

**SCHEME FOR COMPENSATORY
AFFORESTATION OVER AN AREA OF 100.00
HA DEGRADED FOREST LAND IDENTIFIED IN
BAZARGARH RF UNDER KESINGA FOREST
RANGE OF KALAHANDI NORTH FOREST
DIVISION AGAINST
PROPOSED DIVERSION OF 136.966 HA OF
FOREST LAND FOR CONSTRUCTION OF
CONSTRUCTION OF 220 KV DC
TRANSMISSION LINE FROM EXISTING
220/132KV GRID SUB-STATION AT KESINGA,
KALAHANDI DISTRICT TO PROPOSED
220/132/33 KV GRID SUB-STATION AT
SIRTTIGURA UNDER K. NUAGAON TAHASIL
IN KANDHAMAL DISTRICT, ODISHA.**

**BY
ODISHA POWER TRANSMISSION
CORPORATION LIMITED
BERHAMPUR**

ELEMENTS OF THE SCHEME FOR COMPENSATORY AFFORESTATION

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CHAPTER- I

BRIEF NOTE ON THE PROPOSED FOREST DIVERSION PROPOSAL

"Odisha Power Transmission Corporation Limited" (A Government of Odisha undertaking), having its registered office at Janapath, Bhubaneswar, Dist: Khurda, Odisha is primarily entrusted to construct, successful operation and maintenance of EHT Transmission lines and Grid sub-stations with a mission to facilitate effective transfer of power, to improve voltage profile, to minimize interruption power supply, to enhance security/ reliability of power system, for strengthening of power system and to avail alternate power supply within and across the districts through villages of the Odisha state.

Odisha predominantly being an agricultural state and one of rich in mineral resources, expansion in the lift irrigation system and of different industries became essential. The power system of the state has some low voltage pockets in certain remote zones fed as tail end, causing high system loss. Therefore, it is proposed to improve in the system by way of installation new sub-stations in the transmission sector of the state.

The proposed Baliguda 220/33KV grid sub-station can be connected to the system by drawing 102.037 KM of 220KV DC line from existing 220/132 KV Grid Sub-Station at Kesinga for system strengthening purpose. It is proposed to install 2X40MVA, 220/33KV transformers at under construction 220/132/33 KV Grid Sub-Station at Sirtiguda under K.Nuagaon Tahasil, Kandhamal district.

In order to eradicate low voltage problem in the southern parts of the State, it is felt essential to go for installation of a new 2X40 MVA, 220/33 KV Grid sub-station at Baliguda. This will help in minimizing power interruption, improvement in voltage profile and to meet the future load demand in this area besides minimizing losses in the existing system.

Baliguda is one of the strategic towns in the district of Kandhamal. It is situated at the most backward area. The area adjoining to this strategic town is one of the maoist affected area. The habitants are mostly of Adivasi communities & especially the Kondhs. Yet there is no electricity access for a majority of its rural & tribal habitats. The surrounding area is extremely fertile and rich in agricultural products like paddy, oilseeds and vegetables. This will also improve the Socio-Economic condition of the inhabitants. The consumers under rural electrification schemes like Rajiv Gandhi Grameen Vidyut, Yojna and Biju Gram Jyoti are likely to be benefited by the proposed project. The implementation of the project is required for eradication of low voltage profile.

Presently Baliguda area is drawing power at 33 KV from 132/33 KV Grid S/S at Phulbani on 33 KV Nuagaon feeder with a load of around 10MW. The present length of 33 KV line is around 80 KMs from existing 132/33 KV Grid S/S at Phulbani.

The land identified for Grid Sub-Station is around 6 KMs from Nuagaon Chhak which is around 25 KMs from Baliguda town. The location of the Grid S/S is so placed that this Grid S/S will be centrally located between Baliguda, Daringbari and Nuagaon. Commissioning of proposed 220/33 KV Grid Sub-Station at Baliguda will ensure steady and reliable power supply and eradicate low voltage problem not only at Baliguda but also at Nuagaon, Daringbari, Tumudibandha and Phiringia area. After construction of the Grid S/S the loading area of Udayagiri and Raikia will also be considerably reduced, which is around 30 kms from Baliguda town. The present peak loading in Phulbani Grid S/S is around 29MW. The proposed Grid S/S at Baliguda can reduce the loading at Phulbani by 10MW.

In the present proposal, for construction of 220KV DC transmission line from existing 220/132 KV Grid Sub-Station at Kesinga (Latitude: 20°10'28.29"N & Longitude: 83°13'08.72"E) under Kesinga Tahasil, Kalahandi District along with its associated transmission line of 102.037 KM (approx) to 220/132/33 KV Grid Sub-Station at Sirttiguda in K. Nuagaon Tahasil (Latitude: 20°05'04.57"N & Longitude: 84°00'10.37"E) Kandhamal District. In order to achieve stability and to cater qualitative power in the transmission system of the State as well as to meet the increasing load demand. This line shall passing through Kesinga, Madanpur Rampur and Narla Tahasils of Kalahandi District & Tumudibandha, Baliguda & Nuagaon Tahasils of Kandhamal District.

The main thrust and emphasis is laid on the following:

1. Improvement of voltage profile.
2. To minimize interruption of power supply to consumers.
3. Enhance security / reliability of power system.
4. Strengthening of transmission system.
5. Availability of alternate power supply.

This system shall also fulfill the requirement of additional power to these areas. Therefore, the power transmitted through this line will boost the small scale industries and agricultural growth of the area.

Therefore, this proposal is being submitted for diversion of forest land of 136.966 Ha (94.013 Ha in Baliguda Forest Division and 42.953 Ha in Kalahandi North Forest Division) for Construction of 220 KV DC Transmission line from existing 220/132KV Grid Sub-station at Kesinga, Kalahandi District to proposed 220/132/33 KV Grid Sub-station at Sirttiguda under K. Nuagaon Tahasil in Kandhamal District.

Degraded Forest land over 100.00 Ha has been identified and allotted in Bazargarh RF under Kesinga Forest Range of Kalahandi North Forest Division, in favour of M/s Odisha Power Transmission Corporation Limited, Berhampur, vide letter No. 6413/4F-Misc.-2022 dated. 13th October 2022 the Divisional Forest Officer, Kalahandi North Division for raising Compensatory Afforestation. The Degraded Forest Land over 100.00 Ha has been considered for plantation under ANR model @500 seedlings / Ha has been prepared to this effect.

The present scheme aims at preparation of a site-specific Compensatory Afforestation scheme over 100.00 Ha of degraded forest land identified in Bazargarh RF under Kesinga Forest Range of Kalahandi North Forest Division at the prevailing per MD onetime cost norm approved by PCCF & HOFF, Odisha vide his Office Order No. 1109/9F-Misc-387/2021, dated 8th November 2021 with a maintenance period of ten years for raising Compensatory Afforestation ANR with gap plantation.

CHAPTER- II

DETAILS OF LAND IDENTIFIED FOR COMPENSATORY AFFORESTATION

IDENTIFICATION OF DEGRADED FOREST LAND

II (1) - Details of identified Degraded Forest land-

The identified Degraded Forest land for Compensatory Afforestation is situated in Bazargarh RF under Kesinga Range of Kalahandi North Forest Division and Kalahandi District. This Forest Block is allotted to Improvement working circle in 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 Sal in SOI Topo Sheet No. F44X7 & F44X8. The vegetation consists of Sal and its scattered associates like Piasal, Asana, Sisoo, Kuruma, Karada, Dhaura, Sidha, Harida, Bahada and Ainla.

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.

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

Density
The identified site in Bazargarh 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 ANR with Gap model @500 seedling per ha. The average maximum temperature is 40^o to 45^oC and minimum 5^o to 10^o 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. Therefore, the CA scheme is envisaged to be executed with involvement of Baziapada VSS.

CHAPTER-III

DELINEATION OF PROPOSED AREA ON SUITABLE MAP

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

The area has been demarcated through DGPS survey and DGPS survey data showing latitude and longitude of each point and their chainage with bearing 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 obtained are depicted in the **Annexure- ____**.

Decision Support System of degraded forest land identified in Bazargarh RF under Kesinga Range

Sl. No.	Name of the Site	Area identified for Plantation (in Ha)	Non-Forest	Open Forest	In Sq. Km
					Scrub
1	Bazargarh RF	100.00	0.57	0.37	0.08

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, Kalahandi North Forest 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 site specific treatment of the identified site. Choice of species is based on the geo-morphology of the site, soil-texture, structure, fertility and depth, proneness of the site to water logging etc. Specific treatment of the site in terms of soil and moisture conservation intervention will be depicted in the treatment map. A treatment map will invariably be prepared for Species to be planted and treatments to be applied to the different patches shown in the treatment map and planting plan. This plan will be followed when actual planting is carried out.

Species to be planted: -

1. *Syzgiumcumini*(Jamu)
2. *Adina cardifolia*(Kuruma)
3. *Anogeissuslatifolia*(Dhaura)
4. *Albizialebeck*(Siris)
5. *Dalbergiasissoo*(Sissoo)
6. *Azadirachtaindica*(Neem)
7. *Gmelinaarborea* (Gambar)
8. *Terminaliabelerica*(Bahada)
9. *Terminaliachebula*(Harida)
10. *Pongamiapinnata* (Karanja)
11. *Embllicaofficinalis* (Ainla)

B.PRE-PLANTING OPERATION

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

Nursery will be raised @550 18 months old seedlings per 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, KesingaRange) with DGPS coordinates, Pillar No. and distance between pillars inscribed in it. A DGPS map in the scale of 1:3960 has been prepared along with DGPS co-ordinates, 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 45cm X45cm X45 cm. will be dug @500 per ha in the available gaps preferably 2 months before or at least a month before planting of seedlings.

C. PLANTING OPERATION

Planting of 18months old 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, N.P.K. and Urea will be applied in two split doses one in August and the other in September.

D(4)-SOIL MOISTURE CONSERVATION MEASURES

Soil Moisture Conservation measure structures to be carried like Staggered Trench, Percolation Pit, Contour trench, Graded earthen bund, LBCD, Wire mesh LBCD, Sub surface Dyke and Water Harvesting Structure (WHS) as per the slope & site requirement on I.S.

D(5)-PROTECTION AGAINST FIRE AND BIOTIC INTERFERENCE

It is proposed to protect the CA plantation from grazing by domestic animals using Bamboo Twings&Thorns. The total length of such fencing comes to 5.115Km (5115 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 BaziapadaVSS.

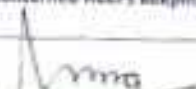
Nursery Cost Norm for raising of 1000 (18 months) seedlings

Wage rate @ 311 per Manday

ANNEXURE-1

Nursery Cost Norm for raising of 1000 (18 months) seedlings								
		Wage rate @ 311 per Manday						
Sl. No	Items of work	Prefeasible Period of Execution	Unit	Unit Cost	No./ Qty	Labour Cost	Material Cost	Total Cost
A. 1st Financial Year (Seedlings Cost for 3 Months)								
1	Cost for Polythene (9' X 5' X 200G) 300 nos./Kg. = 3.33 Kg@Rs.200/- per Kg. (including GST)	Nov- Dec	Kg	200	3.33	0	663	663
2	Procurement of raw & crude Polypot Mixture (Soil, Sand & CDM in ratio (2:1:1)							
	(i) Soil	Nov- Dec	Ch	10	22	0	220	220
	(ii) Sand	Nov- Dec	Ch	16	11	0	176	176
	(iii) CDM/ Vermi compost/ Bio-fertilizers etc.	Nov- Dec	Ch	25	11	0	275	275
	(iv) Insecticide/ Bio-Pesticide	Nov- Dec	Kg	150	2	0	300	300
3	Preparation of Soil Mixture includes pulverisation, straining & mixing the ingredients in proper ratio (2:1:1)	Nov- Dec	MD	311	2	622	0	622
4	Filling of polythene bags & setting in the bed	Nov- Dec	MD	311	3	933	0	933
5	Collection of Seed, Grading & Treatment	Dec	MD	311	2	622	0	622
6	Preparation of germination bed & dibbling of seed.	Jan	MD	311	0.5	155.5	0	155.5
7	Pricking out the Seedlings from germination beds & transplanting in the Poly bags and providing shade.	Jan	MD	311	2	622	500	1122
8	Watering (Jan to March)	Jan-Mar	MD	311	9	2799	0	2799
9	Maintenance of Nursery including fencing	Jan-Mar	MD	311	4	1244	500	1744
10	Contingencies (Water can, Buckets, Nursery shed, Electricity charges/ Diesel charges/ Maintenance of pump set/ Maintenance of Nursery, etc.)			0	0	0	460.5	460.5
TOTAL					22.5	6997.5	3124.5	10121.6
B. 2nd Financial Year (Shifting of Seedlings to larger Polythene bag to avoid root coiling & better growth) April-March								
1	Watering for 3 months (April to June)	April-June	MD	311	9	2799	0.0	2799
2	Cost of Insecticides/ Bio-Pesticide	May-June	Kg/ Lt	0	0	0	400.0	400
3	Application of insecticides/ Bio-Pesticide	May-June	MD	311	1	311	0	311
4	Cost of Poly pot (12" X 18" X 300 gauge) 60 nos. = 17 Kg & Rs.200 per Kg. (including GST)	May-June	Kg	200	17	0	3530	3530

Appendix 1: Cost Norms for raising of (2000) 20 months old seedlings

Sl. No.	Items of work	Stage 1 (Age 0-11)		per Month		Labour Cost	Material Cost	Total Cost
		Probable Period of Execution	Unit	Unit Cost	No. of Units			
1.	Procurement of New 20 months Pigeon Pea Seedlings (Seed, Seed & CMF) @ Rs. 12.43							
	(a) Seed	Apr/May	24	10	100	0	1000	1000
	(b) Seed	Apr/May	24	10	100	0	300	300
	(c) CMF/Plastic compound/ Bio-Fertilizers etc.	Apr/May	24	25	10	0	1250	1250
	(d) Insecticide/ Bio-Pesticide	Apr/May	8g	130	1	0	400	400
2.	Preparation of potting mixture including pulverisation and sowing	Oct-Nov	800	211	4	1880	0	1880
3.	Filling of Polythene bags including repotting and sowing	Oct-Nov	800	211	30	10800	0	10800
4.	Watering	Dec-March	800	211	18	3800	0	3800
5.	Sorting, Weeding, grading and marketing over one year period	April-March	800	211	15	4665	0	4665
6.	Contingencies (Water tax, Suckers, Nursery shed, Electricity charges/ Diesel charges/ Maintenance of pump set/ Maintenance of Nursery, etc.)						400	400
TOTAL					83	26435	1820	28255
C. 2nd Financial Year (Maintenance upto Planting) April-June								
1.	Watering for 3 months (April to June)	April-June	800	211	12	2532	0	2532
2.	Weeding, Shifting and grading	April-June	800	211	4	1244	0	1244
3.	Cost of Insecticide/ Bio-Pesticide					0	400	400
4.	Application of Insecticide/ Bio-Pesticide		800	211	1	211	0	211
5.	Contingencies						230	230
TOTAL					17	3287	630	3917
ABSTRACT								
Item of work						Labour Cost	Material Cost	Total Cost
A. 1st Financial Year (Seedlings Cost for 3 Months)						8097.5	3124.1	11221.6
B. 2nd Financial Year (12 Months)						26435	1820	28255
C. 3rd Financial Year (3 Months)						3287	630	3917
Total						38719.5	5574.1	44293.6
Cost per 20 months old Seedlings: 58219/1000 = Rs 58.21/-								
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								
						 APCLF (Forest Division & ND, H. A. 10)		

CHAPTER- VI

BASE COST NORM FOR COMPENSATORY AFFORESTATION THROUGH AIDED NATURAL REGENERATION (ANR) @ 500 SEEDLINGS/ HECTARE (18 months old seedling)						
Wage Rate Rs.311/- PER MANDAY						
SL No.	Item 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	622.00	0.00	622.00
2.	Preparation of Treatment Map (Digital Map)	Nov-Dec	1	311.00	100.00	411.00
3.	Site preparation	Nov-Dec	2	622.00	0.00	622.00
4.	Silvicultural operation 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	Feb-Mar	15	4665.00	0.00	4665.00
5.	Alignment and stacking for digging of pits	Feb-Mar	1	311.00	0.00	311.00
6.	Digging of pits (45 cm x 45 cm x 45 cm) in hard and gravelly soil	Feb-Mar	20	6220.00	0.00	6220.00
Sub Total =			41	12751.00	100.00	12851.00
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.	Jun-Jul	4	1244.00	2500.00	3744.00
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/- per Seedling. (550 nos.)	Jul-Aug	0	0	3300.00	3300.00
3.	Watering polythene bag seedlings at stacking site of plantation	Jul-Aug	1	311.00	0	311.00
4.	Conveyance of polythene bag 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 perfectly around the planted seedlings.	Jul-Aug	11	3421.00	0	3421.00
5.	<u>Cost of Fertilizer & Insecticide</u> a. NPK/Bio-fertilizer @ 50 gms/plant as basal dose = 25kg @ Rs.30/- per kg = Rs.750.00 b. Urea/Vermi compost /Mo Khata/any other fertilizer @ Rs.375.00 c. Insecticide/Bio-pesticide @ 5 gms/plant = 2.5kg @ Rs.150/- per kg = Rs.375.00	Jul-Aug	0	0	1500.00	1500.00
6.	Casualty Replacement@ 10% (50 nos.)	Jul-Aug	1.5	466.50	0	466.50
7.	1 st weeding & Manuring	Aug-Sept	5	1555.00	0	1555.00

8.	2 nd Weeding, Soil working (1mt. diameter around the plants) & Manuring	Oct-Nov	8	2488.00	0	2488.00
9.	Fire line Tracing & inspection path	Feb-Mar	3	933.00	0	933.00
10.	Watch & ward including watering as per requirement	Aug-Mar	8	2488.00	0	2488.00
Sub Total =			41.5	12906.50	7300.00	20206.50
2nd Year Maintenance						
1.	Transportation of 50 seedlings from Nursery to plantation site including loading, unloading & conveyance by Tractor (@ Rs.6/- per seedling	Jul	0	0.00	300.00	300.00
2.	Casualty replacement	Jul	1.5	466.50	0.00	466.50
3.	Cost of Fertilizer & Insecticide a. Cost of Insecticide/Bio-pesticide (Thimet/Forate) (@ 5 gms/plant = 0.25 kg @ Rs. 150/- per kg = Rs. 37.50/- b. Urea/NPK/Bio-fertilizer/Vermicompost/Mo Khata/any other fertilizer @ Rs.1400/-	Jul	0	0.00	1437.50	1437.50
4.	Weeding (Complete weeding), Manuring & Soil working, (1mt. diameter around the plants)	Sep-Oct	8	2488.00	0.00	2488.00
5.	Fire line tracing (2m. wide fire line over 400 m long) & inspection path	Feb-Mar	3	933.00	0.00	933.00
6.	Watch & Ward including watering as per requirement	Apr-Mar	12	3732.00	0.00	3732.00
Sub Total =			24.5	7619.50	1737.50	9357.00
3rd Year Maintenance						
1.	Cost of Fertilizer (Urea/NPK/Bio-fertilizer/Vermi compost/Mo Khata/any other fertilizer =Rs.1400/-	Sep-Oct	0	0.00	1400.00	1400.00
2.	Weeding (Complete weeding), Manuring & Soil working, (1mt. diameter around the plants)	Aug-Sep	8	2488.00	0.00	2488.00
3.	Fire line tracing (2m. wide fire line & inspection path	Feb-Mar	3	933.00	0.00	933.00
4.	Watch & ward including watering as per requirement	Apr-Mar	12	3732.00	0.00	3732.00
Sub Total =			23	7153.00	1400.00	8553.00
4th Year Maintenance						
1.	Fire line tracing (2m. wide fire line over 400 m length) & inspection path	Feb-Mar	3	933.00	0.00	933.00
2.	Watch & ward including watering as per requirement	Apr-Mar	12	3732.00	0.00	3732.00
Sub Total =			15	4665.00	0.00	4665.00
5th Year Maintenance						
1.	Fire line tracing (2m. wide fire line over 400 m length) & inspection path	Feb-Mar	3	933.00	0.00	933.00
2.	Watch & ward including watering as per requirement	Apr-Mar	12	3732.00	0.00	3732.00
Sub Total =			15	4665.00	0.00	4665.00
6th Year Maintenance						
1.	Fire line tracing (2m. wide fire line over 400 m length) & inspection path	Feb-Mar	3	933.00	0.00	933.00
2.	Watch & ward including watering as per requirement	Apr-Mar	12	3732.00	0.00	3732.00
Sub Total =			15	4665.00	0.00	4665.00

7th Year Maintenance						
1.	Fire line tracing (2m. wide fire line over 400 m length) & inspection path	Feb-Mar	3	933.00	0.00	933.00
2.	Watch & ward including watering as per requirement	Apr-Mar	12	3732.00	0.00	3732.00
Sub Total =			15	4665.00	0.00	4665.00
8th Year Maintenance						
1.	Fire line tracing (2m. wide fire line over 400 m length) & inspection path	Feb-Mar	3	933.00	0.00	933.00
2.	Watch & ward including watering as per requirement	Apr-Mar	12	3732.00	0.00	3732.00
Sub Total =			15	4665.00	0.00	4665.00
9th Year Maintenance						
1.	Fire line tracing (2m. wide fire line over 400 m length) & inspection path	Feb-Mar	3	933.00	0.00	933.00
2.	Watch & ward including watering as per requirement	Apr-Mar	12	3732.00	0.00	3732.00
Sub Total =			15	4665.00	0.00	4665.00
10th Year Maintenance						
1.	Fire line tracing (2m. wide fire line over 400 m length) & inspection path	Feb-Mar	3	933.00	0.00	933.00
2.	Watch & ward including watering as per requirement	Apr-Mar	12	3732.00	0.00	3732.00
Sub Total =			15	4665.00	0.00	4665.00

