

**SCHEME FOR COMPENSATORY  
AFFORESTATION  
AGAINST NETARABANDHA PAHAR  
IRON ORE BY  
M/S BHUSAN POWER & STEEL LTD.**

Jaidega- (Non-Forest land)	36.0 ha @ 1600 nos. plants per ha
Jhurmur- (Non-Forest land)	<u>27.0 ha @ 1600 nos. plants per ha</u>
Total:-	<u>63.0 ha</u>
Jaidega- (Open-Forest land)	15.0 ha @ 500 nos. plants per ha
Jhurmur- (Open-Forest land)	<u>17.0 ha @ 500 nos. plants per ha</u>
Total:-	<u>32.0 ha</u>
Total area:	<u>95.0 ha</u> (1,16,800 nos. Plants)

**UNDER**  
BIRAMITRAPUR FOREST RANGE  
UNDER ROURKELA FOREST DIVISION  
AGAINST NETARABANDHA PAHAR IRON ORE BY  
M/S BHUSAN POWER & STEEL LTD

**USER AGENCY:-** M/S BHUSAN POWER & STEEL LTD

PREPARED BY  
DIVISIONAL FOREST OFFICER,  
ROURKELA FOREST DIVISION.



**SCHEME FOR COMPENSATORY AFFORESTATION OF NETRABANDHA PAHAR IRON  
ORE BY M/S BHUSAN POWER & STEEL LTD**

**1. BRIEF NOTE ON THE PROPOSED FOREST DIVERSION PROPOSAL**

M/s Bhusan Power & Steel Ltd. has applied for mining lease for exploitation of iron ore over an area of 112.621 ha of forest land including Safety Zone (1.808ha) in Netrabandha iron ore mines situated in Bonai Sub-Division of Sundargarh District. The ore is meant for supply to Steel Ltd in India and abroad.

In accordance with Section-2 of the Forest Conservation Act, 1980, M/s Netrabandha iron ore mines by M/s Bhusan Power & Steel Ltd. have submitted diversion proposal for diversion of 112.621 ha of forest land including Safety Zone (1.808ha). This much amount of area is meant for diversion as per provision of Forest (Conservation) Act 1980 for which this compensatory Afforestation scheme over an equivalent amount of non-forest land is being submitted.

**2. IDENTIFICATION OF THE NON-FOREST GOVT. LAND:**

Tahasildar, Biramitrapur Tahasil have identified 110.813 ha non-forest Govt. land in the village- Jhurmur (51.744 ha) and Jaidega (59.069 ha) under the jurisdiction of this Division for the purpose of Compensatory Afforestation (CA) against the diversion of 110.813(112.63 – 1.808 Safety Zone) of forest land for Netrabandha iron ore mines by M/s Bhusan Power & Steel Ltd.,

Village	Khata No	Plot No.	Kisam	Area (in ROR in Ha)	Proposed Area (in Ha)
Jhurmur	259(AAA)	3561	Dungri	23.870	9.369
		1076	Patharabani	39.240	15.783
		3826	Patharabani	4.200	1.700
		3562	Dungri	2.420	0.834
		3626	-do-	3.460	1.380
		3631	-do-	32.850	12.438
		3634	-do-	3.720	1.516
		3635	-do-	18.100	7.019
		3648	-do-	5.810	1.705
		<b>Total:-</b>		<b>133.67</b>	<b>51.744</b>
Jaidega	219(AAA)	2377	Chattana	12.129	7.798
		2562	-do-	69.260	22.447
		2630	-do-	64.570	28.824
		<b>Total:-</b>		<b>145.959</b>	<b>59.069</b>
		<b>G.Total:-</b>		<b>279.629</b>	<b>110.813</b>



For diversion of 110.813 ha (112.621 – 1.808 Safety Zone) forest land 1,10,813 nos. of saplings is to be planted.

On verification of the above land through DSS, it was observed that, the identified area is suitable for accommodating plantation @ 1600 saplings / ha in ANR mode over 63.0 ha(Non-forest land), amounting to 1,00,800 nos. of plants & @500 saplings / ha over 32.0 ha(Open- forest land) amounting to 16,000 nos. plants.

