

**SCHEME FOR
COMPENSATORY AFFORESTATION
OVER 48.00 HA. OF DEGRADED
FOREST LAND IN MAHULPADA RF
OF
KULIPOSH RANGE
IN
BONAI FOREST DIVISION
AGAINST MINING PROJECT
OF
TODA IRON MINES (ML-139)
OF
M/S STEEL AUTHORITY OF INDIA LTD**

**SCHEME FOR COMPENSATORY AFFORESTATION OVER 48.0 HA. OF
DEGRADED FOREST LAND IN MAHULPADA RF OF KULIPOSH RANGE IN
BONAI FOREST DIVISION AGAINST MINING PROJECT OF TODA IRON
MINES (ML-139) OF
M/s STEEL AUTHORITY OF INDIA LTD.**

1. INTRODUCTION:

In accordance with Section-2 of the Forest Conservation Act, 1980, M/s Steel Authority of India Ltd. (SAIL) have submitted diversion proposal for diversion of 25.981 ha. of forest land (including 2.460 ha. of Safety Zone) in M.L.-139 for Mining & allied activities, for which twice the degraded forest land is required for Compensatory Afforestation. Thus, 47.042 ha. of degraded forest land (23.521 ha. x 2 time) is required for Compensatory Afforestation.

Accordingly, degraded forest land over an area of 48.00 ha. has been selected in Mahulpada R.F. of Kuliposh Range. ANR Plantation @500 nos. of seedlings per Ha. at a spacing of 2.5 Mt. X 2.5 Mt. will be taken up over the said identified area of 48.00. The cost estimate for 500 Plants per ha. in ANR mode enclosed as **Annexure-I**.

2. IDENTIFICATION OF THE DEGRADED FOREST AREA:

An area of 48.00 ha. of degraded forest land has been identified in Mahulpada RF of Kuliposh Range of Bonai Division for taking up Compensatory Afforestation. Mahulpada RF comes under Rehabilitation Working Circle as per the Working Plan of Bonai Forest Division. The location map is enclosed as **Annexure-VI**. The area has been inspected by the Range Officer, Kuliposh Range and found to be suitable for Compensatory Afforestation, and free from encroachment & encumbrances. Certificate to this effect furnished by the Range Officer, Kuliposh Range. Further the identified area has been verified with the help of Decision Support System (DSS) & found suitable for Compensatory Afforestation.

The Certificate on DSS analysis report in the prescribed format is enclosed as **Annexure-V**.

3. TOPOGRAPHY AND SOIL:

The forest land identified for this purpose is Hilly, approx. 15 degree in slope, gravel and soil mixed patch. The area experiences tropical climate with monsoon rainfall.

4. **CLIMATE**

The area experiences Sub-tropical climate. It is characterized by very hot summer and cool winter. Maximum temperature during summer rises upto 44⁰ Celsius and the minimum goes down to 8⁰ Celsius. The area gets rain from South-East Monsoon, which breaks during second fortnight of June and continues upto last week of September. The annual rainfall varies from 780 to 1880mm. The annual average rainfall is 1500mm. The bulk of precipitation occurs during July-August. During April-May, occasional rainfall occurs along with thunder storm.

5. **EXISTING VEGETATION.**

The vegetation of degraded forest land identified for raising Compensatory Afforestation in Mahulpada RF comprises of Sal, Kathasiali, Dhaura etc.

6. **OBJECTIVE OF THE SCHEME:**

- i) To restock the barren forest land by planting suitable species.
- ii) To improve the micro-edaphic conditions by undertaking suitable soil and moisture conservation measures.
- iii) To protect the area against encroachment, illicit felling, fire occurrence, grazing etc., so as to check further degradation of the area.
- iv) To provide gainful employment to the local people mainly involving SC/ST population.
- v) To create awareness among the local villagers on protection and maintenance of plantation and forest.

7. **PROPOSED TECHNIQUE:**

To achieve the above objectives, it has been proposed to take up ANR with gap Plantation @ 500 seedlings per hectare at a spacing of 2.5 mtr x 2.5 mtr in Mahulpada RF of Kuliposh Range. The said plantation work shall be undertaken in the first year, followed by maintenance during 2nd, 3rd, 4th 5th, 6th, 7th, 8th, 9th, & 10th year. The detailed expenditure statement per hectare is enclosed as **Annexure-I**.

(A). SURVEY AND DEMARCATION:

The area is surveyed and demarcated in the field with the help of G.P.S. The GPS co-ordinates of the boundary of the site are mentioned in the Map enclosed as **(Annexure-VII)**. RCC Pillars of usual size will be posted along the boundary line. This operation will be helpful in future maintenance and management.

