

**CHECK LIST SERIAL NUMBER: 18**

**SCHEME FOR COMPENSATORY  
AFFORESTATION**

**In lieu of Diversion of 2.622 ha (6.479 Ac) of Forest land in favour of Construction of 4 lane carriage way with service road of Belpahar Bypass form km0/0 to km 2/971 under MCL fund, At: Village Belpahar under Lakhanpur Tahasil of District Jharsuguda.**

**(Revenue Degraded Forest land selected for Compensatory Afforestation -14.00 Ac. (5.664 ha) at village Belpahar under Lakhanpur Tahasil of district Jharsuguda.**

**Block Plantation@1000 plant:5.664 ha with 10 years Maintenance.**

**By Divisional Forest Officer,  
Jharsuguda Division**

# SCHEME FOR COMPENSATORY AFFORESTATION

---

## 1. Introduction:

The Executive Engineer, Jharsuguda , R&B Division Jharsuguda intends to Construction of 4 Lane carriageway road with service road of Belpahar bypass from km 0/00 to 2/971 in the District of Jharsuguda, Odisha for the purpose. 2.622 ha of Revenue Forest land has been proposed for diversion u/s 2 of the Forest (Conservation) Act, 1980. The Tahasildar Lakhanpur provide degraded Revenue Forest Land for compensatory afforestation purpose. (Copy of the letter is at **Annexure-A**). has provided 14.00 Ac (5.664 ha) of degraded forest land for compensatory afforestation purpose against diversion of 2.622 ha of Revenue Forest land for the project.

## 2. Details of degraded revenue forest land allotted for Compensatory afforestation:

The Degraded Revenue Forest Land for Compensatory Afforestation purpose is identified at village Belpahar under Lakhanpur Tahasil of district Jharsuguda. The particulars of land identified for Compensatory Afforestation is furnished below.

Tahasil	Village name	Khata No	Plot no	Total area of the Plot in Acre	Area identified for CA in Acre	Kissam of the Land at present
Lakhanpur	Belpahar	1269 (Anabadi)	5200	20.820	11.50	Patra Jungal
		1267 (Rakhita)	5254	34.370	2.50	Bada Jungal
	<b>Total</b>	<b>2 Khata</b>	<b>2 Plot</b>	<b>55.19</b>	<b>14.00 = 5.664 ha</b>	

The Tahasildar, Lakhanpur has provided the above land for compensatory Afforestation purpose vide letter No 4705 / Rev dated 29.10.2020

## 3. Description of Area:

The identified land is in the Jurisdiction of Belpahar Range of Jharsuguda Division.

The area identified for Compensatory Afforestation is in two patches. and the 1<sup>st</sup> patch is near from the 2<sup>nd</sup> patch only Road divided the both patches The identified land is in

compact patches, close to Revenue Forests and suitable for management. The area finds place in Survey of India Topo Sheet No F44R13 The patch wise area is as follows.

Mouza	Patch No.	Khata No.	Plot No.	Area of the Plot in Acre.	Area Earmarked	Kissam
Belpahar	Patch - I	1269	5200	20.820	11.50	Patra Jungal
	<b>Patch-I (Total)</b>		<b>1 Plot</b>	<b>102.42</b>	<b>11.50 (4.65 ha)</b>	
	Patch - II	1267	5254	34.370	2.50	Bada Jungal
	<b>Patch-II (Total)</b>		<b>1 plot</b>	<b>34.370</b>	<b>2.50 (1.01ha)</b>	
<b>Total Area (Patch-I &amp; II)</b>			<b>92Plot</b>	<b>55.19</b>	<b>14.00 Acre. ( 5.664 ha)</b>	

**Soil:** The land is having a good soil depth to bear healthy vegetation. Soil is of red alluvial soil with small patches of gravelly soil. The area is well drained.

**Topography:** The area is mostly Plain land. It is situated on the periphery of the Forest. The hillock in forest is about 200 m above MSL. The runoff from the forest brings top soil and deposited in this area. Patches affected by Rill Erosion noticed..

**Climate:** The area experiences a tropical climate. The average rainfall is 1400mm.summer is from March to June. The South West monsoon brings usual rain and most of the rainfall receives within July to October. Depression in Bay of Bengal brings wide spread rainfall to this region though it is away from the sea. It also experiences heavy rainfall due to depression in Bay of Bengal. The rain fall for last three years is furnished below.

