

**COMPENSATORY AFFORESTATION SCHEME
OVER 160.419 Ha. OF NON-FOREST LAND
IN VILLAGE TAMANGA
UNDER TELKOI TAHASIL OF TELKOI RANGE
AGAINST
BAMEBARI IRON & MANGANESE MINES
OF**

M/S TATA STEEL LTD.

ELEMENTS OF THE SCHEME FOR COMPENSATORY AFFORESTATION

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CHAPTER- I

BRIEF NOTE ON THE PROPOSED FOREST DIVERSION PROPOSAL

Bamebari mining lease over an area of 1150.550 ha comprises of 3 blocks namely Bamebari, Joribar and Baneikala under Barbil Tahasil of Keonjhar District and was sanctioned in favour of M/s. Tata Steel Ltd by the Maharaja of Keonjhar for 30 years with effect from 1.04.1930 to 31.03.1960. This lease was renewed by Government in Department of Mining & Geology and lease deed was executed on 28.04.1971 for a period of 20 years with effect from 1.04.1960 to 31.03.1980. The 2nd renewal of the above lease was sanctioned by Government in Department of Mining & Geology vide letter No. 2851/MG dated 16.02.1982 for 20 years from 01.04.1980 to 31.03.2000 for mining of Manganese & Manganese Ferrous Iron Ore. Subsequently the State Government vide letter No III(A) SM-14/2006 3298/SM dated 18.04.2015 extended the validity period of Bamebari lease up to 31.03.2030 under section of 8A of the MMDR Amendment Act, 2015. Accordingly, Supplementary Lease Deed was executed on 08.05.2015 and registered on 08.05.2015 in respect of Bamebari Iron & Manganese lease.

The Mining Lease of Bamebari Iron & Manganese mines of M/s Tata Steel Ltd, located within longitude E 85°-25'-00" to 85°-26'-00" and latitude N 21°-53'-00" to 22°-04'-00" in Survey of India topo sheet no. F45N5 & F45H8. The said lease executed over 464.00 ha comprises Reserved Forest (170.157 ha), Khesara Forest (62.844ha.), DLC Forest land (149.268ha), Non-Forest land recorded as Forest as on 25.10.1980(66.126 ha) and Non-Forest land (15.605ha.). The total forest land involved in the mining lease is 448.395 ha.

Forest land over 145.329 ha has been diverted under section- 2(ii) of FC Act, 1980 vide F. No. 8-72/2004-FC dated 25.01.2007 of MoEF, Govt. of India. The instant diversion proposal has been submitted over 303.066 ha. i.e 116.008 ha of Reserved Forest, 48.193 ha of Khesara Forest, 72.739 ha of DLC forest and 66.126 ha of Non-Forest land recorded as Forest as on 25.10.1980.

The present scheme aims at preparation of a site-specific Compensatory Afforestation scheme over 209.419 hectares of non-forest land identified in village Tamanga under Telkoi Tahasil in Telkoi Range with a maintenance period of ten years, in lieu of the proposed diversion proposal submitted over 303.066 ha including Safety Zone area of 27.862 ha. Therefore the required CA area for the project is equivalent to $303.066 - 27.862 = 275.204$ ha. It is to be mentioned that the total area identified for compensatory afforestation is over 275.545 ha (160.419 ha in Telkoi Range & 49.00 ha in B.J.P Range of Keonjhar division + 66.126 ha identified in village Asanabahali in Mahabirroad Range of Dhenkanal division).

Further, it is pertinent to mention that out of the identified Non-forest land of 160.419 ha in Telkoi Range of Keonjhar Division, an area of 51.00 ha is coming under MDF as per DSS report. Hence, only silvicultural operation without Gap plantation is proposed over 51.00 ha. The balance non-forest area over 109.419 ha is suitable for Compensatory Afforestation @200 seedlings/ha with maintenance for 10 years.

Apart from this, an area of 49.00 ha of non-forest land has been identified for compensatory Afforestation in Sudanga village of Keonjhar district. Out of this 49.00 ha non-forest land, an area of 32.00 ha is coming under MDF as per DSS report. The balance non-forest area over 17.00 ha is suitable for compensatory Afforestation @800 seedlings/ha with maintenance for 10 years.

And another 66.126 ha non-forest land has been identified for compensatory Afforestation in Asanabahali village of Dhenkanal district. Out of this 66.126 ha non-forest land, an area of 43.000 ha is coming under MDF as per DSS report. The balance non-forest area over 23.126 ha is suitable for compensatory Afforestation @1600 seedlings/ha with maintenance for

10 years. Separate schemes for the above 49.00 ha and 66.126 ha non-forest land has been prepared by the DFO, Keonjhar Forest Division and DFO, Dhenkanal Forest Division respectively.

Sl. No	Village Name	Tahasil Name	Forest Range	Block	Total CA area in ha	MDF (in ha)	Area (in ha) suitable for Plantation	No of Seedlings to be planted in suitable area per ha	Total nos of Seedlings to be planted
1	Tamanga	Telkoi	Telkoi	I	125.12	48.00	77.12	200	15424
2	Tamanga	Telkoi	Telkoi	II	35.299	3.00	32.299	200	6460
3	Sudanga	Bansapal	B.J.P.	-	49.00	32.00	17.00	800	13600
4	Dhenkanal	Asanabahali	Mahabiroad		66.126	43.00	23.126	1600	37002
			Total in Ha		275.545	83.00	126.419		72486
	Degraded Forest land identified in Masinabila RF		Ghatagaon		259.00			800	207200
			Total						279686

It is mentioned that the total seedling which can be planted comes to 72486 nos. The balance nos of seedlings required to be planted for the total project i.e. over 275.545 ha @1000 seedlings = 275545 nos - 72486 nos = 203059 nos. For the plantation of these 203059 nos of seedlings, which is not possible to accommodate in the above mentioned CA area. Therefore, suitable degraded forest land over 254.00 ha has been identified for plantation @800 seedlings/ha i.e. 207200 nos of seedlings in Masinabila RF under Ghatagaon Forest Range of Keonjhar Division.

Out of the above, the present Compensatory Afforestation area, this scheme is prepared for 160.419 ha of non-forest CA area in Telkoi Tahasil, Telkoi Range in Keonjhar forest division at the prevailing wage rate @Rs.315.00 per manday with a maintenance period of ten years as per approved cost norms of PCCF(O).

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 Tamanga under Telkoi Tahasil in Telkoi Range of Keonjhar Forest Division over 160.419 ha. and has been jointly verified by the Tahasildar, Telkoi, Revenue Inspector, Telkoi, Range Officer, Telkoi Range. The above identified land has been allotted in favour of M/s TATA Steel Limited for their project Bamebari Iron & Manganese mines by the Collector, Keonjhar vide letter No. 2181/Rev/dated 26.09.2015.

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

The Tahasildar, Telkoi has given certificate regarding non-encroachment and non-encumbrance on the identified non-forest land for raising Compensatory Afforestation.(Ref. Annexure-1)

C. INFORMATION ON LAND STATUS.

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

The authenticated land schedule with above description is furnished in Annexure -II

VILLAGE – TAMANGA

BLOCK-I

Sl.No	Khata no	Plot no	Name of the Tenant	Kissam	Total area in Ha	Area to be acquired for CA in Ha	Remarks
1	2	3	4	5	6	7	8
1	43	3	Govt. of Odisha (AJA)	Parbat-II	16.000	16.000	
2	43	16		Parbat-I	22.080	22.080	
3	43	17		Parbat-I	21.760	21.760	
4	43	66		Parbat-I	16.320	16.320	
5	43	67		Parbat-I	16.320	16.320	
6	43	68		Parbat-I	16.000	16.000	
7	43	69		Parbat-I	16.640	16.640	
			Sub-Total			125.12	

BLOCK-II

8	43	78 (P)	Govt. of Odisha (AJA)	Parbat-I	18.880	18.299	
9	43	79		Parbat-I	17.000	17.000	
			Sub-Total			35.299	
			Grand Total			160.419	

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 topography of the identified area is undulating, small hilly terrain. The soil is mostly sandy loam at patches having fairly good depth of soil. Part of the top soil has been washed out due to natural erosion. This necessitates some soil conservation measures. The crop density varies from 0.1 to 0.4.

The area experiences tropical climate with monsoon rain fall. 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 therefore taken up only Silvicultural

operation under ANR without gap plantation model over 51.00 ha with site specific SMC measures.

There are two Blocks of Compensatory area land area under this scheme. Block-I is of 125.12 Ha and Block -II is of 35.299 Ha. It was observed that about 109.419 ha of Non-forest area is suitable for ANR mode @200 seedlings/ha with gap plantation model with site specific SMC measures.

CHAPTER-III

DELINEATION OF PROPOSED AREA ON SUITABLE MAP

A. VILLAGE SHEET SHOWING COMPENSATORY AFFORESTATION SITE.

The identified non-forest land depicted in village sheet and submitted by the Tahasildar, Telkoi is annexed herewith. (Ref. Plate No -2)

B. GPS COORDINATES AND GPS MAP OF THE COMPENSATORY AFFORESTATION SITE

As per guidelines under FC Act 1980, the area has been demarcated through DGPS survey method and 93 nos of 4' height RCC pillars have been posted around the identified area in two blocks and the same has been depicted in the village sheet map (enclosed at **Plate No-2**). The location map of the CA area in toposheet No.F45N7 has been enclosed in Plate No.1.

DGPS Co-ordinates, Boundary description & Field note of the CA area have been enclosed in annexure-3.

CHAPTER- IV

AGENCY RESPONSIBLE FOR COMPENSATORY AFFORESTATION

A. AGENCY RESPONSIBLE FOR PLACEMENT OF FUNDS

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

B. 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 SCHEDULED PROPOSED FOR COMPENSATORY AFFORESTATION

A. PLANTING PLAN

Planting Plan in this scheme 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 shall be depicted. This plan shall be followed when actual planting is carried out.

Species to be planted:-

1. *Dalbergia sissoo* (Sissoo)
2. *Azadirachta indica* (Neem)
3. *Gmelina arborea* (Gambar)
4. *Terminalia belerica* (Bahada)
5. *Terminalia chebula* (Harida)
6. *Pongamia pinnata* (Karanja)
7. *Emblica officinalis* (Amla), etc.
8. *Terminalia tomentosa* (Asan)
9. *Dalbergia latifolia* (Rose wood)
10. *Terminalia arjuna* (Arjuna)
11. *Sisigium cumini* (Jamu)
12. *Madhuca latifolia* (Mahula)
13. *Simaruba glauca* (Simaruba)
14. *Atocarpus integrifolia* (Panas)
15. *Tamarindus indica* (Tentuli)
16. *Schleicher aoleosa* (Kusum)
17. *Bridelia retusa* (Kasi)
18. *Adina cordifolia* (Kurum)

B. PRE-PLANTING OPERATION

I-RAISING OF PLANTATION STOCK- NURSERY.

Nursery will be raised @220 seedlings /ha over 109.419 Ha and including seedlings for 10% causality replacement.

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

The planting area has been surveyed and demarcated with four feet height RCC pillars at inter visible distance with GPS coordinates, forward and backward bearing, pillar No. and distance between pillars inscribed in it. A GPS map in the scale of 1:4000 has been prepared. A sign board has 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 45 x 45 x 45 cm. will be dug @200 seedlings/ha in the available gaps 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 grams 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 161 nos. over the entire plantation site, Staggered trenches of dimension 2.5 x 0.5 x 0.5 mtr to the tune of 300 Nos. per ha @60MD and creation of two nos. water body of size 40 mt x 30 mt x 3 mt in the plantation site.

D(5)-PROTECTION AGAINST FIRE AND BIOTIC INTERFERENCE

It is proposed to protect the CA plantation from grazing by domestic animals using GI Chain Link Mesh Fencing around the plantation site. The total length of such GI Chain Link fencing for all the patches which comes to 11.00 Km. (1100 m). 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 with involvement of Binida VSS.

CHAPTER- VI

Cost Norm for ANR Plantation @200 seedlings per ha (18 months old seedlings) @ 315.00/-
Mandays as per revised wage rate by Labour Commissioner, Odisha, Bhubaneswar vide
Notification No. 5639/LC dated 02.11.2021. The cost norm provided by the PCCF, Odisha,
Bhubaneswar vide their O.O. No. 1087 dated 02.11.2021.