(B). REGENERATION CLEANING AND TENDING OPERATION:

The operation aims at tending the existing crop silviculturally for better growth. It involves removal of inferior and diseased tree growth. During this operation, climbers etc which interferes with the growth of the existing crop are to be cut. This operation helps sapling to grow better and faster. The site clearance is to be done by cutting and removal of Eupatorium and all other unwanted growth.

The following operation will be carried out during the operation.

- i) Cutting back of individual inferior poles interfering with the growth of better ones.
- ii) Cutting back of malformed and diseased individuals.
- iii) Singling of coppice shoots & retaining healthier ones.
- iv) Cutting of climbers.
- v) Cutting back of high stumps flush to the ground.
- vi) Pruning the branches of the poles up to hand reach.

During 1st year operation, climber cutting, high stump cutting, and cutting of shrub, herbs, malformed and diseased plants will be done. In the next two years, cutting of individuals and singling of economically important species will be done.

(C). PLANTATION:

The area will be stocked by way of raising plantation in ANR with gap Plantation. Taking in to consideration the soil condition, the local habitation and suitability of the site, the following species are selected.

1. *Dalbergia latifolia* (Sisoo)
2. *Pongamia pinnata* (Karanja)
3. *Emblia officinalis* (Amla)
4. *Terminalia belerica* (Bahada)
5. *Terminalia chebula* (Harida)
6. *Acacia catechu* (Khair)
7. *Gmelina arborea* (Gambhari)
8. *Mangifera indica* (Mango)
9. *Artocarpus heterophyllus* (Panas)
10. *Limonia acidissima* (Kaitha)
11. *Syzygium cumini* (Jamu)

The following operations will be taken up for plantation;

i) Raising of nursery:

Seedlings required for plantation shall be raised in a temporary nursery nearer to the planting site and water sources. Nursery work will be started 18 months prior to the year of plantation so that quality seedling stock will be available for plantation. The seedlings shall be raised 10% extra besides the actual requirement to compensate the casualties. Seedlings will be raised in polythene bags of 9" x 5" size following standard nursery practice.

ii) Alignment and pitting:

Alignment and pitting will be taken up in the month of March-April, Pits of size 45cm x 45cm x 45cm will be dug maintaining a spacing of 2.5mtr x 2.5mtr @500 seedlings per ha. It is proposed to take up Plantation in the blank patches.

iii) Actual Planting:

The seedlings will be planted @500 seedlings per ha. in the dug out pits of size 45cm x 45cm x 45cm with a spacing of 2.5mtr x 2.5mtr. Plantation shall be taken up after first regular shower of monsoon and completed by the end of July. Species will be planted as per suitability of the soil condition. NPK/ Bio fertilizer @50gms per plant shall be applied as basal dosage. Anti-termite insecticide shall also be applied to each pit while planting. Casualties if any noticed shall be replaced with the excess seedlings raised for the purpose. During second year also, casualty replacement will be done for which seedlings shall be raised.

iv) Weeding, Soil working & manuring :

For establishment and better growth of the planted seedlings, timely weeding, soil working and manuring are necessary. It is proposed to carry out two weedings, soil working and manuring during the first year and second year of plantation and one weeding and soil working during third year. During first year and second year, first weeding and manuring shall be carried out during August-September and the second one during October-November along with soil working. First weeding shall be around the plants and the second will be of strip weeding. The weeding of third year will be around the plants, which will be carried out during August.

After each weeding, soil working will be done around each plant at a radius of 0.5mtr, and manuring of each plant will be done @50grms of NPK/ Bio fertilizer per plant in ring form.

v) Application of insecticides:

After planting of good healthy seedlings, the plantation site may cause influx of insects, which usually eat and damage the tender leaves and shoots of the plants. To get rid of such insect attack, application of insecticides will be taken up in required doses at desired intervals. Spraying of insecticides shall be done preferably in a sunny day in the forenoon as per requirement.

vi) Fire line tracing and maintenance:

Fire causes heavy loss to the forest & plantation during fire season. To prevent incidence of fire, the area shall be divided in to suitable blocks by tracing fire lines. Boundaries of the plantation patches and these block lines will be scrapped of the growth to a width of 2.0mtr during February-March and the cut back materials and the dry leaves stacked along these lines will be burnt under strict supervision. This operation shall be carried out for three years.

8. SOIL CONSERVATION MEASURES:

The site selected for Compensatory Afforestation is degraded Reserve Forest, undulating, and gullies have been formed due to erosion. So, Soil Conservation Measures like Staggered Trench, Percolation Pit, Contour Trench, Graded earthen bund, LBCD, Wire mesh LBCD, Sub surface Dyke and WHS as per site requirement have been proposed. The cost norm of SMC is enclosed as **Annexure-III.**

9. FENCING:

To protect the ANR plantation from biotic interference, Bamboo Twigs & Thorns fencing is proposed over the identified area of 48.00 ha. in Mahulpada RF of Kuliposh Range. The total perimeter of the said identified area is 4133 RMT (Or, 4.133 Km) length of boundary.