Hence an area of **95.0 ha** is considered for raising compensatory Afforestation @ 1600 / ha & @500 /ha. But, the gross area to an extent over 110.813 ha area (which includes additional extent of 15.813 ha in the MDF patch) is considered for treatment and SMC purpose for assisting the natural regeneration of forest growth. Further the identified area has been verified with the help of Decision Support System (DSS) & found suitable for Compensatory Afforestation.

The purpose of drawl of this scheme is to make good the loss of forest land to be diverted for this development work which is non-forestry in nature. Apart from this, as per the provision of Forest (Conservation) Act and rules framed there under, it is obligatory to formulate a suitable scheme for the purpose of Compensatory Afforestation with a view to keep over all forest area intact. So compensatory Afforestation is required both from legal and environmental point of view.

### **3. TOPOGRAPHY AND SOIL:**

The area undulating and in small hilly rocks with gentle to moderate slope. The soil devoid of moisture humus and is degraded in nature. The portion taken for CA consists of rocks, gullies and nallah .

### **4. CLIMATE**

The area experiences Sub-tropical climate. It is characterized by very hot summer and cool winter. Maximum temperature during summer rises up to 44<sup>0</sup> Celsius and the minimum goes down to 8<sup>0</sup> Celsius. The area gets rain from South-East Monsoon, which breaks during second fortnight of June and continues up to 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.

### **EXISTING VEGETATION**

The vegetation of the degraded forest land identified for raising Compensatory Afforestation comprises of Sal, Asan, Kendu, Mahul, Char, Dhaura, Karda, Kurei, Sidha, Harida, Jamu, Kathasiali, Gambhari, Kumbhi etc.

## 5. OBJECTIVE OF THE SCHEME :

The aims of the proposed scheme are as follows:

- i) To restock the barren Non-forest land by planting suitable species.
- ii) To improve the micro-Delphic 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.

## 6. PROPOSED TECHNIQUE:

To achieve the above objectives, it has been proposed to take up ANR with gap Plantation @ 500/ha seedlings per hectare and @1600/ha at spacing of 2.5 mtr x 2.5 mtr in the identified non-forest land at Jaidega & Jhurmur. The said plantation work shall be undertaken in the first year, followed by maintenance during 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup>, 5<sup>th</sup>, 6<sup>th</sup>, 7<sup>th</sup>, 8<sup>th</sup>, 9<sup>th</sup> and 10<sup>th</sup> 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 D.G.P.S. The DGPS co-ordinates of each pillar of the boundary of the site are delineated in the Map as well as in the field enclosed as **(Annexure-II)**. 4' high RCC pillars (372 nos) have been posted at visible distance 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 dead dying and diseased tree growth. During this operation, high stump, climber etc which interfere the growth of the principal and secondary species is to be felled. This operation helps sapling to grow better and faster. The site clearance is to be done by cutting and removing of Eupatorium, Lantana 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.



### **iii) Actual Planting:**

The seedlings will be planted @500 & @1600 seedlings per ha in the dugout 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 fertilizer @30gms 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 weeding, 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 @30grms of NPK per plant in ring form.

### **v) Application of Insecticides:**

The plantation site after planting good healthy seedlings 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:**

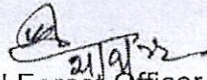
Fire causes heavy losses to the forest & plantation during fire season. To prevent incidence of fire, the area shall be divided in to suitable blocks by tracing fire lines. Boundaries of the plantation patches and these block lines will be scrapped of the growth to a width of 3.0 mtr during February-March 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.



Financial Outlay for Compensatory Afforestation Scheme over an area of 95.00 ha of non forest land & Openforest land identified in vill-Jaidega & Jhurmur under Rourkela Forest Division against Mining project of Netarabandha Pahar Iron Ore by M/s Bhusan Power & Steel Ltd.

