

**ADDITIONAL COMPENSATORY AFFORESTATION
SCHEME OVER AN AREA OF 140.743 HA. IN DEGRADED
FOREST LAND IDENTIFIED IN BEGA R.F OF 80.002 HA.+
LAHADA R.F OF 36.741 HA. & + KAPILASH WILDLIFE
SANCTUARY OF 24.000 HA. IN SADANGI RANGE UNDER
DHENKANAL FOREST DIVISION.**

**AGAINST THE FOREST LAND USED BY-
CUTTACK INVESTIGATION DIVISION
DPWR AT-JOBRA, CUTTACK.
FOR CONSTRUCTION OF HIDISING IRRIGATION
PROJECT IN ANGUL DISTRICT UNDER ANGUL
FOREST DIVISION.**

Prepared by
**DHENKANAL FOREST OFFICER
DHENKANAL DIVISION**

CERTIFICATE ON DSS ANALYSIS FOR CA/ACA/PCA

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

HIDISING IRRIGATION PROJECT.

Sl. No.	Name of the Range	Name of the Forest Block (RF/PRF/PF /DPF/Reve nue 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)	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	Sadangi	Bega RF	ACA	-	-	80.002	-	-	-	80.002	80.002	-	-	80.002	ANR	-
2		Lahada RF	ACA	-	-	36.741	-	-	-	36.741	36.741	-	-	36.741	ANR	-
3		Kapilash Wildlife Sanctuary	ACA	-	-	24.000	-	-	-	24.000	24.000			24.000	ANR	-
			TOTAL			140.743				140.743	140.743			140.743		

Countersigned

Regional Chief Conservator of Forests,

Circle



 Divisional Forest Officer,
 Dhenkanal Forest Division
 Divisional Forest Officer
 Dhenkanal Division

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LAND SUITABILITY CERTIFICATE BY DIVISIONAL FOREST OFFICER,
DHENKANAL FOREST DIVISION

This is to certify that, 80.002 Ha. of degraded Forest land in Bega Reserve Forest, 36.741 Ha. of degraded Forest land in Lahada R.F. and Kapilash Wildlife Sanctuary 24 000 Ha. are identified under Sadangi Range of Dhenkanal Forest Division. Both the patches are suitable for the purpose of Additional Compensatory Afforestation under **ANR Plantation @ 500 Plants per Hectare (18 months old seedlings)** in lieu of Forest land 87.520 Ha. in Angul Forest Division to be diverted for construction of Hidising Irrigation Project in Angul District by Executive Engineer, Cuttack Investigation Division DPWR At-Jobra.

Place: Dhenkanal

Date: 31.12.2022


Divisional Forest Officer
Dhenkanal Division

Divisional Forest Officer
Official Seal
Dhenkanal Division-

Additional Compensatory Afforestation Scheme over an area of 140.743 Ha. over an area 80.002 Ha. of Degraded Forest Land in Bega RF , 36.741 Ha. of Degraded Forest Land in Lahada RF & 24 Ha in Kapilash Wildlife Sanctuary under Sadangi Range of Dhenkanal Division against diversion of Forest land for construction of Hidising Irrigation Project in Angul District under Angul Forest Division.

By

CUTTACK INVESTIGATION DIVISION DPWR AT-JOBRA

1. INTRODUCTION:

The Executive Engineer, Cuttack Investigation Division DPWR At-Jobra is process of submitting Forest Diversion proposal project for 87.520 Ha. of Forest Land for construction of Hidising Irrigation Project in Angul District under Angul Forest Division. In this connection, the Divisional Forest Officer, Angul Diversion has requested vide his Memo No.2446/76/2019/DRP dt.01.05.2020 to identify suitable Degraded Forest Land to be used for Compensatory Afforestation on the above project to adjust 70,000 saplings, Further Superintending Engineer, Angul Investigation Division, Angul has requested vide his Letter No.886 dt.27.07.2022 to identify balance degraded forest land of 24 Ha. to adjust 70.000 saplings @ 500 saplings per Ha. in view of the one-time cost norm Compensatory Afforestation.

2. SCHEME FOR SITE SPECIFIC COMPENSATORY AFFORESTATION

As per provision to adjust 70,000 saplings for Compensatory Afforestation 80.002 Ha. Degraded Forest Land in Bega R.F. and 36.741 Ha. Degraded Forest Land in Lahada R.F. & 24 Ha in Kapilash Wildlife Sanctuary under Sadangi Range have been identified. As per report of the Range Officer, Sadangi Range vide his Memo No.1304 dt.13.11.2020 & 872 dt.11.11.2022 @500 no. of saplings per Ha. 18 months old seedlings can be accommodated. On due verification, the above degraded Forest land is suitable for ANR plantation.

