REVISED COMPENSATORY AFFORESTATION SCHEME FOR DEGRADED FOREST LAND OVER 9Ha. IN GUTHIYALATHUR R.F. OF GERMALAM RANGE AGAINST THE FOREST DIVERSION PROPOSAL FOR REHABILITATION AND UPGRADATION OF TAMILNADU / KARNATAKA BORDER FROM EXISTING KM 266.448 TO ATTAGULIPURA AT EXISTING KM 290.706 OF NH-209 IN THE STATE OF KARNATAKA

Prepared by :-

Deputy Director,
Hasanur Forest Division

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SUITABILITY CERTIFICATE

Certified that 9 Ha. of Degraded Forest Land identified in Guthiyalathur Reserved Forest in Germalam Range under Thalavady taluk of Hasanur Forest Division in Erode District are suitable for the purpose of Compensatory Afforestation for taking plantation @200 plants per Ha. against the Forest Diversion Proposal for rehabilitation and up-gradation of Tamilnadu / Karnataka border from existing km 266.448 to attagulipura at existing km 290.706 of NH-209 in the state of Karnataka. The project implemented by the National Highways Authority of India, Project Implementation unit, Ramanagara.

Deputy Director
Hasanur Forest Division

SCHEME FOR COMPENSATORY AFFORESTATION OVER AN AREA OF 9 HA. OF DEGRATED FOREST LAND AGAINST THE FOREST DIVERSION PROJECT- rehabitation and upgradation of tamilnadu / karnataka border from existing km 266.448 to attagulipura at existing km 290.706 of NH-209 in the state of Karnataka.

HASANUR FOREST DIVISION.

1. INTRODUCTION:-

Since this project is a National Highways Sector Project, as per Para 3.2 (VII) of the guidelines of Forest Conservation Act, 1980 twice the extent of forest area to be diverted of degraded forest land is required for taking up Compensatory Afforestation. Degraded forest land in Hasanur Forest Division, total 13 ha (effective area 9 Ha) degraded forest land has been identified in Guthiyalathur RF Germalam Range under Thalavady Taluk in Erode district to compassionate the loss of 4.478 ha. Forest land proposed for diversion for **rehabilitation and upgradation of Tamilnadu / Karnataka border from existing km 266.448 to attagulipura at existing km 290.706 of nh-209 in the state of Karnataka** in Hasanur Forest Division.

The new Compensatory Afforestation Scheme for raising ANR Plantation 4000 seedlings over an area of 13 ha in Guthiyalathur R.F. has been prepared in favour of National Highways Authority of India, Project Implementation unit, Ramanagara.

2. IDENTIFICATION OF THE DEGRADED FOREST AREA:-

The degraded forest land for this purpose has been identified in Guthiyalathur R.F in Germalam Range of Hasanur Forest Division in Erode District. The identified area is in 01 no of patch over 13 ha of degraded forest land. The area has been inspected by the Range Officer, Germalam Range, of this Division and found suitable for taking up Compensatory Afforestation. The location map showing the proposed Compensatory Afforestation site inside Guthiyalathur R.F. 13 ha is shown in ***Annexure- E .***

(a) Existing Vegetation:-

The Guthiyalathur R.F. under Germalam Range of Erode District is situated approx 03 Km away from Germalam Range office. The head quarter of Germalam Range is Germalam. Sal (Shorea robusta) crop and its associate species like Bija (Pterocarpus marsupium), Asan (Terminalia tomentosa), Senha (Lagerstroemia parviflora), Dhaura (Anogeissus latifolia), Mahul (Madhuca indica), Char (Buchanania lanzan) & Kendu (Diospyros melanoxylon), Harida (Terminalia chebula), Bahada (Terminalia bellerica), Dhatki (Woodfordia fructicosa), Amla (Emblica officinalis), Karala etc. in bushy and pole stages are found in the identified degraded forest land. The slope is gentile and is suitable for carrying out plantation activities. The category of forest is open. The density of the vegetation is $\leq$ **40%**.