The cost norm for Bamboo Twigs & Thorns fencing is enclosed as **Annexure-II.**

10. WATERING :

Watering of the plantation will be carried out aided by solar system with Borewell (1 system for 5 ha. plantation) fitted with Drip system. The cost norm is furnished as **Annexure-IV.**

11. MOTIVATION OF PEOPLE:

As per Govt. resolution of 1993 and 2011, the villagers of the adjoining village, i.e. Tasada village is to be involved in protection and management of plantation. Before execution of the work, a meeting will be conducted in the above villages and resolution regarding support to plantation activities will be made. To motivate the people in this direction, they will be provided with incentives in shape of different community articles, buildings, and different community amenities of fixed and movable type through entry point activities (EPA). Health camps shall also be organized in the villages.

12. EXECUTING AGENCY :

The Divisional Forest Officer, Bonai Division shall execute the work by involving the local VSS mentioned above.

13. INSPECTION, MONITORING & EVALUATION:

In order to make the Afforestation under this Compensatory Afforestation Scheme successful, intensive inspection of the plantation by the Forest field staff and the Officers at the Divisional level is necessary. Moreover, frequent monitoring and evaluation shall have to be done at different stages.

14. REQUIREMENT OF FUNDS:

For implementation of all prescriptions outlined above ₹ 2,49,15,500/- (Rupees Two Crore Forty Nine Lakh Fifteen Thousand five hundred) only will be required as detailed below.

1.	ANR with 500 plants per ha over 48.00 ha. @ ₹1,42,904/-	₹	68,59,392.00
2.	Bamboo twig fencing over 48.00 ha. @ ₹1,04,966/- per hectare.	₹	50,38,368.00
3.	Soil conservation measures structures like staggered trench, percolation pit, contour trench, graded earthen bund, LBCD, wire mesh, LBCD, Sub surface Dyke and Water Harvesting structures = 48.00 ha X ₹37,415/-.	₹	17,95,920.00
4.	Water provision to plantation: Solar system with Bore well (1 system for 5 Ha. Plantation) fitted with Drip system @ ₹2,33,786/- X 48.00 ha.	₹	1,12,21,728.00
	TOTAL :-	₹	2,49,15,408.00
		₹	Or,
		₹	2,49,15,500.00

(Rupees Two Crore Forty Nine Lakh Fifteen Thousand five hundred) only.


Divisional Forest Officer,
Bonai Division.

ANNEXURE-I

ANNEXURE-7

Base Cost Norms for Compensatory Afforestation through Aided Natural Regeneration (ANR) @ 500 Seedlings/Ha.						
WAGE RATE Rs- 311/- PER MANDAY						
Sl. No	Items of work	Preferable Period of Execution	No of Mandays	Labour Cost (In Rs.)	Material Cost (In Rs.)	Total cost (In Rs.)
0th Year (Advance work) Pre-Planting Operation						
1	Survey, Demarcation and Pillar posting	Nov/Dec	2	622	0	622
2	Preparation of Treatment Map (Digital Map)	Nov/Dec	1	311	100	411
3	Site preparation	Nov/Dec	2	622	0	622
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	4665	0	4665
5	Alignment and stacking for digging of pits	Feb/Mar	1	311	0	311
6	Digging of pits (45 cm x 45 cm X 45 cm) in hard and gravelly soil	Feb/Mar	20	6220	0	6220
	Total		41	12751	100	12851
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 perfectly.	June/Jul	4	1244	2500	3744
2	Transportation of 18 months old polythene bag seedlings in hired truck /tractor from the permanent/Mega nursery to planting site including Loading & unloading. (Average lead of 10 Rkm) & Stacking the seedling @ Rs.6/- Seedling. (550 nos.)	Jul/Aug	0	0	3300	3300
3	Watering polythene bag seedlings at stacking site of plantation	Jul/Aug	1	311	0	311
4	Conveyance of polythene bag 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 perfectly around the planted seedling.	Jul/Aug	11	3421	0	3421
5	Cost of Fertilizer & Insecticide (a)NPK/ Bio-fertilizer @ 50 gms/plant as basal dose = 25kg @ Rs.30/- per kg = Rs. 750.0 (b) Urea/Vermicompost/Mo Khata/any other fertilizer @ Rs. 375.00 (c) Insecticide/ Bio-pescticide @ 5 gms/plant= 2.5 kg @ Rs.150/- per kg = Rs. 375/-	Jul/Aug	0	0	1500	1500
6	Casualty Replacement @ 10% (50 nos.)	Jul/Aug	1.5	466.5	0.0	466.5
7	1st weeding & Manuring	Aug/Sept	5	1555	0	1555

