

REVISED SCHEME

FOR COMPENSATORY AFFORESTATION OVER AN AREA OF 16.00 HA IN DEGRADED FOREST LAND In RENGALI- BADMAL RF IN BADMAL RANGE UNDER RAIRAKHOL FOREST DIVISION AGAINST DIVERSION OF 6.754 HA OF FOREST LAND FOR WIDENING & STRENGTHENING OF NH -153 (B) FROM TWO LANE TO TWO LANE WITH PAVED SHOULDER FORM KM 58/00 TO 116/100 IN THE STATE OF ODISHA ON EPC MODE.

Area identified: **16.00 ha**

Plantation in AR Mode – **14.00 ha**

Silvicultural Cleaning -**2.0 ha**

Prepared by

**Divisional Forest Officer,
Rairakhol Forest Division
Rairakhol**

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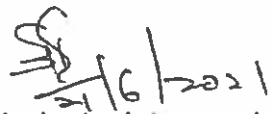
CHECK LIST SERIAL NUMBER: - 13**UNDERTAKING FOR PAYMENT OF NET PRESENT VALUE OF FOREST AREA.**

This is to undertake that the Net Present Value "NPV" for entire forest land applied for diversion for widening & & strengthening of existing 2 lane to 2 lane with paved shoulder from Km58/00 to 116/10 km of NH-153(B) in Rairakhol Division / Sambalpur District in state of Odisha i.e.6.754 ha as would be demanded by DFO, Rairakhol Division will be deposited through web portal.

Further, it is to undertake to pay the additional NPV if so decided at a later date as per the decision of the Supreme Court.

Date: 21st June,2021

Place: Sambalpur


(Signature of the Authorized signatory)
Executive Engineer
N.H. Division, Sambalpur
Office seal _____

Countersigned by:-


Divisional Forest Officer,
Rairakhol Division

Office seal _____

Full Title of the Project: Widening & strengthening of existing 2 lane to 2 lane with paved shoulder from Km58/00 to 116/10 km of NH-153(B) in Rairakhol Division / Sambalpur District in state of Odisha.

File No. : 5-ORC459/2021-BHU

Date of Proposal: 19.10.2020

LAND SUITABILITY CERTIFICATE

BY DIVISIONAL FOREST OFFICER, RAIRAKHOL FOREST DIVISION

This is to certify that, 16.00 ha of degraded Forest land has been identified in Rengali - Barhamal RF (Comp No-2) from RF Pillar No. 118 to 124 under Badmal Section, Badmal Range of Rairakhhol Forest Division in two patches (Patch-I: 14ha; patch-II: 2 ha). The area is suitable for the purpose of Compensatory Afforestation under Block Plantation @1000 Plants per Hectare in lieu of Forest land 6.756 ha in Rairakhhol Forest Division to be diverted for of widening and strengthening of two lane to two lane with paved shoulder from Km 58/00 to 116/100 Km of NH-153(B) in the State of Odisha on EPC Mode in Rairakhhol Division of Sambalpur district.

Place: Rairakhhol
Date : June, 2021


Divisional Forest Officer
Rairakhhol Division
Divisional Forest Officer,
Rairakhhol Division
Official Seal.....

Compensatory Afforestation Scheme over 16.00 Ha. in degraded forest land in Rengali - Badmal RF in Badmal Range under Rairakhol Division against diversion of Forest land for widening and strengthening of two lane to two lane with paved shoulder from Km 58/00 to 116/100 Km of NH-153(B) in the State of Odisha on EPC Mode in Rairakhol Division of Sambalpur district.

