

SCHEME FOR
COMPENSATORY AFFORESTATION
OVER DEGRADED FOREST LAND (819.151 Ha) OF
MALKANGIRI DISTRICT,
MALKANGIRI FOREST DIVISION, ODISHA
AGAINST DIVERSION OF FOREST LAND (i.e. 405.343 Ha)
FOR

Construction of Jeypore-Malkangiri New BG Railway line of
East Coast Railway coming under Malkangiri District

Prepared by

Divisional Forest Officer
Malkangiri Forest Division

SUITABILITY CERTIFICATE

Certified that, **819.151 Ha. of Degraded Forest Land (DFL)** is available in the following forest land of Malkangiri District, Malkangiri Forest Division is suitable for the purpose of Compensatory Afforestation in lieu of diversion of forest land (405.343 Ha.) for construction of Jeypore-Malkangiri New BG Railway line of East Coast Railway coming under Malkangiri District.

Sl. No.	Name of Range	Location	Area in Ha.	Remarks
1	Kalimela	Andaguda (Silakota RL)	45.638	ANR (500 Seedlings)
2		Jakalguda ((Yengulkonda RF)	26.051	ANR (500 Seedlings)
3		Marigata (Gomphakonda RF)	9.198	AR (1000 Seedlings)
4		Nanurguda (Silakota RL)	20.407	ANR (500 Seedlings)
5		Wallampally (Udayagiri RF)	11.013	ANR (500 Seedlings)
6	Balimela	Chitapari RF	22.410	ANR (500 Seedlings)
7		Khalpadar (Matumkonda PRF)	22.638	ANR (500 Seedlings)
8		Bald Hill K.Gumma 1	219.107	ANR (500 Seedlings)
9		Bald Hill K. Gumma 2	169.512	ANR (500 Seedlings)
10	Malkangiri	Gandhinagar (Girididangar PRF)	44.37	AR (1000 Seedlings)
11		Pahadguda (Siadimal RL)	81.792	ANR (500 Seedlings)
12	Mathili	Bakuli PRF	25.034	ANR (500 Seedlings)
13		Kiyang (Kolab Teak)	6.008	ANR (500 Seedlings)
14		Matiguda (Sarangpalli RF)	20.901	ANR (500 Seedlings)
15		Amlajodi (Burudiguda RL)	8.166	ANR (500 Seedlings)
16	Motu	Malavaram RF	86.906	ANR (200 Seedlings)
Total			819.151	

The above identified degraded forest areas for Compensatory Afforestation purpose are suitable for plantation and no plantation has been carried out in the identified Compensatory Afforestation land in any scheme previously.


**Divisional Forest Officer,
Malkangiri Forest Division**

**SCHEME FOR COMPENSATORY AFFORESTATION OVER DEGRADED FOREST LAND
(DFL) OF KONDAKAMBERU URL OF MALKANGIRI DISTRICT, MALKANGIRI FOREST
DIVISION, ODISHA.**

01. INTRODUCTION:

The proposed new line between Jeypore-Malkangiri is part of rail connectivity from Juragam to Bhadrachalam (440kms) passing through major towns/District headquarters of Odisha viz. Nabarangpur, Jeypore (existing station on KK line), Malkangiri, Malkangiri district presently has no rail head and is one of the most backward districts of Odisha

As the new Railway line from Lanjigarh Road to Junagarh already commissioned. Construction of Navarangpur - Jeypore- Malkangiri will start shortly after land acquisition. It will be important & useful for the development of the area, and may later become important route for passenger trains in the state of Odisha.

Moreover, Govt of India has approved final location survey from Junagrh to Navarangour and Malkangiri to Bhadrachalam in AP. Hence, it will be major rail route from Raipur to Hyderabad/Vijaywada also.

The area from Jeypore to Malkangiri is passing through hilly terrain and thick forests. Efforts made to minimize damage to forests and wild life. The important place enroute are Boipariguda, Tanginiguda, Mathil and Pandripani Road. Major town Boipariguda is approximately 25 km from Jeypore via SH-25. There are a number of forest areas including Reserve Forests in the vicinity, and attempt has been made to keep interference with the forest area to the minimum extent.

The Malkangiri District have some industries, but the outgoing traffic and incoming traffic of these industries is neither source from or destined to these districts. The financial viability of the project has been assessed per freight traffic to mover over the project route viz. Agriculture produces, forest produce, industries and minerals.

Having considered the need for development of Malkangiri District, the most backward district of Odisha in Kalahandi-Bolangir-Koraput Division, need for movement of expected traffic on the proposed section and State Govt of Odisha's Interest to develop the area and willingness to share 25% cost of the project, future extension of line up to Bhadrachalam & other places in Telangana /Andhra Pradesh States Railway Board has considered for new line between Jeypore - Malkangiri.