Sl. No	Items of work	Preferable Period of Execution	No. of Mandays	Labour Cost (Rs.)	Material Cost (Rs.)	Total Cost (Rs.)
0th Year (Advance work)						
1	Survey, Demarcation and Pillar posting	Nov/Dec	2	630.00	0	630.00
2	Preparation of Treatment Map (Digital Map)	Nov/Dec	1	315.00	100	415.00
3	Site preparation	Nov/Dec	2	630.00	0	630.00
4	Silvicultural operations including clearance of weed, cutting of climber, High stump cutting, singling of shoots & removal of cut out after drying from the field to blank space.	Jan/Feb	15	4725.00	0	4725.00
5	Alignment and stacking for digging of pits	Feb/Mar	0.5	157.50	0	157.50
6	Digging of pits (45 cm x 45 cm X 45 cm) / 50 cm diameter augur hole in hard & gravelly soil	Feb/Mar	8	2520.00	0	2520.00
	Total		28.5	8977.50	100.0	9077.50
7	Monitoring, Evaluation, Learning, Documentation & any other Contingency upto 5% of the total cost.					453.88
	Grand Total					9,531.38
1st Year/Planting Year						
1	Refilling of pits by altering the dugout soil of the pits, application of organic compounds/ CDM/ FYM & mixing the same properly.	June/Jul	1.5	472.50	1000	1473
2	Transportation of 18 months old polypot seedlings in hired truck /tractor from the Permanent/Mega nursery to planting site including loading & unloading. (Average lead of 10 Rkm) & stacking the seedlings @ Rs.6/- per seedling. (220 nos.)	Jul/Aug	0	0.00	1320	1320
3	Watering polypot seedlings at stacking site of plantation	Jul/Aug	0.5	157.50	0	158
4	Conveyance of polypot seedlings on head load from the stacking site to individual dugout pits within the planting site, applying insecticide, fertilizer & planting after scooping the soil with other applied materials and pressing the soil properly around the planted seedlings.	Jul/Aug	4.5	1417.50	0	1418

5	<u>Cost of Fertilizer & Insecticide</u> (a)NPK/ Bio-fertilizer @ 50 gms/plant as basal dose = 10kg @ Rs.30/- per kg = Rs. 300.0 (b) Urea/Vermicompost/Mo Khata/any other fertilizer @ Rs. 150.00 (c) Insecticide/ Bio-pesticide @ 5 gms/plant= 1 kg @ Rs.150/- per kg = Rs. 150/-	Jul/Aug	0	0.00	600	600
6	Casualty Replacement @ 10% (20 nos.)	Jul/Aug	0.5	157.50	0	158
7	1st Weeding & Manuring	Aug/Sept	2	630.00	0	630
8	2nd Weeding, Soil working (1mt. diameter around the plants) & Manuring	Oct/Nov	3	945.00	0	945
9	Fire line tracing & Inspection path	Feb/Mar	3	945.00	0	945
10	Watch & Ward including watering as per requirement	Aug-Mar	8	2520.00	0	2520
	Total		23	7245.00	2920	10165
11	Monitoring, Evaluation, Learning, Documentation & any other Contingency upto 5% of the total cost.					508
	Grand Total					10673
2nd Year Maintenance						
1	Transportation of 20 seedlings from Nursery to plantation site including loading, unloading & conveyance by Tractor @ Rs.6/- per seedling	Jul	0	0.00	120	120
2	Casualty replacement	Jul	0.5	157.50	0.0	157.5
3	<u>Cost of Fertilizer & Insecticide-</u> A) Cost of Insecticide/ Bio- pesticide(Themet/ Forate) @ 5 gms/plant = 0.1 Kg @ Rs.150/- per kg = Rs.15/- B) Urea/NPK/Bio-fertilizer/Vermicompost/Mo Khata/any other fertilizer= Rs. 560/-	Jul	0	0.00	575	575
4	Weeding (Complete weeding), Manuring & Soil working, (1mt. diameter around the plants)	Sep/Oct	4	1260.00	0.0	1260
5	Fire line tracing (2 m. wide fire line over 400 m long) & Inspection path	Feb/Mar	3	945.00	0.0	945
6	Watch & Ward including watering as per requirement	Apr/Mar	12	3780.00	0.0	3780
	Total		19.5	6142.5	695.0	6837.5
7	Monitoring, Evaluation, Learning, Documentation & any other Contingency upto 5% of the total cost.			0		341.88
	Grand Total					7179
3rd Year Maintenance						
1	<u>Cost of Fertilizer</u> Urea/NPK/Bio-fertilizer/Vermicompost/Mo Khata/any other fertilizer = Rs. 560/-	Sep/Oct	0	0.00	560	560
2	Weeding (Complete weeding), Manuring & Soil working, (1mt. diameter around the plants)	Aug/Sept	4	1260.00	0	1260
3	Fire line tracing (2 m. wide fire line over 400 m long) & Inspection path	Feb/Mar	3	945.00	0	945

4	Watch & Ward including watering as per requirement	Apr/Mar	12	3780.00		3780
	Total		19	5985	560	6545
5	Monitoring, Evaluation, Learning, Documentation & any other Contingency upto 5% of the total cost.					327
	Grand Total					6,872
4th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m long) & Inspection path	Feb/Mar	3	945.00	0	945
2	Watch & Ward including watering as per requirement	Apr/Mar	12	3780.00	0	3780
	Total		15	4725	0	4,725
3	Monitoring, Evaluation, Learning, Documentation & any other Contingency upto 5% of the total cost.					236
	Grand Total					4,961
5th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m long) & Inspection path	Feb/Mar	3	945.00	0	945
2	Watch & Ward including watering as per requirement	Apr/Mar	12	3780.00	0	3780
	Total		15	4725	0	4,725
3	Monitoring, Evaluation, Learning, Documentation & any other Contingency upto 5% of the total cost.					236
	Grand Total					4,961
6th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m long) & Inspection path	Feb/Mar	3	945.00	0	945
2	Watch & Ward including watering as per requirement	Apr/Mar	12	3780.00	0	3780
	Total		15	4725	0	4,725
3	Monitoring, Evaluation, Learning, Documentation & any other Contingency upto 5% of the total cost.					236
	Grand Total					4,961
7th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m long) & Inspection path	Feb/Mar	3	945.00	0	945
2	Watch & Ward including watering as per requirement	Apr/Mar	12	3780.00	0	3780
	Total		15	4725	0	4,725
3	Monitoring, Evaluation, Learning, Documentation & any other Contingency upto 5% of the total cost.					236
	Grand Total					4,961
8th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m long) & Inspection path	Feb/Mar	3	945.00	0	945
2	Watch & Ward including watering as per requirement	Apr/Mar	12	3780.00	0	3780

	Total		15	4725	0	4,725
3	Monitoring, Evaluation, Learning, Documentation & any other Contingency upto 5% of the total cost.					236
	Grand Total					4,961
9th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m long) & Inspection path	Feb/Mar	3	945.00	0	945
2	Watch & Ward including watering as per requirement	Apr/Mar	12	3780.00	0	3780
	Total		15	4725	0	4,725
3	Monitoring, Evaluation, Learning, Documentation & any other Contingency upto 5% of the total cost.					236
	Grand Total					4,961
10th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m long) & Inspection path	Feb/Mar	3	945.00	0	945
2	Watch & Ward including watering as per requirement	Apr/Mar	12	3780.00	0	3780
	Total		15	4725	0	4,725
3	Monitoring, Evaluation, Learning, Documentation & any other Contingency upto 5% of the total cost.					236
	Grand Total					4,961

ABSTARCT (Showing Seedling Cost Separately)

Sl. No	Year	No. of Mandays	Labour Cost (Rs.)	Material Cost (Rs.)	MELD & Other Contingency	Seedling Cost (Rs.)	Total Cost (Rs.)
1	0th year	28.5	8978	100	454	0	9531
2	1st year	23.0	7245	2920	508	11178	21851
3	2nd year	19.5	6143	695	342	1016	8196
4	3rd year	19.0	5985	560	327	0	6872
5	4th year	15.0	4725	0	236	0	4961
6	5th year	15.0	4725	0	236	0	4961
7	6th year	15.0	4725	0	236	0	4961
8	7th year	15.0	4725	0	236	0	4961
9	8th year	15.0	4725	0	236	0	4961
10	9th year	15.0	4725	0	236	0	4961
11	10th year	15.0	4725	0	236	0	4961
Grand Total		195.0	61425.0	4275.0	3285.0	12194.4	81179.4
Total plantation cost (109.419 ha x Rs.81179.4)							8882568.76

**COST STRUCTURE OF PLANTATION, PROVISION OF FUNDS AND UTILIZATION
ESTIMATE OF COST FOR 1.00 HA. UNDER ANR WITHOUT GAP
PLANTATION MODEL**

WAGE RATE Rs. 315/- PER DAY

Sl No	Item of work	Preferable period of execution	Person days	Labour (Rs)	Material (Rs)	Total (Rs)
0th year						
1	Survey demarcation and pillar posting, GPS reading with mapping	Nov/Dec	2	630	0	630
2	Site Preparation	Nov/Dec	2	630	0	630
3	Cutting of high stumps		5	1575	0	1575
	Sub Total		9	2835	0	2835
4	Monitoring & Supervision charge 5% of the total cost					141.75
	Grand Total		9	2835	0	2976.75
1st year						
1	Silvicultural operation involving clearance of weeds, cutting of climbers, singling of shoots etc.	Sep/Oct	15	4725	0	4725
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	6300	0	6300
3	Fireline Tracing and inspection path	Feb/Mar	3	945	0	945
4	Watch & ward	Aug-Mar	5	1575	0	1575
5	Contingency and unforeseen expenditure		0	0	500	500
	Sub Total		43	13545	500	14045
6	Monitoring & Supervision charge 5% of the total cost					702.25
	Grand Total		43	13545	500	14747.25
2nd year						
1	Soil conservation Measures (Renovation of staggered trenches etc.)	Sep/Oct	8	2520	0	2520
2	Fireline Tracing and inspection path	Feb/Mar	1	315	0	315
3	Watch & ward (whole year)	Apr-Mar	7	2205	0	2205
4	Contingency and unforeseen expenditure		0	0	300	300
	Sub Total		16	5040	300	5340
5	Monitoring & Supervision charge 5% of the total cost					267
	Grand Total		16	5040	300	5607
3rd Year						
1	Fireline Tracing and inspection path	Feb/Mar	1	315	0	315
2	Watch & ward (whole year)	Apr-Mar	7	2205	0	2205
3	Contingency and unforeseen expenditure		0	0	300	300
	Sub Total		8	2520	300	2820
4	Monitoring & Supervision charge 5% of the total cost					141
	Grand Total		8	2520	300	2961

4th year						
1	Fireline Tracing and inspection path	Feb/Mar	1	315	0	315
2	Watch & ward and cultural operation	Apr-Mar	2	630	0	630
3	Contingency and unforeseen expenditure			0	100	100
	Sub-Total		3	945	100	1045
4	Monitoring & Supervision charge 5% of the total cost					52.25
	Grand Total		3	945	100	1097.25
5th year						
1	Fireline Tracing and inspection path	Feb/Mar	1	315	0	315
2	Watch & ward and cultural operation	Apr-Mar	2	630	0	630
3	Contingency and unforeseen expenditure			0	100	100
	Sub-Total		3	945	100	1045
4	Monitoring & Supervision charge 5% of the total cost					52.25
	Grand Total		3	945	100	1097.25
6th year						
1	Fireline Tracing and inspection path	Feb/Mar	1	315	0	315
2	Watch & ward and cultural operation	Apr-Mar	2	630	0	630
3	Contingency and unforeseen expenditure			0	100	100
	Sub-Total		3	945	100	1045
4	Monitoring & Supervision charge 5% of the total cost					52.25
	Grand Total		3	945	100	1097.25
7th year						
1	Fireline Tracing and inspection path	Feb/Mar	1	315	0	315
2	Watch & ward and cultural operation	Apr-Mar	2	630	0	630
3	Contingency and unforeseen expenditure			0	100	100
	Sub-Total		3	945	100	1045
4	Monitoring & Supervision charge 5% of the total cost					52.25
	Grand Total		3	945	100	1097.25
8th year						
1	Fireline Tracing and inspection path	Feb/Mar	1	315	0	315
2	Watch & ward and cultural operation	Apr-Mar	2	630	0	630
3	Contingency and unforeseen expenditure				100	100
	Sub-Total		3	945	100	1045
4	Monitoring & Supervision charge 5% of the total cost					52.25
	Grand Total		3	945	100	1097.25
9th year						
1	Fireline Tracing and inspection path	Feb/Mar	1	315	0	315
2	Watch & ward and cultural operation	Apr-Mar	2	630	0	630
3	Contingency and unforeseen expenditure			0	100	100
	Sub-Total		3	945	100	1045
4	Monitoring & Supervision charge 5% of the total cost					52.25
	Grand Total		3	945	100	1097.25

10th year						
1	Fireline Tracing and inspection path	Feb/Mar	1	315	0	315
2	Watch & ward and cultural operation	Apr-Mar	2	630	0	630
3	Contingency and unforeseen expenditure			0	100	100
	Sub-Total		3	945	100	1045
4	Monitoring & Supervision charge 5% of the total cost					52.25
	Grand Total		3	945	100	1097.25

ABSTRACT						
Sl No.	Year	Person days	Labour cost @315.00/- per manday (in Rs.)	Material cost (in Rs.)	Monitoring & Supervision charge 5% of the total cost in (Rs.)	Total cost (in Rs.)
1	0th Year	9	2835	0	141.75	2976.75
2	1st Year	43	13545	500	702.25	14747.25
3	2nd Year	16	5040	300	267	5607
4	3rd Year	8	2520	300	141	2961
5	4th Year	3	945	100	52.25	1097.25
6	5th Year	3	945	100	52.25	1097.25
7	6th Year	3	945	100	52.25	1097.25
8	7th Year	3	945	100	52.25	1097.25
9	8th Year	3	945	100	52.25	1097.25
10	9th Year	3	945	100	52.25	1097.25
11	10th Year	3	945	100	52.25	1097.25
	Total	97	30555	1800	1617.75	33972.75
	Total Cost (51.00 ha x Rs. 33972.75)					1732610.25

ADDITIONAL COST PROPOSED

1	Wire mesh LBCD of size 10' x 10' x 5' for 161 nos. @Rs 15674/- per LBCD	15,674 x 161 nos	2523514.00
2	Staggered trenches of dimension 2.5 x 0.5 x 0.5 mtr to the tune of 300 Nos. per ha @60MD or Rs. 18,900/- per ha over 160.419 ha	60 x 315 x 160.419 ha	3031919.10
3	Two nos. water body of size 40mt x 30mt x 3mt in the plantation site	2 x 6,06,800	1213600.00
4	Cost of G.I. Chain link Mess Fencing over 11.00 Km. with 3 years maintenance @2% of cost per RKM @Rs. 9,91,500/- per RKM	Rs 9,91,500 x 11.00 Km	10906500.00
5	Construction of one watcher shed for plantation	1 x 50000	50000.00
	Maintenance of watcher shed @5000/ year for nine year	9 x 1 x 5000	45000.00
	Sub-Total		17770533.10

TOTAL COST OF PROJECT (in Rs.)