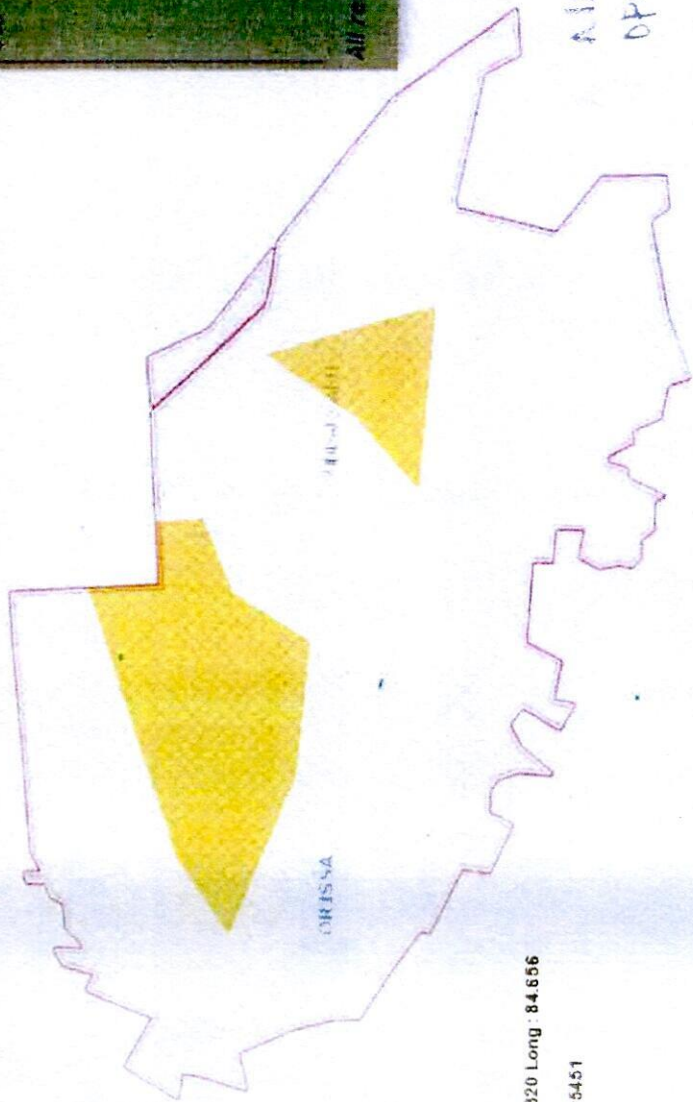
Sl. No	Description	Amount (Rs.)
1	Cost of Block Plantation (AR)@1600 plants per ha with 18 months old seedling over 63.00 ha @ Rs 3,25,623/-	2,05,14,249.00
2	Cost of Block Plantation(ANR)@500 plants per ha with 18 months old seedling over 32.00 ha @ Rs 1,42,904/-	45,72,928.00
3	Cost of fencing with wire mesh over 110.813 ha @ Rs.4,40,299/-per ha	4,87,90,853.08
4	Soil & Moisture Conservation work @ 37,415/- per 110.813 Ha over ha	41,46,068.39
	<b>Total:-</b>	<b>7,80,24,098.47</b>
5	<b>Water provision to CA Plantation</b>	
	Water provision to CA Plantation through Solar system with Bore well (1 system for 5 ha. Plantation) fitted with Drip system = Rs. 2,12,444/- X 95 ha (Since Plantation area is 95 ha)	2,01,82,180.00
	<b>Total Plantation Cost</b>	<b>9,82,06,278.47</b>
6	15% of total plantation cost towards EPA/incentives to VSS including Monitoring & Evaluation	1,47,30,941.77
	<b>Total:-</b>	<b>11,29,37,220.24</b> Or <b>11,29,37,220.00</b>
	<b>Infrastructure to be provided as per consent of the user agency (IN KIND)</b>	
7	(i) Supply Toyota Innova Crysts ZX 2.4 AT 7STR (Pearl White) with all accessories, including RTO, Insurance and other charges.  (ii) Supply Mahindra Scorpio-N Z8 L Diesel MT 4WD 7 STR (Pearl White) with all accessories, including RTO, Insurance and other charges.  (iii) Supply and installation of LG-LED all-in-one Smart <del>Seines</del> <sup>Serits</sup> LAEC-136" (10 'x5.5') fixed pixel pitch 1.56mm, screen resolution 1920x1080 built in speaker.  (iv) Supply of Inverter of 11,000 KVA along with 15 batteries of 4 years warranty.  (v) One high end Laptop for office use of Divisional Forest Officer (MAC Model - <b>Apple (Mac book Pro) 14"</b> (Protection Plan).	

