

**SCHEME FOR COMPENSATORY
AFFORESTATION OVER 22.671 HA OR
22.80 HA OF NON-FOREST GOVT. LAND
IDENTIFIED IN VILLAGE PODADIHI
UNDER BANSAPAL TAHASIL OF B.J.P.
RANGE OF KEONJHAR FOREST DIVISION
AGAINST ESTABLISHMENT OF
PROPOSED GRINDING, DE-SLIMING
(BENEFICIATION) PLANT AND SLURRY
PUMPING STATION AND WATER
INTAKE SYSTEM
OF
M/s JSW UTKAL STEEL LTD**

ELEMENTS OF THE SCHEME FOR COMPENSATORY
AFFORESTATION

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CHAPTER- I

BRIEF NOTE ON THE PROPOSED FOREST DIVERSION PROPOSAL

The project envisages establishment of 30 MTPA of Iron Ore Grinding, De-Sliming [Beneficiation] Plant & Slurry Pumping Station at Villages-Gobardhanpur, Bhaglpur, Sialijoda & Lahanda and Water Intake System at Village-Kandra under Barbil Tahasil, Keonjhar District. High Level Clearance Authority (HLCA), Government of Odisha has accorded In-principle approval for setting of Iron ore Grinding, Beneficiation Plants to produce 30 Million Metric Tonne Per Annum (MTPA) iron ore concentrate & transport through Slurry Pipeline system at Gobardhanpur Village under Barbil Tahasil, Keonjhar District to Integrated Steel Plant at Paradip in District Jagatsinghpur to produce pellets to meet the raw material requirement of proposed Green Field Integrated Steel Plant. IPICOL has recommended for allotment of 80.505 Ha of land vide his letter no.GM/SLNA/JSW/38/17 dated 02.02.2018 for said project in Keonjhar District for proposed Iron Ore Grinding, De-Sliming [Beneficiation] Plant & Slurry Pumping Station at Villages-Gobardhanpur, Bhaglpur, Sialijoda & Lahanda and Water Intake System at Village-Kandra under Barbil Tahasil, Keonjhar District. This project is of vital importance as it will ensure continuous supply of raw material as Iron Ore Concentrate to our upcoming Integrated Steel plant near Paradip. For setting up the proposed Project, Iron ore Grinding, De-Sliming [Beneficiation] Plant & Slurry Pumping Station and Water Intake System, IDCO has handed over the possession of already leased out land measuring 74.304 Ha of land (20.585 ha. Non forest land recorded as forest as on 25.10.1980 + 53.719 ha. non forest) situated in the villages of Gobardhanpur, Bhaglpur, Sialijoda and Lahanda in favour of M/s JSW Utkal Steel Ltd vide his letter no. IDCO/LAE-4012-17/12878 dated 21.06.2018. The said land has been lease out by IDCO vide a registered lease deed no. 11031800324 on dated 23.06.2018. The said land comprises of 23.581 Ha of Govt. land and 50.723 Ha of Pvt land, which was acquired by IDCO for industrial purpose. To meet the total 80.505 Ha of land requirement, M/s JSW Utkal Steel Ltd had applied to acquire additional 3.873 Ha (1.045ha. Revenue forest+ 2.828ha.non forest land) in villages of Bhaglpur and Gobardhanpur to make project area contiguous and compact for its industrial facilities. In addition, M/s JSW Utkal Steel Ltd proposes to establish Project, Water Intake System over 2.328 ha land (1.041 ha Non forest land recorded as forest as on 25.10.1980 and 1.287 ha non-forest land) at village Kandra under Barbil Tahasil in Keonjhar District which is essential requirement for Project. So total land involves in the instant proposal over 80.505 ha which is involves 22.671 Ha forest land (1.045 ha Revenue Forest + 21.626 ha. Non Forest Land recorded as Forest as on 25.10.1980) and 57.834 ha non forest land

The present Compensatory Afforestation scheme is so prepared to compensate the forest land being diverted for non-forestry use at the Non-forest Govt. land identified in village Podadihi under BJP Range of Banspal Tahasil allotted for the said purpose vide letter No. 2105/Rev dt. 20.12.2018 of Collector, Keonjhar. The CA scheme is prepared at present prevailing wages rate i.e. @Rs. 286.30 per man days over 22.80 ha with maintenance period of 10 (ten) years.

CHAPTER- II
DETAILS OF LAND IDENTIFIED FOR COMPENSATORY AFFORESTATION

A. LAND IDENTIFICATION AND JOINT VERIFICATION OF THE IDENTIFIED SITE.

The site for Compensatory Afforestation has been identified in village Podadihi under Bansapal Tahasil in B.J.P. Range of Keonjhar Forest Division over 22.80 ha in two patches and has been jointly verified by the Tahasildar, Bansapal, Revenue Inspector, Suakati, Range Officer, B.J.P. Range and Forest Section Officer, Suakati and found suitable for compensatory afforestation.

B. INFORMATION ON NON-ENCROACHMENT AND NON-ENCUMBRANCE.

The Tahasildar, Bansapal has given certificate of non-encroachment and non-encumbrance in respect of the non-forest Govt. land identified and allotted for Compensatory Afforestation over 22.80 ha in respect of grinding, de-sliming, slurry pumping station & intake well of M/s JSW Utkal Steel Limited vide his letter No. 1332 dated 28.08.2018 (Copy enclosed).

C. INFORMATION ON LAND STATUS.

The land scheduled and land status identified and allotted for Compensatory Afforestation is furnished hereunder:-

Tahasil	Village	Khata No.	Plot No.	Area(in Ha)	Kissam.	Remarks
Bansapal	Podadihi	67(AAA)	329(P)	11.000	Parbat- I	Patch- 1
			519	11.800	Parbat- I	Patch- 2
			Total	22.800		

D. SUITABILITY OF IDENTIFIED SITE FOR COMPENSATORY AFFORESTATION.

The identified land is free from encroachment and encumbrance. This land is neither covered under Section-4 of Orissa Forest Act, 1972 nor included in DLC report.

