

SCHEME FOR

COMPENSATORY AFFORESTATION OVER 64.50 HA.

(AREA 32.50 HA.@200 PLANTS

& AREA 32.00 HA.@500 PLANTS)

IN NON-FOREST LAND IDENTIFIED AT

VILLAGE- MAHUPADA

**BANKI FOREST RANGE
UNDER ROURKELA FOREST DIVISION**

**AGAINST THE NETRABANDHA PAHAR (WEST)
IRON ORE BLOCK OF
M/S RAGA TRADECON PVT. LTD.
UNDER KOIRA TAHASIL
SUNDARGARH DISTRICT.**

SCHEME FOR COMPENSATORY AFFORESTATION OVER 64.50 HA. (@200 NOS SEEDLINGS OVER 32.5 HA. & @500 NOS SEEDLINGS OVER 32.0 HA.) IN THE NON-FOREST LAND IDENTIFIED IN VILLAGE MAHUPADA UNDER ROURKELA FOREST DIVISION IN LIEU OF THE NETRABANDHA PAHAR (WEST) IRON ORE BLOCK OF M/S RAGA TRADECON PVT. LTD. UNDER KOIRA TAHASIL SUNDARGARH.

1. INTRODUCTION:

This Compensatory Afforestation Scheme has been prepared for raising Compensatory Afforestation over **64.50 Ha.** of Non- Forest Land identified in village Mahupada under Banki Range, Koira Tahasil of Sundargarh District. The scheme aims to compensate the loss of **64.50 Ha.** of forest land proposed for diversion by M/S Raga Traders Pvt. Ltd. under Koira Tahasil of Rourkela Division. The area has been demarcated by erecting RCC Pillars and the numbering of the pillars as per boundary description shown in the map.

The Non-forest land has been verified in the field by the Forest Officials and is found suitable for ANR plantation over **64.50 ha.** (@200 seedlings per ha over **32.5 ha.** & @500 nos seedlings over **32.0 ha.**) and is free from encroachment and encumbrances.

The ANR Plantation @200 nos. seedling per ha at a spacing of **2.5 Mtr. x 2.5 Mtr** will be taken up over **32.50 ha** & @ 500 plants per ha over **32.0 ha** in the identified Non-Forest area with a larger maintenance period of 10 years as per the MoEF & CC Guideline No F. No. 11-423/2011-FC Dated 08.11.2017. The cost estimate for this ANR Plantation calculated as per prescribed cost norms including regeneration work are enclosed as **Annexure- I.**

2. TOPOGRAPHY AND SOIL:

The topography of the areas is mainly plain with moderate slope. The soil is mostly sandy loam at patches and depth of the soil is fairly good. The area experiences tropical climate with monsoonal rainfall.

The topographical configuration of the selected site is suitable for undertaking plantation activities. The soil is mostly sandy loam to lateritic in some areas. For such characteristics, the scheme proposes to dovetail adequate soil and moisture conservation measures into the afforestation programme. Honey comb structure with rubble stones around individual plants to retain soil along with three tier continuous

trench will prove quite effective not only for the growth of plants but also for controlling soil erosion which has been incorporated in this scheme.

3. CLIMATE:

The study area lies in tropical region where climate is characterized by very hot summers and cool winters. The summer season usually starts from March and continue up to June during which monthly temperature ranges from a maximum of 45°C during daytime to a minimum of 8°C at night. Winter usually starts from November and continue up to February during which the maximum temperature goes up to 35°C during daytime and goes down to 10°C during night-time. The average annual rainfall as recorded is 1500 mm

4. OBJECTIVE OF THE SCHEME:

The main objective of the scheme is to restock the non-forest crop in village Mahupada under Banki Range, Koira Tahsil of Sundargarh District by taking up tending operation of the existing forest crop and supplementing it with ANR Plantation over **64.50 ha.** (@200 seedlings per ha over **32.5 ha.** & @500 nos seedlings over **32.0 ha.**). The scheme also envisages carrying out adequate and appropriate soil conservation measure works along with the afforestation work so as to conserve soil and water for recharging the ground water table and to check erosion of the fertile top soil of the area.

Further, the aim of the proposed scheme is as follows:

- i) To improve the micro-edaphic conditions by under taking suitable soil and moisture conservation measures.
- ii) To protect the area against encroachment, illicit felling, fire occurrence, grazing etc. so as to check further degradation of the area and maintain the eco-restoration.
- iii) To provide gainful employment to the local people, mainly ST/SC population.
- iv) To create awareness among the local villagers for protection and maintenance of plantation and forest.

- vi) Singling of coppice shoots coming out from stools retaining the most promising one.
- vii) Pruning of the branches of the pole crops up to hand reach distance.

During the 1st year, climber cutting, and cutting of high stumps, weeds and malformed and diseased species will be done. In the next two years, cutting back of ill grown individuals and singling of coppice in case of desired species.

(C.) PLANTATION:

The area will be stocked by way of raising ANR plantations over 64.50 ha. (@200 nos seedlings over 32.5 ha. & @500 nos seedlings over 32.0 ha.). Taking into consideration the soil condition and the local habitation and suitability of species to the site, the following species are selected:

1. Pongamia pinata (Karanja)
2. Azadiracta indica (Neem)
3. Acacia catechu (khair)
4. Terminalia bellirica (Bahada)
5. Gmelina arborea (Gambhar)
6. Terminalia tomentosa (Asan)
7. Terminalia arjuna (Arjun)
8. Cassia fistula (Sunari)
9. Dendrocalamus strictus (Salia Bamboo)
10. Dalbergia latifolia (Pahadi Sissoo), etc

Different other operations to be taken up for plantation are as follows:

Land Schedule of (Non-forest Land) for CA

Village	Khata No.	Plot No.	Kisam	Proposed Area (in Ha.)
Mahupada	44(AAA)	10/773 (P)	Pahada	2.460
		29/774(P)	Pahada	12.240
		15/775	Pahada	10.420
		15/776	Pahada	8.900
		222/793	Pahada	3.620
		222/794(P)	Pahada	1.850

5. PROPOSED TECHNIQUE:

To achieve the above aims & objectives, it has been proposed to take up ANR Plantation over 64.50 ha. (@200 nos seedlings over 32.5 ha. & @500 nos seedlings over 32.0 ha.) at the spacing of 2.5 Mtr x 2.5 Mtr. in the identified non- forest land in village Mahupada under Banki Range, Koira Tahsil of Sundargarh District of Rourkela forest division. The said plantation work will be done in the first year followed by maintenance during second, third, fourth, fifth, sixth, seven, eight, nine & ten year. The detailed expenditure statement is furnished below.

(A) SURVEY AND DEMARCATION:

This work has already been taken up by the User Agency with due consultation with the Range Officer, Banki Range of Rourkela Forest Division.

The boundary has been surveyed and demarcated by positing RCC pillars of size 1.25 cm x 20 cm x 20 cm at visible distance, which have been embedded in the ground, and one signboard has been affixed at the site.

(B) REGENERATION, CLEANING AND TENDING OPERATION:

The operation aims at tending the existing crop silviculturally to desirable species for ensuring better growth of the plants. It includes removal of inferior, diseased, malformed, dead, drying and defective tree growth and disposal of them either by distributing it among the local villagers or by control burning them at a selected site so as not to damage the new recruits. Apart from it, weed eradication and climber cutting is also an integral part as they interfere with the growth of trees and also their regeneration by shrouding them from the sun rays and also through root competition. Hence Site clearance by removing climbers and uprooting Eupatorium and other weeds is also being proposed to be done in the area. The detailed operation to be carried out is as follows-

- i) Cutting back of herbs and shrubs interfering with the growth of the desirable species.
- ii) Cutting back of individual inferior poles interfering with growth of well formed pole crops.
- iii) Cutting back of malformed and diseased species.
- iv) Cutting of climbers up to hand reach distance.
- v) Cutting of high stumps flush to the ground.

		222/795(P)	Pahada	3.710
		222/796	Pahada	3.950
		35/777	Pahada	4.860
		38/778	Pahada	4.860
		93/780(P)	Pahada	2.130
		108/781(P)	Pahada	2.130
		108/782(P)	Pahada	2.500
		115/788(P)	Pahada	0.520
		115/789(P)	Pahada	0.350
			Total:-	64.500

a) Raising of nursery

18 months old seedlings required for the plantation shall be raised in a Decentralized nursery nearer to the plantation site with a perennial water source and connected by a fair weather road. Nursery work will be started one year before the year of plantation so that second year seedlings will be available for plantation. 10% extra seedlings shall be raised to compensate and mitigate the eventuality of seedling casualty in the nursery. Standard nursery practices shall be followed for raising of 18 months old seedlings in polythene bags.

b) Alignment and stacking

Alignment, stacking and pitting will be taken up in the month of March-April, Pits of size 45cmX 45cmX 45cm will be dug maintaining a spacing of 2.5 mt @200 nos seedlings over 32.5 ha. & @500 nos seedlings over 32.0 ha. seedlings per ha. plants per hectare.