1. Introduction:

The Government of India, Ministry of Road Transport & Highway, New Delhi have accorded Technical and financial approval to the Project vide Letter No. RW/12014/41/2016/ORS/P-5, dtd. 20.12.2016. The project corridor is a portion of NH-153(B) running through three major districts i.e Boudh, Deogarh & Sambalpur. The road has been declared as National Highway in the year 2013. The road originates at Sarpal, passes through Naktideul-Rairakhol and ends at Boudh. The total length of NH-153(B) is 118.41km. It is a Central Govt. Project passing through Sambalpur District and tribal dominated scheduled area. The people of this Project area are mostly tribal and mountainous in nature. This existing road of formation width is about 9.00 m of NH-153(B) which was originally Naxalite Corridor (Vijayawada - Ranchi corridor). The road chainage 58/00km to 116/100 km is under the Jurisdiction of N.H. Division Sambalpur. This road is the oldest road and life line route for the traffic commuting mainly from western Odisha to Southern Odisha through Central Odisha passing through intermittent forest and hilly area. It will also enhance the socio-economic conditions of these Districts. During the construction of the project, it will render employment opportunities to the people of the relevant Districts through which alignment will pass.

2. Scheme For Site Specific Compensatory Afforestation

As per Para 2.5(i) f of Hand book of Guideline to Forest (Conservation) Act, 1980 for Govt. of India Projects Compensatory Afforestation can be raised in degraded forest twice in extent. Therefore, 14.00 Ha degraded forest was identified in Rengali- Badmal RF in Badmal Range of Rairakhol Division. On examination of Proposal the Integrated Regional Office, MoEF&CC, Bhubaneswar in their letter No.5-ORC459/2021-BHU dated 8th June. 2021 has asked the State Government to identify additional two Ha for Compensatory Afforestation Purpose. The instruction reads as follows.

“The State Govt. shall identify additional 2.00 ha of degraded forest land for C.A. and submit revised C.A. Scheme along with KML file & Geo-reference map before Stage-I approval. The species to be planted shall be indigenous to the area and naturally growing species shall be planted using intensive planting technique to ensure survival of the plantation with 30% casualty replacement”.

Accordingly another 2 ha degraded forest land has been identified close to the 1st patch so identified and the CA Scheme is revised with a provision to plant 1000 saplings per hectare with provisions for 30% causality replacement on identified CA land with ten-year maintenance.

3.1 Selection of Site:

In accordance with the guide lines and instructions contained in letter No.5-ORC459/2021-BHU dated 8th June. 2021, additional 2 ha degraded Forest land has been identified adjacent to 1st patch identified and reported. The land particulars of the proposed Compensatory Afforestation area are furnished below.

Patch	Division	Range	Section	Name of RF	Comp. No.	Area considered for Compensatory Afforestation (Ha.)
I	Rairakhol	Badmal	Badmal	R.Barhamal	02	14.00
II	Rairakhol	Badmal	Badmal	R.Barhamal	02	2.00
Total						16.00

The site is located on survey of India Topo Sheet No F45-M/4 between

- (1) Latitude: 21° 06' 22.34" - Longitude: 84° 06' 36.478" to
Latitude: 21° 06' 14.31" - Longitude: 84° 06' 54.354" .
- (2) Latitude: 21° 06' 6.406" - Longitude: 84° 06' 50.758" to
Latitude: 21° 06' 25.62" - Longitude: 84° 06' 54.354" .

3.2 Description of the existing vegetation

Though there is no valuable tree growth in the proposed land but some scrubs are found scattered all over the land. On DS system it is noticed that 2 ha within Patch –I crop density is about 40%.

3.3 Topography & Soil

The topography of area is flat and hilly at some portion. The depth of the soil is good and the existing vegetation indicates the PH value 6-7 i.e. slight acidic.

3.4 Rainfall & Temperature

The annual rainfall varied from 1000 mm to 1200mm. The maximum rainfall is received during the rainy season from July to September. The average temperature varied from 14°C minimum in December to 44° C maximum in May.

