

**SCHEME FOR COMPENSATORY
AFFORESTATION OVER 91.00 Ha. OF NON-
FOREST GOVT. LAND @333/- PER MANDAYS
(AS PER ONETIME COST NORM) IDENTIFIED
IN VILLAGE UPAR BIRKALA UNDER
BANSAPAL TAHASIL OF B.J.P. RANGE OF
KEONJHAR FOREST DIVISION AGAINST
LASERDA-PACHERI MANGANESE & IRON
ORE BLOCK
OF
M/s THRIVENI EARTHMOVERS PVT. LTD**

ELEMENTS OF THE SCHEME FOR COMPENSATORY AFFORESTATION

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CHAPTER- I

BRIEF NOTE ON THE PROPOSED FOREST DIVERSION PROPOSAL

Government of Odisha issued the Letter of Intent (LoI) vide letter No – IV (MISC) SM-06/2017848/SM, Bhubaneswar dated 27.01.2017 under Rule 18(1) of Mineral Auction Rules 2015 for grant of Composite License (CL) in favor of M/s Thriveni Earthmovers Pvt. Ltd (TEMPL). After complying with the stipulated conditions of LoI, Govt. of Odisha declared M/s Thriveni Earth Movers Pvt. Ltd as the Successful Bidder and Granted the Composite License over 256.304 ha for Manganese vide No. IV (B)SM-100/2007-433/SM, dated 19.01.2019 and the prospecting license deed was executed on 24.01.2019 for 2 years. During the prospecting new minerals (i.e. iron ore) was discovered and it was intimated to Govt. under Rule 11(2) of Minerals (Other than Atomic and Hydro Carbons energy Minerals) Concession Rules, 2016. On due completion of exploration, Mining Lease application over 131.889 ha was submitted and Government of Odisha has awarded the Letter of Intent for grant of mining lease vide No. 7731-IV(B)SM-100/2017/SM dated 21.09.2021 in favour of M/s Thriveni Earthmovers Pvt. Ltd. for Manganese & Iron ore over an area of 131.889 ha situated in Dhanrjayapur-40, Kanrda -38 & Laserda village under Barbil Tehsil of Keonjhar District, Odisha. Subsequently after conduct of DGPS survey by ORSAC, the area now comes to 131.800 ha which has been intimated by Director of Mines vide no. MXIII (b) 80/2015/8031/DM/dated 22.10.2021.

The allotted ML area is bounded by latitude 22°04'11.44231" to 22°03'25.92856"N and longitude 85°19'15.99748" to 85° 17'53.81761"E is shown in survey of India Topo Sheet No. N45H8(73 F/8). The total area over 131.800 hectare consists of 53.467 ha of Revenue Forest and 40.884 ha of non-forest land recorded as forest as on 25.10.1980 and 37.449 ha of Non-Forest land, copy of Land Schedule authenticated by concerned authority with Certificate of Tahasildar in regards to status as on 25.10.1980 of Laserda-Pacheri Manganese & Iron ore block over an area of 131.800 ha authenticated by the Tahasildar, Barbil.

The LoI holder has submitted Forest Diversion Proposal for mining operation within the granted LoI for Mining Lease bearing Proposal No. FP/OR/MIN/149499/2021, State Sl. No. – OR-094/2021 dated 23.11.2021 seeking approval u/s- 2(iii) and 2(ii) of FC Act, 1980. The proposal for diversion of 94.351 ha under Sec. 2(iii) of F. C. Act 1980 including 4.261 ha of forest land abide for Safety Zone along the Lease boundary and village road. Out of the above an area over 90.09 Ha excluding the safety zone is also being simultaneously applied under Section 2(ii) of FC Act, 1980 Forest land for mining and ancillaries activities within the granted LoI area of 131.800 ha.

The present Compensatory Afforestation scheme, prepared at the prevailing wages @Rs. 333.00 per man days with maintenance period of 10 (ten) years (As per onetime cost norm provided by the PCCF, Odisha, Bhubaneswar vide their O.O. No. 1109 dated 08.11.2021 on Base Norm for the year 2022-23), over 91.00 ha non-forest land identified in village Upar-Birikala under BJP range of Banspal Tahasil of Keonjhar district, in favour of Laserda Pacheri Manganese & Iron Block of M/s Thriveni Earthmovers Pvt. Ltd, vide letter No. 2366/Rev dated 07.12.2021 of the Collector, Keonjhar for raising Compensatory Afforestation.

CHAPTER- II

DETAILS OF LAND IDENTIFIED FOR COMPENSATORY AFFORESTATION

A. LAND IDENTIFICATION AND JOINT VERIFICATION OF THE IDENTIFIED SITE.

The site for Compensatory Afforestation has been identified in village Upar-Birikala under Banspal Tahasil in B.J.P. Range of Keonjhar Forest Division over 91.00 ha and has been jointly verified by the Tahasildar, Banspal, Revenue Inspector, Tarmakanta, Range Officer, B.J.P. Range and Forest Section Officer, Suakati. The identified land has been allotted in favour of Laserda Pacheri Manganese & Iron Block of M/s Thriveni Earthmovers Pvt. Ltd by the Collector, Keonjhar vide letter No. 2366/Rev dated 07.12.2021. The identified site bears Khata No. 34(AJA) and Plot No.117/172, 109, 110/171, 114, 115 & 116 and Khata No. 35(AAA) and Plot No. 111 & 112(P) in pursuance of guideline issued vide letter F. No. 11-306/2014-FC dated 07.10.2014 of MoEF&CC, Govt. of India.

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

The Tahasildar, Banspal has given certificate of non-encroachment and non-encumbrance in respect of the non-forest Govt. land identified and allotted for Compensatory Afforestation.

C. INFORMATION ON LAND STATUS.

The land schedule and land status of 91.00 ha land identified and allotted for Compensatory Afforestation is furnished hereunder:-

Tahasil	Village	Khata No.	Plot No.	Area taken for instant proposal for CA (in ha)	Kissam
Banspal	UparBirikala	34(AJA)	117/172	5.9100	Parbat
			109	20.0000	Parbat
			110/171	12.3770	Parbat
			114	12.3200	Parbat
			115	11.6800	Parbat
			116	9.1200	Parbat
		35(AAA)	111	11.7720	Parbat
			112(P)	7.8210	Parbat
			Total	91.0000	

D. SUITABILITY OF IDENTIFIED SITE FOR COMPENSATORY AFFORESTATION.

The identified land is free from encroachment and encumbrance. This land is neither covered under Section-4 of Orissa Forest Act, 1972 nor included in DLC report.

The non-forest Govt. land identified in village Upar-Birikala is in one patch situated in hilly slopes with existing growth of Sal and its associates. The slope of the identified site is moderate and suitable for Compensatory Afforestation in AR plantation model@ 1000 seedling per ha over 39.00 ha and ANR without Gap plantation model over 52.00 ha.

The topography of the area is mainly hilly. The soil is prone to erosion necessitating soil-moisture conservation measures. Available depth of sandy-loam soil is conducive for plantation with suitable soil-moisture conservation measures. The average

temperature varies from 13.5° C minimum in December to 45° C maximum in May. The annual rainfall varies from 1200 mm to 1500 mm. The maximum rainfall is received during the rainy season from July to September. The identified land is considered for Compensatory Afforestation in AR plantation model@ 1000 seedling per ha over 39.00 ha and ANR without Gap plantation model over 52.00 ha. The CA scheme is envisaged to be executed with involvement of Tala-BirikalaVSS.

CHAPTER-III

DELINEATION OF PROPOSED AREA ON SUITABLE MAP

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

The area has been demarcated through GPS survey and 47 nos of 4' height RCC pillars have been posted around the identified area and the GPS survey data showing latitude & longitude of each point and their chainage with bearing has been depicted in the village sheet map (Map Enclosed). A durable sign board has been erected at the identified site at a conspicuous location with name of the project, year of allotment, name of the scheme, details of plots etc. depicted there on.

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 the approved scheme.

IV(2) AGENCY RESPONSIBLE FOR EXECUTION OF COMPENSATORY AFFORESTATION

The Territorial Wing of the Forest Department i.e. Divisional Forest Officer, Keonjhar Division will be assigned with the task for execution of Compensatory Afforestation.

Decision Support System of Non-Forest Govt. land identified in village Upar-Birikala under Banspal Tahasil of Keonjhar District.

