

SCHEME FOR  
COMPENSATORY AFFORESTATION  
OVER FOREST LAND (63 Ha) OF KORAPUT DISTRICT,  
JEYPORE FOREST DIVISION, ODISHA  
AGAINST DIVERSION OF FOREST LAND (i.e. 47.362 Ha)  
FOR

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

Prepared by

Divisional Forest Officer  
Jeypore Forest Division

## SUITABILITY CERTIFICATE

Certified that, **100.138 Ha. of Forest Land** is available in Koraput District, Jeypore Forest Division is out of which the following details of land is suitable for the purpose of Compensatory Afforestation in lieu of diversion of forest land (47.362 Ha.) for construction of Jeypore-Malkangiri New BG Railway line of East Coast Railway coming under Koraput District.

Sl. No.	Name of Range	Location	Area in Ha.	Remarks
1	Boipariguda	BANABEDA PRF Part 1	50.031	
2		BANABEDA PRF Part 2	50.107	
Total			100.138	

The following land details are available

Sl. No	Name of the Range	Name of the Forest Block (RF/PRF/PF/DPF/Revenue Forest)	Area indentified for CA/AC A/PCA/ (in Ha)	Classification of indentified land (in Ha.)							Area suitable for plantation in Ha
				Very Dense Forest	Moderately Dense Forest	Open Forest	Non Forest	Scrub	Water	Total	
1	2	3	4	5	6	7	8	9	10	11	
1	Boipariguda	Banabeda PRF	50.031	2	25	15	8.031	0	0	50.031	20
			50.107	0	7.107	24	13	6	0	50.107	43
		<b>Total</b>	<b>100.138</b>	<b>2</b>	<b>32.107</b>	<b>39</b>	<b>21.031</b>	<b>6</b>	<b>0</b>	<b>100.138</b>	<b>63</b>

Out of 100.138 Ha identified degraded forest land, 63.00 Ha is suitable for Compensatory Afforestation purpose and no plantation has been carried out in the identified Compensatory Afforestation land in any scheme previously.

  
**Divisional Forest Officer**  
 Jeypore Forest Division

## SCHEME FOR COMPENSATORY AFFORESTATION OVER DEGRADED FORESTLAND (DFL) OF KORAPUT DISTRICT, JEYPORE 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 Railwayline from Lanjigarh Road to Junagarh already commissioned. Construction of Nabarangpur-Jeypore-Malkangiri will start shortly after landacquisition. 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 Nabarangpur 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 madeto 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.

State Govt of Odisha agreed to bear 25% of the total project cost and MOU made between Ministry of Railways and Govt. of Odisha to this extent. Considering the cost being shared by Govt. of Odisha, the Rate of Return on the project is accessed as 10.53%

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 47.362 ha of Revenue Forest; 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 compensatoryafforestation 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, 63Ha.of Degraded Forest Land (DFL)has been identified in Koraput District of Jeypore 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)
<b>Land identified to meet the criteria of Compensatory Afforestation</b>		
1	Forest Area applied for diversion	47.362
2	CA land identified	100.138

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 1600nos trees per ha of Bald Hill plantation over 20 ha and ANR plantation per ha of 500 nos trees over 43 Ha of degraded 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 Forest Land after DSS Check**

Sr. No.	Particular	Area (ha) / Nos.
1	<b>Total Area of Forest land identified for CA</b>	<b>100.138</b>
2	Hence, 58,850 nos. of tree can be planted over forest land (63 ha) considering 1600nos trees per ha of Bald Hill plantation over 20 ha and ANR plantation per ha of 500 trees over 43.00 ha including (10% casualty Replacement)	58,850

### **DETAILS OF THE SITE SELECTED:**

#### ***(a) Crop Composition:***

The main species noticed in this area are Amba(*Schleichera oleosa*), Jackfruit (*Artocarpus heterophyllus*), Tentuli(*Tamarindus indica*), Mahula(*Madhuca indica*), Dhaura (*Anogeissus latifolia*), Moi (*Lannea coromandelica*), Kendu (*Diospyros melanoxylon*), Karada (*Cleistanthus collinus*), Tangan (*Albizia lebbek*), Char (*Buchnanania 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 1700mm. 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 June, which is the hottest month of the year with mean daily maximum temperature of 36°C and the mean daily minimum temperature of 16°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 Laterite soil to higher degraded and dominated by *Lantana camara* and *Eupatorium* species.

## **02. SPECIAL OBJECTIVES OF MANAGEMENT:**

- i) To raise the species in Degraded Forest Land to improve the ecosystem and to support the local community's needs.
- ii) To improve the bio-diversity of the site.
- iii) To ensure participation of local communities i.e., Gadaba tribes (PVTGs) in protection and conservation of forests and wildlife.
- iv) Simultaneously to improve the socioeconomic conditions of the local people.
- v) To reduce the land degradation & restore to near normalcy especially.

## **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 (152 cm height) before they are put to plantation site. Planting of Eighteen-month-old seedling of indigenous species shall be taken up. Nursery Program 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 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 purposes 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 Gadaba 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 of PCCF, Odisha.