Year wise Abstract of Cost Norm (showing seedling cost separately)

129

Sl. No	Items of work	Preferable Period of Execution	No of Mandays	Labour Cost (In Rs.)	Material Cost (In Rs.)	Total cost (In Rs.)	
Sl. No	Year	No. person days	Labour cost @ Rs. 311/-per day (Rs)	Material Cost	Monitoring Evaluation, Learning, Documentation and Other Contingency (5%) of (4+5)	Cost of Seedlings @Rs.50.31 per seedlings	TOTAL COST
1	2	3	4	5	6	7	8
1	0th year	41	12751.0	100.0	549.00	0.00	13400.00
2	1st year	41.5	12906.5	7300.0	993.50	27671.00	48871.00
3	2nd year	24.5	7619.5	1737.5	443.00	2516.00	12316.00
4	3rd year	23.0	7153.0	1400.0	347.00	0.00	8900.00
5	4th year	15	4665.0	0.0	135.00	0.00	4800.00
6	5th year	15	4665.0	0.0	135.00	0.00	4800.00
7	6th year	15	4665.0	0.0	135.00	0.00	4800.00
8	7th year	15	4665.0	0.0	135.00	0.00	4800.00
9	8th year	15	4665.0	0.0	135.00	0.00	4800.00
10	9th year	15	4665.0	0.0	135.00	0.00	4800.00
11	10th year	15	4665.0	0.0	135.00	0.00	4800.00
Total:		235.0	73085.0	10537.5	3277.5	30187	117087.00

Note:

- 1 Priority must be given to the indigenous local species available nearby to the site of plantation.
- 2 10 % indigenous fruit bearing trees must be preferred to Plantation.
- 3 Site specific Soil conservation work like LUCD, Gully Plugging, Staggered Trench, Contour Trench, Graded Bund, etc. may be taken up
- 4 Chain link fencing can be adopted in the CA plantation taken up outside the forest area and Bamboo twigs fencing may be preferred to CA plantations
- 5 Watering facilities for procurement of water & watering may be adopted as per the availability of water.
- 6 The Cost Norm of various items can be changed with the approval of the concerned RCCFs keeping the overall cost norm fixed for each Financial Year

APCCF (Forest Diversion & NO, FC Act)

Matrix for Model-II A (ANR-500 Plants/ Ha)

In Rupees																							
Sl. NO.	Commencement Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI	Total Cost
	Base Norm	13400	48871	12316	8900	4800	4800	4800	4800	4800	4800	4800											
1	2021-22	13400	51315	13577	10303	5834	6126	6432	6754	7092	7446	7819											136098
2	2022-23		14070	53881	14256	10818	6126	6432	6754	7092	7447	7818	8210										142904
3	2023-24			14774	56575	14969	11359	6432	6754	7092	7447	7819	8209	8621									142904
4	2024-25				15513	59404	15717	11927	6754	7092	7447	7819	8210	8619	9052								150051
5	2025-26					16289	62374	16503	12523	7092	7447	7819	8210	8619	9052	9505							157554
6	2026-27						17103	65493	17328	13149	7447	7819	8210	8621	9050	9505							165433
7	2027-28							17958	68768	18194	13806	7819	8210	8621	9052	9503	9980						173705
8	2028-29								18856	72206	19104	14496	8210	8621	9052	9505	9978	10479					182390
9	2029-30									19799	75816	20059	15221	8621	9052	9505	9980	10477	11003				191510
10	2030-31										20789	79607	21062	15982	9052	9505	9980	10479	11003	11553			201086
																					12131		211141

APCCF (Forest Diversion & NO, FC Act)