Name of the site	Area identified for plantation (in ha)	MDF	In Sq. Km.	
			Non-Forest	Open Forest
Village-Upar-Birikala	91.00	0.52	0.26	0.13

CHAPTER- V

DETAILS OF WORK SCHEDULE PROPOSED FOR COMPENSATORY AFFORESTATION

A. PLANTING PLAN

Planting Plan reflects the species specific treatment of the identified site. Choice of species is based on the geo-morphology of the site, soil-texture, structure, fertility and depth, proneness of the site to water logging etc. Specific treatment of the site in terms of soil and moisture conservation intervention will be depicted 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. *Accacia catechu* (Khair)
5. *Dalbergia sissoo* (Sissoo)
6. *Azadirachta indica* (Neem)
7. *Gmelina arborea* (Gambar)
8. *Terminalia belerica* (Bahada)
9. *Terminalia chebula* (Harida)
10. *Pongamia pinnata* (Karanja)
11. *Embllica officinalis* (Ainla)

B. PRE-PLANTING OPERATION

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

Nursery will be raised @1100 seedlings per ha including seedlings for 10% causality replacement under AR plantation model for 39.00 ha.

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

The planting area has been surveyed and demarcated through GPS survey and 47 nos of 4' height RCC pillars have been posted at inter visible distance (as per the direction of forest Range Officer, BJP Range) with GPS co-ordinates, forward and backward bearing, pillar No. and distance between pillars inscribed in it. A GPS map in the scale of 1:4000 has been prepared along with GPS co-ordinates forward and backward bearing, pillar No. and distance between pillars reflected in the map. A durable sign board has been erected at a conspicuous location with name of the site, scheme, area etc. depicted on it.

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

The clearing of the site involving removal of invasive weeds, bushes, climbers, high stumps and singling of shoots will be taken up preferably by the end of February and latest by the end of March. Pits of the dimension 45 x 45 x 45 cm. will be dug @1000 per ha over 39.00 ha preferably 2 months before or at least a month before planting of seedlings.

C. PLANTING OPERATION

Planting of seedlings will be taken up in the month of July. The polythene {(size 12 x 10) (300 gauge)} 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 non-forest sites urban compost or farmyard manure, wherever available, will be added to the soil while refilling the pits. As regards artificial fertilizers, the minerals required and dosage @ 50 grammes of patent mixtures like 'Gromor' or N.P.K. (2:2:1) will be applied in two split doses one in August and the other in September.

D(4)-SOIL MOISTURE CONSERVATION MEASURES

Special Soil Moisture Conservation Measures will be taken up through construction of LBCD structures of dimension 10' x 10' x 5' to the tune of 91 nos. over the entire plantation site.

D(5)-WATERING PROVISION

7 Nos. Diesel pump set with borewell (1 Pump set + Borewell for 5 ha plantation) for 39.00 ha plantation.

D(6)-PROTECTION AGAINST FIRE AND BIOTIC INTERFERENCE

It is proposed to protect the CA plantation from grazing by domestic animals using GI Chain Link Mesh Fencing. The total length of such GI Chain Link Mesh Fencing for both the patches which comes to 6.40 Km (6400 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 Tala-BirikalaVSS.

CHAPTER- VI

COST STRUCTURE OF PLANTATION, PROVISION OF FUNDS AND UTILIZATION

Base Cost Norm for AR Plantation @1000 seedlings per ha (18 months old seedlings) @ 333.00/- Mandays as per revised wage rate by Labour Commissioner, Odisha, Bhubaneswar vide Notification No. 6078/LC dated 19.10.2022. The onetime cost norm provided by the PCCF, Odisha, Bhubaneswar vide their O.O. No. 1109 dated 08.11.2021 (As per base norm of Matrix for the year 2022-23)

ANNEXURE-4						
BASE COST NORM FOR COMPENSATORY AFFORESTATION (BLOCK PLANTATION) @ 1000 PLANTS PER HECTARE (18 months old seedling)						
WAGE RATE RS-311/- PER MANDAY						
Sl. No	Items of work	Preferable Period of Execution	No of Mandays	Labour Cost (In Rs.)	Material Cost (In Rs.)	Total cost (In Rs.)
1	2	3	4	5	6	7
0th Year (Advance work) Pre-Planting Operation						
1	Survey, Demarcation and Pillar posting	Nov/Dec	2	622	0	622
2	Preparation of Treatment Map (Digital Map)	Nov/Dec	1	311	100	411
3	Site preparation (Cleaning & removal of debris)	Nov/Dec	12	3732	0	3732
4	Creation of 4.00 mt wide Inspection Path	Feb/Mar	1	311	0	311
5	Alignment and stacking 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	40	12440	0	12440
7	Construction of Temporary Labour Shed, Drinking water facility and First-Aid etc.	Jan/Mar	0	0	3500	3500
	Total		57	17727	3600	21327
1st Year/Planting Year						
1	Refilling of pits by altering the dugout soil of the pits, application of organic compounds/ CDM/ FYM & mixing the same properly.	Jun/Jul	7.5	2332.50	5000	7332.50
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 load of 10 Rkm) & stacking the seedling @ Rs.6/- per Seedling (1100 nos.)	Jul/Aug	0	0	6600	6600
3	Watering polybag seedlings at planting site	Jul/Aug	2	622	0	622
4	Conveyance of polybag 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	22.5	6997.50	0	6997.50
5	Cost of Fertilizer & Insecticide (a) NPK/Bio-fertilizer @ 50 gms/plant as basal dose = 50kg @ Rs.30/- per kg = Rs. 1500.00 (b) Urea/Vermicompost/Mo Khata/any other fertilizer in two subsequent doses @ Rs. 750.00 (c) Insecticide/ Bio-pesticide @ 5 gms/plant=5 kg @ Rs.150/- per kg = Rs. 750.00	Jul/Aug	0	0	3000	3000
6	Casualty Replacement @ 10% (100 nos.)	Jul/Aug	2.5	777.5	0	777.5
7	1st weeding & Manuring	Aug/Sept	12	3732	0	3732
8	2nd Weeding, Soil working (1mt. diameter around the plants) & Manuring	Oct/Nov	15	4665	0	4665
9	Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of inspection path	Feb/Mar	3	933	0	933
10	Watch & Ward including watering as per requirement	Aug-Mar	12	3732	0	3732
	Total		76.50	23791.50	14600.00	38391.50
2nd Year Maintenance						
1	Transportation of 100 seedlings from Nursery to plantation site including loading, unloading & conveyance by Tractor @ Rs.6/- per seedling	Jul	0	0	600	600
2	Casualty replacement- 10%	Jul	2.5	777.5	0	777.5
3	Cost of Fertilizer & Insecticide: A) Cost of Insecticide/ Bio-pesticide @ 5 gms/plant = 0.5 kg @ Rs.50/- per kg = Rs.75/- B) Urea/NPK/Bio-fertilizer/Vermicompost/Mo Khata/any other fertilizer @Rs. 2800/-	July/Aug	0	0	2875	2875
4	Weeding (Complete weeding), Manuring & Soil working (1mt. diameter around the plants)	Sep/Oct	15	4665	0	4665
5	Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of inspection path	Feb/Mar	3	933	0	933
6	Watch & Ward including watering as per requirement	Apr-Mar	18	5598	0	5598
7	Maintenance of Temporary Labour Shed, Drinking water facility and First Aid etc.	Apr-Mar		0	1000	1000
	Total		38.5	11973.5	4475	16448.5

Sl. No	Items of work	Preferable Period of Execution	No of Mandays	Labour Cost (In Rs.)	Material Cost (In Rs.)	Total cost (In Rs.)
1	2	3	4	5	6	7
3rd Year Maintenance						
1	Cost of Fertilizer(Urea/NPK/Bio-fertilizer/Vermicompost/Mo Khata/any other fertilizer)	July/Aug	0	0	2800	2800
2	Weeding (Complete weeding), Manuring & Soil working, (1 mt. diameter around the plants)	Sept/Oct	15	4665	0	4665
3	Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of inspection path	Feb/Mar	3	933	0	933
4	Watch & Ward including watering as per requirement	Apr/Mar	18	5598	0	5598
5	Maintenance of Temporary Labour Shed, Drinking water facility and First Aid etc.	Apr/Mar	0	0	1000	1000
	Total		36.0	11196	3800	14996
4th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of inspection path	Feb/Mar	3	933	0	933
2	Watch & Ward including maintenance of vegetative fencing	Apr-Mar	18	5590	0	5598
	Total		21	6531	0	6531
5th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933.00	0	933
2	Watch & Ward	Apr/Mar	18	5598.00	0	5598
	Total		21	6531	0	6531
6th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933.00	0	933.0
2	Pruning of branches, Singling out of multiple shoots	Jan/Mar	3	933.00	0	933.0
3	Watch & Ward	Apr/Mar	18	5598.00	0	5598.0
	Total		24	7464	0	7464.0
7th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933.00	0	933
2	Watch & Ward	Apr/Mar	18	5598.00	0	5598
	Total		21	6531	0	6531
8th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933.00	0	933
2	Watch & Ward	Apr/Mar	18	5598.00	0	5598
	Total		21	6531	0	6531
9th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933.00	0	933
2	Watch & Ward	Apr/Mar	18	5598.00	0	5598
	Total		21	6531	0	6531
10th Year Maintenance						
1	Fire line tracing (2 m. wide fire line over 400 m length)	Feb/Mar	3	933	0	933
3	Watch & Ward	Apr/Mar	18	5598.00	0	5598
	Total		21	6531	0	6531
Year wise Abstract of Cost Norm (showing seedling cost separately)						