The non-forest Govt. land identified in village Podadihi is in two patches situated on upland with gentle slope and patch- 1 is suitable for Compensatory Afforestation in AR model @1600 seedlings/ ha over 10 ha and remaining 1.00 ha is suitable for ANR without gap model since the area is sloppy and having vegetation enough and patch- 2 is suitable for ANR model@ 600 seedling/ ha over 11.80 ha.

Patch- 1: The topography of the area is mainly hilly situated on upland. The top soil is eroded due to "Podu cultivation" in the past. The soil is prone to erosion necessitating soil-moisture conservation measures. Available depth of lateritic-loam soil is conducive for plantation, but in most of the area there is a requirement of foreign soil for better growth of plantation coupled with suitable soil-moisture conservation measures. This necessitates the undersigned to adopt Bald Hill Plantation norms @1600/ ha approved by PCCF, Odisha.(Annexure- 13 of letter No. 25281 dated 18.12.2018). The average temperature varies from 13.5° C minimum in December to 45°C maximum in May. The annual rainfall varies from 1200 mm to 1500 mm. The maximum rainfall is received during the rainy season from July to September. The identified land is considered for Compensatory Afforestation AR model @1600 seedlings/ ha over 10 ha in patch- 1 and remaining 1.00 ha of the same patch which is having slope gradient more than 40° is suitable for ANR without gap model, the plantation norm approved by PCCF, Odisha.(Annexure- 8 of letter No. 25281 dated 18.12.2018).

Patch- 2: The topography of the area is mainly hilly situated on upland. The top soil is eroded due to “Podu cultivation” in the past. The soil is prone to erosion necessitating soil-moisture conservation measures. Available depth of lateritic-loam soil is conducive for plantation, but in most of the area there is a requirement of foreign soil for better growth of plantation coupled with suitable soil-moisture conservation measures. The patch over 11.80 ha having slope gradient more than 40° is suitable for ANR with gap model. This necessitates the undersigned to adopt ANR with gap model norms @600/ ha approved by PCCF, Odisha.(Annexure- 11 of letter No. 25281 dated 18.12.2018). The average temperature varies from 13.5° C minimum in December to 45°C maximum in May. The annual rainfall varies from 1200 mm to 1500 mm. The maximum rainfall is received during the rainy season from July to September.

Patch	Total area (in ha)	Bald hill plantation AR @1600/ha	ANR with gap plantation @600/ha	ANR without gap plantation
Patch- 1	11.00	10.00 ha	-	1.00 ha
Patch- 2	11.80	-	11.80	-

CHAPTER-III

DELINEATION OF PROPOSED AREA ON SUITABLE MAP

III(1) GPS COORDINATES AND GPS MAP OF THE COMPENSATORY AFFORESTATION SITE

The area has been demarcated through DGPS survey and 11 nos of 4’ height RCC pillars have been posted around the identified area in patch- 1 and 8 nos of 4’ height RCC pillars have been posted around the identified area in patch- 2. The DGPS survey data showing latitude & Longitude of each point and their chainage with bearing has been depicted in the village sheet map (Map Enclosed). Two durable sign boards have been erected at the identified site at a conspicuous location with name of the project, year of allotment, name of the scheme, details of plots etc. depicted there on.

CHAPTER- IV

AGENCY RESPONSIBLE FOR COMPENSATORY AFFORESTATION

IV(1) AGENCY RESPONSIBLE FOR PLACEMENT OF FUNDS

The user agency shall provide funds for raising Compensatory Afforestation as per the approved scheme.

IV(2) AGENCY RESPONSIBLE FOR EXECUTION OF COMPENSATORY AFFORESTATION

The Territorial Wing of the Forest Department i.e. Divisional Forest Officer, Keonjhar Division will be assigned with the task for execution of Compensatory Afforestation.

CHAPTER- V

DETAILS OF WORK SCHEDULE PROPOSED FOR COMPENSATORY AFFORESTATION

A. PLANTING PLAN

Planting Plan reflects the species specific treatment of the identified site. Choice of species is based on the geo-morphology of the site, soil-texture, structure, fertility and depth, proneness of the site to water logging etc. Specific treatment of the site in terms of soil and moisture conservation intervention will be depicted in the treatment map. A treatment map will invariably be prepared for Species to be planted and treatments to be applied to the different patches shown in the treatment map and planting plan. This plan will be followed when actual planting is carried out. The Range Officer, BJP Range has submitted verification report vide his memo No. 282 dated 09.04.2019 with his specific observations that on an average 1000 plants/ ha can be planted in the proposed CA site. The report of GIS based DSS is enclosed herewith.

Species to be planted:-

1. *Syzgium cumini* (Jamu)
2. *Adina cardifolia* (Kuruma)
3. *Anogeissus latifolia* (Dhaura)
4. *Dalbergia sissoo* (Sissoo)
5. *Azadirachta indica* (Neem)
6. *Gmelina arborea* (Gambar)
7. *Pongamia pinnata* (Karanja)
8. *Emblia officinalis* (Amla)
9. *Artocarpus integrifolia* (Panasa)

B.PRE-PLANTING OPERATION

B(I)-RAISING OF PLANTATION STOCK- NURSERY-

Nursery will be raised @1760 seedlings per ha including seedlings for 10% casualty replacement for 10.00 ha (patch- 1) and @660 seedlings per ha including seedlings for 10% casualty replacement for 11.80 ha (patch- 2).

B(II)-SURVEY, DEMARCATION & PILLAR POSTING, GPS READING WITH MAPPING-

The planting area has been surveyed and demarcated through DGPS survey and 11 nos of 4' height RCC pillars have been posted around the identified area in patch- 1 and 8 nos of 4' height RCC pillars have been posted around the identified area in patch- 2 (as per the direction of forest Range Officer, BJP Range) with GPS co-ordinates, forward and backward bearing, pillar No. and distance between pillars inscribed in it. A DGPS map in the scale of 1:4000 has been prepared along with DGPS co-ordinates forward and backward bearing, pillar No. and distance between pillars reflected in the map. Two durable sign boards have been erected at a conspicuous location with name of the site, scheme, area etc. depicted on it.