3.1 Selection of Site

The land particulars of the proposed Compensatory Afforestation area is depicted below

Patch	Division	Range	Section	Name of RF	Compartment No.	Area
1	Dhenkanal	Sadangi	Khankira	Bega RF	1	80.002 Ha.
2	Dhenkanal	Sadangi	Khankira	Lahada	1	36.741 Ha.
3	Dhenkanal	Sadangi	Khankira	Kapilash Wildlife Sanctuary	28	24 Ha.
Total						140.743 Ha.

The site Bega Reserve Forest over an area of 80.002 Ha. is located on survey of India Topo Sheet No. F45T13 between starting Latitude: 20° 46' 15.187" - Longitude: 85° 58' 13.369" and ending with Latitude: 20° 46' 14.173" - Longitude: 85° 58' 10.630".

The site Lahada Reserve Forest over an area of 36.741 Ha. is located on survey of India Topo Sheet No. F45T13 between starting Latitude: 20° 47' 12.904" - Longitude: 85° 55' 45.07" and ending with Latitude: 20° 47' 10.708" - Longitude: 85° 55' 42.678".

The site Kapilash Wildlife Sanctuary over an area of 24.000 Ha. is located on survey of India Topo Sheet No. F45T14 in two patches between starting Latitude: 20° 44' 48.76080" - Longitude: 85° 55' 10.97040" & ending with Latitude: 20° 44' 47.63040" - Longitude: 85° 55' 12.23040" in patch -1(one) and starting Latitude: 20° 44' 43.89000" - Longitude: 85° 55' 17.60880" & ending with Latitude: 20° 44' 42.83880" - Longitude: 85° 55' 20.38080" in patch -2(Two).

3.2 Description of the existing vegetation

Some valuable trees are available in the proposed land.

3.3 Topography & Soil

The site Bega RF, Lahada RF & Kapilash Wildlife Sanctuary are shown in Topo-sheet Number F45T13 and F45T14 respectively. The soil type occurring in the area is shallow somewhat exclusively drained, calcareous soil on plane land with loamy surface, susceptible to erosion associated with deep and well drained.

3.4 Rainfall & Temperature

The annual rainfall varied from 75 cm to 100 cm. The maximum rainfall is received during the rainy season from July to September. The maximum temperature varied from 45°C. The summer season is from March to June, winter from November to February and rainy season is from July to September.

3.5 Objective of the scheme

The main objective of the present scheme is to (i) increase vegetation through taking up ANR plantation, (ii) clearly demarcating the area with posting up RCC pillars, (iii) enforcing protection measures by involving people around under JFM and (iv) above all checking soil erosion and run off which will go in combination for enrichment of the vegetation and soil and building up ecosystem. The total area i.e. 140.743 Ha (Bega RF = 80.002 Ha. + Lahada RF = 36.741 Ha. + Kapilash Wildlife

Sanctuary 24.000 Ha.) for Addl. CA Scheme shall be covered under ANR Plantation with 500 plants per hectare.

3.6 Items of work to be taken up

To achieve the above objectives, the following items of work are mainly prescribed to be taken up with the full involvement and co-operation of local forest dwellers.

3.7 Survey and Demarcation

The boundary should be surveyed clearly with reference to the RF boundary and demarcated by posting pillars.

3.7.1 ANR Plantation

The total allotted area shall be covered by ANR Plantation. For protection of the plantation from grazing, green fencing will be provided around the plantation site. Care should be taken to select only indigenous species as far as possible keeping in view of the existing natural vegetation in and around the area and also the climatic and edaphic factors. The choices of species are as follows:

Local Name	Scientific Name
Tentuli	Terminalia belerica
Karanja	Pongamia pinnata
Aswastha	Ficus religiosa
Kusuma	Schleichera oleosa
Asana	Terminalia amentosa
Kaitha	Limonia acidissima
Chhatian	Alstonia scholaris
Bara	Ficus bengalensis
Ambeda	Spondias pinnata
Wild mango	Mangifera indica
Mundi	Mitragyna parvifolia
Kumbhi	Careya arborea
Pahadi sissoo	Dalbergia latifolia
Amla	Emblica officinalis
Bela	Jasminum sambac
Bahada	Terminalia bellirica
Arjuna	Terminalia arjuna

It is proposed to take up pitting with a pit size of 45cm x 45cm x 45cm during February / March for allowing weathering of the soil. The planting should be taken up only with two years old seedlings having height more than one meter. The size of P. bags will be 12" x 10" x 300 with desired

quantity of inputs. The seedlings will be graded and sorted at regular intervals to make those healthy and sound and avoid root coiling.

3.8 Planting

The best time of planting of the potted seedling is soon after the onset of regular monsoon or after a good shower of rain. Before planting, the pits are to be prepared by putting mixture of half cubic feet of alluvial soil and farmyard manure. Basal dose of 50 gram of NPK fertilizer and 5 gram of Aldrin dust or Phorate pesticide are to be applied to the pits before planting as basal dose. The excavated earth from the pits already weathered and free from stones should be filled in the pits. Before removal of the plants from the Nursery the following precaution should be taken:

Roots escaping from the container should be trimmed.