3.5 Objective of the scheme

The main objective of the present scheme is to

- i. Restock the area Block (AR) plantation,
- ii. Demarcating the area with posting up RCC pillars,
- iii. Enforcing protection measures by involving people under JFM (VSS to which it is assigned)
- iv. Checking soil erosion and run off which will go in combination for enrichment of the vegetation and soil with building up ecosystem.

3.6 Plantation Mode:

Patch No	Plantation Mode	Area in ha	No of Plants to be planted
I	Block Plantation	12.00	1000 Seedling per ha
I	Silvicultural Cleaning	2.00	No planting
II	Block Plantation	2.00	1000 seedling per ha
Total Block Planting		14.00	14000 seedling
Total silvicultural tending		2.00	Natural Growth

3.7 Items of work to be taken up

3.7.1 Survey and Demarcation:

The area to be demarcated by using GPS with reference to Co-ordinates furnished during DGPS Survey. Pillars have been posted during DGPS survey. The pillar positions to be cross checked only.

3.7.2 Choice of Species:

The existing vegetation is of Dry deciduous mixed forests. The species suitable for the location and matching with the natural vegetation are to be planted. The species selected

for planting are in accordance with the observations of Integrated Regional Office, MoEF&CC, Bhubaneswar. The species are as furnished below.

Sl No	Local Name	Scientific Name
1	Asan	<i>Terminalia tomentosa</i>
2	Bahada	<i>Terminalia belerica</i>
3	Arjuna	<i>Terminalia arjuna</i>
4	Sissoo	<i>Dalbergia latifolia</i>
5	Khair	<i>Acacia catchu</i>
6	Kusuma	<i>Schleichera oleosa</i>
7	Bija	<i>Pterocarpus marsupium</i>
8	Ghambhari	<i>Gmelina arborea</i>
9	Amla	<i>Emblica officinalis</i>

3.7.3 Spacing:

It is proposed to plant 1000 seedlings per ha. The ideal spacing is 3.16m x 3.16m. As the area bears some bushes the spacing at obstacles may be modified but in no case it will be closer than 2.5m x 2.5m.

3.7.4 Development of Nursery

A good nursery is the pre-requisite for a successful plantation. Therefore, all care should be taken to raise healthy and sound seedlings of required sizes before they are put to the plantation site. The seeds required for raising nursery are to be collected from local plus trees of the above species. Seedlings of 1m height only send to planting site.

Number of Seedlings to be raised: (14000 + 30% of 14000 seedlings) + 10% towards suppressing at Nursery stage. Total 20,020 seedlings is to be raised for plantation.

3.7.5 Planting

(i) Alignment, Staking and Pitting.

Alignment and staking will be taken up in the month of January. Pits of size 30 cm x 30 cm x 30 cm are to be dug out with a spacing of 3.16m x 3.16m @ 1000 plants per hectare.

Alignment will be made along the contour strictly. It is also suggested to have plants staggered within adjacent rows to reduce runoff. As the selected area the spacing may be required to be modified according to blank space. In no case the spacing should be less than 2.5mx2.5m.

(ii) Planting

Plantation will be done after first regular shower of monsoon and to be completed within a week. Basal dose of NPK/DAP fertilizer @50gm per plant to be given. Utmost care is to be taken to apply insecticides @5gm per pit. Casualty replacement to an extent of 20% is to be taken up during 1st year of plantation just after one month of planting. 10% causality replacement is also suggested during 2nd Year. (Total causality replacement up to 30% can be taken up to have a successful plantation)

(iii) Weeding, Soil working and Application of Fertilizer:

Post planting operation is most vital in success of any planting program. It is proposed to carry out two weeding during first year. Preferable total Weeding along the contour will be taken up. One weeding and soil working has to be done in second year and third year of plantation. Application of 35gms of Urea to be added to the soil per plant at the time of soil working during rains during 1st, 2nd & 3rd year of plantation.

(iv) Application of insecticide:

To prevent infestation of planted seedlings with diseases due to influx of insects and pests into the area, it is required to apply insecticides like Forate /themet at the time of planting. Foliar spraying of insecticide may be done if badly necessary.

