

**SCHEME FOR COMPENSATORY  
AFFORESTATION OVER AN AREA OF  
61.00 HA DEGRADED FOREST LAND  
IDENTIFIED IN BANKUD RF UNDER  
PATNAGARH FOREST RANGE OF  
BOLANGIR FOREST DIVISION AGAINST  
PROPOSED DIVERSION OF 30.469 HA OF  
FOREST LAND FOR CONSTRUCTION OF  
132 KV DC LINE ON DC TOWER FROM  
EXISTING 132/33 KV PHULBANI GRID  
SUB-STATION KANDHAMAL DISTRICT  
TO 132/33KV GRID SUB-STATION AT  
BOUDH IN BOUDH DISTRICT ODISHA.**

**By**

**ODISHA POWER TRANSMISSION  
CORPORATION LIMITED**

**ANGUL**

**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 @ 333 PERDAY	09-10
	BASE COST NORMS FOR COMPENSATORY AFFORESTATION THROUGH AIDED NATURAL REGENERATION (ANR) @ 500 SEEDLINGS / HA. WAGE RATE RS. 333/- 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 MODEL C)	18-19
	FENCING MODEL-F-I FENCING FOR COMPENSATORY PLANTATION RAISED INSIDE THE FOREST AREAS USING BAMBOO TWIGS & THORNS (250 RMT / HA) & MATRIX FOR FENCING MODEL -F-I	20-21
	WATERING MODEL - W-II WATERING PROVISION TO CA PLANTATION & MATRIX FOR WATERING MODEL -W-III (SOLAR SYSTEM 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 132KV Boudh to Phulbani DC line (65.374 KM) can be connected to the system from existing 132/33 KV sub-station at Boudh to 132/33KV grid sub-station at Phulbani for system strengthening purpose. The proposed 132 KV transmission line project will provide evacuation path from 132/33 KV grid sub-station at Boudh to 132/33 KV grid sub-station at Phulbani.

In order to eradicate low voltage problem in the southern parts of the State, it is felt essential to construct 132 DC line on DC tower from existing 132/33 KV Phulbani Grid Sub-station to 132/33 KV grid sub-station at Boudh with 2 numbers of feeder bay extension at Phulbani Grid Sub-station & 2 numbers of 132 KV feeder bay extension at Boudh Grid Sub-Station is to fulfill the requirement of Phulbani District.

Phulbani 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 most 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 Yojana are likely to be benefited by the proposed project. The implementation of the project is required for eradication of low voltage profile.

Presently Phulbani area is drawing power from 132 KV sub-station at Bhanjanagar in single circuit as there is no alternate power supply to Phulbani.

Commissioning of proposed 132kv Boudh to Phulbani DC line will ensure steady and reliable power supply and eradicate low voltage problem not only at Phulbani but also nearby area of Phulbani town area.

In the present proposal, for construction of 132KV DC transmission line from existing 132/33KV Grid sub-station at Phulbani (Latitude: 20°29'25.66"N & Longitude: 83°13'04.08"E) under Kandhamal tahasil, Kandhamal District along with its associated transmission line of 65.374 KM (approx) to 132/33 KV Grid sub-station at Boudh in Boudh Tahasil (Latitude: 20°46'10.74"N & Longitude: 84°18'50.78"E) Boudh 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 is passing through Kandhamal and Khajuripada Tahasils of Kandhamal District & Boudh and Harabhanga Tahasils of Boudh District.

The main thrust and emphasis are 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 30.469 Ha (Phulbani Forest Division 19.563 Ha + Boudh Forest Division 10.906 Ha Forest Land for Construction of 132 KV DC line on DC tower from existing 132/33 KV Phulbani Grid Sub-Station Kandhamal District to 132/33KV Grid Sub-Station at Boudh in Boudh district Odisha.

Degraded Forest Land over 61.00 Ha has been identified and allotted in Bankud RF under Padhel Beat, Padhel Section of Patanagarh Forest Range of Bolangir Forest Division, in favour of M/s Odisha Power Transmission Corporation Limited, Angul, vide letter No. 9029/4F-Misc dated. 13<sup>th</sup> December 2022 of the Divisional Forest Officer, Bolangir Forest Division for raising Compensatory Afforestation. The Degraded Forest Land over 61.00 Ha has been considered for plantation under ANR model @500 seedlings / Ha & the CA Scheme has been prepared to this effect.