Rainfall data of lakhanpur Block of Jharsuguda District													
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2017	2.10	0.00	5.00	0.00	84.50	256.40	584.30	311.90	293.60	116.90	0.00	0.00	1654.70
2018	0.00	0.00	3.20	38.80	158.50	169.90	443.10	423.70	115.90	22.00	0.00	92.70	1467.80
2019	0.00	37.20	10.30	39.30	29.40	224.30	268.90	769.60	359.70	147.10	0.00	0.00	1885.80
Total	2.10	37.20	18.50	78.10	272.40	650.60	1296.30	1505.20	769.20	286.00	0.00	92.70	5008.30
Aver.	0.70	12.40	6.17	26.03	90.80	216.87	432.10	501.73	256.40	95.33	0.00	30.90	1669.43

**Vegetation:**The area is adjacent to Forests area, but under constant biotic pressure. Sal mixed with other miscellaneous associates of dry Sal is observed. In degraded areas, Kendu, Palas, Khair Asan, Dry Jamun, planted Teak, Zyziphus species are seen. The crop is mostly of drier tract. Phoenix, Dhataki ( Wodfodia) are seen in open patches.

**Biotic interference:**

The area experiences grazing pressure to some extent.

**Villages surrounding the area:** The land is surrounded by village- Belpahar of Jharsuguda district. The population in these villages is as given below.

Demographic Profile of villages surrounding.							
District	Name of village	No_HH	TOT_P	TOT_M	TOT_F	P_SC	P_ST
Jharsuguda	Belpahar	860	3399	1668	1731	495	1412
	Percentage			49.07	50.93	14.56	41.54

**4. Plantation Model:**

The patch wise area available for Block Plantation per ha is as follows.

Patch	Area in Ac	Area in ha	Suitable for Block Plantation in Ha	Suitable for ANR @400 plants / Ha	Periphery in Mts
Patch-I	11.50	4.65	4.65	0.00	866.00
Patch-II	2.50	1.01	1.01	0.00	651.00
Total	14.00	5.664	5.664	0.00	1517.00

It is proposed to take up in **Urban Tree Plantation (UTP) Mode @1000 plants per hectare model over the area as stated above.** Soil & Moisture Conservation measures as prescribed in the cost norm will be strictly followed. In additional cost for SMC will also be taken up as described under para --- below. The approved cost norm by PCCF, Odisha updated to wage rate Rs.311.00 will be applicable.

**5. Schedule of Plantation Program:**

The area is in a single village. Area selected for Block Planting is 5.664 ha. The seedlings that could be planted is 5660 nos seedlings as detailed below.



Sl no	Planting Model	Area in Ha	No of Seedlings per ha	Total Seedlings to be planted
Patch-I	Block Planting	4.65	1000	4650
Patch-II	Block Planting	1.01	1000	1010
Total		5.664		5660

As the selected patch is a degraded forest area, after a good fencing, the area will be fully covered with Sal and miscellaneous crop. Planting of 1000 plants per ha may not be uniformly possible but can be easily planted up. The selected area is in a village and it is proposed to cover up in a single year which will be most effective and convenient from plantation management point of view.

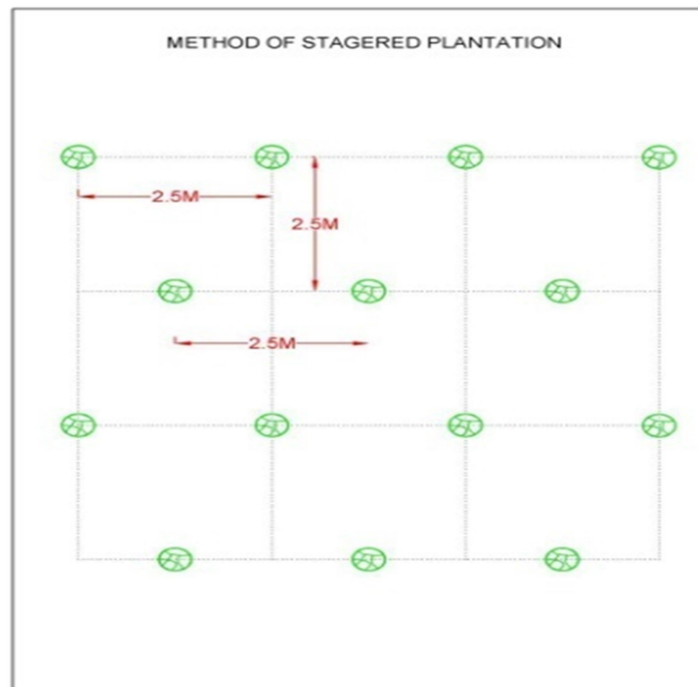
Hence it is proposed to take up the plantation work in a year and subsequent maintenance for 10 years as per approved cost norm. The Soil conservation measures are also proposed to be taken up in the 0<sup>th</sup> Year, 1<sup>st</sup> yr and 2<sup>nd</sup> yr. The Cost norm @Rs.311/- wage rate for Block Plantation (Without Fencing) with 10 years' maintenance is at **Annexure-II& III**. Separate Barbed wire fencing is provided to the plantation. The cost for planting is calculated as a single project than individual patches.