### **1. PLANTATION**

The area will be restocked by planting adequate nos. of seedlings (58850 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. Sisoo(*Dalbergia Sissoo*)
- b. Bija(*Pterocarpus marsupium*)
- c. Arjun(*Terminalia arjuna*)
- d. Karanja(*Millettia pinnata*)
- e. Neem(*Azadirachta indica*)
- f. Simili(*Bombax ceiba*)
- g. Kasi(*Bridellia retusa*)
- h. Teak (*Tectona grandis*)
- i. Tentuli(*Tamarindus indica*)
- j. Gambhar(*Gmelina arborea*)
- k. Mahula(*Madhuca indica*)
- l. Amala(*Emblica officinalis*)
- m. Asan (*Terminalia alata*)
- n. Dhaura (*Anogeissus latifolia*)
- o. Kendu (*Diospyros melanoxylon*)
- p. Jamun(*Syzygium cumini*)
- q. Tangan (*Albizzia lebbek*)
- r. Salia bamboo (*Dendocalamus strictus*)(in highly degraded area of the CA Land & also has been demanded by local population)

## **12. PEOPLE'S PARTICIPATION**

The local communities are to be involved for the protection of the plantation. The V.S.S. (Van Suraksha 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 10<sup>th</sup> year) and subsequently the plantation will be looked after by the V.S.S.; Certain Entry Point Activities (EPAs) will enhance the socioeconomic 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. 3,68,98,410/- (Rupees Three Crore Sixty Eight Lakh Ninty Eight Thousand Four Hundred Ten)** Only on receipt of Demand Notice from D.F.O., Jeypore 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, Jeypore Forest Division.

**16. MONITORING AND EVALUATION**

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

  
Divisional Forest Officer  
Jeypore Forest Division



## FINANCIAL OUTLAY OF COMPENSATORY AFFORESTATION SCHEME

Financial outlay of Compensatory Afforestation scheme for plantation in an area of 63ha of Degraded Forest Land in Jeypore Forest Division under Koraput District, Odisha.

The financial outlay has been prepared as per the guidelines vide Order No 1109 dated 08.11.2021 of Principal.C.C.F & HoFF, Odisha, Bhubaneswar. During the finalization of financial outlay, onetime cost norm for CA has been considered and the **Compensatory Afforestation cost amounting to Rs. 3,68,98,410/-(Rupees Three Crore Sixty Eight Lakh Ninty Eight Thousand Four Hundred Ten)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 Bald Hill over 20 ha. of Degraded Forest Land (DFL) in Jeypore Forest Division, 1600 plants per ha @ Rs.4,31,191/-, with 10% Casualty (i.e.35200 trees) & with 10 years maintenance [as per cost norm Annexure-13 of Pltn Cost Norm 2019 vide O.O No 1335/12F(Affn)25/2018 dated 18.12.2018] (Without bamboo throne fencing)	8623820
2	Fencing Model F-II (Fencing through Angle Iron & Chain Link wire mesh) 250 RMT/ Ha @ 485432/ Ha, Fencing for 20 Ha Bald Hill.	9708640
2	The Cost of Plantation ANR over 43.00 ha of Degraded Forest Land (DFL) in Jeypore Forest Division 500 plants per ha @ Rs.1,57,554 with 10% Casualty (i.e.23650 trees) & with 10 years maintenance [Matrix for ANR Plantation for Compensatory Afforestation (ANR) @ 500 plants per Ha with 10 Years Maintenance.]	6774822
	<b>Total Plantation</b>	<b>25107282</b>
3	Add 10% of the total plantation cost towards incentives to VSS / Entry Point Activities	2510728
	<b>Total</b>	<b>27618010</b>
4	Soil & Moisture Conservation Measures (Total 100.138-2 Ha VDF) (98.138 ha x Rs. 41,248/Ha.)[as per cost norm for in Annexure II]	4047996
5	Cost of Solar System with Bore Well (1 system for 5 Ha. Plantation) to CA plantation over 20 Ha. @ Rs. 234221/ system. So, 4 Nos. of Bore well are required= Rs. 234221/- x 4 Nos. = Rs. 9,36,884/- (as per Watering Provision W-I)	936884
	<b>Total</b>	<b>32602890</b>
6	An area over 63Ha. is identify for Compensatory Afforestation in Dasmantpur section of Boipaiguda Range. This area is habited by PVTGs like Gadaba Tribes. Due to repeated shifting cultivation by PVTGs the land is highly degraded and domination by laterite camone and eupatorium. Hence the plantation treatment of this area is reducing the soil erosion. 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. 9200/- per Ha. (Rs. 9200.00 x 63 ha. = Rs. .5,79,600/-) B. As this area is very inaccessible for transportation of seedling to the plantation site is very difficult, hence a Temporary Nursery with watering along with Water Shed at plantation area is very essential for this (@Rs. 3000000/- per Temporary Nursery) (Total= Rs. 5,79,600/- + Rs. 3000000/-= Rs. 35,79,600/-	3579600
7	Add Escalation Cost (20%)	715920
	<b>G. Total</b>	<b>36898410</b>