The present scheme aims at preparation of a site-specific Compensatory Afforestation scheme over 61.00 Ha of degraded forest land identified in Bankud RF under Padhel Beat, Padhel Section of Patanagarh Forest Range of Bolangir Forest Division as per the cost norm approved by PCCF & HOFF, Odisha vide his Office Order No. 1109/9F-Misc-387/2021, dated 8<sup>th</sup> November 2021 with a maintenance period of ten years for raising Compensatory Afforestation.

## 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 Bankud RF under Patnagarh Range of Bolangir Forest Division and Bolangir District. This Forest Block is allotted to Rehabilitation working circle in the present approved 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. F44X1. The vegetation consists of Sal and its scattered associates like Piasal, Asana, Sisoo, Kuruma, Karada, Dhaura, Sidha, Harida, Bahada, Bheru, Kendu, and Amla,

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

The prescribed objectives of management for the identified forest block are 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 Bankud 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<sup>0</sup> to 45<sup>0</sup>C and minimum 10<sup>0</sup> to 15<sup>0</sup> 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 the names of scheme, year, user agency, area, VSS etc. on it. Therefore, the CA scheme is envisaged to be executed with involvement of Rengaljuri 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- A**.

##### **Decision Support System of Degraded Forest Land identified in Bankud RF under Patnagarh Range**

Sl. No	Name of the Site	Area identified for Plantation (in Ha)	Non-Forest	Open Forest	In Ha
					Scrub
1	Bankud RF	61.0	32.0	28.0	1.0

### **CHAPTER-IV**

#### **AGENCY RESPONSIBLE FOR COMPENSATORY AFFORESTATION**

##### **IV (1) - AGENCY RESPONSIBLE FOR PLACEMENT OF FUNDS**

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

##### **IV (2) - AGENCY RESPONSIBLE FOR EXECUTION OF COMPENSATORY AFFORESTATION**

The Territorial Wing of the Forest Department i.e. Divisional Forest Officer, Bolangir 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. *Syzgium cumini* (Jamu)
2. *Adina cardifolia* (Kuruma)
3. *Anogeissus latifolia* (Dhaura)
4. *Albizia lebbeck* (Siris)
5. *Dalbergia sissoo* (Sissoo)
6. *Azadirachta indica* (Neem)
7. *Gmelina arborea* (Gambar)
8. *Terminalia belerica* (Bahada)
9. *Terminalia chebula* (Harida)
10. *Pongamia pinnata* (Karanja)
11. *Emblica officinalis* (Amla)
12. *Madhuca indica* (Mahul)
13. *Zizyphus mauritiana* (Ber)
14. *Acacia catechu* (Khair)
15. *Buchanania lanzan* (Char)

#### **B. PRE-PLANTING OPERATION**

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

Nursery will be raised @550 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 (In the supervision of the Forest Range Officer, Patnagarh Range) with GPS coordinates, forward and backward bearing, pillar No. and distance between pillars inscribed in it. A DGPS map in the scale of 1:3960 has been

485

prepared along with DGPS co-ordinates, forward & backward bearing, pillar to pillar distance and pillar numbers reflected in the map. A sign board has been erected at a conspicuous location with name of the site, scheme, area etc. depicted on it.

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

The clearing of the site involving removal of invasive weeds, bushes, climbers, high stumps and singling of shoots will be taken up preferably by the end of February and latest by the end of March. Pits of the dimension 45 cm X 45 cm X 45 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 Twigs & Thorns. The total length of such fencing comes to 4.65 Km (4646 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 Rengaljuri VSS.