ABSTRACT							
Sl. No.	Item 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. of person days	Labour cost Rs. 311/- per day Rs.	Material cost (In Rs.)	Monitoring, Evaluation, Learning, Documentation & other Contingency 5% of (4+5)	Cost of Seedlings @ 50.31 per seedlings	Total Cost (In Rs.)
1	2	3	4	5	6	7	8
1.	0th Year	41	12751.00	100.00	549.00	0.00	13400.00
2.	1st Year	41.5	12906.50	7300.00	993.50	27671.00	48871.00
3.	2nd Year	24.5	7619.50	1737.50	443.00	2516.00	12316.00
4.	3rd Year	23	7153.00	1400.00	347.00	0.00	8900.00
5.	4th Year	15	4665.00	0.00	135.00	0.00	4800.00
6.	5th Year	15	4665.00	0.00	135.00	0.00	4800.00
7.	6th Year	15	4665.00	0.00	135.00	0.00	4800.00
8.	7th Year	15	4665.00	0.00	135.00	0.00	4800.00
9.	8th Year	15	4665.00	0.00	135.00	0.00	4800.00
10.	9th Year	15	4665.00	0.00	135.00	0.00	4800.00
11.	10th Year	15	4665.00	0.00	135.00	0.00	4800.00
Total =		235.0	73085.00	10537.50	3277.50	30187.00	117087.00

@ 500 Seedlings / Ha,
WAGE RATE Rs. 311/- PER MANDAY

No.	Description of activity	Frequency of activity	No. of students	Laboratory Cost (Rs. No.)	Material Cost (Rs. No.)	Total cost (Rs. No.)
III Year (Advance work) Pre-Planting Operation						
1	Seedling selection and selection of seedlings	Year (10)	1	100	0	100
2	Preparation of seedbed (100 x 100 x 10)	Year (10)	1	100	100	200
3	Seed preparation	Year (10)	1	100	0	100
4	Seed sowing operation including selection of seed & sowing of seedling (including seedling, sowing of seedling, sowing of seedling after sowing from the field to seedling)	Year (10)	10	1000	0	1000
5	Alignment and sowing for sowing (100)	Year (10)	1	100	0	100
6	Sowing of seed (100 x 100 x 10) and in seed and growth rate	Year (10)	10	1000	0	1000
Total			44	12700	100	12800
III Year (Planting Year)						
1	Selection of site for sowing (100 x 100) and selection of site for sowing (100 x 100) and selection of site for sowing (100 x 100)	Year (10)	1	100	100	200
2	Preparation of seedbed (100 x 100 x 10) and selection of site for sowing (100 x 100) and selection of site for sowing (100 x 100)	Year (10)	1	100	100	200
3	Selection of site for sowing (100 x 100) and selection of site for sowing (100 x 100) and selection of site for sowing (100 x 100)	Year (10)	1	100	0	100
4	Selection of site for sowing (100 x 100) and selection of site for sowing (100 x 100) and selection of site for sowing (100 x 100)	Year (10)	1	100	0	100
5	Selection of site for sowing (100 x 100) and selection of site for sowing (100 x 100) and selection of site for sowing (100 x 100)	Year (10)	1	100	0	100
6	Selection of site for sowing (100 x 100) and selection of site for sowing (100 x 100) and selection of site for sowing (100 x 100)	Year (10)	1	100	0	100
7	Selection of site for sowing (100 x 100) and selection of site for sowing (100 x 100) and selection of site for sowing (100 x 100)	Year (10)	1	100	0	100
8	Selection of site for sowing (100 x 100) and selection of site for sowing (100 x 100) and selection of site for sowing (100 x 100)	Year (10)	1	100	0	100
9	Selection of site for sowing (100 x 100) and selection of site for sowing (100 x 100) and selection of site for sowing (100 x 100)	Year (10)	1	100	0	100
10	Selection of site for sowing (100 x 100) and selection of site for sowing (100 x 100) and selection of site for sowing (100 x 100)	Year (10)	1	100	0	100
Total			10	1000	0	1000

[illegible]

Matrix for ANR-500 Plants / Ha

ANR-500 Plants / Ha	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
101	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200
201	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300
301	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400
401	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500
501	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600
601	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700
701	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800
801	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900
901	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000
1001	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100

ANR-500 Plants / Ha

2

Statement				
No.	Year	No. person (Year)	Indirect cost @ Rs. 11/- per day	Total cost (Rs.)
1	2014 year	02	02	22
2	2015 year	02	02	22
3	2016 year	02	02	22
4	2017 year	02	02	22
5	2018 year	02	02	22
6	2019 year	02	02	22
7	2020 year	02	02	22
8	2021 year	02	02	22
	Total	08	08	88

Matrix for (SMC)

Materials for ISARC

[illegible]

ABCC9 (chromosome 10p15.1) is NaCl, HCl, and acetic

Fencing Model F-1

Fencing for Compensatory Plantation raised inside the Forest Areas using Bamboo Twings & Thorns

Fencing for Compensatory Plantation raised inside the Forest Areas using Bamboo Twings & Thorns
 (Rs. per Hectare) 11.07.1998

No.	Description	Unit	Rate	Quantity	Amount (Rs.)
1st Year Maintenance					
1	Planting of Bamboo Twings & Thorns @ 1000 plants/ha	Plant/ha	10	1000	10000.0
2	Planting of Bamboo Twings & Thorns @ 1000 plants/ha	Plant/ha	10	1000	10000.0
3	Planting of Bamboo Twings & Thorns @ 1000 plants/ha	Plant/ha	10	1000	10000.0
4	Planting of Bamboo Twings & Thorns @ 1000 plants/ha	Plant/ha	10	1000	10000.0
5	Planting of Bamboo Twings & Thorns @ 1000 plants/ha	Plant/ha	10	1000	10000.0
6	Planting of Bamboo Twings & Thorns @ 1000 plants/ha	Plant/ha	10	1000	10000.0
7	Planting of Bamboo Twings & Thorns @ 1000 plants/ha	Plant/ha	10	1000	10000.0
8	Planting of Bamboo Twings & Thorns @ 1000 plants/ha	Plant/ha	10	1000	10000.0
9	Planting of Bamboo Twings & Thorns @ 1000 plants/ha	Plant/ha	10	1000	10000.0
10	Planting of Bamboo Twings & Thorns @ 1000 plants/ha	Plant/ha	10	1000	10000.0
2nd Year Maintenance					
1	Planting of Bamboo Twings & Thorns @ 1000 plants/ha	Plant/ha	10	1000	10000.0
3rd Year Maintenance					
1	Planting of Bamboo Twings & Thorns @ 1000 plants/ha	Plant/ha	10	1000	10000.0
4th Year Maintenance					
1	Planting of Bamboo Twings & Thorns @ 1000 plants/ha	Plant/ha	10	1000	10000.0
5th Year Maintenance					
1	Planting of Bamboo Twings & Thorns @ 1000 plants/ha	Plant/ha	10	1000	10000.0
Abstract					
No.	Year	No. person	Rate	Amount (Rs.)	Total cost (Rs.)
1	1st year	10	1000	10000.0	10000.0
2	2nd year	10	1000	10000.0	20000.0
3	3rd year	10	1000	10000.0	30000.0
4	4th year	10	1000	10000.0	40000.0
5	5th year	10	1000	10000.0	50000.0
6	Total	50	1000	50000.0	50000.0


 Sd/- Project Director & NRI, NRI

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

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

Sl. No.	Material	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI	XXII	XXIII	XXIV	XXV	XXVI	XXVII	XXVIII	XXIX	XXX	XXXI	XXXII	XXXIII	XXXIV	XXXV	XXXVI	XXXVII	XXXVIII	XXXIX	XL	XL1	XL2	XL3	XL4	XL5	XL6	XL7	XL8	XL9	XL10	XL11	XL12	XL13	XL14	XL15	XL16	XL17	XL18	XL19	XL20	XL21	XL22	XL23	XL24	XL25	XL26	XL27	XL28	XL29	XL30	XL31	XL32	XL33	XL34	XL35	XL36	XL37	XL38	XL39	XL40	XL41	XL42	XL43	XL44	XL45	XL46	XL47	XL48	XL49	XL50	XL51	XL52	XL53	XL54	XL55	XL56	XL57	XL58	XL59	XL60	XL61	XL62	XL63	XL64	XL65	XL66	XL67	XL68	XL69	XL70	XL71	XL72	XL73	XL74	XL75	XL76	XL77	XL78	XL79	XL80	XL81	XL82	XL83	XL84	XL85	XL86	XL87	XL88	XL89	XL90	XL91	XL92	XL93	XL94	XL95	XL96	XL97	XL98	XL99	XL100	XL101	XL102	XL103	XL104	XL105	XL106	XL107	XL108	XL109	XL110	XL111	XL112	XL113	XL114	XL115	XL116	XL117	XL118	XL119	XL120	XL121	XL122	XL123	XL124	XL125	XL126	XL127	XL128	XL129	XL130	XL131	XL132	XL133	XL134	XL135	XL136	XL137	XL138	XL139	XL140	XL141	XL142	XL143	XL144	XL145	XL146	XL147	XL148	XL149	XL150	XL151	XL152	XL153	XL154	XL155	XL156	XL157	XL158	XL159	XL160	XL161	XL162	XL163	XL164	XL165	XL166	XL167	XL168	XL169	XL170	XL171	XL172	XL173	XL174	XL175	XL176	XL177	XL178	XL179	XL180	XL181	XL182	XL183	XL184	XL185	XL186	XL187	XL188	XL189	XL190	XL191	XL192	XL193	XL194	XL195	XL196	XL197	XL198	XL199	XL200	XL201	XL202	XL203	XL204	XL205	XL206	XL207	XL208	XL209	XL210	XL211	XL212	XL213	XL214	XL215	XL216	XL217	XL218	XL219	XL220	XL221	XL222	XL223	XL224	XL225	XL226	XL227	XL228	XL229	XL230	XL231	XL232	XL233	XL234	XL235	XL236	XL237	XL238	XL239	XL240	XL241	XL242	XL243	XL244	XL245	XL246	XL247	XL248	XL249	XL250	XL251	XL252	XL253	XL254	XL255	XL256	XL257	XL258	XL259	XL260	XL261	XL262	XL263	XL264	XL265	XL266	XL267	XL268	XL269	XL270	XL271	XL272	XL273	XL274	XL275	XL276	XL277	XL278	XL279	XL280	XL281	XL282	XL283	XL284	XL285	XL286	XL287	XL288	XL289	XL290	XL291	XL292	XL293	XL294	XL295	XL296	XL297	XL298	XL299	XL300	XL301	XL302	XL303	XL304	XL305	XL306	XL307	XL308	XL309	XL310	XL311	XL312	XL313	XL314	XL315	XL316	XL317	XL318	XL319	XL320	XL321	XL322	XL323	XL324	XL325	XL326	XL327	XL328	XL329	XL330	XL331	XL332	XL333	XL334	XL335	XL336	XL337	XL338	XL339	XL340	XL341	XL342	XL343	XL344	XL345	XL346	XL347	XL348	XL349	XL350	XL351	XL352	XL353	XL354	XL355	XL356	XL357	XL358	XL359	XL360	XL361	XL362	XL363	XL364	XL365	XL366	XL367	XL368	XL369	XL370	XL371	XL372	XL373	XL374	XL375	XL376	XL377	XL378	XL379	XL380	XL381	XL382	XL383	XL384	XL385	XL386	XL387	XL388	XL389	XL390	XL391	XL392	XL393	XL394	XL395	XL396	XL397	XL398	XL399	XL400	XL401	XL402	XL403	XL404	XL405	XL406	XL407	XL408	XL409	XL410	XL411	XL412	XL413	XL414	XL415	XL416	XL417	XL418	XL419	XL420	XL421	XL422	XL423	XL424	XL425	XL426	XL427	XL428	XL429	XL430	XL431	XL432	XL433	XL434	XL435	XL436	XL437	XL438	XL439	XL440	XL441	XL442	XL443	XL444	XL445	XL446	XL447	XL448	XL449	XL450	XL451	XL452	XL453	XL454	XL455	XL456	XL457	XL458	XL459	XL460	XL461	XL462	XL463	XL464	XL465	XL466	XL467	XL468	XL469	XL470	XL471	XL472	XL473	XL474	XL475	XL476	XL477	XL478	XL479	XL480	XL481	XL482	XL483	XL484	XL485	XL486	XL487	XL488	XL489	XL490	XL491	XL492	XL493	XL494	XL495	XL496	XL497	XL498	XL499	XL500	XL501	XL502	XL503	XL504	XL505	XL506	XL507	XL508	XL509	XL510	XL511	XL512	XL513	XL514	XL515	XL516	XL517	XL518	XL519	XL520	XL521	XL522	XL523	XL524	XL525	XL526	XL527	XL528	XL529	XL530	XL531	XL532	XL533	XL534	XL535	XL536	XL537	XL538	XL539	XL540	XL541	XL542	XL543	XL544	XL545	XL546	XL547	XL548	XL549	XL550	XL551	XL552	XL553	XL554	XL555	XL556	XL557	XL558	XL559	XL560	XL561	XL562	XL563	XL564	XL565	XL566	XL567	XL568	XL569	XL570	XL571	XL572	XL573	XL574	XL575	XL576	XL577	XL578	XL579	XL580	XL581	XL582	XL583	XL584	XL585	XL586	XL587	XL588	XL589	XL590	XL591	XL592	XL593	XL594	XL595	XL596	XL597	XL598	XL599	XL600	XL601	XL602	XL603	XL604	XL605	XL606	XL607	XL608	XL609	XL610	XL611	XL612	XL613	XL614	XL615	XL616	XL617	XL618	XL619	XL620	XL621	XL622	XL623	XL624	XL625	XL626	XL627	XL628	XL629	XL630	XL631	XL632	XL633	XL634	XL635	XL636	XL637	XL638	XL639	XL640	XL641	XL642	XL643	XL644	XL645	XL646	XL647	XL648	XL649	XL650	XL651	XL652	XL653	XL654	XL655	XL656	XL657	XL658	XL659	XL660	XL661	XL662	XL663	XL664	XL665	XL666	XL667	XL668	XL669	XL670	XL671	XL672	XL673	XL674	XL675	XL676	XL677	XL678	XL679	XL680	XL681	XL682	XL683	XL684	XL685	XL686	XL687	XL688	XL689	XL690	XL691	XL692	XL693	XL694	XL695	XL696	XL697	XL698	XL699	XL700	XL701	XL702	XL703	XL704	XL705	XL706	XL707	XL708	XL709	XL710	XL711	XL712	XL713	XL714	XL715	XL716	XL717	XL718	XL719	XL720	XL721	XL722	XL723	XL724	XL725	XL726	XL727	XL728	XL729	XL730	XL731	XL732	XL733	XL734	XL735	XL736	XL737	XL738	XL739	XL740	XL741	XL742	XL743	XL744	XL745	XL746	XL747	XL748	XL749	XL750	XL751	XL752	XL753	XL754	XL755	XL756	XL757	XL758	XL759	XL760	XL761	XL762	XL763	XL764	XL765	XL766	XL767	XL768	XL769	XL770	XL771	XL772	XL773	XL774	XL775	XL776	XL777	XL778	XL779	XL780	XL781	XL782	XL783	XL784	XL785	XL786	XL787	XL788	XL789	XL790	XL791	XL792	XL793	XL794	XL795	XL796	XL797	XL798	XL799	XL800	XL801	XL802	XL803	XL804	XL805	XL806	XL807	XL808	XL809	XL810	XL811	XL812	XL813	XL814	XL815	XL816	XL817	XL818	XL819	XL820	XL821	XL822	XL823	XL824	XL825	XL826	XL827	XL828	XL829	XL830	XL831	XL832	XL833	XL834	XL835	XL836	XL837	XL838	XL839	XL840	XL841	XL842	XL843	XL844	XL845	XL846	XL847	XL848	XL849	XL850	XL851	XL852	XL853	XL854	XL855	XL856	XL857	XL858	XL859	XL860	XL861	XL862	XL863	XL864	XL865	XL866	XL867	XL868	XL869	XL870	XL871	XL872	XL873	XL874	XL875	XL876	XL877	XL878	XL879	XL880	XL881	XL882	XL883	XL884	XL885	XL886	XL887	XL888	XL889	XL890	XL891	XL892	XL893	XL894	XL895	XL896	XL897	XL898	XL899	XL900	XL901	XL902	XL903	XL904	XL905	XL906	XL907	XL908	XL909	XL910	XL911	XL912	XL913	XL914	XL915	XL916	XL917	XL918	XL919	XL920	XL921	XL922	XL923	XL924	XL925	XL926	XL927	XL928	XL929	XL930	XL931	XL932	XL933	XL934	XL935	XL936	XL937	XL938	XL939	XL940	XL941	XL942	XL943	XL944	XL945	XL946	XL947	XL948	XL949	XL950	XL951	XL952	XL953	XL954	XL955	XL956	XL957	XL958	XL959	XL960	XL961	XL962	XL963	XL964	XL965	XL966	XL967	XL968	XL969	XL970	XL971	XL972	XL973	XL974	XL975	XL976	XL977	XL978	XL979	XL980	XL981	XL982	XL983	XL984	XL985	XL986	XL987	XL988	XL989	XL990	XL991	XL992	XL993	XL994	XL995	XL996	XL997	XL998	XL999	XL1000	XL1001	XL1002	XL1003	XL1004	XL1005	XL1006	XL1007	XL1008	XL1009	XL1010	XL1011	XL1012	XL1013	XL1014	XL1015	XL1016	XL1017	XL1018	XL1019	XL1020	XL1021	XL1022	XL1023	XL1024	XL1025	XL1026	XL1027	XL1028	XL1029	XL1030	XL1031	XL1032	XL1033	XL1034	XL1035	XL1036	XL1037	XL1038	XL1039	XL1040	XL1041	XL1042	XL1043	XL1044	XL1045	XL1046	XL1047	XL1048	XL1049	XL1050	XL1051	XL1052	XL1053	XL1054	XL1055	XL1056	XL1057	XL1058	XL1059	XL1060	XL1061	XL1062	XL1063	XL1064	XL1065	XL1066	XL1067	XL1068	XL1069	XL1070	XL1071	XL1072	XL1073	XL1074	XL1075	XL1076	XL1077	XL1078	XL1079	XL1080	XL1081	XL1082	XL1083	XL1084	XL1085	XL1086	XL1087	XL1088	XL1089	XL1090	XL1091	XL1092	XL1093	XL1094	XL1095	XL1096	XL1097	XL1098	XL1099	XL1100	XL1101	XL1102	XL1103	XL1104	XL1105	XL1106	XL1107	XL1108	XL1109	XL1110	XL1111	XL1112	XL1113	XL1114	XL1115	XL1116	XL1117	XL1118	XL1119	XL1120	XL1121	XL1122	XL1123	XL1124	XL1125	XL1126	XL1127	XL1128	XL1129	XL1130	XL1131	XL1132	XL1133	XL1134	XL1135	XL1136	XL1137	XL1138	XL1139	XL1140	XL1141	XL1142	XL1143	XL1144	XL1145	XL1146	XL1147	XL1148	XL1149	XL1150	XL1151	XL1152	XL1153	XL1154	XL1155	XL1156	XL1157	XL1158	XL1159	XL1160	XL1161	XL1162	XL1163	XL1164	XL1165	XL1166	XL1167	XL1168	XL1169	XL1170	XL1171	XL1172	XL1173	XL1174	XL1175	XL1176	XL1177	XL1178	XL1179	XL1180	XL1181	XL1182	XL1183	XL1184	XL1185	XL1186	XL1187	XL1188	XL1189	XL1190	XL1191	XL1192	XL1193	XL1194	XL1195	XL1196	XL1197	XL1198	XL1199	XL1200	XL1201	XL1202	XL1203	XL1204	XL1205	XL1206	XL1207	XL1208	XL1209	XL1210	XL1211	XL1212	XL1213	XL1214	XL1215	XL1216	XL1217	XL1218	XL1219	XL1220	XL1221	XL1222	XL1223	XL1224	XL1225	XL1226	XL1227	XL1228	XL1229	XL1230	XL1231	XL1232	XL1233	XL1234	XL1235	XL1236	XL1237	XL1238	XL1239	XL1240	XL1241	XL1242	XL1243	XL1244	XL1245	XL1246	XL1247	XL1248	XL1249	XL1250	XL1251	XL1252	XL1253	XL1254	XL1255	XL1256	XL1257	XL1258	XL1259	XL1260	XL1261	XL1262	XL1263	XL1264	XL1265	XL1266	XL1267	XL1268	XL1269	XL1270	XL1271	XL1272	XL1273	XL1274	XL1275	XL1276	XL1277	XL1278	XL1279	XL1280	XL1281	XL1282	XL1283	XL1284	XL1285	XL1286	XL1287	XL1288	XL1289	XL1290	XL1291	XL1292	XL1293	XL1294	XL1295	XL1296	XL1297	XL1298	XL1299	XL1300	XL1301	XL1302	XL1303	XL1304	XL1305	XL1306	XL1307	XL1308	
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Watering Model - W-II