(Rupees Three Crore Sixty Eight Lakh Ninty Eight Thousand Four Hundred Ten)Only

**Divisional Forest Officer**  
Jeypore Forest Division.  
Jeypore Forest Division.

**COST NORM FOR BALD HILL PLANTATION @ 1600 PLANTS PER HECTARE (Based on the "Per Ha Cost Norm for Bald Hill Plantation (Annexure-13)", vide Office Order no 1335/12F(Affn) 25/2018, dated 18.12.2018 of State Forest Headquarter, Odisha, Office of the Principal Chief Conservator of Forests, Odisha, Bhubaneswar and Plantation for Compensatory Afforestation 1600 Nos of Plant/ Ha with 10 Years Maintenance)**

(Labour cost @ ₹352/- per manday)

Sl.N o.	Item of Work	Preferable Period of execution	Manday	Labour Cost (₹)	Material Cost (₹)	Total Cost in (₹)
<b>PREPARATORY OPERATION (0TH YEAR)</b>						
1	Survey and demarcation	June	2	704	0	704
2	(ii) To be strengthened by planting of bamboo and other seedlings in two rows. Bamboo to be planted at 2 meters spacing in staggered manner on the two rows, and the rest of the species to be planted at 1/2 meter spacing along the two rows, the rows being 2m apart. Thus 500 plant (125 bamboo and 375 others) to be planted in two rows to cover 126 m of periphery/Ha by the vegetative fence (Bamboo seedlings @ Rs.12.43 per seedling X 125 = Rs.1553.75, Agave seedling @ Rs.4.90 per seedling X 375 = Rs.1837.5)	June-Sept	11	3872	3391.25	7263
3	Pitting (1600 per ha) each pit-45 cm <sup>3</sup>	Nov-Dec	128	45056	0	45056
4	<b>Soil and water conservation measures</b> (a) Staggered trench along the contour @ 300 per ha (2.5mx0.5 m x0.5m); digging of percolation pits @ 600 per ha in lieu of staggered trenches, gully plugging and Drainage line treatment, half moon trench on the uphill side of each planting pit (100 MD for staggered trench / percolation pits and 30 MD for gully plugging, drainage line treatment and half moon trench).  (b) Site clearance- 8 MD, alignment and staking of contour lines on ground, planting pits, contour trenches / percolation pits and check dam sites, etc.- 2 MD	Sept-Nov	130	45760	0	45760
		July-Aug	10	3520	0	3520
	<b>TOTAL 0th year</b>		<b>281.00</b>	<b>98912</b>	<b>3391</b>	<b>102303</b>
<b>PLANTING OPERATION (1ST YEAR)</b>						
2	Freshening of pits -64 MD, filling with fertile soil and farm yard manure (FYM) -24 MD, application of insecticide and planting of 60 cm tall saplings including carriage of plants- 21 MD	June-July	109	38368	0	38368
3	Cost of Fertile Soil 0.25 cft @ Rs.8 per cft/FYM 0.25 cft @ Rs.15 per cft per pit		0	0	9200	9200
4	Sowing of seeds on dug out earth of trench	June	6	2112	200	2312
5	Carriage -6 MD, Planting including Casualty replacement-6 MD, fertilizer application- 5 MD, 1st weeding-7 MD, 2nd weeding -5 MD, soil working- 7 MD	July-Aug	36	12672	0	12672
6	cost of Fertilizer and insecticide (Granular Insecticide @ 5 gms/plant @ Rs.80/- per kg=Rs.640.00, NPK 100 gms/plant in two doses @ Rs.24 per kg= 3840		0	0	4480	4480
7	Maintenance of soil and Moisture Conservation measures (20% of cost)	Oct-Dec	26	9152	0	9152
8	Closure to grazing fire and other biotic interference by engaging watch & ward	April-Mar	30	10560	0	10560
9	Fire tracing and control, display board construction, painting / writing, other miscellaneous cost	Jan-Feb	10	3520	360	3880
	<b>TOTAL (1st Year)</b>		<b>217</b>	<b>76384</b>	<b>14240</b>	<b>90624</b>