(Rupees Eleven Crore Twenty-nine Lakh Thirty Seven Thousand Two Hundred Twenty)

  
21/9/22  
Divisional Forest Officer  
Rourkela Forest Division



Jaidoga-II



Lat: 22.320 Long: 84.656

Scale: 1:5451



C.A. Land

Area: 10000 - 2500  
Open Forest: 1000  
Scrub: 1000

*Arb*  
3/3/22  
Divisional Forest Officer  
Rourkela Division



Jaiodega-1



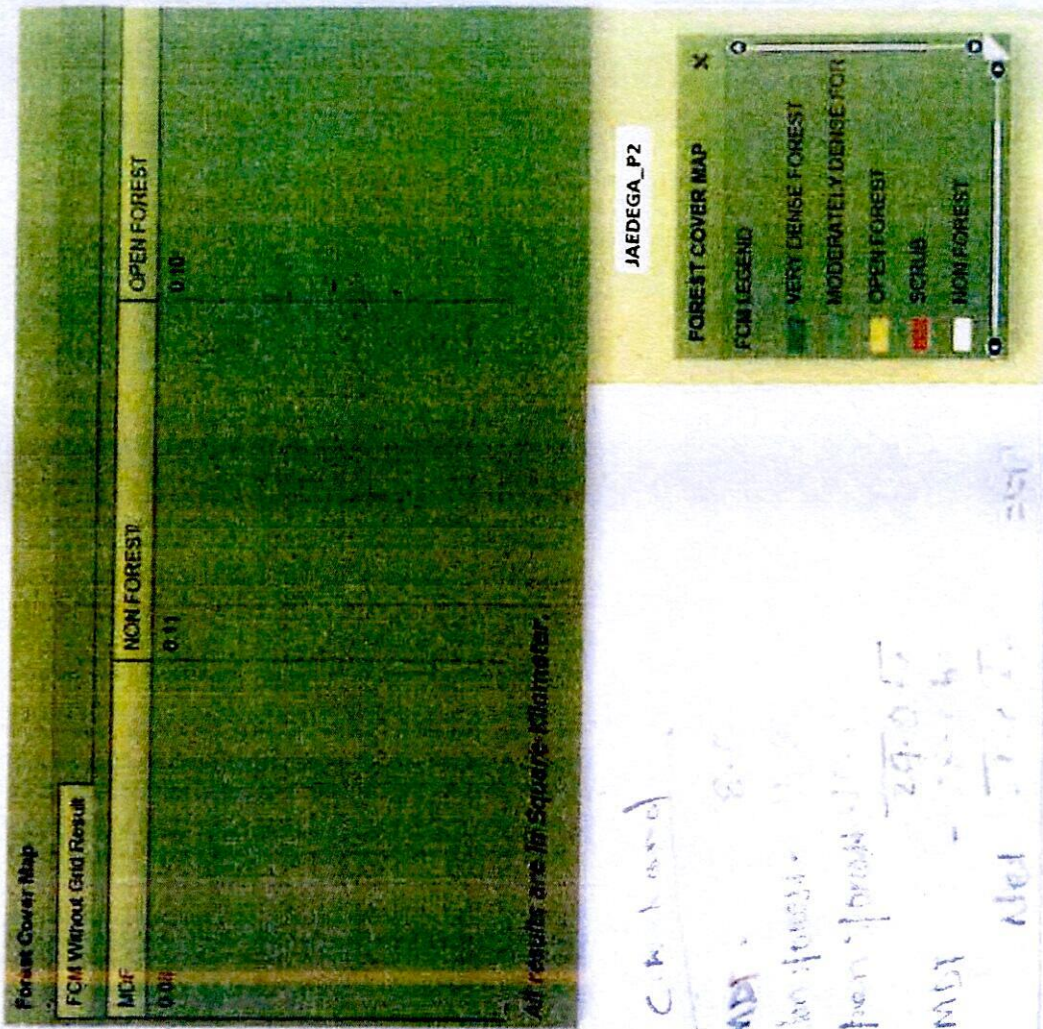
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Scale: 1:5510