- i. Posts containing the plant are watered, if necessary.
- ii. Maximum care should be taken at the time of transportation and handling of seedling so that the ball of earth of the poly pots does not get disturbed and the primary leading shoots are broken. Manual transportation should be given priority.

Planting should be taken up on rainy/cloudy days by adopting all standard techniques of plantation.

Casualty of seedlings occurs due to various causes, like heavy rains, drought, fire, grazing etc. But in a well-managed plantation, where the planting stock consists of healthy and stout seedlings, say, about 10% may die during the period between planning and 1st weeding. Seedlings to be used for casualty replacement should be earmarked and kept reserved at the time of planting. Only healthy and stout seedlings slightly larger than those planted at the time of operation should be used. This is important because only such seedlings can catch up growth with those that have survived and are growing. Before planting for casualty replacement, the following operations are to be taken up:

- a. The failure pit is to be properly dug again.
- b. Another dose of fertilizer, and insecticide should be given to the pit.
- c. If the casualties are due to white ant attack. Little more quantity of phorate pesticide may be applied to the pit.
- d. If the casualties are due to water logging and wilting, care should be taken to drain out the pits by making small channels to downhill side.
- e. Watering is to be done generally directly after planting, if the planting is done on a dry day.

Casualty replacement can also be taken up in the 2nd year formation and this time should not exceed 10%.

Soil and moisture Conservation Measures

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.

Fencing.

- 1) To protect the plantation from grazing and other biotic interference, fencing shall be taken up inside the Forest area using Bamboo Twigs & Thorns as per one-time cost norm in fencing model F-I in Bega RF & Lahada RF.
- 2) To protect the plantation from grazing and other biotic interference, fencing shall be taken up Solar Fencing (400 Pillars /RKM in Fencing Model F-III One-time Cost Norm in Kapilash Wildlife Sanctuary.

Peoples participation

It is experienced that, no scheme shall be effective if the local villagers are not involved in the implementation of the scheme itself. The villagers who are having a right on the NTFP items in the adjoining forest area are to be associated with the implementation of the scheme at all different levels. For that, Van Sarakhyana Samittee (VSS) is proposed to the guidelines of the government of Odisha issued on 3rd July'1993, the villagers are to be motivated and inspired and above all, explained the benefits they will be getting if plantation is protected by them.

3.9 Monitoring and execution

The scheme shall be executed and monitored by the Divisional Forest Officer, Dhenkanal Division from time to time. To facilitate this, the User Agency shall bear the cost of infrastructure required and shall provide also the infrastructural facilities.

3.10 Total cost of the Scheme

The total cost of the project of Rs. 7, 46, 17,506/- or 7, 46, 17,600/- shall be deposited by the User Agency in the State CAMPA Fund.


**Divisional Forest Officer,
Dhenkanal Division
Divisional Forest Officer
Dhenkanal Division**

Base Cost Norm Compensatory Afforestation Aided Natural Regeneration (ANR) @ 500 Seedlings/Ha.						
WAGE RATE Rs.-311/-Per Manday						
Sl. No	Item of work	Preferable Period of Execution	No of Mandays	Labour Cost (In Rs.)	Material Cost (In Rs.)	Total Cost (In Rs.)
0th Year (Advance work) Per-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
1th 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 seedling 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 seedling at stacking site of plantation	Jul/Aug	1	311	0	311
4	Conveyance of polythene bag seedling 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	<u>Cost of Fertilizer & Insecticide</u> A)NPK/Bio-fertilizer @ 50gms/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	1 st weeding & Manuring.	Aug/Sept	5	1555	0	1555
8	2 nd 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

2 nd 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 (Themet/Forate) @ 5 gms/plant=2.5 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(2m. 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
3 rd 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(2m. 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
4 th Year Maintenance						
1	Fire line tracing(2m. 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		15.0	4665.0	0.0	4665.0
5 th Year Maintenance						
1	Fire line tracing(2m. 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		15.0	4665.0	0.0	4665.0
6 th Year Maintenance						
1	Fire line tracing(2m. 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		15.0	4665.0	0.0	4665.0
7 th Year Maintenance						
1	Fire line tracing(2m. 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		15.0	4665.0	0.0	4665.0
8 th Year Maintenance						
1	Fire line tracing(2m. 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		15.0	4665.0	0.0	4665.0

9 th Year Maintenance						
1	Fire line tracing(2m. 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		15.0	4665.0	0.0	4665.0
10 th Year Maintenance						
1	Fire line tracing(2m. 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		15.0	4665.0	0.0	4665.0