B(III)-SITE PREPARATION AND SILVICULTURAL OPERATION INCLUDING CLEARANCE OF WEED, CLIMBER CUTTING, HIGH STUMP CUTTING, SINGLING OF SHOOTS-

The clearing of the site involving removal of invasive weeds, bushes, climbers, high stumps and singling of shoots will be taken up preferably by the end of February and latest by the end of March. Pits of the dimension 45cm³ will be dug AR model @1600 seedlings/ ha over 10 ha in patch- 1 and the dimension 30cm³ will be dug ANR model @ 600 seedling/ ha over 11.80 ha in patch- 2 preferably 2 months before or at least a month before planting of seedlings.

C. PLANTING OPERATION

Planting of seedlings will be taken up in the month of July. The polythene covering of the balls of earth will be carefully removed before planting. Care will be taken to see that the ball of earth is not broken while doing so. The seedling with the ball of earth will then be placed firmly in the pit and buried at such a depth that the root collar is well below the surface of the soil. The soil around the plant will be well compacted with the heel as a final step so that there is a proper bond between the ball and the surrounding soil. The earth close to the collar will be slightly elevated so that rain water does not accumulate very close to the plant.

D. POST PLANTING OPERATION

D(1)-CASUALTY REPLACEMENT

The entire area will be gone over in the same order as plantation was carried out and casualties, if any, will be replaced as soon as the main plantation operation is over.

D(2)-WEEDING AND SOIL WORKING

Regular and efficient weeding will start immediately after sprouting of the stumps is complete or after the seedlings have started throwing up new buds.

D(3)-MANURING AND INSECTICIDE APPLICATION

On degraded sites urban compost or farmyard manure, wherever available, will be added to the soil while refilling the pits. As regards artificial fertilizers, the minerals required and dosage @ 50 gms of patent mixtures like 'Gromor' or N.P.K. (2:2:1) will be applied in two split doses one in August and the other in September.

D(4)-SOIL MOISTURE CONSERVATION MEASURES

Special Soil Moisture Conservation Measures will be taken up through construction of LBCD structures of dimension 10' x 10' x 5' to the tune of 23 nos. along with staggered trenches over the entire plantation site.

D(5)-PROTECTION AGAINST FIRE AND BIOTIC INTERFERENCE

It is proposed to protect the CA plantation from grazing by domestic animals using Barbed wire fencing (7 Strands). The total length of such Barbed wire fencing for both the patches which comes to 2.87 Km (2870 M) (1.51 KM in patch- 1 and 1.36 KM in patch- 2). Fire line tracing will be ensured to protect the plantation from fire and watch & ward will be provided as per the approved norm for protecting the plantation from grazing.

E. OTHER OPERATIONS

Other operations shall be executed as per the details given in the respective cost norms provided in Chapter- VII, VIII, IX.

CHAPTER- VI

Cost Norm For Bald Hill plantation @1600 plants per ha @286.30/- Mandays as per revised wage rate communicated by Labour Commissioner, Odisha, Bhubaneswar vide their letter No. 4820/LC dated 27.05.2019 and approved cost norm communicated by PCCF, Odisha vide memo No. 25281 dated 18.12.2018 as per Annexure- 13.

Sl. No.	Items of work	Period of Execution	Person days	Labour Cost (Rs)	Material Cost(Rs)	Total Cost(Rs)
1	2	3	4	5	6	7
PREPARATORY OPERATION (0TH YEAR)						
1	Survey & demarcation	June	2	572.60	0	572.60
2	(i) For an average of 126 mt per ha @Rs. 76.19 per mt for bamboo twigs and bamboo thorn fencing (L:M=40:60)	June- Sept	19	5439.70	4280	9719.70
	(ii) To be strengthened by planting of bamboo and other seedlings in two rows. Bamboo to be planted at 2mt spacing in staggered manner on the two rows & the rest of the species to be planted at 1/2 mt spacing along the two rows, the rows being 2 mt apart. Thus 500 plant (125 bamboo & 375 others) to be planted in two rows to cover 126M of periphery/ ha by the vegetative fence. (Bamboo seedling @Rs. 12.43 per seedling x 125= Rs. 1553.75. Agave seedling @Rs. 4.90 per seedlings x 375= Rs. 1837.50	June- Sept	11	3149.30	3391.25	6540.55
3	Pitting(1600 per ha) each pit-45cm ³	Nov-Dec	128	36646.40	0	36646.40
4	Soil & water conservation measures (a) Staggered trench along the contour @300/ ha (2.5m x 0.5m x 0.5m), digging of percolation pits @600/ ha in lieu of staggered trenches, gully plugging & drainage line treatment, half-moon trench on the up-hill side of each planting pit (100 MD for staggered trench/ percolation pits & 30 MD for gully plugging drainage land treatment & half-moon trench)	Sept-Nov	130	37219.00	0	37219.00

	(b) Site clearance- 8 MD, alignment and stacking of contour lines on ground, planting pits, contour trenches/ percolation pits & check dam sites etc. -2MD	July-Aug	10	2863.00	0	2863.00
5	Raising of seedlings in poly bags (minimum 60CM high) @Rs. 12.43/ seedling (Rs. 8.67 in 0 th year + Rs. 3.76) part (1760 saplings to be raised for 1 ha	Oct-Mar	44	12597.20	2939	15536.20
	Total 0th year		344	98487.20	10610.25	109097.45
6	Monitoring & Supervision charge 5% of the total cost					5454.87
	Grand Total		344	98487.20	10610.25	114552.32
PLANTING OPERATION (1ST YEAR)						
1	Cost of sapling (balance) from April-June/July @3.76/ seedling for 1760 seedlings	Apr-June	21.5	6155.45	593.00	6748.45
2	Freshening of pits- 64 MD, filling with fertile soil & farm yard manure (FYM)- 24 MD, application of insecticide & planting of 60 CM tall saplings including carriage of plants- 21 MD	June-July	109	31206.70	0	31206.70
3	Cost of fertile soil- 0.25 cft @Rs. 8/ cft /FYM 0.25 cft @Rs. 15/ cft per pit		0	0	9200.00	9200.00
4	Sowing of seeds on dug out earth of trench	June	6	1717.80	200	1917.80
5	Carriage- 6MD, planting including causality replacement- 6MD fertilizer application- 5MD, 1 st weeding- 7 MD, 2 nd weeding- 5MD, Soil working- 7MD	July-Aug	36	10306.80	0	10306.80
6	Cost of fertilizer & insecticide (granular insecticide @5gms per plants@Rs. 80/ KG = Rs. 640.00, NPK 100 gms/ plants in two doses @Rs. 24/ KG = Rs. 3840		0	0	4480.00	4480.00
7	Repair and maintenance of bamboo fenced including material cost	Aug-Oct	15	4294.50	2540	6834.50
8	Maintenance of soil & moisture conservation measures (20% of cost)	Oct-Dec	26	7443.80	0	7443.80