-11-
ANNEXURE-II

112

Fencing for Compensatory Plantation raised inside the Forest Areas using Bamboo Twigs & Thorns						
Fencing Model F-1						
WAGE RATE Rs- 311/- PER DAY						
Sl. No	Items of work	Preferable Period of Execution	Man days	Wages	Material cost (Rs)	Total Cost (Rs. per Ha.)
0th Year Maintenance						
1	NIL		0	0	0	0
1st Year Maintenance						
1	Taking an average perimeter of 250 Rmt/Ha @ 93 Rs/ mt (Half bundle Bamboo Twigs/mt @ 120/Bundle) Labour: Material = 40-60 (approx)	Sept./Oct	30	9330	14133	23463.0
2	Bamboo poles of 8" height at a distance of 2m spacing to be fixed (2" under soil & 2" above soil) 250/2 = 125 x 1 = 126 Nos. of Bamboo Poles 1 Bamboo (approx) 24" height = 3 poles 126/3 = 42 Bamboos @ 200/Bamboo	Sept./Oct		0	8400	8400.0
3	Preparation of Bamboo poles, Digging of holes of 2 ft. depth & fixing Bamboo poles @ 20 poles/ MD	Sept./Oct	6.5	2021.5		2021.5
4	Cost of Bamboo for tying the Bamboo twigs row fence with double side two strand Bamboo batten (One 6" above ground and other one 4 ft" above ground) (250x2)/ 24 = 21 Bamboo @ 200/ Bamboo	Sept./Oct		0	4200	4200.0
5	Making Bamboo batten, Finishing the Batten & Tying the same on double strand on Coir rope etc. @ Rs.11/ Rmt	Sept./Oct	9	2799		2799.0
6	Cost of coir rope @ Rs.0.125 kg/ Rmt 500x 0.125 kg = 62.5 kg @ Rs.70/Kg	Sept./Oct		0	4375	4375.0
7	Making one Bamboo Twigs gate with Bamboo frame			0	500.5	500.5
TOTAL			45.5	14150.5	31608.5	45759.0
Rate per running mt. 45759/ 250 = 183/Rmt						
2nd Year Maintenance						
1	Repair & Maintenance of Bamboo Twigs fence including Material cost	Feb./Mar	20	6220	1500	7720
Rate per running mt. 7720/ 250 = 30.88 or say Rs. 31-Rmt						
3rd Year Maintenance						
1	Repair & Maintenance of Bamboo Twigs fence including Material cost	Feb./Mar	20	6220	5675	11895
Rate per running mt. 11895/ 250 = 47.58 or say Rs. 48-Rmt						
4th Year Maintenance						
1	Repair & Maintenance of Bamboo Twigs fence including Material cost	Feb./Mar	20	6220	5675	11895
Rate per running mt. 11895/ 250 = 47.58 or say Rs. 48-Rmt						
5th Year Maintenance						
1	Repair & Maintenance of Bamboo Twigs fence including Material cost	Feb./Mar	20	6220	5675	11895
Rate per running mt. 11895/ 250 = 47.58 or say Rs. 48-Rmt						
Abstract						
Sl. No	Year	No. person days	Labour cost @ Rs. 311/- per day	Material Cost	Total cost (Rs.)	
1	0th year	0.0	0.0	0.0	0.0	
2	1st year	45.5	14150.5	31608.5	45759.0	
3	2nd year	20.0	6220.0	1500.0	7720.0	
4	3rd year	20.0	6220.0	5675.0	11895.0	
5	4th year	20.0	6220.0	5675.0	11895.0	
6	5th year	20.0	6220.0	5675.0	11895.0	
Total:		125.5	39030.5	50133.5	89164.0	


APECF (Forest Diversification & NO, FC Act)

Matrix for Model-F- I Fencing (Bamboo Twig)

In Rupees

Sl. NO.	Commencement Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	Total Cost
	Base Norm	0	45759	7720	11895	11895	11895											
1	2021-22	0	48047	8511	13770	14458	15181											99967
2	2022-23		0	50449	8937	14459	15181	15940										104966
3	2023-24			0	52971	9384	15182	15940	16737									110214
4	2024-25				0	55620	9853	15941	16737	17574								115725
5	2025-26					0	58401	10346	16738	17574	18453							121512
6	2026-27						0	61321	10863	17575	18453	19376						127588
7	2027-28							0	64387	11406	18454	19376	20345					133968
8	2028-29								0	67606	11976	19377	20345	21362				140666
9	2029-30									0	70986	12575	20346	21362	22430			147699
10	2030-31										0	74535	13204	21363	22430	23552		155084


APCCF (Forest Diversion & NO, FC Act)

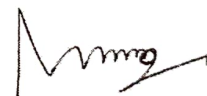
-13-
ANNEXURE-III

112

Cost Norms for creation of Compensatory Afforestation with Stabilization of Soil & Conservation of Moisture (1000)			
Annexure-11			
WAGE RATE Rs- 311/- PER DAY			
Sl.No	Item of Works	Preferable Period of Execution	Total Cost
1	0th Year (Pre-Planting Operation)		
	1st Year		0
2	Soil Conservation measure structures like Staggered Trench, Percolation pit, Contour trench, Graded earthen bund, LBCD, Wire mesh LBCD, Sub surface Dyke & WHS as per the slope & site requirement on LS	Apr/Sept.	20,215
	2nd Year		
3	Maintenance of SMC structures @ 15 % of initial year cost	Apr/jul	3,032
	3rd Year		
4	Maintenance of SMC structures @ 15 % of initial year cost	Apr/jul	3,032
	4th Year		
5	Maintenance of SMC structures @ 15 % of initial year cost	Apr/jul	3,032
	4th Year		
5	Maintenance of SMC structures @ 15 % of initial year cost	Apr/jul	3,032
Total			32,343.0