486

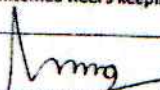
## Nursery Cost Norm for raising of 1000 (18 months) seedlings

### 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	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 5' X 200G) 300 nos./Kg. = 3.33 Kg@Rs.208/- per Kg. (including GST)	Nov- Dec	Kg	208	3.33	0	693	693
2	Procurement of raw & crude Polypot Mixture (Soil, Sand & CDM in ratio (2:1:1))							
	(i) Soil	Nov- Dec	Cft	10	22	0	220	220
	(ii) Sand	Nov- Dec	Cft	16	11	0	176	176
	(iii) CDM/ Vermi compost/ Bio-Fertilizers etc.	Nov- Dec	Cft	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 sheds.	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	3124.1	10121.6
B. 2nd Financial Year (Shifting of Seedlings to larger Polythene bag to avoid root coilling & 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 10" X 300 gauge) 60 nos. = 17 Kg & Rs.208 per Kg. (including GST)	May-June	Kg	208	17	0	3536	3536

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

Sl. No	Items of work	Preferable Period of Execution	Wage rate @ 311 per Manday			Labour Cost	Material Cost	Total Cost
			Unit	Unit Cost	No. / Qty.			
	Procurement of raw & crude Polyprop Mixture (Soil, Sand & CDM in ratio (2:1:1))							
5	(i) Soil	Apr/May	Cft	10	100	0	1000	1000
	(ii) Sand	Apr/May	Cft	16	50	0	800	800
	(iii) CDM/Vermi compost/ Bio-Fertilizers etc.	Apr/May	Cft	25	50	0	1250	1250
	(iv) Insecticide/ Bio-Pesticide	Apr/May	Kg	150	3	0	450	450
6	Preparation of potting mixture including pulverization and straining	Oct-Nov	MD	311	6	1866	0	1866
7	Filling of Polythene bags including repotting and setting	Oct-Nov	MD	311	35	10885	0	10885
8	Watering	Oct-March	MD	311	19	5909	0	5909
9	Sorting, Weeding, grading and resetting over one year period	April-March	MD	311	15	4665	0	4665
10	Contingencies (Water can, Buckets, Nursery shed, Electricity charges/ Diesel charges/ Maintenance of pump set/ Maintenance of Nursery, etc.)						400	400
	<b>TOTAL</b>				85	26435	7836	34271
<b>C. 3rd Financial Year (Maintenance upto Planting) April-June</b>								
1	Watering for 3 months (April to June)	April-June	MD	311	12	3732	0	3732
2	Weeding, Shifting and grading	April-June	MD	311	4	1244	0	1244
3	Cost of Insecticides/ Bio-Pesticide					0	400	400
4	Application of insecticides/ Bio-Pesticide		MD	311	1	311	0	311
5	Contingencies						230	230
	<b>TOTAL</b>				17	5287	630	5917
<b>ABSTRACT</b>								
<b>Item of work</b>						<b>Labour Cost</b>	<b>Material Cost</b>	<b>Total Cost</b>
A 1st Financial Year (Seedlings Cost for 3 Months)						6997.5	3124.1	10122
B 2nd Financial Year (12 Months)						26435	7836	34271
C 3rd Financial Year (3 Months)						5287	630	5917
<b>Total</b>						<b>38719.5</b>	<b>11590.1</b>	<b>50310</b>
Cost per 18 months old Seedlings = $50310/1000 = \text{Rs } 50.31/-$								
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								
 APCCF (Forest Diversion & NO, FC Act)								

## 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
<b>0th Year (Advance Work) Pre-Planting Operation</b>						
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
<b>Sub Total =</b>			<b>41</b>	<b>12751.00</b>	<b>100.00</b>	<b>12851.00</b>
<b>1st Year/Planting Year</b>						
1.	Refilling of pits by altering the dugout soil of the pits, application of organic compounds /CDM/FYM & Mixing the same perfectly.	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-pescticide @ 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	Jul-Aug	1.5	466.50	0	466.50

	nos.)					
7.	1 <sup>st</sup> weeding & Manuring	Aug-Sept	5	1555.00	0	1555.00
8.	2 <sup>nd</sup> 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
<b>Sub Total =</b>			<b>41.5</b>	<b>12906.50</b>	<b>7300.00</b>	<b>20206.50</b>
<b>2nd Year Maintenance</b>						
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 (Themet/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
<b>Sub Total =</b>			<b>24.5</b>	<b>7619.50</b>	<b>1737.50</b>	<b>9357.00</b>
<b>3<sup>rd</sup> Year Maintenance</b>						
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
<b>Sub Total =</b>			<b>23</b>	<b>7153.00</b>	<b>1400.00</b>	<b>8553.00</b>
<b>4th Year Maintenance</b>						
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
<b>Sub Total =</b>			<b>15</b>	<b>4665.00</b>	<b>0.00</b>	<b>4665.00</b>
<b>5th Year Maintenance</b>						
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
<b>Sub Total =</b>			<b>15</b>	<b>4665.00</b>	<b>0.00</b>	<b>4665.00</b>
<b>6th Year Maintenance</b>						
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