Watering Provision to CA Plantation

1st Year Watering				
1	Watering expenditure on Direct Water Expenditure etc. for watering Water 11 x 1000			11,000
2	Watering 1000 Plants (Water 11 x 1000) = 11,000			11,000
3	Watering 1000 Plants (Water 11 x 1000) = 11,000			11,000
			Total	33,000
2nd Year Watering				
1	Watering expenditure on Direct Water Expenditure etc. for watering Water 11 x 1000			11,000
2	Watering 1000 Plants (Water 11 x 1000) = 11,000			11,000
3	Watering 1000 Plants (Water 11 x 1000) = 11,000			11,000
			Total	33,000
3rd Year Watering				
1	Watering expenditure on Direct Water Expenditure etc. for watering Water 11 x 1000			11,000
2	Watering 1000 Plants (Water 11 x 1000) = 11,000			11,000
3	Watering 1000 Plants (Water 11 x 1000) = 11,000			11,000
			Total	33,000
4th Year Watering				
1	Watering expenditure on Direct Water Expenditure etc. for watering Water 11 x 1000			11,000
2	Watering 1000 Plants (Water 11 x 1000) = 11,000			11,000
3	Watering 1000 Plants (Water 11 x 1000) = 11,000			11,000
			Total	33,000
5th Year Watering				
1	Watering expenditure on Direct Water Expenditure etc. for watering Water 11 x 1000			11,000
2	Watering 1000 Plants (Water 11 x 1000) = 11,000			11,000
3	Watering 1000 Plants (Water 11 x 1000) = 11,000			11,000
			Total	33,000
Grand Total				
1	Watering expenditure on Direct Water Expenditure etc. for watering Water 11 x 1000			11,000
2	Watering 1000 Plants (Water 11 x 1000) = 11,000			11,000
3	Watering 1000 Plants (Water 11 x 1000) = 11,000			11,000
4	Watering 1000 Plants (Water 11 x 1000) = 11,000			11,000
5	Watering 1000 Plants (Water 11 x 1000) = 11,000			11,000
			Total	33,000
Summary				
Sl. No.	Year	No. plants	Watering cost @ Rs. 111/1000	Total cost (Rs.)
1	1991-92	1000	111,000	11,10,000
2	1992-93	1000	111,000	11,10,000
3	1993-94	1000	111,000	11,10,000
4	1994-95	1000	111,000	11,10,000
5	1995-96	1000	111,000	11,10,000
6	1996-97	1000	111,000	11,10,000
	Total	6000	666,000	66,60,000


 M. S. Chandra Shekhar & Co. (P) Ltd.

Matrix for Watering Model -W-II (Diesel Pumpset Fitted with Borewell) per Ha

Matrix for Watering Model -W-II (Diesel Pumpset Fitted with Borewell) per Ha

Sl. No.	Component particular	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Total Cost
Per Hectare																						
1	3000-22	10000	14000	14000	14000	14000	14000	14000	14000	14000	14000	14000	14000	14000	14000	14000	14000	14000	14000	14000	14000	478200
2	1000-22																					100000
3	1000-22																					100000
4	1000-22																					100000
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AKCOT (Former Division B, NO, FC, AC)


TOTAL COST OF CA SCHEME (AS PER BASE COST NORM)

S. No.	Item of Work	In Rupees
1	Base Norm (Year 2023-2024)	1,50,051.00
2	Soil Moisture Conservation (SMC)(2023-2024)	39,284.00
3	Fencing Bamboo Twigs & Thorns (2023-2024)	1,15,725.00
4	Watering Diesel Pump set fitted with bore well (2023-2024)	5,27,321.00
5	Sub-Total	8,32,381.00
6	Total Plantation cost over 100.00 Ha (Rs. 8,32,381.00 X 100.00 Ha)	8,32,38,100.00 OR 8,32,38,500.00

(Rupees Eight crore Thirty Two lakh Thirty Eight thousand five hundred) only

A. PROVISION OF FUNDS AND FUND UTILIZATION


Rs. 8,32,38,500.00/- (Rupees Eight crore Thirty Two lakh Thirty Eight thousand five hundred) only shall be deposited by the User Agency M/s OPTCL, Berhampur 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, Kalahandi North Forest Division on allotment by the Principal Chief Conservator of Forests, Odisha, Bhubaneswar.


Divisional Forest Officer,
Kalahandi North Forest Division

CHAPTER- VII

DETAILS OF PROPOSED MONITORING MECHANISM

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


Divisional Forest Officer,
Kalahandi North Forest Division

CERTIFICATE ON DSS ANALYSIS FOR CA / ACA / PCA

This is to certify that DSS Analysis of Land identified for CA/ ACA/ PCA over 100 ha. of degraded forest land in Bazargarh RF of Kalahandi North Division in lieu of diversion of forest land for 220 KV DC Transmission line from existing 220/132 KV Grid Sub Station at Kesinga to proposed 220/132/33 KV Grid Sub Station Baliguda and subsequent ground truthing have been done. The Outcome is as mentioned below:

Sl. No	Name of the Range	Name of the Forest Block (RF/PRE/PE/DPE/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	Moderate to Dense Forest	Open Forest	Non-Forest	Serub	Waste	Total	Open Forest	Non-Forest	Serub	Total		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	KESINGA	Bazargarh RF	100	0	0	37	57	8	0	102	37	55	8	100	ANR 500 Plant/ Ha	


Divisional Forest Officer
Kalahandi North Division.
Kalahandi North Division

**SCHEME FOR COMPENSATORY
AFFORESTATION OVER AN AREA OF 25.00 HA
DEGRADED FOREST LAND IDENTIFIED IN
HATIMUNDA (THUAPADAR GUNDI DPF)
UNDER BHAWANIPATNA FOREST RANGE OF
KALAHANDI NORTH FOREST DIVISION**

AGAINST

**PROPOSED DIVERSION OF 136.966 HA OF
FOREST LAND FOR CONSTRUCTION OF
CONSTRUCTION OF 220 KV DC
TRANSMISSION LINE FROM EXISTING
220/132KV GRID SUB-STATION AT KESINGA,
KALAHANDI DISTRICT TO PROPOSED
220/132/33 KV GRID SUB-STATION AT
SIRTIGURA UNDER K. NUAGAON TAHASIL
IN KANDHAMAL DISTRICT, ODISHA.**

BY

**ODISHA POWER TRANSMISSION
CORPORATION LIMITED
BERHAMPUR**

ELEMENTS OF THE SCHEME FOR COMPENSATORY AFFORESTATION

CHAPTER	PARTICULARS	PAGE NUMBER
I	BRIEF NOTE ON THE PROPOSED FOREST DIVERSION PROPOSAL	03-04
II	DETAILS OF LAND IDENTIFIED FOR COMPENSATORY AFFORESTATION	05-05
III	DELINEATION OF PROPOSED AREA ON SUITABLE MAP	06-06
IV	AGENCY RESPONSIBLE FOR COMPENSATORY AFFORESTATION	06-06
V	DETAILS OF WORK SCHEDULE PROPOSED FOR COMPENSATORY AFFORESTATION	07-08
VI	NURSERY COST NORM FOR RAISING OF 1000 (18 MONTHS) SEEDLINGS WAGE RATE @ 311 PERDAY	09-10
	BASE COST NORMS FOR COMPENSATORY AFFORESTATION THROUGH AIDED NATURAL REGENERATION (ANR) @ 500 SEEDLINGS / HA. WAGE RATE RS. 311/- PER MANDAY & MATRIX FOR ANR-500 PLANTS / HA	11-17
	COST NORMS FOR CREATION OF COMPENSATORY AFFORESTATION WITH STABILIZATION OF SOIL MOISTURE CONSERVATION (SMC) & MATRIX FOR (SMC)	18-19
	FENCING MODEL-F-II FENCING FOR COMPENSATORY PLANTATION RAISED OUTSIDE THE FOREST AREAS USING ANGLE IRON & CHAIN LINK WIRE MESH (250 RMT / HA) & MATRIX FOR FENCING MODEL -F-II (IRON ANGLE WITH CHAINLINK WIRE MESH)	20-21
	WATERING MODEL - W-II WATERING PROVISION TO CA PLANTATION & MATRIX FOR WATERING MODEL -W-II (DIESEL PUMPSET FITTED WITH BOREWELL) PER HA	22-23
	TOTAL COST OF PROJECT	24-24
VII	DETAILS OF PROPOSED MONITORING MECHANISM	25-25

CHAPTER-I

BRIEF NOTE ON THE PROPOSED FOREST DIVERSION PROPOSAL.

"Odisha Power Transmission Corporation Limited" (A Government of Odisha undertaking), having its registered office at Janapath, Bhubaneswar, Dist: Khurda, Odisha is primarily entrusted to construct, successful operation and maintenance of EHT Transmission lines and Grid sub-stations with a mission to facilitate effective transfer of power, to improve voltage profile, to minimize interruption power supply, to enhance security/ reliability of power system, for strengthening of power system and to avail alternate power supply within and across the districts through villages of the Odisha state.

Odisha predominantly being an agricultural state and one of rich in mineral resources, expansion in the lift irrigation system and of different industries became essential. The power system of the state has some low voltage pockets in certain remote zones fed as tail end, causing high system loss. Therefore, it is proposed to improve in the system by way of installation new sub-stations in the transmission sector of the state.

The proposed Baliguda 220/33KV grid sub-station can be connected to the system by drawing 102.037 KM of 220KV DC line from existing 220/132 KV Grid Sub-Station at Kesinga for system strengthening purpose. It is proposed to install 2X40MVA, 220/33KV transformers at under construction 220/132/33 KV Grid Sub-Station at Sirtiguda under K.NuagaonTahasil, Kandhamal district.

In order to eradicate low voltage problem in the southern parts of the State, it is felt essential to go for installation of a new 2X40 MVA, 220/33 KV Grid sub-station at Baliguda. This will help in minimizing power interruption, improvement in voltage profile and to meet the future load demand in this area besides minimizing losses in the existing system.

Baliguda is one of the strategic towns in the district of Kandhamal. It is situated at the most backward area. The area adjoining to this strategic town is one of the maoist affected area. The habitants are mostly of Adivasi communities & especially the Kondhs. Yet there is no electricity access for a majority of its rural & tribal habitats. The surrounding area is extremely fertile and rich in agricultural products like paddy, oilseeds and vegetables. This will also improve the Socio-Economic condition of the inhabitants. The consumers under rural electrification schemes like Rajiv Gandhi GrameenVidyut, Yojna and Biju Gram Jyoti are likely to be benefited by the proposed project. The implementation of the project is required for eradication of low voltage profile.

Presently Baliguda area is drawing power at 33 KV from 132/33 KV Grid S/S at Phulbani on 33 KV Nuagaon feeder with a load of around 10MW. The present length of 33 KV line is around 80 KMs from existing 132/33 KV Grid S/S at Phulbani.

The land identified for Grid Sub-Station is around 6 KMs from NuagaonChhak which is around 25 KMs from Baliguda town. The location of the Grid S/S is so placed that this Grid S/S will be the central located between Baliguda, Daringbari and Nuagaon. Commissioning of proposed 220/33 KV Grid Sub-Station at Baliguda will ensure steady and reliable power supply and eradicate low voltage problem not only at Baliguda but also at Nuagaon, Daringbari, Turnudibandha and Phiringia area. After construction of the Grid S/S the loading area of Udayagiri and Raikia will also be considerably reduced, which is around 30 kms from Baliguda town. The present peak loading in Phulbani Grid S/S is around 29MW. The proposed Grid S/S at Baliguda can reduce the loading at Phulbani by 10MW.

In the present proposal, for construction of 220KV DC transmission line from existing 220/132 KV Grid Sub-Station at Kesinga (Latitude: 20°10'28.29"N & Longitude: 83°13'08.72"E) under KesingaTahasil, Kalahandi District along with its associated transmission line of 102.037 KM (approx) to 220/132/33 KV Grid Sub-Station at Sirttigoda in K. NuagaonTahasil (Latitude: 20°05'04.57"N & Longitude: 84°00'10.37"E) Kandhamal District. In order to achieve stability and to cater qualitative power in the transmission system of the State as well as to meet the increasing load demand. This line shall passing through Kesinga, Madanpur Rampur and NarlaTahasils of Kalahandi District & Tumudibandha, Baliguda&NuagaonTahasils of Kandhamal District.

The main thrust and emphasis is laid on the following:

1. Improvement of voltage profile.
2. To minimize interruption of power supply to consumers.
3. Enhance security / reliability of power system.
4. Strengthening of transmission system.
5. Availability of alternate power supply.

This system shall also fulfill the requirement of additional power to these areas. Therefore, the power transmitted through this line will boost the small scale industries and agricultural growth of the area.

Therefore, this proposal is being submitted for diversion of forest land of 136.966 Ha (94.013 Ha in Baliguda Forest Division and 42.953 Ha in Kalahandi North Forest Division)for Construction of 220 KV DC Transmission line from existing 220/132KV Grid Sub-station at Kesinga, Kalahandi District to proposed 220/132/33 KV Grid Sub-station at Sirttigura under K. NuagaonTahasil in Kandhamal District.

Degraded Forest land over 25.00 Ha has been identified and allotted in Hatimunda(ThuapadarGundi DPF) under BhawanipatnaForest Range of Kalahandi North Forest Division, in favour of M/s Odisha Power Transmission Corporation Limited, Berhampur, vide letter No. 6413/4F-Misc.-2022 dated, 13th October 2022 the Divisional Forest Officer, Kalahandi North Forest Division for raising Compensatory Afforestation. The Degraded Forest Land over 25.00 Ha has been considered for plantation under ANR model @500 seedlings / Ha has been prepared to this effect.

The present scheme aims at preparation of a site-specific Compensatory Afforestation scheme over 25.00 Ha of degraded forest land identified in Hatimunda(ThuapadarGundi DPF)under Bhawanipatna Forest Range of Kalahandi North Forest Division at the prevailing per MD onetime cost norm approved by PCCF & HOFF, Odisha vide his Office Order No. 1109/9F-Misc-387/2021, dated 8th November 2021 with a maintenance period of ten years for raising Compensatory Afforestation ANR with gap plantation.

CHAPTER- II

DETAILS OF LAND IDENTIFIED FOR COMPENSATORY AFFORESTATION

IDENTIFICATION OF DEGRADED FOREST LAND

II(1)- Details of identified Degraded Forest land-

The identified Degraded Forest land for Compensatory Afforestation is situated in Hatimunda(ThuapadarGundi DPF)under Bhawanipatna Forest Range of Kalahandi North Forest Division and Kalahandi District. This Forest Block is allotted to Improvement working circle in 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 Sal in SOI Topo Sheet No. E44F5. The vegetation consists of Sal and its scattered associates like Piasal, Asana, Sisoo, Kuruma, Karada, Dhaura, Sidha, Harida, Bahada and Ainla.

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.

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

The identified site in Hatimunda(ThuapadarGundi DPF)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 ANR with Gap model @500 seedling per 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. Therefore, the CA scheme is envisaged to be executed with involvement of BaziapadaVSS.

CHAPTER-III

DELINEATION OF PROPOSED AREA ON SUITABLE MAP

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

The area has been demarcated through DGPS survey and DGPS survey data showing latitude and longitude of each point and their chainage with bearing 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 obtained are depicted in the Annexure- ____.

Decision Support System of degraded forest land identified in HatimundaThuapadarGundi DPF under BhawanipatnaRange

Sl. No.	Name of the Site	Area identified for Plantation (in Ha)	In Sq. Km	
			Non- Forest	Open Forest
1	Hatimunda(ThuapadarGundi DPF)	25.00	0.05	0.19

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, Kalahundi NorthForest 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 site specific treatment of the identified site. Choice of species is based on the geo-morphology of the site, soil-texture, structure, fertility and depth, proneness of the site to water logging etc. Specific treatment of the site in terms of soil and moisture conservation intervention will be depicted in the treatment map. A treatment map will invariably be prepared for Species to be planted and treatments to be applied to the different patches shown in the treatment map and planting plan. This plan will be followed when actual planting is carried out.

Species to be planted: -

1. *Stryziumcumini*(Jamu)
2. *Adina cardifolia*(Kuruma)
3. *Anogeissuslatifolia*(Dhaura)
4. *Albizialebeck*(Siris)
5. *Dalbergiasissoo*(Sissoo)
6. *Azadirrachtaindica*(Neem)
7. *Gmelinaarhorea* (Gambar)
8. *Terminaliabelerica*(Bahada)
9. *Terminaliachehula*(Harida)
10. *Pongamiapinnata* (Karanja)
11. *Emblicaofficinalis* (Amla)

B.PRE-PLANTING OPERATION

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

Nursery will be raised @550 18 months old seedlings per 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, Bhawanipatna Range) with DGPS coordinates, Pillar No. and distance between pillars inscribed in it. A DGPS map in the scale of 1:3960 has been prepared along with DGPS co-ordinates, 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 45cm X45cm X45 cm. will be dug @500 per ha in the available gaps preferably 2 months before or at least a month before planting of seedlings.

C. PLANTING OPERATION

Planting of 18 months old 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, N.P.K. and Urea will be applied in two split doses one in August and the other in September.

D(4)-SOIL MOISTURE CONSERVATION MEASURES

Soil Moisture Conservation measure structures to be carried like Staggered Trench, Percolation Pit, Contour trench, Graded earthen bund, LBCD, Wire mesh LBCD, Sub surface Dyke and Water Harvesting Structure (WHS) as per the slope & site requirement on LS.

D(5)-PROTECTION AGAINST FIRE AND BIOTIC INTERFERENCE

It is proposed to protect the CA plantation from grazing by domestic animals using Bamboo Twings &Thorns. The total length of such fencing comes to 5.073Km (5073M). 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 Baziapada VSS.

	Frequency of Maintenance	Material Requirement	Labour Cost (\$/hr)	Material Cost (\$/hr)	Labour Cost (\$/hr)
1. Top Dressing (Top Dressing) - 1000 sq. ft.	Annually	0	1000	0	1000
2. Top Dressing (Top Dressing) - 1000 sq. ft.	Annually	0	1000	0	1000
3. Top Dressing (Top Dressing) - 1000 sq. ft.	Annually	0	1000	0	1000
Total		0	3000	0	3000
2nd Year Maintenance					
1. Transportation of Top Dressing from Supplier to location (1000 sq. ft. of Top Dressing) - 1000 sq. ft.	10	0.0	100	100.0	100.0
2. Top Dressing (Top Dressing) - 1000 sq. ft.	10	0.0	100.0	0	100.0
3. Cost of Top Dressing & Top Dressing (1000 sq. ft. of Top Dressing) - 1000 sq. ft.	1000/1000	0	0	1000.0	1000.0
4. Weeding (Complete weeding) - Weeding & Soil working (1000 sq. ft. of Top Dressing) - 1000 sq. ft.	Sup/1000	0	2400	0	2400
5. Fertilizer (Complete weeding) - Weeding & Soil working (1000 sq. ft. of Top Dressing) - 1000 sq. ft.	1000/1000	0	0	0	0
6. Watch & Weed including weeding as per requirement	Apr/May	10	3732	0	3732
Total		10.0	2640	1000.0	3732
3rd Year Maintenance					
1. Cost of Fertilizer (1000 sq. ft. of Top Dressing) - 1000 sq. ft.	1000/1000	0	0	1000.0	1000.0
2. Weeding (Complete weeding) - Weeding & Soil working (1000 sq. ft. of Top Dressing) - 1000 sq. ft.	Sup/1000	0	2400	0	2400
3. Fertilizer (Complete weeding) - Weeding & Soil working (1000 sq. ft. of Top Dressing) - 1000 sq. ft.	1000/1000	0	0	0	0
4. Watch & Weed including weeding as per requirement	Apr/May	10	3732	0	3732
Total		10.0	2400	1000.0	3732
4th Year Maintenance					
1. Fertilizer (Complete weeding) - Weeding & Soil working (1000 sq. ft. of Top Dressing) - 1000 sq. ft.	1000/1000	0	0	0	0
2. Watch & Weed including weeding as per requirement	Apr/May	10	3732	0	3732
Total		10.0	3732	0	3732
5th Year Maintenance					
1. Fertilizer (Complete weeding) - Weeding & Soil working (1000 sq. ft. of Top Dressing) - 1000 sq. ft.	1000/1000	0	0	0	0
2. Watch & Weed including weeding as per requirement	Apr/May	10	3732	0	3732
Total		10.0	3732	0	3732
6th Year Maintenance					
1. Fertilizer (Complete weeding) - Weeding & Soil working (1000 sq. ft. of Top Dressing) - 1000 sq. ft.	1000/1000	0	0	0	0
2. Watch & Weed including weeding as per requirement	Apr/May	10	3732	0	3732
Total		10.0	3732	0	3732
7th Year Maintenance					
1. Fertilizer (Complete weeding) - Weeding & Soil working (1000 sq. ft. of Top Dressing) - 1000 sq. ft.	1000/1000	0	0	0	0
2. Watch & Weed including weeding as per requirement	Apr/May	10	3732	0	3732
Total		10.0	3732	0	3732
8th Year Maintenance					
1. Fertilizer (Complete weeding) - Weeding & Soil working (1000 sq. ft. of Top Dressing) - 1000 sq. ft.	1000/1000	0	0	0	0
2. Watch & Weed including weeding as per requirement	Apr/May	10	3732	0	3732
Total		10.0	3732	0	3732
9th Year Maintenance					
1. Fertilizer (Complete weeding) - Weeding & Soil working (1000 sq. ft. of Top Dressing) - 1000 sq. ft.	1000/1000	0	0	0	0
2. Watch & Weed including weeding as per requirement	Apr/May	10	3732	0	3732
Total		10.0	3732	0	3732
10th Year Maintenance					
1. Fertilizer (Complete weeding) - Weeding & Soil working (1000 sq. ft. of Top Dressing) - 1000 sq. ft.	1000/1000	0	0	0	0
2. Watch & Weed including weeding as per requirement	Apr/May	10	3732	0	3732
Total		10.0	3732	0	3732
Year wise Abstract of Cost (showing seedling cost separately)					

Sl. No.	Particulars	2019-20		2020-21		2021-22	
		Estimate	Actual	Estimate	Actual	Estimate	Actual
1	2	3	4	5	6	7	8
1	1st year	41	12700.00	1000	1000.00	1000	1000.00
2	2nd year	41	12700.00	1000	1000.00	1000	1000.00
3	3rd year	41	12700.00	1000	1000.00	1000	1000.00
4	4th year	41	12700.00	1000	1000.00	1000	1000.00
5	5th year	41	12700.00	1000	1000.00	1000	1000.00
6	6th year	41	12700.00	1000	1000.00	1000	1000.00
7	7th year	41	12700.00	1000	1000.00	1000	1000.00
8	8th year	41	12700.00	1000	1000.00	1000	1000.00
9	9th year	41	12700.00	1000	1000.00	1000	1000.00
10	10th year	41	12700.00	1000	1000.00	1000	1000.00
11	11th year	41	12700.00	1000	1000.00	1000	1000.00
12	12th year	41	12700.00	1000	1000.00	1000	1000.00
13	13th year	41	12700.00	1000	1000.00	1000	1000.00
14	14th year	41	12700.00	1000	1000.00	1000	1000.00
	Total	41	12700.00	1000	1000.00	1000	1000.00

Note:

1. Payment must be made to the contractor for all services available under the scope of provision.
2. All the expenditure for the services must be included in the provision.
3. The expenditure for the services must be included in the provision.
4. The expenditure for the services must be included in the provision.
5. The expenditure for the services must be included in the provision.
6. The expenditure for the services must be included in the provision.