**Divisional Forest Officer  
Jeypore Forest Division**



S.N o.	Item of Work	Preferable Period of execution	Manday	Labour Cost (₹)	Material Cost (₹)	Total Cost in (₹)
<b>MAINTENANCE OPERATION (2ND YEAR)</b>						
1	Casualty replacement- 6 MD including seedling cost @Rs.12.43 per seedling and its transportation	June-July	10	3520	1988.00	5508.00
2	Soil working- 7 MD, 1st weeding-6 MD, 2nd weeding -6 MD and fertilizer application -4 MD	Aug-Oct	23	8096	0	8096
3	Cost of fertilizer @ 50 gms NPK per plant @ Rs.24/- per kg for 1600 plants =Rs.1920.00 Insecticide @ 5 gm per plant for 160 nos. of plants @ Rs. 80 per KG = Rs. 64.00		0	0	1984	1984
4	Maintenance of Soil and Moisture Conservation measures (20% of cost)	Aug-Oct	26	9152	0	9152
5	Fire tracing and control and other miscellaneous cost	Feb-Mar	10	3520	0	3520
6	Closure to grazing, fire and other biotic interference by engaging watch and ward	April-Mar	30	10560	0	10560
	<b>TOTAL 2nd Year</b>		<b>99</b>	<b>34848</b>	<b>3972</b>	<b>38820</b>
<b>MAINTENANCE OPERATION (3RD YEAR)</b>						
1	SMC measures (Renovation)-26 MD and maintenance of plantation-14 MD as per requirement	April- Mar	40	14080	0	14080
2	Closure to grazing, fire and other biotic interference by engaging watch and ward	April- Mar	18	6336	0	6336
	<b>TOTAL 3rd Year</b>		<b>58</b>	<b>20416</b>	<b>0</b>	<b>20416</b>
<b>MAINTENANCE OPERATION (4TH YEAR)</b>						
1	SMC measures - 21 MD and maintenance of plantation-14 MD	April- Mar	35	12320	500	12820
2	Closure to grazing, fire and other biotic interference by engaging watch and ward	April- Mar	18	6336	0	6336
	<b>TOTAL 4th Year</b>		<b>53</b>	<b>18656</b>	<b>500</b>	<b>19156</b>
<b>MAINTENANCE OPERATION (5TH YEAR)</b>						
1	Closure to grazing, fire and other biotic interference by engaging watch and ward	April- Mar	18	6336	0	6336
	<b>TOTAL 5th Year</b>		<b>18</b>	<b>6336</b>	<b>0</b>	<b>6336</b>
<b>MAINTENANCE OPERATION (6TH YEAR)</b>						
1	Closure to grazing, fire and other biotic interference by engaging watch and ward	April- Mar	18	6336	0	6336
	<b>TOTAL 6th Year</b>		<b>18</b>	<b>6336</b>	<b>0</b>	<b>6336</b>
<b>MAINTENANCE OPERATION (7TH YEAR)</b>						
1	Closure to grazing, fire and other biotic interference by engaging watch and ward	April- Mar	18	6336	0	6336
	<b>TOTAL 7th Year</b>		<b>18</b>	<b>6336</b>	<b>0</b>	<b>6336</b>
<b>MAINTENANCE OPERATION (8TH YEAR)</b>						
1	Closure to grazing, fire and other biotic interference by engaging watch and ward	April- Mar	18	6336	0	6336
	<b>TOTAL 8th Year</b>		<b>18</b>	<b>6336</b>	<b>0</b>	<b>6336</b>
<b>MAINTENANCE OPERATION (9TH YEAR)</b>						
1	Closure to grazing, fire and other biotic interference by engaging watch and ward	April- Mar	18	6336	0	6336
	<b>TOTAL 9th Year</b>		<b>18</b>	<b>6336</b>	<b>0</b>	<b>6336</b>
<b>MAINTENANCE OPERATION (10TH YEAR)</b>						
1	Closure to grazing, fire and other biotic interference by engaging watch and ward	April- Mar	18	6336	0	6336
	<b>TOTAL 10th Year</b>		<b>18</b>	<b>6336</b>	<b>0</b>	<b>6336</b>

  
 Divisional Forest Officer  
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# ABSTRACT

Sl. No.	Year	No. Person Day	Labour cost @ ₹ 352/-per day	Material cost (₹)	Total cost in (₹)	MELD and other contingency 5% in (₹) (4+5+6)	Seedling Cost @ (₹) 55.41	Total Cost in (₹)
1	0th Year	281	98912	3391	102303	5115		107418
2	1st Year	217	76384	14240	90624	4531	97522	192677
3	2nd Year	99	34848	3972	38820	1941	8866	49627
4	3rd Year	58	20416	0	20416	1021		21437.0
5	4th Year	53	18656	500	19156	958		20114.0
6	5th Year	18	6336	0	6336	317		6653.0
7	6th Year	18	6336	0	6336	317		6653.0
8	7th Year	18	6336	0	6336	317		6653.0
9	8th Year	18	6336	0	6336	317		6653.0
10	9th Year	18	6336	0	6336	317		6653.0
11	10 th Year	18	6336	0	6336	317		6653.0
	<b>Total</b>	<b>816</b>	<b>287232</b>	<b>22103</b>	<b>309335</b>	<b>15468</b>	<b>106388</b>	<b>431191</b>

In case of Bald Hill Plantation, the hills having more than 30% slope will qualify for Bald Hill Plantation norm. In remaining areas of the hill, cost norm for normal plantation @ 1600 plants per hectare will be applicable. In case of highly refractory sites having rocky out crop having less than 30% slope, the concerned CFs/RCCFs I/C circle will have to certify specifically about the Bald Hill characteristics of the site. In case of high hills, the upper portion may quality for Bald Hill Cost Norm and the foot hill with normal soil depth may be taken up at per with norms applicable for normal plantation. But the provision of fencing Bald Hill Plantation Norms will be available for the entire plantation in such case also.

## Note:-

- 1 Priority must be given to the indigenous local species available nearby to the site of plantation
- 2 10% indigenous fruit bearing trees must be preferred to Plantation
- 3 Site specific Soil Conservation work like LBCD, Gully Plugging, Staggered Trench, Countour Trench, Graded Bund, etc may be taken up
- Chain link fencing can be adopted in the CA plantatin taken up outside the forest area and Bamboo twings fencing may be preferred to CA plantation taken up in degraded forest area.
- 5 Watering facilities for procurement of water & watering may be adopted as per the availability of water.

- 6 The Cost Norm of various items can be changed with the approval of the concerned RCCF's keeping the overall cost norm fixed for each Financial Year.