<b>Sub Total =</b>		<b>15</b>	<b>4665.00</b>	<b>0.00</b>	<b>4665.00</b>
--------------------	--	-----------	----------------	-------------	----------------

<b>7th Year Maintenance</b>						
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
<b>Sub Total =</b>			<b>15</b>	<b>4665.00</b>	<b>0.00</b>	<b>4665.00</b>
<b>8th Year Maintenance</b>						
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
<b>Sub Total =</b>			<b>15</b>	<b>4665.00</b>	<b>0.00</b>	<b>4665.00</b>
<b>9th Year Maintenance</b>						
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
<b>Sub Total =</b>			<b>15</b>	<b>4665.00</b>	<b>0.00</b>	<b>4665.00</b>
<b>10th Year Maintenance</b>						
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
<b>Sub Total =</b>			<b>15</b>	<b>4665.00</b>	<b>0.00</b>	<b>4665.00</b>

<b>ABSTRACT</b>							
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
	<b>Total =</b>	<b>235.0</b>	<b>73085.00</b>	<b>10537.50</b>	<b>3277.50</b>	<b>30187.00</b>	<b>117087.00</b>

472

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

**@ 500 Seedlings / Ha.**

**WAGE RATE Rs. 311/- PER MANDAY**

ANNEXURE - I

WAGE RATE Rs. 311/- PER MANDAY					
No.	Description of work	Preferable Period of Execution	No. of Mandays	Labour Cost (In Rs.)	Material Cost (In Rs.)
<b>0th Year (Advance work) Pre-Planting Operation</b>					
1	Survey, Demarcation and clearing of site	Nov/Dec	2	622	0
2	Preparation of Treatment Map (TM) & Map	Nov/Dec	1	311	139
3	Site preparation	Nov/Dec	2	622	0
4	Site cultural operations including clearing of weed, cutting of clamber, High stump cutting, smothering of stumps & removal of cut out after drying from the field to block space	Jan/Feb	18	4665	0
5	Alignment and stacking for digging of pits	Feb/Mar	1	311	0
6	Digging of pits (45 cm x 45 cm x 45 cm) in hard and gravelly soil	Feb/Mar	20	6220	0
<b>Total</b>			<b>41</b>	<b>12751</b>	<b>139</b>
<b>1st Year/Planting Year</b>					
1	Refilling of pits by altering the dugout soil of the pits, application of organic compounds/ CIM/ FYM & mixing the same perfectly.	June/Jul	4	1244	2500
2	Transportation of 10 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
3	Watering polythene bag seedlings at stacking site of plantation	Jul/Aug	1	311	0
4	Conveyance of polythene bag seedlings on head load from the stacking site to individual dugout pits within the plantation 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
5	Cost of Fertilizer & Insecticide (a) NPK/ Bio-fertilizer @ 50 gms/plant as basal dose 25kg @ Rs.20/- per kg = Rs. 750.00 (b) Urea/Vermicompost/Mu Khata/any other fertilizer @ Rs. 375.00 (c) Insecticide/ Bio pesticide @ 5 gms/plant - 2.5 kg @ Rs. 150/- per kg = Rs. 375.00	Jul/Aug	0	0	1500
6	Casualty Replacement @ 10% (30 nos.)	Jul/Aug	1.5	466.5	0.0
7	1st weeding & Manuring	Aug/Sept	5	1555	0