Abstract					
Sl. No	Year	No. person days	Labour cost @ Rs. 311/-per day	Material Cost	Total cost (Rs.)
1	0th year				
2	1st year	0.0	0.0	0.0	0.0
3	2nd year	0.0	0.0	20,215.0	20,215.00
4	3rd year	0.0	0.0	3,032.00	3,032.00
5	4th year	0.0	0.0	3,032.00	3,032.00
6	5th year	0.0	0.0	3,032.00	3,032.00
Total		0.00	0.00	32,343.0	32,343.0

Different types of SMC structures may be taken up as per the scope & requirements of the plantation site out of the design & specification of different structures annexed along this document.


APCCF (Forest Diversion & NO, FC Act)

Matrix for (SMC)

In Rupees

Sl. NO.	Commencement Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	Total Cost
	Base Norm	0	20215	3032	3032	3032	3032											
1	2021-22	0	21226	3342	3510	3685	3870											35633
2	2022-23		0	22287	3509	3686	3869	4064										37415
3	2023-24			0	23401	3684	3870	4062	4267									39284
4	2024-25				0	24571	3868	4064	4265	4480								41248
5	2025-26					0	25800	4061	4267	4478	4704							43310
6	2026-27						0	27090	4264	4480	4702	4939						45475
7	2027-28							0	28445	4477	4704	4937	5186					47749
8	2028-29								0	29867	4701	4939	5184	5445				50136
9	2029-30									0	31360	4936	5186	5443	5717			52642
10	2030-31										0	32928	5183	5445	5715	5003		55274

APCCF (Forest Diversion & NO, FC Act)

ANNEXURE-IV

Watering Model-W-I				
Watering provision to CA Plantation				
Solar system with Bore well (1 system for 5 Ha Plantation) fitted with Drip system, Wage rate @ Rs.311/-				
Year of Installation (0th Year)				
1	Cost of Borewell		1,50,000	
2	Installation of Solar panel & other System		3,00,000	
3	Cost of 0.5 HP submersable motor with accessories		50,000	
4	Water Storage Tanks/ Flexible pipes		15,000	
5	Cost of laying Drip system including all accessories, fittings etc. with 12% GST		3,02,431	
Total			8,17,431	
6	Cost of Water & watering per Ha. (8,17,431/ 5)= Rs. 1,63,486/-			1,63,486
1st Year Watering				
7	No maintenance required			0
2nd Year Watering				
8	Maintenance of system @ 5% of initial cost of installation			8,174
3rd Year Watering				
9	Maintenance of system @ 5% of initial cost of installation			8,174
4th Year Watering				
10	Maintenance of system @ 5% of initial cost of installation			8,174
5th Year Watering				
11	Maintenance of system @ 5% of initial cost of installation			8,174
Total			8,174	
Abstract				
Sl. No	Year	No. person days	Labour cost @ Rs. 311/- per day	Material Cost
1	0th year	0	0.0	163486.0
2	1st year	0	0.0	0.0
3	2nd year	0	0.0	8174.0
4	3rd year	0	0.0	8174.0
5	4th year	0	0.0	8174.0
6	5th year	0	0.0	8174.0
Total:		0	0	196182

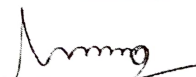
APCCF (Forest Diversion & NO, FC Act)

13

Matrix for Watering W1 (Solar Borewell) fitted with Drip System (per Ha)

In Rupees

Sl. NO.	Commence ment Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	Total Cost
	Base Norm	163486	0	8174	8174	8174	8174											
1	2021-22	163486	0	9011	9463	9935	30758											222653
2	2022-23		171660	0	9462	9936	10432	32296										233786
3	2023-24			180243	0	9935	10433	10954	33911									245476
4	2024-25				189255	0	10432	10955	11502	35607								257751
5	2025-26					198718	0	10954	11503	12077	37387							270639
6	2026-27						208654	0	11502	12078	12681	39256						284171
7	2027-28							219087	0	12077	12682	13315	41219					298380
8	2028-29								230041	0	12681	13316	13981	43280				313299
9	2029-30									241543	0	13315	13982	14680	45444			328964
10	2030-31										253620	0	13981	14681	15414	47716		345412


APCCF (Forest Diversion & NO, FC Act)