Sl. No	Items of work	Preferable Period of Execution	No of Mandays	Labour Cost (In Rs.)	Material Cost (In Rs.)	Total cost (In Rs.)	
1	2	3	4	5	6	7	8
Sl. No	Year	No. of Mandays	Labour cost (In Rs)	Material Cost(In Rs.)	Monitoring, Evaluation, Learning, Documentation and Other Contingency (5%) of (4+5)	Cost of Seedlings @Rs.50.31 per seedlings	TOTAL COST(In Rs)
1	2	3	4	5	6	7	8
1	0th year	57.0	17727.0	3600.0	973.00	0.00	22300.00
2	1st year	76.5	23791.5	14600.0	1918.50	55341.00	95651.00
3	2nd year	38.5	11973.5	4475.0	821.50	5031.00	22301.00
4	3rd year	36.0	11196.0	3800.0	749.00	0.00	15745.00
5	4th year	21.0	6531.0	0.0	326.00	0.00	6857.00
6	5th year	21.0	6531.0	0.0	326.00	0.00	6857.00
7	6th year	24.0	7464.0	0.0	373.00	0.00	7037.00
8	7th year	21.0	6531.0	0.0	326.00	0.00	6857.00
9	8th year	21.0	6531.0	0.0	326.00	0.00	6857.00
10	9th year	21.0	6531.0	0.0	326.00	0.00	6857.00
11	10th year	21.0	6531.0	0.0	326.00	0.00	6857.00
Total:		358.0	111338.0	26475.0	6791.0	60372.0	204976.0

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 LBCD, Gully Plugging, Staggered Trench, Contour Trench, Graded Bund, etc. may be taken up
- 4 Chain link fencing can be adopted in the EA plantation taken up outside the forest area and Bamboo twigs fencing may be preferred
- 5 Watering facilities for procurement of water & watering may be adopted as per the availability of water.
- 6 The Cost Norm of various items can be changed with the approval of the concerned RCCPs keeping the overall cost norm fixed for each Financial Year


APCCF (Forest Diversion & NO, FC Act)

Matrix for AR-1000 Plants / Ha

Matrix for Model A Conventional CA Plantation (AR) 1000 plants per Ha

Sl. NO.	Commencement Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI	Total Cost (10 Years)
Base Norm		23300	95651	22301	15745	6857	6857	7837	6857	6857	6857	5857											
1	2021-22	23300	100434	24585	18726	8335	8751	10502	9648	10131	10637	11169											234718
2	2022-23		23415	105456	25814	19137	8752	9189	11027	10130	10638	11169	11727										246454
3	2023-24			24586	110729	27105	20094	9190	9648	11578	10537	11170	11727	12313									258777
4	2024-25				25815	116785	28460	21099	9650	10130	10537	11169	11729	12313	12929								271716
5	2025-26					27106	127078	29883	7754	10133	10637	1169	11727	12313	12929	13575							285302
6	2026-27						28461	128182	31377	23267	10640	1169	13403	12313	12931	13575	14754						299567
7	2027-28							29884	134591	32946	10640	1172	11727	14073	12929	13578	14754	14967					314546
8	2028-29								31378	14321	10693	1169	11731	12313	14777	13575	14757	14967	15715				330273
9	2029-30									32947	10693	1169	11728	12313	12929	13516	14754	14970	15715	16501			346788
10	2030-31										10694	1169	11729	12313	12934	13575	14757	14967	15719	16501	17316		364127

In Rupees

APCCF (Forest Diversion & NO, FC Act)

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

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

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

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



A.P.CCF (Forest Diversinn & NDI, FC Act)

Matrix for (SMC)

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 Norm	0	20215	3032	3032	3032	3032											
1	2021-22	0	2226	3342	3510	3665	3870											35633
2	2022-23		0	22287	3509	3666	3869	4064										37415
3	2023-24			0	23401	3684	3870	4067	4267									39284
4	2024-25				0	34571	3868	4064	4265	4480								41248
5	2025-26				0	25800	4061	4267	4478	4704								43310
6	2026-27					0	27090	4264	4480	4702	4939							45475
7	2027-28						0	28443	4477	4704	4937	5166						47749
8	2028-29						0	29867	4701	4939	5184	5445						50136
9	2029-30							0	31360	4936	5186	5441	5717					52642
10	2030-31								0	32928	5183	5445	5715	6003				55274

In Rupees

APCCF (Forest Diversion & NO, FC Act)

Fencing Model F-II

Fencing for Compensatory Plantation raised outside the Forest Areas using Angle Iron & Chain Link Fencing

Fencing Model-F-II						
Fencing for Compensatory Plantation raised outside the Forest Areas using Angle Iron & Chain Link wire mesh (250 Rmt/ Ha.)						
WAGE RATE Rs- 311/- PER DAY						
Sl. No	Items of work	Preferable Period of Execution	Man days	Wages	Material cost (Rs)	Total Cost (Rs. per Ha.)
0th Year (PPO)						
1	Earth work (Excavation of hole) in Hard soil at a distance 3 mt. 0.40m x 0.40m x 0.10m = 0.064 x 84 = 5.376 cum @ Rs. 140/ cum = Rs. 753.		2.42	752.62	0.0	752.6
2	Cement concrete (1:4:8) using 40 mm BHG metal 84 X 0.40m X 0.40m X 0.10m = 1.344 @ 3755.94/cum		0	0	5,047.4	5,047.4
3	Angle iron pole of size 50 mm X 50 mm X 6 mm of height 2.40 mt. 84 x 2.40 = 201.60 Sqmt. @ 4.50/kg/ Sqmt. = 907.20 kg @ 69.50 per kg				63,050.0	63,050.0
4	Cement concrete (1:2:4) for fixing the iron angle pole using 12mm BHG Chips 84 X 0.40m X 0.40m X 0.30m = 4.032 cum @ 5486.77/cum				22,123.0	22,123.0
5	Cost of Chain link mess using 4 mm Dia GI wire having gap size 50 mm X 50 mm 250 Rmt X 2.10 mt = 525 Sq mt @ 331/Sqmt = Rs. 1,73,775				1,73,775.0	1,73,775.0
6	Double coat painting of iron angle pole over a coat of primer using good quality enamel paint 84 x 2.10 x 0.20 = 35.28 sqmt. @ Rs.108.80/Sqmt				3,838.0	3,838.0
7	Painting of GI chain link mess 250 x 2.10 x 2 = 1050/10 = 105 Sqmt. @ Rs. 108.80 Sqmt.				11,424.0	11,424.0
8	Transportation of Chain link mess, Iron angle, Strengthening & tying of chain link mess etc. @ 2% of the total cost.				5,600.0	5,600.0
	TOTAL		2.42	752.62	2,84,857.4	2,85,610.0
Rate per running mt. 2,85,610/ 250= Rs. 1142/Rmt						
1st Year Maintenance						
1	No Maintenance is required.	Sept./Oct	0	0	0	0
2nd Year Maintenance						
1	Maintenance of wire mess fence @ 1% per running mt. cost of installation in 1st yr. 1142x 1% = 11.42 say Rs. 11	Sept./Oct	0	0	11000	11000
3rd Year Maintenance						
1	Maintenance of wire mess fence @ 1% per running mt. cost of installation in 1st yr. 1142x 1% = 11.42 say Rs. 11	Sept./Oct	0	0	11000	11000
4th Year Maintenance						
1	Maintenance of wire mess fence @ 1% per running mt. cost of installation in 1st yr. 1142x 1% = 11.42 say Rs. 11	Sept./Oct	0	0	11000	11000
5th Year Maintenance						
1	Maintenance of wire mess fence @ 1% per running mt. cost of installation in 1st yr. 1142x 1% = 11.42 say Rs. 11	Sept./Oct	0	0	11000	11000
6th Year Maintenance						
1	Maintenance of wire mess fence @ 1% per running mt. cost of installation in 1st yr. 1142x 1% = 11.42 say Rs. 11	Sept./Oct	0	0	11000	11000
7th Year Maintenance						
1	Maintenance of wire mess fence @ 1% per running mt. cost of installation in 1st yr. 1142x 1% = 11.42 say Rs. 11	Sept./Oct	0	0	11000	11000
8th Year Maintenance						
1	Maintenance of wire mess fence @ 1% per running mt. cost of installation in 1st yr. 1142x 1% = 11.42 say Rs. 11	Sept./Oct	0	0	11000	11000
9th Year Maintenance						
1	Maintenance of wire mess fence @ 1% per running mt. cost of installation in 1st yr. 1142x 1% = 11.42 say Rs. 11	Sept./Oct	0	0	11000	11000
10th Year Maintenance						