c) Planting

The seedlings will be planted in dug out pits of 45 cm³ maintaining a spacing of 2.5 mtr between the pits **@200 nos seedlings over 32.5 ha. & @500 nos seedlings over 32.0 ha..** Plantation should be taken up after first regular shower of monsoon and should ideally be completed by end of August. NPK/DAP fertilizer @ 50 gms per plant should be given as basal dose. Anti- termite and insecticide like methyl

parathion @ 5 gms. per plant should be applied per pit. Care should be taken to avoid direct contact of the root tip of the plant with that of the insecticide to prevent damage to the plant. Casualty replacement when required during the planting year and in the second year should be undertaken for which the seedlings shall be raised.

d) Weeding, Soil working and manuring

For establishment and better growth of the planted seedlings, weeding, soil working and manuring are necessary. It is prescribed to carry out two weeding, soil working and manuring during the first year and second year of plantation and one weeding and soil working during the third year. Weeding and manuring for the first and second year shall be carried out during August- September and the second one during October- November along with soil working during which 30 gms. of NPK/DAP shall be added to the soil per plant. First weeding shall be area weeding and the second weeding should be strip weeding. The weeding of third year will be area weeding which shall be carried out during August.

e) Application of Insecticides

The plantation site after planting with good seedlings may in future course of time get infested with diseases owing to influx of insects and pests into the area which usually cause heavy damage to the soft, tender and avidly growing parts of the plant that heavily affects the rate of growth and sometimes causes wide spread casualty of the seedlings. To avoid such incidences foliar spray and ground application of insecticides in at regular intervals usually on a sunny day before fore noon shall be done.

f) Fire line tracing and maintenance

Fire causes irreparable damage to the plantation and the forest growth during fire season and to prevent such fire out breaks in the area, the plantation area shall be divided into suitable blocks by tracing fire lines. Boundaries of the plantation patches and these block lines will be scrapped of forest growth to a width of 3.0 mt. during Feb-March and the cut back materials and the dry leaves stacked along these fire lines shall be controlled burnt under direct supervision of the forest staff. This

operation is highly essential and the scheme proposes to carry this operation for the first three years.

6. FENCING

Fencing is an important aspect for a successful plantation. Thus Solar Fencing with RCC pillar (400 pillars/RKM) over 64.50 Ha. area is proposed to protect the CA area from biotic interference.

7. MOTIVATION OF PEOPLE

As per Govt. resolution of 1993, the villagers of the adjoining villages are to be involved in protection and management of plantation raised under Compensatory Afforestation. For this purpose meeting will be conducted and existing Mahupada V.S.S. and Jharbeda V.S.S. will be involved. To motivate the people in this direction, they will be provided with incentives in shape of different community articles, buildings and other different community amenities of fixed and movable type through entry point activities. Health camps shall also be organized in the villages. Thus, 15% of the plantation cost has been earmarked for expenditure on this score.

8. EXECUTING AGENCY

The Divisional Forest Officer, Rourkela will be assigned with the task of executing this scheme and the cots norm applicable is enclosed herewith.

9. The CA scheme has been prepared with one time cost norm in accordance with guidelines issued by PCCF & HoFF, Odisha vide his Office Order No.1109 dt.08.11.2021 and communicated vide memo no.18833, dtd.08.11.2021 of PCCF & HoFF, Odisha ,Bhubaneswar.

10. TOTAL COST OF THE PROJECT.

For implementation of all the prescriptions out lined above Rs. 4,17,84,977.00 (Rupees Four Crore Seventeen Lakh Eighty Four Thousand Nine Hundred Seventy Seven) only will be required as detailed below. As there will be a time lag between the preparation of the scheme and its implementation, the User Agency will pay the enhance wage rate as and when required.

TOTAL COST OF PROJECT

Sl.N o.	Description	Amount (Rs.)
1.	Cost of ANR Plantation @200 plants per ha with 18 months old seedling over 32.00 ha @ Rs.1,00,938/-	32,30,016.00
2.	Cost of ANR Plantation @500 plants per ha with 18 months old seedling over 32.50 ha @ Rs.1,42,904/-	46,44,380.00
3.	Cost of Solar Fencing with RCC Pillars(400 Pillars/RKM) over 64.5 ha @ Rs.1,70,045 /-	1,09,67,902.50
4.	Soil & Moisture Conservation work @ 37,415/- per Ha over 64.50 ha	24,13,267.50
	Water provision to CA Plantation	
5.	Water provision to CA Plantation through Solar system with Bore well (1 system for 5 ha. Plantation) fitted with Drip system = Rs. 2,33,786.00 per ha X 64.50 ha	1,50,79,197.00
	Total Plantation Cost	3,63,34,763.00
6.	15% of total plantation cost towards EPA/incentives to VSS including Monitoring & Evaluation	54,50,214.45
	Total:-	4,17,84,977.45 or 4,17,84,977.00
	INFRASTRUCTURE (To be provided in Kinds):	
7.	(a) Supply Toyota Innova Crysta ZX 2.4 AT 7STR (Pearl White) with all accessories, including RTO, Insurance and other charges.	In kind
	(b) Supply of Inverter of 11,000 KVA along with 15 batteries of 4 years warranty. (2-Sets)	
	(c) One high end Laptop for Office use of Divisional Forest Officer (MAC Mode-Apple (Mac Book Pro) 14" (Protection Plan).	


 31/01/23
 Divisional Forest Officer,
 Rourkela Division.

prepared by me


 31.01.23

ACF Rourkela

**JOINT VERIFICATION OF NON- FOREST GOVT. LAND FOR COMPENSATORY AFFORESTATION IN
RESPECT OF NETRABANDH IRON ORE BLOCK(WEST) OF RAGA TRADECON PVT LTD**

Date: -.....

Tahsil: -Koirā

Range: -Banki Range

Sl no.	Name of Village	Khata No	Plot no	Kissam	Area as per RoR in Ha.	Area found Suitable for Plantation in Ha			Surrounded by				Area in Ha found for Unsuitable with Reason	Remarks
						AR	ANR	Total	North	South	East	West		
1	2	3	4	5	6	7	8	9	10				11	
1	Mahupada	44(AAA)	101/773(p)	Pahad	4.470			2.460	Plot No-15,773(p)	Plot No-774	Plot No-15	Plot No-6		
2	Mahupada	44(AAA)	29/774(p)	Pahad	13.090			12.240	Plot No-773	Plot No-46	Plot No-776	Plot No-6		
3	Mahupada	44(AAA)	15/775	Pahad	10.420			10.420	Plot No-28	Plot No-776	Plot No-793	Plot No-774		
4	Mahupada	44(AAA)	15/776	Pahad	8.900			8.900	Plot No-775	Plot No-99	Plot No-796	Plot No-774		
5	Mahupada	44(AAA)	222/793	Pahad	3.620		ANR Plantation over 32.5 Ha. @200 nos. seedling	3.620	Plot No-6	Plot No-37	Plot No-35	Plot No-6		
6	Mahupada	44(AAA)	222/794(p)	Pahad	2.110		ANR Plantation over 32.0 Ha. @500 nos. seedling	1.850	Plot No-777	Plot no-780	Plot No-37,38	Plot No-6		
7	Mahupada	44(AAA)	222/795(p)	Pahad	7.080			3.710	Plot No-778	Plot No-781	Plot No-93	Plot No-780(p)		
8	Mahupada	44(AAA)	222/796	Pahad	3.950			3.950	Plot No-773	Plot No-46	Plot No-776	Plot No-6		
9	Mahupada	44(AAA)	35/777	Pahad	4.860			4.860	Plot No-6	Plot No-37	Plot No-35	Plot No-6		
10	Mahupada	44(AAA)	38/778	Pahad	4.860			4.860	Plot No-777	Plot No-780	Plot No-36,38	Plot No-6		
11	Mahupada	44(AAA)	93/780(p)	Pahad	4.350			2.130	Plot No-778	Plot No-781	Plot No-93	Plot No-780(p)		
12	Mahupada	44(AAA)	108/781(p)	Pahad	7.180			2.130	Plot No-780	Plot No-781(p)	Plot No-781(p)	Plot No-782		
13	Mahupada	44(AAA)	108/782(p)	Pahad	8.300			2.500	Plot No-782(p)	Plot No-788,789	Plot No-781	Plot No-782(p),109		

14	Mahupada	44(AAA)	115/788(p)	Pahad	6.270			0.520	Plot No- 782	Plot No- 788(p)	Plot No- 789	Plot No- 109	
15	Mahupada	44(AAA)	115/789(p)	Pahad	6.800			0.350	Plot No- 782	Plot No- 789(p)	Plot No- 789(p)	Plot No- 788	
Total					103.260			64.500					

1. Certified that the above non-forest Government land as mentioned above is in compact patches of 4 Ha or more having adequate soil depth suitable for plantation from management point of view.
2. Certified that the above non-forest Government land found suitable for plantation is free from encroachment and encumbrances.
3. Certified that the above non-forest Government land is not covered under 4(I) Notification.
4. Certified that the above non-forest Government land is not covered under DLC report.
5. Certified that the above non-forest Government land is not allotted previously.
6. Certified that the above non-forest Government land is not covered under any M.L/P. L areas.
7. Certified that the above plot not settled in favors of individual/ community under F.R. Act, 2006.
8. Certified that the Status of the above plot was non forest as on 25.10.1980.
9. Certified that the above plots are not covered under any proposed reserved forest.
10. Certified that the above plots are unfit not only for agriculture, but also for other development requirements.
11. Certified that the above plots have no future potential for agrarian or industrial use.