CERTIFICATE ON DSS ANALYSIS FOR CA/ACA/PCA

This is to certify that DSS Analysis of land identified for CA/ ACA/ PCA and subsequent ground truthing have been done. The outcome is as mentioned below:

Sl. No	Name of Range	Name of the Forest Block (RF/PREF/PF/DPF/Revenue Forest)	Area identified for CA/ACA/PCA (in ha.)	Classification of identified land (in ha.)							Area suitable for plantation				Plantation Model (AR/ANR)	Remarks
				Very Dense Forest	Moderately Dense Forest	Open Forest	Non-Forest	Scrub	Water	Total	Open Forest	Non-Forest	Scrub	Total		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	Kuliposh	Mahulpada RF	48.00	-	-	47	1	-	-	48	47	1	-	48	ANR with Gap Plantation @ 500 per ha.	

Countersigned

RCCF, Rourkela Circle


 Divisional Forest Officer
 Bonai Forest Division

ANNEXURE V



ORISSA

KENDRAPARA



Forest Cover Map X

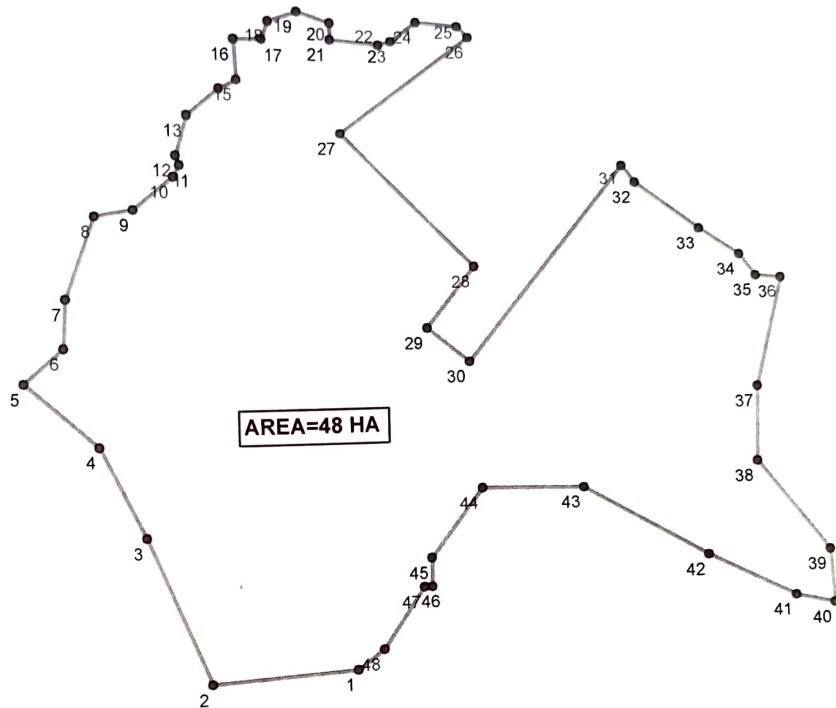
FCM Without Grid Result

MDI	NON FOREST	OPEN FOREST
0.00	0.01	0.47

GPS Map showing CA Land identified in Mahulpada Reserve Forest over 48HA in lieu of diversion of forest land in ML-139(25.981 HA) of Kalta Iron Mine, Rourkela Steel Plant, SAIL

(Perimeter - 4133 Mtr)

N



PILLAR ID	LONGITUDE	LATITUDE
1	85° 10 37.956' E	21° 38 17.925' N
2	85° 10 31.500' E	21° 38 17.500' N
3	85° 10 28.736' E	21° 38 23.942' N
4	85° 10 26.757' E	21° 38 30.649' N
5	85° 10 23.545' E	21° 38 32.166' N
6	85° 10 25.292' E	21° 38 34.273' N
7	85° 10 25.421' E	21° 38 37.846' N
8	85° 10 26.737' E	21° 38 38.140' N
9	85° 10 28.424' E	21° 38 39.604' N
10	85° 10 30.197' E	21° 38 40.118' N
11	85° 10 30.480' E	21° 38 40.530' N
12	85° 10 30.326' E	21° 38 42.239' N
13	85° 10 30.843' E	21° 38 43.433' N
14	85° 10 32.279' E	21° 38 43.838' N
15	85° 10 33.077' E	21° 38 45.554' N
16	85° 10 32.976' E	21° 38 45.606' N
17	85° 10 34.209' E	21° 38 46.389' N
18	85° 10 34.514' E	21° 38 46.851' N
19	85° 10 35.825' E	21° 38 46.440' N
20	85° 10 37.315' E	21° 38 45.529' N
21	85° 10 37.319' E	21° 38 45.529' N
22	85° 10 39.503' E	21° 38 45.679' N
23	85° 10 40.054' E	21° 38 46.541' N
24	85° 10 41.232' E	21° 38 46.541' N

