EXECUTIVE SUMMARY

FOR

Mining of minor Mineral (Sand, Bajri and Boulders) SONG-1 River Bed, Village Balawala, Tehsil and District, Uttarakhand

(M.L. AREA OF 202.0 HA, Category-A PROJECT; CAPACITY: 5999400.00 TPA)

PRODUCTION (AS PER REPLENISHMENT STUDY REPORT 2018-19)-1074572.16 TPA

(AS RAJAJI TIGER RESERVE SITUATED AT 8.50 KM FROM PROJECT SITE)

PROJECT PROPONENT

UTTARAKHAND FOREST DEVELOPMENT CORPORATION

STUDY PERIOD: DEC 2019- FEB 2020

MCPL/EMD/MIN/2019-20/09/01(DEIA) November, 2021

Prepared By

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1. INTRODUCTION

M/s Uttarakhand Forest Development Corporation (UKFDC) is a statutory body constituted by the State Government of Uttarakhand. The Corporation was formed for the better preservation, supervision and development of forest, also for better exploitation of forest produce within the State and for matters connected therewith.
The Corporation has been progressing forward not only in its financial aspect but also has taken a big leap in the direction of diversification of its activities.

M/s Uttarakhand Forest Development Corporation (UKFDC) has proposed for mining of Sand, Bajri and Boulder minor mineral in their mining lease area of 202.00 hectare in Village Balawala, Tehsil and District Dehradun for collection of 5999400.00TPA.

2. PROJECT PROPOSAL

It has proposed for mining of Sand, Bajri and Boulders (minor minerals) in their mining lease area of 202.00 hectares in village Balawala, Tehsil and District- Dehradun for collection of 5999400.00 TPA of minor minerals. The applicant is seeking prior Environmental Clearance for the project as per EIA notification' 2006 and its subsequent amendments, so it has allotted the job for EIA/EMP Study of their proposed project to Mantec Consultant Pvt. Ltd., Noida. Since, the applied mine lease area is located at a distance of 8.50 kms from Rajaji Tiger Reserve, it falls under "Category A"&the Schedule Clause number 1(a) of EIA notification 2006 and its subsequent amendments. The Letter of Intent (LoI) has been issued by the Director of Mines & Geology department, Uttarakhand 38 **खनन / आशय पत्र / व०वि०नि०/ भू० खनि० ई०/2018-19** dated **24.7.2018** and **vide letter no.** 51039/**खनन/ आशय पत्र / व०वि०नि०/ भू० खनि० ई ०**/2018-19 dated 05/11/2018

Table 1Details of the Project

S. No.	Particulars	Details
A.	**Lease Area Details**	
	Lease Area	202.0 ha
	Topography	Undulated (Riverbed)
	Site Elevation Range	547.4 m - 605.2m amsl (*Source: Mining Plan)*
B.	**Production Details:**	
	Proposed Production	5999400 TPA
C.	**Cost Details**	
	Cost of the project	Rs. 4.18 Crore
	Cost for EMP	Rs. 95.7 Lakhs/Yr (Capital Cost) Rs. 23.53 Lakhs/Yr (Recurring Cost)
	OH&S	Rs.1.0 Lakh/Yr(Capital Cost) Rs 5.0Lakhs/Yr (Recurring Cost)
E.	**Environmental Settings of the area**	
	Ecological Sensitive Areas (National Park, Wild Life Sanctuary, Biosphere Reserve, Reserve/ Protected Forest etc.) within 10 Km radius	Rajaji Tiger Reserve - 8..50 Km, SWS Direction Saura Reserve Forest-0Km Barkot Range Forest- 9.4 Km SWS Direction Hrishikesh Reserve Forest- 2.8 Km WSW Direction .

	Inter-state boundary within 5 Km radius	None
	Nearest Town/ Major City	Uttarakhand Vidhansabha Dehradun~8.44 Km, WN
	Nearest Railway Station	Harrawala Railway Station~3.6 km, W
	Nearest State Highway/ National Highway	NH-72 Haridwar Dehradun Road~4.0 km, W
	Nearest Airport	Jolly Grant Airport~8.75 km, SE (aerial distance)
	Nearest Post Office	Nathuwala Post office ~1.0 km, W (aerial distance)
	Nearest Police Station	Nehru Colony police station Police Station~7.50 kms .
	Medical Facilities	Kailash Hospital~6.71 Km Raipura Government hospital ~2.50 Km
	Education Facilities	Dayalbagh Educational Institute Study Center ~ 9.6 Km, NW Acacia Public School ~ 5.5 Km, W
	Seismic Zone	Zone-IV (As per 1893:2002)
	Water Body	Jhakan River ~ 7.92 kms in S

3. PROJECT DESCRIPTION

The proposed project is for mining of Sand, Bajri and Boulder (Minor Mineral) by open manual method in riverbed over an area of 202.0 Ha with proposed production capacity of 5999400 TPA.

The total geological reserve is 12003328.26 tons and total mineable reserve is 5999400.00TPA. Ultimate depth of a bench will be 3.0 m.

Riverbed block will be further replenished during rainy season. Minerals will be transported by trucks. It is widely used in construction, buildings, bridges and other infrastructure.

Total water requirement for the project is 55.5 KLD. Total manpower requirement for the project is 670 numbers. The site facilities like canteen, rest-shelter, first aid facility, water and electricity supply etc. will be provided as per requirement.

There is no litigation pending against this project. It is coming under the Zone IV of Seismic Zone(As per 1893:2002)

4. DESCRIPTION OF THE ENVIRONMENT

Environmental data has been collected in relation to proposed mining for Air, Noise, Water, Soil, Ecology and Biodiversity. The generation of primary data as well as collection of secondary data and information from the site and surroundings was carried out during winter season i.e. **December 2019 to February 2020.**

The EIA study is being done for the Mine Lease (core zone) and area within 10 Km distance from mine lease boundary (buffer zone), both of which together comprise the study area.