Divisional Forest Officer  
Rourkela Division

486



C. K. Pandey

MDI - 8.0  
Non forest - 11.0  
Open forest - 29.0  
MDI - 29.0  
Net 29.0











JOINT VERIFICATION REPORT									
Date:		Range: Biramitrapur Range			Tahasil: Biramitrapur				
LAND SCHEDULE IN VILLAGE: JHURMUR & JAIDEGA UNDER TAHASIL: BIRAMITRAPUR, DISTRICT: SUNDARGARH IDENTIFIED FOR RAISING COMPENSATORY AFFORESTATION IN LIEU OF DIVERSION OF FOREST LAND OVER AN AREA OF 110.813 Ha. IN RESPECT OF NETRABANDHA PAHAR IRON ORE BLOCK OF M/S BHUSHAN POWER & STEEL LTD.									
Sl. No.	Name of Village	Khata No	Plot No	Kissam	Area found suitable for plantation			Area found unsuitable with reason	Remarks
					Block	RDF	Total		
1	2	3	4	5	6	7	8	9	10
1	JHURMUR	259	3561	Dunguri			9.369		
2	JHURMUR	259	1076	Patharabani			15.783		
3	JHURMUR	259	3826	Patharabani			1.700		
4	JHURMUR	259	3562	Dunguri			0.834		
5	JHURMUR	259	3626	Dunguri			1.380		
6	JHURMUR	259	3631	Dunguri			12.438		
7	JHURMUR	259	3634	Dunguri			1.516		
8	JHURMUR	259	3635	Dunguri			7.019		
9	JHURMUR	259	3648	Dunguri			1.705		
10	JAIDEGA	219	2377	Chattana			7.798		
11	JAIDEGA	219	2562	Chattana			22.447		
12	JAIDEGA	219	2630	Chattana			28.824		
TOTAL AREA =							110.813		

*Revenue Inspector*

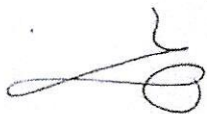
**TEHSILDAR  
BIRMITRAPUR**

*3/3/23*  
**Divisional Forest Officer**  
Rourkela Division

**FOREST RANGE OFFICER  
BIRMITRAPUR RANGE**

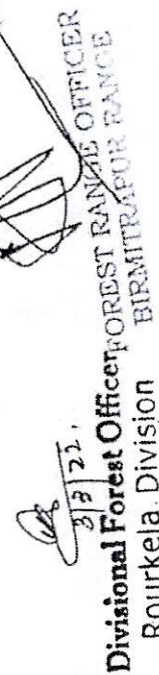


1. Certified that the above degraded/non forest government land as mentioned in column No.7, 8,&9 is in compact patches of 362.874 Ha. Or more having adequate soil depth suitable for plantation.
2. Certified that the above government land found suitable for plantation and is free from encroachment and encumbrance.
3. Certified that the above government land is not covered under 4(1) Notification.
4. Certified that the above government land is not covered under DLC report/covered under DLC report.
5. Certified that the above government land is not allotted previously.
6. Certified that the above government land is not covered under any M.L/P.L area.
7. Certified that the above plots are not settled in favour individual/community under F.R Act, 2006.
8. Certified that the status of the above plot was non forest/forest as on 25.10.1980.
9. Certified that the above plots are not covered under any proposed reserved forest.
10. Certified that the above plots are unfit not only for agriculture, but also for other developmental requirements. (applicable in case Non-forest Govt. land).
11. Certified that the above plots have no future potential for agrarian or industrial use (applicable in case Non-forest Govt. land).