APCET (Project Director & NCL, IC, AUC)

Matrix for (SMC)

[illegible]

ADPCT (Dumont Chaperon & Co., Inc. NY)

Fencing for Compensatory Plantation raised inside the Forest Areas using Bamboo
Twings& Thorns

Armed Forces Health Surveillance Center
 1215 Jefferson Davis Highway
 Alexandria, VA 22304-6150
 703/696-6111
 www.afhsr.org

Moisture Conservation (SMC)

Sl. No.	Particulars	Estimated cost	Budgeted cost
1	Total		
2	Total		
3	Total		
4	Total		
5	Total		
6	Total		
7	Total		
8	Total		
9	Total		
10	Total		
11	Total		
12	Total		
13	Total		
14	Total		
15	Total		
16	Total		
17	Total		
18	Total		
19	Total		
20	Total		
21	Total		
22	Total		
23	Total		
24	Total		
25	Total		
26	Total		
27	Total		
28	Total		
29	Total		
30	Total		

Sl. No	Year	No persons days	Labour cost @ Rs. 100/- per day	Material cost (Rs.)	Total cost (Rs.)
1	2016 year	0.0	0.00	0.00	0.00
2	2017 year	0.0	0.00	28,233.00	28,233.00
2	2018 year	0.0	0.00	3,802.00	3,802.00
3	2019 year	0.0	0.00	3,897.00	3,897.00
4	2020 year	0.0	0.00	3,872.00	3,872.00
5	2021 year	0.0	0.00	3,892.00	3,892.00
	Total	0.00	0.00	37,896.00	37,896.00

Different types of VMC structures may be taken up as per the scope & requirements of the simulation site out of the design & specification of different facilities across the site elements.


A. C. C. Forest Division & NII, VC, A/1

Matrix for ANR-500 Plants / Ha

Matrix for Model A (ANR-500 Plant/ Ha)

Plant Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	1218	1219	1220	12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Matrix for Model-F-I Fencing (Bamboo Twing)

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

Line Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	1218	1219	1220	12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Watering Provision to CA Plantation

APPLIED POLYMER SYMPOSIA NO. 12, 1968

TOTAL COST OF CA SCHEME (AS PER BASE COST NORM)

S. No.	Item of Work	In Rupees
1	Base Norm (Year 2023-2024)	1, 50,051.00
2	Soil Moisture Conservation (SMC)(2023-2024)	39,284.00
3	Fencing Bamboo Twigs & Thorns (2023-2024)	1,10,214.00
4	Watering Diesel Pump set fitted with bore well (2023-2024)	5, 27,321.00
5	Sub-Total	8,26, 870.00
6	Total Plantation cost over 25.00 Ha (Rs. 8, 26, 870.00 X 25.00 Ha)	2, 06, 71, 750.00 OR 2, 06, 71, 800.00

(Rupees Two crore six lakh Seventy one thousand Eight hundred) only

A. PROVISION OF FUNDS AND FUND UTILIZATION

Rs. 2, 06, 71, 800.00/- (Rupees Two crore six lakh Seventy one thousand Eight hundred) only shall be deposited by the User Agency M/s OPTCL, Berhampur 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, Kalahandi North Forest Division on allotment by the Principal Chief Conservator of Forests, Odisha, Bhubaneswar.


Divisional Forest Officer,
Kalahandi North Forest Division
Divisional Forest Officer
Kalahandi North Division
Odisha

CHAPTER- VII

DETAILS OF PROPOSED MONITORING MECHANISM

Compensatory Afforestation will be taken up in the identified site by the Range Officer, Bhawanipatna Range of Kalahandi North Division. The Range Forest Officer, Bhawanipatna 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, Kalahandi North Forest Division. DGPS co-ordinates along with other required informations of Compensatory Afforestation will be uploaded in the e-Greenwatch Portal of NIC, MoEF, Govt. of India for the purpose of online monitoring. Annual progress of plantation involving growth of planted seedlings, survival percentage etc. will be monitored and recorded in the plantation journal by the field staffs of Bhawanipatna and reported to the Divisional Forest Officer for necessary action. The same thing will be reported to the Regional Chief Conservator of Forests, Bhawanipatna Circle and Chief Conservator of Forests (PP&A), O/o the Principal Chief Conservator of Forests, Odisha, Bhubaneswar and necessary corrective measures will be followed if required so.


Divisional Forest Officer,
Kalahandi North Forest Division
Kalahandi North Division

CERTIFICATE ON DSS ANALYSIS FOR CA / ACA / PCA

This is to certify that DSS Analysis of Land identified for CA/ ACA/ PCA over 25 ha. of degraded forest land in Thuapadar Gundi DPF of Kalahandi North Division in lieu of diversion of forest land for 220 KV DC Transmission line from existing 220/132 KV Grid Sub Station at Kesinga to proposed 220/132/33 KV Grid Sub Station Baliguda and subsequent ground truthing have been done. The Outcome is as mentioned below:

Sl. No	Name of the Range	Name of the Forest Block (RE/PRE/PP/DPF/Revenue Forest)	Area identified for C/A/ ACA/ PCA (In Ha.)	Classification of identified land (in Ha)							Area suitable for plantation (in Ha)					Plantation on Model (AR/ ANR)	Remarks
				Very Dense Forest	Moderate to Dense Forest	Open Forest	Non-Forest	Sericulture	Waste	Total	Open Forest	Non-Forest	Sericulture	Total			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
1	Bhawani patna	Thupadar Gundi DPF	25	0	0	0	4	22	0	26	0	4	21	25	ANR @ 500 Plant/ Ha		


Divisional Forest Officer
Kalahandi North Division,
 Kalahandi North Division

**SCHEME FOR COMPENSATORY
AFFORESTATION OVER AN AREA OF 25.00 HA
DEGRADED FOREST LAND IDENTIFIED IN
PATTOLA (SINANG RF) UNDER
BHAWANIPATNA FOREST RANGE OF
KALAHANDI NORTH FOREST DIVISION
AGAINST
PROPOSED DIVERSION OF 136.966 HA OF
FOREST LAND FOR CONSTRUCTION OF
CONSTRUCTION OF 220 KV DC
TRANSMISSION LINE FROM EXISTING
220/132KV GRID SUB-STATION AT KESINGA,
KALAHANDI DISTRICT TO PROPOSED
220/132/33 KV GRID SUB-STATION AT
SIRTTIGURA UNDER K. NUAGAON TAHASIL
IN KANDHAMAL DISTRICT, ODISHA.**

**BY
ODISHA POWER TRANSMISSION
CORPORATION LIMITED
BERHAMPUR**

ELEMENTS OF THE SCHEME FOR COMPENSATORY AFFORESTATION

CHAPTER	PARTICULARS	PAGE NUMBER
I	BRIEF NOTE ON THE PROPOSED FOREST DIVERSION PROPOSAL	03-04
II	DETAILS OF LAND IDENTIFIED FOR COMPENSATORY AFFORESTATION	05-05
III	DELINEATION OF PROPOSED AREA ON SUITABLE MAP	06-06
IV	AGENCY RESPONSIBLE FOR COMPENSATORY AFFORESTATION	06-06
V	DETAILS OF WORK SCHEDULE PROPOSED FOR COMPENSATORY AFFORESTATION	07-08
VI	NURSERY COST NORM FOR RAISING OF 1000 (18 MONTHS) SEEDLINGS WAGE RATE @ 311 PERDAY	09-10
	BASE COST NORMS FOR COMPENSATORY AFFORESTATION THROUGH AIDED NATURAL REGENERATION (ANR) @ 500 SEEDLINGS / HA. WAGE RATE RS. 311/- PER MANDAY & MATRIX FOR ANR-500 PLANTS / HA	11-17
	COST NORMS FOR CREATION OF COMPENSATORY AFFORESTATION WITH STABILIZATION OF SOIL MOISTURE CONSERVATION (SMC) & MATRIX FOR (SMC)	18-19
	FENCING MODEL-F-II FENCING FOR COMPENSATORY PLANTATION RAISED OUTSIDE THE FOREST AREAS USING ANGLE IRON & CHAIN LINK WIRE MESH (250 RMT / HA) & MATRIX FOR FENCING MODEL -F-II (IRON ANGLE WITH CHAINLINK WIRE MESH)	20-21
	WATERING MODEL - W-II WATERING PROVISION TO CA PLANTATION & MATRIX FOR WATERING MODEL -W-II (DIESEL PUMPSET FITTED WITH BOREWELL) PER HA	22-23
	TOTAL COST OF PROJECT	24-24
VII	DETAILS OF PROPOSED MONITORING MECHANISM	25-25

CHAPTER-I

BRIEF NOTE ON THE PROPOSED FOREST DIVERSION PROPOSAL

"Odisha Power Transmission Corporation Limited" (A Government of Odisha undertaking), having its registered office at Janapath, Bhubaneswar, Dist: Khurda, Odisha is primarily entrusted to construct, successful operation and maintenance of EHT Transmission lines and Grid sub-stations with a mission to facilitate effective transfer of power, to improve voltage profile, to minimize interruption power supply, to enhance security/ reliability of power system, for strengthening of power system and to avail alternate power supply within and across the districts through villages of the Odisha state.

Odisha predominantly being an agricultural state and one of rich in mineral resources, expansion in the lift irrigation system and of different industries became essential. The power system of the state has some low voltage pockets in certain remote zones fed as tail end, causing high system loss. Therefore, it is proposed to improve in the system by way of installation new sub-stations in the transmission sector of the state.

The proposed Baliguda 220/33KV grid sub-station can be connected to the system by drawing 102.037 KM of 220KV DC line from existing 220/132 KV Grid Sub-Station at Kesinga for system strengthening purpose. It is proposed to install 2X40MVA, 220/33KV transformers at under construction 220/132/33 KV Grid Sub-Station at Sirtiguda under K.NuagaonTahasil, Kandhamal district.

In order to eradicate low voltage problem in the southern parts of the State, it is felt essential to go for installation of a new 2X40 MVA, 220/33 KV Grid sub-station at Baliguda. This will help in minimizing power interruption, improvement in voltage profile and to meet the future load demand in this area besides minimizing losses in the existing system.

Baliguda is one of the strategic towns in the district of Kandhamal. It is situated at the most backward area. The area adjoining to this strategic town is one of the maoist affected area. The habitants are mostly of Adivasi communities & especially the Kondhs. Yet there is no electricity access for a majority of its rural & tribal habitats. The surrounding area is extremely fertile and rich in agricultural products like paddy, oilseeds and vegetables. This will also improve the Socio-Economic condition of the inhabitants. The consumers under rural electrification schemes like Rajiv Gandhi GrameenVidyut, Yojna and Biju Gram Jyoti are likely to be benefited by the proposed project. The implementation of the project is required for eradication of low voltage profile.

Presently Baliguda area is drawing power at 33 KV from 132/33 KV Grid S/S at Phulbani on 33 KV Nuagaon feeder with a load of around 10MW. The present length of 33 KV line is around 80 KMs from existing 132/33 KV Grid S/S at Phulbani.

The land identified for Grid Sub-Station is around 6 KMs from NuagaonChhak which is around 25 KMs from Baliguda town. The location of the Grid S/S is so placed that this Grid S/S will be the central located between Baliguda, Daringbari and Nuagaon. Commissioning of proposed 220/33 KV Grid Sub-Station at Baliguda will ensure steady and reliable power supply and eradicate low voltage problem not only at Baliguda but also at Nuagaon, Daringbari, Tumudibandha and Phiringia area. After construction of the Grid S/S the loading area of Udayagiri and Raikia will also be considerably reduced, which is around 30 kms from Baliguda town. The present peak loading in Phulbani Grid S/S is around 29MW. The proposed Grid S/S at Baliguda can reduce the loading at Phulbani by 10MW.

In the present proposal, for construction of 220KV DC transmission line from existing 220/132 KV Grid Sub-Station at Kesinga (Latitude: 20°10'28.29"N & Longitude: 83°13'08.72"E) under KesingaTahasil, Kalahandi District along with its associated transmission line of 102.037 KM (approx) to 220/132/33 KV Grid Sub-Station at Sirttiguda in K. NuagaonTahasil (Latitude: 20°05'04.57"N & Longitude: 84°00'10.37"E) Kandhamal District. In order to achieve stability and to cater qualitative power in the transmission system of the State as well as to meet the increasing load demand. This line shall passing through Kesinga, Madanpur Rampur and NariaTahasils of Kalahandi District & Tumudibandha, Baliguda&NuagaonTahasils of Kandhamal District.

The main thrust and emphasis is laid on the following:

1. Improvement of voltage profile.
2. To minimize interruption of power supply to consumers.
3. Enhance security / reliability of power system.
4. Strengthening of transmission system.
5. Availability of alternate power supply.

This system shall also fulfill the requirement of additional power to these areas. Therefore, the power transmitted through this line will boost the small scale industries and agricultural growth of the area.

Therefore, this proposal is being submitted for diversion of forest land of 136.966 Ha (94.013 Ha in Baliguda Forest Division and 42.953 Ha in Kalahandi North Forest Division)for Construction of 220 KV DC Transmission line from existing 220/132KV Grid Sub-station at Kesinga, Kalahandi District to proposed 220/132/33 KV Grid Sub-station at Sirttigura under K. NuagaonTahasil in Kandhamal District.

Degraded Forest land over 25.00 Ha has been identified and allotted in Pattola(Sinang RF) under BhawanipatnaForest Range of Kalahandi North Forest Division, in favour of M/s Odisha Power Transmission Corporation Limited, Berhampur, vide letter No. 6413/4F-Misc.-2022 dated. 13th October 2022 the Divisional Forest Officer, Kalahandi North Division for raising Compensatory Afforestation. The Degraded Forest Land over 25.00 Ha has been considered for plantation under ANR model @500 seedlings / Ha has been prepared to this effect.

The present scheme aims at preparation of a site-specific Compensatory Afforestation scheme over 25.00 Ha of degraded forest land identified in Pattola(Sinang RF)under Bhawanipatna Forest Range of Kalahandi North Forest Divisionat the prevailing per MD onetime cost norm approved by PCCF & HOFF, Odisha vide his Office Order No. 1109/9F-Misc-387/2021, dated 8th November 2021 with a maintenance period of ten years for raising Compensatory Afforestation ANR with gap plantation.

CHAPTER- II

DETAILS OF LAND IDENTIFIED FOR COMPENSATORY AFFORESTATION

IDENTIFICATION OF DEGRADED FOREST LAND

II(1)- Details of identified Degraded Forest land-

The identified Degraded Forest land for Compensatory Afforestation is situated in Pattola(Sinang RF)under Bhawanipatna Forest Range of Kalahandi North Forest Division and Kalahandi District. This Forest Block is allotted to Improvement working circle in 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 Sal in SOI Topo Sheet No. E44F1. The vegetation consists of Sal and its scattered associates like Piasal, Asana, Sisoo, Kuruma, Karada, Dhaura, Sidha, Harida, Bahada and Ainla.

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.

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

The identified site in Pattola(Sinang 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 ANR with Gap model @500 seedling per ha. The average maximum temperature is 40^o to 45^oC and minimum 5^o to 10^o 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. Therefore, the CA scheme is envisaged to be executed with involvement of Baziapada VSS.

CHAPTER-III

DELINEATION OF PROPOSED AREA ON SUITABLE MAP

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

The area has been demarcated through DGPS survey and DGPS survey data showing latitude and longitude of each point and their chainage with bearing 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 obtained are depicted in the **Annexure- ____**.

Decision Support System of degraded forest land identified in PattolaSinang RF under Bhawanipatna Range

Sl. No	Name of the Site	Area identified for Plantation (in Ha)	In Sq. Km	
			Non-Forest	Scrub
1	Pattola(Sinang RF)	25.00	0.15	0.10

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, Kalahandi North Forest 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 site specific treatment of the identified site. Choice of species is based on the geo-morphology of the site, soil-texture, structure, fertility and depth, proneness of the site to water logging etc. Specific treatment of the site in terms of soil and moisture conservation intervention will be depicted in the treatment map. A treatment map will invariably be prepared for Species to be planted and treatments to be applied to the different patches shown in the treatment map and planting plan. This plan will be followed when actual planting is carried out.

Species to be planted: -

1. *Syzygiumcumini*(Jamu)
2. *Adina cardifolia*(Kuruma)
3. *Anogeissuslatifolia*(Dhaura)
4. *Albizialebeck*(Siris)
5. *Dalbergiasissoo*(Sissoo)
6. *Azadirachtaindica*(Neem)
7. *Gmelinaarborea* (Gambar)
8. *Terminaliabelelica*(Bahada)
9. *Terminaliachebula*(Harida)
10. *Pongamiapinnata* (Karanja)
11. *Emblicaofficinalis* (Amla)

B.PRE-PLANTING OPERATION

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

Nursery will be raised @550 18 months old seedlings per 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, Bhawanipatna Range) with DGPS coordinates, Pillar No. and distance between pillars inscribed in it. A DGPS map in the scale of 1:3960 has been prepared along with DGPS coordinates, 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 45cm X45cm X45 cm. will be dug @500 per ha in the available gaps preferably 2 months before or at least a month before planting of seedlings.

C. PLANTING OPERATION

Planting of 18 months old 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, N.P.K. and Urea will be applied in two split doses one in August and the other in September.

D(4)-SOIL MOISTURE CONSERVATION MEASURES

Soil Moisture Conservation measure structures to be carried like Staggered Trench, Percolation Pit, Contour trench, Graded earthen bund, LBCD, Wire mesh LBCD, Sub-surface Dyke and Water Harvesting Structure (WHS) as per the slope & site requirement on L.S.

D(5)-PROTECTION AGAINST FIRE AND BIOTIC INTERFERENCE

It is proposed to protect the CA plantation from grazing by domestic animals using Bamboo Twigs &Thorns. The total length of such fencing comes to 5.073Km (5073M). 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 Baziapada VSS.