1	Nursery for 24,073 no of seedlings including casualty replacement 10% for 109.419 ha @Rs. 315/- (24,073 nos. x Rs. 50.81 per seedling)	1223149.13
2	ANR with gap plantation model @200/- over 109.419 ha @ Rs. 81179.40 /- per ha.	8882568.76
3	15% of the total plantation cost towards Entry Point Activity/ Incentive to VSS etc.	1332385.31
4	ANR without gap plantation model over 51.00 ha @ Rs. 33972.75/- per ha.	1732610.25
5	Total additional cost	17770533.10
	Total	30941246.55
6	Add Escalation Cost (20%)	6188249.31
	Grand Total	37129495.86 Or say 3,71,29,500.00

(Rupees three crore seventy-one lakh twenty-nine thousand five hundred) Only

A. PROVISION OF FUNDS AND FUND UTILIZATION

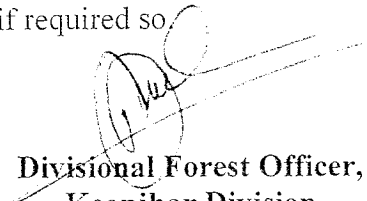
Rs. 3,71,29,500.00 (Rupees three crore seventy-one lakh twenty-nine thousand five hundred) only shall be deposited by the User Agency M/s Tata Steel Limited, on approval of the scheme, in the Ad-hoc CAMPA Account and the funds will be utilized for raising of Compensatory Afforestation by the Divisional 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, Telkoi Forest Range of Keonjhar Division. The Range Forest Officer, Telkoi 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. GPS co-ordinates along with other required information of Compensatory Afforestation will be uploaded in the e-Greenwatch Portal of NIC, MoEF&CC, 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 Telkoi Forest Range 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**

**COMPENSATORY AFFORESTATION SCHEME
OVER 49.00 Ha. OF NON-FOREST LAND
IN VILLAGE SUDANGA
UNDER BANSAPAL TAHASIL OF B.J.P.
FOREST RANGE AGAINST
BAMEBARI IRON & MANGANESE MINES
OF
M/S TATA STEEL LTD.**

ELEMENTS OF THE SCHEME FOR COMPENSATORY AFFORESTATION

CHAPTER	PARTICULARS	PAGE NUMBER
I	BRIEF NOTE ON THE PROPOSED FOREST DIVERSION PROPOSAL	01 – 02
II	DETAILS OF LAND IDENTIFIED FOR COMPENSATORY AFFORESTATION	03 – 03
III	DELINEATION OF PROPOSED AREA ON SUITABLE MAP	04 – 04
IV	AGENCY RESPONSIBLE FOR COMPENSATORY AFFORESTATION	04 – 04
V	DETAILS OF WORK SCHEDULE PROPOSED FOR COMPENSATORY AFFORESTATION	05 – 06
VI	COST STRUCTURE OF PLANTATION, PROVISION OF FUNDS AND UTILIZATION	07 – 14
VII	DETAILS OF PROPOSED MONITORING MECHANISM	15 – 15

CHAPTER- I

BRIEF NOTE ON THE PROPOSED FOREST DIVERSION PROPOSAL

Bamebari mining lease over an area of 1150.550 ha comprises of 3 blocks namely Bamebari, Joribar and Baneikala under Barbil Tahasil of Keonjhar District and was sanctioned in favour of M/s. Tata Steel Ltd by the Maharaja of Keonjhar for 30 years with effect from 1.04.1930 to 31.03.1960. This lease was renewed by Government in Department of Mining & Geology and lease deed was executed on 28.04.1971 for a period of 20 years with effect from 1.04.1960 to 31.03.1980. The 2nd renewal of the above lease was sanctioned by Government in Department of Mining & Geology vide letter No. 2851/MG dated 16.02.1982 for 20 years from 01.04.1980 to 31.03.2000 for mining of Manganese & Manganese Ferrous Iron Ore. Subsequently the State Government vide letter No III(A) SM-14/2006 3298/SM dated 18.04.2015 extended the validity period of Bamebari lease up to 31.03.2030 under section of 8A of the MMDR Amendment Act, 2015. Accordingly, Supplementary Lease Deed was executed on 08.05.2015 and registered on 08.05.2015 in respect of Bamebari Iron & Manganese lease.

The Mining Lease of Bamebari Iron & Manganese mines of M/s Tata Steel Ltd, located within longitude E 85°-25'-00" to 85°-26'-00" and latitude N 21°-53'-00" to 22°-04'-00" in Survey of India topo sheet no. F45N5 & F45H8. The said lease executed over 464.00 ha comprises Reserved Forest (170.157 ha), Khesara Forest (62.844ha.), DLC Forest land (149.268ha), Non-Forest land recorded as Forest as on 25.10.1980(66.126 ha) and Non-Forest land (15.605ha.). The total forest land involved in the mining lease is 448.395 ha.

Forest land over 145.329 ha has been diverted under section- 2(ii) of FC Act, 1980 vide F. No. 8-72/2004-FC dated 25.01.2007 of MoEF, Govt. of India. The instant diversion proposal has been submitted over 303.066 ha. i.e 116.008 ha of Reserved Forest, 48.193 ha of Khesera Forest, 72.739 ha of DLC forest and 66.126 ha of Non-Forest land recorded as Forest as on 25.10.1980.

The present scheme aims at preparation of a site-specific Compensatory Afforestation scheme over 49.00 hectares of non-forest land identified in village Sudanga under Bansapal Tahasil in B.J.P. Range with a maintenance period of ten years, in lieu of the proposed diversion proposal submitted over 303.066 ha including Safety Zone area of 27.862 ha. Therefore the required CA area for the project is equivalent to $303.066 - 27.862 = 275.204$ ha. It is to be mentioned that the total area identified for compensatory afforestation is over 275.545 ha (160.419 ha in Telkoi Range & 49.00 ha in B.J.P Range of Keonjhar division + 66.126 ha identified in village Asanabahali in Mahabirroad Range of Dhenkanal division).

Further, it is pertinent to mention that out of the identified Non-forest land of 49.00 ha of non-forest land has been identified for compensatory Afforestation in Sudanga village of Keonjhar district. Out of this 49.00 ha non-forest land, an area of 32.00 ha is coming under MDF as per DSS report. The balance non-forest area over 17.00 ha is suitable for compensatory Afforestation @800 seedlings/ha with maintenance for 10 years.

Apart from this, an area of 160.419 ha in Telkoi Range of Keonjhar Division, an area of 51.00 ha is coming under MDF as per DSS report. Hence, only silvicultural operation without Gap plantation is proposed over 51.00 ha. The balance non-forest area over 109.419 ha is suitable for Compensatory Afforestation @200 seedlings/ha with maintenance for 10 years.

And another 66.126 ha non-forest land has been identified for compensatory Afforestation in Asanbahali village of Dhenkanal district. Out of this 66.126 ha non-forest land, an area of 43.000 ha is coming under MDF as per DSS report. The balance non-forest area over 23.126 ha is suitable for compensatory Afforestation @1600 seedlings/ha with maintenance for 10 years. Separate schemes for the above 160.419 ha and 66.126 ha non-forest land has been prepared by the DFO, Keonjhar Forest Division and DFO, Dhenkanal Forest Division respectively.

Sl. No	Village Name	Tahasil Name	Forest Range	Block	Total CA area in ha	MDF (in ha)	Area (in ha) suitable for Plantation	No of Seedlings to be planted in suitable area per ha	Total nos of Seedlings to be planted
1	Tamanga	Telkoi	Telkoi	I	125.12	48.00	77.12	200	15424
2	Tamanga	Telkoi	Telkoi	II	35.299	3.00	32.299	200	6460
3	Sudanga	Bansapal	B.J.P.	-	49.00	32.00	17.00	800	13600
4	Dhenkanal	Asanabahali	Mahabiroad		66.126	43.00	23.126	1600	37002
			Total		275.545	83.00	126.419		72486
	Degraded Forest land identified in Masinabila RF		Ghatagaon		254.00			800	207200
			Total						279686

It is mentioned that the total seedling which can be planted comes to 72486 nos. The balance nos of seedlings required to be planted for the total project i.e. over 275.204 ha @1000 seedlings = 275204 nos - 72486 nos = 203059 nos. For the plantation of these 203059 nos of seedlings, which is not possible to accommodate in the above mentioned CA area. Therefore, suitable degraded forest land over 254.00 ha has been identified for plantation @800 seedlings/ha i.e. 207200 nos of seedlings in Masinabila RF under Ghatagaon Forest Range of Keonjhar Division.

Out of the above, the present Compensatory Afforestation area. this scheme is prepared for 49.00 ha of non-forest CA area in Bansapal Tahasil, B.J.P. Range in Keonjhar forest division at the prevailing wage rate @Rs.315.00 per manday with a maintenance period of ten years as per approved cost norms of PCCF(O).

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 Sudanga under Bansapal Tahasil in B.J.P. Range of Keonjhar Forest Division over 49.00 ha. and has been jointly verified by the Tahasildar, Bansapal, Revenue Inspector, Nayakote, Range Officer, B.J.P. Range. The above identified land has been allotted in favour of M/s TATA Steel Limited for their project Bamebari Iron & Manganese mines by the Collector, Keonjhar vide letter No. 1837/Rev dated 24.09.2020.

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

The Tahasildar, Bansapal has given certificate regarding non-encroachment and non-encumbrance on the identified non-forest land for raising Compensatory Afforestation. (Ref. Annexure-1)

C. INFORMATION ON LAND STATUS.

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

The authenticated land schedule with above description is furnished in Annexure -II

VILLAGE – SUDANGA

VILLAGE – SUDANGA						
Sl.No	Khata No	Tenant Name	Plot No	Kissam	Area in Ha	Proposed Area for CA in Ha
1	87	Abada Ajogya Anabadi (AAA)	420(P)	Hudi	13.500	10.246
2	87		421(P)	Hudi	15.500	11.931
3	87		422(P)	Hudi	15.700	10.097
4	87		423(P)	Hudi	14.250	9.323
5	87		424(P)	Hudi	16.000	5.623
6	87		428(P)	Hudi	17.000	1.780
	Total in Ha					49.000

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 topography of the identified area is undulating, small hilly terrain. The soil is mostly sandy loam at patches having fairly good depth of soil. Part of the top soil has been washed out due to natural erosion. This necessitates some soil conservation measures. The crop density varies from 0.1 to 0.4.

The area experiences tropical climate with monsoon rain fall. 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 therefore taken up only Silvicultural operation under ANR without gap plantation model over 32.00 ha with site specific SMC measures. The balance area over 17.00 ha of Non-forest area is suitable for ANR mode @800 seedlings/ha with gap plantation model with site specific SMC measures.

CHAPTER-III

DELINEATION OF PROPOSED AREA ON SUITABLE MAP

A. VILLAGE SHEET SHOWING COMPENSATORY AFFORESTATION SITE.

The identified non-forest land depicted in village sheet and submitted by the Tahasildar, Bansapal is annexed herewith. (Ref. Plate No -2)

B. GPS COORDINATES AND GPS MAP OF THE COMPENSATORY AFFORESTATION SITE

As per guidelines under FC Act 1980, the area has been demarcated through GPS survey method and 15 nos of 4' height RCC pillars have been posted around the identified area in two blocks and the same has been depicted in the village sheet map (enclosed at **Plate No-2**). The location map of the CA area in toposheet No. F45N1 has been enclosed in Plate No.1.

GPS Co-ordinates, Boundary description & Field note of the CA area have been enclosed in annexure-3.

C. DECISION SUPPORT SYSTEM- ANALYSIS OF FOREST COVER MAP

The map of the proposed CA land was processed using DSS for analysis of Forest cover over the area. The result of DSS map obtained are depicted in the **Annexure- 3**

Name of the plantation site	Total Area identified (in ha)	Verified in Decision Support System (in Square Kilometer)		
		MDF	Non-forest	Open-forest
Village- Sudanga	49.00	0.32	0.01	0.16

CHAPTER- IV

AGENCY RESPONSIBLE FOR COMPENSATORY AFFORESTATION

A. AGENCY RESPONSIBLE FOR PLACEMENT OF FUNDS

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

B. 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 SCHEDULED PROPOSED FOR COMPENSATORY AFFORESTATION

A. PLANTING PLAN

Planting Plan in this scheme 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 shall be depicted. This plan shall be followed when actual planting is carried out.

Species to be planted:-

1. *Dalbergia sissoo* (Sissoo)
2. *Azadirachta indica* (Neem)
3. *Gmelina arborea* (Gambar)
4. *Terminalia belerica* (Bahada)
5. *Terminalia chebula* (Harida)
6. *Pongamia pinnata* (Karanja)
7. *Emblia officinalis* (Ainla), etc.
8. *Terminalia tomentosa* (Asan)
9. *Dalbergia latifolia* (Rose wood)
10. *Terminalia arjuna* (Arjuna)
11. *Sizigium cumuni* (Jamu)
12. *Madhuca latifolia* (Mahula)
13. *Simaruba glauca* (Simaruba)
14. *Atocarpus integrifolia* (Panas)
15. *Tamarindus indica* (Tentuli)
16. *Schleicher aoleosa* (Kusum)
17. *Bridelia retusa* (Kasi)
18. *Adina cordifolia* (Kurum)

B. PRE-PLANTING OPERATION

I-RAISING OF PLANTATION STOCK- NURSERY.

Nursery will be raised @880 seedlings /ha over 17.00 Ha and including seedlings for 10% causality replacement.

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

The planting area has been surveyed and demarcated with four feet height RCC pillars at inter visible distance with GPS coordinates, forward and backward bearing, pillar No. and distance between pillars inscribed in it. A GPS map in the scale of 1:4000 has been prepared. A sign board has 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 45 x 45 x 45 cm. will be dug @800 seedlings/ha in the available gaps 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 grams 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 wire mesh LBCD structures of dimension 10' x 10' x 5' to the tune of 50 nos. over the entire plantation site, Staggered trenches of dimension 2.5 x 0.5 x 0.5 mtr to the tune of 300 Nos. per ha @60MD and creation of one water body of size 40 mt x 30 mt x 3 mt in the plantation site.

D(5)-PROTECTION AGAINST FIRE AND BIOTIC INTERFERENCE

It is proposed to protect the CA plantation from grazing by domestic animals using GI Chain Link Mesh Fencing around the plantation site. The total length of such GI Chain Link fencing for this patch which comes to 3.63 Km (3630 m). 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 with involvement of Kadakala VSS.

CHAPTER- VI

Cost Norm for ANR Plantation @800 seedlings per ha (18 months old seedlings) @ 315.00/- Mandays as per revised wage rate by Labour Commissioner, Odisha, Bhubaneswar vide Notification No. 5639/LC dated 02.11.2021. The cost norm provided by the PCCF, Odisha, Bhubaneswar vide their O.O. No. 1087 dated 02.11.2021.