Table 1-2: Baseline Status

Attribute	Baseline Status
1. Ambient Air Quality The baseline status of the ambient air quality has been assessed through scientifically designed Ambient Air Quality Network. The design of monitoring network in the air quality surveillance program has been based on the following considerations: a) Representation of Mine leases area. b) Representation of the down wind direction and cross-sectional distribution. c) Representation of residential areas. d) Representation of regional background levels. e) Representation of sensitive receptor. f) Meteorological conditions (predominant wind direction and wind speed. g) Topography of the study area.	• Ambient Air quality Monitoring was carried out in total 8 locations and the maximum value for **PM_{10}** is observed as 67 **µg/m³** at mine site and minimum value of 42 **µg/m³**. • Ambient Air Quality Monitoring was carried out in total 8 locations and the maximum value for **$PM_{2.5}$** is observed as 38 **µg/m³** at mine site and minimum value of 23 **µg/m³** observed. • Ambient Air Quality Monitoring was carried out in total 8 locations and the maximum value for **SO_2** is observed as 15 **µg/m³** at Lal Tappad & Narendra Nagar and minimum value 6 **µg/m³** is observed. • Ambient Air Quality Monitoring was carried out in total 8 locations and the maximum value for **NO_2** is observed as 28 **µg/m³** at Doiwala and the minimum value of 14 **µg/m³** is observed.
2. Noise Levels **1. Dehradun** **2. Manav Vihar** **3. Bhopalpani Grant** **4. Doiwala** **5. Barasi Grant** **6. Bhaniwala** **7. Mothrowala** **8. Hirikhesh**	Noise Monitoring was carried out in total 8 locations and the noise levels recorded during the day time were from 58.3 Leq dB to 48.5 Leq dB respectively and level of noise during night time were from 48.5 Leq dB to 39.6 Leq dB respectively.
3. Water Quality	Analyses of Ground water and Surface water were taken in the Post Monsoon Season December 2019 to February 2020.

Ground water Station:- **1. Dehradun** **2. Manav Vihar** **3. Bhopalpani Grant** **4. Doiwala** **5. Barasi Grant** **6. Bhaniwala** **7. Mothrowala** **8. Hirikhesh** **Surface water station:-** **1. Mine Site** **2. Nala near Nakraunda** **3. Water Body near Barasi Grant** 4. **Song River U/S**	**Ground Water-**Ground water monitoring was carried out in total 6 locations. • pH varies from to7.21 to 7.96 • Total Hardness varies from 161.00 to 293.00 mg/L. • Total Dissolved Solids varies from 251.00 to 403.00 mg/L. • Fluoride varies from 0.51 to 0.77 mg/L • Chloride varies from 56.00 to 105.00 mg/L **Surface Water -** Surface Monitoring was carried out in 4 locations. • pH varies from to 7.34 to 7.81 • Total Hardness varies from 123.00 to 139.00 mg/L. • Total Dissolved Solids varies from 227.00 to 253.00 mg/L. • Fluoride varies from 0.37 to 0.78 mg/L • Chloride varies from 42 to 64 mg/L • COD varies from 48 to 76 mg/L • BOD varies from 6 to 10mg/L
4. Soil Quality **1. Dehradun** **2. Manav Vihar** **3. Bhopalpani Grant** **4. Doiwala** **5. Barasi Grant** **6. Bhaniwala** **7. Mothrowala** **8. Hirikhesh**	Soil Monitoring was carried out in total 8 locations. • The data shows that value of pH ranges from 7.15-7.84. • Bhopalpani Grant shows maximum conductivity of 415µmhos/cm, Mothrowala village shows minimum conductivity of415 µmhos/cm. • Values of CEC ranges from 11.88 meq/100g as lowest at Barasi Grant and 15.34 meq/100gas maximum at Mothrowala. • Magnesium values ranges from 2.35 meq/100g as lowest at Bhaniwala and 2.84 meq/100g as highest at Barasi Grant. • The average concentration of Nitrogen, Phosphorus and Potassium in the soil samples • Varies from 9.2 to 11.4 mg/100gm, 0.57 to 0.96 mg/100gm and 4.0 to 6.0 mg/100gm.

b) Socio Economic Environment

Socio-Economic Impact Assessment (SEIA) refers to systematic analysis of various social and economic characteristics of human being living in a given geographical area (study area/impact area). The prime objective of SEIA is to identify and evaluate potential socio-economic and cultural impacts of a proposed development project on the lives & conditions of people, their families and communities.

1.1.1 Study Area

The study area defines 10 km circle radius around The mine is situated in the Village- Balawala, Tehsil and District-Dehradun. The mine lease area falls in the survey of India Toposheet no 53J/4. . The study area habitations are spread over the Dehradun district and sub districts Dhanaulti and

Narendranagar of Tehri Garhwal district of Uttarakhand state. The nearest railway station and airport to the project site is Harrawala Railway Station 3.6 km in west (W) direction and Jolly Grant Airport, 8.75 km south east (SE) of the mining site respectively.

