

***EXECUTIVE SUMMARY OF DRAFT EIA REPORT***  
**FOR**  
**PROPOSED RIVER BED MINING FOR BARAK SAND MINOR**  
**MINERAL UNIT NO. 3**  
**ON BARAK RIVER BED UNDER KALAIN RANGE OF KARIMGANJ**  
**FOREST DIVISION, DISTRICT: CACHAR, STATE: ASSAM**  
***(Cat – B1, Area -13Ha)***  
***Capacity- 46,159 Cu.m per year***

***Project Proponent***

**SRI ABHAY KUMAR JAIN**  
**VILL: MOHANPUR PART I, P.O: KATIRAIL**  
**P.S: KATIGORAH, CACHAR**

**ENVIRONMENTAL CONSULTANT**



**M/s. ULTRA-TECH**  
**ENVIRONMENTAL LABORATORY AND CONSULTANCY**

**NABET Accredited EIA Consulting Organization**

**Certificate No.: NABET/EIA/2023/RA 0194\_Rev 01 Validity Upto**  
**18/10/2024**

**September, 2023**

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## EXECUTIVE SUMMARY

### 1.0 Introduction

Department of Environment & Forest, Govt. of Assam has leased out river bed area of 13 Ha located near Kalain, Cachar district of Assam under Kalain Range of Karimganj Forest Division, Assam in favour of Sri Abhay Kumar Jain for extraction of sand for a period of 5 (five) years with production capacity of 4,21,200 Cu.M/year.

The Mining contract holder will extract sand from the river bed of Barak River, which is a perennial river. The sand available in the river bed for extraction is basically river gravels of different size i.e., small to medium mixed with medium to sand. The river gravel is hard and suitable for use as civil construction material and road metal.

### Project Location

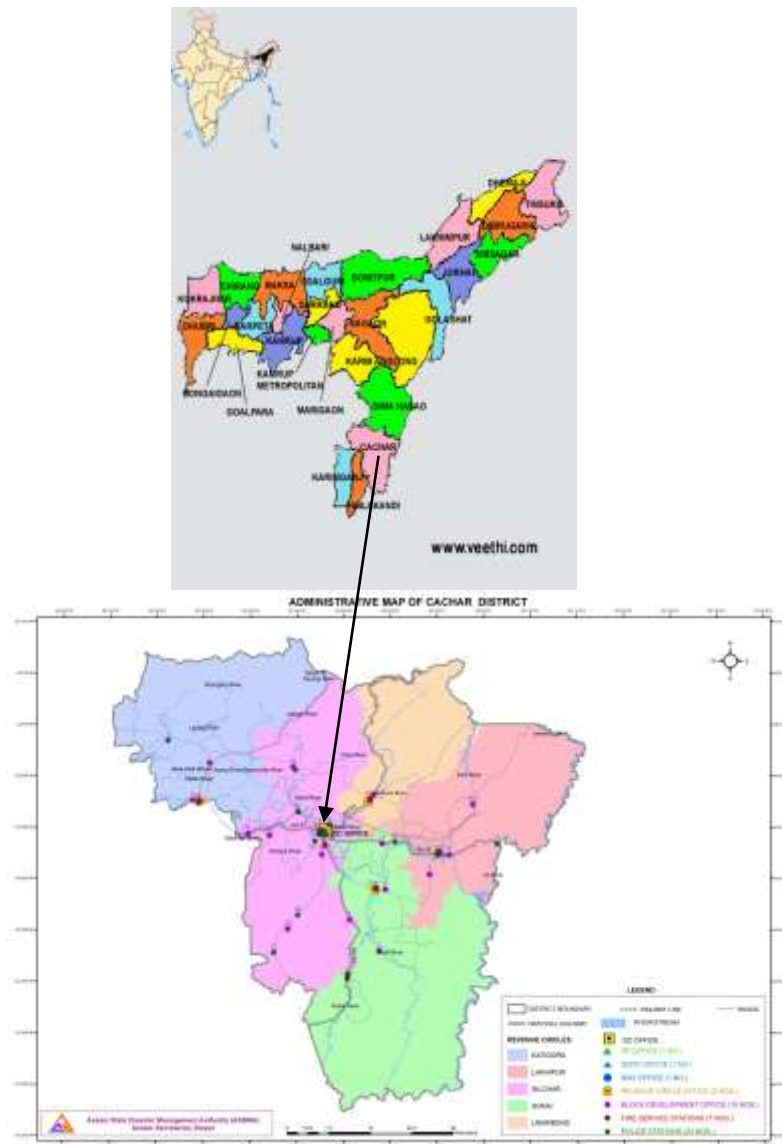


Figure E-1: Location map of the Project Site

The details of environmental setting are given below.