Sl. No	Items of work	Preferable Period of Execution	No. of Mandays	Labour Cost (Rs.)	Material Cost (Rs.)	Total Cost (Rs.)
0th Year (Advance work)						
1	Survey, Demarcation and Pillar posting	Nov/Dec	2	630.00	0	630.00
2	Preparation of Treatment Map (Digital Map)	Nov/Dec	1	315.00	100	415.00
3	Site preparation	Nov/Dec	2	630.00	0	630.00
4	Silvicultural operations including clearance of weed, cutting of climber, High stump cutting, singling of shoots & removal of cut out after drying from the field to blank space.	Jan/Feb	15	4725.00	0	4725.00
5	Alignment and stacking for digging of pits	Feb/Mar	2	630.00	0	630.00
6	Digging of pits (45 cm x 45 cm X 45 cm) / 50 cm diameter augur hole in hard & gravelly soil	Feb/Mar	32	10080.00	0	10080.00
	Total		54.0	17010.00	100.0	17110.00
7	Monitoring, Evaluation, Learning, Documentation & any other Contingency upto 5% of the total cost.					855.50
	Grand Total					17,965.50
1st Year/Planting Year						
1	Refilling of pits by altering the dugout soil of the pits, application of organic compounds/ CDM/ FYM & mixing the same properly.	June/Jul	6.0	1890.00	1000	2890
2	Transportation of 18 months old polypot seedlings in hired truck /tractor from the Permanent/Mega nursery to planting site including loading & unloading. (Average lead of 10 Rkm) & stacking the seedlings @ Rs.6/- per seedling. (880 nos.)	Jul/Aug	0	0.00	5280	5280
3	Watering polypot seedlings at stacking site of plantation	Jul/Aug	2.0	630.00	0	630
4	Conveyance of polypot seedlings on head load from the stacking site to individual dugout pits within the planting site, applying insecticide, fertilizer & planting after scooping the soil with other applied materials and pressing the soil properly around the planted seedlings.	Jul/Aug	18.0	5670.00	0	5670

5	<u>Cost of Fertilizer & Insecticide</u> (a)NPK/ Bio-fertilizer @ 50 gms/plant as basal dose = 40kg @ Rs.30/- per kg = Rs. 1200.0 (b) Urea/Vermicompost/Mo Khata/any other fertilizer @ Rs. 600.00 (c) Insecticide/ Bio-pesticide @ 5 gms/plant= 1 kg @ Rs.150/- per kg = Rs. 600/-	Jul/Aug	0	0.00	2400	2400
6	Casualty Replacement @ 10% (80 nos.)	Jul/Aug	2.0	630.00	0	630
7	1st Weeding & Manuring	Aug/Sept	8	2520.00	0	2520
8	2nd Weeding, Soil working (1mt. diametre around the plants) & Manuring	Oct/Nov	12	3780.00	0	3780
9	Fire line tracing & Inspection path	Feb/Mar	3	945.00	0	945
10	Watch & Ward including watering as per requirement	Aug-Mar	8	2520.00	0	2520
	Total		59	18585.00	8680	27265
11	Monitoring, Evaluation, Learning, Documentation & any other Contingency upto 5% of the total cost.					1363
	Grand Total					28628
2nd Year Maintenance						
1	Transportation of 80 seedlings from Nursery to plantation site including loading, unloading & conveyance by Tractor @ Rs.6/- per seedling	Jul	0	0.00	480	480
2	Casualty replacement	Jul	2.0	630.00	0.0	630.0
3	<u>Cost of Fertilizer & Insecticide-</u> A) Cost of Insecticide/ Bio-pesticide(Themet/ Forate) @ 5 gms/plant = 0.4 Kg @ Rs.150/- per kg = Rs.60/- B) Urea/NPK/Bio-fertilizer/Vermicompost/Mo Khata/any other fertilizer= Rs. 2240/-	Jul	0	0.00	2300	2300
4	Weeding (Complete weeding), Manuring & Soil working. (1mt. diametre around the plants)	Sep/Oct	16	5040.00	0.0	5040
5	Fire line tracing (2 m. wide fire line over 400 m long) & Inspection path	Feb/Mar	3	945.00	0.0	945
6	Watch & Ward including watering as per requirement	Apr/Mar	12	3780.00	0.0	3780
	Total		33.0	10395.0	2780.0	13175.0
7	Monitoring, Evaluation, Learning, Documentation & any other Contingency upto 5% of the total cost.			0		658.75
	Grand Total					13834
3rd Year Maintenance						
1	<u>Cost of Fertilizer</u> Urea/NPK/Bio-fertilizer/Vermicompost/Mo Khata/any other fertilizer = Rs. 2240/-	Sep/Oct	0	0.00	2240	2240

2	Weeding (Complete weeding), Manuring & Soil working, (1mt. diameter around the plants)	Aug/Sep	16	5040.00	0	5040
3	Fire line tracing (2 m. wide fire line over 400 m long) & Inspection path	Feb/Mar	3	945.00	0	945
4	Watch & Ward including watering as per requirement	Apr/Mar	12	3780.00		3780
	Total		31	9765	2240	12005
5	Monitoring, Evaluation, Learning, Documentation & any other Contingency upto 5% of the total cost.					600
	Grand Total					12,605
4th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m long) & Inspection path	Feb/Mar	3	945.00	0	945
2	Watch & Ward including watering as per requirement	Apr/Mar	12	3780.00	0	3780
	Total		15	4725	0	4,725
3	Monitoring, Evaluation, Learning, Documentation & any other Contingency upto 5% of the total cost.					236
	Grand Total					4,961
5th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m long) & Inspection path	Feb/Mar	3	945.00	0	945
2	Watch & Ward including watering as per requirement	Apr/Mar	12	3780.00	0	3780
	Total		15	4725	0	4,725
3	Monitoring, Evaluation, Learning, Documentation & any other Contingency upto 5% of the total cost.					236
	Grand Total					4,961
6th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m long) & Inspection path	Feb/Mar	3	945.00	0	945
2	Watch & Ward including watering as per requirement	Apr/Mar	12	3780.00	0	3780
	Total		15	4725	0	4,725
3	Monitoring, Evaluation, Learning, Documentation & any other Contingency upto 5% of the total cost.					236
	Grand Total					4,961
7th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m long) & Inspection path	Feb/Mar	3	945.00	0	945
2	Watch & Ward including watering as per requirement	Apr/Mar	12	3780.00	0	3780
	Total		15	4725	0	4,725

3	Monitoring, Evaluation, Learning, Documentation & any other Contingency upto 5% of the total cost.					236
	Grand Total					4,961
8th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m long) & Inspection path	Feb/Mar	3	945.00	0	945
2	Watch & Ward including watering as per requirement	Apr/Mar	12	3780.00	0	3780
	Total		15	4725	0	4,725
3	Monitoring, Evaluation, Learning, Documentation & any other Contingency upto 5% of the total cost.					236
	Grand Total					4,961
9th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m long) & Inspection path	Feb/Mar	3	945.00	0	945
2	Watch & Ward including watering as per requirement	Apr/Mar	12	3780.00	0	3780
	Total		15	4725	0	4,725
3	Monitoring, Evaluation, Learning, Documentation & any other Contingency upto 5% of the total cost.					236
	Grand Total					4,961
10th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m long) & Inspection path	Feb/Mar	3	945.00	0	945
2	Watch & Ward including watering as per requirement	Apr/Mar	12	3780.00	0	3780
	Total		15	4725	0	4,725
3	Monitoring, Evaluation, Learning, Documentation & any other Contingency upto 5% of the total cost.					236
	Grand Total					4,961

ABSTARCT (Showing Seedling Cost Separately)

Sl. No	Year	No. of Mandays	Labour Cost (Rs.)	Material Cost (Rs.)	MELD & Other Contingency	Seedling Cost (Rs.)	Total Cost (Rs.)
1	0th year	54.0	17010	100	856	0	17966
2	1st year	59.0	18585	8680	1363	44713	73341
3	2nd year	33.0	10395	2780	659	4065	17899
4	3rd year	31.0	9765	2240	600	0	12605
5	4th year	15.0	4725	0	236	0	4961
6	5th year	15.0	4725	0	236	0	4961
7	6th year	15.0	4725	0	236	0	4961

8	7th year	15.0	4725	0	236	0	4961
9	8th year	15.0	4725	0	236	0	4961
10	9th year	15.0	4725	0	236	0	4961
11	10th year	15.0	4725	0	236	0	4961
Grand Total		282.0	88830.0	13800.0	5131.5	48777.6	156539.10
Total plantation Cost (17.00 ha x Rs. 156539.1)							2661164.70

COST STRUCTURE OF PLANTATION, PROVISION OF FUNDS AND UTILIZATION
A. ESTIMATE OF COST FOR 1.00 HA. UNDER ANR WITHOUT GAP
PLANTATION MODEL

WAGE RATE Rs. 315/- PER DAY

Sl No	Item of work	Preferable period of execution	Person days	Labour (Rs)	Material (Rs)	Total (Rs)
0th year						
1	Survey demarcation and pillar posting, GPS reading with mapping	Nov/Dec	2	630	0	630
2	Site Preparation	Nov/Dec	2	630	0	630
3	Cutting of high stumps		5	1575	0	1575
	Sub Total		9	2835	0	2835
4	Monitoring & Supervision charge 5% of the total cost					141.75
	Grand Total		9	2835	0	2976.75
1st year						
1	Silvicultural operation involving clearance of weeds, cutting of climbers, singling of shoots etc.	Sep/Oct	15	4725	0	4725
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	6300	0	6300
3	Fireline Tracing and inspection path	Feb/Mar	3	945	0	945
4	Watch & ward	Aug-Mar	5	1575	0	1575
5	Contingency and unforeseen expenditure		0	0	500	500
	Sub Total		43	13545	500	14045
6	Monitoring & Supervision charge 5% of the total cost					702.25
	Grand Total		43	13545	500	14747.25
2nd year						
1	Soil conservation Measures (Renovation of staggered trenches etc.)	Sep/Oct	8	2520	0	2520
2	Fireline Tracing and inspection path	Feb/Mar	1	315	0	315
3	Watch & ward (whole year)	Apr-Mar	7	2205	0	2205
4	Contingency and unforeseen expenditure		0	0	300	300
	Sub Total		16	5040	300	5340

5	Monitoring & Supervision charge 5% of the total cost					267
	Grand Total		16	5040	300	5607
3rd Year						
1	Fireline Tracing and inspection path	Feb/Mar	1	315	0	315
2	Watch & ward (whole year)	Apr-Mar	7	2205	0	2205
3	Contingency and unforeseen expenditure		0	0	300	300
	Sub Total		8	2520	300	2820
4	Monitoring & Supervision charge 5% of the total cost					141
	Grand Total		8	2520	300	2961
4th year						
1	Fireline Tracing and inspection path	Feb/Mar	1	315	0	315
2	Watch & ward and cultural operation	Apr-Mar	2	630	0	630
3	Contingency and unforeseen expenditure			0	100	100
	Sub-Total		3	945	100	1045
4	Monitoring & Supervision charge 5% of the total cost					52.25
	Grand Total		3	945	100	1097.25
5th year						
1	Fireline Tracing and inspection path	Feb/Mar	1	315	0	315
2	Watch & ward and cultural operation	Apr-Mar	2	630	0	630
3	Contingency and unforeseen expenditure			0	100	100
	Sub-Total		3	945	100	1045
4	Monitoring & Supervision charge 5% of the total cost					52.25
	Grand Total		3	945	100	1097.25
6th year						
1	Fireline Tracing and inspection path	Feb/Mar	1	315	0	315
2	Watch & ward and cultural operation	Apr-Mar	2	630	0	630
3	Contingency and unforeseen expenditure			0	100	100
	Sub-Total		3	945	100	1045
4	Monitoring & Supervision charge 5% of the total cost					52.25
	Grand Total		3	945	100	1097.25
7th year						
1	Fireline Tracing and inspection path	Feb/Mar	1	315	0	315
2	Watch & ward and cultural operation	Apr-Mar	2	630	0	630
3	Contingency and unforeseen expenditure			0	100	100
	Sub-Total		3	945	100	1045
4	Monitoring & Supervision charge 5% of the total cost					52.25
	Grand Total		3	945	100	1097.25
8th year						

1	Fireline Tracing and inspection path	Feb/Mar	1	315	0	315
2	Watch & ward and cultural operation	Apr-Mar	2	630	0	630
3	Contingency and unforeseen expenditure				100	100
	Sub-Total		3	945	100	1045
4	Monitoring & Supervision charge 5% of the total cost					52.25
	Grand Total		3	945	100	1097.25
9th year						
1	Fireline Tracing and inspection path	Feb/Mar	1	315	0	315
2	Watch & ward and cultural operation	Apr-Mar	2	630	0	630
3	Contingency and unforeseen expenditure			0	100	100
	Sub-Total		3	945	100	1045
4	Monitoring & Supervision charge 5% of the total cost					52.25
	Grand Total		3	945	100	1097.25
10th year						
1	Fireline Tracing and inspection path	Feb/Mar	1	315	0	315
2	Watch & ward and cultural operation	Apr-Mar	2	630	0	630
3	Contingency and unforeseen expenditure			0	100	100
	Sub-Total		3	945	100	1045
4	Monitoring & Supervision charge 5% of the total cost					52.25
	Grand Total		3	945	100	1097.25

ABSTRACT						
Sl No.	Year	Person days	Labour cost @315.00/- per manday (in Rs.)	Material cost (in Rs.)	Monitoring & Supervision charge 5% of the total cost in (Rs.)	Total cost (in Rs.)
1	0th Year	9	2835	0	141.75	2976.75
2	1st Year	43	13545	500	702.25	14747.25
3	2nd Year	16	5040	300	267	5607
4	3rd Year	8	2520	300	141	2961
5	4th Year	3	945	100	52.25	1097.25
6	5th Year	3	945	100	52.25	1097.25
7	6th Year	3	945	100	52.25	1097.25
8	7th Year	3	945	100	52.25	1097.25
9	8th Year	3	945	100	52.25	1097.25
10	9th Year	3	945	100	52.25	1097.25
11	10th Year	3	945	100	52.25	1097.25
	Total	97	30555	1800	1617.75	33972.75
	Total Cost (32.00 ha x Rs. 33972.75)					1087128.00