  
Divisional Forest Officer  
Jeypore Division

**COST NORM FOR AIDED NATURAL REGENERATION (ANR) @ 500 PLANTS PER HECTARE) WITH 10 YEAR MAINTENANCE**

Wage rate ₹ 311/Day.

(The Cost Norm is based on the Cost Norm for Compensatory Afforestation, Odisha @ 200 Plants / Ha. with 10 Years Maintenance Wage rate Rs.352 per mandays vide office Order No 1109/9F-(Misc)-387/2021 dated 08.11.2021 of State Forest Head quarter, O/O the Principal Chief Conservator of Forests, Odisha, Bhubaneswar.)

Sl. No.	Item of Work	Preferable period of Execution	Labour in Mandays	Labour Cost (₹)	Material Cost (₹)	Total Cost in (₹)
<b>0TH YEAR</b>						
1	Survey, Demarcation and Pillar Posting, GPS Reading with mapping	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 Operation including clearance of weed, climber cutting, high stump cutting, singling of shoots etc & 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)	Feb/Mar	20	6220	0	6220
	<b>SUB TOTAL</b>		<b>41</b>	<b>12751</b>	<b>100</b>	<b>12851</b>
7	Monitoring , Evaluation, Learning, Documentation any other contingency 5% of the total cost					549
	<b>GRAND TOTAL</b>		<b>41</b>	<b>12751</b>	<b>100</b>	<b>13400</b>
<b>1ST YEAR OPERATION</b>						
1	Refilling of pits by altering the dugout soil of the pits, application of Organic compounds / CDM/ FYM & mixing the same properly	June/July	4	1244	2500	3744
2	Transportation of 18 months old polypot seedlings in hired truck / tractor from the permanent / Mega Nursery to planting site including loading & unloading (Average lead of 10 Rkm) & Stacking these seedling @ Rs6/- per seedling (220 Nos)	Jul/Aug	0	0	3300	3300
3	Watering polypot seedlings at stacking site of plantation	Jul/Aug	1	311.0	0	311.0
4	Conveyance of polypot seedlings on head load from the stacking site to individual dug out pits within the planting site, applying insecticide, fertilizer & planting after scooping the soil with other applied materials & pressing the soil properly around the planted seedling	Jul/Aug	11.0	3421	0	3421
5	Cost of fertiliser & insecticide Cost of insecticide and fertilizer (a) NPK/ Bio fertilizer @ 50 gms/plant as basal dose = 80kg @ Rs.30/- per kg = Rs.750 (b) Urea/ Vermi compost/ Mo Khata / any other in two subsequent doses @ Rs.375/- (c) Insecticide/ Bio pesticide @ 5 gms/plant @ Rs.150/- per kg = Rs.375/-	Jul/Aug	0	0	1500	1500
6	Casualty Replacement @ 10% (20 Nos)	Jul/Aug	1.5	467	0	467
7	1st Weeding and Manuring	Aug/Sep	5	1555	0	1555
8	2nd Weeding, soil working (1 mt diameter around the plants) & Manuring	Oct/ Nov	8	2488	0	2488
9	Fireline Tracing and Inspection Path	Feb/Mar	3	933	0	933
10	Watch & Ward including watering as per requirement	Aug-Mar	8	2488	0	2488
	<b>SUB TOTAL</b>		<b>41.5</b>	<b>12907</b>	<b>7300</b>	<b>20207</b>
11	Monitoring & Supervision charge 5% of the total cost					994
	<b>GRAND TOTAL</b>		<b>41.5</b>	<b>12906.5</b>	<b>7300</b>	<b>21200</b>
<b>2ND YEAR OPERATION</b>						
1	Transportation of 20 seedlings from Nursery to plantation site including loading unloading & conveyance by Tractor @ Rs6/- per seedling	Jul	0	0	300	300.00
2	Casualty Replacement	Jul	1.5	467	0.00	466.50
3	Cost of Fertilizer & Insecticide Cost of Insecticide / Bio pesticide @ 5 Gms / Plant=0.25 Kg @ Rs.150/- KG=37.50/- Urea/NPK/Bio Fertilizer/ Vermi Compost/ Mo Khata/ any other fertilizer @ Rs1400/-	Jul	0	0	1437.50	1437.50
4	Weeding (complete weeding) Manuring and Soil working (1 Mt Diameter around the plant)	Sep/Oct	8	2488	0	2488