9	Closure of grazing fire & other biotic interference by engaging watch & ward	Apr-Mar	30	8589.00	0	8589.00
10	Fire tracing & control, display board construction, painting/ writing, other misc. cost	Jan-Feb	10	2863.00	360	3223.00
	Total		253.5	72577.05	17373.00	89950.05
11	Monitoring & Supervision charge 5% of the total cost					4497.50
	Grand Total		253.5	72577.05	17373.00	94447.55
MAINTENANCE OPERATION (2ND YEAR)						
1	Causality replacement - 6MD including seedling cost @Rs. 12.43 / seedling and its transportation	June-July	10	2863.00	1988.80	4851.80
2	Soil working- 7MD, 1 st weeding- 6MD, 2 nd weeding-6MD & fertilizer application- 4MD	Aug-Oct	23	6584.90	0	6584.90
3	Cost of fertilizer @ 50 gms NPK per plant. @ Rs. 24 per KG for 1600 plants= Rs. 1920.00, Insecticide@5gm per plant for 160 nos. plants @Rs. 80/ KG= Rs. 64.00		0	0	1984.00	1984.00
4	Repair & maintenance of bamboo fence including material cost	Aug-Oct	15	4294.50	2540.00	6834.50
5	Maintenance of soil & moisture conservation measures (20% of cost)	Aug-Oct	26	7443.80	0	7443.80
6	Fire tracing & control & other misc. cost	Feb-Mar	10	2863.00	0	2863.00
7	Closure of grazing fire & other biotic interference by engaging watch & ward	Apr-Mar	30	8589.00	0	8589.00
	Total		114	32638.20	6512.80	39151.00
12	Monitoring & Supervision charge 5% of the total cost					1957.55
	Grand Total		114	32638.20	6512.80	41108.55
MAINTENANCE OPERATION (3RD YEAR)						
1	Repair and maintenance of fence- 15 MD / (in case of barbed wire fencing Rs. 9000 for repair) SMC measures (renovation) – 26 MD & maintenance of plantation- 14 MD as per requirement	Apr-Mar	55	15746.50	500.00	16246.50
2	Closure of grazing fire	Apr-Mar	18	5153.40	0	5153.40

	& other biotic interference by engaging watch & ward					
	Total		73	20899.90	500.00	21399.90
3	Monitoring & Supervision charge 5% of the total cost					1069.99
	Grand Total		73	20899.90	500.00	22469.89
MAINTENANCE OPERATION (4TH YEAR)						
1	Repair and maintenance of fence- 13 MD / no maintenance in case of barbed wire fencing, SMC measures- 21 MD & maintenance of plantation- 14 MD	Apr-Mar	48	13742.40	500.00	14242.40
2	Closure of grazing fire & other biotic interference by engaging watch & ward	Apr-Mar	18	5153.40	0	5153.40
	Total		66	18895.80	500.00	19395.80
3	Monitoring & Supervision charge 5% of the total cost					969.79
	Grand Total		66	18895.80	500.00	20365.59
MAINTENANCE OPERATION (5TH YEAR)						
1	Repair and maintenance of fence- 13 MD / no maintenance in case of barbed wire fencing, SMC measures- 21 MD & maintenance of plantation- 14 MD	Apr-Mar	48	13742.40	500.00	14242.40
2	Closure of grazing fire & other biotic interference by engaging watch & ward	Apr-Mar	18	5153.40	0	5153.40
	Total		66	18895.80	500.00	19395.80
3	Monitoring & Supervision charge 5% of the total cost					969.79
	Grand Total		66	18895.80	500.00	20365.59
MAINTENANCE OPERATION (6TH YEAR)						
1	Repair and maintenance of fence- 13 MD / no maintenance in case of barbed wire fencing, SMC measures- 21 MD & maintenance of plantation- 14 MD	Apr-Mar	48	13742.40	500.00	14242.40
2	Closure of grazing fire & other biotic interference by engaging watch & ward	Apr-Mar	18	5153.40	0	5153.40
	Total		66	18895.80	500.00	19395.80
3	Monitoring & Supervision charge 5% of the total cost					969.79
	Grand Total		66	18895.80	500.00	20365.59