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 seedling	Total Cost
1	2	3	4	5	6	7	8
1	0 th Year	41	12751.0	100.0	549.00	0.00	13400.00
2	1 st Year	41.5	12906.5	7300.0	993.50	27671.00	48871.00
3	2 nd Year	24.5	7619.5	1737.5	443.00	2516.00	12316.00
4	3 rd Year	23.0	7153.0	1400.0	347.00	0.00	8900.00
5	4 th Year	15	4665.0	0.0	135.00	0.00	4800.00
6	5 th Year	15	4665.0	0.0	135.00	0.00	4800.00
7	6 th Year	15	4665.0	0.0	135.00	0.00	4800.00
8	7 th Year	15	4665.0	0.0	135.00	0.00	4800.00
9	8 th Year	15	4665.0	0.0	135.00	0.00	4800.00
10	9 th Year	15	4665.0	0.0	135.00	0.00	4800.00
11	10 th Year	15	4665.0	0.0	135.00	0.00	4800.00
	Total	235.0	73085.0	10537.5	3277.5	30187.00	117087.00

ANNEXURE-II

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
1th 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
2th 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
5th Year			
6	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	0 th	0.0	0.0	0.0	0.0
2	1 th	0.0	0.0	20,215.00	20,215.00
3	2 th	0.0	0.0	3,032.00	3,032.00
4	3 th	0.0	0.0	3,032.00	3,032.00
5	4 th	0.0	0.0	3,032.00	3,032.00
6	5 th	0.0	0.0	3,032.00	32,343.00
Total		0.00	0.00	32,343.00	32,343.00

Fencing Modal F-I

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

WAGE RATE Rs.311/- PER DAY

Sl. No	Item 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 8 hight 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	0	8400	8400.0
3	Preparation of Bamboo poles, Digging of holes of 2 ft. deph & fixing Bamboo poles @ 20 poles/MD.	Sept/Oct	6.5	2021.5	0	2021.5
4	Cost of Bamboo for tying the Bamboo Twig row fence with double side two stand Bamboo batten (one 6" above ground and other one 4 ft" above ground)(250×2)/24=21 Bamboo @200/Bamboo.	Sept/Oct	0	0	4200	4200.0
5	Making Bamboo betten, Finsihing the Batten & Tying the same on double stand on Coir rope etc. @ Rs.11/Rmt.	Sept/Oct	9	2799	0	2799.0
6	Cost of coir rope @ Rs.0.125 kg/Rmt. 500× 0.125 kg=62.5kg @ Rs.70/kg.	Sept/Oct	0	0	4375	4375.0
7	Making one Bamboo Twigs gate with Bamboo frame.	Sept/Oct	0	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
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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
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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
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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
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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(Rs.)	Material Cost	Total Cost
1	0 th Year	0.0	0.0	0.0	0.0
2	1 st Year	45.5	14150.5	31608.5	45759.0
3	2 nd Year	20.0	6220.0	1500.0	7720.0
4	3 rd Year	20.0	6220.0	5675.0	11895.0
5	4 th Year	20.0	6220.0	5675.0	11895.0
6	5 th Year	20.0	6220.0	5675.0	11895.0
Total		125.5	39030.5	50133.5	89164.0

Fencing Model-F-III

Estimate for Solar Fencing (400 Pillars/Rkm)

WAGE RATE Rs-311/-PER DAY

0TH Year (PPO)

a)	Earth Excavation of foundation in hard soil with initial lead of 50 mtr and lift of 1.5 mtr and finishing the base =400 nos. ×0.45 mtr length ×0.40 mtr depth ×0.25 mtr width =18.00 cum @ Rs.133.73/-per Cum=	2,407.00
b)	Fixing of Pillars with 4cm Hg metals in C.M 1.4.8 Pit size 400 NOS.×0.45mtr×0.40 mtr×0.25mtr=18.00cum Deduct 1/3 rd but of pillars i.e 6cum 18 cum-6cum=12 cum×Rs.3755.94 per cum	45,071.00
c)	Construction of RCC pillars (1:2:4) cement concrete works of 400 nos. (I)Base of the pillars of the size (Under ground) 0.35 length ×0.075 in width ×0.2m high×400 nos. =2.1cum. (II)Pillar above ground size. 400×1.5mtr. ×(0.1mtr+0.075mtr/2)×0.075 mtr=3.94 cum Total 6.04 cum Cost of 400 pillars=6.04 cum ×@Rs.5486.77	33,140.00
d)	Cost of rods including cutting, bending & binding of 6.04 cum ×0.09 quintals M.s rod=5.436 quintals @ Rs.11621.44	63,174.00
e)	Contingency including curing, stacking and provision of insulator hooks etc on L.S	14,800.00
f)	Stand wire: 5 steps. 1000×5=5000 Rmt 5000 Rmt× 0.375 kg=1875 kg =1875 kg×@ Rs.85/- kg	1,59,375.00
g)	Labour for straightening of the stand wire, fixing and clipping with pillars-50 MD per KM @ 311/-per.	15,550.00
h)	Carriage of RCC pillars and stand wire from Range Officer Campus to work site @ Rs.1000 per TLD and cost of loading and unloading with 5 km distance approximately-8 TLD @Rs.800/-TLD	14,400.00
Total		3,47,917.00
Cost of one energizer for each 3 km length		55,000.00
Total		4,02,917.00