(v) Fire line tracing and maintenance:

Tender seedlings planted are subject to damage by ground fire. It is required to protect the plantation and forest growth from fire hazard by tracing of fire lines. Boundary of the plantation and several internal lines need to be scrapped to a width of 2mtr during February-March. The cut back materials and dry leaves along with fire lines should be separated and dumped in pits outside the plantation area.

(vii) Fencing:

(vi) Watch and Ward:

Watch and ward is necessary to protect the area from grazing, fire accident and other biotic interference. Necessary provisions have been made in the approved cost norm.

(vii) Soil and Moisture Conservation Works:

In order to enhance soil moisture, check run off and arrest carrying of silt in the flow water it is required to have staggered trenches (Size 2m longx0.50 m width X0.5 m Deep) along the contour. In the cost norm 30 numbers of staggered trenches per hectare has been provided.

(viii) Proposed Monitoring Mechanism:

Implementation of the planting program will be monitored by the DFO, Rairakhol and RCCF, Sambalpur periodically. As other technical facilities / tools are now available at the hands of supervising authority and KML file along with Coordinates available it can be easily monitored from Satellite imagery / Google earth maps. Plantation journal is also to be regularly maintained by Field staff.

3.7.6 Fencing:

The planting site is well within the Forest area. The planting site is to be protected against grazing etc with vegetative fencing provided in the cost norm. Provision of 250m fencing per ha is inbuilt. Hence for 14 ha, 3.50 km fencing along with its maintenance for 3 years has been provided.

3.7.7 Silvicultural Tending:

In the identified CA land in 1st patch, the Integral MoEF&CC, Bhubaneswar has observed that 2 ha within the selected area bears a good dense forest patch. This 2 ha needs to be silviculturally tendered and Silvicultural Cleaning operation will be taken up. 20 Md per ha is proposed for cleaning operation and 30 staggered trenches per ha @ 10 Md is also suggested. Hence a sum of Rs 18660/- for this operation has been proposed.

3.7.8 Peoples participation:

Peoples participation is an important component in any plantation activities. With their cooperation necessary protection measures can be taken up effectively. For success of plantation it will be assigned to VSS nearby to the Forest Block. 15% of the planting cost has been provided for EPA for the VSS.

3.7.9 Monitoring and Evaluation:

The scheme shall be executed and monitored by the Divisional Forest Officer, Rairakhol 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.

3.7.10 Total cost of the Scheme (@ 311/- PD wage rate)

Abstract of Compensatory Afforestation Cost @311.00 wage rate				
Sl No	Description	Rate	Quantum	Amount
1	AR Plantation @ 1000 seedling per Ha with Vegetative fencing & ten year maintenance	152267/-	14	2131738/-
2	Silvicultural Cleaning @20 MD per ha	20*311	2	12440/-
3	Soil & Moisture Conservation @ 30 no staggered trenches @10 MD/ Ha	10*311	2	6220/-
	S. Total			2150398/-
	EPA @ 15%			322560/-
	Total			2472958/-
	Add 20% for cost escalation			494592/-
	Total CA Scheme Cost			2967550/-

(Rupees Twenty Nine Lakh Sixty Seven Thousand Five Hundred and Fifty only)

The total cost of the project will be Rs. 29,67,550/- which will be deposited by the User Agency in the State CAMPA Account as per the Demand Notice issued by the Divisional Forest Officer, Rairakhol Forest Division on event of its approval.