MAINTENANCE OPERATION (7 TH YEAR)						
1	Repair and maintenance of fence- 13 MD / no maintenance in case of barbed wire fencing, SMC measures- 21 MD & maintenance of plantation- 14 MD	Apr-Mar	48	13742.40	500.00	14242.40
2	Closure of grazing fire & other biotic interference by engaging watch & ward	Apr-Mar	18	5153.40	0	5153.40
	Total		66	18895.80	500.00	19395.80
3	Monitoring & Supervision charge 5% of the total cost					969.79
	Grand Total		66	18895.80	500.00	20365.59
MAINTENANCE OPERATION (8 TH YEAR)						
1	Repair and maintenance of fence- 13 MD / no maintenance in case of barbed wire fencing, SMC measures- 21 MD & maintenance of plantation- 14 MD	Apr-Mar	48	13742.40	500.00	14242.40
2	Closure of grazing fire & other biotic interference by engaging watch & ward	Apr-Mar	18	5153.40	0	5153.40
	Total		66	18895.80	500.00	19395.80
3	Monitoring & Supervision charge 5% of the total cost					969.79
	Grand Total		66	18895.80	500.00	20365.59
MAINTENANCE OPERATION (9 TH YEAR)						
1	Repair and maintenance of fence- 13 MD / no maintenance in case of barbed wire fencing, SMC measures- 21 MD & maintenance of plantation- 14 MD	Apr-Mar	48	13742.40	500.00	14242.40
2	Closure of grazing fire & other biotic interference by engaging watch & ward	Apr-Mar	18	5153.40	0	5153.40
	Total		66	18895.80	500.00	19395.80
3	Monitoring & Supervision charge 5% of the total cost					969.79
	Grand Total		66	18895.80	500.00	20365.59
MAINTENANCE OPERATION (10 TH YEAR)						
1	Repair and maintenance of fence- 13 MD / no maintenance in case of barbed wire fencing, SMC measures- 21 MD & maintenance of plantation- 14 MD	Apr-Mar	48	13742.40	500.00	14242.40
2	Closure of grazing fire	Apr-Mar	18	5153.40	0	5153.40

	& other biotic interference by engaging watch & ward					
	Total		66	18895.80	500.00	19395.80
3	Monitoring & Supervision charge 5% of the total cost					969.79
	Grand Total		66	18895.80	500.00	20365.59
ABSTRACT						
Sl.No.	Year	No. Person Day	Labour cost @ Rs. 286.30/- per day	Material Cost	Monitoring & Supervision charge 5% of the total cost	Total Cost
1	0 th year	344	98487.20	10610.25	5454.87	114552.32
2	1 st year	253.5	72577.05	17373.00	4497.50	94447.55
3	2 nd year	114	32638.20	6512.80	1957.55	41108.55
4	3 rd year	73	20899.90	500.00	1069.99	22469.89
5	4 th year	66	18895.80	500.00	969.79	20365.59
6	5 th year	66	18895.80	500.00	969.79	20365.59
7	6 th year	66	18895.80	500.00	969.79	20365.59
8	7 th year	66	18895.80	500.00	969.79	20365.59
9	8 th year	66	18895.80	500.00	969.79	20365.59
10	9 th year	66	18895.80	500.00	969.79	20365.59
11	10 th year	66	18895.80	500.00	969.79	20365.59
Total		1246.5	356872.95	38496.05	19768.44	415137.44
Total Cost of plantation (10.00 ha.)						4151374.40

Cost Norm For Aided Natural Regeneration (ANR without Gap) @286.30/- Mandays as per revised wage rate communicated by Labour Commissioner, Odisha, Bhubaneswar vide their letter No. 4820/LC dated 27.05.2019 and approved cost norm communicated by PCCF, Odisha vide memo No. 25281 dated 18.12.2018 as per Annexure- 8.

Sl. No.	Item of Work	Preferable Period of Execution	Labour in Mandays	Labour Cost (Rs)	Material Cost (Rs)	Total Cost in (Rs)
0TH YEAR						
1	Survey, Demarcation and Pillar Posting, GPS Reading with mapping	Nov/Dec	2	572.60	0	572.60
2	Site Preparation	Nov/Dec	2	572.60	0	572.60
3	Cutting of high stumps	Nov/Dec	5	1431.50		1431.50
	SUB TOTAL		9	2576.70	0	2576.70
4	Monitoring & Supervision charge 5% of the total cost					128.84
	GRAND TOTAL		9	2576.70	0	2705.54
1ST YEAR OPERATION						
1	Silvicultural Operation involving clearance of weeds, cutting of climbers, singling of shoots etc.	Sep/Oct	15	4294.50	0	4294.50
2	Soil Conservation Measures (Staggered trenches of dimension 2 m X 0.5 m X 0.5 m @ 60 nos per ha) or its equivalent	Sep/Oct	20	5726.00	0	5726.00

3	Fireline Tracing and Inspection Path	Feb/Ma	3	858.90	0	858.90
4	Watch & ward	Aug-	5	1431.50	0	1431.50
5	Contingency and Unforeseen Expenditures		0	0.00	500	500.00
	SUB TOTAL		43	12310.9	500	12810.9
6	Monitoring & Supervision charge 5% of the total cost					640.54
	GRAND TOTAL		43	12310.9	500	13451.4
2ND YEAR OPERATION						
1	Soil Conservation Measures (Renovation of staggered trenches etc.)	Sep/Oct	8	2290.40	0	2290.40
2	Fireline Tracing and Inspection Path	Feb/Ma	1	286.30	0	286.30
3	Watch & ward (whole year)	Apr-	7	2004.10	0	2004.10
4	Contingency and Unforeseen Expenditures		0	0.00	300	300.00
	SUB TOTAL		16	4580.80	300	4880.80
5	Monitoring & Supervision charge 5% of the total cost					244.04
	GRAND TOTAL		16	4580.80	300	5124.84
3RD YEAR OPERATION						
1	Fireline Tracing and Inspection Path	Feb/Ma	1	286.30	0	286.30
2	Watch & ward (whole year)	Apr-	7	2004.10	0	2004.10
3	Contingency and Unforeseen Expenditures		0	0.00	300	300.00
	SUB TOTAL		8	2290.40	300	2590.40
4	Monitoring & Supervision charge 5% of the total cost					129.52
	GRAND TOTAL		8	2290.40	300	2719.92
4TH YEAR OPERATION						
1	Fireline Tracing and Inspection Path	Feb/Ma	1	286.30	0	286.30
2	Watch & ward and cultural operations	Apr-	2	572.60	0	572.60
3	Contingency and Unforeseen Expenditures			0.00	100	100.00
	SUB TOTAL		3	858.90	100	958.90
4	Monitoring & Supervision charge 5% of the total cost					47.94
	GRAND TOTAL		3	858.90	100	1006.84
5TH YEAR OPERATION						
1	Fireline Tracing and Inspection Path	Feb/Ma	1	286.30	0	286.30
2	Watch & ward and cultural operations	Apr-	2	572.60	0	572.60
3	Contingency and Unforeseen Expenditures			0.00	100	100.00
	SUB TOTAL		3	858.90	100	958.90
4	Monitoring & Supervision charge 5% of the total cost					47.94
	GRAND TOTAL		3	858.90	100	1006.84
6TH YEAR OPERATION						
1	Fireline Tracing and Inspection Path	Feb/Ma	1	286.30	0	286.30