Cost/Ha.(250 Rmt)-4,02,917/4=1,00,729/-

1st Year Maintenance

Nil

0.0

2nd Year Maintenance

Maintenance cost @ 5% of initials year cost of installation

5,036.00

3rd Year Maintenance

Maintenance cost @ 5% of initials year cost of installation

5,036.00

4th Year Maintenance

Maintenance cost @ 5% of initials year cost of installation

5,036.00

5th Year Maintenance

Maintenance cost @ 5% of initials year cost of installation

5,036.00

6th Year Maintenance

Maintenance cost @ 5% of initials year cost of installation

5,036.00

7th Year Maintenance

Maintenance cost @ 5% of initials year cost of installation

5,036.00

8th Year Maintenance

Maintenance cost @ 5% of initials year cost of installation

5,036.00

9th Year Maintenance

Maintenance cost @ 5% of initials year cost of installation

5,036.00

10th Year Maintenance

Maintenance cost @ 5% of initials year cost of installation

5,036.00

Abstract

No.	Year	No. Person days	Labour cost @ Rs. 311/-per day	Material Cost	Total Cost (Rs.)
1	0 th Year	0.0	0.0	1,00,729.00	1,00,729.00
2	1 th Year	0.0	0.0	0.0	0.00
3	2 nd Year	0.0	0.0	5,036.00	5,036.00
4	3 rd Year	0.0	0.0	5,036.00	5,036.00
5	4 th Year	0.0	0.0	5,036.00	5,036.00
6	5 th Year	0.0	0.0	5,036.00	5,036.00
7	6 th Year	0.0	0.0	5,036.00	5,036.00
8	7 th Year	0.0	0.0	5,036.00	5,036.00
9	8 th Year	0.0	0.0	5,036.00	5,036.00
10	9 th Year	0.0	0.0	5,036.00	5,036.00
11	10 th Year	0.0	0.0	5,036.00	5,036.00
Total		0.0	0.0	1,46,053.00	1,46,053.00

Watering Model-W=1		
Watering Provision to CA Plantation		
Solar System with Bore Well (1 pump set+ Bore Well for 5 Ha. Plantation) fitted with Drip System, Wage rate @ Rs.311/-		
Year of Installation (0 th Year)		
1	Cost of Borewell	1,50,000
2	Installation of Solar Panel & other system	3,00,000
3	Cost of 0.5 HP submersible motor with accessories	50,000
4	Water Storage Tanks/Flexible Pipes	15,000
5	Cost of laying Drip System including all accessories, Fitting etc. with 12% GST	3,02,431
	Total	8,17,431
	Cost of water & watering per Ha. (8,17,431/5)=Rs.1,63,486/-	1,63,486
1 st Year Watering		
7	No maintenance required	0
	Total	0
2 nd Year Watering		
8	Maintenance of System @ 5% of initial cost of installation	8,174
	Total	8,174
3 rd Year Watering		
9	Maintenance of System @ 5% of initial cost of installation	8,174
	Total	8,174
4 th Year Watering		
10	Maintenance of System @ 5% of initial cost of installation	8,174
	Total	8,174
5 th Year Watering		
11	Maintenance of System @ 5% of initial cost of installation	8,174
	Total	8,174

Abstract					
Sl. No	Year	No. Person days	Labour cost @ Rs. 311/-per day	Material Cost	Total Cost (Rs.)
1	0 th Year	0	0.0	163486.0	163486.0
2	1 st Year	0	0.0	0.0	0.0
3	2 nd Year	0	0.0	8174.0	8174.0
4	3 rd Year	0	0.0	8174.0	8174.0
5	4 th Year	0	0.0	8174.0	8174.0
6	5 th Year	0	0.0	8174.0	8174.0
	Total	0	0	196182	1,96,182

Matrix for Modal-II A (ANR-500 plants/Ha.)

Year→	2022-23 (Pre-Plantation Operation)	2023-24 (1 st Year Creation)	2024-25 (2 nd Year Maintenance)	2025-26 (3 rd Year Maintenance)	2026-27 (4 th Year Maintenance)	2027-28 (5 th Year Maintenance)	2028-29 (6 th Year Maintenance)	2029-30 (7 th Year Maintenance)	2030-31 (8 th Year Maintenance)	2031-32 (9 th Year Maintenance)	2032-33 (10 th Year Maintenance)	Total per Ha.
Cost of Plantation per Ha.	14070	53881	14256	10818	6126	6432	6754	7092	7447	7818	8210	142904

Matrix for (SMC)