(b) Soil and topography:-

The topography of the area is mainly undulated terrain and having gentile slope. The soil is sandy loam and PH is acidic. Depth of the soil is fairly good. The soil is mainly devoid of humus and shallow in depth.

The topographical configuration of the selected site is suitable for undertaking plantation activities. The soil is mostly sandy loam. For such characteristics, the scheme proposes to dovetail adequate soil and moisture conservation measures into the afforestation programme.

(c) Temperature:-

The area experiences sub-tropical climate. It is characterized by very hot summer and cool winter. Maximum temperature during summer rises up to 35-42 degree Celsius and in winter it goes down to 10-15 degree Celsius.

(d) Rain fall:-

The area gets rain from South-East monsoon, which breaks during second fortnight of June and continues until last week of September. The annual rainfall varies from 1100.0 mm to 1200.0 mm. The annual rainfall average is 1100 mm. The bulk of precipitation occurs during July-August. During April-May, occasional rainfall occurs along with thunder storm. The annual rain fall varies from 1200 mm to 1500 mm mostly received during rainy season from July to October.

3. OBJECTIVE OF THE SCHEME:-

The main objective of the scheme is to restock the forest vegetation in Guthiyalathur R.F. under Germalam Range of Erode District by taking up silvicultural operation of the existing forest crop and supplementing it with plantation in blanks patches. The scheme also envisages carrying out adequate and appropriate soil conservation measures 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.

Principal Aims of the proposed scheme:-

(i) To rehabilitate the degraded forest land through plantation with suitable indigenous species.
(ii) To promote the growth of existing crop and root stock through suitable silvicultural practices.
(iii) To arrest soil erosion and to improve the soil-moisture regime of the area which will ultimately recharge the ground water.
(iv) To create a compact forest, which will be an asset for the local people from environmental, economic and aesthetic points of view.
(v) To help reduce environmental pollution.

ITEMS OF WORK TO BE TAKEN UP:-

To achieve the objective narrated in the foregoing para, the following items of work are mainly prescribed to be taken up:

1. SURVEY AND DEMARCATION:-

The proposed Compensatory Plantation Area has been identified in the field by the Range Officer, Germalam. The fencing along the periphery of boundary and possible areas of biotic and human interference of Reserve Forest will be done through digging of elephant proof trench.

2. SOIL AND MOISTURE CONSERVATION.

Since the area is undulating, so soil and moisture conservation measures will be taken up by way of constructing small loose boulder structures and providing vegetative palisades as per site condition.

3. FENCING :-

<u>Elephant proof earthen trench Fencing</u>

To protect from biotic interference, solar hanging fencing is proposed to be done over 7.0 KM. Amount required for solar hanging fencing over 7.0 KM is RS.84,00,000/- @ Rs.12,00,000/-per Running Kms.

4. PROTECTION MEASURE:-

The forest block has become degraded due to biotic interference and to save the area from the same, the following protection measures are to be adopted.

(a) Watch and ward.

The Compensatory Area will have to be protected by engaging watchers for 10 years continuously, i.e. till establishment of the planted trees and natural saplings.

5. MONITORING AND EVALUATION:-

This scheme shall be executed and monitored by the Deputy Director, Hasanur Forest Division. Nursery and plantation journals shall be maintained regularly to facilitate monitoring and evaluation of the project.

6. CLEANING AND TENDERING OPERATION.

Regeneration cleaning of the area will be taken up during the pre-planting year by cutting of unwanted growth, high stumps and singling out of promising shoots of primary species where bushy forest growth is available.