Encl: In Six Set

1. Revised DGPS Map
2. Revised Topo Map (1:50000 Scale)
3. KML file (in CD)
4. Approved Cost norm @ Rs 311/- PD wage rate


22/6/22
Divisional Forest Officer,
Rairakhol Division
Rairakhol Division


Cost Norm For AR Plantaion for 1000 plants per ha(Compensatory Afforestation)						
For Ten year maintenance. Wage rate- @Rs311/ PD						
Sl. No	Item of Work	Preferable Period of Execution	Person days	Labour cost @Rs 311/- per day	Material (Rs)	Total (Rs)
0th Year (Advance Work)						
1	Survey, Demarcation and Pillar Posting,	Nov / Dec	2	622	0	622
2	Site Preparation	Nov / Dec	8	2488	0	2488
3	Alignment & Stacking of pits.	Jan / Feb	2	622	0	622
4	Digging of pits (30cm cube)	Feb / March	25	7775	0	7775
5	Nursery Cost (6 month old seedling) Part@12.43/seedling (Rs8.67in 0th yr +Rs3.76 in 1st year)for 1100seedlings (1000+160)	Jan-Mar	27.5	8552.5	1837	10389.5
	S.Total		64.5	20059.50	1837.00	21896.50
6	Monitoring & Supervision charges 5% of the cost					1094.83
	G.Total		64.5	20060	1837	22991.33
1st Year / Planting Year						
7	Nursery Cost (6 month old seedling) Balance @3.76 for 1760 seedling	Apr-June	13	4043	496	4539
8	Fencing For an average of 250meter /ha@Rs 76.80/- per meter for bamboo twigs and bamboo thorn fencing	Jan/Feb	38	11818	8560	20378
9	Carriage and planting Causality replacement and application of insecticide, manure etc.	July / Aug	13	4043	0	4043
10	Cost of Insecticide & Fertilizer. (a) NPK @50gm/ plant as basal dose=50kg @Rs24/- per Kg : Rs1200/- (b) Urea 70gm per plant in two subsequent doses@6/- per kg Rs420/- (c) Granullar insecticides (Themet , Forest, etc @5gm/ plant@Rs80/ kg=Rs400/-			0	2020	2020
11	1 st Weeding (Complete weeding)	Aug / Sept	5	1555	0	1555
12	Manuring of urea 35gm/ plant	Aug / Sept	4	1244	0	1244
13	2 nd Weeding (Complete weeding)	Sept / Oct	4	1244	0	1244
14	Soil Working(50cm Radius around plant) mauring 35g/ plant	Sept / Oct	5	1555	0	1555

15	Soil conservation measures in the form of Staggered trenches of 2m Lx.5m x0.5m @ 30 no/ ha.	Sept/ Oct.	10	3110	0	3110
16	Fire line tracing & inspection path		3	933	0	933
17	Watch & Ward		7	2177	0	2177
	Sub Total		102	31722	11076	42798.0
18	Monitoring & Supervision charges 5% of the cost					2139.9
	G.Total		102	31722.0	11076.0	44937.9
2nd Year Maintenance						
19	Casualty Replacement (10%) with nursery cost	July / Aug	2.5	777.50	1036.00	1813.50
20	weeding (Complete weeding)		4	1244.00	0.00	1244.00
21	Cost of Fertilizer @NPK 70g/ plant (Rs24.00 per Kg & insecticides @5g/ plant for 100 plants 800 gm @Rs80/- per Kg			0.00	1720.00	1720.00
22	Repair and maintenance of Bamboo fence including material cost	May/June	20	6220.00	5080.00	11300.00
23	Soil working 50cm Radius around Plant	Oct / Nov	5	1555.00	0.00	1555.00
24	Application of Fertilizer & insecticides.	Sept/ Oct	2.5	777.50	0.00	777.50
25	Fire line tracing (2m Wide fire line over 400m long)	Feb/ March	3	933.00	0.00	933.00
26	Watch & Ward	April / March	15	4665.00	0.00	4665.00
	Sub Total		52	16172.00	7836.00	24008.00
27	Monitoring & Supervision charges 5% of the cost					1200
	G.Total		52	16172	7836	25208.4
3rd Year maintenance						
28	Weeding and application of fertilizer	Aug / Sept	5	1555	0	1555
29	Cost of fertilizer. NPK @50g/ plant @Rs24/- per Kg			0	1200	1200
30	Repair and maintenance of Bamboo fence including material cost	May/June	20	6220	1000	7220
31	Soil Working(50cm Radius around plant)	Oct / Nov	5	1555	0	1555
32	Fire line tracing (2m Wide fire line over 400m long) & cultural operation	Fec / March	3	933	0	933
33	Watch & Ward	April / March	15	4665	0	4665
	Sub Total		48	14928	2200	17128
34	Monitoring & Supervision charges 5% of the cost					856