Year→	2022-23 (Pre-Plantation Operation)	2023-24 (1 st Year Creation)	2024-25 (2 nd Year Maintenance)	2025-26 (3 rd Year Maintenance)	2026-27 (4 th Year Maintenance)	2027-28 (5 th Year Maintenance)	Total per Ha.
Cost of SMC per Ha.	0	22287	3509	3686	3869	4064	37415

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

Year→	2022-23 (Pre-Plantation Operation)	2023-24 (1 st Year Creation)	2024-25 (2 nd Year Maintenance)	2025-26 (3 rd Year Maintenance)	2026-27 (4 th Year Maintenance)	2027-28 (5 th Year Maintenance)	Total per Ha.
Cost of Fencing per Ha.	0	50449	8937	14459	15181	15940	104966

Matrix for Fencing Model-III (Solar Fencing with RCC Pillars)

Year→	2022-23 (Pre-Plantation Operation)	2023-24 (1 st Year Creation)	2024-25 (2 nd Year Maintenance)	2025-26 (3 rd Year Maintenance)	2026-27 (4 th Year Maintenance)	2027-28 (5 th Year Maintenance)	2028-29 (6 th Year Maintenance)	2029-30 (7 th Year Maintenance)	2030-31 (8 th Year Maintenance)	2031-32 (9 th Year Maintenance)	2032-33 (10 th Year Maintenance)	Total per Ha.
Cost of Fencing per Ha.	105765	0	5830	6122	6427	6748	7085	7440	7812	8203	8613	170045

Matrix for Watering Model-W-I (Solar Borewell) Fitted with Drip System(per Ha.)

Year →	2022-23 (Pre-Plantation Operation)	2023-24 (1 st Year Creation)	2024-25 (2 nd Year Maintenance)	2025-26 (3 rd Year Maintenance)	2026-27 (4 th Year Maintenance)	2027-28 (5 th Year Maintenance)	Total per Ha.
Cost of Watering per Ha.	171660	0	9462	9936	10432	32296	233786

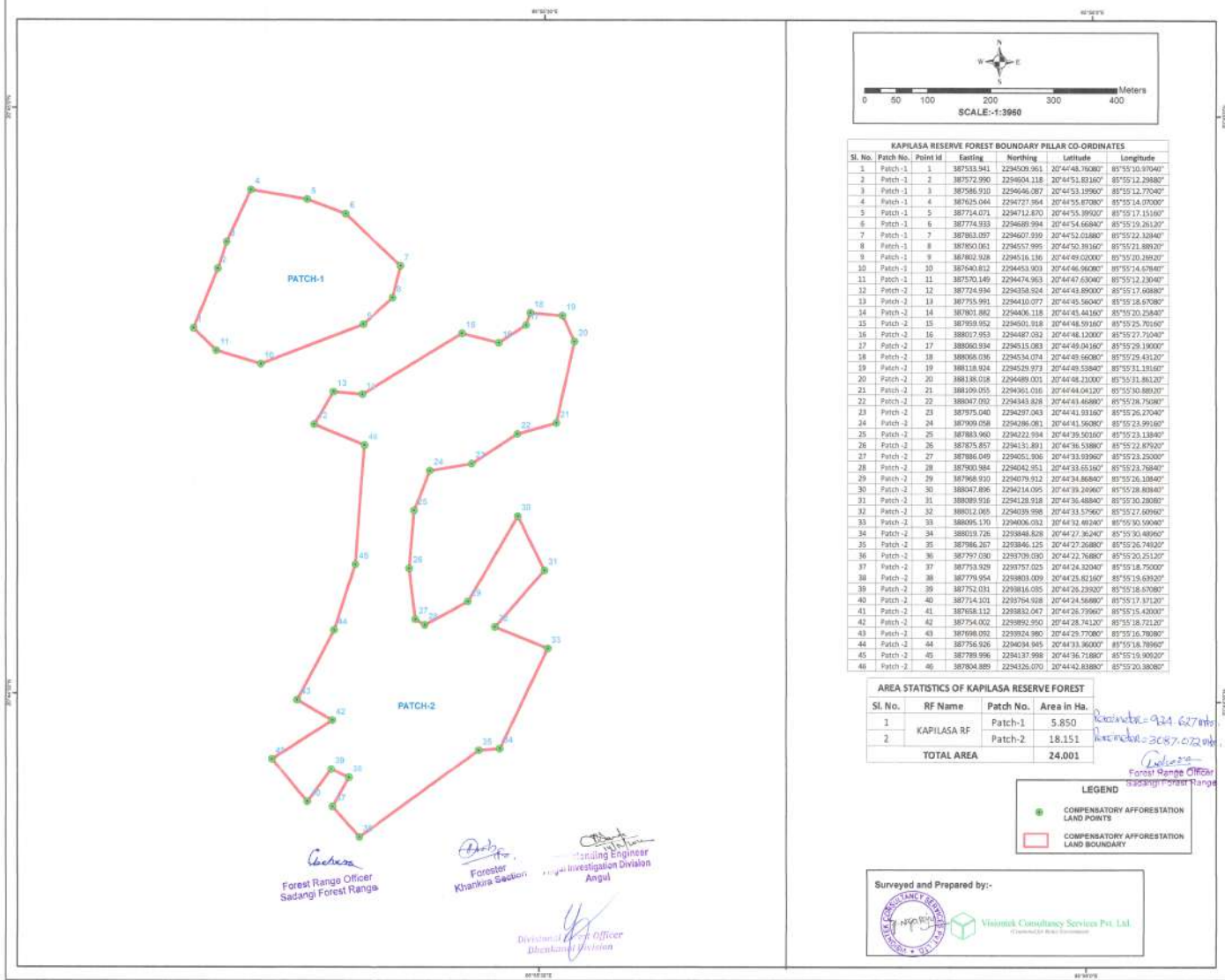
**TOTAL FINANCIAL OUTLAY OF THE 10 YEARS PLANTATION PROGRAMME WITH
MAINTENANCE ONE TIME COST NORM**