Various routes were identified from Jeypore to Malkangiri, considering various aspects of Project works, Socio economic issue & Interference of Forest land, the most feasible route with maximum safety at minimum cost and involving bare minimum requirement of forest land has been considered. No other alternative route is feasible which avoids forest land interference. All out efforts made to pass the proposed new line near the periphery of the forest area.

In lieu of diversion of 405.343 ha of Revenue Forest and Reserve Forest area; as per Para 3.1 (i) of Guideline to Forest (Conservation) Act, 1980 and Chapter 2 (Part B) of F(C) Act 2019, any proposal submitted by the State Govt. seeking prior approval of Central Govt. under F(C) Act shall have a comprehensive Scheme for compensatory afforestation duly approved by the Chief Conservator of Forest Diversion and Nodal Officer.

As per point no. f of para 2.5 of Guidelines to FC Act 1980, when the project is linear project and also implemented by the Central Govt, the Compensatory Afforestation could be carried out over Degraded Forest Land (DFL) twice in extent of the forest area being diverted. Therefore, 819.151 Ha. of Degraded Forest Land (DFL) has been identified in Malkangiri District of Malkangiri Forest Division for Compensatory Afforestation Purpose. Further, DSS has also been checked to find out the canopy density and accordingly the land has been finalized for Compensatory Afforestation purpose.

The details of the CA land is summarized as per below Table 1:

Table 1: Details of Land identified for CA Purpose

Sr. No.	Particular	Area (ha)
Land identified to meet the criteria of Compensatory Afforestation		
1	Forest Area applied for diversion	405.343
2	Degraded Forest Land (DFL) area identified for CA purpose	819.151

As per above Table no. 1, the DSS has been checked to finalize the plantation scheme as per the guidelines of MoEF & CC i.e. plantation of 1000 / 500 / 200 trees per ha for the diverted land over forest land as identified under the applicable guidelines of Govt. of Odisha. The plantation to be carried out over forest land is provided below:

Table 2: Plantation scheme over Non Forest Govt. Land after DSS Check

Sr. No.	Particular	Area (ha) / Nos.
1	Total Area of Forest land identified for CA	819.151
2	Hence, nos. of tree can be planted over forest land (53.568 ha) considering (AR) 1000 trees per ha	53568
3	nos. of tree can be planted over forest land (678.677 ha) considering (ANR) 500 trees per ha	339339
4	nos. of tree can be planted over forest land (86.906 ha) considering (ANR) 200 trees per ha	17381
	Total Seedlings	410288

DETAILS OF THE SITE SELECTED:

(a) Crop Composition:

The main species noticed in this area are Teak (*Tectona grandis*), Asan (*Terminalia alata*), Dhaura (*Anogeissus latifolia*), Sal (*Shorea robusta*), Amla (*Embelica officinalis*), Simal (*Bombax ceiba*), Tangan (*Albizia lebbek*), Char (*Buchnanian lanzan*) and Salia bamboo (*Dendocalamus strictus*) etc. Crop density varies from <10% to 20%. In such areas, efforts are essential to deflect the biotic interference like grazing, fire, shifting cultivation etc. to maximum possible extent for restricting further degradation of the forest by providing fencing according to site condition.

(b) Temperature:

The average annual temperature varies from 13°C to 47°C, the minimum being in December- January and the maximum in May-June.

(c) Rain fall:

The annual average rainfall is about 1700 mm. The maximum rainfall is received during the rainy season from July to September.

(d) Climate:

The climate of this area is characterized by a hot dry summer and well distributed rainfall by the South-West monsoon. The hot season starts from February and continues till May, which is the hottest month of the year with mean daily maximum temperature of 47°C and the mean daily minimum temperature of 13°C. The rainy season starts from July to September, July being the month with the heaviest shower. Relative humidity is high in the South-West monsoon season.

(e) Soil: Wider ranging Soil – Wider ranging from alluvial soil to higher degraded and dominated by Pennisetum polystachion in Kondakamberu URL.

02. SPECIAL OBJECTIVES OF MANAGEMENT:

- i) To raise the species in Degraded Forest Land to improve the ecosystem and to support the local communities needs.
- ii) To take up appropriate soil moisture conservation measures to improve the soil moisture regime and prevention the land degradation and soil erosion indirectly helps in reducing the saltation of the Balimela Dam.
- iii) To improve the bio-diversity of the site.
- iv) To ensure participation of local communities i.e., Bonda and Didayi tribes (PVTGs) in protection and conservation of forests and wildlife.
- v) Simultaneously to improve the socioeconomic conditions of the local persons.
- vi) To reduce the land degradation & restore to near normalcy especially in Kondakamberu URL.