The study area comprises of a total of 115 identified habitations out of which there are 112 villages and 3 are urban areas. There is 1 uninhabited village in the study area habitations. The habitations have been shown in the map and the table below:

Habitations in the study area

Sl. No.	Village	Sl. No.	Village
1	Bharwa Katal	47	Nahi Kalan
2	Mahendra Pur	48	Jakar
3	Dubri	49	Farti
4	Dubara	50	Sangaon
5	Kokliyal Gaon	51	Sindhwal Gaon
6	Daur Mai Kanda	52	Kotala
7	Kol	53	Nahikhurd
8	Chiphalti Lagga Gawali Danda	54	Baderha Kalan
9	Jaintwari	55	Baderna Khurd
10	Jhoti Urph Koti Lagga Jaintwar	56	Tamoli Garh
11	Toliya Katal	57	Talai
12	Saudan Lagga Gawali Dand	58	Dharkot
13	Ghursal Gaon	59	Simiyanah
14	Sunderwala	60	Baderana Majhala
15	Dwara	61	Kuthar
16	Akhandwali Bhilang	62	Katkot Khurd
17	Sodasaroli	63	Katkot Kalan
18	Kalimati	64	Siron
19	Barasi Grant	65	Ghandol
20	Bhopalpani Grant	66	Chauki
21	Paw Wala Soda	67	Kaknawamaychak Talai

22	Motharo Wala	68	Kotimay Chak
23	Badripur	69	Ramnagar Danda
24	Haripur	70	Kandogal
25	Nawada	71	Kudhal
26	Chaktonwala Grant	72	Gadool
27	Balawala	73	Pali
28	Miyanwala	74	Khaldhar
29	Mohkam Pur Kala	75	Bagi
30	Mohkam Pur Khurd	76	Bangai
31	Majari Mafi	77	Naurtuwala
32	Harrawala	78	Rakhwal Gaon
33	Nakraunda	79	Govind Wala
34	Kuwan Wala	80	Bishan Garh
35	Nagal Jwalapur	81	Bairagada
36	Simlas Grant	82	Sarangdharwala
37	Lachhi Wala	83	Bhogpur
38	Missar Wala Kala	84	Chakbarkot
39	Missar Wala Khurd	85	Barkot Mafi
40	Markham Grant	86	Rani Pokhari Grant
41	Ghissar Pari	87	Mauja Rani Pokhari
42	Doiwala	88	Listrabad
43	Hansuwala	89	Kaluwala
44	Lachhiwala Range	90	Sangatiya Walakala
45	Landwakot	91	Bhaglana
46	Haldwari	92	Badowala
Sl. No.	**Village**	**Sl. No.**	**Village**

93	Baruwala Grant	105	Ashkrodi Range
94	Jauligrant	106	Kaudasi
95	Sangatiya Walakhurd	107	Fagsi
96	Baksar Wala	108	Badogal
97	Kanhar Wala	109	Falsuwa
98	Athhoorwala	110	Rainapur Grant
99	Bhaniya Wala	111	Mazri Grant
100	Jeevan Wala	112	Kasron Range
101	Fatehpur Danda		**Urban Area**
102	Sahab Nagar	113	Dehradun
103	Barkot Range	114	Natthuwa Wala (CT)
104	Thano Range	115	Natthan Pur (CT)

The demographic profile of the study area is given below:-

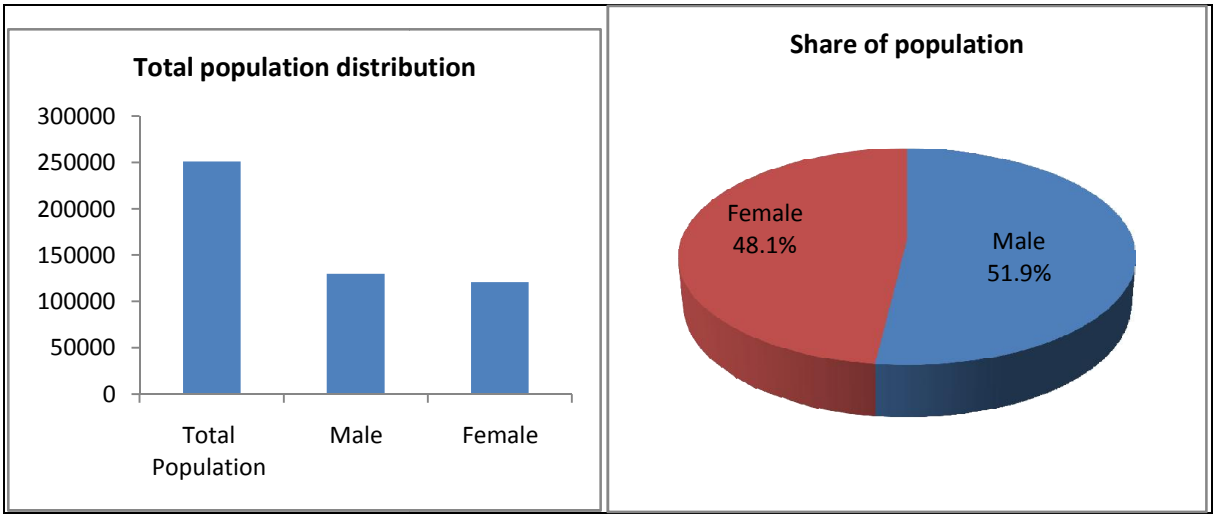
S. No.	Description	Number	Percentage to Respective Total
1	**Total Population**	**250971**	**100**
	Male	**130151**	**51.9**
	Female	**120820**	**48.1**
	Sex Ratio	928	
2	**Population (0-6) Age Group**	**29108**	**100**
	Male	15507	53.3
	Female	13601	46.7
	Sex Ratio	877	
3	**Population- Scheduled Caste**	**30881**	**100**
	Male	16303	52.8
	Female	14578	47.2
	Sex Ratio	894	

4	**Population- Scheduled Tribe**	**1749**	**100**
	Male	941	53.8
	Female	808	46.2
	Sex Ratio	858	
5	**Total Literates**	**192218**	**100**
	Male	105768	55.0
	Female	86450	45.0
	Gender Gap in Literates	10.0	
6	**Overall Literacy Rate**	**86.6**	
	Male	92.3	
	Female	80.6	
	Gender Gap in Literacy Rate	11.7	
7	**Total Workers**	86312	**100**
	Male	65409	75.8
	Female	20903	24.2
	Gender Gap in Work Participation	51.6	
8	**Main Workers**	**67248**	**100**
	Male	53878	80.1
	Female	13370	19.9
	Gender Gap in Work Participation	60.2	
9	**Marginal Workers**	**19064**	**100**
	Male	11531	60.5
	Female	7533	39.5
	Gender Gap in Work Participation	21.0	
10	**Household Industrial Workers**	**2503**	**100**