Sl. No.	Description of work	Period of execution	No. of Man-days	Labour Cost (Rs.)	Material Cost (Rs.)	Total cost (Rs.)
9	Urea/NPK/Bio-fertilizer/Vermicompost/Mo Khata/any other fertilizer @ Rs. 1400/-	Feb/Mar	4	933	0	933
10	Watch & Ward including watering as per requirement	Apr/Mar	8	2488	0	2488
<b>Total</b>						
<b>2nd Year Maintenance</b>						
1	Transportation of 50 seedlings from Nursery to plantation site including loading, unloading & conveyance by Tractor @ Rs.6/- per seedling	Jul	0.0	0.0	320.0	320.0
2	Casualty replacement	Jul	1.5	466.5	0.0	466.5
3	Cost of Fertilizer & Insecticide A) Cost of Insecticide/ Bio-pesticide/Thermit/ Forate/ @ 5 gms/plant = 25 kg @ Rs. 150/- per kg = Rs. 3750 B) Urea/NPK/Bio-fertilizer/Vermicompost/Mo Khata/any other fertilizer @ Rs. 1400/-	July/Aug	0	0	1437.5	1437.5
4	Weeding (Complete weeding), Manuring & Soil working (1m diameter around the plants)	Sep/Oct	8	2488	0	2488
5	Fire line tracing (2 m. wide fire line) & inspection path	Feb/Mar	3	933	0	933
6	Watch & Ward including watering as per requirement	Apr/Mar	12	3732	0	3732
<b>Total</b>						
<b>3rd Year Maintenance</b>						
3	Cost of Fertilizer Urea/NPK/Bio-fertilizer/Vermicompost/Mo Khata/any other fertilizer @ Rs. 1400/-	July/Aug	0	0	1400.0	1400.0
4	Weeding (Complete weeding), Manuring & Soil working (1m diameter around the plants)	Sep/Oct	8	2488	0	2488
5	Fire line tracing (2 m. wide fire line) & inspection path	Feb/Mar	3	933	0	933
6	Watch & Ward including watering as per requirement	Apr/Mar	12	3732	0	3732
<b>Total</b>						
<b>4th Year Maintenance</b>						
1	Fire line tracing (2 m. wide fire line) & inspection path	Feb/Mar	3	933	0	933
2	Watch & Ward including watering as per requirement	Apr/Mar	12	3732	0	3732
<b>Total</b>						
<b>5th Year Maintenance</b>						
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3.0	933.00	0	933
2	Watch & Ward including watering as per requirement	Apr/Mar	12	3732.00	0	3732
<b>Total</b>						
<b>6th Year Maintenance</b>						
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933.00	0	933
2	Watch & Ward including watering as per requirement	Apr/Mar	12	3732.00	0	3732
<b>Total</b>						
<b>7th Year Maintenance</b>						
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933.00	0	933
2	Watch & Ward including watering as per requirement	Apr/Mar	12	3732.00	0	3732
<b>Total</b>						
<b>8th Year Maintenance</b>						
1	Fire line tracing (2 m. wide fire line over 400 m length) & cultural operation	Feb/Mar	3	933.00	0	933
2	Watch & Ward including watering as per requirement	Apr/Mar	12	3732.00	0	3732
<b>Total</b>						
<b>9th Year Maintenance</b>						
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933.00	0	933
2	Watch & Ward including watering as per requirement	Apr/Mar	12	3732.00	0	3732
<b>Total</b>						
<b>10th Year Maintenance</b>						
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933.00	0	933
2	Watch & Ward including watering as per requirement	Apr/Mar	12	3732.00	0	3732
<b>Total</b>						
<b>Year wise Abstract of Cost Norm (showing seedling cost separately)</b>						