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 @ 1% per running mt. cost of installation in 1st yr. 1142x1% = 11.42 say Rs. 11	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	752.6	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


APCEF (Forest Diversion & NO, FC Act)

Matrix for Model-F-II Fencing (Angle Iron & Chain Link Fencing)

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

Sl. No.	Comment	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	285610	0	11000	11000	11000	11000	11000	11000	11000	11000	11000	11000											
1	2021-22	185610	0	11126	11734	12340	14039	14740	15478	16251	17054	17918											419331
2	2022-23		185610	0	11740	12371	14059	14771	15477	16251	17063	17937	18814										440289
3	2023-24			314556	0	13169	14040	14741	15478	16251	17064	17938	18813	19753									462316
4	2024-25				380616	0	14037	14742	15478	16252	17064	17938	18814	19754	20743								485432
5	2025-26					347281	0	14739	15479	16252	17066	17947	18814	19755	20744	21780							509705
6	2026-27						364520	0	15476	16253	17068	17938	18813	19755	20743	21779	22869						535191
7	2027-28							382746	0	16250	17068	17938	18814	19754	20743	21780	22868	24011					561951
8	2028-29								401883	0	17050	17939	18814	19755	20743	21780	22869	24011	25213				590049
9	2029-30									420977	0	17936	18813	19755	20743	21779	22869	24011	25213	26474			619552
10	2030-31										440276	0	18812	19755	20743	21780	22868	24011	25213	26473	27738		650531

In Rupees

APCCF Forest Diversion & NO, FC Act)

Watering Model – W-II

Watering Provision to CA Plantation

Watering Model-W-II					
Watering provision to CA Plantation					
Diesel pump set with Bore well (1 pump set + Bore well for 5 Ha Plantation), Wage rate @ Rs.311/-					
Year of Installation (0th Year)					
1	Cost of Borewell		1,50,000		
2	Cost of Diesel pump set 5HP		60,000		
3	Diesel pump set & accessories like commander, Pipes, etc.		30,000		
4	Water Storage Tanks/ Flexible pipes		15,000		
			2,55,000		
Cost of Water per Plant (2,55,000/ 5000) = Rs. 51/-				51,000	
Cnst of Water per Ha. = Rs. 51,000/-					
1st Year Watering					
1	Recurring expenditure i.e Diesel, Mobil, Engine Oil, etc. for pumping Water -21 x 1000 =			21,000	
2	Watering 1000 Plants (Nov-Mar.) @ 200 plants/MD with 7 days rotation 20 MD x 5 months = 100 MD x 311 =			31,100	
			Total	52,100	
2nd Year Watering					
1	Recurring expenditure i.e Diesel, Mobil, Engine Oil, etc. for pumping Water -21 x 1000 =			21,000	
	Maintenance Diesel pump set etc. @ 15 % of the installation cost.			7,650	
2	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	78,410	
3rd Year Watering					
1	Recurring expenditure i.e Diesel, Mobil, Engine Oil, etc. for pumping Water -21 x 1000 =			21,000	
	Maintenance Diesel pump set etc. @ 15 % of the installation cost.			7,650	
2	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	78,410	
4th Year Watering					
1	Recurring expenditure i.e Diesel, Mobil, Engine Oil, etc. for pumping Water -21 x 1000 =			21,000	
	Maintenance Diesel pump set etc. @ 15 % of the installation cost.			7,650	
2	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	78,410	
5th Year Watering					
1	Recurring expenditure i.e Diesel, Mobil, Engine Oil, etc. for pumping Water -21 x 1000 =			21,000	
	Maintenance Diesel pump set etc. @ 15 % of the installation cost.			7,650	
2	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	78,410	
Abstract					
Sl. No.	Year	No. person days	Labour cost @ Rs. 311/-per day	Material Cost	Total cost (Rs.)
1	0th year	0	0.0	51000.0	51000.0
2	1st year	100.0	31100.0	21000.0	52100.0
3	2nd year	160	49760.0	28650.0	78410.0
4	3rd year	160	49760.0	28650.0	78410.0
5	4th year	160	49760.0	28650.0	78410.0
6	5th year	160	49760.0	28650.0	78410.0
	Total:	740	230140	106600	4,16,740


 APCCF (Forest Diversion & NO, FC Act)

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.	Commence ment Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	Total Cost
Base Norm		5100	52100	78410	78410	78410	78410											
1	2021-22	51000	54705	86439	90771	95307	100072											478294
2	2022-23		53550	57440	90761	95310	100072	105076										502209
3	2023-24			56228	60312	65799	100076	105076	110330									527321
4	2024-25				59039	63328	100064	105080	110330	115847								553688
5	2025-26					61991	66494	105067	110334	115847	121639							581372
6	2026-27						65091	69819	110340	115851	121639	127724						610441
7	2027-28							68346	73310	115836	121644	127724	134107					640964
8	2028-29								71763	76976	121628	127726	134107	140812				673012
9	2029-30									75351	80925	127729	134112	140812	147853			706662
10	2030-31										79119	84866	134094	140818	147853	155246		741996

In Rupees

ARCCF (Forest Diversion & NO, FC Act)

TOTAL COST OF PROJECT

S. No	Item of Work	Unit Price	In Rupees
1	Base Norm for 1000 plants/ ha (As per base norm of Matrix for the year 2022-23)	246454.00 x 39.00 ha	9611706.00
2	Soil Moisture Conservation (SMC) (As per base norm of Matrix for the year 2022-23)	37415.00 x 91.00 ha	3404765.00
3	Angle Iron & Chain Link Fencing (As per base norm of Matrix for the year 2022-23)	440299.00 x 91.00 ha	40067209.00
4	Cost of 7 nos. borewell for watering (one diesel pump set fitted with borewell for 5 ha plantation) (As per base norm of Matrix for the year 2022-23)	502209.00 x 7 nos.	3515463.00
	Grand Total		56599143.00 Or say 5,65,99,500.00

(Rupees five crore sixty-five lakh ninety-nine thousand five hundred) only.

A. PROVISION OF FUNDS AND FUND UTILIZATION

Rs. 5,65,99,500/- (Rupees five crore sixty-five lakh ninety-nine thousand five hundred) only shall be deposited by the User Agency i.e. M/s Thriveni Earthmovers Pvt. Ltd on approval of the scheme to the Ad-hoc CAMPA Account and the funds will be utilized for raising of Compensatory Afforestation by the Divisional Forest Officer, Keonjhar Division on allotment by the Principal Chief Conservator of Forests, Odisha, Bhubaneswar.


Divisional Forest Officer
Keonjhar Division
14/11/23
Divisional Forest Officer
Keonjhar Division

CHAPTER- VII

DETAILS OF PROPOSED MONITORING MECHANISM

Compensatory Afforestation will be taken up in the identified site by the Range Officer, BJP Forest Range of Keonjhar Division. The Range Forest Officer, BJP Forest Range will undertake field checks of the works undertaken at the identified site and will be cross checked by the Asst. Conservator of Forests, (Affn.) and Divisional Forest Officer, Keonjhar Division. GPS co-ordinates along with other required information of Compensatory Afforestation will be uploaded in the e-Greenwatch Portal of NIC, MoEF, 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 BJP Forest Range and reported to the Divisional Forest Officer for necessary action. The same thing will be reported to the Regional Chief Conservator of Forests, Rourkela Circle and Chief Conservator of Forests (PP&A), O/o the Pr. Chief Conservator of Forests, Odisha, Bhubaneswar and necessary corrective measures will be followed if required so.