ABSTRACT

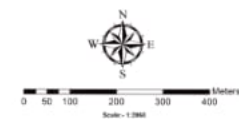
Sl. No	Item	Base Cost Per Ha. (Rs.)	Total Cost Per Hectare for 10 years plantation from 2022-23 to 2032-33(Rs.)	Total cost of 140.743 Ha. from 2022-23 to 2032-33 (Rs.)
1	ANR Plantation for 140.743 Ha.	1,17,087/-	1,42,904/-	2,01,12,738/-
2	SMC for 140.743 Ha.	32,343/-	37,415/-	52,65,899/-
3	Fencing (Bamboo Twigs) for 116.743 Ha.	89,164/-	1,04,966/-	1,22,54,046/-
4	Fencing (Solar) for 24 Ha.	1,46,053/-	1,70,045/-	40,81,080/-
5	Watering (Model-I) Solar Borewell Fitted with Drip System per Ha. for 140.743 Ha.	1,96,182/-	2,33,786/-	3,29,03,743/-
Total		5,80,829/-	6,89,116/-	7,46,17,506/- or 7,46,17,600/-


Divisional Forest Officer,
Dhenkanal Division
Divisional Forest Officer
Dhenkanal Division

MAP SHOWING DEGRADED FOREST LAND SELECTED FOR RAISING COMPENSATORY AFFORESTATION OVER AN AREA OF 24.001 HA. IN KAPILASA RESERVE FOREST UNDER SADANGI RANGE, DHENKANAL FOREST DIVISION AND DHENKANAL DISTRICT AGAINST DIVERSION OF 87.520 HA OF FOREST LAND FOR CONSTRUCTION OF HIDSING IRRIGATION PROJECT UNDER ANGUL FOREST DIVISION AND ANGUL DISTRICT.



MAP SHOWING DEGRADED FOREST LAND SELETED FOR RAISING COMPENSATORY AFFORESTATION OVER AN AREA OF 36.741 HA IN LAHARHA RESERVED FOREST UNDER SADANGI RANGE, DHENKANAL FOREST DIVISION AND DHENKANAL DISTRICT AGAINST DIVERSION OF 87.520 HA FOREST LAND FOR CONSTRUCTION OF HIDISING IRRIGATION PROJECT UNDER ANGUL FOREST DIVISION AND ANGUL DISTRICT.