**Table E.1: Environmental Setting around Project Site**

SN	Component	Description																																																								
1	Plant Location	<b>Barak Sand Minor Mineral Unit No. 3</b> near Kalain <b>P. O &amp; P.S:</b> Kalain <b>District:</b> Cachar, Assam <b>Left bank:</b> Naharpur, Niz malua, Chapra, Badarpur <b>Right bank:</b> Hari Nagar pt-2, Nadar pur, Nazat pur, Lathimara																																																								
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3	Village/District/State	<b>District:</b> Cachar <b>State:</b> Assam																																																								
4	Maximum temperature	35°C																																																								
5	Minimum temperature	12°C																																																								
6	Annual rainfall (total)	>4000mm																																																								
7	Plant site elevation above MSL	-																																																								
8	Present land use at the site	River Bed																																																								
9	Nearest highway	<b>NH -6</b> Road Distance- 2.1 Kms E , Aerial Distance-1.85 E  <b>NH-37</b> Road Distance- 2.2 m SE, Aerial Distance-0.95 SE																																																								
10	Nearest Railway Station	<b>Railway Station:</b> Bandarkhal Railway Station - Road Distance-71.3 Kms NE, Aerial Distance-31.34 Kms NE																																																								

SN	Component	Description
11	Nearest Airport	<b>Airport:</b> Silchar Airport Road Distance- 61.1 Kms E Aerial Distance- 42.14 Kms E
12	Nearest major water bodies	<b>Barak River</b> –Project Site itself Kushiyara River- Beside the project site
13	Nearest town/City	<b>Nearest Town</b> : Karimganj Town 14.45 Kms W (Aerial Distance) (From Block D)
14	Nearest village	1. Barbari Village– 9.01 km, S
15	Nearest Dispensary and Govt. Hospital, Educational facility	1. Rajartilla Hospital 0.72 km, N (From Block D) 2. Badarpur Hospital- 1.11km, S (From Block C) 3. Srigouri Hospital-1.60 km , S (From Block C) All major educational Institutions are : 1. Saraswati Vidhyaniketan – 1.09 km, S (From Block C) 2. Katigorah Senior Secondary School - 0.67 km, N (From Block B)
16	Nearest Religious/Worship Places:	1. Radha Krishna Akhra ( Manipuri Colony) – 0.89 km, SE (From Block A) 2. Durga Bari– 3.83 km,SE (From Block A) 3. Madinatul Uloom – 4.27 km, SE (From Block A)
17	Protected areas as per Wildlife Protection Act, 1972 (Tiger reserve, Elephant reserve, Biospheres, National parks, Wildlife sanctuaries, community reserves and conservation reserves)	Barail WLS boundary distance 13.56 km
18	Reserved / Protected Forests	None Within 10 km of Project Site
19.	Defence Installations	None Within 10 km of Project Site
20.	International/State Boundary	India Bangladesh boundary – 0.86 Km (from Block D), W

## 2.0 Project Description

The Proposed River-bed project on Barak River over an area of 13 hectare is located near Kalain at Cachar district of Assam under Kalain Range of Karimganj Forest Division, Assam was granted in favour of Sri Abhay Kumar Jain for collection of sand against their developmental work for a period of 7 (seven) years, as recommended by the Divisional Forest Officer, Government of Assam. Mining Plan has been prepared by RQP Mr. Prabal Kumar Goswami, which was approved by Department of mining and Geology, Govt. of Assam for five years with production capacity of 46,159 Cu. M per year over an area of 13 hectare. River bed mining activities do not involve top soil removal. Excavation of sand will

be done manually using hand tools like hand shovel, pan, sieve and other advanced machineries on a temporary basis, if required. There will be no or minimum waste generation as the gravels are exposed in the river bed. The copy of the mining plan is attached as **Annexure II**.