TEHSILDAR  
BIRMITRAPUR

  
Inspector


  
3/3/22  
Divisional Forest Officer  
Rourkela Division  
BIRMITRAPUR RANGE



# **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 /PRF/PF/DPF/Revenue Forest)	Area identified for CA/ACA /PCA(in ha)	Classification of identified land (in ha)							Area suitable for plantation in ha				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	Biramitrapur	Non-Forest Land	110.813	0	15.813	32.0	63.0	0	0	110.813	32.0	63.0	0	95.0	ANR with Block Plantation NET AREA 63 HA @ 1600 PLANTS/HA & ANR exp planted 32 HA @ 500 PLANTS/HA	0

  
 2/3/22  
 Divisional Forest Officer  
 Rourkela Forest Division



BASE COST NORM FOR COMPENSATORY AFFORESTATION (BLOCK PLANTATION) @ 1600 PLANTS PER HECTARE (18 months old seedling)						
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.)
1	2	3	4	5	6	7
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 (Cleaning & removal of debris)	Nov/Dec	12	3732	0	3732
4	Creation of 4.00 mt wide Inspection Path	Feb/Mar	1	311	0	311
5	Alignment and stacking	Feb/Mar	2	622	0	622
6	Digging of pits (45 cm x 45 cm X 45 cm) in hard and gravelly soil	Feb/Mar	64	19904	0	19904
7	Construction of Temporary Labour Shed, Drinking water facility and First-Aid etc.	Jan/Mar	0	0	3500	3500
Total			82	25502	3600	29102
1st Year/Planting Year						
1	Refilling of pits by altering the dug-out soil of the pits, application of Organic compounds/ CDM/ FYM & mixing the same properly.	Jun/Jul	12	3732	8000	11732
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 seedling @ Rs.6/- per Seedling. (1760 nos.)	Jul/Aug	0	0	10560	10560
3	Watering the polypot seedlings at planting site	Jul/Aug	3	933	0	933
4	Conveyance of polypot seedlings on head load from the stacking site to individual dugout pits within the planting site, applying insecticide, fertilizers & planting after scooping the soil with other applied materials & pressing the soil properly around the planted seedlings.	Jul/Aug	36	11196	0	11196
5	Cost of Fertilizer & Insecticide (a) NPK/Bio-fertilizer @ 50 gms/plant as basal dose = 80kg @ Rs.30/- per kg = Rs. 2400.00 (b) Urea/Vermicompost/Mo Khata/any other fertilizer in two subsequent doses @ Rs. 1,200.00 (c) Insecticide/ Bio-pescticide @ 5 gms/plant= 8 kg @ Rs.150/- per kg = Rs. 1200.00	Jul/Aug	0	0	4800	4800



BASE COST NORM FOR COMPENSATORY AFFORESTATION (BLOCK PLANTATION) @ 1600 PLANTS PER HECTARE (18 months old seedling)						
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.)
1	2	3	4	5	6	7
<b>3rd Year Maintenance</b>						
3	Cost of Fertilizer Urea/NPK/Bio-fertilizer/Vermicompost/Mo Khata/any other fertilizer	Sept/Oct	0	0	4486	4486
4	Weeding, Manuring & Soil working, (1mt. diameter around the plants)	Sep/Oct	20	6220	0	6220
5	Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of inspection path	Feb/Mar	3	933	0	933
6	Watch & Ward including watering as per requirement	Apr/Mar	18	5598	0	5598
7	Maintenance of Temporary Labour Shed, Drinking water facility and First-Aid etc.	Apr/Mar			1000	1000
<b>Total</b>			<b>41</b>	<b>12751</b>	<b>5486</b>	<b>18237</b>
<b>4th Year Maintenance</b>						
1	Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of inspection path	Feb/Mar	3	933	0	933
2	Watch & Ward	Apr-Mar	18	5598	0	5598
<b>Total</b>			<b>21</b>	<b>6531</b>	<b>0</b>	<b>6531</b>
<b>5th Year Maintenance</b>						
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933.00	0	933
2	Watch & Ward	Apr/Mar	18	5598.00	0	5598
<b>Total</b>			<b>21</b>	<b>6531</b>	<b>0</b>	<b>6531</b>
<b>6th Year Maintenance</b>						
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933.00	0	933.0
2	Pruning of branches, Singling out of multiple shoots	Jan/Mar	5	1555.00	0	1555.0
3	Watch & Ward	Apr/Mar	18	5598.00	0	5598.0
<b>Total</b>			<b>26</b>	<b>8086</b>	<b>0</b>	<b>8086.0</b>
<b>7th Year Maintenance</b>						
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933.00	0	933
2	Watch & Ward	Apr/Mar	18	5598.00	0	5598
<b>Total</b>			<b>21</b>	<b>6531</b>	<b>0</b>	<b>6531</b>
<b>8th Year Maintenance</b>						
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933.00	0	933
2	Watch & Ward	Apr/Mar	18	5598.00	0	5598
<b>Total</b>			<b>21</b>	<b>6531</b>	<b>0</b>	<b>6531</b>
<b>9th Year Maintenance</b>						
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933.00	0	933
2	Watch & Ward	Apr/Mar	18	5598.00	0	5598