	Male	1903	76.0
	Female	600	24.0
11	**Total Agricultural Workers**	**11131**	**100**
	Male	7870	70.7
	Female	3261	29.3
12	**Cultivators**	**8191**	**100**
	Male	5394	65.9
	Female	2797	34.1
13	**Agricultural Labour**	**2940**	**100**
	Male	2476	84.2
	Female	464	15.8
14	**Other Workers**	**53614**	**100**
	Male	44105	82.3
	Female	9509	17.7

(Source: Primary Census Abstract, 2011)

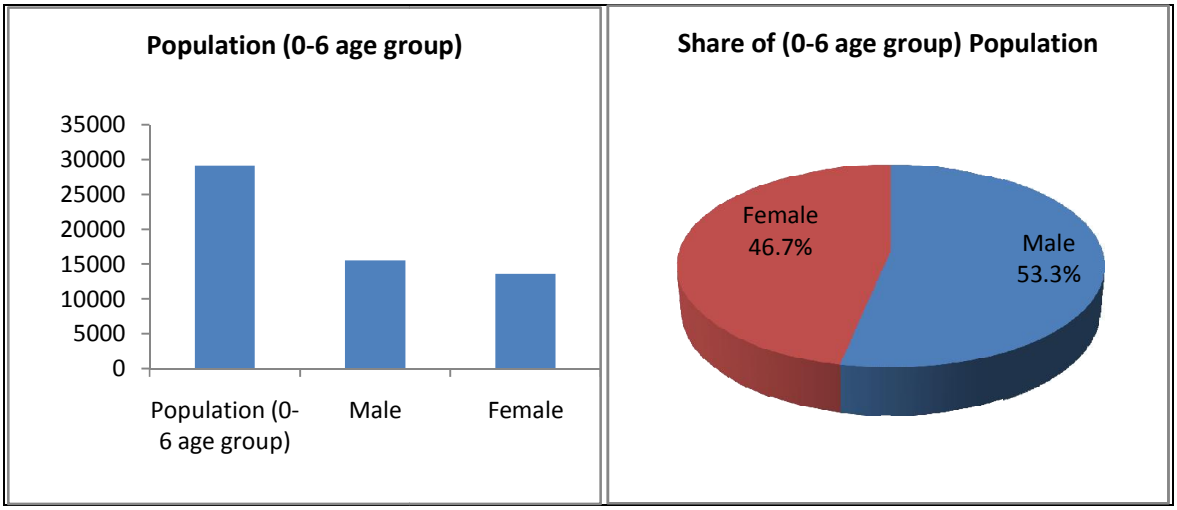
Total Population Details



Child Population Distribution

In the study area, the total population of age group of 0-6 year has been worked out to be 29108 which constitute about 11.6 per cent of the total population. Of the total (0-6) age group population, 53.3 per cent are boys and remaining 46.7 per cent are girls. In absolute terms, the number of males in the age group (0-6) population is 15507 whereas the number of females in this age group is 13601. The sex ratio of population in this age group (0-6 years) is 877 girls per 1,000 boys.

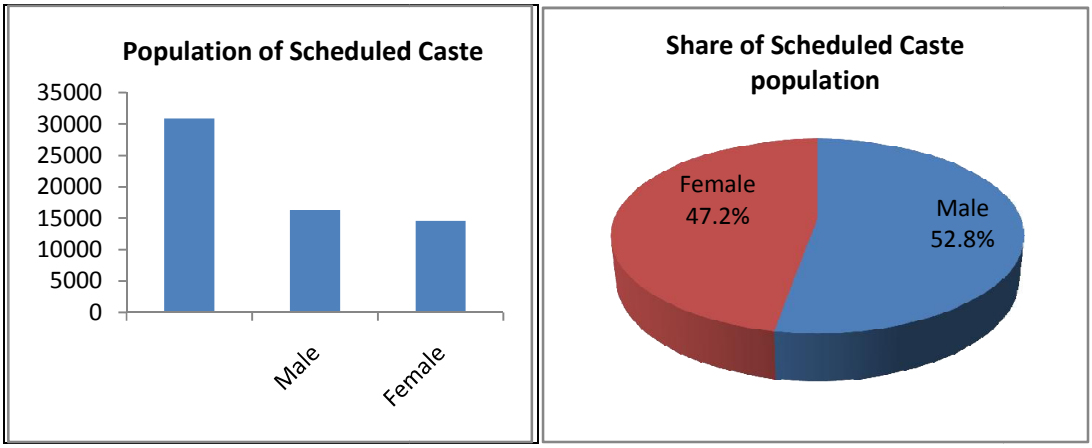
Age Group 0-6 Population Distribution



Social Group Population Distribution

In the study area, Scheduled Caste population is 30881 which constitute 12.3 per cent of the total population of the study area. In the total Scheduled Caste population, 52.8 per cent is male and the remaining 47.2 per cent is female. In absolute terms, the number of Scheduled Caste males is 16303 whereas the number of Scheduled Caste females is 14578. The sex ratio among Scheduled Caste population has been worked out to be 894 females per 1,000 males.