2	Watch & ward and cultural operations	Apr-	2	572.60	0	572.60
3	Contingency and Unforeseen Expenditures			0.00	100	100.00
	SUB TOTAL		3	858.90	100	958.90
4	Monitoring & Supervision charge 5% of the total cost					47.94
	GRAND TOTAL		3	858.90	100	1006.84
7TH YEAR OPERATION						
1	Fireline Tracing and Inspection Path	Feb/Ma	1	286.30	0	286.30
2	Watch & ward and cultural operations	Apr-	2	572.60	0	572.60
3	Contingency and Unforeseen Expenditures			0.00	100	100.00
	SUB TOTAL		3	858.90	100	958.90
4	Monitoring & Supervision charge 5% of the total cost					47.94
	GRAND TOTAL		3	858.90	100	1006.84
8TH YEAR OPERATION						
1	Fireline Tracing and Inspection Path	Feb/Ma	1	286.30	0	286.30
2	Watch & ward and cultural operations	Apr-	2	572.60	0	572.60
3	Contingency and Unforeseen Expenditures			0.00	100	100.00
	SUB TOTAL		3	858.90	100	958.90
4	Monitoring & Supervision charge 5% of the total cost					47.94
	GRAND TOTAL		3	858.90	100	1006.84
9TH YEAR OPERATION						
1	Fireline Tracing and Inspection Path	Feb/Ma	1	286.30	0	286.30
2	Watch & ward and cultural operations	Apr-	2	572.60	0	572.60
3	Contingency and Unforeseen Expenditures			0.00	100	100.00
	SUB TOTAL		3	858.90	100	958.90
4	Monitoring & Supervision charge 5% of the total cost					47.94
	GRAND TOTAL		3	858.90	100	1006.84
10TH YEAR OPERATION						
1	Fireline Tracing and Inspection Path	Feb/Ma	1	286.30	0	286.30
2	Watch & ward and cultural operations	Apr-	2	572.60	0	572.60
3	Contingency and Unforeseen Expenditures			0.00	100	100.00
	SUB TOTAL		3	858.90	100	958.90
4	Monitoring & Supervision charge 5% of the total cost					47.94
	GRAND TOTAL		3	858.90	100	1006.84

ABSTRACT

Sl. No.	Item of Work	No. Person day	Labour cost @ Rs 286.30/- per day	Material cost (Rs.)	Monitoring & Supervision charge 5% of the total cost	Total cost in (Rs)
1	0th Year	9	2576.70	0	128.84	2705.54
2	1st Year	43	12310.90	500	640.54	13451.44
3	2nd Year	16	4580.80	300	244.04	5124.84
4	3rd Year	8	2290.40	300	129.52	2719.92
5	4th Year	3	858.90	100	47.94	1006.84
6	5th Year	3	858.90	100	47.94	1006.84
7	6th Year	3	858.90	100	47.94	1006.84
8	7th Year	3	858.90	100	47.94	1006.84
9	8th Year	3	858.90	100	47.94	1006.84
10	9th Year	3	858.90	100	47.94	1006.84
11	10th Year	3	858.90	100	47.94	1006.84
	Total	97	27771.1	1800	1478.52	31049.62
Total Cost Norm over 1.00 ha						31049.62

Cost Norm For Aided Natural Regeneration @600 plants per ha @286.30/- Mandays as per revised wage rate communicated by Labour Commissioner, Odisha, Bhubaneswar vide their letter No. 4820/LC dated 27.05.2019 and approved cost norm communicated by PCCF, Odisha vide memo No. 25281 dated 18.12.2018 as per Annexure- 11.

SL. No	Item of Work	Preferable Period of Execution	Labour in Mandays	Labour Cost (Rs)	Material Cost (Rs)	Total Cost in (Rs)
0TH YEAR						
1	Survey, Demarcation and Pillar Posting, GPS Reading with mapping	Nov/Dec	2	572.60	0	572.60
2	Site Preparation	Nov/Dec	2	572.60	0	572.60
3	Silvicultural Operation including clearance of weed, climber cutting, high stump cutting, singling of shoots etc.	Jan/Feb	5	1431.50	0	1431.50
4	Nursery cost (6 months old seedling)part @ Rs.12.43/- seedling (Rs.8.67 in 0th year + Rs.3.76 in 1st year) for 660 seedlings (600+60)	Jan-Mar	16.5	4723.95	1102.00	5825.95
5	Contingency and Unforeseen Expenditures		0	0	198	198
	SUB TOTAL		25.5	7300.65	1300.00	8600.65
	Monitoring & Supervision charge 5% of the total cost					430.03
	GRAND TOTAL		25.5	7300.65	1300.00	9030.68
1ST YEAR						
1	Nursery cost (6 months old seedling) balance @ Rs.3.76 for 660 seedlings	Apr-June	8	2294.40	241.50	2531.90
2	Pitting 30 cm cube size	Feb/Mar	18	5153.40	0	5153.40
3	Carriage and planting including casualty replacement	Jul/Aug	15	4294.50	0	4294.50