ADDITIONAL COST PROPOSED

1	Wire mesh LBCD of size 10' x 10' x 5' for 50 nos. @Rs 15674/- per LBCD	15,674 x 50 nos	783700.00
2	Staggered trenches of dimension 2.5 x 0.5 x 0.5 mtr to the tune of 300 Nos. per ha @60MD or Rs. 18,900/- per ha over 49.00 ha	60 x 315 x 49.00 ha	926100.00
3	One water body of size 40mt x 30mt x 3mt in the plantation site	1 x 6,06,800	606800.00
4	Cost of G.I. Chain link Mess Fencing over 3.63 Km. with 3 years maintenance @2% of cost per RKM @Rs. 9.91,500/- per RKM	Rs 9,91,500 x 3.63 Km	3599145.00
5	Construction of one watcher shed for plantation	1 x 50000	50000.00
	Maintenance of watcher shed @5000/ year for nine year	9 x 1 x 5000	45000.00
	Sub-Total		6010745.00

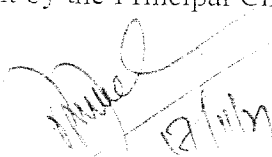
TOTAL COST OF PROJECT

1	Nursery for 14,960 no of seedlings including casualty replacement 10% for 17.00 ha @Rs. 315/- (14,960 nos. x Rs. 50.81 per seedling)	760117.60
2	ANR with Gap Plantation @800 seedling over 17.00 ha @ Rs. 156539.10/- per ha.	2661164.70
3	15% of the total plantation cost towards Entry Point Activity/ Incentive to VSS etc.	399174.70
4	Plantation over 32.00 ha ANR without Gap @Rs. 33972.75/- per ha	1087128.00
5	Total additional cost	6010745.00
	Total	10918330.00
6	Add 20% escalation	2183666.00
	Grand Total	13101996.00 Or say 1,31,02,000.00

(Rupees one crore thirty-one lakh two thousand) Only

A. PROVISION OF FUNDS AND FUND UTILIZATION

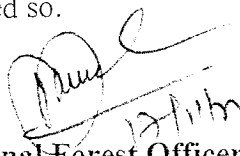
Rs. 1,31,02,000.00 (Rupees one crore thirty-one lakh two thousand) only shall be deposited by the User Agency M/s Tata Steel Limited, on approval of the scheme, in the Ad-hoc CAMPA Account and the funds will be utilized for raising of Compensatory Afforestation by the Divisional Forest Officer, Keonjhar 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, B.J.P. Forest Range of Keonjhar Division. The Range Forest Officer, B.J.P. 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. GPS co-ordinates along with other required information of Compensatory Afforestation will be uploaded in the e-Greenwatch Portal of NIC, MoEF&CC, 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 Telkoi Forest Range 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

**SCHEME FOR COMPENSATORY
AFFORESTATION OVER AN AREA OF 66.127
HECT. IN THE VILLAGE ASANABAHALI UNDER
KANKADAHAD TAHASIL OF MAHABIROD
RANGE UNDER DHENKANAL DIVISION.**

**AGAINST THE FOREST LAND USED BY
M/S. TATA STEEL LTD.
FOR BAMEBARI IRON & MN MINES IN
KEONJHAR DISTRICT.**

**DHENKANAL FOREST DIVISION
DHENKANAL**

Compensatory Afforestation Scheme over 66.127 Ha
(23.127 Ha. Bald Hill Plantation + 43.00 Ha. ANR Without Gap)
identified in village Asanbahali under Kankadahad Tahasil of Dhenkanal
District against Diversion of Forest land for Bamebari Iron & Mn Mines
in Keonjhar District.

by

M/s Tata Steel Ltd.

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01	Suitability certificate	1
02	Scheme write- up	2-5
03	Cost norm for Bald Hill Plantation (1600 per Ha.), ANR without Gap Plantation	6-14
04	Total Financial outlay	15
05	Surveyed map	16

LAND SUITABILITY CERTIFICATE BY DIVISIONAL FOREST OFFICER,
DHENKANAL (T) DIVISION

This is to certify that 66.127 ha. land bearing Survey No./ Compartment Khata No.196, Plot No. 57/2388, 36, 67 & 127 of Kissam Parbat-I & II of village Asanabahali of Tahasil Kankadahad District Dhenkanal identified for Compensatory Afforestation, out of which 23.127 ha is suitable for plantation from management point of view and is free and all sorts of encumbrances and encroachments.

Place: Dhenkanal

Date: 05 / 06 /2018


Divisional Forest Officer
Dhenkanal Division

Divisional Forest Officer
Official Seal...~~Dhenkanal~~ Division

SCHEME FOR COMPENSATORY AFFORESTATION OVER 66.127 HA (23.127 HA. BALD HILL PLANTATION + 43.00 HA. ANR WITHOUT GAP PLANTATION) NON-FOREST LAND IN MOUZA-ASANBAHALI UNDER KANKADAHAD TAHASIL OF DHENKANAL DISTRICT BY M/S TATA STEEL LTD. KEONJHAR DISTRICT.

Introduction:

The M/S TATA Steel Ltd. has submitted a diversion proposal to the Divisional Forest Officer, Keonjhar Forest Division for Bamebari Iron & Mn Mines in Keonjhar District for diversion of 66.127 Ha of forest land for non-forestry purpose.

Selection of Sites

As a matter of principle and as per guidelines of Forest (Conservation) Act, 1980 much efforts have been exerted to identify non-forest land for the purpose of Compensatory Afforestation. However, as per para 3.2 (iii) of guideline to the Forest (Conservation) Act, equivalent extent of non-forest land has been identified in Kankadahad Tahasil of Dhenkanal Dist. But while searching for such a piece of land 66.127 ha could be available as a part of a single patch compatible for raising plantation. Therefore, 66.127 ha has been selected for Compensatory Afforestation, but it is seen from the Decision Support System (DSS) that 43.00 ha has been coming under Moderately Dense Forest (MDF). Hence, the Compensatory Afforestation Scheme is prepared in 66.127 ha (23.127 Ha. Bald Hill Plantation + 43.00 Ha. ANR without Gap Plantation) non-forest land identified in village Asanabahali under Kanakadahad Tahasil. The land schedule has been furnished below. This non forest land is located in Mahabirod Range.

Asanabahali non forest land is located in Mahabirod Range.					
Tahasil	Village.	Khata No.	Plot No.	Area (in ha)	Kissam.
Kankadahad	Asanabahali	196	57/2388	34.000 Ac	Parbat-I
			36	53.402 Ac	Parbat-I
			67	32.500 Ac	Parbat-II
			127	43.500 Ac	Parbat-I
Total				163.402 Ac or 66.127 Ha.	

• **Description of the existing vegetation**

The existing vegetation is of miscellaneous type like only bushes.

• **Soil & Topography**

The topography of area is undulating. But the depth of the soil is good being a valley and the existing vegetation indicates the PH value to be above 07, hence the soil is basic.

• **Temperature**

The average temperature varies from 13.5° C minimum in December to 45°C maximum in May.

• **Rainfall**

The annual rainfall varies from 1200 mm to 1500 mm. The maximum rainfall is received during the rainy season from July to September.

- **Objective of the Scheme**

The main objective of the scheme is to compensate the loss of vegetation / forest growth that would happen due to diversion of forest land and to re-stock the non-forest land identified with mostly indigenous species with admixture of fuel wood, small timber, N.T.F.P., medicinal plants, bamboo etc. It also aims at defining the boundaries of the non-forest land with Barbed Wire Fencing and enforcing protection measures of the plantations by involving people around under JFM. It further seeks to dovetail suitable soil conservation measures with the afforestation works, so as to conserve soil and water for enrichment of the eco-system.

- **Item of works to be taken up**

To achieve the above objectives, the following item of works is mainly prescribed to be taken up.

1. **Survey & Demarcation of boundary**

This work shall be taken up by the User Agency while arranging for advance possession/mutation of the non-forest land in favour of Forest Department.

The boundary shall be surveyed with reference to the Village map and demarcated by posting RCC pillars of size **1.25m x 20 cm x 20cm** which shall be embedded at every corner/turning of boundary line. The pillars shall be embedded 0.625 meter deep in the ground with a foundation of 50 cm x 40 cm. Top of the pillar shall be kept slanting with the lower side facing outer side of the area. Numbering shall be done in the same sequence as done in the map, which should start from the north-western corner and proceed in a clockwise direction. The demarcation of the land shall be done in presence of the local Revenue Inspector and Range Officer or Forester to avoid future complication. As on date the land is free from encroachment and encumbrance and attempts will be kept in force to keep the land free from encroachment.

2. **Planting and post-planting**

Bald Hill Plantation over 23.127 non-forest land shall be taken up with 1600 plants per ha. at a spacing of 2.5m x 2.5m and ANR without Gap Plantation over 43.00 ha. of non-forest land shall be taken up.

3. **Choice of species**

As far as possible, indigenous species like, Bamboo, Sisoo, Gambhar, Neem, Asana, Arjun, Simaruba, Mango, etc. shall be planted. In areas subjected to heavily grazing incidences, some mix of Chakunda, Simaruba may be given that to on the periphery only.

4. Points of importance

While taking up plantation, the following vital points shall be taken up for consideration.

- All cares be taken to raise healthy seedlings of minimum 2' height. 10% extra of the required stock shall be raised to accommodate casualties both at the nursery stage as well as transportation of seedling to the site for planting. Complete 1 year seedlings shall be used in case of Bamboo, Sisoo, Asan, Arjun, Neem, Simaruba, Gambhari etc.
- Pitting shall invariably be done during February – April, i.e. before onset of monsoon. In hilly areas, pits shall be dug along the contours.
- Planting shall be done on the onset of monsoon and should not be delayed.
- Basal dose of 50 grams of NPK and 10 grams of Aldrin be applied at the time of planting for the growth of the plant and to avoid insect attack respectively.
- Causality replacement, weeding and soil working, application of fertilizer and insecticides shall be taken up as per the provisions in the cost-norm at the proper time.
- Engaging requisite watchers as per norm will be done who shall also take up tracing of inspection path and fire line and maintenance of fence as and when required. A temporary watcher shed be constructed at suitable place for proper upkeep of the plantation and for the watcher to take shelter during rains.
- All out efforts shall be taken to keep the plantation free from grazing, fire and other biotic interference.
- The cost norm for Bald hill is given below.
- This Plantation shall be maintained for 10 years to achieve the better rate of survivalist.

5. Soil and moisture Conservation Measures

As the area is in a valley soil conservation measures like stagard trench of size 0.5 mt x 0.5 m x 2 mt @ 60 Nos. / Ha. shall be constructed to absorb rain water for the seedlings planted

6. **Fencing.**

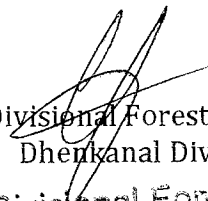
To protect the plantation from grazing and other biotic interference, fencing shall be taken up over 66.127 Ha. of periphery by Angel Iron & Chain link wire mess (250 Rmt/Ha).

7. **Monitoring and Evaluation**

The scheme shall be executed and monitored by the Divisional Forest Officer, Dhenkanal Division from time to time. To facilitate this, the User Agency shall bear the cost of infrastructure required and shall provide also the infrastructural facilities.

8. **Total cost of the Project**

The total cost of the project will be **Rs.4,22,89,300.00**


Divisional Forest Officer,
Dhenkanal Division

Divisional Forest Officer
Dhenkanal Division

COST NORM FOR BALD HILL PLANTATION @ 1600 PLANTS PER HECTARE						
Labour cost @ Rs 315.00 per manday						
Sl. No.	Item of work	Preferable period of execution	Manday	Labour cost @ Rs 315/- per day	Material cost per hectare in Rs	Total cost per hectare in Rs.
Preparatory operation (0th Year)						
1.	Survey and demarcation	June	2	630	0	630.00
2.	Fencing i. For an average of 126 meters/ha @ Rs. 76.19/- per meter for bamboo twigs and bamboo thorn fencing (L:M=40:60) ii. To be strengthened by planting of bamboo and other seedlings in two rows. Bamboo to be planted at 2 meters spacing in staggered manner on the two rows, and the rest of the species to be planted at ½ meter spacing along the two rows, the rows being 2m apart. Thus 500 plant (125 bamboo and 375 others) to be planted in two rows to cover 126 m of periphery/Ha by the vegetative fence. (Bamboo seedlings @ Rs. 12.43 per seedling X 125 = Rs. 1553.75, Agave seedling @ Rs. 4.90 per seedling X 375 = Rs. 1837.5)	June-Sept June-Sept	Angel Iron & Chain Link Wire mesh is proposed			
3.	Pitting (1600 pits per ha.)- each pit 45cm ³	Nov-Dec	128	40320	0	40320.00
4.	Soil and water conservation measures (a) Staggered trench along the contour @ 300 per ha (2.5mx0.5mx0.5m), digging of percolation pits @ 600 per ha in lieu of staggered trenches, gully plugging and Drainage line treatment, half moon trench on the uphill side of each planting pit (100 MD for staggered trench/percolation pits and 30 MD for gully plugging, drainage line treatment and half moon trench)	Sept-Nov	130	40950	0	40950.00
	(b) Site clearance-8 MD. Alignment and staking of contour lines on ground, planting pits, contour trenches/ percolation pits and check dam sites etc.-2 MD	July-Aug	10	3150	0	3150.00
5.	Cost of 18 months old seedlings raised at Mega/ Permanent Nursery @ 52/- for 1760 seedlings	July-Aug	-	-	91520	91520.00
	Total 0th year		268	84420	91520	175940.00
6.	Monitoring & Supervision charge 5% of the total cost					8797.00
	GRAND TOTAL		268	84420	91520	184737.00