Nursery Cost Norm for raising of 1000 (18 months) seedlings

Wage rate @ 311 per Manday

ANNEXURE-3

ANNEXURE-1

Nursery Cost Norm for raising of 1000 (18 months) seedlings

Wage rate @ 311 per Manday

Preferable
Period of
Execution

Unit

Unit
Cost

No /
Qty

Labour
Cost

Material
Cost

Total
Cost


A. 1st Financial Year (Seedlings Cost for 3 Months)

1	Cost for Polythene (9" X 12" 200G) 800 nos./Kg. - 3.33 Rs/900.00/- per Kg. (including GST)	Nov-Dec	Kg	200	3.33	0	666	666
2	Procurement of raw & ready Polypropylene Mixture (Soil, Sand & CDM in ratio 2:1:1)							
	(i) Soil	Nov-Dec	Cu	10	22	0	220	220
	(ii) Sand	Nov-Dec	Cu	16	11	0	176	176
	(iii) CDM/ Vermi compost/ Bio-Fertilizers etc.	Nov-Dec	Cu	25	11	0	275	275
	(iv) Insecticide/ Bio-Pesticide	Nov-Dec	Kg	150	2	0	300	300
3	Preparation of Soil Mixture includes pulverisation, Straining & mixing the ingredients in proper ratio. (2:1:1)	Nov-Dec	MD	311	2	622	0	622
4	Filling of polythene bags & Setting in the bed	Nov-Dec	MD	311	3	933	0	933
5	Collection of Seed, Grading & Treatment	Dec	MD	311	2	622	0	622
6	Preparation of germination bed & sowing of seed.	Jan	MD	311	0.5	155.5	0	155.5
7	Pricking out the Seedlings from germination beds & transplanting in the Poly bags and overdrain sheds.	Jan	MD	311	2	622	300	1122
8	Watering (Jan to March)	Jan-Mar	MD	311	9	2799	0	2799
9	Maintenance of Nursery including fencing	Jan-Mar	MD	311	4	1244	500	1744
10	Contingencies (Water can, Buckets, Nursery shed, Electricity charges/ Diesel charges/ Maintenance of pump set/ Maintenance of Nursery, etc.)			0	0	0	460.5	460.5
TOTAL					22.5	6997.5	3124.5	10122.0

B. 2nd Financial Year (Shifting of Seedlings to larger Polythene bag to avoid root coiling & better growth) April-March

1	Watering for 3 months (April to June)	April-June	MD	311	9	2799	0.0	2799
2	Cost of Insecticides/ Bio-Pesticide	May-June	Kg/ Lt	0	0	0	400.0	400
3	Application of insecticides/ Bio-Pesticide	May-June	MD	311	1	311	0	311
4	Cost of Poly bag (12" X 10" X 300 gauge) 60 nos. - 17 Kg & Rs.200 per Kg. (including GST)	May-June	Kg	200	17	0	3536	3536

1

Sl. No.	Items of work	Probable Period of Execution	Unit	Min. Cost	Max. Qty	Labour Cost	Material Cost	Total Cost	
5	Procurement of raw & crude (Super Phosphate) (P.O. No. 114/115/116/117/118/119/120/121/122/123/124/125/126/127/128/129/130/131/132/133/134/135/136/137/138/139/140/141/142/143/144/145/146/147/148/149/150/151/152/153/154/155/156/157/158/159/160/161/162/163/164/165/166/167/168/169/170/171/172/173/174/175/176/177/178/179/180/181/182/183/184/185/186/187/188/189/190/191/192/193/194/195/196/197/198/199/200/201/202/203/204/205/206/207/208/209/210/211/212/213/214/215/216/217/218/219/220/221/222/223/224/225/226/227/228/229/230/231/232/233/234/235/236/237/238/239/240/241/242/243/244/245/246/247/248/249/250/251/252/253/254/255/256/257/258/259/260/261/262/263/264/265/266/267/268/269/270/271/272/273/274/275/276/277/278/279/280/281/282/283/284/285/286/287/288/289/290/291/292/293/294/295/296/297/298/299/300/301/302/303/304/305/306/307/308/309/310/311/312/313/314/315/316/317/318/319/320/321/322/323/324/325/326/327/328/329/330/331/332/333/334/335/336/337/338/339/340/341/342/343/344/345/346/347/348/349/350/351/352/353/354/355/356/357/358/359/360/361/362/363/364/365/366/367/368/369/370/371/372/373/374/375/376/377/378/379/380/381/382/383/384/385/386/387/388/389/390/391/392/393/394/395/396/397/398/399/400/401/402/403/404/405/406/407/408/409/410/411/412/413/414/415/416/417/418/419/420/421/422/423/424/425/426/427/428/429/430/431/432/433/434/435/436/437/438/439/440/441/442/443/444/445/446/447/448/449/450/451/452/453/454/455/456/457/458/459/460/461/462/463/464/465/466/467/468/469/470/471/472/473/474/475/476/477/478/479/480/481/482/483/484/485/486/487/488/489/490/491/492/493/494/495/496/497/498/499/500/501/502/503/504/505/506/507/508/509/510/511/512/513/514/515/516/517/518/519/520/521/522/523/524/525/526/527/528/529/530/531/532/533/534/535/536/537/538/539/540/541/542/543/544/545/546/547/548/549/550/551/552/553/554/555/556/557/558/559/560/561/562/563/564/565/566/567/568/569/570/571/572/573/574/575/576/577/578/579/580/581/582/583/584/585/586/587/588/589/590/591/592/593/594/595/596/597/598/599/600/601/602/603/604/605/606/607/608/609/610/611/612/613/614/615/616/617/618/619/620/621/622/623/624/625/626/627/628/629/630/631/632/633/634/635/636/637/638/639/640/641/642/643/644/645/646/647/648/649/650/651/652/653/654/655/656/657/658/659/660/661/662/663/664/665/666/667/668/669/670/671/672/673/674/675/676/677/678/679/680/681/682/683/684/685/686/687/688/689/690/691/692/693/694/695/696/697/698/699/700/701/702/703/704/705/706/707/708/709/710/711/712/713/714/715/716/717/718/719/720/721/722/723/724/725/726/727/728/729/730/731/732/733/734/735/736/737/738/739/740/741/742/743/744/745/746/747/748/749/750/751/752/753/754/755/756/757/758/759/760/761/762/763/764/765/766/767/768/769/770/771/772/773/774/775/776/777/778/779/780/781/782/783/784/785/786/787/788/789/790/791/792/793/794/795/796/797/798/799/800/801/802/803/804/805/806/807/808/809/810/811/812/813/814/815/816/817/818/819/820/821/822/823/824/825/826/827/828/829/830/831/832/833/834/835/836/837/838/839/840/841/842/843/844/845/846/847/848/849/850/851/852/853/854/855/856/857/858/859/860/861/862/863/864/865/866/867/868/869/870/871/872/873/874/875/876/877/878/879/880/881/882/883/884/885/886/887/888/889/890/891/892/893/894/895/896/897/898/899/900/901/902/903/904/905/906/907/908/909/910/911/912/913/914/915/916/917/918/919/920/921/922/923/924/925/926/927/928/929/930/931/932/933/934/935/936/937/938/939/940/941/942/943/944/945/946/947/948/949/950/951/952/953/954/955/956/957/958/959/960/961/962/963/964/965/966/967/968/969/970/971/972/973/974/975/976/977/978/979/980/981/982/983/984/985/986/987/988/989/990/991/992/993/994/995/996/997/998/999/1000)	Apr/May	CR	50	100	0	1000	1000	
	(ii) Lime	Apr/May	CR	16	10	0	800	800	
	(iii) GPM/Vermi compost/ Bio Fertilizers etc.	Apr/May	CR	25	50	0	1250	1250	
	(iv) Insecticides/ Bio-Pesticide	Apr/May	kg	150	5	0	450	450	
6	Preparation of potting mixture including pulverisation and straining	Oct-Nov	MD	311	8	1866	0	1866	
7	Filling of Polythene bags including repurting and setting	Oct-Nov	MD	321	25	1985	0	1985	
8	Watering	Dec- March	MD	311	19	5909	0	5909	
9	Sorting, Weeding, grading and re-setting over one year period	April-March	MD	311	15	6665	0	6665	
10	Contingencies (Water can, Buckets, Nursery shed, Electricity charges/ Diesel charges/ Maintenance of pump set/ Maintenance of Nursery, etc.)						400	400	
TOTAL						RS	26435	7936	34271
C. 3rd Financial Year (Maintenance upto Planting) April-June									
1	Watering for 3 months (April to June)	April-June	MD	311	12	2732	0	2732	
2	Weeding, Shifting and grading	April-June	MD	311	8	1244	0	1244	
3	Cost of Insecticides/ Bio-Pesticide					0	400	400	
4	Application of insecticides/ Bio-Pesticide		MD	211	2	311	0	311	
5	Contingencies						230	230	
TOTAL						17	5207	630	5917
ABSTRACT									
Item of work						Labour Cost	Material Cost	Total Cost	
A	1st Financial Year (Seedlings Cost for 3 Months)					4997.5	3124.1	10122	
B	2nd Financial Year (12 Months)					26435	7936	34271	
C	3rd Financial Year (3 Months)					5207	630	5917	
Total						30710.5	11500.1	50210	
Cost per 19 months old Seedlings= 50210/1000 = Rs 10.31/-									
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									
									
A.P.C.F. Forest Division & N.B. FC									

CHAPTER- VI

BASE COST NORM FOR COMPENSATORY AFFORESTATION THROUGH AIDED NATURAL REGENERATION (ANR) @ 500 SEEDLINGS/ HECTARE (18 months old seedling)

Wage Rate Rs.311/- PER MANDAY

Sl. No.	Item 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	622.00	0.00	622.00
2.	Preparation of Treatment Map (Digital Map)	Nov-Dec	1	311.00	100.00	411.00
3.	Site preparation	Nov-Dec	2	622.00	0.00	622.00
4.	Silvicultural operation 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	Feb-Mar	15	4665.00	0.00	4665.00
5.	Alignment and stacking for digging of pits	Feb-Mar	1	311.00	0.00	311.00
6.	Digging of pits (45 cm x 45 cm x 45 cm) in hard and gravelly soil	Feb-Mar	20	6220.00	0.00	6220.00
Sub Total =			41	12751.00	100.00	12851.00
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.	Jun-Jul	4	1244.00	2500.00	3744.00
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/- per Seedling. (550 nos.)	Jul-Aug	0	0	3300.00	3300.00
3.	Watering polythene bag seedlings at stacking site of plantation	Jul-Aug	1	311.00	0	311.00
4.	Conveyance of polythene bag 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 perfectly around the planted seedlings.	Jul-Aug	11	3421.00	0	3421.00
5.	Cost of Fertilizer & Insecticide a. NPK/Bio-fertilizer @ 50 gms/plant as basal dose = 25kg @ Rs.30/- per kg = Rs.750.00 b. Urea/Vermi compost /Mo Khata/any other fertilizer @ Rs.375.00 c. Insecticide/Bio-pesticide @ 5 gms/plant = 2.5kg @ Rs.150/- per kg = Rs.375.00	Jul-Aug	0	0	1500.00	1500.00
6.	Casualty Replacement@ 10% (50 nos.)	Jul-Aug	1.5	466.50	0	466.50
7.	1 st weeding & Manuring	Aug-Sept	5	1555.00	0	1555.00

8.	2 nd Weeding, Soil working (1mt. diameter around the plants) & Manuring	Oct-Nov	8	2488.00	0	2488.00
9.	Fire line Tracing & inspection path	Feb-Mar	3	933.00	0	933.00
10.	Watch & ward including watering as per requirement	Aug-Mar	8	2488.00	0	2488.00
Sub Total =			41.5	12906.50	7300.00	20206.50
2nd Year Maintenance						
1.	Transportation of 50 seedlings from Nursery to plantation site including loading, unloading & conveyance by Tractor @ Rs.6/- per seedling	Jul	0	0.00	300.00	300.00
2.	Casualty replacement	Jul	1.5	466.50	0.00	466.50
3.	<u>Cost of Fertilizer & Insecticide</u> a. Cost of Insecticide/Bio-pesticide (Thimet/Forate) @ 5 gms/plant = 0.25 kg @ Rs. 150/- per kg = Rs. 37.50/- b. Urea/NPK/Bio-fertilizer/Vermicompost/Mo Khata/any other fertilizer @ Rs.1400/-	Jul	0	0.00	1437.50	1437.50
4.	Weeding (Complete weeding), Manuring & Soil working, (1mt. diameter around the plants)	Sep-Oct	8	2488.00	0.00	2488.00
5.	Fire line tracing (2m. wide fire line over 400 m long) & inspection path	Feb-Mar	3	933.00	0.00	933.00
6.	Watch & Ward including watering as per requirement	Apr-Mar	12	3732.00	0.00	3732.00
Sub Total =			24.5	7619.50	1737.50	9357.00
3rd Year Maintenance						
1.	Cost of Fertilizer (Urea/NPK/Bio-fertilizer/Vermi compost/Mo Khata/any other fertilizer -Rs.1400/-	Sep-Oct	0	0.00	1400.00	1400.00
2.	Weeding (Complete weeding), Manuring & Soil working, (1mt. diameter around the plants)	Aug-Sep	8	2488.00	0.00	2488.00
3.	Fire line tracing (2m. wide fire line & inspection path	Feb-Mar	3	933.00	0.00	933.00
4.	Watch & ward including watering as per requirement	Apr-Mar	12	3732.00	0.00	3732.00
Sub Total =			23	7153.00	1400.00	8553.00
4th Year Maintenance						
1.	Fire line tracing (2m. wide fire line over 400 m length) & inspection path	Feb-Mar	3	933.00	0.00	933.00
2.	Watch & ward including watering as per requirement	Apr-Mar	12	3732.00	0.00	3732.00
Sub Total =			15	4665.00	0.00	4665.00
5th Year Maintenance						
1.	Fire line tracing (2m. wide fire line over 400 m length) & inspection path	Feb-Mar	3	933.00	0.00	933.00
2.	Watch & ward including watering as per requirement	Apr-Mar	12	3732.00	0.00	3732.00
Sub Total =			15	4665.00	0.00	4665.00
6th Year Maintenance						
1.	Fire line tracing (2m. wide fire line over 400 m length) & inspection path	Feb-Mar	3	933.00	0.00	933.00
2.	Watch & ward including watering as per requirement	Apr-Mar	12	3732.00	0.00	3732.00
Sub Total =			15	4665.00	0.00	4665.00

7th Year Maintenance						
1.	Fire line tracing (2m. wide fire line over 400 m length) & inspection path	Feb-Mar	3	933.00	0.00	933.00
2.	Watch & ward including watering as per requirement	Apr-Mar	12	3732.00	0.00	3732.00
Sub Total =			15	4665.00	0.00	4665.00
8th Year Maintenance						
1.	Fire line tracing (2m. wide fire line over 400 m length) & inspection path	Feb-Mar	3	933.00	0.00	933.00
2.	Watch & ward including watering as per requirement	Apr-Mar	12	3732.00	0.00	3732.00
Sub Total =			15	4665.00	0.00	4665.00
9th Year Maintenance						
1.	Fire line tracing (2m. wide fire line over 400 m length) & inspection path	Feb-Mar	3	933.00	0.00	933.00
2.	Watch & ward including watering as per requirement	Apr-Mar	12	3732.00	0.00	3732.00
Sub Total =			15	4665.00	0.00	4665.00
10th Year Maintenance						
1.	Fire line tracing (2m. wide fire line over 400 m length) & inspection path	Feb-Mar	3	933.00	0.00	933.00
2.	Watch & ward including watering as per requirement	Apr-Mar	12	3732.00	0.00	3732.00
Sub Total =			15	4665.00	0.00	4665.00

ABSTRACT							
Sl. No.	Item 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. of person days	Labour cost Rs. 311/- per dayRs.	Material cost (In Rs.)	Monitoring, Evaluation, Learning, Documentation & other Contingency 5% of (4+5)	Cost of Seedlings @ 50.31 per seedlings	Total Cost (In Rs.)
1	2	3	4	5	6	7	8
1.	0th Year	41	12751.00	100.00	549.00	0.00	13400.00
2.	1st Year	41.5	12906.50	7300.00	993.50	27671.00	48871.00
3.	2nd Year	24.5	7619.50	1737.50	443.00	2516.00	12316.00
4.	3rd Year	23	7153.00	1400.00	347.00	0.00	8900.00
5.	4th Year	15	4665.00	0.00	135.00	0.00	4800.00
6.	5th Year	15	4665.00	0.00	135.00	0.00	4800.00
7.	6th Year	15	4665.00	0.00	135.00	0.00	4800.00
8.	7th Year	15	4665.00	0.00	135.00	0.00	4800.00
9.	8th Year	15	4665.00	0.00	135.00	0.00	4800.00
10.	9th Year	15	4665.00	0.00	135.00	0.00	4800.00
11.	10th Year	15	4665.00	0.00	135.00	0.00	4800.00
Total =		235.0	73085.00	10537.50	3277.50	30187.00	117087.00

Base Cost Norms for Compensatory Afforestation through Aided Natural Regeneration (ANR)

@ 500 Seedlings / Ha.

WAGE RATE Rs. 311/- PER MANDAY

Sl. No.		Particulars of work	Unit	Qty. (mandays)	Labour Cost (Rs.)	Material Cost (Rs.)	Total cost (Rs.)
Pre-Planting Operations							
1	Site preparation	Preparation of site for planting of seedlings	Ha.	1	311	0	311
2	Site preparation	Preparation of site for planting of seedlings	Ha.	21	6531	0	6531
3	Site preparation	Preparation of site for planting of seedlings	Ha.	1	311	0	311
4	Site preparation	Preparation of site for planting of seedlings	Ha.	21	6531	0	6531
Total				44	13783	0	13783
Post-Planting Operations							
1	Planting of seedlings	Planting of seedlings	Ha.	4	1244	1500	2744
2	Planting of seedlings	Planting of seedlings	Ha.	4	1244	1500	2744
3	Planting of seedlings	Planting of seedlings	Ha.	4	1244	1500	2744
4	Planting of seedlings	Planting of seedlings	Ha.	11	3421	0	3421
5	Planting of seedlings	Planting of seedlings	Ha.	4	1244	1500	2744
6	Planting of seedlings	Planting of seedlings	Ha.	1.5	466.5	0	466.5
7	Planting of seedlings	Planting of seedlings	Ha.	4	1244	0	1244

[illegible]

**Cost Norms for Creation of Compensatory Afforestation with Stabilization of Soil
Moisture Conservation (SMC)**

Account	Debit	Credit
1. Balance forward		100.00
2. Sales		100.00
3. Sales discounts	10.00	
4. Sales returns	10.00	
5. Sales allowances	10.00	
6. Sales taxes		10.00
7. Sales commissions		10.00
8. Sales interest		10.00
9. Sales other		10.00
10. Total	30.00	130.00

Summary				
Sl. No.	Year	No. person-days	Labour cost @ Rs. 115/- per day	Material cost
1	2011 year	10	1150	0.0
2	2012 year	10	1150	70218.00
3	2013 year	10	1150	1451.00
4	2014 year	10	1150	1451.00
5	2015 year	10	1150	1451.00
6	2016 year	10	1150	1451.00
	Total	60	6900	74582.00

Differences suggest that SMEs are likely to be taken up as an alternative to improvements of the production site and of the design & organization of different resources concerned along the production.


 David J. Johnson, Governor & Sec. of State

Matrix for (SMC)

Matrix for (SMC)

Sl. No.	Particulars	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432	2433	2434	2435	2436	2437	2438	2439	2440	2441	2442	2443	2444	2445	2446	2447	2448	2449	2450	2451	2452	2453	2454	2455	2456	2457	2458	2459	2460	2461	2462	2463	2464	2465	2466	2467	2468	2469	2470	2471	2472	2473	2474	2475	2476	2477	2478	2479	2480	2481	2482	2483	2484	2485	2486	2487	2488	2489	2490	2491	2492	2493	2494	2495	2496	2497	2498	2499	2500	2501	2502	2503	2504	2505	2506	2507	2508	2509	2510	2511	2512	2513	2514	2515	2516	2517	2518	2519	2520	2521	2522	2523	2524	2525	2526	2527	2528	2529	2530	2531	2532	2533	2534	2535	2536	2537	2538	2539	2540	2541	2542	2543	2544	2545	2546	2547	2548	2549	2550	2551	2552	2553	2554	2555	2556	2557	2558	2559	2560	2561	2562	2563	2564	2565	2566	2567	2568	2569	2570	2571	2572	2573	2574	2575	2576	2577	2578	2579	2580	2581	2582	2583	2584	2585	2586	2587	2588	2589	2590	2591	2592	2593	2594	2595	2596	2597	2598	2599	2600	2601	2602	2603	2604	2605	2606	2607	2608	2609	2610	2611	2612	2613	2614	2615	2616	2617	2618	2619	2620	2621	2622	2623	2624	2625	2626	2627	2628	2629	2630	2631	2632	2633	2634	2635	2636	2637	2638	2639	2640	2641	2642	2643	2644	2645	2646	2647	2648	2649	2650	2651	2652	2653	2654	2655	2656	2657	2658	2659	2660	2661	2662	2663	2664	2665	2666	2667	2668	2669	2670	2671	2672	2673	2674	2675	2676	2677	2678	2679	2680	2681	2682	2683	2684	2685	2686	2687	2688	2689	2690	2691	2692	2693	2694	2695	2696	2697	2698	2699	2700	2701	2702	2703	2704	2705	2706	2707	2708	2709	2710	2711	2712	2713	2714	2715	2716	2717	2718	2719	2720	2721	2722	2723	2724	2725	2726	2727	2728	2729	2730	2731	2732	2733	2734	2735	2736	2737	2738	2739	2740	2741	2742	2743	2744	2745	2746	2747	2748	2749	2750	2751	2752	2753	2754	2755	2756	2757	2758	2759	2760	2761	2762	2763	2764	2765	2766	2767	2768	2769	2770	2771	2772	2773	2774	2775	2776	2777	2778	2779	2780	2781	2782	2783	2784	2785	2786	2787	2788	2789	2790	2791	2792	2793	2794	2795	2796	2797	2798	2799	2800	2801	2802	2803	2804	2805	2806	2807	2808	2809	2810	2811	2812	2813	2814	2815	2816	2817	2818	2819	2820	2821	2822	2823	2824	2825	2826	2827	2828	2829	2830	2831	2832	2833	2834	2835	2836	2837	2838	2839	2840	2841	2842	2843	2844	2845	2846	2847	2848	2849	2850	2851	2852	2853	2854	2855	2856	2857	2858	2859	2860	2861	2862	2863	2864	2865	2866	2867	2868	2869	2870	2871	2872	2873	2874	2875	2876	2877	2878	2879	2880	2881	2882	2883	2884	2885	2886	2887	2888	2889	2890	2891	2892	2893	2894	2895	2896	2897	2898	2899	2900	2901	2902	2903	2904	2905	2906	2907	2908	2909	2910	2911	2912	2913	2914	2915	2916	2917	2918	2919	2920	2921	2922	2923	2924	2925	2926	2927	2928	2929	2930	2931	2932	2933	2934	2935	2936	2937	2938	2939	2940	2941	2942	2943	2944	2945	2946	2947	2948	2949	2950	2951	2952	2953	2954	2955	2956	2957	2958	2959	2960	2961	2962	2963	2964	2965	2966	2967	2968	2969	2970	2971	2972	2973	2974	2975	2976	2977	2978	2979	2980	2981	2982	2983	2984	2985	2986	2987	2988	2989	2990	2991	2992	2993	2994	2995	2996	2997	2998	2999	3000	3001	3002	3003	3004	3005	3006	3007	3008	3009	3010	3011	3012	3013	3014	3015	3016	3017	3018	3019	3020	3021	3022	3023	3024	3025	3026	3027	3028	3029	3030	3031	3032	3033	3034	3035	3036	3037	3038	3039	3040	3041	3042	3043	3044	3045	3046	3047	3048	3049	3050	3051	3052	3053	3054	3055	3056	3057	3058	3059	3060	3061	3062	3063	3064	3065	3066	3067	3068	3069	3070	3071	3072	3073	3074	3075	3076	3077	3078	3079	3080	3081	3082	3083	3084	3085	3086	3087	3088	3089	3090	3091	3092	3093	3094	3095	3096	3097	3098	3099	3100	3101	3102	3103	3104	3105	3106	3107	3108	3109	3110	3111	3112	3113	3114	3115	3116	3117	3118	3119	3120	3121	3122	3123	3124	3125	3126	3127	3128	3129	3130	3131	3132	3133	3134	3135	3136	3137	3138	3139	3140	3141	3142	3143	3144	3145	3146	3147	3148	3149	3150	3151	3152	3153	3154	3155	3156	3157	3158	3159	3160	3161	3162	3163	3164	3165	3166	3167	3168	3169	3170	3171	3172	3173	3174	3175	3176	3177	3178	3179	3180	3181	3182	3183	3184	3185	3186	3187	3188	3189	3190	3191	3192	3193	3194	3195	3196	3197	3198	3199	3200	3201	3202	3203	3204	3205	3206	3207	3208	3209	3210	3211	3212	3213	3214	3215	3216	3217	3218	3219	3220	3221	3222	3223	3224	3225	3226	3227	3228	3229	3230	3231	3232	3233	3234	3235	3236	3237	3238	3239	3240	3241	3242	3243	3244	3245	3246	3247	3248	3249	3250	3251	3252	3253	3254	3255	3256	3257	3258	3259	3260	3261	3262	3263	3264	3265	3266	3267	3268	3269	3270	3271	3272	3273	3274	3275	3276	3277	3278	3279	3280	3281	3282	3283	3284	3285	3286	3287	3288	3289	3290	3291	3292	3293	3294	3295	3296	3297	3298	3299	3300	3301	3302	3303	3304	3305	3306	3307	3308	3309	3310	3311	3312	3313	3314	3315	3316	3317	3318	3319	3320	3321	3322	3323	3324	3325	3326	3327	3328	3329	3330	3331	3332	3333	3334	3335	3336	3337	3338	3339	3340	3341	3342	3343	3344	3345	3346	3347	3348	3349	3350	3351	3352	3353	3354	3355	3356	3357	3358	3359	3360	3361	3362	3363	3364	3365	3366	3367	3368	3369	3370	3371	3372	3373	3374	3375	3376	3
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Fencing Model F-1