Divisional Forest Officer,
Keonjhar Division
Divisional Forest Officer
Keonjhar Division

CERTIFICATE ON DSS ANALYSIS FOR CA/ACA/PCA

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

Sl. No.	Name of Range	Name of the Forest Block (RF/PRF/PF/DPF/Revenue Forest)	Area identified for CA/ACA/PCA (in ha)	Classification of identified land (in ha)						Area suitable for plantation (in ha)				Plantation model (AR/ANR)	Remarks	
				Very Dense Forest	Moderately Dense Forest	Non-Forest	Open Forest	Scrub	Water	Total	Non-Forest	Open Forest	Scrub			Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	BJP	Uper- Birikala	CA	0.00	52.00	26.00	13.00	0.00	0.00	91.00	26.00	13.00	0.00	39.00	AR	@1000 seedling/ha over 39.00 ha


 Divisional Forest Officer
 Divisional Forest Officer
 Keonjhar Division
 Keonjhar Division

Countersigned

Regional Chief Conservator of Forests,
Rourkela Circle

**SCHEME FOR ADDL. COMPENSATORY
AFFORESTATION OVER 104.00 ha OF
DEGRADED FOREST LAND @Rs. 333/- PER
MANDAYS (AS PER ONETIME COST NORM)
IDENTIFIED IN JYOTIPUR RF UNDER
CHAMPUA RANGE OF KEONJHAR FOREST
DIVISION**

IN RESPECT OF

LASERDA PACHERI MN. & IRON BLOCK

of

M/s THRIVENI EARTHMOVERS PVT. LTD

ELEMENTS OF THE SCHEME

CHAPTER	PARTICULARS	PAGE NUMBER
I	BRIEF NOTE ON THE PROPOSED FOREST DIVERSION PROPOSAL	01 – 01
II	DETAILS OF LAND IDENTIFIED FOR ADDL. COMPENSATORY AFFORESTATION	02 – 02
III	DELINEATION OF PROPOSED AREA ON SUITABLE MAP	03 – 03
IV	AGENCY RESPONSIBLE FOR ADDL. COMPENSATORY AFFORESTATION	03 – 03
V	DETAILS OF WORK SCHEDULED PROPOSED FOR ADDL. COMPENSATORY AFFORESTATION	04 – 05
VI	COST STRUCTURE OF PLANTATION, PROVISION OF FUNDS AND UTILIZATION	06 – 17
VII	DETAILS OF PROPOSED MONITORING MECHANISM	18– 18

CHAPTER- I

BRIEF NOTE ON THE PROPOSED FOREST DIVERSION PROPOSAL

Government of Odisha issued the Letter of Intent (LoI) vide letter No – IV (MISC) SM-06/2017848/SM, Bhubaneswar dated 27.01.2017 under Rule 18(1) of Mineral Auction Rules 2015 for grant of Composite License (CL) in favor of M/s Thriveni Earthmovers Pvt. Ltd (TEMPL). After complying with the stipulated conditions of LoI, Govt. of Odisha declared M/s Thriveni Earth Movers Pvt. Ltd as the Successful Bidder and Granted the Composite License over 256.304 ha for Manganese vide No. IV (B)SM-100/2007-433/SM, dated 19.01.2019 and the prospecting license deed was executed on 24.01.2019 for 2 years. During the prospecting new minerals (i.e. iron ore) was discovered and it was intimated to Govt. under Rule 11(2) of Minerals (Other than Atomic and Hydro Carbons energy Minerals) Concession Rules, 2016. On due completion of exploration, Mining Lease application over 131.889 ha was submitted and Government of Odisha has awarded the Letter of Intent for grant of mining lease vide No. 7731-IV(B)SM-100/2017/SM dated 21.09.2021 in favour of M/s Thriveni Earthmovers Pvt. Ltd. for Manganese & Iron ore over an area of 131.889 ha situated in Dhanjayapur-40, Kanrda -38 & Laserda village under Barbil Tehsil of Keonjhar District, Odisha. Subsequently after conduct of DGPS survey by ORSAC, the area now comes to 131.800 ha which has been intimated by Director of Mines vide no. MXIII (b) 80/2015/8031/DM/dated 22.10.2021.

The allotted ML area is bounded by latitude 22°04'11.44231" to 22°03'25.92856"N and longitude 85°19'15.99748" to 85° 17'53.81761"E is shown in survey of India Topo Sheet No. N45H8(73 F/8). The total area over 131.800 hectare consists of 53.467 ha of Revenue Forest and 40.884 ha of non-forest land recorded as forest as on 25.10.1980 and 37.449 ha of Non-Forest land, copy of Land Schedule authenticated by concerned authority with Certificate of Tahasildar in regards to status as on 25.10.1980 of Laserda-Pacheri Manganese & Iron ore block over an area of 131.800 ha authenticated by the Tahasildar, Barbil.

The LoI holder has submitted Forest Diversion Proposal for mining operation within the granted LoI for Mining Lease bearing Proposal No. FP/OR/MIN/149499/2021, State Sl. No. – OR-094/2021 dated 23.11.2021 seeking approval u/s- 2(iii) and 2(ii) of FC Act, 1980. The proposal for diversion of 94.351 ha under Sec. 2(iii) of F. C. Act 1980 including 4.261 ha of forest land abide for Safety Zone along the Lease boundary and village road. Out of the above an area over 90.09 Ha excluding the safety zone is also being simultaneously applied under Section 2(ii) of FC Act, 1980 Forest land for mining and ancillaries activities within the granted LoI area of 131.800 ha.

The present scheme aims at preparation of a site-specific Compensatory Afforestation scheme over 104.00 ha of degraded forest land identified in Jyotipur RF under Champua Forest Range of Keonjhar Division prepared at the prevailing wage rate @Rs. 333.00 per MD (as per onetime cost norm) with a maintenance period of ten years regarding Laserda Pacheri Manganese & Iron Block of M/s Thriveni Earthmovers Pvt. Ltd under ANR with Gap plantation model @500 seedlings/ ha x 104.00 ha. The scheme is for 52000 nos. of balance seedlings against the non-forest Govt. land identified in village Upar-Birikala under Banspal Tahasil of Keonjhar District.

CHAPTER- II

DETAILS OF LAND IDENTIFIED FOR COMPENSATORY AFFORESTATION

IDENTIFICATION OF DEGRADED FOREST LAND

II(1)- Details of identified Forest land-

The identified Forest land for Compensatory Afforestation is situated in Jyotipur RF of Champua Range in Keonjhar Forest Division.

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. 73G/9 & 73G/13. The vegetation consists of Sal and its scattered associates like Jamu, Piasal, Asana, Sisoo, Kuruma, Karada, Dhaura, Khair, 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.
4. Fulfillment of the bonafide needs of the local inhabitants for fuel wood, small timber, fodder and N.T.F.P. to the extent possible depending upon the productivity of the forests to ensure their participation.

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

The identified site in Jyotipur 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 plantation model @500 seedling per ha for 104.00 ha. The average maximum temperature is 40⁰ to 45⁰C and minimum 5⁰ to 10⁰ C and annual rainfall varies from 1100 mm to 1800 mm. The maximum rainfall is received during the rainy season from July to September. The identified site is situated in Jyotipur RF of Champua Range. The site has been demarcated with 4 feet RCC pillars with erection of durable signboard depicting Scheme, Year, User Agency, Area etc. on it.

CHAPTER-III

DELINEATION OF PROPOSED AREA ON SUITABLE MAP

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

The area has been demarcated through GPS survey and GPS survey data showing latitude and longitude of each point and their 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- I**.

Decision Support System of degraded Forest land identified in Jyotipur RF of Champua Range

Name of the site	Area identified for plantation (in ha)	Non-Forest (in ha)	Open Forest (in ha)
Jyotipur RF	104.00	54.00	50.00

CHAPTER- IV

AGENCY RESPONSIBLE FOR COMPENSATORY AFFORESTATION

IV(1)- AGENCY RESPONSIBLE FOR PLACEMENT OF FUNDS

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

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

The Territorial Wing of the Forest Department i.e. Divisional Forest Officer, Keonjhar Division will be assigned with the task for execution of the Compensatory Afforestation.

CHAPTER- V

DETAILS OF WORK SCHEDULE PROPOSED FOR COMPENSATORY AFFORESTATION

A. PLANTING PLAN

Planting Plan reflects the species-specific treatment of the identified site. Choice of species is based on the geo-morphology of the site, soil-texture, structure, fertility and depth, proneness of the site to water logging etc. Specific treatment of the site in terms of soil and moisture conservation intervention will be depicted 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. *Accacia catechu* (Khair)
5. *Dalbergia sissoo* (Sissoo)
6. *Azadirachta indica* (Neem)
7. *Gmelina arborea* (Gambar)
8. *Terminalia belerica* (Bahada)
9. *Terminalia chebula* (Harida)
10. *Pongamia pinnata* (Karanja)
11. *Embllica officinalis* (Ainla)
12. *Shorea robusta* (Sal)

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 for 104.00 ha.

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, Champua Range) with GPS coordinates, forward and backward bearing, pillar No. and distance between pillars inscribed in it. A GPS map in the scale of 1:4000 has been prepared along with GPS co-ordinates, forward & backward bearing, pillar to pillar distance and pillar numbers reflected in the map. A sign board has been erected at a conspicuous location with name of the site, scheme, area etc. depicted on it.

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

The clearing of the site involving removal of invasive weeds, bushes, climbers, high stumps and singling of shoots will be taken up preferably by the end of February and latest by the end of March. Pits of the dimension 45 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 seedlings will be taken up in the month of July. The polythene {(size 12 x 10) (300 gauge)} covering of the balls of earth will be carefully removed before planting. Care will be taken to see that the ball of earth is not broken while doing so. The seedling with the ball of earth will then be placed firmly in the pit and buried at such a depth that the root collar is well below the surface of the soil. The soil around the plant will be well compacted with the heel as a final step so that there is a proper bond between the ball and the surrounding soil. The earth close to the collar will be slightly elevated so that rain water does not accumulate very close to the plant.