7. PLANTING OF SEEDLINGS.

The proposed Compensatory Afforestation area will be planted by suitable species with a gap planting methods 4000Nos seedlings planted in 13 ha will be planted. As the entire area is prone to grazing, suitable indigenous species will be planted as detailed below :-

1. Sissoo (Dalbergia)
2. Gambhar (Gmelina arborea)
3. Amala (Emblica officinalis)
4. Bamboo (Dendrocalamus strictus)

5. Neem (Azadirachta indica)
6. Bel (Aegle marmelos)
7. Karanja (Pongamia pinnata)
8. Siris (Albizzia lebbek)
9. Khair (Acacia catechu)
10. Bara (Ficus bengalensis)
11. Panas (Artocarpus integrifolia)

For taking up plantation work, the following items of works are to be taken up.

(i) Raising of Nursery: -

The nursery will be raised for 1 year old seedlings during the pre-planting year. Potted seedlings will be planted 4000Nos over the total area.

(ii) Survey demarcation, staking and digging of pits:-

A treatment map will be prepared for the area. Concrete masonry pillars will be constructed along the boundary of the above forest area during demarcation. The area shall be divided in to small patches in the field with proper demarcation to facilitate management/inspection.

PLANTATION YEAR 1ST YEAR.

(i) **Application of Farmyard Manure, Chemical Fertilizer and Insecticides : -**

To enhance fertility, farmyard manure will be applied in the pits during June after scooping of the pits. Chemical fertilizer (N.P.K) as basal dose @ 50 gms per plant will be applied at the time of planting. To save the planted seedlings from termite attack, Aldrin dust or some effective insecticides will be applied at the time of planting.

(ii) **Planting**: -

Planting of seedling will be done during the mid July after the onset of monsoon. The soil and water conservation works will be taken up before the rains.

(iii) **Weeding, Soil Working, Manuring, and Casualty Replacement:** -

1st weeding and soil working will be taken up during 1st week of August or just after establishment of planted seedlings. Soil working at 0.5 m radius around the seedling planted will be taken up. The casualties will be replaced simultaneously.

2nd weeding will be done during 2nd F.N of September or 1st week of October. 2nd dose of chemicals fertilizer @ 50 gms per plant will be applied in the crowbar holes during 2nd weeding.

2ND YEAR OPERATION.

During the second year operation the following works will be taken up.

(i) 1st weeding, casualty replacement and application of chemical fertilizer:-

Weeding will be taken up during 1st week of July. Soil working with 0.5 mt radius will be done along with the replacement of 10% casualties and application of

chemical fertilizer @ 50 gms per plant in crow bar holes. Precaution should be taken for conservation of soil and water at the time of soil working.

(ii) 2nd weeding and mulching :-

2nd weeding will be done during 1st F.N. of October. Mulching of the plant sides will be done for conservation of moistures.

3RD YEAR OPERATION.

(i) Weeding pruning and deep soil working:-

Weeding and deep soil working will be taken up during July and August. Pruning of planted trees and tending of natural species will be done during November.

4TH YEAR OPERATION.

(i) Cleaning and pruning:

Cleaning of existing crop and Pruning of planted trees will be taken up during December/ January.

(ii) **Fire Tracing:**

Like previous years grass cutting and fire tracing will be done during December/ January.

5TH YEAR TO 10TH YEAR SAME OPERATIONS.

(i) Cleaning and pruning:-

Cleaning of existing crop and pruning of planted trees will be done during December/ January.

PLANTING LOCATION DETAILS

Location details taken up in Guthiyalathur R.F. in Germalam Range pertaining to Hasanur Forest Division for compensatory afforestation purpose by National Highways. is furnished in the **Annexure-D**.

Annexure A … *Cost norm of ANR Plantation @ 200 Plants.*

Annexure B … *Details of item wise financial outlay for Afforestation*.