Planting Operation (1 st Year)						
1.	Cost of 18 months old seedlings for casualty replacement @ 52/- for 1760 seedlings	July-Aug			0	0
2.	Loading of 18 months old polythene bag seedlings into the vehicle at the nursery site and unloading at the site nearest to the plantation site (including 10 % for casualty replacement) seedlings (1760 nos.)	July-Aug	8	2520	0	2520.00
3.	Transportation of 18 months old polythene bag seedlings in hired truck/tractor from the permanent/mega nursery to planting site (Average lead of 10 Rkm) & Stacking the seedlings @ Rs.8/- seedlings(1760)				14080	14080.00
4.	Freshening of pits-64 MD, filling with fertile soil and farm yard manure (FYM)-24 MD, application of insecticide and planting of 18 months old saplings	June-July	88	27720	0	27720.00
5.	Cost of fertile soil 0.25 cft @ Rs 8 per cft/ FYM 0.25 cft @ Rs 15 per cft per pit		0	0	9200	9200.00
6.	Sowing of seeds on dug out earth of trench	June	6	1890	200	2090.00
7.	Carriage-6 MD. Planting including casualty replacement-6 MD, fertilizer application-5 MD, 1 st weeding-7 MD, 2 nd weeding-5 MD, soil working-7 MD.	July-August	36	11340	0	11340.00
8.	Cost of fertilizer and insecticide (Granular insecticide @ 5gms/plant @Rs 80/- per kg = Rs 640.00, NPK 100 gms/plant in two doses @ Rs 24 per kg = Rs 3840.00		0	0	4480	4480.00
9.	Repair and maintenance of bamboo fence including material cost	Aug-Oct	-	-	-	-
10.	Maintenance of Soil and Moisture Conservation measures (20% of cost)	October-December	26	8190	0	8190.00
11.	Closure to grazing, fire and other biotic interference by engaging watch & ward	April-March	30	9450	0	9450.00
12.	Fire tracing and control, display board construction, painting/writing, other miscellaneous cost	Jan-Feb	10	3150	360	3510.00
	Total (1st year)		204	64260	28320	92580.00
13.	Monitoring & Supervision charge 5% of the total cost					4629.00
	GRAND TOTAL		204	64260	28320	97209.00
Maintenance Operation (2 nd Year)						
1.	Cost of 18 months old seedlings for casualty replacement 10% for 176 seedlings	July-Aug	-	-	9152	9152.00
2.	Soil working-7 MD, 1 st weeding-6 MD, 2 nd weeding-6 MD and fertilizer application-4 MD	August-October	23	7245	0	7245.00
3.	Cost of fertilizer @ 50 gms NPK per plant @ Rs 24/- per kg for 1600 plants = Rs 1920.00. Insecticide @ 5 gm per plant for 160 nos of plants @ Rs 80 per kg = Rs 64.00		0	0	1984	1984.00
4.	Repair and maintenance of bamboo fence including material cost	August-October	-	-	-	-
5.	Maintenance of Soil and Moisture Conservation measures (20% of cost)	August-October	26	8190	0	8190.00
6.	Fire tracing and control, and other miscellaneous cost	Feb-March	10	3150	0	3150.00
7.	Closure to grazing, fire and other biotic interference by engaging watch & ward	April-March	30	9450	0	9450.00
	Total (2nd year)		89	28035	11136	39171.00
8.	Monitoring & Supervision charge 5% of the total cost					1958.55
	GRAND TOTAL		89	28035	11136	41129.55

Maintenance Operation (3 rd Year)						
1.	Repair and maintenance of fence-15 MD/(in case of barbed wire fencing Rs. 9000/- for repair), SMC measures (Renovation)-26 MD and Maintenance of Plantation-14 MD as per requirement	April-March	-	-	-	-
			40	12600	0	12600.00
2	Closure to grazing, fire and other biotic interference by engaging watch & ward	April-March	18	5670	0	5670.00
			58	18270	0	18270.00
	Total 3rd Year					913.50
3	Monitoring & Supervision charge 5% of the total cost					
			58	18270	0	19183.50
	GRAND TOTAL					
Maintenance Operation (4 th Year)						
1	Repair and maintenance of fence maintenance, SMC measures-21 MD and maintenance of plantation-14 MD	April-March	-	-	-	-
			35	11025		11025.00
2	Closure to grazing, fire and other biotic interference by engaging watch & ward	April-March	18	5670	0	5670.00
			53	16695	0	16695.00
	Total 4th Year					834.75
3	Monitoring & Supervision charge 5% of the total cost					
			53	16695	0	17529.75
	GRAND TOTAL					
Maintenance Operation (5 th Year)						
1	Repair and maintenance of fence maintenance, SMC measures-21 MD and maintenance of plantation-14 MD	April-March	-	-	-	-
			35	11025		11025.00
2	Closure to grazing, fire and other biotic interference by engaging watch & ward	April-March	18	5670	0	5670.00
			53	16695	0	16695.00
	Total 5th Year					834.75
3	Monitoring & Supervision charge 5% of the total cost					
			53	16695	0	17529.75
	GRAND TOTAL					
Maintenance Operation (6 th Year)						
1	Repair and maintenance of fence maintenance, SMC measures-21 MD and maintenance of plantation-14 MD	April-March	-	-	-	-
			35	11025		11025.00
2	Closure to grazing, fire and other biotic interference by engaging watch & ward	April-March	18	5670	0	5670.00
			53	16695	0	16695.00
	Total 6th Year					834.75
3	Monitoring & Supervision charge 5% of the total cost					
			53	16695	0	17529.75
	GRAND TOTAL					
Maintenance Operation (7 th Year)						
1	Repair and maintenance of fence maintenance, SMC measures-21 MD and maintenance of plantation-14 MD	April-March	-	-	-	-
			35	11025		11025.00
2	Closure to grazing, fire and other biotic interference by engaging watch & ward	April-March	18	5670	0	5670.00
			53	16695	0	16695.00
	Total 7th Year					834.75
3	Monitoring & Supervision charge 5% of the total cost					
			53	16695	0	17529.75
	GRAND TOTAL					

Maintenance Operation (8 th Year)						
1	Repair and maintenance of fence maintenance, SMC measures-21 MD and maintenance of plantation-14 MD	April-March	35	11025	-	11025.00
2	Closure to grazing, fire and other biotic interference by engaging watch & ward	April-March	18	5670	0	5670.00
			53	16695	0	16695.00
	Total 8th Year					834.75
3	Monitoring & Supervision charge 5% of the total cost		53	16695	0	17529.75
	GRAND TOTAL					
Maintenance Operation (9 th Year)						
1	Repair and maintenance of fence maintenance, SMC measures-21 MD and maintenance of plantation-14 MD	April-March	35	11025	-	11025.00
2	Closure to grazing, fire and other biotic interference by engaging watch & ward	April-March	18	5670	0	5670.00
			53	16695	0	16695.00
	Total 9th Year					834.75
3	Monitoring & Supervision charge 5% of the total cost		53	16695	0	17529.75
	GRAND TOTAL					
Maintenance Operation (10 th Year)						
1	Repair and maintenance of fence maintenance, SMC measures-21 MD and maintenance of plantation-14 MD	April-March	35	11025	-	11025.00
2	Closure to grazing, fire and other biotic interference by engaging watch & ward	April-March	18	5670	0	5670.00
			53	16695	0	16695.00
	Total 10th Year					834.75
3	Monitoring & Supervision charge 5% of the total cost		53	16695	0	17529.75
	GRAND TOTAL					

TOTAL FINANCIAL OUTLAY OF BLOCK (BALD HILL) PLANTATION SCHEME

ABSTRACT

Sl. No	Year	No. Person Day	Labour cost @ Rs 315/- per day	Material cost (Rs.)	Monitoring & Supervision charge 5% of the total cost	Total (Rs.)
					8797.00	184737.00
1	0 th year	268	84420.00	91520.00	4629.00	97209.00
2	1 st year	204	64260.00	28320.00	1958.55	41129.55
3	2 nd year	89	28035.00	11136.00	913.50	19183.50
4	3 rd year	58	18270.00	0	834.75	17529.75
5	4 th year	53	16695.00	0	834.75	17529.75
6	5 th year	53	16695.00	0	834.75	17529.75
7	6 th year	53	16695.00	0	834.75	17529.75
8	7 th year	53	16695.00	0	834.75	17529.75
9	8 th year	53	16695.00	0	834.75	17529.75
10	9 th year	53	16695.00	0	834.75	17529.75
11	10 th year	53	16695.00	0	834.75	17529.75
	Total	990	311850.00	130976.00	22141.30	464967.30
12	Cost of Bald Hill Plantation @ 1600 plants per Ha. over 23.127Ha. with 10 years maintenance	23.127 × 464967.30				1,07,53,298.74 or 1,07,53,300.00

COST NORM FOR AIDED NATURAL REGENERATION (ANR without GAP)
Wage rate @ 315/Day.

Sl No.	Items of work	Preferable period of Execution	Manday	Labour Cost @ Rs 315/- per day	Material cost per hectare in Rs	Total Cost per hectare in Rs
1	2	3	4	5	6	7

0TH YEAR OPERATION

1	Survey Demarcation and pillar posting, GPS Reading with mapping	Nov/Dec	2	630	0	630.00
2	Site Preparation	Nov/Dec	2	630	0	630.00
3	Cutting of high stumps		5	1575	0	1575.00
	SUB TOTAL		9	2835	0	2835.00
4	Monitoring & Supervision charge 5% of the total cost					141.75
	GRAND TOTAL		9	2835	0	2976.75

1ST YEAR OPERATION

1	Silvicultural Operation involving clearance of weeds, cutting of climbers, singling of shoots etc.	Sep/Oct	15	4725	0	4725.00
2	Soil Conservation Measures (Staggered trenches of dimension 2 m x 0.5 m x @ 60 nos per ha) or its equivalent	Sep/Oct	20	6300	0	6300.00
3	Fire line Trenching and inspection Path	Feb/Mar	3	945	0	945.00
4	Watch & Ward	Aug-Mar	5	1575	0	1775.00
5	Contingency and Unforeseen Expenditure		0	0	500	500.00
	SUB TOTAL		43	13545	500	14045.00
6	Monitoring & Supervision charge 5% of the total cost					702.25
	GRAND TOTAL		43	13545	500	14747.25

2ND YEAR OPERATION

1	Soil Conservation Measures (Renovation staggered trenches etc.)	Sep/Oct	8	2520	0	2520.00
2	Fire line Trenching and inspection Path	Feb/Mar	1	315	0	315.00
3	Watch & Ward (Whole year)	Aug-Mar	7	2205	0	2205.00
4	Contingency and Unforeseen Expenditure		0	0	300	300.00
	SUB TOTAL		16	5040	300	5340.00
5	Monitoring & Supervision charge 5% of the total cost					267.00
	GRAND TOTAL		16	5040	300	5607.00

3RD YEAR OPERATION

1	Fire line Trenching and inspection Path	Feb/Mar	1	315	0	315.00
2	Watch & Ward (Whole year)	Aug-Mar	7	2205	0	2205.00
3	Contingency and Unforeseen Expenditure		0	0	300	300.00
	SUB TOTAL		8	2520	300	2820.00
4	Monitoring & Supervision charge 5% of the total cost					141.00
	GRAND TOTAL		8	2520	300	2961.00

4TH YEAR OPERATION

1	Fire line Trenching and inspection Path	Feb/Mar	1	315	0	315.00
2	Watch & Ward and cultural operations	Aug-Mar	2	630	0	630.00
3	Contingency and Unforeseen Expenditure		0	0	100	100.00
	SUB TOTAL		3	945	100	1045.00
4	Monitoring & Supervision charge 5% of the total cost					52.25
	GRAND TOTAL		3	945	100	1097.25

5TH YEAR OPERATION

1	Fire line Trenching and inspection Path	Feb/Mar	1	315	0	315.00
2	Watch & Ward and cultural operations	Aug-Mar	2	630	0	630.00
3	Contingency and Unforeseen Expenditure		0	0	100	100.00
	SUB TOTAL		3	945	100	1045.00
4	Monitoring & Supervision charge 5% of the total cost					52.25
	GRAND TOTAL		3	945	100	1097.25

6TH YEAR OPERATION

1	Fire line Trenching and inspection Path	Feb/Mar	1	315	0	315.00
2	Watch & Ward and cultural operations	Aug-Mar	2	630	0	630.00
3	Contingency and Unforeseen Expenditure		0	0	100	100.00
	SUB TOTAL		3	945	100	1045.00
4	Monitoring & Supervision charge 5% of the total cost					52.25
	GRAND TOTAL		3	945	100	1097.25

7TH YEAR OPERATION

1	Fire line Trenching and inspection Path	Feb/Mar	1	315	0	315.00
2	Watch & Ward and cultural operations	Aug-Mar	2	630	0	630.00
3	Contingency and Unforeseen Expenditure		0	0	100	100.00
	SUB TOTAL		3	945	100	1045.00
4	Monitoring & Supervision charge 5% of the total cost					52.25
	GRAND TOTAL		3	945	100	1097.25

8TH YEAR OPERATION

1	Fire line Trenching and inspection Path	Feb/Mar	1	315	0	315.00
2	Watch & Ward and cultural operations	Aug-Mar	2	630	0	630.00
3	Contingency and Unforeseen Expenditure		0	0	100	100.00
	SUB TOTAL		3	945	100	1045.00
4	Monitoring & Supervision charge 5% of the total cost					52.25
	GRAND TOTAL		3	945	100	1097.25

9TH YEAR OPERATION

1	Fire line Trenching and inspection Path	Feb/Mar	1	315	0	315.00
2	Watch & Ward and cultural operations	Aug-Mar	2	630	0	630.00
3	Contingency and Unforeseen Expenditure		0	0	100	100.00
	SUB TOTAL		3	945	100	1045.00
4	Monitoring & Supervision charge 5% of the total cost					52.25
	GRAND TOTAL		3	945	100	1097.25

10TH YEAR OPERATION

1	Fire line Trenching and inspection Path	Feb/Mar	1	315	0	315.00
2	Watch & Ward and cultural operations	Aug-Mar	2	630	0	630.00
3	Contingency and Unforeseen Expenditure		0	0	100	100.00
	SUB TOTAL		3	945	100	1045.00
4	Monitoring & Supervision charge 5% of the total cost					52.25
	GRAND TOTAL		3	945	100	1097.25