07. NURSERY:

- A) A good nursery is the pre-requisite for a successful plantation. All care should be taken to raise healthy and sound seedlings of required size (45 cm height) before they are put to plantation site. Planting of one year and six-month-old seedling of indigenous species shall be taken up. Nursery Programme must be planned out as per the "Guide-lines" in the plantation manual 1977 so that a good stock of healthy Seedling can be raised. 10% extra seedling is to be raised to cover the shortfall due to casualty in the nursery stage/Plantation Site.
- B) The temporary nursery should be raised near the plantation site as far as practicable especially Kondakamberu URL for which significant logistics support is required.
- C) The seeds should be collected preferably from plus trees or purchased from State Silviculturist.
- D) Proper treatment of seeds should be done as per the Plantation manual.
- E) During nursery stage periodical shifting and grading is recommended to avoid roots interlacing/ coiling in to the ground soil.

08. PROTECTION:

The important element of successful plantation is Protection. Watchers are to be engaged for the various purpose such as protection, watering, to prevent fire during summer season etc.

09. CONTROL:

The nursery journal, plantation journal and other records shall be maintained separately in accordance with the provision of "The Orissa Forest Plantation Manual 1977" indicating the physical and financial achievements. Necessary entries with regard to plantation activities undertaken shall be entered in the journals and shall be produced before the inspecting officers. In case of any eventuality like cyclone, thunderstorm, hail storm etc. if affect the plantation, this should also be noted. It is also necessary to note the distribution of rain fall which not only helps in monitoring the growth of plants at site but also acts as a guideline for the ensuing year's nursery schedule to be formulated.

Protection, measures shall be taken to save the plantation from fire/ grazing incidence. During February / March the cut materials are to be burnt (control burning) under strict supervision. The inspection

path shall also have to be laid and weed growths are to be scrapped. Fallen leaves etc. are to be swept regularly.

10. SOIL & WATER CONSERVATION MEASURES:

The land is highly degraded because of continuous shifting cultivation by Didayi and Bonda Tribes. Hence site-specific soil moisture conservation measures are needed (The SMC measures has been proposed based on one time cost norms issued vide memo no. 1109 dated 08.11.2021).

1. PLANTATION

The area will be restocked by planting adequate nos. of seedlings (410288 nos.) over the identified land for Compensatory Afforestation purpose. Taking into consideration of soil condition, requirement of local inhabitants and suitability of the site, the following local native species are recommended for plantation.

- a. Asan (*Terminalia tomentosa*)
- b. Gambhar (*Gmelina arborea*)
- c. Jamun (*Syzygium cumini*)
- d. Peepal (*Ficus religiosa*)
- e. Banyan (*Ficus benghalensis*)
- f. Tentuli (*Tamarindus indica*)
- g. Neem (*Azadirachta indica*)
- h. Bija (*Pterocarpus marsupium*)
- i. Amla (*Emblica officinalis*)
- j. Mahula (*Madhuca indica*)
- k. Cashew (*Anacardium occidentale*) (in highly degraded area of Kondakamberu URL & also has been demanded by local PVTGs)

12. PEOPLE'S PARTICIPATION

The local communities are to be involved for the protection of the plantation. The V.S.S. (Van Surakhya Samiti) is to be formed (if not done earlier) & incentives to be given to the V.S.S. for their active participation in protecting the plantation. Livelihood option and Entry Point Activities are to be taken to improve the socio-economic status of the people living around the forest. For effective protection of area watch and ward shall be provided during the project period (from inception to 10th year) and subsequently the plantation will be looked after by the V.S.S. Certain Entry Point Activities (EPAs) will enhance the socio-economic conditions of this local people (PVTGs) & also ensure the protection of the plantation.

13. WATCH AND WARD

Watchers (one watcher for every 10Ha of Plantation) should be engaged from the day of inception of the plantation. Also, extra provision for watch and ward will be considered if applicable towards the successful implementation of scheme and for better protection of plantation.

14. FUNDING AGENCY

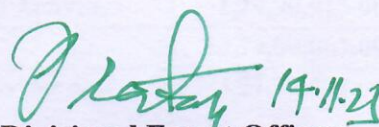
The Deputy Chief Engineer / Con-I, East Coast Railway, Koraput will pay the cost of Compensatory Afforestation amounting to **Rs. 23,99,65,474.00 (Rupees Twenty-three crore ninety-nine lakhs sixty-five thousand four hundred seventy-four) only** on receipt of Demand Notice from D.F.O., Malkangiri Division. However, Deputy Chief Engineer / Con-I, East Coast Railway, Koraput will furnish an undertaking to pay any additional amount in case any direction from the competent authority.