Sl. No.	Year	Area of plantation	Number of Man-days	Labour cost (Rs. 311 per day (Rs.))	Material Cost	Monitoring, Evaluation, Location, Documentation and Other Contingency (3% of 4+5)	Total cost (Rs.)	Total cost
		No person days						
1	2	3	4	5	6	7	8	
1	1st year	41	12751.0	1200.0	549.00	0.00	13490.00	
2	1st year	41.5	12920.5	1300.0	595.50	2767.10	48873.00	
3	2nd year	24.5	7619.5	1700.0	443.50	2156.00	12116.00	
4	2nd year	23.0	7153.0	1400.0	347.00	0.00	8900.00	
5	3rd year	15	4665.0	0.0	135.00	0.00	4800.00	
6	3rd year	15	4665.0	0.0	135.00	0.00	4800.00	
7	4th year	15	4665.0	0.0	135.00	0.00	4800.00	
8	4th year	15	4665.0	0.0	135.00	0.00	4800.00	
9	5th year	15	4665.0	0.0	135.00	0.00	4800.00	
10	5th year	15	4665.0	0.0	135.00	0.00	4800.00	
11	6th year	15	4665.0	0.0	135.00	0.00	4800.00	
	Total	235.0	73085.0	10537.5	3277.5	30187	117087.00	

Note:

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

APCCF (Forest Division & NO, FC Ad)

# **Matrix for ANR-500 Plants / Ha**

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

Sl. No.	Commencement Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI	Total Cost
1	2000-01	13400	46871	12316	8900	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	211341
2	2001-02	13400	46871	12316	8900	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	136098
3	2002-03	13400	46871	12316	8900	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	142904
4	2003-04	13400	46871	12316	8900	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	150051
5	2004-05	13400	46871	12316	8900	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	157554
6	2005-06	13400	46871	12316	8900	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	165433
7	2006-07	13400	46871	12316	8900	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	173705
8	2007-08	13400	46871	12316	8900	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	182390
9	2008-09	13400	46871	12316	8900	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	191510
10	2009-10	13400	46871	12316	8900	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	201086
11	2010-11	13400	46871	12316	8900	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	4800	211341

In Rupees

ANRCC (Forest Division & NO, FC Act)

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

(Cost Norms for Creation of Compensatory Afforestation with Stabilization of Soil & Conservation of Moisture (1000  
MOISTURE CONSERVATION) PER DAY)

Sl. No.	Item of Work	Unit/Period (Approximate)	Total Cost
1	0th Year (Pre-planting Operations)		0
2	1st Year		
2	Soil Conservation measure structures like Staggered Trench, Percolation pit, Contour trench, Graded earthen bund, LBCB, Wire mesh (RCC), Sub-surface Dyke & WWS as per the slope & site requirement on LS	Apr/Sept	20,215
3	2nd Year		
3	Maintenance of SMC structures @ 15% of initial year cost	Apr/Jul	3,032
4	3rd Year		
4	Maintenance of SMC structures @ 15% of initial year cost	Apr/Jul	3,032
5	4th Year		
5	Maintenance of SMC structures @ 15% of initial year cost	Apr/Jul	3,032
6	5th Year		
6	Maintenance of SMC structures @ 15% of initial year cost	Apr/Jul	3,032
	<b>Total</b>		<b>32,343.0</b>

**Abstract**

Sl. No.	Year	No. person days	Labour cost @ Rs. 111/- per day	Material Cost	Total cost (Rs.)
1	0th year	0.0	0.0	0.0	0.0
2	1st year	0.0	0.0	20,215.0	20,215.00
3	2nd year	0.0	0.0	3,032.00	3,032.00
4	3rd year	0.0	0.0	3,032.00	3,032.00
5	4th year	0.0	0.0	3,032.00	3,032.00
6	5th year	0.0	0.0	3,032.00	3,032.00
	<b>Total</b>	<b>0.00</b>	<b>0.00</b>	<b>32,343.0</b>	<b>32,343.0</b>

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

APCCF (Forest Division & ND, FC Act)

# **Matrix for (SMC)**

Matrix for (SMC)																	IN Rupees
Sl. No.	Component	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	
1	2021-22	0	20215	1032	3032	3032	3032	3032									35633
2	2022-23	0	21238	1112	3510	3655	3870	3904									37415
3	2023-24	0	21287	1112	3509	3686	3869	3904									39284
4	2024-25	0	21601	1684	3870	3870	4250	4250	4483								41248
5	2025-26	0	28471	28471	3454	3454	4250	4250	4483								43810
6	2026-27	0	21800	0	21800	4780	4780	4807	4478	4704							45475
7	2027-28	0	27590	4780	4780	4780	4780	4780	4480	4702	4931						47749
8	2028-29	0	28445	4477	4702	4931	5186										50136
9	2029-30	0	29887	4702	4931	5186	5445										52642
10	2030-31	0	31067	4931	5186	5445	5712										55274