REVENUE INSPECTOR
K BAIANG


TEHSIL
KOTRA


FORESTER
PAIAMINDA SECTION


Forest Range Officer
Banki Range


Divisional Forest Officer
Rourkela Division

SUITABILITY CERTIFICATE OF 64.500 HA OF NON FOREST GOVT LAND IN VILLAGE MAHUPADA UNDER KOIRA TAHASIL, DISTRICT SUNDERGARH IDENTIFIED/ALLOTTED FOR RAISING COMPENSATORY AFFORESTATION AGAINST THE MINING PROJECT OF NETRABANDH (WEST) IRON ORE BLOCK OF M/S RAGA TRADECON PVT LTD.

1. Certified that the above non- forest Government land identified for CA land is in compact patches of 4 Ha or more having adequate soil depth suitable for plantation from management point of view.
2. Certified that the above government land found suitable for plantation is free from encroachment and encumbrances.
3. Certified that the above government land is not covered under 4(I) Notification.
4. Certified that the above government land is not covered under covered under DLC report.
5. Certified that the above government land is not allotted previously.
6. Certified that the above government land is not covered under covered under any M.L/P. L areas.
7. Certified that the above plot not settled in favors of individual/ community under F.R. Act,2006.
8. Certified that the Status of the above plot was non-forest as on 25.10.1980.
9. Certified that the above plots are not covered under any proposed reserved forest.
10. Certified that the above plots are unfit not only for agriculture, but also for other development requirements.
11. Certified that the above plots have no future potential for agrarian or industrial use.


21.10.2022
REVENUE INSPECTOR
K BALANG


FORESTER
PA.IAMUNDA SECTION


21-10-22
Forest Range Officer
Banki Range


Tehsil Officer
KOIRA


31/01/23
Divisional Forest Officer
Rourkela Division

LAND SCHEDULE IN VILLAGE: MAHUPADA UNDER TAHASIL: KOIRA, DISTRICT: SUNDARGARH IDENTIFIED FOR RAISING COMPENSATORY AFFORESTATION IN LIEU OF DIVERSION OF FOREST LAND OVER AN AREA OF 64.5 Ha. IN RESPECT OF NETRABANDHA PAHAR (WEST) IRON ORE BLOCK OF M/S RAGA TRADECON PVT LTD.

Sl.No	Name of Village	Khata No	Plot No	Kissam	Area as per RoR in AC	Area as per RoR in Ha	Area Consider for CA in Ha.	Remarks
1	2	3	4	5	6	7	8	9
1	Mahupada	44(AAA)	10/773(p)	Pahad	11.05	4.470	2.460	
2	Mahupada	44(AAA)	29/774(p)	Pahad	32.35	13.090	12.240	
3	Mahupada	44(AAA)	15/775	Pahad	25.75	10.420	10.420	
4	Mahupada	44(AAA)	15/776	Pahad	22	8.900	8.900	
5	Mahupada	44(AAA)	222/793	Pahad	8.95	3.620	3.620	
6	Mahupada	44(AAA)	222/794(p)	Pahad	5.22	2.110	1.850	
7	Mahupada	44(AAA)	222/795(p)	Pahad	17.5	7.080	3.710	
8	Mahupada	44(AAA)	222/796	Pahad	9.75	3.950	3.950	
9	Mahupada	44(AAA)	35/777	Pahad	12	4.860	4.860	
10	Mahupada	44(AAA)	38/778	Pahad	12	4.860	4.860	
11	Mahupada	44(AAA)	93/780(p)	Pahad	10.75	4.350	2.130	
12	Mahupada	44(AAA)	108/781(p)	Pahad	17.75	7.180	2.130	
13	Mahupada	44(AAA)	108/782(p)	Pahad	20.5	8.300	2.500	
14	Mahupada	44(AAA)	115/788(p)	Pahad	15.5	6.270	0.520	
15	Mahupada	44(AAA)	115/789(p)	Pahad	16.8	6.800	0.350	
Total					243.87	103.260	64.500	

1. Certified that the above degraded/non forest government land as mentioned in column no.8 is in compact patch of 5.00 ha or more having adequate soil depth suitable for plantation.
2. Certified that the above government land found suitable for plantation and free from encroachment and encumbrance.
3. Certified that the above government land is not covered under 4(1) Notification.
4. Certified that the above government non forest land is not covered under DLC report.
5. Certified that the above government land is not allotted previously.
6. Certified that the above government land is not covered any M.L/P.L area.
7. Certified that the above plots are not settled in favour individual/community under F.R Act, 2006.
8. Certified that the status of the above non forest plot are non forest as on 25.10.1980.
9. Certified that the above plots are not covered under any proposed reserved forest.
10. Certified that the above plots are unfit not only for agriculture, but also for other developmental requirements (applicable incase non forest Govt. Land).
11. Certified that the above plots have no future potential for agrarian or industrial use (applicable in case non-forest Govt. Land)


FORESTER
RAJAMUNDA SECTION


REVENUE INSPECTOR
K BALANG


Forest Range Officer
Banki Range


Tehsil Officer
KOIRA


Divisional Forest Officer
Rourkela Division

FOR THE
REPUBLIC OF CHINA

Ministry of
Education


1947

**DGPS COORDINATE OF BOUNDARY PILLARS OF THE AREA IDENTIFIED FOR RAISING COMPENSATORY
AFFORESTATION IN LIEU OF DIVERSION OF FOREST LAND OVER AN AREA OF 64.5 Ha. IN
VILLAGE:MAHUAPADA UNDER TAHASIL:KOIRA, DISTRICT:SUNDARGARHIN RESPECT OF NETRABANDHA
PAHAR (WEST) IRON ORE BLOCK OF M/S RAGA TRADECON PVT LTD.**

Pillar No	Easting	Northing	LONGITUDE	LATITUDE	Lat_DMS	Lon_DMS	Patch_No
1	295939.2543	2444483.358	85.022053	22.093338	22° 5' 36.016" N	85° 1' 19.391" E	Patch-A
2	295794.1642	2444410.263	85.020657	22.092661	22° 5' 33.579" N	85° 1' 14.364" E	Patch-A
3	295697.8557	2444404.125	85.019724	22.092594	22° 5' 33.339" N	85° 1' 11.007" E	Patch-A
4	295630.1222	2444385.921	85.01907	22.092422	22° 5' 32.719" N	85° 1' 8.653" E	Patch-A
5	295516.457	2444358.828	85.017972	22.092164	22° 5' 31.790" N	85° 1' 4.701" E	Patch-A
6	295453.2214	2444401.659	85.017354	22.092543	22° 5' 33.155" N	85° 1' 2.476" E	Patch-A
7	295360.5112	2444420.497	85.016454	22.092702	22° 5' 33.729" N	85° 0' 59.234" E	Patch-A
8	295161.1208	2444397.002	85.014525	22.092467	22° 5' 32.880" N	85° 0' 52.290" E	Patch-A
9	295047.3153	2444356.818	85.013428	22.092091	22° 5' 31.526" N	85° 0' 48.339" E	Patch-A
10	295030.5478	2444438.682	85.013255	22.092828	22° 5' 34.180" N	85° 0' 47.717" E	Patch-A
11	294972.9744	2444453.075	85.012695	22.092951	22° 5' 34.623" N	85° 0' 45.702" E	Patch-A
12	294931.6993	2444522.29	85.012286	22.093571	22° 5' 36.856" N	85° 0' 44.231" E	Patch-A
13	294966.6244	2444570.974	85.012619	22.094015	22° 5' 38.453" N	85° 0' 45.427" E	Patch-A
14	294946.516	2444611.402	85.012419	22.094377	22° 5' 39.758" N	85° 0' 44.707" E	Patch-A
15	294940.166	2444638.707	85.012354	22.094623	22° 5' 40.643" N	85° 0' 44.474" E	Patch-A
16	294941.8593	2444672.574	85.012366	22.094929	22° 5' 41.745" N	85° 0' 44.517" E	Patch-A
17	294960.9094	2444705.382	85.012546	22.095228	22° 5' 42.819" N	85° 0' 45.167" E	Patch-A
18	294953.4851	2444745.096	85.012469	22.095585	22° 5' 44.107" N	85° 0' 44.890" E	Patch-A
19	295089.5014	2444845.179	85.013775	22.096505	22° 5' 47.418" N	85° 0' 49.588" E	Patch-A
20	295191.354	2444830.869	85.014763	22.096388	22° 5' 46.996" N	85° 0' 53.147" E	Patch-A
21	295202.9595	2444721.148	85.014889	22.095398	22° 5' 43.434" N	85° 0' 53.602" E	Patch-A
22	295316.466	2444753.533	85.015985	22.095704	22° 5' 44.535" N	85° 0' 57.546" E	Patch-A
23	295330.436	2444853.228	85.016108	22.096606	22° 5' 47.782" N	85° 0' 57.988" E	Patch-A
24	295386.1574	2444913.077	85.01664	22.097153	22° 5' 49.750" N	85° 0' 59.905" E	Patch-A
25	295536.6527	2444960.067	85.018092	22.097595	22° 5' 51.342" N	85° 1' 5.132" E	Patch-A
26	295623.1716	2444987.213	85.018927	22.09785	22° 5' 52.261" N	85° 1' 8.138" E	Patch-A
27	295700.8005	2444967.37	85.019682	22.09768	22° 5' 51.648" N	85° 1' 10.854" E	Patch-A
28	295774.1431	2444935.143	85.020396	22.097398	22° 5' 50.632" N	85° 1' 13.427" E	Patch-A
29	295851.772	2444916.093	85.021151	22.097235	22° 5' 50.045" N	85° 1' 16.144" E	Patch-A
30	295895.2617	2444855.875	85.02158	22.096696	22° 5' 48.106" N	85° 1' 17.688" E	Patch-A
31	295969.5568	2444805.287	85.022306	22.096248	22° 5' 46.493" N	85° 1' 20.302" E	Patch-A
32	295990.4638	2444772.912	85.022513	22.095958	22° 5' 45.450" N	85° 1' 21.046" E	Patch-A
33	295967.1474	2444641.074	85.022303	22.094765	22° 5' 41.155" N	85° 1' 20.292" E	Patch-A
34	294197.2798	2443490.531	85.005302	22.084169	22° 5' 3.007" N	85° 0' 19.087" E	Patch-B
35	294138.5422	2443476.244	85.004735	22.084033	22° 5' 2.517" N	85° 0' 17.045" E	Patch-B
36	294122.4421	2443510.598	85.004574	22.084341	22° 5' 3.627" N	85° 0' 16.468" E	Patch-B
37	294055.992	2443522.281	85.003929	22.084439	22° 5' 3.979" N	85° 0' 14.145" E	Patch-B
38	293995.9531	2443593.561	85.003338	22.085075	22° 5' 6.270" N	85° 0' 12.019" E	Patch-B
39	294014.0775	2443598.683	85.003513	22.085123	22° 5' 6.444" N	85° 0' 12.648" E	Patch-B
41	294086.1546	2443657.219	85.004204	22.08566	22° 5' 8.378" N	85° 0' 15.135" E	Patch-B
42	294225.8548	2443633.406	85.005561	22.085462	22° 5' 7.663" N	85° 0' 20.018" E	Patch-B
43	294336.9256	2443743.43	85.006623	22.086468	22° 5' 11.286" N	85° 0' 23.842" E	Patch-B