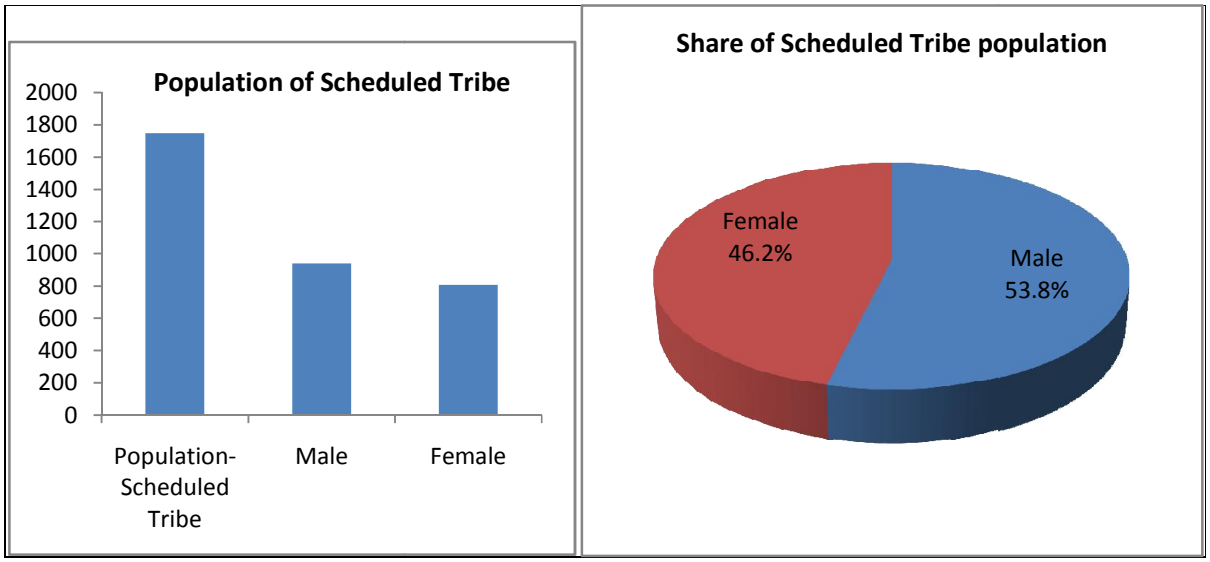
Scheduled Caste Population Distribution



In the study area, Scheduled Tribe population is 1749 which constitute 0.7 per cent of the total population of the study area. Of the total Scheduled Tribe population, 53.8 per cent is male and the

remaining 46.2 per cent is female. In absolute terms, the number of the Scheduled Tribe males is 941 whereas the number of Scheduled Tribe females is 808. The sex ratio among Scheduled Tribe population has been worked out to be 858 females per 1,000 males

Scheduled Tribe Population Distribution



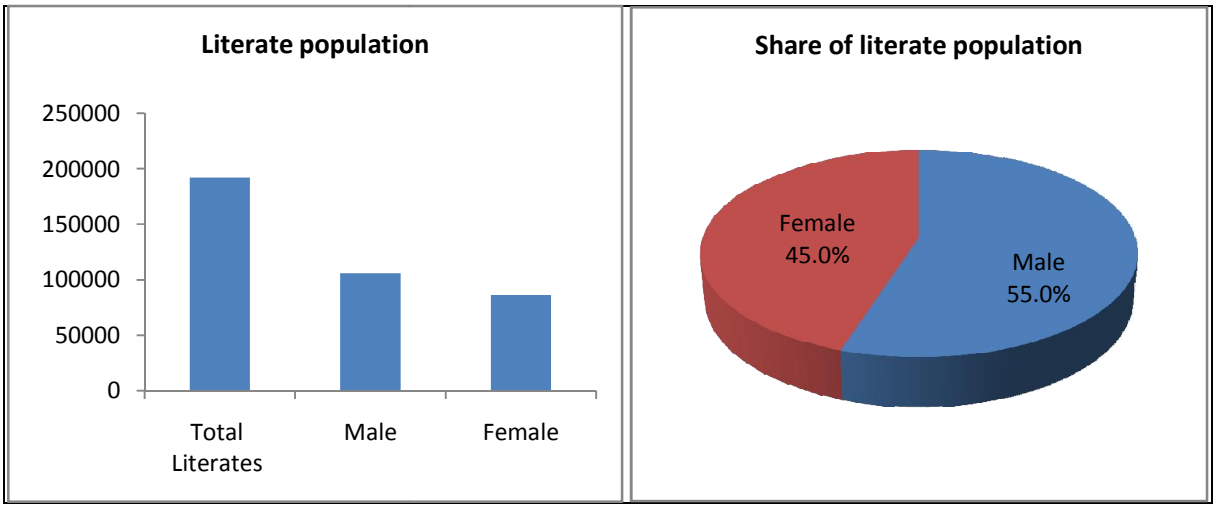
Household and Household Size

The entire population of the study area is distributed into 53747 households and the average household size has been worked out to be 5.

Literates, Literacy Rate and Gender Gap in Literacy Rate

In the study area, 76.6 per cent of the total population is literate. The total number of the literate population is 192218 in which the number of male literates is 105768 and the number of female literates is 86450. The male literates are 55.0 per cent and the female literates are 45.0 per cent. The gender gap among the literate population is 10.0 per cent. The overall literacy rate has been worked out to be 86.6 per cent. The literacy rate of the male is 92.3 per cent and the literacy rate of the female is 80.6 per cent which creates a gender gap in the literacy rate of 11.7 per cent.