D. POST PLANTING OPERATION

D(1)-CASUALTY REPLACEMENT

The entire area will be gone over in the same order as plantation was carried out and casualties, if any, will be replaced as soon as the main plantation operation is over.

D(2)-WEEDING AND SOIL WORKING

Regular and efficient weeding will start immediately after sprouting of the stumps is complete or after the seedlings have started throwing up new buds.

D(3)-MANURING AND INSECTICIDE APPLICATION

On degraded sites urban compost or farmyard manure, wherever available, will be added to the soil while refilling the pits. As regards artificial fertilizers, the minerals required and dosage @ 50 grammes of patent mixtures like 'Gromor' or N.P.K. (2:2:1) will be applied in two split doses one in August and the other in September.

D(4)-SOIL MOISTURE CONSERVATION MEASURES

Special Soil Moisture Conservation Measures will be taken up through construction of LBCD structures of dimension 10' x 10' x 5' to the tune of 104 nos. over the entire plantation site & Staggered trenches of 2.5 mtr x 0.5 mtr x 0.5 mtr @60MD for 300 structures per ha.

D(5)-WATERING PROVISION

20 Nos. Diesel pump set with borewell (1 Pump set + Borewell for 5 ha plantation) for 104.00 ha plantation.

D(6)-PROTECTION AGAINST FIRE AND BIOTIC INTERFERENCE

It is proposed to protect the plantation from grazing by domestic animals using Angle Iron & Chain Link wire mesh Fencing. The total length of such Angle Iron & Chain Link wire mesh Fencing for the patch which comes to 6.11 KM. 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 Jyotipur (Bhuyansahi) VSS.

CHAPTER- VI

COST STRUCTURE OF PLANTATION, PROVISION OF FUNDS AND UTILIZATION

Base Cost Norm for ANR Plantation @500 seedlings per ha (18 months old seedlings) @ 333.00/- Mandays as per revised wage rate by Labour Commissioner, Odisha, Bhubaneswar vide Notification No. 6078/LC dated 19.10.2022. The onetime cost norm provided by the PCCF, Odisha, Bhubaneswar vide their O.O. No. 1109 dated 08.11.2021 (As per base norm of Matrix for the year 2022-23)

ANNEXURE-7

Base Cost Norms for Compensatory Afforestation through Aided Natural Regeneration (ANR) @ 500 Seedlings/Ha.						
WAGE RATE Rs- 311/- PER MANDAY						
Sl. No	Items of work	Preferable Period of Execution	No of Mandays	Labour Cost (In Rs.)	Material Cost (In Rs.)	Total cost (In Rs.)
0th Year (Advance work) Pre-Planting Operation						
1	Survey, Demarcation and Pillar posting	Nov/Dec	2	622	0	622
2	Preparation of Treatment Map (Digital Map)	Nov/Dec	1	311	100	411
3	Site preparation	Nov/Dec	2	622	0	622
4	Silvicultural operations including clearance of weed, cutting of climber, High stump cutting, slugling 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 track /tractor from the permanent/Mega nursery to planting site including loading & unloading (Average load of 10 Rkm) & Stacking the seedling @ Rs.6/ Seedling (550 nos.)	Jul/Aug	0	0	3300	3300
3	Watering polythene bag seedlings at stacking site of plantation	Jul/Aug	1	311	0	311
4	Conveyance of polythene bag seedlings on head load from the stacking site to individual dugout pits within the planting site, applying insecticide, fertilizer & planting after senoping 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/Vermincompost/Mo Khata/any other fertilizer @ Rs. 325.00 (c) Insecticide/ Bio pesticide @ 5 gms/plant = 2.5 kg @ Rs.150/- per kg = Rs. 375/-	Jul/Aug	0	0	1500	1500
6	Casualty Replacement @ 10% (50 nos.)	Jul/Aug	1.5	466.5	0.0	466.5
7	1st weeding & Manuring	Aug/Sept	5	1555	0	1555

Sl. No	Items of work	Preferable Period of Execution	No of Mandays	Labour Cost (In Rs.)	Material Cost (In Rs.)	Total cost (In Rs.)
8	2nd Weeding, Soil working; (1mt. diametre around the plants) & Manuring	Oct/Nov	8	2488	0	2488
9	Fire line tracing & Inspection path	Feb/Mar	3	933	0	933
10	Watch & Ward including watering as per requirement	Apr/Mar	8	2488	0	2488
	Total		41.5	12906.5	7300.0	20206.5
2nd Year Maintenance						
1	Transportation of 50 seedlings from Nursery to plantation site including loading, unloading & conveyance by Tractor @ Rs.6/- per seedlings	Jul	0.0	0.0	300.0	300.0
2	Casualty replacement	Jul	1.5	466.5	0.0	466.5
3	Cost of Fertilizer & Insecticide: A) Cost of Insecticide/ Bio-pesticide (Thimet/ Forate) @ 5 gms/plant = .25 Kg @ Rs.150/- per kg = Rs.37.50 B) Urea/NPK/Bio-fertilizer/Vermicompost/Mu Khata/any other fertilizer = Rs. 1400/-	July/Aug	0	0	1437.5	1437.5
4	Weeding (Complete weeding), Manuring & Soil working, (1mt. diametre 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
	Total		24.5	7619.5	1737.5	9357
3rd Year Maintenance						
3	Cost of Fertilizer Urea/NPK/Bio-fertilizer/Vermicompost/Mu Khata/any other fertilizer = Rs. 1400/-	July/Aug	0	0	1400.0	1400.0
4	Weeding (Complete weeding), Manuring & Soil working, (1mt. diametre 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
	Total		23.0	7153.0	1400.0	8553.0
4th Year Maintenance						
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
	Total		15	4665	0	4665
5th Year Maintenance						
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
	Total		15.0	4665.0	0	4665
6th Year Maintenance						
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
	Total		15.0	4665.0	0.0	4665.0
7th Year Maintenance						
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
	Total		15.0	4665.0	0.0	4665.0
8th Year Maintenance						
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
	Total		15.0	4665.0	0.0	4665.0
9th Year Maintenance						
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
	Total		15.0	4665.0	0.0	4665.0
10th Year Maintenance						
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
	Total		15.0	4665.0	0.0	4665.0
Year wise Abstract of Cost Norm (showing seedling cost separately)						

Sl. No	Items of work	Preferable Period of Execution	No of Mandays	Labour Cost (In Rs.)	Material Cost (In Rs.)	Total cost (In Rs.)	
Sl. No	Year	No. person days	Labour cost @ Rs. 311/- per day (Rs)	Material Cost	Monitoring Evaluation, Learning, Documentation and Other Contingency (5%) of (4+5)	Cost of Seedlings @Rs.50.31 per seedlings	TOTAL COST
1	2	3	4	5	6	7	8
1	0th year	41	12751.0	100.0	549.00	0.00	13400.00
2	1st year	41.5	12906.5	7300.0	293.50	27671.00	48871.00
3	2nd year	24.5	7619.5	1737.5	443.00	2516.00	12316.00
4	3rd year	23.0	7153.0	1400.0	347.00	0.00	8900.00
5	4th year	15	4665.0	0.0	135.00	0.00	4800.00
6	5th year	15	4665.0	0.0	135.00	0.00	4800.00
7	6th year	15	4665.0	0.0	135.00	0.00	4800.00
8	7th year	15	4665.0	0.0	135.00	0.00	4800.00
9	8th year	15	4665.0	0.0	135.00	0.00	4800.00
10	9th year	15	4665.0	0.0	135.00	0.00	4800.00
11	10th year	15	4665.0	0.0	135.00	0.00	4800.00
Total:		235.0	73085.0	10537.5	3277.5	30187	117087.00

Note:

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

APCCF (Forest Diversion & NO, FC Act)

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
	Base Norm	13400	48871	12316	8900	4800	4800	4800	4800	4800	4800	4800											
1	2021-22	13400	51315	13577	10303	5834	6126	6432	6754	7092	7446	7819											136098
2	2022-23		14070	53881	14256	10818	6126	6432	6754	7092	7447	7818	8210										142904
3	2023-24			14774	56575	14969	11359	6432	6754	7092	7447	7819	8209	8621									150051
4	2024-25				15513	59404	15717	11917	6754	7092	7447	7819	8210	8619	9057								157554
5	2025-26					16289	62374	16503	12523	7092	7447	7819	8210	8621	9050	9505							165433
6	2026-27						17103	65493	17378	13149	7447	7819	8210	8621	9052	9503	9980						173705
7	2027-28							17958	68768	18194	13806	7819	8210	8621	9052	9505	9978	10479					182390
8	2028-29								18856	72205	19104	14496	8210	8621	9052	9505	9980	10479	11003				191510
9	2029-30									19799	75816	78056	15221	8621	9052	9505	9980	10479	11002	11553			201086
10	2030-31										20789	79607	21062	13987	9052	9505	9980	10479	11003	11551	12131		211141