TOTAL FINANCIAL OUTLAY OF ANR WITHOUT GAP PLANTATION SCHEME
ABSTRACT

Sl. No	Year	Mandays	Labour cost (Rs.)	Material cost (Rs.)	Monitoring & Supervision charge 5% of the total cost	Total (Rs.)
1	0 th year	9	2835.00	0	141.75	2976.75
2	1 st year	43	13545.00	500.00	702.25	14747.25
3	2 nd year	16	5040.00	300.00	267	5607.00
4	3 rd year	8	2520.00	300.00	141.00	2961.00
5	4 th year	3	945.00	100.00	52.25	1097.25
6	5 th year	3	945.00	100.00	52.25	1097.25
7	6 th year	3	945.00	100.00	52.25	1097.25
8	7 th year	3	945.00	100.00	52.25	1097.25
9	8 th year	3	945.00	100.00	52.25	1097.25
10	9 th year	3	945.00	100.00	52.25	1097.25
11	10 th year	3	945.00	100.00	52.25	1097.25
	Total	97	30555.00	1800.00	1617.75	33972.75
12	Cost of ANR Without GAP Plantation over 43.00 Ha. with 10 years maintenance	33972.75 × 43.00 Ha.				1460828.25 or 14,60,828.00

Fencing for Compensatory Plantation raised outside the Forest Areas using Angel Iron & Chain Link wire mesh (250 Rmt./Ha.)						
Wage Rate Rs.315/per Day						
Sl. No	Items of Work	Preferable period of Execution	Man Days	Wages	Material cost (Rs.)	Total cost (Rs. Per Ha.)
1	Earth work (Excavation of hole) in Hard soil at a distance 3 mt. $0.40 \text{ m} \times 0.40 \text{ m} \times 0.40 \text{ m} = 0.064 \times 84 = 5.376 \text{ cum @ Rs.140/cum} = \text{Rs.753.}$		2.42	762.30	0	762.30
2	Cement concrete (1:4:8) using 40mm BHG metal $84 \times 0.40 \text{ m} \times 0.40 \text{ m} \times 0.10 \text{ m} = 1.344 @ 3755.94/\text{cum}$		0		5,047.4	5,047.4
3	Angel Iron pole of size 50 mm \times 50mm \times 6 mm of height 2.40 mt. $84 \times 2.40 = 201.60 \text{ Sqmt. @ } 4.50/\text{kg/Sqmt.} = 907.20 \text{ kg @ } 69.50 \text{ per kg}$				63,050.0	63,050.0
4	Cement concrete (1:2:4) for fixing of the iron angel pole using 12 mm BHG Chips $84 \times 0.40 \text{ m} \times 0.40 \text{ m} \times 0.30 \text{ m} = 4.032 @ 5486.77/\text{cum}$				22,123.0	22,123.0
5	Cost of Chain link mess using 4mm Dia GI wire having gap size 50mm \times 50mm $250 \text{ Rmt} \times 2.10 \text{ mt.} = 525 \text{ Sq.mt @ } 331/\text{Sqmt.} = 1,73,775$				1,73,775.0	1,73,775.0
6	Double cost painting of iron angel pole over a coat of primer using good quality enamale paint $84 \times 2.10 \times 0.20 = 35.28 \text{ Sqmt. @ Rs.108.80 Sqmt}$				3,838.0	3,838.0
7	Painting of GI Chain link mess $250 \times 2.10 \times 2 = 1050/10 = 105 \text{ Sqmt. @ Rs.108.80 Sqmt}$				11,424.0	11,424.0
8	Transportation of Chain link mess, Iron angel, Straighening & tieing of chain link				5,600.0	5,600.0
Rate per running mt. $2,85,620/250 = \text{Rs.1142/Rmt}$						
1 st Year Maintenance						
1	No maintenance is required	Sept./Oct	0	0	0	0
2 nd Year Maintenance						
1	Maintenance of wire mess fence @ 1% per running mt.	Sept./Oct	0	0	11000	11000
3 rd Year Maintenance						
1	Maintenance of wire mess fence @ 1% per running mt.	Sept./Oct	0	0	11000	11000
4 th Year Maintenance						
1	Maintenance of wire mess fence @ 1% per running mt.	Sept./Oct	0	0	11000	11000
5 th Year Maintenance						
1	Maintenance of wire mess fence @ 1% per running mt.	Sept./Oct	0	0	11000	11000
6 th Year Maintenance						
1	Maintenance of wire mess fence @ 1% per running mt.	Sept./Oct	0	0	11000	11000
7 th Year Maintenance						
1	Maintenance of wire mess fence @ 1% per running mt.	Sept./Oct	0	0	11000	11000
8 th Year Maintenance						
1	Maintenance of wire mess fence @ 1% per running mt.	Sept./Oct	0	0	11000	11000
9 th Year Maintenance						
1	Maintenance of wire mess fence @ 1% per running mt.	Sept./Oct	0	0	11000	11000
10 th Year Maintenance						
1	Maintenance of wire mess fence @ 1% per running mt.	Sept./Oct	0	0	11000	11000

TOTAL FINANCIAL OUTLAY OF ANGEL IRON & CHAIN LINK WIRE MESH

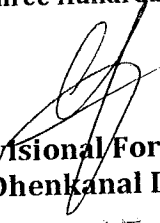
ABSTRACT

Sl. No	Year	No. person days	Labour cost @315/- per day	Material Cost	Total Cost (Rs.)
		2.42	762.30	284857.40	285619.70
1	0 th year	0.0	0.0	0.0	0
2	1 st year	0.0	0.0	11000.0	11000.0
3	2 nd year	0.0	0.0	11000.0	11000.0
4	3 rd year	0.0	0.0	11000.0	11000.0
5	4 th year	0.0	0.0	11000.0	11000.0
6	5 th year	0.0	0.0	11000.0	11000.0
7	6 th year	0.0	0.0	11000.0	11000.0
8	7 th year	0.0	0.0	11000.0	11000.0
9	8 th year	0.0	0.0	11000.0	11000.0
10	9 th year	0.0	0.0	11000.0	11000.0
11	10 th year	0.0	0.0	11000.0	11000.0
Total		2.42	762.30	383857.40	3,84,620.00

ABSTRACT

1	Total Plantation Cost of 23.127 Ha. of Bald Hill Plantation					1,07,53,300.00
2	Total Plantation Cost of 43.00 Ha. of ANR Without Gap Plantation					14,60,828.00
3	Soil Conservation Measures included in the Scheme					
	Total					1,22,14,128.00
4	15 % of the total plantation cost towards EPA/ Incentive to V.S.S.					18,32,119.00
	Total					1,40,46,247.00
5	Add Escalation Cost(20%)					28,09,249.00
	Grand Total					1,68,55,496.00
6	Cost of Angel Iron & Chain link wire mesh (250 Rmt/Ha.)	384620×66.127				2,54,33,767.00
						4,22,89,263.00 or 4,22,89,300.00

(Rupees Four Crore Twenty Two Lakhs Eighty Nine Thousand Three Hundred) Only.


Divisional Forest Officer,
Dhenkanal Division

Divisional Forest Officer
Dhenkanal Division

**SCHEME FOR COMPENSATORY
AFFORESTATION OVER 254.00 ha OF
FOREST LAND IDENTIFIED IN
MASINABILLA RESERVED FOREST LAND
UNDER GHATGAON RANGE OF
KEONJHAR DIVISION BAMBARI IRON &
MANGANESE MINES
OF
M/s TATA STEEL LIMITED**

ELEMENTS OF THE SCHEME FOR COMPENSATORY AFFORESTATION

CHAPTER	PARTICULARS	PAGE NUMBER
I	BRIEF NOTE ON THE PROPOSED FOREST DIVERSION PROPOSAL	01 – 02
II	DETAILS OF LAND IDENTIFIED FOR COMPENSATORY AFFORESTATION	03 – 03
III	DELINEATION OF PROPOSED AREA ON SUITABLE MAP	04 – 04
IV	AGENCY RESPONSIBLE FOR COMPENSATORY AFFORESTATION	04 – 04
V	DETAILS OF WORK SCHEDULE PROPOSED FOR COMPENSATORY AFFORESTATION	05 – 06
VI	COST STRUCTURE OF PLANTATION, PROVISION OF FUNDS AND UTILIZATION	06 – 10
VII	DETAILS OF PROPOSED MONITORING MECHANISM	11 – 11

CHAPTER- I

BRIEF NOTE ON THE PROPOSED FOREST DIVERSION PROPOSAL

Bamebari mining lease over an area of 1150.550 ha comprises of 3 blocks namely Bamebari, Joribar and Baneikala under Barbil Tahasil of Keonjhar District and was sanctioned in favour of M/s. Tata Steel Ltd by the Maharaja of Keonjhar for 30 years with effect from 1.04.1930 to 31.03.1960. This lease was renewed by Government in Department of Mining & Geology and lease deed was executed on 28.04.1971 for a period of 20 years with effect from 1.04.1960 to 31.03.1980. The 2nd renewal of the above lease was sanctioned by Government in Department of Mining & Geology vide letter No. 2851/MG dated 16.02.1982 for 20 years from 01.04.1980 to 31.03.2000 for mining of Manganese & Manganese Ferrous Iron Ore. Subsequently the State Government vide letter No III(A) SM-14/2006 3298/SM dated 18.04.2015 extended the validity period of Bamebari lease up to 31.03.2030 under section of 8A of the MMDR Amendment Act, 2015. Accordingly, Supplementary Lease Deed was executed on 08.05.2015 and registered on 08.05.2015 in respect of Bamebari Iron & Manganese lease.

The Mining Lease of Bamebari Iron & Manganese mines of M/s Tata Steel Ltd. located within longitude E 85°-25'-00" to 85°-26'-00" and latitude N 21°-53'-00" to 22°-04'-00" in Survey of India topo sheet no. F45N5 & F45H8. The said lease executed over 464.00 ha comprises Reserved Forest (170.157 ha), Khesara Forest (62.844ha.), DLC Forest land (149.268ha), Non-Forest land recorded as Forest as on 25.10.1980(66.126 ha) and Non-Forest land (15.605ha.). The total forest land involved in the mining lease is 448.395 ha.

The present scheme aims at preparation of a site-specific Compensatory Afforestation scheme over 254.00 hectares of degraded forest land identified in Masinabila RF under Ghatagaon Range of Keonjhar Forest Division with a maintenance period of ten years.

Further, it is pertinent to mention that out of the identified Non-forest land of 160.419 ha in village Tamanga under Telkoi Range, 49.00 ha in village Sudanga under B.J.P. Range of Keonjhar Division and 66.126 ha in village Asanabahali of Mahabiroad Range under Dhenkanal Division. Separate schemes for the above non-forest land has been prepared by the DFO, Keonjhar Forest Division and DFO, Dhenkanal Forest Division respectively.

The details of CA area identified for Bamebari Iron & Manganese mines is given below.

Sl. No	Village Name	Tahasil Name	Forest Range	Block	Total CA area in ha	MDF (in ha)	Area (in ha) suitable for Plantation	No of Seedlings to be planted in suitable area per ha	Total nos of Seedlings to be planted
1	Tamanga	Telkoi	Telkoi	I	125.12	48.00	77.12	200	15424
2	Tamanga	Telkoi	Telkoi	II	35.299	3.00	32.299	200	6460
3	Sudanga	Bansapal	B.J.P.	-	49.00	32.00	17.00	800	13600
4	Dhenkanal	Asanabahali	Mahabiroad		66.126	43.00	23.126	1600	37002
			Total in Ha		275.545	83.00	126.419		72486
	Degraded Forest land identified in Masinabila RF		Ghatagaon		254.00			800	203200
			Total						275686

It is mentioned that the total seedling which can be planted comes to 72486 nos. The balance nos of seedlings required to be planted for the total project i.e. over 275.545 ha @1000 seedlings = 275545 nos - 72486 nos = 203059 nos. For the plantation of these 203059 nos of seedlings, which is not possible to accommodate in the above mentioned CA area. Therefore, suitable degraded forest land over 254.00 ha has been identified for plantation @800 seedlings/ha i.e. 203200 nos of seedlings in Masinabila RF under Ghatagaon Forest Range of Keonjhar Division.

Out of the above, the present Compensatory Afforestation area, this scheme is prepared for 254.00 ha of degraded CA area in Ghatagaon Range in Keonjhar forest division at the prevailing wage rate @Rs.315.00 per manday with a maintenance period of ten years as per approved cost norms of PCCF(O).

CHAPTER- II

DETAILS OF LAND IDENTIFIED FOR COMPENSATORY AFFORESTATION

IDENTIFICATION OF DEGRADED FOREST LAND

II(1)- Details of identified Forest land-

The identified Degraded Forest land for Compensatory Afforestation is situated in Masinabila in Coupe- GML-III under Ghati Mangala Improvement Series of Ghatagaon Range in Keonjhar Forest Division. This Forest Block is allotted to Improvement Series of the present Working Plan.

II(2)- Character of existing vegetation of the identified site for Compensatory Afforestation-

The prevailing forest growth has been categorized under forest type- open jungle mainly in SoI Topo Sheet No. F45N15. The vegetation consists of Sal and its scattered associates like Jamu, Piasal, Asana, Sisoo, Kuruma, Karada & Khair.

II(3)- Working Plan prescription for the identified site for Compensatory Afforestation-

The prescribed objectives of management for the identified forest block is depicted hereunder-

1. Regenerate of the degraded forest blocks including the areas once affected by shifting cultivation, by appropriate silvicultural inputs and protection measures with people's participation.
2. Improvement of the micro-climate and micro-edaphic conditions through soil and moisture conservation measures.
3. Encouragement of natural regeneration for increasing the biodiversity in forest crop.
4. Fulfillment of the bonafide needs of the local inhabitants for fuel wood, small timber, fodder and N.T.F.P. to the extent possible depending upon the productivity of the forests to ensure their participation.

II(4)- Suitability of the identified site for Compensatory Afforestation-

The identified site in Masinabila RF is a degraded patch with existing vegetation of Sal and Sal associates. Gaps are sporadically spread over the forest block. The topography of the area is mainly undulating hilly having good depth of red boulder mixed

soil conducive for plantation under Block model @800seedling/ha over 254.00 ha. The average maximum temperature is 40⁰ to 45⁰C and minimum 5⁰ to 10⁰ C and annual rainfall varies from 1100 mm to 1800 mm. The maximum rainfall is received during the rainy season from July to September. The site has been demarcated with 4 feet RCC pillars with erection of durable signboard depicting Scheme, Year, User Agency, Area etc. on it.