Annexure C … *Details cost of Infrastructure.*

Annexure D … *GPS reading of ANR plantation area.*

Annexure E … *Location shown Map.*

Annexure-A

COMPENSATORY AFFORESTATION SCHEME DETAILS – HASANUR DIVISION

Sl no	Item of work	Mandays	Labour rate @ Rs.460.25/day	material cost	Total
0 th year (Advance work) Pre-planting operation					
1	Survey, Demarcation & pillar posting, GPS reading with mapping	2	920.5	-	920.5
2	Site preparation	2	920.5	-	920.5
3	Sivicultural operation including clearance of weed, climber cutting, high stump cutting, singling of shoots.	5	2301.25	-	2301.25
4	Raising Nursery @260 seedling/Ha (including 10% casualty replacement) and watch and ward (part-I)	5.5	2531.375	367	2898.375
5	Contingency and unforeseen expenditure	0	0	133	133
	Sub Total	**14.5**	**6673.63**	**500**	**7173.625**
6	Monitoring and supervision charges @5%				250.47
	Grand total				**7424.10**
1st year/ planting					
1	Maintenance of Nursery (Balance)	2.5	1150.63	128	905.5
2	Pitting 3cm cube size	6	2761.50	-	1866
3	Carriage and planting including casualty replacement	5	2301.25	-	1555
4	Complete wedding, soil working, Mannering	6	2761.50	-	1866
5	Cost of vermin compost and insectide for plantation	0	0	880	880
6	Cost of chemical fertilizer	0	0	324	324
7	Fire line tracing and inspection path	3	1380.75	-	933
8	Silvicultural operation involving clearance of weeds, cutting of climbers and siggling of shoots on each stool etc.,	15	6903.75	-	4665
9	Watch and ward	7	3221.75	-	2177
10	Soil conservation measures	20	9205.00	-	6220
11	Contingency and unforeseen expenditure	0	0	304	304
	Sub Total	**64.5**	**29686.13**	**1636**	**21695.5**
12	Monitoring and supervision charges @5%				1084.77
	Grand total				**22780.27**

2nd year Maintenance					
1	Causality replacement including cost of seedling, carriage and planting	1	460.25	271	582
2	Complete weeding and pruning	2	920.50	0	622
3	Soil working and Mannering	2	920.50	0	622
4	Cost of Fertilizer and insecticide	0	0	808	808
5	Fire line tracing and inspection path	1	460.25	0	311
6	Soil conservation measures	8	3682.00	0	2488
7	Watch and ward (whole year)	7	3221.75	0	2177
8	Contingency and unforeseen expenditure	0	0	181	181
	Sub Total	**21**	**9665.25**	**1260**	**7791**
9	Monitoring and supervision charges @5%				389.55
	Grand total				**8180.55**
3rd year Maintenance					
1	Complete weeding and pruning	1	460.25	0	311
2	Soil working	1	460.25	0	311
3	Fire line tracing and inspection path	1	460.25	0	311
4	Watch and ward (whole year)	7	3221.75	0	2177
5	Contingency and unforeseen expenditure	0	0	200	200
	Sub Total	**10**	**4602.50**	**200**	**3310**
6	Monitoring and supervision charges @5%				165.50
	Grand total				**3475.50**
4th year Maintenance					
1	Fire line tracing and inspection path	1	460.25	0	311
2	Prunning,Watch and ward	2	920.50	0	622
	Sub Total	**3**	**1380.75**	**0**	**933**
3	Monitoring and supervision charges @5%				46.65
	Grand total				**979.65**
5th year- 10th year Maintenance					
1	Fire line tracing and inspection path	6	2761.50	0	1866
2	Prunning,Watch and ward	12	5523.00	0	3732
	Sub Total	**18**	**8284.50**	**0**	**5598**
3	Monitoring and supervision charges @5%				279.90
	Grand total				**5877.90**

ABSTRACT

Sl. No	Year	Person Days	Labour	Material	Monitoring and supervision charges @ 5%	Total
1	0th Year	14.5	6673.63	500	250.47	7424.10
2	1st Year	64.5	29686.13	1636	1084.77	32406.90
3	2nd Year	21	9665.25	1260	389.55	11314.80
4	3rd Year	10	4602.50	200	165.50	4968.00
5	4th Year	3	1380.75	0	46.65	1427.40
6	5th Year to 10th year	18	8284.50	0	279.90	8564.40
	Total	**131**	**60292.76**	**3596**	**2216.84**	**66105.60/-** **Or** **66,106/-**