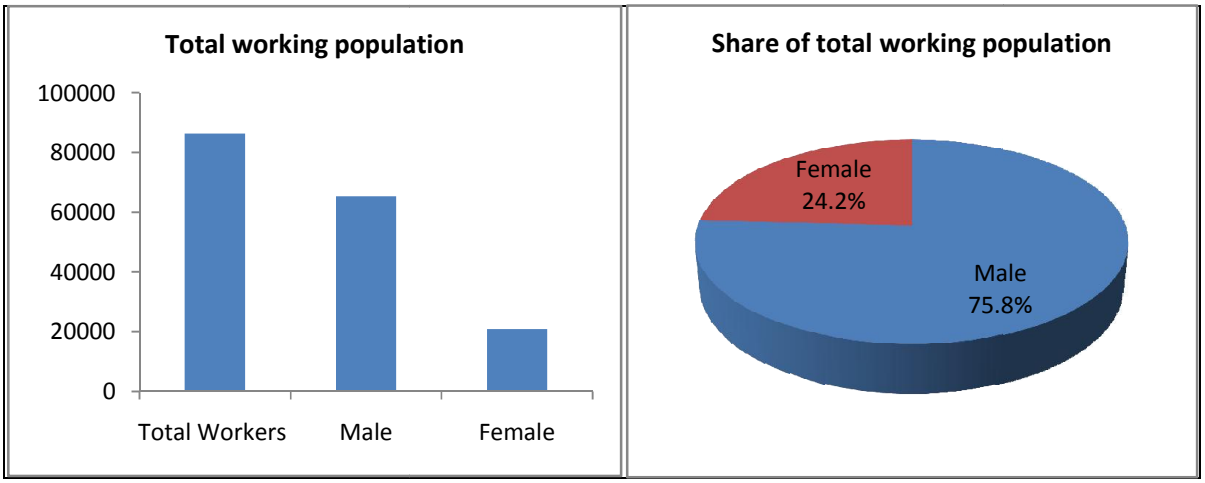
Literates Population Distribution



Working Population Details

Based on Census 2011, total number of workers in the study area has been worked out to be 86312 which constitute 34.4 per cent of the total population. Of the total workers, 75.8 per cent are males and the remaining 24.2 per cent are females. In absolute term, the total number of male workers is 65409 and the total number of female workers is 20903. In the total working population there is a large gender gap of 51.6 per cent.

Working Population Distribution

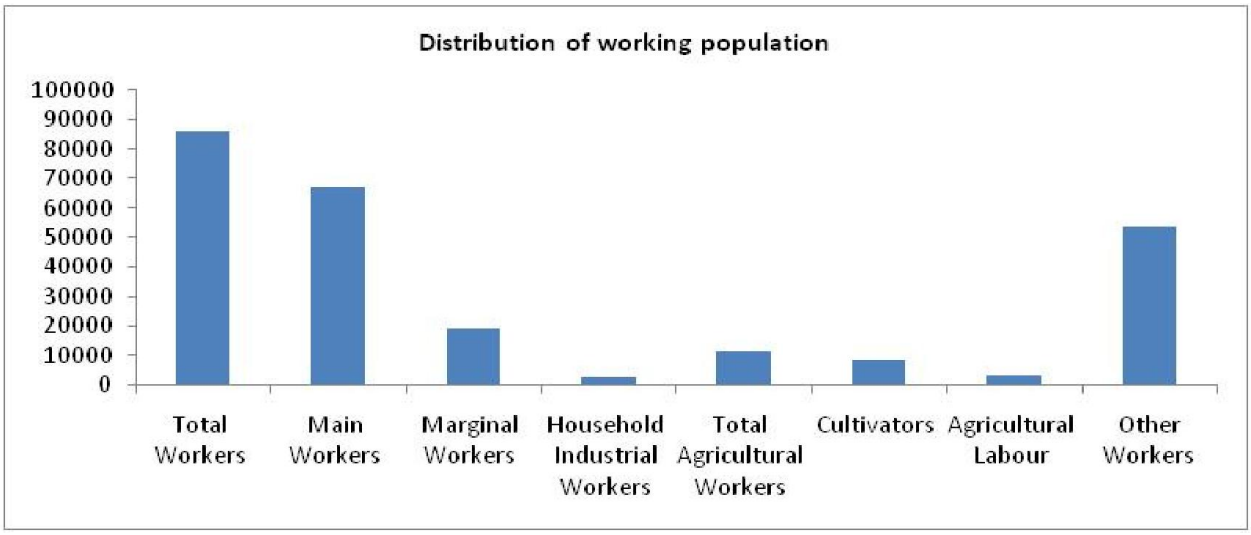


Details of the Working Population

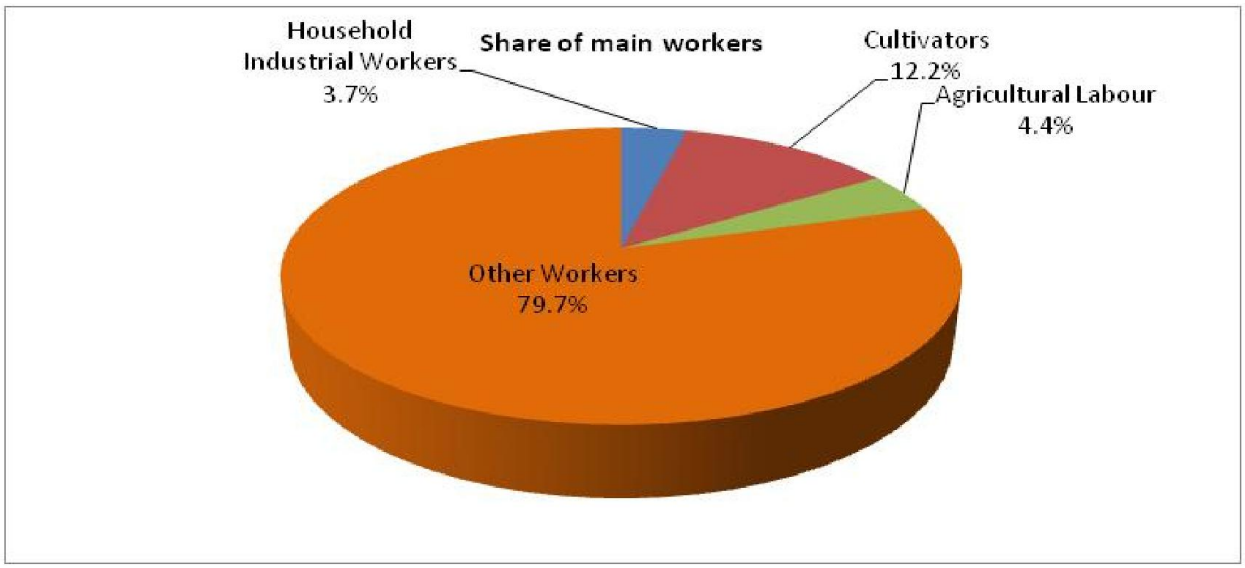
In the total working population of the study area habitations is 77.9 per cent is main workers and the remaining 22.1 per cent is marginal workers. Of the total main workers 80.1 per cent are males and remaining 19.9 per cent are females which create a large gender gap in work participation of 60.2 per cent. In case of marginal workers, 60.5 per cent are males and 39.5 per cent are females that create a gender gap of 21.0 per cent in this segment of work participation. The main workers are further divided into cultivators, agricultural laborers, household industrial workers and other

workers. The sum total of the cultivators and agricultural laborers has been termed as total agricultural workers.