Sl. No.	Item of Work	Preferable period of Execution	Labour in Mandays	Labour Cost (₹)	Material Cost (₹)	Total Cost in (₹)
5	Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of Inspection Path	Feb/Mar	3	933	0	933
6	Watch & Ward including watering as per requirement	Apr-Mar	12	3732	0	3732
	<b>SUB TOTAL</b>		<b>24.5</b>	<b>7619.5</b>	<b>1737.5</b>	<b>9357</b>
7	Monitoring & Supervision charge 5% of the total cost					443
	<b>GRAND TOTAL</b>		<b>24.5</b>	<b>7619.5</b>	<b>1738</b>	<b>9800</b>
<b>3RD YEAR OPERATION</b>						
1	Cost of Fertilizer Cost of Urea/NPK/Bio Fertilizer/ Vermi Compost/ Mo Khata/ any other fertilizer =1400/-	Sep/Oct	0	0	1400	1400
2	Weeding (complete weeding) Manuring and Soil working (1 Mt Diameter around the plant)	Aug/Sep	8	2488	0	2488
3	Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of Inspection Path	Feb/Mar	3	933	0	933
4	Watch & Ward including watering as per requirement	Apr-Mar	12	3732	0	3732
	<b>SUB TOTAL</b>		<b>23</b>	<b>7153</b>	<b>1400</b>	<b>8553</b>
5	Monitoring & Supervision charge 5% of the total cost					347
	<b>GRAND TOTAL</b>		<b>23</b>	<b>7153</b>	<b>1400</b>	<b>8900</b>
<b>4TH YEAR OPERATION</b>						
1	Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of Inspection Path	Feb/Mar	3	933	0	933
2	Watch & Ward including watering as per requirement	Apr-Mar	12	3732	0	3732
	<b>SUB TOTAL</b>		<b>15</b>	<b>4665</b>	<b>0</b>	<b>4665</b>
3	Monitoring & Supervision charge 5% of the total cost					135
	<b>GRAND TOTAL</b>		<b>15</b>	<b>4665</b>	<b>0</b>	<b>4800</b>
<b>5TH YEAR OPERATION</b>						
1	Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of Inspection Path	Feb/Mar	3	933	0	933
2	Watch & Ward including watering as per requirement	Apr-Mar	12	3732	0	3732
	<b>SUB TOTAL</b>		<b>15</b>	<b>4665</b>	<b>0</b>	<b>4665</b>
3	Monitoring & Supervision charge 5% of the total cost					135
	<b>GRAND TOTAL</b>		<b>15</b>	<b>4665</b>	<b>0</b>	<b>4800</b>
<b>6TH YEAR OPERATION</b>						
1	Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of Inspection Path	Feb/Mar	3	933	0	933
2	Watch & Ward including watering as per requirement	Apr-Mar	12	3732	0	3732
	<b>SUB TOTAL</b>		<b>15</b>	<b>4665</b>	<b>0</b>	<b>4665</b>
3	Monitoring & Supervision charge 5% of the total cost					135
	<b>GRAND TOTAL</b>		<b>15</b>	<b>4665</b>	<b>0</b>	<b>4800</b>
<b>7TH YEAR OPERATION</b>						
1	Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of Inspection Path	Feb/Mar	3	933	0	933
2	Watch & Ward including watering as per requirement	Apr-Mar	12	3732	0	3732
	<b>SUB TOTAL</b>		<b>15</b>	<b>4665</b>	<b>0</b>	<b>4665</b>
3	Monitoring & Supervision charge 5% of the total cost					135
	<b>GRAND TOTAL</b>		<b>15</b>	<b>4665</b>	<b>0</b>	<b>4800</b>
<b>8TH YEAR OPERATION</b>						
1	Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of Inspection Path	Feb/Mar	3	933	0	933
2	Watch & Ward including watering as per requirement	Apr-Mar	12	3732	0	3732
	<b>SUB TOTAL</b>		<b>15</b>	<b>4665</b>	<b>0</b>	<b>4665</b>
3	Monitoring & Supervision charge 5% of the total cost					135
	<b>GRAND TOTAL</b>		<b>15</b>	<b>4665</b>	<b>0</b>	<b>4800</b>
<b>9TH YEAR OPERATION</b>						
1	Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of Inspection Path	Feb/Mar	3	933	0	933
2	Watch & Ward including watering as per requirement	Apr-Mar	12	3732	0	3732
	<b>SUB TOTAL</b>		<b>15</b>	<b>4665</b>	<b>0</b>	<b>4665</b>
3	Monitoring & Supervision charge 5% of the total cost					135
	<b>GRAND TOTAL</b>		<b>15</b>	<b>4665</b>	<b>0</b>	<b>4800</b>



Sl. No.	Item of Work	Preferable period of Execution	Labour in Mandays	Labour Cost (₹)	Material Cost (₹)	Total Cost in (₹)
1	Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of Inspection Path	Feb/Mar	3	933	0	933
2	Watch & Ward including watering as per requirement	Apr-Mar	12	3732	0	3732
	<b>SUB TOTAL</b>		<b>15</b>	<b>4665</b>	<b>0</b>	<b>4665</b>
3	Monitoring & Supervision charge 5% of the total cost					135
	<b>GRAND TOTAL</b>		<b>15</b>	<b>4665</b>	<b>0</b>	<b>4800</b>
<b>10TH YEAR OPERATION</b>						
1	Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of Inspection Path	Feb/Mar	3	933	0	933
2	Watch & Ward including watering as per requirement	Apr-Mar	12	3732	0	3732
	<b>SUB TOTAL</b>		<b>15</b>	<b>4665</b>	<b>0</b>	<b>4665</b>
3	Monitoring & Supervision charge 5% of the total cost					135
	<b>GRAND TOTAL</b>		<b>15</b>	<b>4665</b>	<b>0</b>	<b>4800</b>