FORESTER
BA JAMUNDA SECTION


Forest Range Officer
Banki Range


Divisional Forest Officer
Rourkela Division

44	294432.1181	2443844.639	85.007532	22.087394	22° 5' 14.617" N	85° 0' 27.116" E	Patch-B
45	294478.3706	2443845.178	85.00798	22.087404	22° 5' 14.654" N	85° 0' 28.729" E	Patch-B
46	294478.6208	2443923.778	85.007973	22.088114	22° 5' 17.209" N	85° 0' 28.702" E	Patch-B
47	294554.821	2443981.246	85.008704	22.088641	22° 5' 19.109" N	85° 0' 31.333" E	Patch-B
48	294597.1544	2444002.307	85.009111	22.088837	22° 5' 19.812" N	85° 0' 32.800" E	Patch-B
49	294646.7009	2444102.561	85.009578	22.089748	22° 5' 23.091" N	85° 0' 34.482" E	Patch-B
50	294669.5445	2444143.7	85.009795	22.090122	22° 5' 24.438" N	85° 0' 35.260" E	Patch-B
51	294689.4412	2444169.947	85.009984	22.090361	22° 5' 25.300" N	85° 0' 35.942" E	Patch-B
52	294695.7913	2444228.685	85.010038	22.090892	22° 5' 27.212" N	85° 0' 36.137" E	Patch-B
53	294716.5346	2444246.888	85.010237	22.091059	22° 5' 27.812" N	85° 0' 36.852" E	Patch-B
54	294730.293	2444241.914	85.010371	22.091016	22° 5' 27.657" N	85° 0' 37.334" E	Patch-B
55	294762.4377	2444236.614	85.010683	22.090972	22° 5' 27.498" N	85° 0' 38.458" E	Patch-B
56	294822.2623	2444215.138	85.011265	22.090785	22° 5' 26.825" N	85° 0' 40.554" E	Patch-B
57	294857.6107	2444271.124	85.0116	22.091294	22° 5' 28.660" N	85° 0' 41.761" E	Patch-B
58	294874.7558	2444285.941	85.011765	22.09143	22° 5' 29.149" N	85° 0' 42.353" E	Patch-B
59	294887.985	2444283.507	85.011893	22.09141	22° 5' 29.075" N	85° 0' 42.815" E	Patch-B
60	294914.8138	2444213.815	85.012162	22.090784	22° 5' 26.822" N	85° 0' 43.783" E	Patch-B
61	294940.9017	2444144.759	85.012423	22.090163	22° 5' 24.588" N	85° 0' 44.724" E	Patch-B
62	295052.3445	2444150.262	85.013502	22.090226	22° 5' 24.814" N	85° 0' 48.608" E	Patch-B
63	295022.3936	2444107.188	85.013218	22.089834	22° 5' 23.401" N	85° 0' 47.583" E	Patch-B
64	294907.0536	2444085.623	85.012103	22.089625	22° 5' 22.651" N	85° 0' 43.570" E	Patch-B
65	294775.7661	2444058.963	85.010834	22.089369	22° 5' 21.729" N	85° 0' 39.004" E	Patch-B
66	294729.411	2443908.944	85.010404	22.088009	22° 5' 16.833" N	85° 0' 37.455" E	Patch-B
67	294643.2096	2443847.666	85.009577	22.087446	22° 5' 14.805" N	85° 0' 34.477" E	Patch-B
68	294623.6833	2443846.873	85.009388	22.087436	22° 5' 14.771" N	85° 0' 33.796" E	Patch-B
69	294588.1233	2443812.106	85.009048	22.087118	22° 5' 13.626" N	85° 0' 32.572" E	Patch-B
70	294547.6419	2443774.324	85.00866	22.086772	22° 5' 12.380" N	85° 0' 31.177" E	Patch-B
71	294505.7318	2443719.079	85.008261	22.086269	22° 5' 10.567" N	85° 0' 29.740" E	Patch-B
73	294479.8554	2443688.969	85.008014	22.085994	22° 5' 9.577" N	85° 0' 28.852" E	Patch-B
74	294451.2803	2443612.769	85.007747	22.085302	22° 5' 7.088" N	85° 0' 27.890" E	Patch-B
75	294348.8863	2443597.688	85.006757	22.085154	22° 5' 6.554" N	85° 0' 24.326" E	Patch-B
76	294246.4924	2443582.606	85.005767	22.085006	22° 5' 6.021" N	85° 0' 20.761" E	Patch-B
77	294226.5877	2443500.429	85.005585	22.084261	22° 5' 3.341" N	85° 0' 20.105" E	Patch-B

R.B.S.
FORESTER
D.A. IAMUNDA SECTION

[Signature]
31-10-22
Forest Range Officer
Banki Range

[Signature]
31/10/22
Divisional Forest Officer
Rourkela Division



**SCHEME FOR
ADDITIONAL
COMPENSATORY AFFORESTATION
OVER 73.462 HA. IDENTIFIED IN
MAHULPADA RESERVE FOREST
IN KULIPOSH RANGE
OF
BONAI FOREST DIVISION
AGAINST MINING PROJECT
OF
NETRABANDH PAHAR (WEST) IRON
ORE BLOCK
OF
M/S RAGA TRADECON PVT. LTD.**

**SCHEME FOR ADDITIONAL COMPENSATORY AFFORESTATION OVER
73.462 HA. IDENTIFIED IN MAHULPADA RESERVE FOREST IN KULIPOSH
RANGE OF BONAI FOREST DIVISION AGAINST MINING PROJECT OF
NETRABANDH PAHAR (WEST) IRON ORE BLOCK OF
M/S RAGA TRADECON PVT. LTD.**

1. INTRODUCTION:

M/s Raga Tradecon Pvt. Ltd. has submitted a proposal for diversion of 66.242 ha. of forest land (including 2.09 ha. of earmarked as Safety Zone) in allotted Mining Project of Netrabandh Pahar (West) Iron Ore Block. Equal extent of non-forest land is required for Compensatory Afforestation. Accordingly, 64.500 ha. of Govt. non-forest land has been identified in village Mahupada under Koira Tehsil, Banki Range of Rourkela Forest Division for raising of Compensatory Afforestation. As per Compensatory Afforestation Scheme of prepared by DFO, Rourkela Forest Division, ANR plantation @200 seedlings over 32.0 ha. and ANR plantation @500 seedlings over 32.50 ha. Total seedlings in the aforesaid CA land will be accommodated 22500 nos. out of 64500 nos. of seedlings.

In order to achieve balance number of 42000 seedlings as per F.C. Guidelines, an area of 73.462 ha. of degraded forest land has been identified in Mahulpada RF in Kuliposh Range of Bonai Forest Division.

The Addl. Compensatory Afforestation Scheme has been prepared for raising balance 42000 seedlings over 73.462 Ha. of degraded forest land for Mining Project of Netrabandh Pahar (West) Iron Ore Block of M/s Raga Tradecon Pvt. Ltd. in Bonai Division. The above degraded forest land has been verified in the field by the Range Officer, Kuliposh Range and found suitable for plantation being free from encroachment and encumbrances.

A total of 73.462 ha. of degraded forest land which has been identified for Addl. Compensatory Afforestation is fit to take up AR Plantation @ 1000 plant per hectare over 5.00 ha., @1600 plants per hectare over 3.00 ha. and ANR Plantation @500 plants per hectare over 65.462 ha. The cost estimate for this plantation has been calculated as per cost norm for ANR Plantation @500 plants per ha., AR Plantation of @1000 plants per ha. and @1600 plants per hectare, which is enclosed vide Annexure-I, II & III respectively.