Project Proponent Sri Abhay Kumar Jain has experience in mining of minerals residing at District Cachar in Assam. He has good record of project execution in schedule time. He has track record of Environmental Management Plan (EMP) and compliance of Environmental Conditions. Separate funds for EMP, CSR and Health and Hygiene are allocated from project cost for all statutory requirements. Work is executed as Mining Plan and Environmental Compliance is completed as statutory requirements and environmental policy.



**Figure E-2: Area of the proposed Mining site**

**Table E.2: Salient Features of Proposed Project**

S. N.	Information	Details			
1.	Location	<b>Barak Sand Minor Mineral Unit No. 3</b> near Kalain <b>P. O &amp; P.S:</b> Kalain <b>District:</b> Cachar, Assam <b>Left bank:</b> Naharpur, Niz malua, Chapra, Badarpur <b>Right bank:</b> Hari Nagar pt-2, Nadar pur, Nazat pur, Lathimara			
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	Toposheet No.	83 D/9 & 83 D/5 of zone 46			
	Village	--			
	Tehsil	Katigorah			
	District	Cachar			
	State	Assam			
2.	Name of the Mineral to be mined	Sand will be collected from River bed			
3.	Capacity of Proposed Production per annum	46,159 Cu. m per year Production in 5 Years – 230,795 Cu.M			
4.	Drilling Blasting	The mining does not require any drilling and blasting in mining activities.			
5.	Method of Mining	Open cast manual method of mining will be applied in river bed of Barak River to collect sand from river bed.			
6.	Lease Period	7 Years Approved mine plan for 5 years.			
7.	Lease Area	13 Hectares			
8.	Land Use Pattern of the Lease Area	River bed of area 13 Hectare of Barak River. Ownership/Occupancy: The Divisional Forest Officer, Karimganj Forest Division, District- Cachar, Assam			
9.	Inferred Reserve	Area of proposed site = 13 Hectares Mineable area=13 Hectares (1,30,000 Sq. m) The maximum depth allowed for extraction of the mineral = 3 m Total reserve of the minerals available would be = 1,30,000 X 3= 3,90,000 Cu.M Considering 1.2 times replenishment total reserve for 5 years would be 4,68,000 CUM			

S. N.	Information	Details
10.	Mineable Reserve	As there will be accumulation of sand to a considerable extent during the rainy season. Mine plan is approved for five years. It is assessed that production in 5 years is 1.2 times of estimated quantity of material (in 5 years) i.e. $3,90,000 \times 1.2 = 4,68,000$ Cu.M. The reserve of sand available for extraction per year would be about $(4,68,000 / 5) = 93,600$ Cu M. Mining Loss being assumed approximately 10% during the extraction operation would be = $(93,600 \times 10\%) = 9,360$ Cu.M per year. The mineable reserve of sand per year = $(93,600 - 9,360) = 84,240$ Cu.M So, mineable reserve of sand during the awarded Mining Contract period of 5 years = $84,240 \times 5 = 4,21,200$ Cu.M.
11.	Manpower to be involved	30
12.	Water requirements and source	3 KLD Source: Ground/ surface water
13.	Solid Waste Generation	The generation of Over burden and top soil are envisaged to be nil. No solid waste except small amount of domestic waste by the workers at the site will be generated.
14.	Cost of the Project	2 Cr (Approx.)
15.	Budgetary Provision for EMP	5% of project cost is allocated for Environmental Management Plan
16.	Corporate Social Responsibility (CSR) cost	2% of project cost is allocated for CSR cost
17.	Health and Hygiene	2% of project cost is allocated for health and hygiene cost

### **Mining methodology**

In order to ensure the conservation of mineral, Systematic mining and protection of environment, the Assam Minor Mineral concession Rules (AMMCR), 1994 has been replaced by AMMCR, 2013 and it has been mandatory to prepare Mining Plan and Progressive Mine Closure Plan for grant of any mineral concession like “Mining Lease”, “Mining Contract” or “Mining Permit” in respect of minor minerals for systematic and scientific development of all mines, quarries as well as river bed mining.

Here, the Mining Plan is prepared to extract sands of the Barak river bed deposits.

The proposed Mining area is basically almost loose deposit of river bed sands and to extract the same from this deposit, manual opencast method of mining is suggested. Use of machinery is sternly not advisable. The procedure to be adopted for open cast mining is elaborately described below:

1. The entire boundary of the Mining Contract area will be marked with boundary lines and pillars in all the corner points. The boundary pillars are to be numbered and marked with GPS coordinate there on. Extraction of sand is to be carried out with a bench height of 0.5 meter to 1.0 meter for the whole area. Use of explosives for mining is not required.
2. The river bed deposits to be extracted and stacked by the Mining Permit Holder will not



exceed twice the average monthly production.