4	Complete weeding, Soil working, Manuring	Aug/Sep	18	5153.40	0	5153.40
5	Cost of Vermi compost 200 gms/plant @ Rs.20/- per kg = Rs.2400.00 and Granular Insecticide 5 gms/plant @ Rs.80/- per kg. =Rs.240.00	Aug/Sep	0	0	2640.00	2640.00
6	Cost of Chemical fertilizer (a) Urea 70 gms/plant in two subsequent doses @ Rs.6/- per kg =Rs.252.00 (b) NPK 50 gms/plant @ Rs.24/- per kg=Rs.720.00 as basal dose	Jul/Aug	0	0	972.00	972.00
7	Fireline Tracing and Inspection Path	Feb/Mar	3	858.90	0	858.90
8	Silvicultural Operation involving clearance of weeds, cutting of climbers, singling of shoots etc.	Sep/Oct	15	4294.50	0	4294.50
9	Soil Conservation Measures (Staggered trenches of dimension 2 m X 0.5 m X 0.5 m @ 60 nos per ha) or its equivalent	Sep/Oct	20	5726.00	0	5726.00
10	Watch & ward	Aug-Mar	7	2004.1	0	2004.1
11	Contingency and Unforeseen Expenditures		0	0	353.00	353.00
	SUB TOTAL		104	29779.2	4206.50	33981.70
	Monitoring & Supervision charge 5% of the total cost					1699.08
	GRAND TOTAL		104	29779.2	4206.50	35680.78
2ND YEAR						
1	Casualty Replacement including cost of seedling, carriage and planting	Jul/Aug	3	858.90	745.80	1604.70
2	Complete weeding and cultural operations	Sep/Oct	6	1717.80	0	1717.80
3	Soil working and manuring	Sep/Oct	6	1717.80	0	1717.80
4	Cost of Fertiliser and insecticide (a) Vermicompost 200gms/plant @ Rs.20/- per kg=Rs.2400.00 (b) Granular Insecticides 5 gms/plant for 80 plants 300 gms @ Rs.80/- per kg=Rs.24.00	Sep/Oct	0	0	2424.00	2424.00
5	Fireline Tracing and Inspection Path	Feb/Mar	1	286.30	0	286.30
6	Soil Conservation Measures (Renovation of staggered trenches etc.)	Sep/Oct	8	2290.40	0	2290.40
7	Watch & ward (whole year)	Apr-March	7	2004.1	0	2004.1
8	Contingency and Unforeseen Expenditures		0	0	193.00	193.00
	SUB TOTAL		31	8875.30	3362.80	12238.10
	Monitoring & Supervision charge 5% of the total cost					611.90
	GRAND TOTAL		31	8875.30	3362.80	12850.00
3RD YEAR						
1	Complete weeding and cultural operations	Aug/Sep	3	858.90	0	858.90
2	Soil working	Aug/Sep	3	858.90	0	858.90
3	Fireline Tracing and Inspection Path	Feb/Mar	1	286.30	0	286.30
4	Watch & ward (whole year)	April-Mar	7	286.30	0	2004.1
	SUB TOTAL		14	2290.4	0	4008.20
	Monitoring & Supervision charge 5% of the total cost					200.41
	GRAND TOTAL		14	2290.4	0	4208.61
4TH YEAR						
1	Fireline Tracing and Inspection Path	Feb/Mar	1	286.30	0	286.30
2	Watch & ward and cultural operations	April-Mar	2	572.60	0	572.60

	SUB TOTAL		3	858.90	0	858.90
	Monitoring & Supervision charge 5% of the total cost					42.95
	GRAND TOTAL		3	858.59	0	901.85
5th Year						
1	Fireline Tracing and Inspection Path	Feb/Mar	1	286.30	0	286.30
2	Watch & ward and cultural operations	April-Mar	2	572.60	0	572.60
	SUB TOTAL		3	858.90	0	858.90
	Monitoring & Supervision charge 5% of the total cost					42.95
	GRAND TOTAL		3	858.59	0	901.85
6th Year						
1	Fireline Tracing and Inspection Path	Feb/Mar	1	286.30	0	286.30
2	Watch & ward and cultural operations	April-Mar	2	572.60	0	572.60
	SUB TOTAL		3	858.90	0	858.90
	Monitoring & Supervision charge 5% of the total cost					42.95
	GRAND TOTAL		3	858.59	0	901.85
7th Year						
1	Fireline Tracing and Inspection Path	Feb/Mar	1	286.30	0	286.30
2	Watch & ward and cultural operations	April-Mar	2	572.60	0	572.60
	SUB TOTAL		3	858.90	0	858.90
	Monitoring & Supervision charge 5% of the total cost					42.95
	GRAND TOTAL		3	858.59	0	901.85
8th Year						
1	Fireline Tracing and Inspection Path	Feb/Mar	1	286.30	0	286.30
2	Watch & ward and cultural operations	April-Mar	2	572.60	0	572.60
	SUB TOTAL		3	858.90	0	858.90
	Monitoring & Supervision charge 5% of the total cost					42.95
	GRAND TOTAL		3	858.59	0	901.85
9th Year						
1	Fireline Tracing and Inspection Path	Feb/Mar	1	286.30	0	286.30
2	Watch & ward and cultural operations	April-Mar	2	572.60	0	572.60
	SUB TOTAL		3	858.90	0	858.90
	Monitoring & Supervision charge 5% of the total cost					42.95
	GRAND TOTAL		3	858.59	0	901.85
10th Year						
1	Fireline Tracing and Inspection Path	Feb/Mar	1	286.30	0	286.30
2	Watch & ward and cultural operations	April-Mar	2	572.60	0	572.60
	SUB TOTAL		3	858.90	0	858.90
	Monitoring & Supervision charge 5% of the total cost					42.95
	GRAND TOTAL		3	858.59	0	901.85

A B S T R A C T						
SL. No	Item of Work	No. Person Day	Labour cost @ Rs 286.30/-per day	Material cost (Rs)	Monitoring & Supervision charge 5% of the total cost	Total cost in (Rs)
1	0th Year	25.5	7300.65	1300.00	430.03	9030.68
2	1 st Year	104	29779.2	4206.50	1699.08	35680.78
3	2 nd Year	31	8875.30	3362.80	611.90	12850.00
4	3 rd Year	14	2290.4	0	200.41	4208.61
5	4 th Year	3	858.90	0	42.95	901.85
6	5 th Year	3	858.90	0	42.95	901.85
7	6 th Year	3	858.90	0	42.95	901.85
8	7 th Year	3	858.90	0	42.95	901.85
9	8 th Year	3	858.90	0	42.95	901.85
10	9 th Year	3	858.90	0	42.95	901.85
11	10 th Year	3	858.90	0	42.95	901.85
TOTAL		195.5	54257.85	8869.3	3242.07	68083.02
Total Cost of plantation (11.80 ha.)						803379.63