S.No.	WP_Name	Point_No	Latting	Longting	Latitude	Longitude
1	LAHARHA_RESERVED	CA_1	20.0010.0000	85.0010.0000	20°00'10.0000"	85°10'10.0000"
2	LAHARHA_RESERVED	CA_2	20.0010.0000	85.0010.0000	20°00'10.0000"	85°10'10.0000"
3	LAHARHA_RESERVED	CA_3	20.0010.0000	85.0010.0000	20°00'10.0000"	85°10'10.0000"
4	LAHARHA_RESERVED	CA_4	20.0010.0000	85.0010.0000	20°00'10.0000"	85°10'10.0000"
5	LAHARHA_RESERVED	CA_5	20.0010.0000	85.0010.0000	20°00'10.0000"	85°10'10.0000"
6	LAHARHA_RESERVED	CA_6	20.0010.0000	85.0010.0000	20°00'10.0000"	85°10'10.0000"
7	LAHARHA_RESERVED	CA_7	20.0010.0000	85.0010.0000	20°00'10.0000"	85°10'10.0000"
8	LAHARHA_RESERVED	CA_8	20.0010.0000	85.0010.0000	20°00'10.0000"	85°10'10.0000"
9	LAHARHA_RESERVED	CA_9	20.0010.0000	85.0010.0000	20°00'10.0000"	85°10'10.0000"
10	LAHARHA_RESERVED	CA_10	20.0010.0000	85.0010.0000	20°00'10.0000"	85°10'10.0000"
11	LAHARHA_RESERVED	CA_11	20.0010.0000	85.0010.0000	20°00'10.0000"	85°10'10.0000"
12	LAHARHA_RESERVED	CA_12	20.0010.0000	85.0010.0000	20°00'10.0000"	85°10'10.0000"
13	LAHARHA_RESERVED	CA_13	20.0010.0000	85.0010.0000	20°00'10.0000"	85°10'10.0000"
14	LAHARHA_RESERVED	CA_14	20.0010.0000	85.0010.0000	20°00'10.0000"	85°10'10.0000"
15	LAHARHA_RESERVED	CA_15	20.0010.0000	85.0010.0000	20°00'10.0000"	85°10'10.0000"
16	LAHARHA_RESERVED	CA_16	20.0010.0000	85.0010.0000	20°00'10.0000"	85°10'10.0000"
17	LAHARHA_RESERVED	CA_17	20.0010.0000	85.0010.0000	20°00'10.0000"	85°10'10.0000"
18	LAHARHA_RESERVED	CA_18	20.0010.0000	85.0010.0000	20°00'10.0000"	85°10'10.0000"
19	LAHARHA_RESERVED	CA_19	20.0010.0000	85.0010.0000	20°00'10.0000"	85°10'10.0000"
20	LAHARHA_RESERVED	CA_20	20.0010.0000	85.0010.0000	20°00'10.0000"	85°10'10.0000"
21	LAHARHA_RESERVED	CA_21	20.0010.0000	85.0010.0000	20°00'10.0000"	85°10'10.0000"
22	LAHARHA_RESERVED	CA_22	20.0010.0000	85.0010.0000	20°00'10.0000"	85°10'10.0000"
23	LAHARHA_RESERVED	CA_23	20.0010.0000	85.0010.0000	20°00'10.0000"	85°10'10.0000"
24	LAHARHA_RESERVED	CA_24	20.0010.0000	85.0010.0000	20°00'10.0000"	85°10'10.0000"
25	LAHARHA_RESERVED	CA_25	20.0010.0000	85.0010.0000	20°00'10.0000"	85°10'10.0000"
26	LAHARHA_RESERVED	CA_26	20.0010.0000	85.0010.0000	20°00'10.0000"	85°10'10.0000"
27	LAHARHA_RESERVED	CA_27	20.0010.0000	85.0010.0000	20°00'10.0000"	85°10'10.0000"
28	LAHARHA_RESERVED	CA_28	20.0010.0000	85.0010.0000	20°00'10.0000"	85°10'10.0000"
29	LAHARHA_RESERVED	CA_29	20.0010.0000	85.0010.0000	20°00'10.0000"	85°10'10.0000"
30	LAHARHA_RESERVED	CA_30	20.0010.0000	85.0010.0000	20°00'10.0000"	85°10'10.0000"
31	LAHARHA_RESERVED	CA_31	20.0010.0000	85.0010.0000	20°00'10.0000"	85°10'10.0000"
32	LAHARHA_RESERVED	CA_32	20.0010.0000	85.0010.0000	20°00'10.0000"	85°10'10.0000"
33	LAHARHA_RESERVED	CA_33	20.0010.0000	85.0010.0000	20°00'10.0000"	85°10'10.0000"
34	LAHARHA_RESERVED	CA_34	20.0010.0000	85.0010.0000	20°00'10.0000"	85°10'10.0000"
35	LAHARHA_RESERVED	CA_35	20.0010.0000	85.0010.0000	20°00'10.0000"	85°10'10.0000"
36	LAHARHA_RESERVED	CA_36	20.0010.0000	85.0010.0000	20°00'10.0000"	85°10'10.0000"
37	LAHARHA_RESERVED	CA_37	20.0010.0000	85.0010.0000	20°00'10.0000"	85°10'10.0000"
38	LAHARHA_RESERVED	CA_38	20.0010.0000	85.0010.0000	20°00'10.0000"	85°10'10.0000"
39	LAHARHA_RESERVED	CA_39	20.0010.0000	85.0010.0000	20°00'10.0000"	85°10'10.0000"
40	LAHARHA_RESERVED	CA_40	20.0010.0000	85.0010.0000	20°00'10.0000"	85°10'10.0000"
41	LAHARHA_RESERVED	CA_41	20.0010.0000	85.0010.0000	20°00'10.0000"	85°10'10.0000"
42	LAHARHA_RESERVED	CA_42	20.0010.0000	85.0010.0000	20°00'10.0000"	85°10'10.0000"

WP Name	Area (Ha)
LAHARHA_RESERVED Forest	36.741
Total	36.741

●	CA Land Boundary Points
□	CA Land Boundary

Surveyed and Prepared By:



Vinodh Consultancy Services Pvt. Ltd.
100, Park Road, Bhubaneswar - 751005

For and on behalf of
Dhenkanal District
Forest Range Officer
Angul Forest Range

For and on behalf of
Dhenkanal District
Forest Range Officer
Angul Forest Range

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Forest Range Officer
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