3. No mining would be permissible in a river bed up to a distance of five times of the span of a bridge on upstream side and ten times the span of such bridge on downstream side, subject to minimum of 250M on upstream and 500M on the downstream side. (Rule 39(i) of AMMCR, 2013).
4. There shall be maintained an un-mined block of 50M width after every block of 1000M over which mining is undertaken or at such distance as may be directed by the competent authority. (Rule 39(ii) of AMMCR, 2013).
5. Depth of the river bed mining will not in any way exceed 3 meters at any point in the Permit area from the top of the un-mined river bed as per( rule 39 (iii) of AMMCR 2013).
6. The extraction of sand will be restricted within the central 3/4<sup>th</sup> width of the river. Here, in Barak Sand MMU No. (C), the average mineable width of the Permit area is to be kept 243.72 meters out of the average width of the river being 325 meters as per rule 39(iv) of AMMCR, 2013.

### ***Power Requirement***

There is no power demand in the project. Work will be carried out in day time only.

### ***Water Requirement***

The total water requirement shall be 3 KLD for domestic and sprinkling purpose, which will be sourced from Ground / surface water.

- Dust suppression – 2KLD
- Green Belt – 0.5KLD
- Domestic – 0.5 KLD

### ***Manpower***

The mining activity shall generate employment opportunity of 30 nos. from nearby villages and business opportunity for others.

## **3.0 Description of Environment**

The area around the proposed mining site has been surveyed for physical features and existing environmental scenario. The field survey and baseline monitoring has been done from the period of **December 2022 to February 2023**.

### ***3.1 Meteorology***

The meteorological parameters are recorded on hourly basis during the study period near proposed project site and the summary of meteorological data generated at site is presented in following **Table E.3**.

**Table E.3: Summary of the Meteorological Data generated at Site**

Period	Wind Speed (M/S)		Temp (°C)		Relative Humidity (%)		Rainfall (mm)
	Max	Min	Max	Min	Max	Min	
<b>Dec-22</b>	7.82	0.07	32.63	17.45	99.88	52.56	234.44
<b>Jan-23</b>	4.49	0.1	29.48	13.58	100	41.94	4.68
<b>Feb-23</b>	4.29	0.11	29.44	9.76	99.44	32.06	4.68

### 3.2 Air Environment

The results of the monitored data indicate that the ambient air quality of the region in general is in conformity with respect to rural/residential norms of the National Ambient Air Quality Standards of CPCB, with present level of activities.

**PM<sub>10</sub>**: The maximum value for PM<sub>10</sub> is observed at A8, as **75 µg/m<sup>3</sup>**, while the minimum value observed at A2,3,5, as **56 µg/m<sup>3</sup>** during the study period.

**PM<sub>2.5</sub>**: The maximum value for PM<sub>2.5</sub> is observed at A1,5 and 8, as **36 µg/m<sup>3</sup>** with the minimum value observed at A3, as **22µg/m<sup>3</sup>** during the study period.

**SO<sub>2</sub>**: The maximum value for SO<sub>2</sub> is observed at A6 and 8, as **10 µg/m<sup>3</sup>** with the minimum value observed at 3 locations, as **5 µg/m<sup>3</sup>** during the study period.

**NO<sub>2</sub>**: The maximum value for NO<sub>2</sub> is observed at A8 as **19µg/m<sup>3</sup>** with the minimum value observed at A2 and 3 as **10 µg/m<sup>3</sup>** during the study period.

**CO**: The maximum value for CO is observed at A4,7 and 8 locations, as **1.3 mg/m<sup>3</sup>** with the minimum value observed at A6, as **0.6 mg/m<sup>3</sup>** during the study period.

### 3.3 Noise Environment

The noise monitoring has been conducted for determination of noise levels at 8 locations in the study area. Noise level of the study area varied from 53.3 to 55.1 dB (A) in day time and from 43.6 to 44.4 dB (A) in the night time.