36

Matrix for Model-B Conventional CA Plantation (AR 1800 plants per Ha)

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 (10 Years)
	Base Norm	30500	147351	29639	19148	6857	6857	8490	6857	6857	6857	6857											
1	2021-22	30500	154729	32674	22166	8335	6751	11377	9648	10131	10637	11169											310117
2	2022-23		32025	162465	34308	23274	8752	9185	11946	10130	10638	11169	11727										325613
3	2023-24			33626	170588	36023	24438	9190	9648	12543	10637	11170	11727	12313									341903
4	2024-25				35307	175117	37824	25660	9650	10130	11170	11169	11725	12313	12929								358998
5	2025-26					37077	188073	39715	26943	10133	10637	13829	11727	13315	12929	13575							376948
6	2026-27						38526	197477	41701	128290	10640	11169	14520	12315	12931	13575	14254						395796
7	2027-28							40872	207351	43786	29705	11172	11727	13246	12929	13578	14254	14967					415587
8	2028-29								42916	217719	45975	31150	11731	12313	16008	13575	14257	14967	15715				436366
9	2029-30									45062	228625	48274	32750	12318	12529	16808	14254	14970	15715	16501			458185
10	2030-31										47315	240035	50688	34398	12934	13575	17648	14967	15719	16501	17326		481096

APCCF (Forest Division & NO, FC Act)



## 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.)
<b>0th Year (Advance work)/Pre-Planting Operation</b>						
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
<b>Total</b>			<b>41</b>	<b>12751</b>	<b>100</b>	<b>12851</b>
<b>1st Year/Planting Year</b>						
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 = 25 kg @ 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



Sl. No.	Items of work	Preferable Period of Execution	No of Mandays	Labour Cost (In Rs.)	Matrrial Cost (In Rs.)	Total cost (In Rs.)	
Sl. No.	Year	No. person days	Labour cost @ Rs. 911/- 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:	238.0	73085.0	10537.5	3227.5	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 LULU, 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 RCCPs keeping the overall cost norm fixed for each Financial Year


  
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Cost Norms for creation of Compensatory Afforestation with Rehabilitation of Soil & Conservation of Moisture (1000)			
WAGE RATE Rs. 311/- PER DAY			
Sl. No.	Item of Works	Preferable Period of Execution	Total Cost
0th Year (Pre-Planting Operation)			
1	NIL		0
1st Year			
2	Soil Conservation measure structures like Staggered Trench, Percolation pit, Contour trench, Graded earthen bund, LBCE, Wire mesh LBCE, 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	0.0	0.0	0.0	0.0
2	1st year	0.0	0.0	20,215.0	20,215.00
3	2nd year	0.0	0.0	3,032.00	3,032.00
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.