In Rupees

APCCF (Forest Diversion & NO, FC Act)

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

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

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

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


A.P.C.C.F. (Forest Diversinn & ND, FC Act)

Matrix for (SMC)

Matrix for (SMC)

In Rupees

Sl. NO.	Commencement Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	Total Cost
	Base Norm	0	20215	3032	3032	3032	3032											
1	2021-22	0	2,226	3342	3510	3685	3870											35633
2	2022-23		0	22287	3509	3686	3869	4064										37415
3	2023-24			0	23401	3684	3870	4062	4257									39284
4	2024-25				0	24571	3868	4064	4255	4480								41248
5	2025-26					0	25803	4061	4257	4478	4704							43310
6	2026-27						0	27090	4254	4480	4702	4939						45475
7	2027-28							0	28443	4477	4704	4937	5156					47749
8	2028-29							0	29867	4701	4939	5184	5445					50136
9	2029-30								0	31360	4936	5186	5443	5717				52642
10	2030-31									0	31978	5183	5445	5715	6003			55274

APCCF (Forest Diversion & NO, FC Act)

Fencing Model F-II

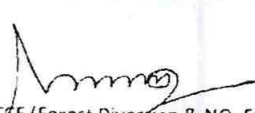
Angle Iron & Chain Link wire mesh Fencing

Fencing Model-F-II						
Fencing for Compensatory Plantation raised outside the Forest Areas using Angle Iron & Chain Link wire mesh (250 Rmt/ Ha.)						
WAGE RATE Rs-311/- PER DAY						
Sl. No	Items of work	Preferable Period of Execution	Man days	Wages	Material cost (Rs)	Total Cost (Rs. per Ha.)
0th Year (PPO)						
1	Earth work (excavation of hole) in Hard soil at a distance 3 mt. 0.40m x 0.40m x 0.30m = 0.064 x 84 = 5.376 cum @ Rs. 140/ cum = Rs. 753.		2.42	752.62	0.0	752.6
2	Cement concrete (1:4:8) using 40 mm BHG metal 84 X 0.40m X 0.40m X 0.10m = 1.344 @ 3755.94/cum		0	0	5,047.4	5,047.4
3	Angle iron pole of size 50 mm X 50 mm X 6 mm of height 2.40 mt. 84 x 2.40 = 201.60 Sqmt. @ 4.50/kg/ Sqmt. = 907.20 kg @ 69.50 per kg				63,050.0	63,050.0
4	Cement concrete (1:2:4) for fixing the iron angle pole using 12mm BHG Chips 04 X 0.40m X 0.40m X 0.30m = 4.032 cum @ 5486.77/cum				22,123.0	22,123.0
5	Cost of Chain link mesh using 4 mm Dia GI wire having gap size 50 mm X 50 mm 250 Rmt X 2.10 mt = 525 Sq mt @ 331/Sqmt = Rs. 1,73,775				1,73,775.0	1,73,775.0
6	Double coat painting of iron angle pole over a coat of primer using good quality enamel paint 84 x 2.10 x 0.20 = 35.28 sqmt. @ Rs. 108.80/Sqmt				3,838.0	3,838.0
7	Painting of GI chain link mesh 250 x 2.10 x 2 = 1050/10 = 105 Sqmt. @ Rs. 108.80 Sqmt.				11,424.0	11,424.0
8	Transportation of Chain link mesh, Iron angle, Strengthening & tying of chain link mesh etc. @ 2% of the total cost.				5,600.0	5,600.0
	TOTAL		2.42	752.62	2,84,857.4	2,85,610.0
Rate per running mt. 2,85,610/ 250= Rs. 1142/Rmt						
1st Year Maintenance						
1	No Maintenance is required.	Sept./Oct	0	0	0	0
2nd Year Maintenance						
1	Maintenance of wire mesh fence @ 1% per running mt. cost of installation in 1st yr. 1142x 1% = 11.42 say Rs. 11	Sept./Oct	0	0	11000	11000
3rd Year Maintenance						
1	Maintenance of wire mesh fence @ 1% per running mt. cost of installation in 1st yr. 1142x 1% = 11.42 say Rs. 11	Sept./Oct	0	0	11000	11000
4th Year Maintenance						
1	Maintenance of wire mesh fence @ 1% per running mt. cost of installation in 1st yr. 1142x 1% = 11.42 say Rs. 11	Sept./Oct	0	0	11000	11000
5th Year Maintenance						
1	Maintenance of wire mesh fence @ 1% per running mt. cost of installation in 1st yr. 1142x 1% = 11.42 say Rs. 11	Sept./Oct	0	0	11000	11000
6th Year Maintenance						
1	Maintenance of wire mesh fence @ 1% per running mt. cost of installation in 1st yr. 1142x 1% = 11.42 say Rs. 11	Sept./Oct	0	0	11000	11000
7th Year Maintenance						
1	Maintenance of wire mesh fence @ 1% per running mt. cost of installation in 1st yr. 1142x 1% = 11.42 say Rs. 11	Sept./Oct	0	0	11000	11000
8th Year Maintenance						
1	Maintenance of wire mesh fence @ 1% per running mt. cost of installation in 1st yr. 1142x 1% = 11.42 say Rs. 11	Sept./Oct	0	0	11000	11000
9th Year Maintenance						
1	Maintenance of wire mesh fence @ 1% per running mt. cost of installation in 1st yr. 1142x 1% = 11.42 say Rs. 11	Sept./Oct	0	0	11000	11000
10th Year Maintenance						

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 @ 1% per running mt. cost of installation in 1st yr. 1142x 1% = 11 42 say Rs. 11	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	752.6	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


APCEF (Forest Diversion & NO, FC Act)

Matrix for Model-F-II Fencing (angle Iron & Chain Link wire mesh)

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

Sl. No.	Comments	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		285610	0	11000	11000	11000	11000	11000	11000	11000	11000	11000											
1	2021-22	385610	0	11126	11724	12310	14039	14740	15478	16251	17064	17916											419331
2	2022-23		285610	0	11740	12371	14039	14741	15477	16250	17063	17917	18814										440289
3	2023-24			314556	0	13569	14040	14741	15478	16251	17065	17918	18813	19753									462316
4	2024-25				330343	0	14937	14742	15478	16252	17064	17918	18814	19754	20743								485432
5	2025-26					347107	0	16439	15479	16252	17066	17917	18814	19755	20742	21780							509705
6	2026-27						364520	0	18176	16253	17066	17918	18813	19753	20743	21779	22869						535191
7	2027-28							383746	0	18350	17066	17918	18814	19754	20743	21780	22868	24011					561961
8	2028-29								201893	0	17063	17919	18814	19753	20742	21780	22869	24011	25213				590049
9	2029-30									421977	0	17916	18813	19753	20743	21779	22869	24011	25213	26474			619552
10	2030-31										440276	0	18814	19753	20743	21780	22868	24011	25213	26473	27798		650531

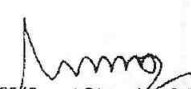
In Rupees

APCCF (Forest Diversion & NO, FC Act)

Watering Model – W-II

Watering Model-W-II					
Watering provision to CA Plantation					
Diesel pump set with Bore well (1 pump set + Bore well for 5 Ha Plantation), Wage rate @ Rs.311/-					
Year of Installation (0th Year)					
1	Cost of Borewell		1,50,000		
2	Cost of Diesel pump set 5HP		60,000		
3	Diesel pump set & accessories like commander, Pipes, etc.		30,000		
4	Water Storage Tanks/ Flexible pipes		15,000		
			2,55,000		
Cost of Water per Plant (2,55,000/ 5000) = Rs. 51/-					51,000
Cnst of Water per Ha. = Rs. 51,000/-					
1st Year Watering					
1	Recurring expenditure i.e Diesel, Mobil, Engine Oil, etc. for pumping Water -21 x 1000=				21,000
2	Watering 1000 Plants (Nov-Mar.) @ 200 plants/MD with 7 days rotation 20 MD x 5 months = 100 MD x 311 =				31,100
				Total	52,100
2nd Year Watering					
1	Recurring expenditure i.e Diesel, Mobil, Engine Oil, etc. for pumping Water -21 x 1000=				21,000
	Maintenance Diesel pump set etc. @ 15 % of the installation cost.				7,650
2	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	78,410
3rd Year Watering					
1	Recurring expenditure i.e Diesel, Mobil, Engine Oil, etc. for pumping Water -21 x 1000=				21,000
	Maintenance Diesel pump set etc. @ 15 % of the installation cost.				7,650
2	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	78,410
4th Year Watering					
1	Recurring expenditure i.e Diesel, Mobil, Engine Oil, etc. for pumping Water -21 x 1000=				21,000
	Maintenance Diesel pump set etc. @ 15 % of the installation cost.				7,650
2	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	78,410
5th Year Watering					
1	Recurring expenditure i.e Diesel, Mobil, Engine Oil, etc. for pumping Water -21 x 1000=				21,000
	Maintenance Diesel pump set etc. @ 15 % of the installation cost.				7,650
2	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	78,410