Fencing for Compensatory Plantation raised inside the Forest Areas using Bamboo Twings& Thorns

[illegible]

Arno
Arno Schmidhuber, University of Vienna

Matrix for Model-F-1 Fencing (Bamboo Twig)

Matrix for Model-F-1 Fencing (Bamboo Twig)

Component Unit Price	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	1218	1219	1220	1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Watering Provision to CA Plantation

APR 27 1994

Matrix for Watering Model-W-II (Diesel Pumpset Fitted with Borwell) per Ha

Sl. No.	Component	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Total Cost
	Base Value	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	
1	2023-24	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	478204
2	2024-25	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	502207
3	2025-26	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	527211
4	2026-27	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	552215
5	2027-28	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	577219
6	2028-29	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	602223
7	2029-30	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	627227
8	2030-31	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	652231
9	2031-32	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	677235
10	2032-33	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	702239
11	2033-34	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	727243

Amritha
AMCOI Project Supervisor & NO, PC A001

TOTAL COST OF CA SCHEME (AS PER BASE COST NORM)

S. No.	Item of Work	In Rupees
1	Base Norm (Year 2023-2024)	1, 50,051.00
2	Soil Moisture Conservation (SMC)(2023-2024)	39,284.00
3	Fencing Bamboo Twings&Throns (2023-2024)	1,10,214.00
4	Watering Diesel Pump set fitted with bore well (2023-2024)	5, 27,321.00
5	Sub-Total	8,26, 870.00
6	Total Plantation cost over 25.00 Ha (Rs. 8,26, 870.00 X 25.00 Ha)	2, 06, 71, 750.00 OR 2, 06, 71, 800.00

(Rupees Two crore Six lakh Seventy one thousand Eight hundred) only

A. PROVISION OF FUNDS AND FUND UTILIZATION

Rs. 2, 06, 71, 800.00/- (Two crore Six lakh Seventy one thousand Eight hundred) only shall be deposited by the User Agency M/s OPTCL, Berhampur 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, Kalahandi North Forest Division on allotment by the Principal Chief Conservator of Forests, Odisha, Bhubaneswar.


Divisional Forest Officer,
Kalahandi North Forest Division

CHAPTER- VII

DETAILS OF PROPOSED MONITORING MECHANISM

Compensatory Afforestation will be taken up in the identified site by the Range Officer, Bhawanipatna Range of Kalahandi North Division. The Range Forest Officer, Bhawanipatna 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, Kalahandi North Forest Division. DGPS co-ordinates along with other required informations of Compensatory Afforestation will be uploaded in the e-Greenwatch Portal of NIC, MoEF, Govt. of India for the purpose of online monitoring. Annual progress of plantation involving growth of planted seedlings, survival percentage etc. will be monitored and recorded in the plantation journal by the field staffs of Bhawanipatna and reported to the Divisional Forest Officer for necessary action. The same thing will be reported to the Regional Chief Conservator of Forests, Bhawanipatna Circle and Chief Conservator of Forests (PP&A), O/o the Principal Chief Conservator of Forests, Odisha, Bhubaneswar and necessary corrective measures will be followed if required so.


Divisional Forest Officer,
Kalahandi North Forest Division
Kalahandi North Division

CERTIFICATE ON DSS ANALYSIS FOR CA / ACA / PCA

This is to certify that DSS Analysis of Land identified for CA/ ACA/ PCA over 25 ha. of degraded forest land in Sinang RF of Kalahandi North Division in lieu of diversion of forest land for 220 KV DC Transmission line from existing 220/132 KV Grid Sub Station at Kesinga to proposed 220/132/33 KV Grid Sub Station Baliguda and subsequent ground truthing have been done. The Outcome is as mentioned below:

Sl. No	Name of the Range	Name of the Forest Block (RF/PBF/PT/DPF/Reserve Forest)	Area identified for CA/ ACA/ PCA (In Ha.)	Classification of identified land (in Ha)							Area suitable for plantation (in Ha)					Plantation on Model (AR/ ANR)	Remarks
				Very Dense Forest	Moderate ly Dense Forest	Open Forest	Non-Forest	Scrub b	Waste	Total	Open Forest	Non-Forest	Scrub b	Total			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
1	Bhawani patna	Sinang RF	25	0	0	0	15	12	0	27	0	15	10	25	ANR @ 500 Plant/ Ha		


Divisional Forest Officer
Kalahandi North Division.

**SCHEME FOR COMPENSATORY
AFFORESTATION OVER AN AREA OF 25.00 HA
DEGRADED FOREST LAND IDENTIFIED IN
PODAMUNDI (BRAHAMHANI RF) UNDER
BHAWANIPATNA FOREST RANGE OF
KALAHANDI NORTH FOREST DIVISION**

AGAINST

**PROPOSED DIVERSION OF 136.966 HA OF
FOREST LAND FOR CONSTRUCTION OF
CONSTRUCTION OF 220 KV DC
TRANSMISSION LINE FROM EXISTING
220/132KV GRID SUB-STATION AT KESINGA,
KALAHANDI DISTRICT TO PROPOSED
220/132/33 KV GRID SUB-STATION AT
SIRTTIGURA UNDER K. NUAGAON TAHASIL
IN KANDHAMAL DISTRICT, ODISHA.**

BY

**ODISHA POWER TRANSMISSION
CORPORATION LIMITED
BERHAMPUR**

ELEMENTS OF THE SCHEME FOR COMPENSATORY AFFORESTATION

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CHAPTER- I

BRIEF NOTE ON THE PROPOSED FOREST DIVERSION PROPOSAL

"Odisha Power Transmission Corporation Limited" (A Government of Odisha undertaking), having its registered office at Janapath, Bhubaneswar, Dist: Khurda, Odisha is primarily entrusted to construct, successful operation and maintenance of EHT Transmission lines and Grid sub-stations with a mission to facilitate effective transfer of power, to improve voltage profile, to minimize interruption power supply, to enhance security/ reliability of power system, for strengthening of power system and to avail alternate power supply within and across the districts through villages of the Odisha state.

Odisha predominantly being an agricultural state and one of rich in mineral resources, expansion in the lift irrigation system and of different industries became essential. The power system of the state has some low voltage pockets in certain remote zones fed as tail end, causing high system loss. Therefore, it is proposed to improve in the system by way of installation new sub-stations in the transmission sector of the state.

The proposed Baliguda 220/33KV grid sub-station can be connected to the system by drawing 102.037 KM of 220KV DC line from existing 220/132 KV Grid Sub-Station at Kesinga for system strengthening purpose. It is proposed to install 2X40MVA, 220/33KV transformers at under construction 220/132/33 KV Grid Sub-Station at Sirtiguda under K.NuagaonTahasil, Kandhamal district.

In order to eradicate low voltage problem in the southern parts of the State, it is felt essential to go for installation of a new 2X40 MVA, 220/33 KV Grid sub-station at Baliguda. This will help in minimizing power interruption, improvement in voltage profile and to meet the future load demand in this area besides minimizing losses in the existing system.

Baliguda is one of the strategic towns in the district of Kandhamal. It is situated at the most backward area. The area adjoining to this strategic town is one of the maoist affected area. The habitants are mostly of Adivasi communities & especially the Kondhs. Yet there is no electricity access for a majority of its rural & tribal habitats. The surrounding area is extremely fertile and rich in agricultural products like paddy, oilseeds and vegetables. This will also improve the Socio-Economic condition of the inhabitants. The consumers under rural electrification schemes like Rajiv Gandhi GramcenVidyut, Yojna and Biju Gram Jyoti are likely to be benefited by the proposed project. The implementation of the project is required for eradication of low voltage profile.

Presently Baliguda area is drawing power at 33 KV from 132/33 KV Grid S/S at Phulbani on 33 KV Nuagaon feeder with a load of around 10MW. The present length of 33 KV line is around 80 KMs from existing 132/33 KV Grid S/S at Phulbani.

The land identified for Grid Sub-Station is around 6 KMs from NuagaonChhak which is around 25 KMs from Baliguda town. The location of the Grid S/S is so placed that this Grid S/S will be the central located between Baliguda, Daringbari and Nuagaon. Commissioning of proposed 220/33 KV Grid Sub-Station at Baliguda will ensure steady and reliable power supply and eradicate low voltage problem not only at Baliguda but also at Nuagaon, Daringbari, Tumudibandha and Phiringia area. After construction of the Grid S/S the loading area of Udayagiri and Raikia will also be considerably reduced, which is around 30 kms from Baliguda town. The present peak loading in Phulbani Grid S/S is around 29MW. The proposed Grid S/S at Baliguda can reduce the loading at Phulbani by 10MW.

In the present proposal, for construction of 220KV DC transmission line from existing 220/132 KV Grid Sub-Station at Kesinga (Latitude: 20°10'28.29"N & Longitude: 83°13'08.72"E) under KesingaTahasil, Kalahandi District along with its associated transmission line of 102.037 KM (approx) to 220/132/33 KV Grid Sub-Station at Sirttiguda in K. NuagaonTahasil (Latitude: 20°05'04.57"N & Longitude: 84°00'10.37"E) Kandhamal District. In order to achieve stability and to cater qualitative power in the transmission system of the State as well as to meet the increasing load demand. This line shall passing through Kesinga, Madanpur Rampur and NariaTahasils of Kalahandi District & Tumudibandha, Baliguda&NuagaonTahasils of Kandhamal District.

The main thrust and emphasis is laid on the following:

1. Improvement of voltage profile.
2. To minimize interruption of power supply to consumers.
3. Enhance security / reliability of power system,
4. Strengthening of transmission system.
5. Availability of alternate power supply.

This system shall also fulfill the requirement of additional power to these areas. Therefore, the power transmitted through this line will boost the small scale industries and agricultural growth of the area.

Therefore, this proposal is being submitted for diversion of forest land of 136.966 Ha (94.013 Ha in Baliguda Forest Division and 42.953 Ha in Kalahandi North Forest Division)for Construction of 220 KV DC Transmission line from existing 220/132KV Grid Sub-station at Kesinga, Kalahandi District to proposed 220/132/33 KV Grid Sub-station at Sirttiguda under K. NuagaonTahasil in Kandhamal District.

Degraded Forest land over 25.00 Ha has been identified and allotted in Podamundi(Brahambhani RF) under BhawanipatnaForest Range of Kalahandi North Forest Division, in favour of M/s Odisha Power Transmission Corporation Limited, Berhampur, vide letter No. 6413/4F-Misc.-2022 dated. 13th October 2022 the Divisional Forest Officer, Kalahandi North Division for raising Compensatory Afforestation. The Degraded Forest Land over 25.00 Ha has been considered for plantation under ANR model @500 seedlings / Ha has been prepared to this effect.

The present scheme aims at preparation of a site-specific Compensatory Afforestation scheme over 25.00 Ha of degraded forest land identified in Podamundi(Brahambhani RF) under Bhawanipatna Forest Range of Kalahandi North Forest Divisionat the prevailing per MD onetime cost norm approved by PCCF & HOFF, Odisha vide his Office Order No. 1109/9F-Misc-387/2021, dated 8th November 2021 with a maintenance period of ten years for raising Compensatory Afforestation ANR with gap plantation.

CHAPTER- II

DETAILS OF LAND IDENTIFIED FOR COMPENSATORY AFFORESTATION

IDENTIFICATION OF DEGRADED FOREST LAND

II(1)- Details of identified Degraded Forest land-

The identified Degraded Forest land for Compensatory Afforestation is situated in Podamundi(Brahamhani RF) under Bhawanipatna Forest Range of Kalahandi North Forest Division and Kalahandi District. This Forest Block is allotted to Improvement working circle in 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 Sal in SOI Topo Sheet No. F44X4. The vegetation consists of Sal and its scattered associates like Piasal, Asana, Sisoo, Kuruma, Karada, Dhaura, Sidha, Harida, Bahada and Ainla.

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.

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

The identified site in Podamundi(Brahamhani 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 ANR with Gap model @500 seedling per ha. The average maximum temperature is 40° to 45°C and minimum 5° to 10° 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. Therefore, the CA scheme is envisaged to be executed with involvement of Baziapada VSS.

CHAPTER-III

DELINEATION OF PROPOSED AREA ON SUITABLE MAP

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

The area has been demarcated through DGPS survey and DGPS survey data showing latitude and longitude of each point and their chainage with bearing 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 obtained are depicted in the **Annexure- ____**.

Decision Support System of degraded forest land identified in PodamundiBrahamhani RF under Bhawanipatna Range

Sl. No	Name of the Site	Area identified for Plantation (in Ha)	In Sq. Km	
			Non-Forest	Scrub
1	Podamundi(Brahamhani RF)	25.00	0.21	0.05

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, Kalahandi North Forest 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 site specific treatment of the identified site. Choice of species is based on the geo-morphology of the site, soil-texture, structure, fertility and depth, proneness of the site to water logging etc. Specific treatment of the site in terms of soil and moisture conservation intervention will be depicted in the treatment map. A treatment map will invariably be prepared for Species to be planted and treatments to be applied to the different patches shown in the treatment map and planting plan. This plan will be followed when actual planting is carried out.

Species to be planted: -

1. *Syziumcumini*(Jamu)
2. *Adina cardifolia*(Kuruma)
3. *Anogeissuslatifolia*(Dhaura)
4. *Albizialebeck*(Siris)
5. *Dalbergiasissoo*(Sissoo)
6. *Azadirachtaindica*(Neem)
7. *Gmelinaarborea* (Gambar)
8. *Terminaliabellerica*(Bahada)
9. *Terminaliachebula*(Harida)
10. *Pongumiapinnata* (Karanja)
11. *Emblicaofficinalis* (Amla)

B.PRE-PLANTING OPERATION

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

Nursery will be raised @550 18 months old seedlings per 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, Bhawanipatna Range) with DGPS coordinates, Pillar No. and distance between pillars inscribed in it. A DGPS map in the scale of 1:3960 has been prepared along with DGPS co-ordinates, 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 45cm X45cm X45 cm. will be dug @500 per ha in the available gaps preferably 2 months before or at least a month before planting of seedlings.

C. PLANTING OPERATION

Planting of 18 months old 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, N.P.K. and Urea will be applied in two split doses one in August and the other in September.

D(4)-SOIL MOISTURE CONSERVATION MEASURES

Soil Moisture Conservation measure structures to be carried like Staggered Trench, Percolation Pit, Contour trench, Graded earthen bund, LBCD, Wire mesh LBCD, Sub surface Dyke and Water Harvesting Structure (WHS) as per the slope & site requirement on I.S.

D(5)-PROTECTION AGAINST FIRE AND BIOTIC INTERFERENCE

It is proposed to protect the CA plantation from grazing by domestic animals using Bamboo Twigs &Thorns. The total length of such fencing comes to 5.073Km (5073M). 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 Baziapada VSS.

Nursery Cost Norm for raising of 1000 (18 months) seedlings

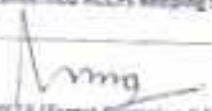
Wage rate @ 311 per Manday

ANNEXURE-1

ANNEXURE

Nursery Cost Norm for raising of 1000 (18 months) seedlings									
Sl. No.	Items of work	Wage rate @ 311 per Manday		Unit	Unit Cost	No./ Qrs.	Labour Cost	Material Cost	Total Cost
		Preferable Period of Execution							
A. 1st Financial Year (Seedlings Cost for 3 Months)									
1	Cost for Polythene (9" X 5" X 200G) 600 nos./Kg. = 3.33 Kg@Rs.200/- per Kg. (including GST)	Nov-Dec	Kg	200	3.33	0	0	663	663
2	Procurement of soil & crude Polypot Mixture (Soil, sand & CIM in ratio 2:1:1)								
	(i) Soil	Nov-Dec	Ct	10	22	0	220	220	
	(ii) Sand	Nov-Dec	Ct	14	11	0	176	176	
	(iii) CIM/ Vermi compost/ Bio-fertilizers etc.	Nov-Dec	Ct	25	11	0	275	275	
	(iv) Insecticide/ Bio-Pesticide	Nov-Dec	Kg	150	2	0	300	300	
3	Preparation of Soil Mixture includes pulverisation, Straining & mixing the ingredients in proper ratio (2:1:1)	Nov-Dec	MD	311	2	622	0	622	
4	Filling of polythene bags & setting in the bed	Nov-Dec	MD	311	3	933	0	933	
5	Collection of Seed, Grading & Treatment	Dec	MD	311	2	622	0	622	
6	Preparation of germination bed & dibbling of seed.	Jan	MD	311	0.5	155.5	0	155.5	
7	Picking out the seedlings from germination beds & transplanting in the Poly bags and providing shade.	Jan	MD	311	2	632	500	1132	
8	Watering (Jan to March)	Jan-Mar	MD	311	9	2799	0	2799	
9	Maintenance of Nursery including weeding	Jan-Mar	MD	311	4	1244	500	1744	
10	Contingencies (Water can, Buckets, Nursery shed, Electricity charges/ Diesel charges/ Maintenance of pump set/ Maintenance of Nursery, etc.)			0	0	0	440.5	440.5	
TOTAL					22.5	6997.5	3124.1	10321.6	
B. 2nd Financial Year (Shifting of Seedlings to larger Polythene bag to avoid root coiling & better growth) April-March									
1	Watering for 3 months (April to June)	April-June	MD	311	9	2799	0.0	2799	
2	Cost of insecticides/ Bio-Pesticide	May-June	Kg/ Lt	0	0	0	400.0	400	
3	Application of insecticides/ Bio-Pesticide	May-June	MD	311	1	311	0	311	
4	Cost of Poly pot (14" X 10" X 300 gauge) 60 nos. = 17 Kg & Rs.200 per Kg. (including GST)	May-June	Kg	200	17	0	3536	3536	

Statement of Seedling Cost for 18 months old seedlings

Sl. No.	Name of work	Wage rate of ₹ 111 per Month		Rate	Qty. Paid	No. of Men	Labour Cost	Material Cost	Total Cost
		Period of Operation	Unit						
1	Preparation of seed & shade nursery Station (Burr Seed & CDM is rate 12.1.11)								
	(i) Seed	Jan / May	75	10	140	0	2000	9400	
	(ii) Seed	May/Nov	12	14	140	0	800	800	
	(iii) CDM/Vermi Compost/ Bio Fertilizers etc.	Apr/May	15	25	14	0	1250	1250	
	(iv) Insecticide/ Bio-Pesticide	Apr/May	80	150	3	0	450	450	
2	Preparation of potting mixture including pulverization and straining	Oct-Nov	800	211	4	1800	0	1800	
3	Filling of Polymeric bags including repotting and settling	Oct-Nov	800	311	35	10805	0	10805	
4	Watering	Nov- March	800	311	18	5600	0	5600	
5	Sorting, Weeding, grading and re-planting over one year period	April-March	800	311	15	4665	0	4665	
10	Contingencies (Water can, Buckets, Nursery shed, Electricity charges/ Diesel charges/ Maintenance of pump and Maintenance of Nursery, etc.)						400	400	
TOTAL						85	26435	7836	34271
C. 3rd Financial Year (Maintenance upto Planting) April-June									
1	Watering for 3 months (April to June)	April-June	800	311	12	3732	0	3732	
2	Weeding, Sorting and grading	April-June	800	311	4	1244	0	1244	
3	Cost of Insecticide/ Bio-Pesticide					0	400	400	
4	Application of Insecticide/ Bio-Pesticide		800	211	1	311	0	311	
5	Contingencies						230	230	
TOTAL						5297	630	5927	
ABSTRACT									
Name of work							Labour Cost	Material Cost	Total Cost
A. 1st Financial Year (Seedlings Cost for 3 Months)							6997.3	7124.1	14121.4
B. 2nd Financial Year (12 Months)							25435	7836	33271
C. 3rd Financial Year (3 Months)							5297	630	5927
Total							38719.8	11590.2	50310
Cost per 18 months old Seedlings = 50310/1000 = Rs 50.31/-									
The Cost Norm of various items can be changed with the approval of the concerned RCCs keeping the overall cost norm fixed for each Financial Year									
							 A.P.C.E.F. (Forest Officer & NO. FC. A/2)		