  
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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 (PFO)						
1	Earth work (Excavation of hole) in Hard soil at a distance 3 mt. 0.40m x 0.40m x 0.40m = 0.064 x 84 = 5.376 cum @ Rs. 140/- cum = Rs. 753.		2.42	752.62	0.0	752.6
2	Cement concrete (1:4:8) using 40 mm DHG metal 84 x 0.40m x 0.40m x 0.10m = 1.344 @ 3755.94/cum		0	0	5,047.4	5,047.4
3	Angle Iron pole of size 50 mm x 50 mm x 6 mm of height 2.40 mt. 84 x 2.40 = 201.60 Sqmt. @ 4.50/kg/ Sqmt = 907.20 kg @ 69.50 per kg				63,050.0	63,050.0
4	Cement concrete (1:2:4) for fixing the iron angle pole using 12mm BHG Chips 84 x 0.40m x 0.40m x 0.30m = 4.032 cum @ 5486.77/cum				22,123.0	22,123.0
5	Cost of Chain link mesh using 4 mm Dia GI wire having gap size 50 mm x 50 mm 250 Rmt x 2.10 mt = 525 Sqmt @ 331/Sqmt = Rs. 1,73,775				1,73,775.0	1,73,775.0
6	Double coat painting of iron angle pole over a coat of primer using good quality enamel paint 84 x 2.10 x 0.20 = 35.28 sqmt. @ Rs. 108.00/Sqmt				3,838.0	3,838.0
7	Painting of GI chain link mesh 250 x 2.10 x 2 = 1050/40 = 105 Sqmt. @ Rs. 108.00/Sqmt.				11,424.0	11,424.0
8	Transportation of Chain link mesh, iron angle, Straightening & fixing of chain link mesh etc. @ 2% of the total cost.				5,600.0	5,600.0
TOTAL			2.42	752.62	2,84,857.4	2,85,610.0
Rate per running mt 2,85,610/250 = Rs. 1142/Rmt						
1st Year Maintenance						
1	No Maintenance is required.	Sept./Oct	0	0	0	0
2nd Year Maintenance						
1	Maintenance of wire mesh fence @ 1% per running mt. cost of installation in 1st yr. 1142x 1% = 11.42 say Rs. 11	Sept./Oct	0	0	11000	11000
3rd Year Maintenance						
1	Maintenance of wire mesh fence @ 1% per running mt. cost of installation in 1st yr. 1142x 1% = 11.42 say Rs. 11	Sept./Oct	0	0	11000	11000
4th Year Maintenance						
1	Maintenance of wire mesh fence @ 1% per running mt. cost of installation in 1st yr. 1142x 1% = 11.42 say Rs. 11	Sept./Oct	0	0	11000	11000
5th Year Maintenance						
1	Maintenance of wire mesh fence @ 1% per running mt. cost of installation in 1st yr. 1142x 1% = 11.42 say Rs. 11	Sept./Oct	0	0	11000	11000
6th Year Maintenance						
1	Maintenance of wire mesh fence @ 1% per running mt. cost of installation in 1st yr. 1142x 1% = 11.42 say Rs. 11	Sept./Oct	0	0	11000	11000
7th Year Maintenance						
1	Maintenance of wire mesh fence @ 1% per running mt. cost of installation in 1st yr. 1142x 1% = 11.42 say Rs. 11	Sept./Oct	0	0	11000	11000
8th Year Maintenance						
1	Maintenance of wire mesh fence @ 1% per running mt. cost of installation in 1st yr. 1142x 1% = 11.42 say Rs. 11	Sept./Oct	0	0	11000	11000
9th Year Maintenance						
1	Maintenance of wire mesh fence @ 1% per running mt. cost of installation in 1st yr. 1142x 1% = 11.42 say Rs. 11	Sept./Oct	0	0	11000	11000
10th Year Maintenance						



Matrix for Fencing Model - II (Iron angle with Chainlink wire mesh)

In Rupees

Sl. NO.	Contract 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 Month	285610	0	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000	419337
1	2021-22	285610	0	12736	12734	13370	14039	14740	15478	16252	17064	17918											440299
2	2022-23		285610	0	12736	13370	14039	14740	15478	16252	17064	17918	18813	19755									462216
3	2023-24			1152836	0	13370	14039	14740	15478	16252	17064	17918	18813	19755	20743								485482
4	2024-25				3564334	0	14039	14740	15478	16252	17064	17918	18813	19755	20743	21779							509705
5	2025-26					3564334	0	14740	15478	16252	17064	17918	18813	19755	20743	21779	22869						535101
6	2026-27						3564334	0	15478	16252	17064	17918	18813	19755	20743	21779	22869	23982					561951
7	2027-28							382746	0	16252	17064	17918	18813	19755	20743	21779	22869	23982	25112				590049
8	2028-29								402883	0	17064	17918	18813	19755	20743	21779	22869	23982	25112	26414			619552
9	2029-30									421977	0	17918	18813	19755	20743	21779	22869	23982	25112	26414	27786		650531
10	2030-31										443676	0	18813	19755	20743	21779	22869	23982	25112	26414	27786		

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