Cost of plantation and maintenance 0th year to 10th year for 260 seedlings = Rs.66,106 / 260Nos
(2times of diverted Area 4.478 x 2 = 8.9 or 9 ha – 200 seedlings / ha = 1800 + 30% casualties Total No. of seedlings raised = 2340 Nos)
In this project requirement of total 2340 Nos seedling = 2340Nos @ 66106/260Nos
= Rs.594954.00 (0r) 6.00lakhs

Annexure-B

DETAILS OF ITEM-WISE FINANCIAL OUTLAY FOR AFFORESTATION.

Sl. No.	Item of work	Total outlay
01	Plantation	6,00,000
02	Providing Solar Power fencing 7 kms @ 12.00 lakhs / km	84,00,000
03	Entry Point Activity for villages around Guthiyalatnur R.F. by distribution of 30 nos. of Solar street light surrounded by Guthiyalathur R.F., an amount of Rs.50,000/- per light.	15,00,000
05	Entry Point Activity for villages around Guthiyalathur R.F.	30,00,000
06	Watering seedlings by vehicle 1800 seedlings LS	3,00,000
	Sub-Total	**1,38,00,000**
07	Escalation cost @ 20%	27,60,000
	Sub-Total	**1,65,60,000**
08	Infrastructure Development (Purchase of all terrain Vehicle, Lightening arrester, Generator set to DD office etc.,)	30,00,000
	Grand Total	**Rs.1,95,60,000**

(Rupees One Core ninety thousand and sixty lakhs only).

Deputy Director
Hasanur Division

Annexure-C

DETAILS COST OF INFRASTRUCTURE

There is a gross lack of adequate infrastructure in the Division Office at Hasanur which is seriously hamper day to day office works. The main bottlenecks are power and internal connectivity. The same is the case in all Ranges of the division. Very frequent disruptions in electric power supply and regular voltage fluctuations attack timely execution of office work in addition to damaging Electronic Applications/ Computer/ AC/ Xerox machines etc. As such the following infrastructure development work/ machinery/ equipments are badly essential for building capacity of the office as well as for timely and efficient disposal of various office works as well as monitoring of diversion proposals. Hence, the User Agency shall be required to deposit the cost of Compensatory Afforestation along with the infrastructural development/ equipments from the Project Cost as detailed below:

Sl. No.	Description	Amount in Rs.
1	1 No. Genset to the Division Office for smooth running of Official work as frequent disturbance of power supply and voltage fluctuation occurs. UA to deposit the estimated cost with CESU for installation and commissioning	8,00,000
2	One no. new all terrain four wheeler for official purposes, field visit & inspection, protection of forest and Wildlife by DFO.	16,00,000
3	Lightening arrest to the Division office	6,00,000
	TOTAL	**Rs.30,00,000/-**

(Rupees Thirty lakh only)

Divisional Forest Officer,
Hasanur Forest Division.

Annexure D

GPS LOCATION OF THE ANR PLANTATION AREA

SINo	N	E
1	11.720886	77.306236
2	11.721175	77.306529
3	11.721617	77.30659
4	11.721756	77.306904
5	11.722274	77.307073
6	11.722816	77.307866
7	11.722894	77.308496
8	11.723222	77.309585
9	11.722649	77.309903
10	11.721768	77.310171
11	11.720884	77.310425
12	11.719947	77.310789
13	11.719668	77.310917
14	11.719489	77.310834
15	11.719306	77.310471
16	11.719282	77.310172
17	11.719181	77.309713
18	11.719373	77.309387
19	11.719789	77.309232
20	11.720186	77.308664
21	11.72039	77.307068
22	11.720671	77.306437

Annexure -E

LOCATION SHOWN MAP