2. IDENTIFICATION OF THE DEGRADED FOREST AREA:

An area of 73.462 ha. of degraded forest land has been identified in Mahulpada RF of Kuliposh Range of Bonai Division for taking up Addl. Compensatory Afforestation. Mahulpada RF comes under Rehabilitation Working Circle as per the Working Plan of Bonai Forest Division. The area has been inspected by the Range Officer, Kuliposh Range and found to be suitable for Addl. Compensatory Afforestation, and free from encroachment & encumbrances. Certificate to this effect furnished by the Range Officer, Kuliposh Range (Annexure-VII).

Further the identified area has been verified with the help of Decision Support System (DSS) & found suitable for Compensatory Afforestation. The DSS report is attached as **(Annexure-VIII)**.

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

3. TOPOGRAPHY AND SOIL:

The forest land identified for this purpose is Hilly, approx. 16 degree in slope, gravel and soil mixed patch. The area experiences tropical climate with monsoon rainfall.

4. CLIMATE

The area experiences Sub-tropical climate. It is characterized by very hot summer and cool winter. Maximum temperature during summer rises upto 44^o Celsius and the minimum goes down to 8^o Celsius. The area gets rain from South-East Monsoon, which breaks during second fortnight of June and continues upto last week of September. The annual rainfall varies from 780 to 1880mm. The annual average rainfall is 1500mm. The bulk of precipitation occurs during July-August. During April-May, occasional rainfall occurs along with thunder storm.

5. EXISTING VEGETATION.

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

6. OBJECTIVE OF THE SCHEME:

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

7. PROPOSED TECHNIQUE:

To achieve the above objectives, it has been proposed to take up AR Plantation @ 1000 seedlings per hectare at a spacing of 2.5 mtr x 2.5 mtr over 5.00 ha., AR Plantation @ 1600 seedlings per hectare over 3.00 ha. and ANR Plantation @ 500 plants per hectare over 65.462 ha. (18 months old seedlings) in the identified degraded forest area of Mahulpada RF of Kuliposh Range. The said plantation work shall be undertaken in the 0th year (Pre-plantation operation) followed by first year plantation work and maintenance during 2nd, 3rd, 4th, 5th, 6th, 7th, 8th, 9th, & 10th year. The detailed expenditure statement per hectare is enclosed as **Annexure-I, II & III.**

(A). SURVEY AND DEMARCATION:

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

(B). REGENERATION CLEANING AND TENDING OPERATION:

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

The following operation will be carried out during the operation.

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

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

(C). PLANTATION:

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

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

The following operations will be taken up for plantation;

i) Raising of nursery:

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

ii) Alignment and pitting:

Alignment and pitting will be taken up in the month of March-April, Pits of size 45cm x 45cm x 45cm will be dug maintaining a spacing of 2.5mtr x 2.5mtr @1000 and 1600 seedlings per ha. It is proposed to take up Plantation in the blank patches.

iii) Actual Planting:

The seedlings will be planted @1000, 1600 & 500 seedlings per ha. in the dug out pits of size 45cm x 45cm x 45cm with a spacing of 2.5mtr x 2.5mtr. Plantation shall be taken up after first regular shower of monsoon and completed by the end of July. Species will be planted as per suitability of the soil condition. NPK/ Bio fertilizer @50gms per plant shall be applied as basal dosage. Anti-termite insecticide shall also be applied to each pit while planting. Casualties if any noticed shall be replaced with the excess seedlings raised for the purpose. During second year also, casualty replacement will be done for which seedlings shall be raised.

iv) Weeding, Soil working & manuring :

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

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

v) Application of insecticides:

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

vi) Fire line tracing and maintenance:

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

8. SOIL CONSERVATION MEASURES:

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

9. FENCING:

To protect the AR plantation from biotic interference, Bamboo twigs & Thorns fencing is proposed over the identified area of 73.462 ha. in Mahulpada Reserve Forest of Kuliposh Range. The total perimeter of the said identified area is 8793 RMT (Or, 8.793 Km) length of boundary.

The cost norm for Bamboo twigs & Thorns fencing is enclosed as **Annexure-IV.**

10. WATERING :

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

11. MOTIVATION OF PEOPLE:

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

12. EXECUTING AGENCY :

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

13. INSPECTION, MONITORING & EVALUATION:

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

14. REQUIREMENT OF FUNDS:

For implementation of all prescriptions outlined above ₹ 2,12,77,500/- (Rupees Two Crore Twelve Lakh Seventy Seven Thousand Five hundred) only will be required as detailed below.

1.	ANR Plantation @500 plants per hectare over 65.462 ha. @ ₹1,42,904/-	₹	93,54,782.00
2.	AR Plantation @1000 plants per hectare over 5.00 ha. @ ₹2,46,454/-	₹	12,32,270.00
3.	AR Plantation @1600 plants per hectare over 3.00 ha. @ ₹3,25,623/-	₹	9,76,869.00
4.	Bamboo twigs & Thorns fencing over 8.793 KM (Or, 8793 RMT) @ ₹419.86/- per RMT.	₹	36,91,829.00
5.	Soil conservation measures structures like staggered trench, percolation pit, contour trench, graded earthen bund, LBCD, wire mesh, LBCD, Sub surface Dyke and Water Harvesting structures = 73.462 ha X ₹37,415/-.	₹	27,48,580.00
6.	Water provision to plantation: Solar system with Bore well (1 system for 5 Ha. Plantation) fitted with Drip system @ ₹2,33,786/- X 14 nos.	₹	32,73,004.00
TOTAL :-		₹	2,12,77,334.00
		₹	Or, 2,12,77,500.00

(Rupees Two Crore Twelve Lakh Seventy Seven Thousand Five hundred) only.

Divisional Forest Officer,
Bonai Division.

ANNEXURE-7						
Base Cost Norms for Compensatory Afforestation through Aided Natural Regeneration (ANR) @ 500 Seedlings/Ha.						
WAGE RATE Rs- 311/- PER MANDAY						
Sl. No	Items of work	Preferable Period of Execution	No of Mandays	Labour Cost (In Rs.)	Material Cost (In Rs.)	Total cost (In Rs.)
0th Year (Advance work) Pre-Planting Operation						
1	Survey, Demarcation and Pillar posting	Nov/Dec	2	622	0	622
2	Preparation of Treatment Map (Digital Map)	Nov/Dec	1	311	100	411
3	Site preparation	Nov/Dec	2	622	0	622
4	Silvicultural operations including clearance of weed, cutting of climber, High stump cutting, singling of shoots & removal of cut out after drying from the field to blank space.	Jan/Feb	15	4665	0	4665
5	Alignment and stacking for digging of pits	Feb/Mar	1	311	0	311
6	Digging of pits (45 cm x 45 cm X 45 cm) in hard and gravelly soil	Feb/Mar	20	6220	0	6220
	Total		41	12751	100	12851
1st Year/Planting Year						
1	Refilling of pits by altering the dugout soil of the pits, application of organic compounds/ CDM/ FYM & mixing the same perfectly.	June/Jul	4	1244	2500	3744
2	Transportation of 18 months old polythene bag seedlings in hired truck /tractor from the permanent/Mega nursery to planting site including Loading & unloading, (Average lead of 10 Rkm) & Stacking the seedling @ Rs.6/- Seedling. (550 nos.)	Jul/Aug	0	0	3300	3300
3	Watering polythene bag seedlings at stacking site of plantation	Jul/Aug	1	311	0	311
4	Conveyance of polythene bag seedlings on head load from the stacking site to individual dugout pits within the planting site, applying insecticide, fertilizer & planting after scooping the soil with other applied materials and pressing the soil perfectly around the planted seedling.	Jul/Aug	11	3421	0	3421
5	Cost of Fertilizer & Insecticide (a) NPK/ Bio-fertilizer @ 50 gms/plant as basal dose = 25kg @ Rs.30/- per kg = Rs. 750.0 (b) Urea/Vermicompost/Mo Khata/any other fertilizer @ Rs. 375.00 (c) Insecticide/ Bio-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. diameter 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	Aug-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 (Thermet/ Forate) @ 5 gms/plant = .25 Kg @ Rs.150/- per kg = Rs.37.50 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, (1mt. 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
	Total		24.5	7619.5	1737.5	9357
3rd Year Maintenance						
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, (1mt. 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
	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)						

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

Note:

- 1 Priority must be given to the indigenous local species available nearby to the site of plantation.
- 2 10 % indigenous fruit bearing trees must be preferred to Plantation.
- 3 Site specific Soil conservation work like LBCD, 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 RECFs keeping the overall cost norm fixed for each Financial Year

APCCF (Forest Diversion & NO, FC Act)