PILLAR ID	LONGITUDE	LATITUDE
25	85° 10 43.098' E	21° 38 46.368' N
26	85° 10 43.586' E	21° 38 45.875' N
27	85° 10 37.699' E	21° 38 41.610' N
28	85° 10 43.586' E	21° 38 35.587' N
29	85° 10 41.400' E	21° 38 32.900' N
30	85° 10 43.269' E	21° 38 31.556' N
31	85° 10 50.412' E	21° 38 39.995' N
32	85° 10 50.900' E	21° 38 39.211' N
33	85° 10 53.830' E	21° 38 37.040' N
34	85° 10 55.600' E	21° 38 35.800' N
35	85° 10 56.304' E	21° 38 34.815' N
36	85° 10 57.441' E	21° 38 34.701' N
37	85° 10 56.173' E	21° 38 29.816' N
38	85° 10 56.021' E	21° 38 26.485' N
39	85° 10 59.108' E	21° 38 22.467' N
40	85° 10 59.230' E	21° 38 20.130' N
41	85° 10 57.501' E	21° 38 20.154' N
42	85° 10 53.671' E	21° 38 22.408' N
43	85° 10 48.220' E	21° 38 25.601' N
44	85° 10 43.692' E	21° 38 25.731' N
45	85° 10 41.358' E	21° 38 22.728' N
46	85° 10 41.334' E	21° 38 21.454' N
47	85° 10 40.985' E	21° 38 21.451' N
48	85° 10 39.123' E	21° 38 18.781' N

COUNTERSIGN
Divisional Forest Officer
Bona Division

Forester
Daleisara Section

Forest Range Officer
Kullipooh

ବନାଞ୍ଚଳ ଅଧିକାରୀଙ୍କ କାର୍ଯ୍ୟାଳୟ, କୁଲିପୋଷ ବନାଞ୍ଚଳ
OFFICE OF THE FOREST RANGE OFFICER, KULIPOSH RANGE

Email-kuliposhrange@rediffmail.com

Memo No. 988 KP / Date. 05.11.2021

To

Divisional Forest Officer ,
Bonai Division, Bonai

Sub:

Proposal for diversion of 25.981 ha. of Reserve Forest land in Toda R.F. for mining of Iron Ore in ML No. 139 (A & B) under Bonai Forest Division by SAIL in 1st RML.

Ref:-

Your memo no 7752/6F-(Mg.) Dt. 05.10.2021.

Sir,

With reference to the above subject cited Memo, I would like to report you that M/s Steel Authority of India Limited has applied for diversion of 25.981 ha of forest land .

In this context I verified one area over 48 ha. area comes under Mahulpada RF which is suitable for ANR Plantation.

Sl. No	Condition/Quarry	Reply
1	Name of the degraded forest land and Compartment No.	Mahulpada RF.
2	Certificate regarding boundary description of the area along with GPS reading from pillar to pillar.	Attached in Annexure-I.
3	RCC Pillars should be posted around the demarcated area, and pillars should be numbered at the cost of User Agency.	The area demarcated but not posted RCC Pillar as the area has not Finalized.
4	Density of vegetation with reference to existing forest growth, and name of the species available.	The density of Forest 2 to 3 and available of species, Kathasiali, Dhaura, Sal etc.
5	Suitability of the area for raising of plantation under Compensatory afforestation	Suitable for ANR Plantation. c 500/0.4a.
6	Suitability of the site from Management point of view.	The site is suitable for management site.
7	Whether the area is free from encroachment and encumbrances, and not included under FRA'2006.	The area is free from encroachment and not include in FRA'2006.
8	That the area has not been allotted previously for any other Project.	The area has not been allotted previously.
9	GPS Map, Treatment Map, and Photograph of the sites are to be enclosed.	GPS MAP attached in Annexure-II.
10	Length of boundary for fencing in each case.	The length of Boundary is 4.13 K.M. (4133 Mtrs.)
11	Topography and soil of the identified area.	Hilly, Approx. 15 degree in slope, Gravel and soil mixed patch.
12	Name of the adjoining villages in the indentified area in each case.	identified site is situated in Tasada Village.
13	The name of Working Circle should be mentioned as per Working Plan of Bonai Division.	The area comes under in rehabilitation working circle.
14	A Masonry Sign Board should be fixed at the site to facilitate easy identification of the area during execution.	Masonry signed board to be fixed after Finalization of sites.

This is for favor of your kind information and necessary action.

Yours faithfully


Forest Range Officer
Kuliposh Range
Kuliposh