  
**Divisional Forest Officer**  
**Jeypore Forest Division**

A B S T R A C T							
SL. No.	Item of Work	No. Person Day	Labour cost @ ₹ 311/- per day	Material cost (₹)	Monitoring & Supervision charge 5% of the total cost	Total cost in (₹)	Seedling Cost @ 50.31
1	10th Year operation	41	12751	100	549	13400	13400
2	1st Year operation	41.5	12906.5	7300	993.5	21200	27670.5
3	2nd Year operation	24.5	7619.5	1737.5	443	9800	2515.5
4	3rd Year operation	23	7153	1400	347	8900	8900
5	4th Year operation	15	4665	0	135	4800	4800
6	5th Year operation	15	4665	0	135	4800	4800
7	6th Year operation	15	4665	0	135	4800	4800
8	7th Year operation	15	4665	0	135	4800	4800
9	8th Year operation	15	4665	0	135	4800	4800
10	9th Year operation	15	4665	0	135	4800	4800
11	10th Year operation	15	4665	0	135	4800	4800
TOTAL		235	73085	10537.5	3277.5	86900	30186
							117086

  
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 Jeypore Forest Division

Matrix for ANR Plantation for Compensatory Afforestation (ANR) @ 500 plants per Ha with 10m Years Maintenance.

Sl. NO.	Commencement	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI	Total Cost (10 Years)
1	2021-22	13400	48871	12316	8900	4800	4800	4800	4800	4800	4800	4800											136098
2	2022-23	13400	51315	13577	10303	5834	6126	6432	6754	7092	7447	7818	8210										142904
3	2023-24		14070	53881	14256	10818	6126	6432	6754	7092	7447	7819	8209	8621									150051
4	2024-25				15503	59404	15717	11927	6754	7092	7447	7819	8210	8619	9052								157554
5	2025-26					16289	62374	16503	12523	7092	7447	7819	8210	8621	9050	9505							165433
6	2026-27						17103	65493	17328	13149	7447	7819	8210	8621	9052	9503	9980						173705
7	2027-28							17958	68768	18194	13806	7819	8210	8621	9052	9505	9978	10479					182390
8	2028-29								18856	72206	19104	14496	8210	8621	9052	9505	9980	10477	11003				191510
9	2029-30									19799	75816	20059	15221	8621	9052	9505	9980	10479	11001	11553			201086
10	2030-31										20789	79607	21062	15982	9052	9505	9980	10479	11003	11551	12131		211141

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**Jeypore Forest Division**



Matrix for (SMC)

Sl.	Commen cement Year Base Norm	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	Total
																		Cost
		0	20215	3032	3032	3032	3032											
1	2021-22	0	21226	3342	3510	2685	3870											35633
2	2022-23		0	22287	3509	3686	3869	4064										37415
3	2023-24			0	23401	3684	3870	4062	4267									39284
4	2024-25				0	34571	3868	4064	4265	4480								41248
5	2025-26					0	25800	4061	4267	4478	4704							43310
6	2026-27						0	27090	4264	4480	4702	4939						45475
7	2027-28							0	28445	4477	4704	4937	5186					47749
8	2028-29								0	29867	4701	4939	5184	5445				50136
9	2029-30									0	31360	4636	5186	5443	5717			52642
10	2030-31										0	32928	5183	5445	5715	6003		55274

  
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 Jeypore Forest Division

MATRIX FOR WATERING MODEL W-1 (solar bore well) fitted with drip system (Per Ha)

Sl. No.	Comment Year	I 2E+05	II 0	III 8174	IV 8174	V 8174	VI 8174	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	Total Cost
Base Norm																		196182
1	2021-22	163486	0	9011	9463	9935	10432	10954	0	0	0	0	0					202327
2	2022-23		171660	0	9462	9936	10432	10954	11502	0	0	0	0					212444
3	2023-24			180243	0	9935	10433	10954						0				223067
4	2024-25				139255	0	10432	10955	11502	12077	0	0	0	0	0			234221
5	2025-26					198718	0	10954	11503	12077	12681	0	0	0	0	0		245933
6	2026-27						208654	0	11502	12078	12681	13315	0	0	0	0	0	258230
7	2027-28							219087	0	12077	12682	13315	13981	0	0	0	0	271142
8	2028-29								230041	0	12681	13316	13981	14680	0	0	0	284699
9	2029-30									241543	0	13315	13982	14680	15414	0	0	298934
10	2030-31										253620	0	13981	14681	15414	16185	0	313881

  
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Jeypore Forest Division

Conservator of Forests, Odisha, Bhubaneswar.)

(250 Rmt/Ha.)