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

Sl. No.	Commence ment Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI	Total Cost
	Base Norm	13400	48871	12316	8900	4800	4800	4800	4800	4800	4800	4800											
1	2021-22	13400	51315	13577	10303	5834	6126	6432	6754	7092	7446	7819											
2	2022-23		14070	53861	14256	10818	6126	6432	6754	7092	7447	7818	8210										136098
3	2023-24			14774	56575	14969	11359	6432	6754	7092	7447	7819	8209	8621									142904
4	2024-25				15513	59404	15717	11927	6754	7092	7447	7819	8210	8619	9052								150051
5	2025-26					16289	62374	16503	12523	7092	7447	7819	8210	8621	9050	9505							157554
6	2026-27						17103	65493	17328	13149	7447	7819	8210	8621	9052	9503	9980						165433
7	2027-28							17958	68768	18194	13805	7819	8210	8621	9052	9505	9978	10479					173705
8	2028-29								18856	72206	19104	14496	8210	8621	9052	9505	9980	10477	11003				182390
9	2029-30									19759	75816	20059	15221	8621	9052	9505	9980	10479	11001	11553			191510
10	2030-31										20789	79607	21062	15982	9052	9505	9980	10479	11003	11551	12131		201086
																							211141

ARCCF (Forest Diversion & NO, FC Act)

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ANNEXURE-II

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 lead of 10 Rkm) & stacking the seedling @ Rs.6/- per seedling. (1100 nos.)	Jul/Aug	0	0	6600	6600
3	Watering polyplot seedlings at planting site	Jul/Aug	2	622	0	622
4	Conveyance of polyplot 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.150/- 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

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Sl. No	Items of work	Preferable Period of Execution	No of Mandays	Labour Cost (In Rs.)	Material Cost (In Rs.)	Total cost (In Rs.)
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, (1mt. diameter around the plants)	Sep/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	5598	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.)	Matrrial Cost (In Rs.)	Total cost (In Rs.)	
1	2	3	4	5	6	7	
Sl. No	Year	No. of Mandays	Labour cost (In Rs)	Material Cost(In Rs.)	Monitoring, Evaluation, Learning, Documentat ion 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						
2	1st year	57.0	17727.0	3600.0	973.00	0.00	22300.00
3	2nd year	76.5	23791.5	14600.0	1918.50	55341.00	95651.00
4	3rd year	38.5	11973.5	4475.0	821.50	5031.00	22301.00
5	4th year	36.0	11196.0	3800.0	749.00	0.00	15745.00
6	5th year	21.0	6531.0	0.0	326.00	0.00	6857.00
7	6th year	21.0	6531.0	0.0	326.00	0.00	6857.00
8	7th year	24.0	7464.0	0.0	373.00	0.00	7837.00
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 CA 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 RCCFs keeping the overall cost norm fixed for each Financial Year

APCCF (Forest Diversion & NO, FC Act)

Matrix for Model-I 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	22300	95651	72301	15745	6857	6857	7837	6857	6857	6857	6857	6857	6857	6857	6857	6857	6857	6857	6857	6857	6857	
1	2021-22	22300	100434	74585	18226	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	9150	9648	11578	10837	11170	11727	12313									258777
4	2024-25				25815	116265	28460	21099	9650	10130	12157	11169	11729	12313	12825								271716
5	2025-26					27106	122078	29883	22154	10133	10637	12765	11727	12315	12979	13575							285302
6	2026-27						28461	128182	31377	23167	10640	13169	13403	12313	12931	13575	14254						299567
7	2027-28							29884	31378	32947	24475	11172	11727	14073	12929	13576	14254	14967					314546
8	2028-29																						330273
9	2029-30																						346788
10	2030-31																						364127

APCCF (Forest Diversion & NO, FC Act)

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ANNEXURE-III

ANNEXURE-5

BASE COST NORM FOR COMPENSATORY AFFORESTATION (BLOCK PLANTATION) @ 1600 PLANTS PER HECTARE (18 months old seedling)						
WAGE RATE Rs- 311/- PER MANDAY						
Sl. No	Items of work	Preferable Period of Execution	No of Mandays	Labour Cost (In Rs.)	Material Cost (In Rs.)	Total cost (In Rs.)
1	2	3	4	5	6	7
0th Year (Advance work) Pre-Planting Operation						
1	Survey, Demarcation and Pillar posting	Nov/Dec	2	622	0	622
2	Preparation of Treatment Map (Digital Map)	Nov/Dec	1	311	100	411
3	Site preparation (Cleaning & removal of debris)	Nov/Dec	12	3732	0	3732
4	Creation of 4.00 mt wide Inspection Path	Feb/Mar	1	311	0	311
5	Alignment and stacking	Feb/Mar	2	622	0	622
6	Digging of pits (45 cm x 45 cm X 45 cm) in hard and gravelly soil	Feb/Mar	64	19904	0	19904
7	Construction of Temporary Labour Shed, Drinking water facility and First-Aid etc.	Jan/Mar	0	0	3500	3500
Total			82	25502	3600	29102
1st Year/Planting Year						
1	Refilling of pits by altering the dug-out soil of the pits, application of Organic compounds/ CDM/ FYM & mixing the same properly.	Jun/Jul	12	3732	8000	11732
2	Transportation of 18 months old polypot seedlings in hired truck /tractor from the permanent/Mega nursery to planting site including Loading & unloading. (Average lead of 10 Rkm) & Stacking the seedling @ Rs.6/- per Seedling. (1760 nos.)	Jul/Aug	0	0	10560	10560
3	Watering the polypot seedlings at planting site	Jul/Aug	3	933	0	933
4	Conveyance of polypot seedlings on head load from the stacking site to individual dugout pits within the planting site, applying insecticide, fertilizers & planting after scooping the soil with other applied materials & pressing the soil properly around the planted seedlings.	Jul/Aug	36	11196	0	11196
5	<u>Cost of Fertilizer & Insecticide</u> (a) NPK/Bio-fertilizer @ 50 gms/plant as basal dose = 80kg @ Rs.30/- per kg = Rs. 2400.00 (b) Urea/Vermicompost/Mo Khata/any other fertilizer in two subsequent doses @ Rs. 1,200.00 (c) Insecticide/ Bio-pesticide @ 5 gms/plant= 8 kg @ Rs.150/- per kg = Rs. 1200.00	Jul/Aug	0	0	4800	4800

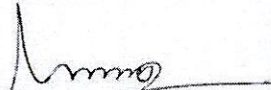
BASE COST NORM FOR COMPENSATORY AFFORESTATION (BLOCK PLANTATION) @ 1600 PLANTS PER HECTARE (18 months old seedling)						
WAGE RATE Rs- 311/- PER MANDAY						
Sl. No	Items of work	Preferable Period of Execution	No of Mandays	Labour Cost (In Rs.)	Material Cost (In Rs.)	Total cost (In Rs.)
1	2	3	4	5	6	7
6	Casualty Replacement @ 10% (160 nos.)	Jul/Aug	4	1244	0	1244
7	1st weeding & Manuring	Aug/Sept	15	4665		4665
8	2nd Weeding, Soil working (1mt. diameter around the plants) and Manuring	Oct/Nov	20	6220	0	6220
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			105	32655	23360	56015
2nd Year Maintenance						
1	Transportation of 160 seedlings from Nursery to plantation site including loading, unloading & conveyance by Tractor @ Rs.6/- per seedlings	Jul	0	0	960	960
2	Causality replacement- 10%	Jul	4	1244	0	1244
3	<u>Cost of Fertilizer & Insecticide-</u> A) Cost of Insecticide/ Bio-pesticide @ 5 gms/plant = 0.8 Kg @ Rs.150/- per kg = Rs.120/- B) Urea/NPK/Bio-fertilizer/Vermicompost/Mo Khata/any other fertilizer @Rs. 4486/-	Aug/Sept	0	0	4606	4606
4	Weeding (Complete weeding), Manuring & Soil working (1mt. diameter around the plants)	Sep/Oct	20	6220	0	6220
5	Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of inspection path	Feb/Mar	3	933	0	933
6	Watch & Ward including watering as per requirement	Apr-Mar	18	5598	0	5598
7	Maintenance of Temporary Labour Shed, Drinking water facility and First-Aid etc.				1000	1000
Total			45	13995	6566	20561

BASE COST NORM FOR COMPENSATORY AFFORESTATION (BLOCK PLANTATION) @ 1600 PLANTS PER HECTARE (18 months old seedling)						
WAGE RATE Rs- 311/- PER MANDAY						
Sl. No	Items of work	Preferable Period of Execution	No of Mandays	Labour Cost (In Rs.)	Matrrial Cost (In Rs.)	Total cost (In Rs.)
1	2	3	4	5	6	7
3rd Year Maintenance						
3	Cost of Fertilizer Urea/NPK/Bio-fertilizer/Vermicompost/Mo Khata/any other fertilizer	Sept/Oct	0	0	4486	4486
4	Weeding, Manuring & Soil working, (1mt. diametre around the plants)	Sep/Oct	20	6220	0	6220
5	Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of inspection path	Feb/Mar	3	933	0	933
6	Watch & Ward including watering as per requirement	Apr/Mar	18	5598	0	5598
7	Maintenance of Temporary Labour Shed, Drinking water facility and First-Aid etc.	Apr/Mar			1000	1000
Total			41	12751	5486	18237
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	Apr-Mar	18	5598	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	5	1555.00	0	1555.0
3	Watch & Ward	Apr/Mar	18	5598.00	0	5598.0
Total			26	8086	0	8086.0
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