Abstract					
Sl. No	Year	No. person days	Labour cost @ Rs. 311/- per day	Material Cost	Total cost (Rs.)
1	0th year	0	0.0	51000.0	51000.0
2	1st year	100.0	31100.0	21000.0	52100.0
3	2nd year	160	49760.0	28650.0	78410.0
4	3rd year	160	49760.0	28650.0	78410.0
5	4th year	160	49760.0	28650.0	78410.0
6	5th year	160	49760.0	28650.0	78410.0
	Total:	740	230140	186600	4,16,740


APCCF/(Forest Diversion & NO, FC Act)

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.	Commencement Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	Total Cost
	Base Norm	5100	52100	78410	78410	78410	78410											
1	2021-22	51000	54705	86439	90771	95307	100072											478294
2	2022-23		53550	57440	90761	95310	100072	105076										502209
3	2023-24			56228	60312	65299	100076	105076	110330									527321
4	2024-25				59039	63338	100064	105080	110330	115847								553688
5	2025-26					61991	66496	105067	110334	115847	121639							581372
6	2026-27						65091	69819	110330	115851	121639	127722						610441
7	2027-28							68346	73310	115836	121644	127722	134107					640964
8	2028-29								71763	76976	121628	127726	134107	140812				673012
9	2029-30									75351	80925	127729	134112	140812	147853			706662
10	2030-31										79119	84866	134094	140818	147853	155246		741996

In Rupees

ARCCF (Forest Diversion & NO, FC Act)

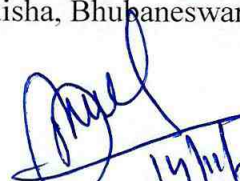
TOTAL COST OF PROJECT

S. No	Item of Work	Unit price	In Rupees
1	Cost of Base Norm for 500 plants/ ha (Year 2022-2023)	142904.00 x 104 ha	14862016.00
2	Cost of Soil Moisture Conservation (SMC) (2022-2023)	37415.00 x 104 ha	3891160.00
3	Staggered trenches of 2.5 mtr x 0.5 mtr x 0.5 mtr @60MD for 300 structures per ha.	60 x 333 x 104 ha	2077920.00
4	Angle Iron & Chain Link wire mesh Fencing (2022-2023)	440289.00 x 104 ha	45790056.00
5	Cost of 20 nos. borewell for watering (one diesel pump set fitted with borewell for 5 ha plantation) (2022-2023)	502209.00 x 20 Nos.	10044180.00
	Grand Total		76665332.00 Or say 7,66,65,500.00

(Rupees seven crore sixty-six lakh sixty-five thousand five hundred) only

PROVISION OF FUNDS AND FUND UTILIZATION

Rs. 7,66,65,500/- (Rupees seven crore sixty-six lakh sixty-five thousand five hundred) only shall be deposited by the User Agency i.e. M/s Thriveni Earthmovers Pvt. Ltd on approval of the scheme to the Ad-hoc CAMPA Account and the funds will be utilized for raising of Compensatory Afforestation by the Divisional Forest Officer, Keonjhar Division on allotment by the Principal Chief Conservator of Forests, Odisha, Bhubaneswar.


Divisional Forest Officer,
Keonjhar Division
14/11/23
Divisional Forest Officer
Keonjhar Division

CHAPTER- VII

DETAILS OF PROPOSED MONITORING MECHANISM

Compensatory Afforestation will be taken up in the identified site by the Range Officer, Champua Range of Keonjhar Division. The Range Forest Officer, Champua Range will undertake field checks of the works undertaken at the identified site and will be cross checked by the Asst. Conservator of Forests, (Affn.) and Divisional Forest Officer, Keonjhar Division. GPS co-ordinates along with other required 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 Champua Range and reported to the Divisional Forest Officer for necessary action. The same thing will be reported to the Regional Chief Conservator of Forests, Rourkela Circle and Chief Conservator of Forests (PP&A), O/o the Pr. Chief Conservator of Forests, Odisha, Bhubaneswar and necessary corrective measures will be followed if required so.

**Divisional Forest Officer,
Keonjhar Division**

CERTIFICATE ON DSS ANALYSIS FOR CA/ACA/PCA

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

Sl. No.	Name of Range	Name of the Forest Block (RF/PRF/PF/DPF/Revenue Forest)	Area identified for CA/ ACA/ PCA (in ha)	Classification of identified land (in ha)							Area suitable for plantation (in ha)				Plantation model (AR/ANR)	Remarks
				Very Dense Forest	Moderately Dense Forest	Non-Forest	Open Forest	Scrub	Water	Total	Non-Forest	Open Forest	Scrub	Total		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	Champua	Jyotipur RF	ACA	0.00	0.00	54.00	50.00	0.00	0.00	104.00	54.00	50.00	0.00	104.000	ANR	@500 seedlings/ha

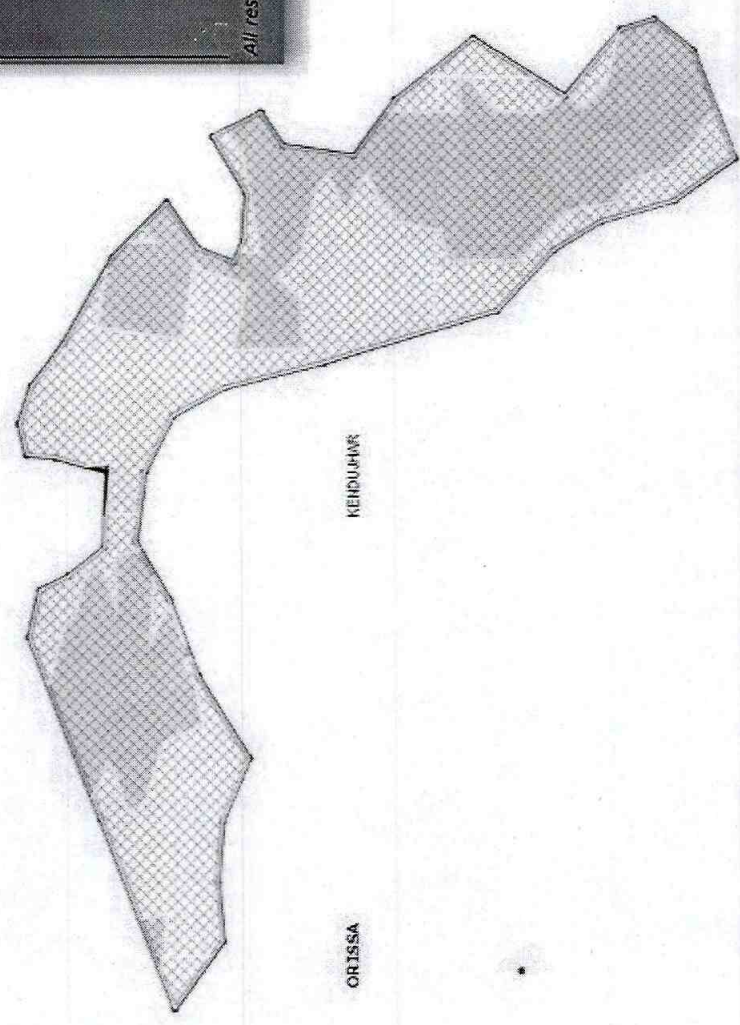
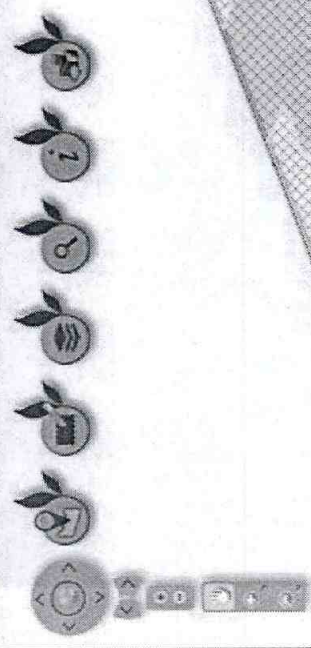

 Divisional Forest Officer,
 Keonjhar Division.
 Divisional Forest Officer
 Keonjhar Division

Countersigned

Regional Chief Conservator of Forests,
Rourkela Circle



GIS based Decision Support System



Lat: 21.880 Long: 85.752
Scale: 1:11697

0.5 km
0.5 mi

Forest Cover Map

FCM Without Grid Result	
NON FOREST	0.54
OPEN FOREST	0.50
WATER	0.00

All results are in Square Kilometer.

FOREST COVER MAP

FCM LEGEND

VERY DENSE FOREST
MODERATELY DENSE FOREST
OPEN FOREST
SCRUB
NON FOREST
WATER