Distribution of Working Population



Distribution of main workers



Of the main working population, 12.2 per cent are cultivators and 4.4 per cent are agricultural laborers. The population that belongs to the other workers category is 79.7 per cent while 3.7 per cent of the main workers belong to industrial household workers category. From the above distribution of workers it is clear that the economy of the study area is mainly dependent on other workers category and next is those involved in agricultural sector either as cultivators or agricultural laborers.

(c) Biological Environment

The study area falls in the Forests land. The list of total number of different plant species (trees, shrubs, herbs and climbers) has been prepared based on the site observations and along with consultation with local peoples. The most common floral species are Shorea robusta (Sal), *Bombax ceiba, Lannea coromandelica, Mallotus philippensis, Dalbergia sissoo, Aegle marmelos*, *Melia azadirachta*, *Tectona grandis*, *Shorea robusta*, *Trewia nudiflora*, *Adhatoda vasica, Boehmeria macrophylla, Callicarpa macrophylla, Carissa carandas, Cassia occidentalis, Commelina benghalensis, Jasminum pubescens, Lantana camara, Solanum torvum, Urtica dioica etc.* Whereas common herbs are *Achyranthes aspera, Ageratum conyzoides, Artemisia nilagirica, Chenopodium album, Euphorbia hirta, Justicia procumbens, Oxalis corniculata, Rauvolfia sp. Sida cordifolia,* and *Xanthium strumarium etc.*

There are no Rare or Critically Endangered and Threatened plant species in the study area as per IUCN category. The floral species found in the study area are common and wide spread occurrence.

Various kinds of birds are found flying across the project area. There are no species- specific major nesting sites near the project site. The site is also not known for any migratory bird halt. Snakes such as **Cobra** (*Naja naja*) and Common **green whip snakes** (*Hierophis viridiflavus*) have been spotted in the study area.

Amphibians such as **Cascades frog** (*Rana cascadae*), **Common Asian Toad** (*Duttaphrynus melanostictus*) are more frequent along the river during the peak season. Small fish species are found in the river.

Around 102 faunal species are reported from this area (24 mammals, 51 birds, 9 reptilians, 8 amphibians and 10 butterflies' species). The major animals reported from surrounding forest areas include Elephant (*Elephas maximus*), **Leopard** (*Panthera pardus*), **Leopard Cat** (*Prionailurus bengalensis*), Bengal Tiger (*Panthera tigris tigris*), **Indian Pangolin** (*Manis crassicaudata*) and **Indian Peafowl** (*Pavo critatus*) some of which are endangered and accorded protection under the Wildlife Protection Act, 1972. All the listed species were compared with IUCN Red Data Book and Indian Wildlife Protection Act, 1972

5. ANTICIPATED ENVIRONMENT IMPACT AND MITIGATION MEASURES

(a) AIR ENVIRONMENT

The air quality in the mining area depends upon the nature and concentration of emissions and meteorological conditions.

Anticipated Impact

- Mining Operation carried out by opencast manual & semi mechanized method generate dust particles due to various activities like loading &unloading of sand and transportation.
- The impact on ambient air quality in the area surrounding the mining area depends upon the pollutant emission rate and prevailing meteorological conditions. As it is an open cast semi mechanized mine, particulate Matter (Dust) of various sizes is the only pollutant of any significance.

Mitigation Measures

- The speed of trucks on haul road will be controlled as increased speed increases dust emissions. Overloading of transport vehicles will be avoided.
- Proper mitigation measures like water sprinkling will be adopted to control dust emissions.

- Masks will be provided to workers.
- To control the emissions regular preventive maintenance of equipment will be carried out on contractual basis.
- Green belt of adequate width will be developed.

(b) NOISE ENVIRONMENT

The area generally represents calm surroundings. There is no heavy traffic, industry or noisy habitation in the area. As the project is proposed for open cast manual mining method, there will be no blasting or drilling activities.

Anticipated Impact

- The source of Noise pollution will be the vehicular movements.
- Noise generated by manual extraction of river bed material, using shovels, crowbars etc., will be negligible.

Mitigation Measures

- Proper maintenance of all transportation vehicles will be carried out which help in reducing noise during operations. No other equipment except the transportation vehicles will be allowed.
- Noise generated by hand equipment will be negligible and will not cause detectable adverse impact.
- Awareness will be imparted to the workers about the permissible noise levels and maximum exposure to those levels.

(c) WATER ENVIRONMENT

The impact of mining project on groundwater hydrology and surface water regime are site specific and depends upon the characteristics of the mineral, hydrogeology and requirement of groundwater for other uses.

Anticipated Impacts

- The Mining in the riverbed area may cause the groundwater contamination due to the intersection of the water table.
- Waste water disposed from the mining activity may contaminate the surface water.
- River recharges the ground water; excessive mining may reduce the thickness of natural filter materials (Sediments), through which the ground water is recharged.

Mitigation Measures

- Mining will be done above the water table as well as river bed water level, therefore much impact on water regime is not accepted.
- Proper analysis/Monitoring will be done to check the ground water.

(d) LAND ENVIRONMENT

Impact assessment study on land environment can be done by considering land use pattern/land cover, topography, drainage pattern and geological features of the mine site as well as the study area.