BASE COST NORM FOR COMPENSATORY AFFORESTATION (BLOCK PLANTATION) @ 1600 PLANTS PER HECTARE (18 months old seedling)							
WAGE RATE Rs- 311/- PER MANDAY							
Sl. No	Items of work	Preferable Period of Execution	No of Mandays	Labour Cost (In Rs.)	Matrrial Cost (In Rs.)	Total cost (In Rs.)	
1	2	3	4	5	6	7	
	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	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	82	25502	3600	1398.00	0	30500.00
2	1st year	105	32655	23360	2800.00	88546	147361.00
3	2nd year	45	13995	6566	1028.00	8050	29639.00
4	3rd year	41	12751	5486	911.00	0	19148.00
5	4th year	21	6531	0	326.00	0	6857.00
6	5th year	21	6531	0	326.00	0	6857.00
7	6th year	26	8086	0	404.00	0	8490.00
8	7th year	21	6531	0	326.00	0	6857.00
9	8th year	21	6531	0	326.00	0	6857.00
10	9th year	21	6531	0	326.00	0	6857.00
11	10th year	21	6531	0	326.00	0	6857.00
	Total:	425	132175	39012	8497	96596	276280

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
- 4 Chain link fencing can be adopted in the CA plantation taken up outside the forest area and Bamboo twigs fencing may be
- 5 Watering facilities for procurement of water & watering may be adopted as per the availability of water.
- 6 The Cost Norm of various items can be changed with the approval of the concerned RCCFs keeping the overall cost norm fixed for each Financial Year


 APCCF (Forest Diversion & NO, FC Act)

Matrix for Model-I B Conventional CA Plantation (AR) 1600 plants per Ha

Sl. NO.	Commence ment Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI	Total Cost (10 Years)
Base Norm		30500	147361	29639	19148	6857	6857	8490	6857	6857	6857	6857											
1	2021-22	30500	154729	32674	22166	8335	8751	11377	9648	10131	10637	11169											320117
2	2022-23		32025	162465	34308	23274	8752	9189	11946	10130	10638	11169	11727										320117
3	2023-24			33626	170588	36023	24438	9190	9648	12543	10637	11170	11727	12313									325623
4	2024-25				33307	179117	37824	25660	9650	10130	13170	11169	11729	12313	12929								341903
5	2025-26					37072	188073	39715	26943	10133	10637	11829	11727	12315	12929	13575							358998
6	2026-27						38526	197477	41701	28290	10640	11169	14520	12315	12831	13575	14254						376948
7	2027-28							40872	207351	43786	29705	11172	11727	13246	12829	13578	14254	14967					395796
8	2028-29								42916	217719	45975	31190	11721	12313	16608	13575	14257	14967	15715				415587
9	2029-30									45062	228605	48074	32790	12318	12929	16808	14254	14970	15715	16501			436366
10	2030-31										47315	240035	50688	34388	12934	13575	17648	14967	15713	16501	17316		458186
																							481096

APCCF (Forest Diversion & NO. FC Act)

mmg

-10-
ANNEXURE-IV

Fencing Model F-I						
Fencing for Compensatory Plantation raised inside the Forest Areas using Bamboo Twigs & Thorns						
WAGE RATE Rs- 311/- PER DAY						
Sl. No	Items of work	Preferable Period of Execution	Man days	Wages	Material cost (Rs)	Total Cost (Rs. per Ha.)
0th Year Maintenance						
1	NIL		0	0	0	0
1st Year Maintenance						
1	Taking an average perimeter of 250 Rmt/Ha. @ 93.85/ mt. (Half bundle Bamboo Twigs/mt @ 120/Bundle) Labour Material = 40:60 (approx)	Sept./Oct	30	9330	14133	23463.0
2	Bamboo poles of 2" height at a distance of 2mt spacing to be fixed (2" under soil & 2" above soil) 250/2 = 125+1= 126 Nos. of Bamboo Poles 1 Bamboo (approx) 24" height = 3 poles 126/3 = 42 Bamboos @ 200/Bamboo	Sept./Oct		0	8400	8400.0
3	Preparation of Bamboo poles, Digging of holes of 2 ft. depth & fixing Bamboo poles @ 20 poles/ MD	Sept./Oct	6.5	2021.5		2021.5
4	Cost of Bamboo for tying the Bamboo twigs row fence with double side two strand Bamboo batten (One 6" above ground and other one 4 ft" above ground) (250x2)/ 24= 21 Bamboo @ 200/ Bamboo	Sept./Oct		0	4200	4200.0
5	Making Bamboo batten, Finishing the Batten & Tying the same on double strand on Coir rope etc. @ Rs.11/ Rmt. Cost of coir rope @ Rs.0.125 kg/ Rmt	Sept./Oct	9	2799		2799.0
6	500x 0.125 kg= 62.5 kg @ Rs.70/Kg	Sept./Oct		0	4375	4375.0
7	Making one Bamboo Twigs gate with Bamboo frame			0	500.5	500.5
TOTAL			45.5	14150.5	31608.5	45759.0
Rate per running mt. 45759/ 250= 183/Rmt						
2nd Year Maintenance						
1	Repair & Maintenance of Bamboo Twigs fence including Material cost	Feb./Mar	20	6220	1500	7720
Rate per running mt. 7720/ 250= 30.88 or say Rs. 31-Rmt						
3rd Year Maintenance						
1	Repair & Maintenance of Bamboo Twigs fence including Material cost	Feb./Mar	20	6220	5675	11895
Rate per running mt. 11895/ 250= 47.58 or say Rs. 48-Rmt						
4th Year Maintenance						
1	Repair & Maintenance of Bamboo Twigs fence including Material cost	Feb./Mar	20	6220	5675	11895
Rate per running mt. 11895/ 250= 47.58 or say Rs. 48-Rmt						
5th Year Maintenance						
1	Repair & Maintenance of Bamboo Twigs fence including Material cost	Feb./Mar	20	6220	5675	11895
Rate per running mt. 11895/ 250= 47.58 or say Rs. 48-Rmt						
Abstract						
Sl. No	Year	No. person days	Labour cost @ Rs. 311/- per day	Material Cost	Total cost (Rs.)	
1	0th year	0.0	0.0	0.0	0.0	
2	1st year	45.5	14150.5	31608.5	45759.0	
3	2nd year	20.0	6220.0	1500.0	7720.0	
4	3rd year	20.0	6220.0	5675.0	11895.0	
5	4th year	20.0	6220.0	5675.0	11895.0	
6	5th year	20.0	6220.0	5675.0	11895.0	
Total:		125.5	39030.5	50133.5	89164.0	

APCCF (Forest Diversion & NO, FC Act)

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

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	0	45759	7720	11895	11895	11895											
1	2021-22	0	48047	8511	13770	14458	15181											99967
2	2022-23		0	50449	8937	14459	15181	15940										104966
3	2023-24			0	52971	9384	15182	15940	16737									110214
4	2024-25				0	55620	9853	15941	16737	17574								115725
5	2025-26					0	58401	10346	16738	17574	18453							121512
6	2026-27						0	61321	10863	17575	18453	19376						127588
7	2027-28							0	64287	11406	18454	19376	20345					133968
8	2028-29								0	67606	11976	19377	20345	21362				140665
9	2029-30									0	70986	12575	20346	21362	22430			147699
10	2030-31										0	74535	13204	21363	22430	23552		155084

In Rupees

APDCF (Forest Division & NO, FC Act)

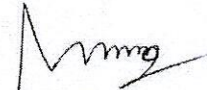
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ANNEXURE IV

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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, LB CD, Wire mesh LB CD, 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.


 APCCF (Forest Division & NO, FCA, D)

Matrix for (SMC)

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	0	20215	3032	3032	3032	3032											
1	2021-22	0	21226	3342	3510	3685	3870											35633
2	2022-23		0	22287	3509	3686	3869	4064										37415
3	2023-24			0	23401	3684	3870	4062	4267									39284
4	2024-25				0	24571	3968	4064	4265	4480								41248
5	2025-26					0	25800	4061	4267	4478	4704							43310
6	2026-27						0	27090	4264	4480	4702	4939						45475
7	2027-28							0	28445	4477	4704	4937	5186					47749
8	2028-29								0	29867	4701	4939	5184	5445				50136
9	2029-30									0	31360	4936	5186	5443	5717			52642
10	2030-31										0	32928	5183	5445	5715	6003		55274

In Rupees

APCCF (Forest Diversion & NO, FC Act)

ANNEXURE-VI

Watering Model-W-I				
Watering provision to CA Plantation				
Solar system with Bore well (1 system for 5 Ha Plantation) fitted with Drip system, Wage rate @ Rs.311/-				
Year of Installation (0th Year)				
1	Cost of Borewell		1,50,000	
2	Installation of Solar panel & other System		3,00,000	
3	Cost of 0.5 HP submersable motor with accessories		50,000	
4	Water Storage Tanks/ Flexible pipes		15,000	
5	Cost of laying Drip system including all accessories, fittings etc. with 12% GST		3,02,431	
Total			8,17,431	
6	Cost of Water & watering per Ha. (8,17,431/ 5) = Rs. 1,63,486/-			1,63,486
1st Year Watering				
7	No maintenance required			0
Total				0
2nd Year Watering				
8	Maintenance of system @ 5% of initial cost of instalation			8,174
Total				8,174
3rd Year Watering				
9	Maintenance of system @ 5% of initial cost of instalation			8,174
Total				8,174
4th Year Watering				
10	Maintenance of system @ 5% of initial cost of instalation			8,174
Total				8,174
5th Year Watering				
11	Maintenance of system @ 5% of initial cost of instalation			8,174
Total				8,174
Abstract				
Sl. No	Year	No. person days	Labour cost @ Rs. 311/-per day	Material Cost
1	0th year			
2	1st year	0	0.0	163486.0
3	2nd year	0	0.0	0.0
4	3rd year	0	0.0	8174.0
5	4th year	0	0.0	8174.0
6	5th year	0	0.0	8174.0
Total:		0	0	196182
				1,96,182