ADDITIONAL COST PROPOSED FOR PATCH- 1 OVER 10.00 HA

1	SMC measures- LBCD structure of 2mtr span @Rs.10489/- per LBCD for 23 no. LBCD structures.	10489.00 x 23 nos.	241247.00
2	Staggered trenches of 2.5 mt x 0.5 mt x 0.5 mt) @60 MD for 300 structures per ha	17178.00 x 10.00 ha	171780.00
3	Additional incentive @ 3% of cumulative expenditure up to 4 th year) for VSS/Fr/FG proposed for more than 80% survival and very good growth during 4th year of maintenance as per recommendation of DFO and RCCF @ Rs.8789/- for 10.00 ha.	8789.00 x 10.00 ha	87890.00
4	Barbed Wire Fencing for 1.51 Km. @Rs.668000.00 per Km,including gate with maintenance upto 9th year as per approved norm	Rs.668000.00 x 1.51 Km	1008680.00
Sub-Total			1509597.00

ADDITIONAL COST PROPOSED FOR PATCH- 1 OVER 1.00 HA

1	Continuous Contour trench at Patch- 600mtr to divert runoff water from mountain / hill within the CA area. Unit cost per RMT= 0.27 MD = Rs. 77.30	Rs. 77.30 x 600 mt	46380.60
2	Staggered trenches of 2.5 mt x 0.5 mt x 0.5 mt) @121 MD for 450 structures per ha in hard soil.	34642.30 x 1.00 ha	34642.30
Sub-Total			81022.90

ADDITIONAL COST PROPOSED FOR PATCH- 2 OVER 11.80 HA

1	SMC measures- LBCD structure of 2mtr span @Rs.10489/- per LBCD for 27 no. LBCD structures.	10489.00 x 27 nos.	283203.00
2	Staggered trenches of 2.5 mt x 0.5 mt x 0.5 mt) @60 MD for 300 structures per ha	17178.00 x 11.80 ha	202700.40
3	Additional incentive @ 3% of cumulative expenditure up to 4 th year) for VSS/Fr/FG proposed for more than 80% survival and very good growth during 4th year of maintenance as per recommendation of DFO and RCCF @ Rs.1881/- for 11.80 ha.	1881.00 x 11.80 ha	22195.80
4	Barbed Wire Fencing for 1.36 Km. @Rs.668000.00 per Km including gate with maintenance upto 9th year as per approved norm	Rs.668000.00 x 1.36 Km	908480.00
	Sub-Total		1416579.20

ANCILLARY ACTIVITIES

1	Awareness programme- 0.5 lakh/ year for 10 year	0.5 lakh x 10 year	500000.00
2	Entry Point Activity (EPA)- Community Hall- 3.5 lakh	3.50 lakh	350000.00
3	Bore Well with overhead tank with solar power	7.00 lakh	700000.00
	Sub-Total		1550000.00

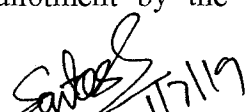
TOTAL COST OF PROJECT

1.	Cost Norm for Bald Hill plantation @1600 plants per ha (Rs. 415137.44/ ha x 10.00 ha)	4151374.40
2	Cost Norm for ANR without Gap Plantation (Rs. 31049.62/ ha x 1.00 ha)	31049.62
3	Cost Norm for ANR with Gap Plantation @600 plants per ha of seedlings/ha) (Rs. 68083.02/ha x11.80 ha)	803379.63
	Total plantation cost over 22.80 ha	4985803.65
4	Additional Cost	
	Additional Cost Proposed For Patch- 1 Over 10.00 Ha	1509597.00
	Additional Cost Proposed For Patch- 1 Over 1.00 Ha	81022.90
	Additional Cost Proposed For Patch- 2 Over 11.80 Ha	1416579.20
	Total Additional Cost	3007199.10
5	Ancillary Activities	1550000.00
	Sub Total (Plantation cost + Additional cost +Ancillary Activities)	9543002.75
6	Add 20% escalation	1908600.55
	Grand Total	11451603.30 Or say 1,14,52,000.00

(Rupees one crore fourteen lakh fifty-two thousand) only.

PROVISION OF FUNDS AND FUND UTILIZATION

Rs. 1,14,52,000/- (Rupees one crore fourteen lakh fifty-two thousand) only shall be deposited by the User Agency i.e. M/s JSW Utkal Steel Limited on approval of the scheme in Ad-hoc CAMPA Account and the funds will be utilized for raising of Compensatory Afforestation by the Divisional Forest Officer, Keonjhar Division on allotment by the Principal Chief Conservator of Forests, Odisha, Bhubaneswar.


Divisional Forest Officer,
Keonjhar Division

CHAPTER- VII

DETAILS OF PROPOSED MONITORING MECHANISM

Compensatory Afforestation will be taken up in the identified site by the Range Officer, BJP Forest Range of Keonjhar Division. The Range Forest Officer, BJP Forest Range will undertake field checks of the works undertaken at the identified site and will be cross checked by the Asst. Conservator of Forests, (Affn.) and Divisional Forest Officer, Keonjhar Division. DGPS/GPS co-ordinates along with other required informations of Compensatory Afforestation will be uploaded in the e-Green watch Portal of NIC, MoEF, Govt. of India for the purpose of online monitoring. Annual progress of plantation involving growth of planted seedlings, survival percentage etc. will be monitored and recorded in the plantation journal by the field staffs of BJP Forest Range and reported to the Divisional Forest Officer for necessary action. The same thing will be reported to the Regional Chief Conservator of Forests, Rourkela Circle and Chief Conservator of Forests (PP&A), O/o the Pr. Chief Conservator of Forests, Odisha, Bhubaneswar and necessary corrective measures will be followed if required so.


Divisional Forest Officer,
Keonjhar Division