CHAPTER- VI

BASE COST NORM FOR COMPENSATORY AFFORESTATION THROUGH AIDED NATURAL REGENERATION (ANR) @ 500 SEEDLINGS/ HECTARE (18 months old seedling)

Wage Rate Rs.311/- PER MANDAY

SL No.	Item 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	622.00	0.00	622.00
2.	Preparation of Treatment Map (Digital Map)	Nov-Dec	1	311.00	100.00	411.00
3.	Site preparation	Nov-Dec	2	622.00	0.00	622.00
4.	Silvicultural operation 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	Feb-Mar	15	4665.00	0.00	4665.00
5.	Alignment and stacking for digging of pits	Feb-Mar	1	311.00	0.00	311.00
6.	Digging of pits (45 cm x 45 cm x 45 cm) in hard and gravelly soil	Feb-Mar	20	6220.00	0.00	6220.00
Sub Total =			41	12751.00	100.00	12851.00
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.	Jun-Jul	4	1244.00	2500.00	3744.00
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/- per Seedling. (550 nos.)	Jul-Aug	0	0	3300.00	3300.00
3.	Watering polythene bag seedlings at stacking site of plantation	Jul-Aug	1	311.00	0	311.00
4.	Conveyance of polythene bag 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 perfectly around the planted seedlings.	Jul-Aug	11	3421.00	0	3421.00
5.	Cost of Fertilizer & Insecticide a. NPK/Bio-fertilizer @ 50 gms/plant as basal dose = 25kg @ Rs.30/- per kg = Rs.750.00 b. Urea/Vermi compost /Mo Khata/any other fertilizer @ Rs.375.00 c. Insecticide/Bio-pesticide @ 5 gms/plant = 2.5kg @ Rs.150/- per kg = Rs.375.00	Jul-Aug	0	0	1500.00	1500.00
6.	Casualty Replacement@ 10% (50 nos.)	Jul-Aug	1.5	466.50	0	466.50
7.	1 st weeding & Manuring	Aug-Sept	5	1555.00	0	1555.00

8.	2 nd Weeding, Soil working (1mt. diameter around the plants) & Manuring	Oct-Nov	8	2488.00	0	2488.00
9.	Fire line Tracing & inspection path	Feb-Mar	3	933.00	0	933.00
10.	Watch & ward including watering as per requirement	Aug-Mar	8	2488.00	0	2488.00
Sub Total =			41.5	12906.50	7300.00	20206.50
2nd Year Maintenance						
1.	Transportation of 50 seedlings from Nursery to plantation site including loading, unloading & conveyance by Tractor @ Rs.6/- per seedling	Jul	0	0.00	300.00	300.00
2.	Casualty replacement	Jul	1.5	466.50	0.00	466.50
3.	<u>Cost of Fertilizer & Insecticide</u> a. Cost of Insecticide/Bio-pesticide (Thimet/Forate) @ 5 gms/plant = 0.25 kg @ Rs. 150/- per kg = Rs. 37.50/- b. Urea/NPK/Bio-fertilizer/Vermicompost/Mo Khata/any other fertilizer @ Rs.1400/-	Jul	0	0.00	1437.50	1437.50
4.	Weeding (Complete weeding), Manuring & Soil working, (1mt. diameter around the plants)	Sep-Oct	8	2488.00	0.00	2488.00
5.	Fire line tracing (2m. wide fire line over 400 m long) & inspection path	Feb-Mar	3	933.00	0.00	933.00
6.	Watch & Ward including watering as per requirement	Apr-Mar	12	3732.00	0.00	3732.00
Sub Total =			24.5	7619.50	1737.50	9357.00
3rd Year Maintenance						
1.	Cost of Fertilizer (Urea/NPK/Bio-fertilizer/Vermi compost/Mo Khata/any other fertilizer -Rs.1400/-	Sep-Oct	0	0.00	1400.00	1400.00
2.	Weeding (Complete weeding), Manuring & Soil working, (1mt. diameter around the plants)	Aug-Sep	8	2488.00	0.00	2488.00
3.	Fire line tracing (2m. wide fire line & inspection path	Feb-Mar	3	933.00	0.00	933.00
4.	Watch & ward including watering as per requirement	Apr-Mar	12	3732.00	0.00	3732.00
Sub Total =			23	7153.00	1400.00	8553.00
4th Year Maintenance						
1.	Fire line tracing (2m. wide fire line over 400 m length) & inspection path	Feb-Mar	3	933.00	0.00	933.00
2.	Watch & ward including watering as per requirement	Apr-Mar	12	3732.00	0.00	3732.00
Sub Total =			15	4665.00	0.00	4665.00
5th Year Maintenance						
1.	Fire line tracing (2m. wide fire line over 400 m length) & inspection path	Feb-Mar	3	933.00	0.00	933.00
2.	Watch & ward including watering as per requirement	Apr-Mar	12	3732.00	0.00	3732.00
Sub Total =			15	4665.00	0.00	4665.00
6th Year Maintenance						
1.	Fire line tracing (2m. wide fire line over 400 m length) & inspection path	Feb-Mar	3	933.00	0.00	933.00
2.	Watch & ward including watering as per requirement	Apr-Mar	12	3732.00	0.00	3732.00
Sub Total =			15	4665.00	0.00	4665.00

7th Year Maintenance						
1.	Fire line tracing (2m. wide fire line over 400 m length) & inspection path	Feb-Mar	3	933.00	0.00	933.00
2.	Watch & ward including watering as per requirement	Apr-Mar	12	3732.00	0.00	3732.00
Sub Total =			15	4665.00	0.00	4665.00
8th Year Maintenance						
1.	Fire line tracing (2m. wide fire line over 400 m length) & inspection path	Feb-Mar	3	933.00	0.00	933.00
2.	Watch & ward including watering as per requirement	Apr-Mar	12	3732.00	0.00	3732.00
Sub Total =			15	4665.00	0.00	4665.00
9th Year Maintenance						
1.	Fire line tracing (2m. wide fire line over 400 m length) & inspection path	Feb-Mar	3	933.00	0.00	933.00
2.	Watch & ward including watering as per requirement	Apr-Mar	12	3732.00	0.00	3732.00
Sub Total =			15	4665.00	0.00	4665.00
10th Year Maintenance						
1.	Fire line tracing (2m. wide fire line over 400 m length) & inspection path	Feb-Mar	3	933.00	0.00	933.00
2.	Watch & ward including watering as per requirement	Apr-Mar	12	3732.00	0.00	3732.00
Sub Total =			15	4665.00	0.00	4665.00

ABSTRACT							
Sl. No.	Item 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. of person days	Labour cost Rs. 311/- per dayRs.	Material cost (In Rs.)	Monitoring, Evaluation, Learning, Documentation & other Contingency 5% of (4+5)	Cost of Seedlings @ 50.31 per seedlings	Total Cost (In Rs.)
1	2	3	4	5	6	7	8
1.	0th Year	41	12751.00	100.00	549.00	0.00	13400.00
2.	1st Year	41.5	12906.50	7300.00	993.50	27671.00	48871.00
3.	2nd Year	24.5	7619.50	1737.50	443.00	2516.00	12316.00
4.	3rd Year	23	7153.00	1400.00	347.00	0.00	8900.00
5.	4th Year	15	4665.00	0.00	135.00	0.00	4800.00
6.	5th Year	15	4665.00	0.00	135.00	0.00	4800.00
7.	6th Year	15	4665.00	0.00	135.00	0.00	4800.00
8.	7th Year	15	4665.00	0.00	135.00	0.00	4800.00
9.	8th Year	15	4665.00	0.00	135.00	0.00	4800.00
10.	9th Year	15	4665.00	0.00	135.00	0.00	4800.00
11.	10th Year	15	4665.00	0.00	135.00	0.00	4800.00
Total =		235.0	73085.00	10537.50	3277.50	30187.00	117087.00

Base Cost Norms for Compensatory Afforestation through Aided Natural Regeneration (ANR)

@ 500 Seedlings / Ha.

WAGE RATE Rs. 311/- PER MANDAY

[illegible]

[illegible]

Matrix for ANR-500 Plants / Ha

[illegible]

Cost Norms for Creation of Compensatory Afforestation with Stabilization of Soil Moisture Conservation (SMC)

Sl. No.		Particulars	Unit	Rate
1	1	1.00 ha of land for afforestation with SMC	ha	1.00
2	2	2.00 ha of land for afforestation with SMC	ha	2.00
3	3	3.00 ha of land for afforestation with SMC	ha	3.00
4	4	4.00 ha of land for afforestation with SMC	ha	4.00
5	5	5.00 ha of land for afforestation with SMC	ha	5.00
6	6	6.00 ha of land for afforestation with SMC	ha	6.00
7	7	7.00 ha of land for afforestation with SMC	ha	7.00
8	8	8.00 ha of land for afforestation with SMC	ha	8.00
9	9	9.00 ha of land for afforestation with SMC	ha	9.00
10	10	10.00 ha of land for afforestation with SMC	ha	10.00
Total			10.00	10.00

Sl. No.		Particulars	Unit	Rate
1	1	1.00 ha of land for afforestation with SMC	ha	1.00
2	2	2.00 ha of land for afforestation with SMC	ha	2.00
3	3	3.00 ha of land for afforestation with SMC	ha	3.00
4	4	4.00 ha of land for afforestation with SMC	ha	4.00
5	5	5.00 ha of land for afforestation with SMC	ha	5.00
6	6	6.00 ha of land for afforestation with SMC	ha	6.00
7	7	7.00 ha of land for afforestation with SMC	ha	7.00
8	8	8.00 ha of land for afforestation with SMC	ha	8.00
9	9	9.00 ha of land for afforestation with SMC	ha	9.00
10	10	10.00 ha of land for afforestation with SMC	ha	10.00
Total			10.00	10.00

Different types of SMC structures shall be taken up as per the scope & requirements of the plantation site and of the design & specifications of different structures entered along with documents.


4/2/22 (For: Director & S.O. to Govt)

Matrix for (SMC)

Matrix for (SMC)

S. No.	Expenditure (per Unit)	II	2023	2023	2023	2023	2023	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	Total Cost
			2023	2023	2023	2023	2023													
1	2023.11	0	11275	8323	9022	8888	8875													31633
2	2023.12	0	21287	8628	9888	8888	8888													97613
3	2023.13	0	21287	8628	9888	8888	8888													38584
4	2023.14	0	21287	8628	9888	8888	8888													41268
5	2023.15	0	21287	8628	9888	8888	8888													43310
6	2023.16	0	21287	8628	9888	8888	8888													45478
7	2023.17	0	21287	8628	9888	8888	8888													47746
8	2023.18	0	21287	8628	9888	8888	8888													50044
9	2023.19	0	21287	8628	9888	8888	8888													52342
10	2023.20	0	21287	8628	9888	8888	8888													54640
11	2023.21	0	21287	8628	9888	8888	8888													56938

APCCF (Forest Division & HD, T.C. No.1)

Fencing Model F-1

Fencing for Compensatory Plantation raised inside the Forest Areas using Bamboo Twings& Thorns

[illegible]

APCS Student Question # 580, 11, 2010

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

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

Sl. No.	Particulars	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	1218	1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Watering Model – W-II

Watering Provision to CA Plantation

		Abstract			
Sl. No.	Year	No. of plants	Labour cost @ Rs 100/- per day	Material Cost	Total cost (Rs.)
1	1st year	1000	15,000	15,000	30,000
2	2nd year	1000	15,000	15,000	30,000
3	3rd year	1000	15,000	15,000	30,000
4	4th year	1000	15,000	15,000	30,000
5	5th year	1000	15,000	15,000	30,000
Total		5000	75,000	75,000	1,50,000


 APLX Forest Services & Co., FC A/1

Matrix for Watering Model-Wall (Diesel Pumpset Fitted with Borewell) per Ha

Sl. No.	Disbursement Project Name	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000
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Barney
SACD For Presentation & NO. 17 Act

TOTAL COST OF CA SCHEME (AS PER BASE COST NORM)

S. No.	Item of Work	In Rupees
1	Base Norm (Year 2023-2024)	In Rupees
1	Base Norm (Year 2023-2024)	1, 50,051.00 ✓
2	Soil Moisture Conservation (SMC) (2023-2024)	39,284.00 ✓
3	Fencing Bamboo Twings&Throns (2023-2024)	1,10,214.00 ✓
4	Watering Diesel Pump set fitted with bore well (2023-2024)	5, 27,321.00 ✓
5	Sub-Total	8,26, 870.00
6	Total Plantation cost over 25.00 Ha (Rs. 8,26, 870.00 X 25.00 Ha)	2, 06, 71, 750.00 OR 2, 06, 71, 800.00 ✓

(Rupees Two crore Six lakh Seventy one thousand Eight hundred) only

A. PROVISION OF FUNDS AND FUND UTILIZATION

Rs. 2, 06, 71, 800.00/- (Two crore Six lakh Seventy one thousand Eight hundred) only shall be deposited by the User Agency M/s OPTCL, Berhampur 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, Kalahandi North Forest Division on allotment by the Principal Chief Conservator of Forests, Odisha, Bhubaneswar.


Divisional Forest Officer,
Kalahandi North Forest Division

CHAPTER- VII

DETAILS OF PROPOSED MONITORING MECHANISM

Compensatory Afforestation will be taken up in the identified site by the Range Officer, Bhawanipatna Range of Kalahandi North Division. The Range Forest Officer, Bhawanipatna 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, Kalahandi North Forest Division. DGPS co-ordinates along with other required informations of Compensatory Afforestation will be uploaded in the e-Greenwatch Portal of NIC, MoEF, Govt. of India for the purpose of online monitoring. Annual progress of plantation involving growth of planted seedlings, survival percentage etc. will be monitored and recorded in the plantation journal by the field staffs of Bhawanipatna and reported to the Divisional Forest Officer for necessary action. The same thing will be reported to the Regional Chief Conservator of Forests, Bhawanipatna 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,
Kalahandi North Forest Division
Bhawanipatna Circle
Kalahandi North Division

CERTIFICATE ON DSS ANALYSIS FOR CA / ACA / PCA

This is to certify that DSS Analysis of Land identified for CA/ ACA/ PCA over 25 ha. of degraded forest land in Brahmani RF of Kalahandi North Division in lieu of diversion of forest land for 220 KV DC Transmission line from existing 220/132 KV Grid Sub Station at Kesinga to proposed 220/132/33 KV Grid Sub Station Baliguda and subsequent ground truthing have been done. The Outcome is as mentioned below:

Sl. No	Name of the Range	Name of the Forest Block (RF/PRF/PE/DPE/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	Moderate Dense Forest	Open Forest	Non-Forest	Scrub	Waste	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	Bhawani patna	Brahmani RF	25	0	0	0	20	5	0	25	0	20	5	25	ANR @ 500 Plant/Ha	


Divisional Forest Officer
Kalahandi North Division.

SCHEME FOR SITE SPECIFIC COMPENSATORY AFFORESTATION OF 100.00 HA OF DEGRADED FOREST IDENTIFIED IN HATILIMUNDA RESERVE FOREST OF BIRMAHARAJPUR RANGE UNDER SUBARNAPUR DISTRICT AGAINST THE DIVERSION PROPOSAL FOR CONSTRUCTION OF 220 KV DC TRANSMISSION LINE FROM EXISTING 220/132/33KV GSS, KESINGA TO PROPOSED 220/33KV GSS, BALIGUDA.

The "Odisha Power Transmission Corporation Limited" (A Government of Odisha undertaking), having its registered office at Janapath, Bhubaneswar, Dist: Khurda, Odisha is primarily entrusted to construct, successful operation and maintenance of EHT Transmission lines and Grid sub-stations with a mission to facilitate effective transfer of power, to improve voltage profile, to minimize interruption power supply, to enhance security/ reliability of power system, for strengthening of power system and to avail alternate power supply within and across the districts through villages of the Odisha state.

The proposed Baliguda 220/33KV grid sub-station can be connected to the system by drawing 102.037 KM of 220KV DC line from existing 220/132 KV Grid Sub-Station at Kesinga for system strengthening purpose. It is proposed to install 2X40MVA, 220/33KV transformers at under construction 220/132/33 KV Grid Sub-Station at Sirtiguda under K.Nuagaon Tahasil, Kandhamal district.

The land identified for Grid Sub-Station is around 6 KMs from Nuagaon Chhak which is around 25 KMs from Baliguda town. The location of the Grid S/S is so placed that this Grid S/S will be the central located between Baliguda, Daringbari and Nuagaon. Commissioning of proposed 220/33 KV Grid Sub-Station at Baliguda will ensure steady and reliable power supply and eradicate low voltage problem not only at Baliguda but also at Nuagaon, Daringbari, Tumudibandha and Phiringia area. After construction of the Grid S/S the loading area of Udayagiri and Raikia will also be considerably reduced, which is around 30 kms from Baliguda town. The present peak loading in Phulbani Grid S/S is around 29MW. The proposed Grid S/S at Baliguda can reduce the loading at Phulbani by 10MW.

In the present proposal, for construction of 220KV DC transmission line from existing 220/132 KV Grid Sub-Station at Kesinga (Latitude: 20°10'28.29"N & Longitude: 83°13'08.72"E) under KesingaTahasil, Kalahandi District along with its associated transmission line of 102.037 KM (approx) to 220/132/33 KV Grid Sub-Station at Sirttiguda in K. NuagaonTahasil (Latitude: 20°05'04.57"N & Longitude: 84°00'10.37"E) Kandhamal District. In order to achieve stability and to cater qualitative power in the transmission system of the State as well as to meet the increasing load demand. This line shall passing through Kesinga, Madanpur Rampur and NariaTahasils of Kalahandi District & Tumudibandha, Baliguda&NuagaonTahasils of Kandhamal District.

The main thrust and emphasis is laid on the following:

1. Improvement of voltage profile.
2. To minimize interruption of power supply to consumers.
3. Enhance security / reliability of power system.
4. Strengthening of transmission system.
5. Availability of alternate power supply.

This system shall also fulfill the requirement of additional power to these areas. Therefore, the power transmitted through this line will boost the small scale industries and agricultural growth of the area.

Therefore, this proposal is being submitted for diversion of forest land of 136.966 Ha (94.013 Ha in Baliguda Forest Division and 42.953 Ha in Kalahandi North Forest Division) for Construction of 220 KV DC Transmission line from existing 220/132KV Grid Sub-station at Kesinga, Kalahandi District to proposed 220/132/33 KV Grid Sub-station at Sirttigura under K. Nuagaon Tahasil in Kandhamal District.

As requested by the Deputy General Manager (EI) the balance Degraded Forest land over 100.00 Ha has been identified and allotted in Hatlimunda RF under Birmaharajpur Forest Range of Subarnapur Forest Division, in favour of M/s Odisha Power Transmission Corporation Limited, Berhampur, vide letter No. 3978/4F-Misc./166-2022, dated 01.11.2022 the Divisional Forest Officer, Subarnapur Forest Division for raising Compensatory Afforestation. The Degraded Forest Land over 100.00 Ha has been considered for plantation under ANR model @500 seedlings / Ha has been prepared to this effect.

The present scheme aims at preparation of a site-specific Compensatory Afforestation scheme over 100.00 Ha of degraded forest land identified in Hatlimunda RF under Birmaharajpur Forest Range of Subarnapur Forest Division at the prevailing per MD onetime cost norm approved by PCCF & HOFF, Odisha vide his Office Order No. 1109/9F-Misc-387/2021, dated 8th November 2021 with a maintenance period of ten years for raising Compensatory Afforestation ANR with gap plantation.

Stage-I Forest Clearance over 30.226 ha has been granted by MoEF & CC vide letter Dt. 15.05.2015. Condition No. (viii) of the Stage-I approval is given as under:

"The cost of compensatory afforestation at the prevailing wage rates as per compensatory afforestation scheme and the cost of survey, demarcation and erection of permanent pillars, if required on the CA land, shall be deposited in advance with the Forest Department by the user agency. The CA will be maintained for 10 years. The scheme may include afforestation of indigenous species with appropriate provision for anticipated cost increase for works scheduled for subsequent years".

Three patches of the total CA land allotted inside Hatlimunda RF is examined through Decision Support System and the analysis is given as below:

Sl. No.	Name of the degraded forest	DSS Results		Total area in ha
		Degraded Forest Area in ha	Open Forest or above Canopy Area in ha	
1	Hatlimunda Reserve Forest	100		100
Total				

Considering the results of DSS survey and observations during field verification, the CA scheme over 100.0 ha is now prepared as per the one-time cost norm for Compensatory Afforestation issued vide Office Order No. 1109 dated 08.11.2021 of the PCCF, Odisha.