### 3.4 Water Environment

#### Ground Water Quality

- The analysis results indicate that the pH ranges in between 7.3 to 7.8. The minimum pH of 7.3 was observed at GW5,6 and 8; the maximum pH of 7.8 was observed at GW1 and 3.

- Total hardness was observed to be ranging from 204 to 332 mg/l. The minimum hardness (204 mg/l) was recorded at GW2 and the maximum (332 mg/l) was recorded at GW6.
- Chlorides were found to be in the range of 54 to 75 mg/l, the minimum concentration of chlorides 54 mg/l was observed at GW7, whereas the maximum value of 75 mg/l was observed at GW4.
- Sulphates were found to be in the range of 59 to 76 mg/l. The minimum value observed at GW7 (59 mg/l) whereas the maximum value observed at GW5 (76 mg/l).
- The Total Dissolved Solids (TDS) concentrations were found to be ranging in between 316 to 642 mg/l, the minimum TDS observed at GW7 (316 mg/l) and maximum concentration of TDS observed at GW1 (642 mg/l).
- Iron & Zinc found below detectable limit.

### **Surface Water Quality**

- The analysis results indicate that the pH values in the range of 7.3 to 7.8, the minimum value was observed at SW5 and maximum value was observed at SW2 & 8.
- DO was observed to be in the range of 5.6 to 6.1 mg/l. The minimum DO value was observed at SW2 & 6 and maximum DO was observed at SW8.
- The TDS was observed in the range of 168 to 342 mg/l, the minimum TDS value was observed at SW1 and where as maximum value was observed at SW7.
- The chlorides and Sulphates were found to be in the range of 40 to 57 mg/l and 25 to 34 mg/l, respectively.
- Total hardness expressed as CaCO<sub>3</sub> ranges between 104 to 152 mg/l.
- The calcium & magnesium were found to be in the range of 25 to 34 mg/l and 10 to 17 mg/l, respectively. Zinc is found below detectable limit..

### **3.5 Soil Quality**

- It has been observed that the pH of the soil in the study area varied from 6.9 to 7.5. The Minimum pH value of 6.9 was observed at S7 where as the Mximum value of 7.5 was observed at S1.
- The electrical conductivity was observed to range from 0.306 to 0.455 ms/cm, with the maximum observed at S1 with the minimum observed in S6.
- The available Nitrogen value varies from 117 to 134 kg/ha.
- The available Phosphorus value varies from 57 to 80 kg/ha.
- The available Potassium value varies from 228 to 282 kg/ha.

### **3.6 Ecology and Biodiversity**

The project site is situated in Barak riverbed under Kalain Range of Karimganj Forest Division, Assam. As per records of the forest Department there is Barail West Wildlife sanctuary in 13.56 meters in NNW direction.

### **3.7 Socio Economics**

Although the study area (10 km radius from the project location) is divided based on secondary data (Population Census 2011), the total population of the study area is 100110. There are 56457 households on a surface area of 449.52 sq.kmsquare kilometres.

In the study area, the total male population is 167611, which is somewhat higher than the female population of 156944. A map of the research area has been developed based on the concentration of people within a 10 km radius of the study area—the moderate number of inhabitants in the villages of Chapra, Niz Hari Tikar PT II , and Kandigram Chaita located central section the project region, where the project location is located. The villages of Badarpur (TC) has highest population. The remaining settlements in the study region have a moderate to low population density.

## **4.0 Anticipated Environment Impacts and Environment Management Plan**

### ***Land/Soil Environment Impact Mitigation***

Adopting suitable, site-specific mitigation measures can reduce the degree of impact of mining on land & soil. Some of the land & soil related mitigation measures are as follows:

- Present land use pattern of the lease area is riverbed and at the conceptual stage the land use pattern will remain the same, hence will not be changed.
- There will be no mining near the banks. This is to protect the bank erosion and river migration.
- There is no generation of waste material in case of River Bed mining. No back filling is proposed as river Bed will be replenished by sediments during rainy season.
- Minimum number of haul roads to river bed for which cutting of river banks will be avoided.
- Mining is avoided during the monsoon season and at the time of floods.
- Vegetation development is proposed along the road sides of the haul roads, to stop soil erosion. While selecting the plant species, preference will be given for planting native species of the area.