APCCF (Forest Diversion & NO, FC Act)

Matrix for Watering W1 (Solar Borewell) fitted with Drip System (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	163486	0	8174	8174	8174	8174											
1	2021-22	163486	0	9011	9463	9935	30758											222653
2	2022-23		171650	0	9462	9936	10432	32296										233786
3	2023-24			180243	0	9935	10433	10954	33911									245476
4	2024-25				189255	0	10432	10955	11502	35607								257751
5	2025-26					198718	0	10954	11503	12077	37387							270639
6	2026-27						208654	0	11502	12078	12681	39256						284171
7	2027-28							219087	0	12077	12682	13315	41219					298380
8	2028-29								230041	0	12681	13316	13981	43280				313299
9	2029-30									241543	0	13315	13982	14680	45444			328964
10	2030-31										253620	0	13981	14681	15414	47716		345412

In Rupees

APCCF (Forest Diversion & NO, FC Act)

OFFICE OF THE FOREST RANGE OFFICER, KULIPOSH RANGE

Email- kuliposhrange@rediffmail.com

Memo No. 1354^{KP} Dt. 24-12-2022

To,

The Divisional Forest Officer,
Bonai Division. Bonai

Sub: Proposal for diversion of 66.242 ha. (including 2.09 ha. of safety zone) in respect of Netrabandha Pahar West Iron ore block of M/S Raga Tradecon Pvt. Ltd. under Bonai Forest Division of Sundargarh District.

X- Sub: - Identification of degraded forest land for additional Compensatory Afforestation to accomodate 42000 of seedlings for plantation.

Ref: 1. Proposal No. FP/OR/MIN/153549/2022 (OR-027/2022 dt.31.03.2022)

2. Memo No. 108/8/6F-(Mg) Dt.17.12.2022

Sir,

With reference to the above subject, I would like to report you that an area of 73.462 ha. of degraded Forest land for raising of addl. compensatory Afforestation has been identified for accomodate 42000 seedlings for plantation in Mahulpada RF of this Range and the following certificate is furnished below.

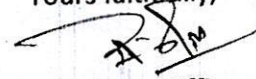
1.	Name of the degraded forest land and Compartment no.	Mahulpada RF and Compartment No.MP-2 (a)
2.	Certificate regarding boundary description of the area along with GPS reading from pillar to pillar.	Attached in Annexure- I.
3.	RCC Pillars should be posted around the demarcated area and pillars should be numbered at the cost of User Agency.	RCC pillars will be posted and demarcated after finalization of land.
4.	Density of vegetation with reference to existing forest growth, and name of the species available	The density of vegetation 0.2 and available species are Kathasiali, Dhaura, Sal, Kendu, Mahula etc.
5.	Suitability of the area for additional Compensatory Afforestation to accomodate 42000 of seedlings for plantation.	Suitable for ANR and AR Plantation, @ 1600/ha own 3 ha @ 1000/ha own 5 ha @ 500/ha own 65.462 ha
6.	Suitability of the site from Management point of view	The Site is suitable for management.
7.	Whether the area is free from encroachment and encumbrances, and not included under FRA '2006	The area is free from encroachment and encumbrances and not included in FRA '2006.
8.	That the area has not been allotted previously for any other Project.	The area has not been allotted previously.
9.	GPS Map, Treatment Map, and Photograph of the sites are to be enclosed.	GPS MAP, Topo Map attached in Annexure-II.

Contd.2...

10.	Length of boundary for fencing	The periphery of the boundary is about 8.793 K.M.
11.	Topography and soil of the identified area.	Hilly, Approx.16 degree in slope, Gravel and soil mixed.
12.	Name of the adjoining villages in the identified area in each case	The adjoining villages of identified area is Sasa and Kiri Village.
13.	The name of Working Circle should be mentioned as per Working Plan of Bonai Division	The area comes under Rehabilitation Working Circle.
14.	A Masonry Sign Board should be fixed at the site to facilitate easy identification of the area during execution.	Masonry Sign Board will be fixed at the time of execution of the Project.

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

Yours faithfully,



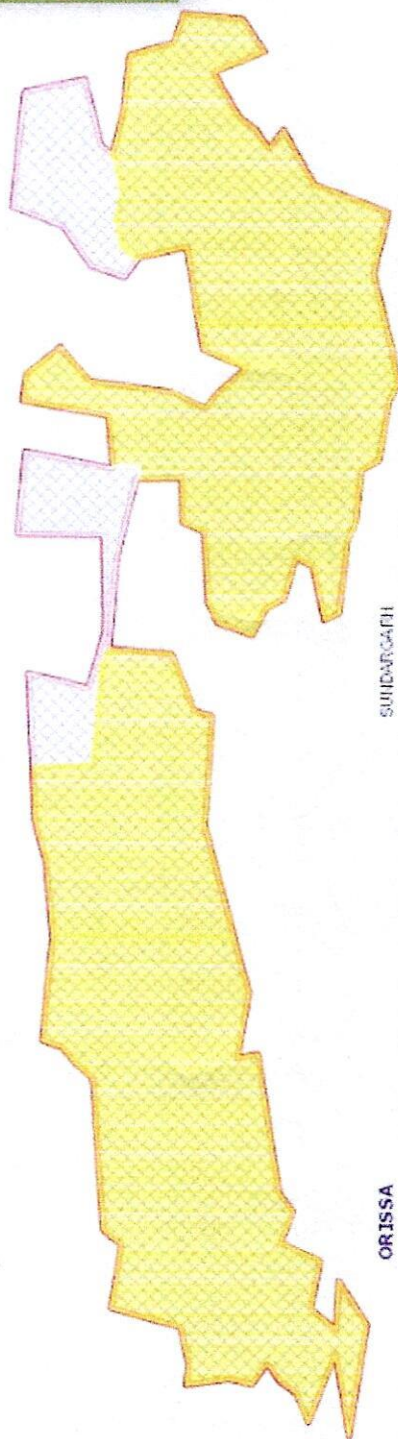
Forest Range Officer
Kuliposh Range



GIS based Decision Support System



FOREST COVER MAP	X
FCM LEGEND	
VERY DENSE FOREST	
MODERATELY DENSE FOREST	
OPEN FOREST	
SCRUB	
NON FOREST	
WATER	

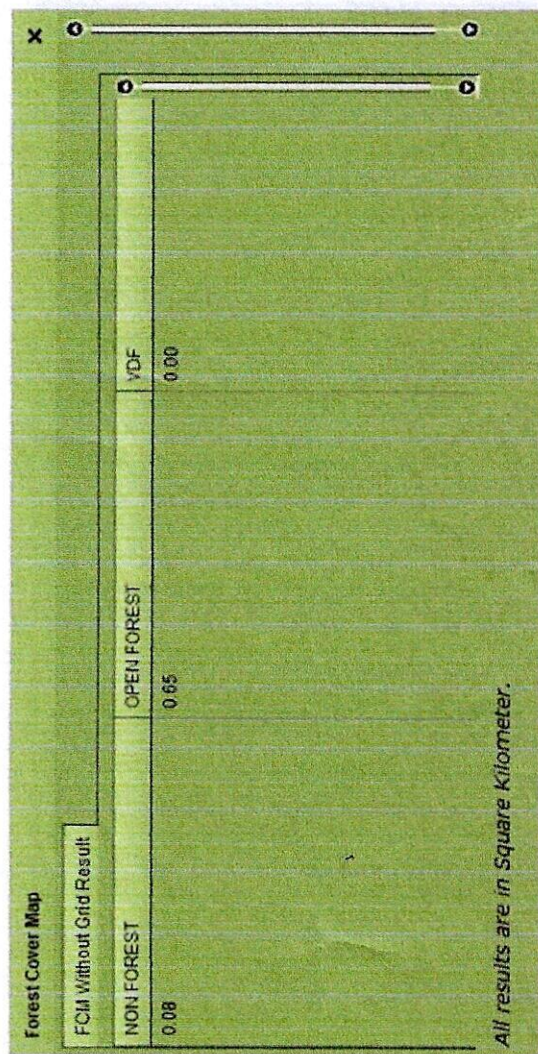


ORISSA

SUNDERGARH

Lat : 21.677 Long : 85.171

Scale: 1:9678



[Signature]
Divisional Forest Officer
Bomai 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/DPE/Revenue Forest)	Area identified for CA/ACA/PCA (in ha.)	Classification of identified land (in ha.)							Area suitable for plantation				Plantation Model (AR/ANR)	Remark
				Very Dense Forest	Moderately Dense Forest	Open Forest	Non-Forest	Scrub	Water	Total	Open Forest	Non-Forest	Scrub	Total		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	Kuliposh	Mahulpada RF	73.462	-	0	65.462	8	-	-	73.462	65.462	8	-	73.462	AR-1600 plant over 3 ha., AR-1000 plants over 5.00 ha. and ANR-500 plants over 65.462 ha.	

Countersigned

RCCF, Rourkela Circle

Divisional Forest Officer
Bonai Forest Division