The detailed site-specific scheme is therefore prepared as follows:

Name of the degraded forest	Type of Plantation	Area in ha	No. of seedlings to be planted per ha	Total no. of seedlings required (Including Casualty Replacement-10%)
Hatilimunda Reserve Forest	ANR@500 Plants per ha	100.0	500	55000
	Sub-total	100.0	500	55000
	Grand Total	100.0	500	55000

Further details and various components of the CA scheme is given below: -

1. Details of degraded forest land: Enclosed as **Annexure-A**

The DGPS survey maps showing the land details for the proposed Compensatory Afforestation are enclosed. The GPS co-ordinates of survey station of the Compensatory Afforestation area are furnished as **Annexure-A**.

2. Description of Area

- I. **Whether the site selected for Compensatory Afforestation is a land bank or not:**
This identified degraded forest area is under the control of Forest Department and classified as 'Reserve Forest'. It is not a land bank.
- II. **If the CA site is other than the land bank, reasons be given:** No land bank has been established yet for this purpose.
- III. **In case of non-forest area identified for CA, then what is the distance of CA site from the adjoining forest boundary:** The identified CA area is coming under Hatilimunda Reserve Forest.
- IV. **Soil type:** Sandy soil/ Murrom.
- V. **Topography:**
 - a) *Hilly/Undulating/Plain:* The Compensatory Afforestation site is undulating.
 - b) *Slope (Steep/Medium/Gentle):* The site selected for Compensatory Afforestation has medium to gentle slope.
- VI. **Whether the area is bearing any root stock of vegetation:** The site selected for Compensatory Afforestation is one patch of area 100.0 ha. The patch is having various gaps for the plantation along with vegetation cover in the balance area. The patch is completely suitable for the ANR plantation at spacing of 2.5 m x 2.5 m. So, in total 55000 nos. of plants will be accommodated easily in the patch selected for the Compensatory Afforestation.

3. Plantation Model:

ANR plantation with 500 plants per hectare will be raised over 100.0 Ha and a detail of the plantation is furnished in the **Annexure-B**. The plantation scheme is prepared in incorporating planting of 18 months old seedlings along with cost of transportation as per the stipulation and new one-time cost norm for Compensatory Afforestation issued vide Office Order No. 1109 dated 08.11.2021 of the PCCF, Odisha. Pit size has been taken as 45 Cm³ to accommodate bigger size 18 months old seedlings with (12"x 10") poly bags properly inside the dugout pit.

4. Technical details of Compensatory Afforestation Scheme are as follows:

a) General Details:

Survey & Demarcation of boundary: The identified area has been surveyed by ORSAC, Odisha and the Head DGPS Survey, ORSAC, Odisha has submitted the DGPS Survey Map along with the C.D ROM after verifying the 100.0 Ha. of degraded forest land in connection with raising of Compensatory Afforestation. This work has already been done by the User Agency.

Planting and post-planting:

ANR plantation shall be taken up with 500 plants per hectares in all the gap areas within the gross area of 100 ha at spacing of 2.5 m x 2.5 m. alignment and pit marking should be done carefully in slopes so that the horizontal distance between plants in a row remains 2.5 mtrs and not the distance measured along the slope. All post planting measures like casualty replacement, soil working, manuring, fire protection etc. will be undertaken. The plantation area should be divided into 4-hectare plots. These plots should be demarcated in the field before digging of pits so that the demarcating line does not cross a plantation row. The 4.0 ha plots should be shown on map. Cost norm for the ANR plantation is furnished in **Annexure-B**.

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

- Pitting shall invariably be done during January-March i.e., before onset of monsoon. If possible the soil of upper portion and lower portion of pit should be placed separately in specific direction so that while planting the pits will be filled with top-soil first.
- Planting shall be done on the onset of monsoon to get full benefit of monsoon rain and planting should never be delayed.
- Basal dose of 50 grams of NPK and 5 grams of Chlorpyrifos dust per plant should be applied at the time of planting carefully by mixing with top-soil so that the roots of seedlings do not come in direct contact with fertilizer.
- In case of any mortality of planted seedlings, it should be replaced with good seedlings as soon as possible for better success rate.
- Complete weeding in proper time will be done. Strip weeding will not be permitted.
- Soil-working and application of 2nd dose fertilizer of 50 gms NPK per plant should be done in time.
- Since the area is provided with wire mesh fence, watch & ward will be easier and the watchers may be engaged in weeding in problematic areas along with watch & ward.

b) Species: Although indigenous species are to be preferred in the plantation, considering adverse soil & moisture conditions we may go for few hardy exotic species wherever required so that the plants are able to survive. For success of plantation in the interior tribal areas, plantation of fruit & NTFP species plays a great role since economic species have a little value for local people. Considering the topography, soil and moisture availability of the plantation area, the following species will be planted:

Name of species	Common name	Remarks
<i>Terminalia chebula</i>	Harida	In rocky area with low soil depth
<i>Terminalia bellirica</i>	Bahada	In rocky area with low soil depth
<i>Phyllanthus emblica</i>	Amla	In lower areas i.e. water Logged Area.
<i>Dalbergia sissoo</i>	Sissoo	In lower areas with good soil depth
<i>Diospyros macrophylla</i>	Makad Kendu	In lower areas with good soil depth
<i>Gardenia latifolia</i>	Dam Kurdu	In lower areas with good soil depth
<i>Schleichera oleosa</i>	Kusum	In lower areas i.e. water Logged Area.
<i>Madhuca indica</i>	Mahul	In lower areas with good soil depth
<i>Syzygium cumini</i>	Jamun	In lower areas i.e. water Logged Area.
<i>Cordia myxa</i>	Bahal	In lower areas with good soil depth
<i>Tamarindus indica</i>	Tentuli	In rocky area with low soil depth
<i>Terminalia tomentosa</i>	Asan	In lower areas with good soil depth
<i>Terminalia arjuna</i>	Arjuna	In lower areas i.e. water logged area.
<i>Acacia catechu</i>	Khair	In the degraded area
<i>Pterocarpus marsupium</i>	Bija	Only two years old seedling may be planted
<i>Dendrocalamus strictus</i>	Bamboo	In lower areas with good soil depth healthy seedling from rhizomes may be planted.

d) Soil and Moisture Conservation Works: -

Since most of the areas are hilly and undulating, SMC structures will be constructed as provided in cost norm. In order to achieve at least 15% cost towards SMC measures of total plantation cost, various sizes of the loose boulder check dams have been proposed. Estimate for loose boulder check dam has been provided in **Annexure-E**. The details of plantation and SMC measures proposed are given as under:

Sl. No.	Area in Ha	Plantation model	Cost of Plantation in Rs. per Ha.	Total Plantation cost in Rs.	Cost of SMC Measures in Rs. per Ha.	Total cost SMC measures in Rs.
1	100.0	ANR plantation @500 plants per ha	150051.00	15005100.00	39284.00	3928400.00
Total				15005100.00		3928400.00

So, the cost of SMC measures amounting **Rs. 3928400.00** is **26.18 %** of total plantation cost of **Rs. 15005100.00**.

5. Proposed Monitoring Mechanism: The scheme shall be executed by the Divisional Forest Officer, Subarnapur Forest Division with his staff and all the prescribed records will be maintained throughout the planting operation. In addition to internal monitoring by Forest Officers of State Government, a Monitoring Committee under item no. 3.4(iii) of consolidated guidelines under F.C Act 1980 issued by MoEF, shall be established with a nominee of the Central Government to oversee that the stipulations, including those pertaining to Compensatory Afforestation are carried out.

6. The site selected for Compensatory Afforestation is located inside the Hatilimunda RF of the Birmaharajpur Range. This Reserve Forest is highly fragmented due to issuance of the titles under FRA and encroachment. Site selected for the CA is surrounded by the land under cultivation. Hence, a strong wire mesh fencing is highly essential to protect the CA plantation site from encroachment in the coming future. So, in order to ensure success of the plantation a strong wire mesh fencing is proposed in place of the bamboo twigs fencing as recommended in the one-time cost norm for Compensatory Afforestation issued vide Office Order No. 1109 dated 08.11.2021 of the PCCF, Odisha.

7. Total cost of the Compensatory Afforestation scheme:

Sl. No.	Item of Work	Total Estimated Cost in Rs.	Details of the Operations are given in
1	Cost of ANR Plantation @500 plants over 100.00 Ha.	15005100.00	Annexure-B
2	Wire mesh fencing around plantation sites around 100.0 Ha. over 25000 RMT	46231600.00	Annexure-C
3	Soil Moisture Conservation Work over 100.0 Ha.	3928400.00	Annexure-D
4	Solar and Manual Watering over 100.0 Ha (Twenty Five Units).	1,30,06,525.00	Annexure-E
	Sub-Total:	7,81,71,625.00	

Total cost of the project: The total cost of the project is **Rs.7,81,71,625.00 (Rupees Seven Crore eighty-one lakhs seventy-one thousand six hundred twenty-five)** only as given above, which shall be payable by the user agency to the DFO, Subarnapur Forest Division.

ANNEXURE-A
CO-ORDINATES OF BOUNDARY PILLARS OF CA LAND IN HATILIMUNDA RESERVE FOREST

PATCH- 100.0 Ha.

GPS Co-ordinates					
Sl. No.	Latitude	Longitude	Sl. No.	Latitude	Longitude
1	N21 00.097	E84 06.691	33	N21 00.955	E84 06.824
2	N21 00.162	E84 06.707	34	N21 00.987	E84 06.783
3	N21 00.228	E84 06.723	35	N21 00.928	E84 06.761
4	N21 00.235	E84 06.689	36	N21 00.822	E84 06.750
5	N21 00.203	E84 06.669	37	N21 00.782	E84 06.672
6	N21 00.229	E84 06.618	38	N21 00.706	E84 06.616
7	N21 00.286	E84 06.658	39	N21 00.754	E84 06.599
8	N21 00.333	E84 06.654	40	N21 00.819	E84 06.603
9	N21 00.320	E84 06.614	41	N21 00.829	E84 06.573
10	N21 00.367	E84 06.586	42	N21 00.870	E84 06.620
11	N21 00.377	E84 06.496	43	N21 00.899	E84 06.665
12	N21 00.409	E84 06.506	44	N21 00.945	E84 06.620
13	N21 00.513	E84 06.498	45	N21 01.092	E84 06.635
14	N21 00.557	E84 06.527	46	N21 01.110	E84 06.541
15	N21 00.576	E84 06.621	47	N21 00.991	E84 06.454
16	N21 00.536	E84 06.636	48	N21 00.852	E84 06.354
17	N21 00.522	E84 06.615	49	N21 00.692	E84 06.239
18	N21 00.491	E84 06.644	50	N21 00.673	E84 06.243
19	N21 00.554	E84 06.677	51	N21 00.634	E84 06.247
20	N21 00.559	E84 06.761	52	N21 00.603	E84 06.247
21	N21 00.621	E84 06.765	53	N21 00.551	E84 06.239
22	N21 00.615	E84 06.718	54	N21 00.478	E84 06.211
23	N21 00.628	E84 06.714	55	N21 00.458	E84 06.212
24	N21 00.648	E84 06.731	56	N21 00.443	E84 06.217
25	N21 00.661	E84 06.698	57	N21 00.415	E84 06.235
26	N21 00.680	E84 06.687	58	N21 00.382	E84 06.241
27	N21 00.774	E84 06.814	59	N21 00.338	E84 06.268
28	N21 00.798	E84 06.791	60	N21 00.223	E84 06.270
29	N21 00.834	E84 06.827	61	N21 00.189	E84 06.383
30	N21 00.859	E84 06.802	62	N21 00.156	E84 06.494
31	N21 00.893	E84 06.822	63	N21 00.123	E84 06.604
32	N21 00.920	E84 06.811			

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 Kms) & 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-pesticide @ 5 gms/plant = 2.5 kg @ Rs. 250/- 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

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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 seedling	TOTAL COST
1	2	3	4	5	6	7	8
1	0th year	41	12751.0	100.0	542.00	0.00	13400.00
2	1st year	41.5	12906.5	7400.0	393.50	27671.00	48071.00
3	2nd year	24.5	7619.5	1217.5	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

Notes:

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 provided to Plantation.
3. Site specific soil conservation work like LBCJ, Gully Plugging, Staggered Trench, Contour Trench, Graded Broad, 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 Norms of various items can be changed with the approval of the concerned RDOs keeping the overall cost norm fixed for each Financial Year.

APCCF (Forest Division & NO, FC Act)

Fencing

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

Sl. No.	Commence ment 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	8500	4800	4800	4800	4800	4800	4800	4800											
1	2021-22	13400	51315	13577	10303	5834	6176	6432	6754	7092	7446	7819											
2	2022-23		14070	53881	14256	10818	6126	6432	6754	7092	7447	7818	8210										116098
3	2023-24			14774	56575	14969	11359	6432	6754	7092	7447	7819	8209	8621									142904
4	2024-25				15513	59404	12717	11927	6754	7092	7447	7819	8210	8619	9052								150051
5	2025-26					16189	62374	16503	12323	7092	7447	7819	8210	8621	9050	9505							157554
6	2026-27						17103	65493	17328	13149	7647	7819	8210	8621	9052	9505	9978	10479					165433
7	2027-28							17958	68768	18194	13806	7819	8210	8621	9052	9505	9978	10479					173705
8	2028-29								18556	72206	19104	14496	8210	8621	9052	9505	9980	10477	11003				182390
9	2029-30									19799	75816	20059	15221	8621	9052	9505	9980	10479	11002	11553			191510
10	2030-31										20789	79607	21082	15982	9052	9505	9980	10479	11003	11552	12131		201086
																							211141

APCCF (Forest Division & NO, FC Act)

Sl. No	Items of work	Preferable Period of Execution	Man days	Wages	Material cost (Rs)	Total Cost (Rs. per Ha.)
1	Maintenance of wire mesh fence @ 2% per running mt. cost of installation in 1st yr. 1142x 2% = 22.84 say Rs. 23	Sept./Oct	0	0	11000	11000

Abstract					
Sl. No	Year	No. person days	Labour cost @ Rs. 311/- per day	Material Cost	Total cost (Rs.)
1	0th year	2.42	752.62	284857.4	285610.0
2	1st year	0.0	0.0	0.0	0.0
3	2nd year	0.0	0.0	11000.0	11000.0
4	3rd year	0.0	0.0	11000.0	11000.0
5	4th year	0.0	0.0	11000.0	11000.0
6	5th year	0.0	0.0	11000.0	11000.0
7	6th year	0.0	0.0	11000.0	11000.0
8	7th year	0.0	0.0	11000.0	11000.0
9	8th year	0.0	0.0	11000.0	11000.0
10	9th year	0.0	0.0	11000.0	11000.0
11	10th year	0.0	0.0	11000.0	11000.0
Total:		2.42	752.62	383857.4	3,84,610.0


APCCF (Forest Diversion & NO, FC Act)

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

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 Year	285610	0	31000	11000	11000	11000	11000	11000	11000	11000	11000	11000										419331
1	2021-22	285610	0	12126	31734	33170	14039	14140	15478	16752	17054	17918											442399
2	2022-23		294891	0	13332	13971	14039	14741	15477	16232	17065	17917	18814										482216
3	2023-24			314886	0	13968	14040	14741	15478	16231	17065	17918	18813	19754	20743								485432
4	2024-25				350630	0	14037	14142	15478	16232	17064	17918	18814	19754	20743	21783							529705
5	2025-26					347162	0	14739	15476	16233	17065	17918	18813	19755	20743	21779	22869						535191
6	2026-27						364520	0	15476	16233	17065	17918	18814	19754	20743	21780	22868	24012					561351
7	2027-28							382746	0	16233	17065	17918	18814	19755	20743	21780	22869	24011	25113				590049
8	2028-29								401863	0	17063	17919	18814	19755	20743	21779	22869	24012	25112	26274			619652
9	2029-30									421877	0	17916	18815	19755	20743	21780	22869	24012	25113	26273	27758		650531
10	2030-31										443276	0	18812	19756	20743	21780	22869	24012	25113	26273	27758		682031

Sumo
APCCF (Forest Diversion & NO, FC Act)

SMC Works Model-C			
Cost Norms for creation of Compensatory Afforestation with Stabilization of Soil & Conservation of Moisture (1000 Plants/ Ha.)			
WAGE RATE Rs- 211/- 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, LBCD, Wire mesh LBCD, Sub surface Dyke & WHS as per the slope & site requirement on 15	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. 211/- per day	Material Cost
1	0th year	0.0	0.0	0.0
2	1st year	0.0	0.0	20,215.00
3	2nd year	0.0	0.0	3,032.00
4	3rd year	0.0	0.0	3,032.00
5	4th year	0.0	0.0	3,032.00
6	5th year	0.0	0.0	3,032.00
Total		0.00	0.00	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.



AFCCF (Forest Division & ND, FC Act)

Matrix for (SMC)

Sl. NO.	Commencement Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	Total Cost
	Base Year	0	2015	2012	2012	2012	2012											
1	2013-22	0	22276	3142	3510	3685	3870											35633
2	2022-23		0	22287	3529	3606	3669	4064										37415
3	2023-24			0	23471	3684	3870	4062	4267									39284
4	2024-25				0	24571	3888	4264	4265	4480								41248
5	2025-26					0	25800	4061	4267	4478	4704							43310
6	2026-27						0	27090	4264	4480	4702	4919						45475
7	2027-28							0	28445	4477	4704	4937	5186					47749
8	2028-29								0	29867	4702	4939	5184	5445				50136
9	2029-30									0	31360	4916	5186	5442	5717			52642
10	2030-31										0	32928	5183	5445	5715	6003		55274

In Rupees

ADCCF (Forest Diversion & NO. FC Act)

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Watering Model-W-III		
Watering provision to CA Plantation		
Solar System (One Solar Energy Pump/ 5 Ha Plantation, Wage rate @ Rs.311/-		
Year of Installation (0th Year)		
1	Cost of Borewell	150000
2	Installation of Solar panel & other System	300000
3	Cost of 0.5 HP submersible motor with accessories	50000
4	Water Storage Tanks/ Flexible pipes	15000
Total		5,15,000
Cost of Water per Plant (515000/ 5000) = Rs. 103/-		
Cost of Water per Ha = Rs. 1,03,000/-		
1st Year Watering		
a.	Cost of Water - 103 x 1000	0
b.	Watering 1000 Plants (Nov-Mar.) @ 200 plants/MD with 7 days rotation 20 MD x 5 months = 100 MD x 311 =	31,100
Total		31,100
2nd Year Watering		
a.	Cost of Water per plant @ 20% of installation year cost 103 x 20% = 20.60 or 21.00 For 1000 plants= 21 x 1000=	21,000
b.	Watering 1000 Plants (April- June & Nov-Mar.- 8 months) @ 200 plants/MD with 7 days rotation 20 MD x 8 months = 160 MD x 311 =	49,760
Total		70,760
3rd Year Watering		
a.	Cost of Water per plant @ 20% of installation year cost 103 x 20% = 20.60 or 21.00 For 1000 plants= 21 x 1000=	21,000
b.	Watering 1000 Plants (April- June & Nov-Mar.- 8 months) @ 200 plants/MD with 7 days rotation 20 MD x 8 months = 160 MD x 311 =	49,760
Total		70,760
4th Year Watering		
a.	Cost of Water per plant @ 20% of installation year cost 103 x 20% = 20.60 or 21.00 For 1000 plants= 21 x 1000=	21,000
b.	Watering 1000 Plants (April- June & Nov-Mar.- 8 months) @ 200 plants/MD with 7 days rotation 20 MD x 8 months = 160 MD x 311 =	49,760
Total		70,760
5th Year Watering		
a.	Cost of Water per plant @ 20% of installation year cost 103 x 20% = 20.60 or 21.00 For 1000 plants= 21 x 1000=	21,000
b.	Watering 1000 Plants (April- June & Nov-Mar.- 8 months) @ 200 plants/MD with 7 days rotation 20 MD x 8 months = 160 MD x 311 =	49,760
Total		70,760

Abstract				
SL No	Year	No. person days	Labour cost @ Rs. 311/- per day	Material Cost
1	0th year	0	0.0	103000.0
2	1st year	100.0	31100.0	0.0
3	2nd year	160	49760.0	21000.0
4	3rd year	160	49760.0	21000.0
5	4th year	160	49760.0	21000.0
6	5th year	160	49760.0	21000.0
Total:		740	230140	187000
				4,17,140


 APCCF (Forest Diversion & NO, FC Act)

Matrix for Model-W-III Watering (Solar System Fitted with Borewell) per Ha (One solar pump/ 5 Ha)


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	103000	31100	70760	70760	70760	70760											
1	2021-22	103000	32655	78006	81915	86008	90309											
2	2022-23		108150	34288	81906	86011	90308	94824										471893
3	2023-24			113558	36002	86001	90312	94823	99565									495487
4	2024-25				119236	37802	90301	94828	99564	104543								520261
5	2025-26					125198	39692	94816	99569	104542	109770							546274
6	2026-27						131458	41677	99557	104547	109769	115259						573587
7	2027-28							138031	43761	104535	109774	115257	121022					602267
8	2028-29								144933	45949	109762	115263	121020	127073				632380
9	2029-30									152180	48146	115250	127071	133427				664000
10	2030-31										159789	50658	127077	133425	140098			697200
																		732060

ARCCF (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 over 102.27 Ha degraded forest land in Hatimuda RF of Subarnapur Forest Division in-lieu of Diversion of Forest Land for 220 KV DC Transmission line from existing 220/132 KV Grid Sub Station at Kesinga to proposed 220/132/33 KV Grid Sub Station at Baliguda and subsequent ground truthing have been done. The Outcome is as mentioned below:

Sl. No.	Name of the Range	Name of the Forest Block (RF-IPSPS-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		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	17
1	Bimathansipur	Hathmunda	102.27	0	0	78.2	24.07	0	0	102.27	78.2	24.07	0	102.27	ANR @ 500 Plants/Ha


 Divisional Forest Officer
 Subarnapur Forest Division