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 GPS survey and GPS survey data showing latitude and longitude of each point and their distance is also enclosed in the map prepared thereon (Maps enclosed).

III(2)- DECISION SUPPORT SYSTEM- ANALYSIS OF FOREST COVER MAP

The map of the proposed CA land was processed using DSS for analysis of Forest cover over the area. The result of DSS map obtained are depicted in the **Annexure- JJ**

Name of the plantation site	Total Area identified (in ha)	Patch	Verified in Decision Support System (in Square Kilometer)	
			Non-forest	Open-forest
Masinabilla RF	254.00	Patch- 1	1.13	0.64
		Patch- 2	0.17	0.00
		Patch- 3	0.35	0.25
Total			1.65	0.89

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 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 the 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. This plan will be followed when actual planting is carried out.

Species to be planted:-

1. *Syzium cumini*(Jamu)
2. *Adina cardifolia*(Kuruma)
3. *Anogeissus latifolia*(Dhaura)
4. *Accacia catechu* (Khair)
5. *Dalbergia sissoo*(Sissoo)
6. *Azadirachta indica*(Neem)
7. *Gmelina arborea* (Gambar)
8. *Terminalia belerica*(Bahada)
9. *Terminalia chebula*(Harida)
10. *Pongamia pinnata* (Karanja)
11. *Emblica officinalis* (Ainla)
12. *Shorea robusta*(Sal)

B. PRE-PLANTING OPERATION

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

Nursery will be raised @880 seedlings/ha over 254.00 ha including seedlings for 10% causality replacement.

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

The planting area has been surveyed and demarcated with four feet height RCC pillars at inter visible distance (as per the direction of the Forest Range officer, Ghatagaon Range) with GPS coordinates, forward and backward bearing, pillar No. and distance between pillars inscribed in it. A GPS map in the scale of 1:6000 has been prepared along with GPS co-ordinates, forward & backward bearing, pillar to pillar distance and pillar numbers reflected in the map. A sign board has 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 45 x 45 x 45 cm. will be dug

@800 per ha. in the available gaps in Masinabila RF over 254.00 ha 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 grams 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 wire mesh LBCD structures of dimension 10' x 10' x 5' to the tune of 254 nos. over the entire plantation site. Staggered trenches of dimension 2.5 x 0.5 x 0.5 mtr to the tune of 300 Nos. per ha @60MD and creation of two nos. water body of size 40 mt x 30 mt x 3 mt in the plantation site.

D(5)-PROTECTION AGAINST FIRE AND BIOTIC INTERFERENCE

It is proposed to protect the CA plantation from grazing by domestic animals using GI Chain Link Mesh Fencing. The total length of such GI Chain Link Mesh Fencing for all the patches which comes to 9.75 Km (9750 mtr). 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 with involvement of Medinpur VSS.

CHAPTER- VI

Cost Norm for ANR Plantation @800 seedlings per ha (18 months old seedlings) @ 315.00/-
Mandays as per revised wage rate by Labour Commissioner, Odisha, Bhubaneswar vide
Notification No. 5639/LC dated 02.11.2021. The cost norm provided by the PCCF, Odisha,
Bhubaneswar vide their O.O. No. 1087 dated 02.11.2021.

Sl. No	Items of work	Preferable Period of Execution	No. of Mandays	Labour Cost (Rs.)	Material Cost (Rs.)	Total Cost (Rs.)
0th Year (Advance work)						
1	Survey, Demarcation and Pillar posting	Nov/Dec	2	630.00	0	630.00
2	Preparation of Treatment Map (Digital Map)	Nov/Dec	1	315.00	100	415.00
3	Site preparation	Nov/Dec	2	630.00	0	630.00
4	Silvicultural operations including clearance of weed, cutting of climber, High stump cutting, singling of shoots & removal of cut out after drying from the field to blank space.	Jan/Feb	15	4725.00	0	4725.00
5	Alignment and stacking for digging of pits	Feb/Mar	2	630.00	0	630.00
6	Digging of pits (45 cm x 45 cm X 45 cm) / 50 cm diameter augur hole in hard & gravelly soil	Feb/Mar	32	10080.00	0	10080.00
	Total		54.0	17010.00	100.0	17110.00
7	Monitoring, Evaluation, Learning, Documentation & any other Contingency upto 5% of the total cost.					855.50
	Grand Total					17,965.50
1st Year/Planting Year						
1	Refilling of pits by altering the dugout soil of the pits, application of organic compounds/ CDM/ FYM & mixing the same properly.	June/Jul	6.0	1890.00	1000	2890
2	Transportation of 18 months old polypot seedlings in hired truck /tractor from the Permanent/Mega nursery to planting site including loading & unloading. (Average lead of 10 Rkm) & stacking the seedlings @ Rs.6/- per seedling. (880 nos.)	Jul/Aug	0	0.00	5280	5280
3	Watering polypot seedlings at stacking site of plantation	Jul/Aug	2.0	630.00	0	630
4	Conveyance of polypot seedlings on head load from the stacking site to individual dugout pits within the planting site, applying insecticide, fertilizer & planting after scooping the soil with other applied materials and pressing the soil properly around the planted seedlings.	Jul/Aug	18.0	5670.00	0	5670

5	Cost of Fertilizer & Insecticide (a)NPK/ Bio-fertilizer @ 50 gms/plant as basal dose = 40kg @ Rs.30/- per kg = Rs. 1200.0 (b) Urea/Vermicompost/Mo Khata/any other fertilizer @ Rs. 600.00 (c) Insecticide/ Bio-pesticide @ 5 gms/plant= 1 kg @ Rs.150/- per kg = Rs. 600/-	Jul/Aug	0	0.00	2400	2400
6	Casualty Replacement @ 10% (80 nos.)	Jul/Aug	2.0	630.00	0	630
7	1st Weeding & Manuring	Aug/Sept	8	2520.00	0	2520
8	2nd Weeding, Soil working (1mt. diametre around the plants) & Manuring	Oct/Nov	12	3780.00	0	3780
9	Fire line tracing & Inspection path	Feb/Mar	3	945.00	0	945
10	Watch & Ward including watering as per requirement	Aug-Mar	8	2520.00	0	2520
	Total		59	18585.00	8680	27265
11	Monitoring, Evaluation, Learning, Documentation & any other Contingency upto 5% of the total cost.					1363
	Grand Total					28628
2nd Year Maintenance						
1	Transportation of 80 seedlings from Nursery to plantation site including loading, unloading & conveyance by Tractor @ Rs.6/- per seedling	Jul	0	0.00	480	480
2	Casualty replacement	Jul	2.0	630.00	0.0	630.0
3	Cost of Fertilizer & Insecticide- A) Cost of Insecticide/ Bio- pesticide(Themet/ Forate) @ 5 gms/plant = 0.4 Kg @ Rs.150/- per kg = Rs.60/- B) Urea/NPK/Bio- fertilizer/Vermicompost/Mo Khata/any other fertilizer= Rs. 2240/-	Jul	0	0.00	2300	2300
4	Weeding (Complete weeding), Manuring & Soil working. (1mt. diametre around the plants)	Sep/Oct	16	5040.00	0.0	5040
5	Fire line tracing (2 m. wide fire line over 400 m long) & Inspection path	Feb/Mar	3	945.00	0.0	945
6	Watch & Ward including watering as per requirement	Apr/Mar	12	3780.00	0.0	3780
	Total		33.0	10395.0	2780.0	13175.0
7	Monitoring, Evaluation, Learning, Documentation & any other Contingency upto 5% of the total cost.			0		658.75
	Grand Total					13834
3rd Year Maintenance						
1	Cost of Fertilizer Urea/NPK/Bio- fertilizer/Vermicompost/Mo Khata/any other fertilizer = Rs. 2240/-	Sep/Oct	0	0.00	2240	2240

2	Weeding (Complete weeding). Manuring & Soil working. (1mt. diametre around the plants)	Aug/Sep	16	5040.00	0	5040
3	Fire line tracing (2 m. wide fire line over 400 m long) & Inspection path	Feb/Mar	3	945.00	0	945
4	Watch & Ward including watering as per requirement	Apr/Mar	12	3780.00		3780
	Total		31	9765	2240	12005
5	Monitoring, Evaluation, Learning, Documentation & any other Contingency upto 5% of the total cost.					600
	Grand Total					12,605
4th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m long) & Inspection path	Feb/Mar	3	945.00	0	945
2	Watch & Ward including watering as per requirement	Apr/Mar	12	3780.00	0	3780
	Total		15	4725	0	4,725
3	Monitoring, Evaluation, Learning, Documentation & any other Contingency upto 5% of the total cost.					236
	Grand Total					4,961
5th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m long) & Inspection path	Feb/Mar	3	945.00	0	945
2	Watch & Ward including watering as per requirement	Apr/Mar	12	3780.00	0	3780
	Total		15	4725	0	4,725
3	Monitoring, Evaluation, Learning, Documentation & any other Contingency upto 5% of the total cost.					236
	Grand Total					4,961
6th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m long) & Inspection path	Feb/Mar	3	945.00	0	945
2	Watch & Ward including watering as per requirement	Apr/Mar	12	3780.00	0	3780
	Total		15	4725	0	4,725
3	Monitoring, Evaluation, Learning, Documentation & any other Contingency upto 5% of the total cost.					236
	Grand Total					4,961
7th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m long) & Inspection path	Feb/Mar	3	945.00	0	945
2	Watch & Ward including watering as per requirement	Apr/Mar	12	3780.00	0	3780
	Total		15	4725	0	4,725

3	Monitoring, Evaluation, Learning, Documentation & any other Contingency upto 5% of the total cost.					236
	Grand Total					4,961
8th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m long) & Inspection path	Feb/Mar	3	945.00	0	945
2	Watch & Ward including watering as per requirement	Apr/Mar	12	3780.00	0	3780
	Total		15	4725	0	4,725
3	Monitoring, Evaluation, Learning, Documentation & any other Contingency upto 5% of the total cost.					236
	Grand Total					4,961
9th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m long) & Inspection path	Feb/Mar	3	945.00	0	945
2	Watch & Ward including watering as per requirement	Apr/Mar	12	3780.00	0	3780
	Total		15	4725	0	4,725
3	Monitoring, Evaluation, Learning, Documentation & any other Contingency upto 5% of the total cost.					236
	Grand Total					4,961
10th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m long) & Inspection path	Feb/Mar	3	945.00	0	945
2	Watch & Ward including watering as per requirement	Apr/Mar	12	3780.00	0	3780
	Total		15	4725	0	4,725
3	Monitoring, Evaluation, Learning, Documentation & any other Contingency upto 5% of the total cost.					236
	Grand Total					4,961

ABSTARCT (Showing Seedling Cost Separately)

Sl. No	Year	No. of Mandays	Labour Cost (Rs.)	Material Cost (Rs.)	MELD & Other Contingency	Seedling Cost (Rs.)	Total Cost (Rs.)
1	0th year	54.0	17010	100	856	0	17966
2	1st year	59.0	18585	8680	1363	44713	73341
3	2nd year	33.0	10395	2780	659	4065	17899
4	3rd year	31.0	9765	2240	600	0	12605
5	4th year	15.0	4725	0	236	0	4961
6	5th year	15.0	4725	0	236	0	4961
7	6th year	15.0	4725	0	236	0	4961

8	7th year	15.0	4725	0	236	0	4961
9	8th year	15.0	4725	0	236	0	4961
10	9th year	15.0	4725	0	236	0	4961
11	10th year	15.0	4725	0	236	0	4961
Grand Total		282.0	88830.0	13800.0	5131.5	48777.6	156539.1
Total plantation Cost (254.00 ha x Rs. 156539.1)							39760931.40

ADDITIONAL COST PROPOSED

1	Wire mesh LBCD of size 10' x 10' x 5' for 254 nos. @Rs 15674/- per LBCD	15,674 x 254 nos	3981196.00
2	Staggered trenches of dimension 2.5 x 0.5 x 0.5 mtr to the tune of 300 Nos. per ha @60MD or Rs. 18,900/- per ha over 254.00 ha	60 x 315 x 254.00 ha	4800600.00
3	Two nos. water body of size 40mt x 30mt x 3mt in the plantation site	2 x 6,06,800	1213600.00
4	Cost of G.I. Chain link Mess Fencing over 9.75 Km. with 3 years maintenance @2% of cost per RKM @Rs. 9,91,500/- per RKM	Rs 9,91,500 x 9.75 Km	9667125.00
5	Construction of two nos. watcher shed for plantation	2 x 50000	100000.00
	Maintenance of watcher shed @5000/ year for nine year	9 x 2 x 5000	90000.00
	Sub-Total		19852521.00

TOTAL COST OF PROJECT

1	Nursery for 2,23,520 no of seedlings including casualty replacement 10% for 254.00 ha @Rs. 315/- (2,23,520 nos. x Rs. 50.81 per seedling)	11357051.20
2	ANR with gap plantation over 254.00 ha @ Rs. 156539.10 per ha.	39760931.40
3	15% of the total plantation cost towards Entry Point Activity/ Incentive to VSS etc.	5964139.71
4	Total additional cost	19852521.00
	Total	76934643.31
5	Add 20% escalation	15386928.66
	Grand Total	92321571.97 Or say 9,23,21,600.00

(Rupees nine crore twenty-three lakh twenty-one thousand six hundred) Only

A. PROVISION OF FUNDS AND FUND UTILIZATION

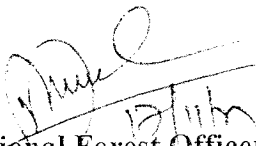
Rs. 9.23,21,600.00 (Rupees nine crore twenty-three lakh twenty-one thousand six hundred) Only shall be deposited by the User Agency M/s Tata Steel Ltd on approval of the scheme to the Ad-hoc CAMPA Account and the funds will be utilized for raising of Compensatory Afforestation by the Divisional Forest 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, Ghatagaon Range of Keonjhar Division. The Range Forest Officer, Ghatagaon 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. GPS co-ordinates along with other required information of Compensatory Afforestation will be uploaded in the e-Greenwatch Portal of NIC, MoEF&CC, 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 Ghatagaon 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