### ***Air Impact Mitigation***

- The long life WBM (Water Bound Macadam) haul roads will be constructed and maintained for traffic movement.
- The speed of dumpers/ trucks on haul road will be controlled as increased speed increases dust emissions. Overloading of transport vehicles will be avoided. The trucks/ tippers will have sufficient free board. Spillage of ore on public roads will be cleared immediately and vehicles will play in safe speed.
- Planting of trees all along main mine haul road and regular grading of haul roads will be practiced to prevent the generation of dust due to movement of dumpers/trucks.

### ***Noise Impact Mitigation***

- Proper maintenance of all transportation vehicles will be carried out which help in

reducing noise during operations.

- Regular maintenance and proper management of deployed machinery will be ascertained and entire mining operation will be carried out in day time only.
- Awareness will be imparted to the workers about the permissible noise levels & maximum exposure to those levels.

### ***Water Impact Mitigation***

- Ground water table will not be intersected during the mining activity. During the entire lease period, the deposit will be worked from the top surface up to 3 m bgl or above ground water table, whichever comes first.
- No diversion of surface water is proposed. There will not be any adverse impact on flow pattern, surface hydrology and ground water regime.

### ***Ecology and Biodiversity Impact Mitigation***

#### **Flora**

- Plantation proposed along the haul roads and other areas in the vicinity will improve the vegetation cover of the study area over a period of time.
- Native plant species which are stress and pollution tolerant and comparatively well acclimatized should be grown along roadsides.
- The trucks carrying stone and sand shall be covered with tarpaulin to avoid dust generation during transportation.

#### **Fauna**

- All workers and drivers involved in the project will be trained to avoid harming any animal spotted. No mining activity shall be carried out at night.
- No night time mining will be allowed which will disturb wildlife.
- Workers will be made aware of the importance of the wildlife and signage will be displayed at the sensitive areas to caution the workers & other passerby.
- Access roads will not encroach into the riparian zones and if any riparian vegetation cleared off for the mining activity will be restored at the end of closure of mine.

### ***Socio-Economic Environment Impact Mitigation***

- The implementation of the Stone mining project will generate both direct and indirect employment.
- Mining in this lease will give job opportunities to the local people. Thus, mining will create beneficial effect on local people.
- The various indirect employment opportunities will also be generated. Several persons of the Neighbouring villages will be benefited with contract works, employment through contractors, running of jeeps, trucks, tractors water tankers and bullock carts on hire, and transport related business avenues.
- There will be some people who are engaged in trading of stones. Therefore due to mining

of stone, there is possibility of the per capital income improving.

## **5.0 Environmental Monitoring Programme**

It is imperative that the project proponent shall continue to monitor environmental health, post clearance.

- It helps to verify the predictions on environmental impacts presented in this study.
- It helps to indicate warnings of the development of any alarming environmental situations, and thus, provides opportunities for adopting appropriate control measures in advance.

Detailed EMP plan during construction and operation phase is given Chapter 6 of EIA/EMP report.

## **6.0 Capital Investment and Project Schedule**

The proposed mining project is estimated to cost Rs 2 Crores (approx.). Once the statutory clearance being obtained, the mine will start operating. Mine activity will be carried out for five years as per approved mining plan.

## **7.0 Project Benefits**

Mining is backbone of infra-structure development of country. Proposed project has following benefits as given below:

1. Employment for local people
2. Revenue for the State Govt. in form of excise duties, GST, tax cess, levies etc.
3. Stone will be used in construction of road, bridges, buildings etc.
4. Generate business opportunity
5. CSR funds will be used for welfare of people in villages
6. EMP funds will improve environmental quality.
7. Proposed project adds to improve infrastructure that will attract business houses.

The operation of the Mining would help in up-liftment of socio-economic scenario of the locality.

## **8.0 Need Based Activity**

The proposed mining project is aware of the obligations towards the society and to fulfill the social obligations. The proposed project will employ semi-skilled and unskilled labor from the nearby villages for the proposed project as far as possible. The project will also try to generate maximum direct & indirect employment in the nearby villages. The Project Proponents will allocate fund (2% of the project cost) as part of their Need Based Activity and will carry out various activities in nearby villages.

The total estimated cost of the project is 2 Crores. The project Proponent will allot 2% of the project cost i.e., around 4 Lacs towards the Need Based Activity.



## **9.0 Conclusions**

The proposed project will have certain level of marginal impacts on the local environment. However, it would also generate indirect employment generation, improve the social and economic environment in the vicinity and meets the need of the state.