	G.Total		48	14928	2200	17984
4th Year maintenance						
35	Fire line tracing (2m Wide fire line over 400m long) & cultural operation	Feb / March	3	933	0	933
36	Watch & Ward	April / March	15	4665	0	4665
	Sub Total		18	5598	0	5598
37	Monitoring & Supervision charges 5% of the cost					280
	G.Total		18	5598	0	5878
5th Year maintenance						
35	Fire line tracing (2m Wide fire line over 400m long) & cultural operation	Feb / March	3	933	0	933
36	Watch & Ward	April / March	15	4665	0	4665
	Sub Total		18	5598	0	5598
37	Monitoring & Supervision charges 5% of the cost					280
	G.Total		18	5598	0	5878
6th Year maintenance						
35	Fire line tracing (2m Wide fire line over 400m long) & cultural operation	Feb / March	3	933	0	933
36	Watch & Ward	April / March	15	4665	0	4665
	Sub Total		18	5598	0	5598
37	Monitoring & Supervision charges 5% of the cost					280
	G.Total		18	5598	0	5878
7th Year maintenance						
35	Fire line tracing (2m Wide fire line over 400m long) & cultural operation	Feb / March	3	933	0	933
36	Watch & Ward	April / March	15	4665	0	4665
	Sub Total		18	5598	0	5598
37	Monitoring & Supervision charges 5% of the cost					280
	G.Total		18	5598	0	5878
8th Year maintenance						
35	Fire line tracing (2m Wide fire line over 400m long) & cultural operation	Feb / March	3	933	0	933
36	Watch & Ward	April / March	15	4665	0	4665
	Sub Total		18	5598	0	5598
37	Monitoring & Supervision charges 5% of the cost					280

	G.Total		18	5598	0	5878
9th Year maintenance						
35	Fire line tracing (2m Wide fire line over 400m long) & cultural operation	Feb / March	3	933	0	933
36	Watch & Ward	April / March	15	4665	0	4665
	Sub Total		18	5598	0	5598
37	Monitoring & Supervision charges 5% of the cost					280
	G.Total		18	5598	0	5878
10th Year maintenance						
35	Fire line tracing (2m Wide fire line over 400m long) & cultural operation	Feb / March	3	933	0	933
36	Watch & Ward	April / March	15	4665	0	4665
	Sub Total		18	5598	0	5598
37	Monitoring & Supervision charges 5% of the cost					280
	G.Total		18	5598	0	5878
	Grand Total		392.5	122068	22949	152267

ABSTRACT of Cost norm (Year wise) .					
Year	Person days	Labour Component	Material Component	Monitoring & Supervision charge 5% of total cost	Total in Rs
0th Yr	64.5	20059.50	1837	1094.83	22991
1st yr	102	31722	11076	2139.90	44938
2nd Yr	52	16172	7836	1200	25208
3rd Yr	48	14928	2200	856	17984
4th Yr	18	5598	0	280	5878
5th Yr	18	5598	0	280	5878
6th Yr	18	5598	0	280	5878
7th Yr	18	5598	0	280	5878
8th Yr	18	5598	0	280	5878
9th Yr	18	5598	0	280	5878
10th Yr	18	5598	0	280	5878
Total	392.5	122068	22949	7250.83	152267


 Divisional Forest Officer,
 Bairaahol Division.