  
 A/CCE (Forest Division & NO. FC Act)

## Fencing Model F-1

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

Fencing for Compensatory Plantation raised inside the Forest Areas using Bamboo Twigs & Thorns						
WAGE RATE: Rs. 211/- PER DAY						
Sl. No.	Items of work	Preferable Period of Execution	Man days	Wages	Material cost (Rs.)	Total Cost (Rs. per Ha.)
1st Year Maintenance						
1	Preparation of bamboo poles. Digging of holes of 2 ft. depth & driving bamboo poles @ 20 poles / Mt.	Sept./Oct.	70	14770	14110	28880
2	Labour: Material - 4800 (approx.) Bamboo poles of 4" height at 120 Nos. of bamboo poles per 12' x 12' x 12' (above ground) 250/2 - 125 x 1 - 126 Nos. of bamboo poles 1 bamboo (approx) 25' height - 3 poles 126/3 - 42 Bamboos @ 200 / Bamboo	Sept./Oct.	0	0	8100	8100
3	Preparation of bamboo poles. Digging of holes of 2 ft. depth & driving bamboo poles @ 20 poles / Mt.	Sept./Oct.	6.5	1371.5		1371.5
4	Cost of bamboo twigs for the bamboo twigs fence with double side two strand bamboo twigs (One 6" above ground and other one 4" above ground) (250x2) / 25 = 21 Bamboos @ 200 / Bamboo	Sept./Oct.	0	0	4200	4200
5	Making bamboo twigs fence. Finishing the twigs & tying the same on double strand on fence posts etc. @ Rs. 11 / Rmt	Sept./Oct.	0	7790		7790
6	500x 0.125 kg - 62.5 kg or Rs. 70 / Kg	Sept./Oct.	0	0	4375	4375
7	Making one Bamboo Twigs gate with bamboo frame	Sept./Oct.	0	0	500	500
TOTAL			45.5	14150.5	11600.5	45759.0
Rate per running mt. 45759 / 250 = 183 / Rmt						
2nd Year Maintenance						
1	Repair & Maintenance of Bamboo Twigs fence including Material cost	Feb./Mar.	20	4220	1500	7720
Rate per running mt. 7720 / 250 = 30.88 or say Rs. 31 / Rmt						
3rd Year Maintenance						
1	Repair & Maintenance of Bamboo Twigs fence including Material cost	Feb./Mar.	20	4220	5675	11895
Rate per running mt. 11895 / 250 = 47.58 or say Rs. 48 / Rmt						
4th Year Maintenance						
1	Repair & Maintenance of Bamboo Twigs fence including Material cost	Feb./Mar.	20	4220	5675	11895
Rate per running mt. 11895 / 250 = 47.58 or say Rs. 48 / Rmt						
5th Year Maintenance						
1	Repair & Maintenance of Bamboo Twigs fence including Material cost	Feb./Mar.	20	4220	5675	11895
Rate per running mt. 11895 / 250 = 47.58 or say Rs. 48 / Rmt						
Abstract						
Sl. No	Year	No. person days	Labour cost @ Rs. 211/- per day	Material Cost	Total cost (Rs.)	
1	1st year	0.0	0.0	0.0	0.0	
2	1st year	45.5	14150.5	8100.5	45759.0	
3	2nd year	20.0	4220.0	1500.0	7720.0	
4	3rd year	20.0	4220.0	5675.0	11895.0	
5	4th year	20.0	4220.0	5675.0	11895.0	
6	5th year	20.0	4220.0	5675.0	11895.0	
Total:		125.5	39830.5	50133.5	89164.0	

  
 APCCF (Forest Division & NO, FC Act)