Anticipated Impact

- Mining activity will impact river bed topography by formation of excavation voids.
- River bed mining may bring some change in topography at the nearby area of the mine lease.
- Stacks of solid waste generated from mining activity may hinder the flow of water in monsoon season.

Mitigation Measures

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

- Excavated pits will get replenished annually in monsoon itself & will be restored to original.
- Mineral will be mined after leaving the 25% width as a safety zone on both sides of the riverbed.
- Solid waste will not be stacked on the bank side as it will hinder the flow of water in monsoon season.
- The mine working will remain confined to allotted river bed only, so it will not disturb any surface area outside the mine lease area which may affect topography or drainage.

(e) ECOLOGY & BIODIVERSITY

Anticipated Impact

- There shall be negligible air emissions or effluents from the project site. This shall be a temporary effect and not anticipated to affect the surrounding vegetation significantly.

Mitigation Measures

- Plantation will be done along the approach roads. These activities will help to improve the Floral cover of the area, which helps in countering soil erosion.
- All the preventive measures will be taken for growth & development of flora.
- Although, the project will not lead to any tree cutting, it is proposed to improve the greenery of the locality by plantation services. To avoid dust emissions, the mined materials will be covered with tarpaulin during transportation.
- Suitable plan for conservation of Schedule-I Species have prepared and necessary fund to implement for the same will be made.

(f) SOCIO ECONOMIC

Anticipated Impact

There will be positive impact on the employment and nearby society due to the following reasons:

- The project will generate 670 employment opportunities for the local people in the mining project. Indirect employment is also expected due to the associated mining activities.
- The project will prevent widening of the river bed due to the deposition of sediments which if not mined out, will results in rising of the river bed, thereby causing flood, damage to the adjoining areas, destruction of life & property.
- The project will incur towards the corporate social responsibility for wellbeing of the nearby villagers.

(g) Solid Waste

Anticipated Impact

- As there is practically no soil cover observed in the river bed, this project does not involve any waste generation.
- No municipal waste other than domestic sewage shall be generated.

Mitigation Measures

- Only clayey soil generated during mining process which will be used for the plantation.
- Domestic sewage will be disposed off into septic tanks followed by soak pits.

(h) TRAFFIC ENVIRONMENT

Anticipated Impact

- The increase in traffic density will lead to the air pollution and it cause the effect on human health like damage to lung tissue, cancer, asthma etc.
- The movement of vehicles cause the noise pollution.

Mitigation Measures

- Vehicles with PUC certificate will be hired. Regular maintenance of vehicles will be done to ensure smooth running of vehicles.
- Regular health check up camps will be organised for the safety purpose of the workers.
- Unnecessary blowing of horn will be avoided.

ANALYSIS OF ALTERNATIVES

No alternate site is suggested as it is site specific. Since, the Letter of Intent (LoI) has been issued by the Director of Mines & Geology department, Uttarakhand for the river bed mining.

6. ENVIRONMENT MONITORING PROGRAMME

UKFD has formulated well laid-out Environmental Policy, wherein preservation of environment has been accorded a most strategic and prime position. The various protocol procedures in connection with communication channels upwards and downwards, for dealing with violations or departures in environmental standards involvement of Board of Directors as well as shareholders about such incidences, etc,

Regular monitoring of environmental parameters will be carried out to assess the status of environment during project operation. With the knowledge of baseline conditions, the monitoring programme will serve as an indicator for any deterioration in environmental conditions due to operations of the project, which will enable to take suitable mitigation steps in time to safeguard the environment.

7. ADDITIONAL STUDIES

At present, the mining is proposed in a mild sloping in river bed to protect the forest from the erosion. Pits will be created upto depth 3.0 m or ground water levels whichever less during mining period.

A replenishment study was undertaken by “ICAR-Indian Institute of Soil and Water Conservation, Dehradun (Uttarakhand) on 'Assessment of extractable river bed material from river’. On the basis of recommendations, permissible quantity of RBM and the methodology of extraction will be followed so as to maintain the hydrological profile of the river along with the extraction of the RBM.

8. PROJECT BENEFITS

The project will brings overall improvement in the locality, neighbourhood and the state by bringing employment generation at local level and revenue to state government. Hence it will be helpful for the economic growth and support to enhance quality of life through employment.

9. ENVIRONMENTAL COST BENEFIT ANALYSIS

It is considered desirable that the mining project may be implemented. Project cost for the proposed Mining project having area of 202.0 Ha. Falling in Village-Balawala, Tehsil & District-Dehradun, Uttarakhand is Rs. 4.18Crore .

10. ENVIRONMENTAL MANAGEMENT PLAN

There are no major impacts on the environment due to the mining except fugitive emission in the form of dust generated during handling of mineral. The adequate preventive measures will be adopted to contain the various pollutants within permissible limits. Plantation development will be carried out along the approach roads, around Govt. buildings etc. It will prove an effective pollution mitigation technique and help to avoid soil erosion during monsoon season. Employment opportunities will be provided to the locals only through extraction of minerals from the mine site and is the only prevailing occupation for them to their livelihood. A budget of Rs.1.00 Lakhs (Capital Cost)& Rs.5.00 Lakhs (Recurring Cost) for Occupational Health and Safety and a budget of Rs. 95.7 Lakhs (Capital Cost)&Rs. 23.53 Lakhs (Recurring Cost)under Environmental management control measures.

11. CONCLUSION

The proposed project will provide the employment to local people in different activities such as mining, transportation and plantation activities. The project activity will not have any major impact on the environment. At post mining stage of proposed project, the existing land use will remain same i.e. riverbed, and it will get replenished yearly during monsoon season. Also the extraction of sand, Bajri and Boulder used in construction activities like building, infrastructure facilities, construction etc. will contribute to the overall development of the region.

The Corporate Social Responsibility initiatives will have a positive impact on socio economic environment of the region. Therefore, this Project should be implemented at the earliest in the State and National interest.