	202	3.5	387	4	21	4.07	5,52,300/-
25	Sadak Arjuni	Pipri-2	Chulbandh	202/1, 223/A, 223/B, 224/1/A	400	30	0.4	12000	1.2	4800	1696	554	3	754	4	21	8.03	6,74,100/-

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26	Sadak Arjuni	Palasgaon (raka)	Chulbandh	93, 281, 282, 283, 284	260	40	0.3	10400	1.04	3120	1102	680	3	810	2	11	8.65	6,65,500/-
27	Sadak Arjuni	Saundad	Chulbandh	988, 72, 1452/1, 1452/2, 85, 1451	350	40	0.4	14000	1.4	5600	1979	480	2.5	655	4	21	7.07	6,59,500/-
28	Amgaon	Ghattemani (Dongaghat)	Bagh	1049, 1054, 1055, 1056, 306 (Old)	360	30	0.4	10800	1.08	4320	1527	255	3	435	3	16	4.45	5,46,000/-
29	Amgaon	Manekasa	Bagh	330 (old), 193 to 196, 200, 203	320	40	0.3	12800	1.28	3840	1357	1250	2.5	1410	3	16	15.27	9,76,000/-
30	Morgaon Arjuni	Singhmarhan	Gadhvi	67	320	40	0.25	12800	1.28	3200	1131	919	3	1079	2	11	11.45	8,03,100/-
31	Morgaon Arjuni	Wadegaon Bandhya	Gadhvi	197	580	18	0.4	10440	1.044	4176	1476	351	3	641	3	16	6.16	5,83,400/-