498

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

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

Sl. No.	CONTRACT NO.	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	Total Cost
1	2013-22	0	15734	7720	11805	11805	21805											99967
2	2013-23		8453	8511	13770	14458	15181											104966
3	2013-24			50449	8937	14458	13181	15943										110214
4	2014-25			0	9386	15183	15943	18737	17574									115725
5	2015-26				0	58401	10346	18738	17574	18453								121512
6	2016-27					0	61371	10863	17575	18453	19276							127588
7	2017-28						0	64187	11406	18454	19276	20345						133968
8	2018-29							0	67606	11978	19277	20345	21162					140646
9	2019-30								0	70986	11978	20346	21167					147699
10	2020-31									0	74340	18304	21163	22430	23552			159084

in Rupees

Amo

**Watering Model – W-III**  
**Watering Provision to CA Plantation**

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
<b>Total</b>					<b>5,15,000</b>
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
<b>Total</b>					<b>31,100</b>
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
<b>Total</b>					<b>70,760</b>
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
<b>Total</b>					<b>70,760</b>
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
<b>Total</b>					<b>70,760</b>
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
<b>Total</b>					<b>70,760</b>
Abstract					
Sl. No	Year	No. person days	Labour cost @ Rs. 311/-per day	Material Cost	Total cost (Rs.)
1	0th year	0	0.0	103000.0	103000.0
2	1st year	100.0	31100.0	0.0	31100.0
3	2nd year	160	49760.0	21000.0	70760.0
4	3rd year	160	49760.0	21000.0	70760.0
5	4th year	160	49760.0	21000.0	70760.0
6	5th year	160	49760.0	21000.0	70760.0
<b>Total:</b>		<b>740</b>	<b>230140</b>	<b>187000</b>	<b>4,17,140</b>

APCCF (Forest Diversion & NO, FC Act)

500

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											471893
2	2022-23		108150	34288	81906	86011	90308	94824										495487
3	2023-24			113558	36002	86001	90312	94823	99565									520261
4	2024-25				119236	37802	90301	94828	99564	104543								546274
5	2025-26					125198	39692	94816	99569	104542	109770							573587
6	2026-27						131458	41677	99557	104547	109769	115259						602267
7	2027-28							138031	43761	104535	109774	115257	121022					632380
8	2028-29								144933	45949	109762	115263	121020	127073				664000
9	2029-30									152180	48246	115250	121026	127071	133427			697200
10	2030-31										159789	50658	121013	127077	133425	140098		732060

In Rupees

501

*[Signature]*

ARCCF (Forest Diversion & NO, FC Act)


**TOTAL COST OF PROJECT**

S. No.	Item of Work	In Rupees
1	Plantation over 61 ha @ 500 Plants per ha in Base Norm (Year 2023-2024) @ Rs. 150051.00 x 61 ha	9153111.00
2	Soil Moisture Conservation (SMC Work Model C) over the 61 ha plantation in base norm year 2023-2024 @ Rs. 39284.00 x 61 ha	2396324.00
3	Fencing Bamboo Twigs & thorns Fencing Model F-1) at base norm year 2023-2024) @ Rs. 110214.00 per 250 RMT (for 4654 RMT)	2051743.82
4	Watering provision to the site using Solar system fitted with Borewell (Watering model-W-III) in base cost norm (2023-2024) @ 520261.00 x 61 ha	31735921.00
	<b>TOTAL</b>	<b>45337099.82</b> <b>Or say</b> <b>45337100.00</b>

(Rupees Four crore fifty three lakhs thirty seven thousand one hundred) only

**A. PROVISION OF FUNDS AND FUND UTILIZATION**


Rs. 45337100.00 (Rupees Four crore fifty three lakhs thirty seven thousand one hundred) only shall be deposited by the User Agency M/s OPTCL, Angul 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, Bolangir Division on allotment by the Principal Chief Conservator of Forests, Odisha, Bhubaneswar.

  
Divisional Forest Officer,  
Bolangir Forest Division

## CHAPTER- VII

### **DETAILS OF PROPOSED MONITORING MECHANISM**

Compensatory Afforestation will be taken up in the identified site by the Range Officer, Patnagarh Range of Bolangir Division. The Range Forest Officer, Patnagarh 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, Bolangir Division. DGPS co-ordinates along with other required information 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 staff of Patnagarh Range and reported to the Divisional Forest Officer for necessary action. The same thing will be reported to the Regional Chief Conservator of Forests, Berhampur & 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,  
Bolangir Forest Division