15. EXECUTING AGENCY

Divisional Forest Officer, Malkangiri Forest Division.

16. MONITORING AND EVALUATION

Divisional Forest Officer, Malkangiri Forest Division shall monitor and evaluate the scheme periodically.


Divisional Forest Officer
Malkangiri Forest Division

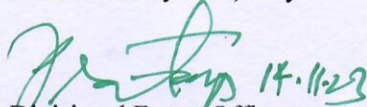
FINANCIAL OUTLAY OF COMPENSATORY AFFORESTATION SCHEME

Financial outlay of Compensatory Afforestation scheme for plantation in an area of 819.151 ha of Degraded Forest Land in Malkangiri Forest Division under Malkangiri District, Odisha.

The financial outlay has been prepared as per the guidelines of State Forest Dept., Govt. of Odisha, office order dt. 08.11.2021. During the finalization of financial outlay, one time cost norm for CA has been considered and the **Compensatory Afforestation cost amounting to Rs. 23,99,65,474.00 (Rupees Twenty-three crore ninety-nine lakhs sixty-five thousand four hundred seventy-four) only** has been finalized including plantation over degraded forest land. The calculation detail of the proposed Compensatory Afforestation cost is provided below:

1	The Cost of Plantation AR over 53.568 ha. of Degraded Forest Land (DFL) in Malkangiri Forest Division @ 1000 plants per ha (i.e. 53568 trees) & its maintenance Rs. 258777/- per ha with 10 years maintenance [as per cost norm for in Annexure 4]	1,38,62,166.00
2	The Cost of Plantation ANR over 678.677 ha. of Degraded Forest Land (DFL) in Malkangiri Forest Division @ 500 plants per ha (i.e. 339339 trees) & its maintenance Rs. 150051/- per ha with 10 years maintenance [as per cost norm for in Annexure 7]	10,18,36,163.00
3	The Cost of Plantation ANR over 86.906 ha. of Degraded Forest Land (DFL) in Malkangiri Forest Division @ 200 plants per ha (i.e. 17381 trees) & its maintenance Rs. 105986/- per ha with 10 years maintenance [as per cost norm for in Annexure 6]	92,10,819.00
	Total Plantation	12,49,09,148.00
4	Add 10% of the total plantation cost towards incentives to VSS / Entry Point Activities	1,24,90,915.00
	Total	13,74,00,063.00
5	Soil & Moisture Conservation Measures (819.151 ha x Rs. 39284.00/Ha.) [as per cost norm for in Annexure 11]	3,21,79,528.00
6	Cost of fencing with Bamboo Twig over 819.151 ha @ Rs.1,10,214.00/Ha. & 250 Rmt/Per Ha. with 5 Years Maintenance. So, Fencing required over 57000 Rmt./250= 228 Ha. x Rs. 1,10,214/-= Rs. 2,51,28,792.00	2,51,28,792.00
7	Cost of Solar System with Bore Well (1 system for 5 Ha. Plantation) to CA plantation @ over 819.151 Ha. @ Rs. 245476.00/ ha So, 164 Nos. of Borewell are required= Rs. 245476/- x 164 Nos. = Rs. 4,02,58,064.00 (as per Watering Provision W-I)	4,02,58,064.00
	Total	23,49,66,446.00
8	An area over 388.619 Ha. is identify for Compensatory Afforestation in Kondakamberu URL. This area is habited by PVTGs like Didayi and Bonda Tribes. Due to repeated shifting cultivation by PVTGs the land is highly degraded and domination by Pennisetum polystachion. This area is also water shed for Sileru river. Hence the plantation treatment of this area is reducing the soil erosion as well as reduces the siltation of Balimela reservoir. Hence planting in this area is very essential. To ensure successful plantation in highly degraded land provision of fertile soil is required. A. Farm Soil / large quality of Sodiums Rs. 3000/- per Ha. (Approx. 33%) (Rs. 3000.00 x 388.619 ha. = Rs. 11,65,857.00) (As per bald hill cost norm) B. As this area is very inaccessible for transportation of seedling to the plantation site is very difficult, hence a Temporary Nursery with watering alongwith Watcher Shed at plantation area is very essential for this (@Rs. 3000000/- per Temporary Nursery) (Total= Rs. 1165857.00 + Rs. 3000000.00= Rs. 4165857.00	41,65,857.00
9	Add Escalation Cost (20%)	8,33,171.00
10	Total amount for Site Specific requirement for Kondakamberu URL	49,99,028.00
	G. Total	23,99,65,474.00

(Rupees Twenty-three crore ninety-nine lakhs sixty-five thousand four hundred seventy-four) only


 Divisional Forest Officer,
 Malkangiri Forest Division.