Sl. No	Item of work	Preferable Period of Execution	Man days	Wages	Marital cost	Total Cost (Rs.per Ha.)
0 <sup>th</sup> Year						
1	Earth work (Excavation of pits ) in Hard soil at a distance 3 mt. 0.40m x 0.40m=0.064 x 84=5.376 cum @ Rs.140/ cum=Rs.753.		2.42	851.84	0	851.84
2	Cement concrete (1:4:8) using 40 mm BHC metal 84 X 0.40m X 0.10m = 1.344@3755.94/cum		0	0	5,047.40	5,047.40
3	Angle Iron pole of size 50mm X 50 mm X 6mm of height 2.40mt. 84 x 2.40=201.60Sqmt. @4.50/kg/Sq.mt.= 907.20 kg@ 69.50 per kg				63,050.00	63,050.00
4	Cement Concrete (1:2:4) for fixing the iron angle pole using 12mm BHG Chips 84 X 0.40m X 0.40m X 0.30m = 4.032 cum @5486.77/cum				22,123.00	22,123.00
5	Cost of Chain link mesh using 4mm Dia GI wire having gap size 50mm X 50mm 250 Rmt X				173775	173775
6	Double cost painting of Iron angle pole over a 84 x 2.10 x 0.20 = 35.28sqmt. @ Rs.108.80/Sq.mt				3,838.00	3,838.00
7	Painting of GI chain link mess 250 x 2.10 x 2 = 1050/10 = 105 Sqmt.@108.80Sq.mt.				11,424.00	11,424.00
8	Transportation of Chain link mesh,Iron angle,Straightening&tying of chain link mess etc. @ 2% of the total cost.				5,600.00	5,600.00
	<b>Total</b>		<b>2.42</b>	<b>851.84</b>	<b>284857.4</b>	<b>285709.24</b>
<b>Rate</b>						
<b>1st Year Maintenance</b>						
1	No Maintenance is required	Sept / Oct	0	0	0	0
<b>2nd Year Maintenance</b>						
1	Maintenance of wire mess fence @ 1% per 1142 x 1% = 1142 say Rs.11	Sept / Oct	0	0	11000	11000
<b>3rd Year Maintenance</b>						
1	Maintenance of wire mess fence @ 1% per running mt. cost of installation in 1st yr. 1142 x 1% = 1142 say Rs.11	Sept / Oct	0	0	11000	11000
<b>4th Year Maintenance</b>						
1	Maintenance of wire mess fence @ 1% per running mt. cost of installation in 1st yr. 1142 x 1% = 1142 say Rs.11	Sept / Oct	0	0	11000	11000
<b>5thYear Maintenance</b>						
1	Maintenance of wire mess fence @ 1% per running mt. cost of installation in 1st yr. 1142 x 1% = 1142 say Rs.11	Sept / Oct	0	0	11000	11000
<b>6th Year Maintenance</b>						



		Execution				
1	Maintenance of wire mess fence @ 1% per running mt. cost of installation in 1st yr.	Sept / Oct	0	0	11000	11000
	1142 x 1% = 1142 say Rs.11					
7th Year Maintenance						
1	Maintenance of wire mess fence @ 1% per running mt. cost of installation in 1st yr.	Sept / Oct	0	0	11000	11000
	1142 x 1% = 1142 say Rs.11					
8th Year Maintenance						
1	Maintenance of wire mess fence @ 1% per	Sept / Oct	0	0	11000	11000
	1142 x 1% = 1142 say Rs.11					
9th Year Maintenance						
1	Maintenance of wire mess fence @ 1% per	Sept / Oct	0	0	11000	11000
	1142 x 1% = 1142 say Rs.11					
10th Year Maintenance						
1	Maintenance of wire mess fence @ 1% per	Sept / Oct	0	0	11000	11000
	1142 x 1% = 1142 say Rs.11					
Abstract						
SL. No	Year	No. person days	Labour cost @ Rs.352/- per days	Material Cost	Total cost	
1	0 th year	2.42	851.84	284857	285709	
2	1 st year	0	0	0	0	
3	2 nd year	0	0	11000	11000	
4	3 rd year	0	0	11000	11000	
5	4 th year	0	0	11000	11000	
6	5 th year	0	0	11000	11000	
7	6 th year	0	0	11000	11000	
8	7 th year	0	0	11000	11000	
9	8 th year	0	0	11000	11000	
10	9 th year	0	0	11000	11000	
11	10 th year	0	0	11000	11000	
	Total	2.42	851.84	383857	384709	

  
**Divisional Forest Officer**  
**Jeypore Forest Division**



Matrix for Fencing Model-F-II (Iron angle with Chainlink weir mesh)

Matrix for Fencing Model-I-II (Iron angle with Chainlink weir mesh)																							
Sl.	Commen- t Year	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX	XXI	Total
No.	Base Norm	285610	0	11000	11000	11000	11000	11000	11000	11000	11000	11000										XXI	Cost
1	2021-22																						
2	2022-23	285610	0	12126	12734	13370	14039	14740	15478	16252	17064	17918											419331
3	2023-24		299891	0	12732	13371	14039	14741	15477	16252	17065	17917	18814										440299
4	2024-25			314886	0	13369	14040	14741	15478	16251	17065	17918	18813	19755									462316
5	2025-26				330630	0	14037	14742	15478	16252	17064	17918	18814	19754	20743								485432
6	2026-27					347162	0	14739	15479	16252	17065	17917	18814	19755	20742	21780							509705
7	2027-28						364520	0	15476	16253	17065	17918	18813	19755	20743	21779	22869						535191
8	2028-29							382746	0	16250	17068	17918	18814	19754	20743	21780	22868	24012					561951
9	2029-30								401883	0	17063	17919	18814	19755	20742	21780	22869	24011	25213				590049
10	2030-31									421977	0	17916	18815	19755	20743	21779	22869	24012	25212	26474			619552
											443076	0	18812	19756	20743	21780	22868	24012	25213	26473	27798		650531

*Divisional Forest Officer*  
*Jeypore Forest Division*