## 6. Technical details: -

- a) **General:** The plantation will be taken up in Block Plantation Mode over 5.664 ha. The year wise activities to be implemented has been enumerated in the approved Cost norm at **Annexure-II &III**

### For Block Planting @1000 plants per ha

- b) **Spacing:** The plant density proposed for planting is @1000 plants per ha. The spacing is 2.5mX2.5m which is generally adopted in this tract. It is suggested to have the line of planting along the contour and plant to plant in adjacent row is staggered.



This will reduce the runoff and encourage percolation of water and enrichment of vegetation.

**C. Choice of Species:** The suitable species for the site as indicated from the present vegetation are mostly of indigenous species. The Species suggested are

1. *Azadirachta indica* (neema)
2. *Aegle marmelos* (Bela)
3. *Acacia catechu* (Khair)
4. *Bombax ceiba* (Simili)
5. *Cassia fistula* (Sunari)
6. *Dalbergia Sisoo* ( Sisoo)
7. *Dalbergia latifolia* ( Pahadi sisoo)
8. *Gmelina arborea* ( Gambhari )
9. *Mangifera indica* (Aamba)
10. *Phyllanthus emblica* (Anla)
11. *Pongamia pinnata* (karanja)
12. *Syzygium cumini* (Jamun)
13. *Sal* (*Shorea Robusta*)
14. Any other species suggested by VSS.

#### **d) Plantation Method.**

##### **d(i) Survey Demarcation & Pillar Posting:**

The Allotted area has been demarcated, Pillars posted and duly surveyed by DGPS. The coordinated (Latitude / Longitude) of pillars are provided in the DGPS Map attached to this scheme. The area is bounded by

<b>GPS CO-ORDINATES OF CA LAND AREA BOUNDARY</b>					
<b>Mouza- Belpahar, Khata No.1269, Plot No.5200, Area-11.50 Ac.</b>					
<b>Sl. No</b>	<b>Latitude</b>	<b>Longitude</b>	<b>Easting</b>	<b>Northing</b>	<b>Remarks</b>
1	21°47'38.52"N	83°51'4.98"E	794834.00 m E	2412755.00 m N	
2	21°47'41.93"N	83°51'5.18"E	794838.00 m E	2412860.00 m N	
3	21°47'42.44"N	83°51'5.58"E	794849.00 m E	2412876.00 m N	
4	21°47'43.03"N	83°51'5.59"E	794849.00 m E	2412894.00 m N	
5	21°47'45.34"N	83°51'7.03"E	794889.00 m E	2412966.00 m N	
6	21°47'46.33"N	83°51'9.86"E	794970.00 m E	2412998.00 m N	
7	21°47'46.12"N	83°51'10.73"E	794995.00 m E	2412992.00 m N	
8	21°47'46.44"N	83°51'11.15"E	795007.00 m E	2413002.00 m N	
9	21°47'46.71"N	83°51'12.76"E	795053.00 m E	2413011.00 m N	
10	21°47'44.43"N	83°51'12.65"E	795051.00 m E	2412941.00 m N	
11	21°47'40.35"N	83°51'12.04"E	795036.00 m E	2412815.00 m N	
12	21°47'37.76"N	83°51'11.50"E	795022.00 m E	2412735.00 m N	
13	21°47'38.03"N	83°51'9.04"E	794951.00 m E	2412742.00 m N	
14	21°47'38.33"N	83°51'6.78"E	794886.00 m E	2412750.00 m N	
<b>Mouza- Belpahar, Khata No.1267, Plot No.5254, Area-2.50 Ac.</b>					
<b>Sl. No</b>	<b>Latitude</b>	<b>Longitude</b>	<b>Easting</b>	<b>Northing</b>	<b>Remarks</b>
1	21°47'37.73"N	83°51'5.90"E	794861.00 m E	2412731.00 m N	
2	21°47'37.21"N	83°51'11.18"E	795013.00 m E	2412718.00 m N	
3	21°47'36.77"N	83°51'16.04"E	795153.00 m E	2412707.00 m N	
4	21°47'35.73"N	83°51'15.81"E	795147.00 m E	2412675.00 m N	
5	21°47'36.19"N	83°51'10.43"E	794992.00 m E	2412686.00 m N	
6	21°47'36.56"N	83°51'5.88"E	794861.00 m E	2412695.00 m N	

The area finds place in Survey of India Topo Sheet No F44R13 .

##### **d(ii)Alignment, Stacking and Pitting.**

Alignment and stacking will be taken up in the month of January. Pits of size 30 cm x 30 cm x 30cm are to be dugout with a spacing of 2.5mt x 2.5mt @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.

### **d(iii) 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 is to be taken up during 1<sup>st</sup> year of plantation just after one month of planting. 10% causality replacement is also suggested during 2<sup>nd</sup> Year.

### **d(iv) 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 1<sup>st</sup>, 2<sup>nd</sup> & 3<sup>rd</sup> year of plantation.

### **d(v) 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.

### **d(vi) 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.

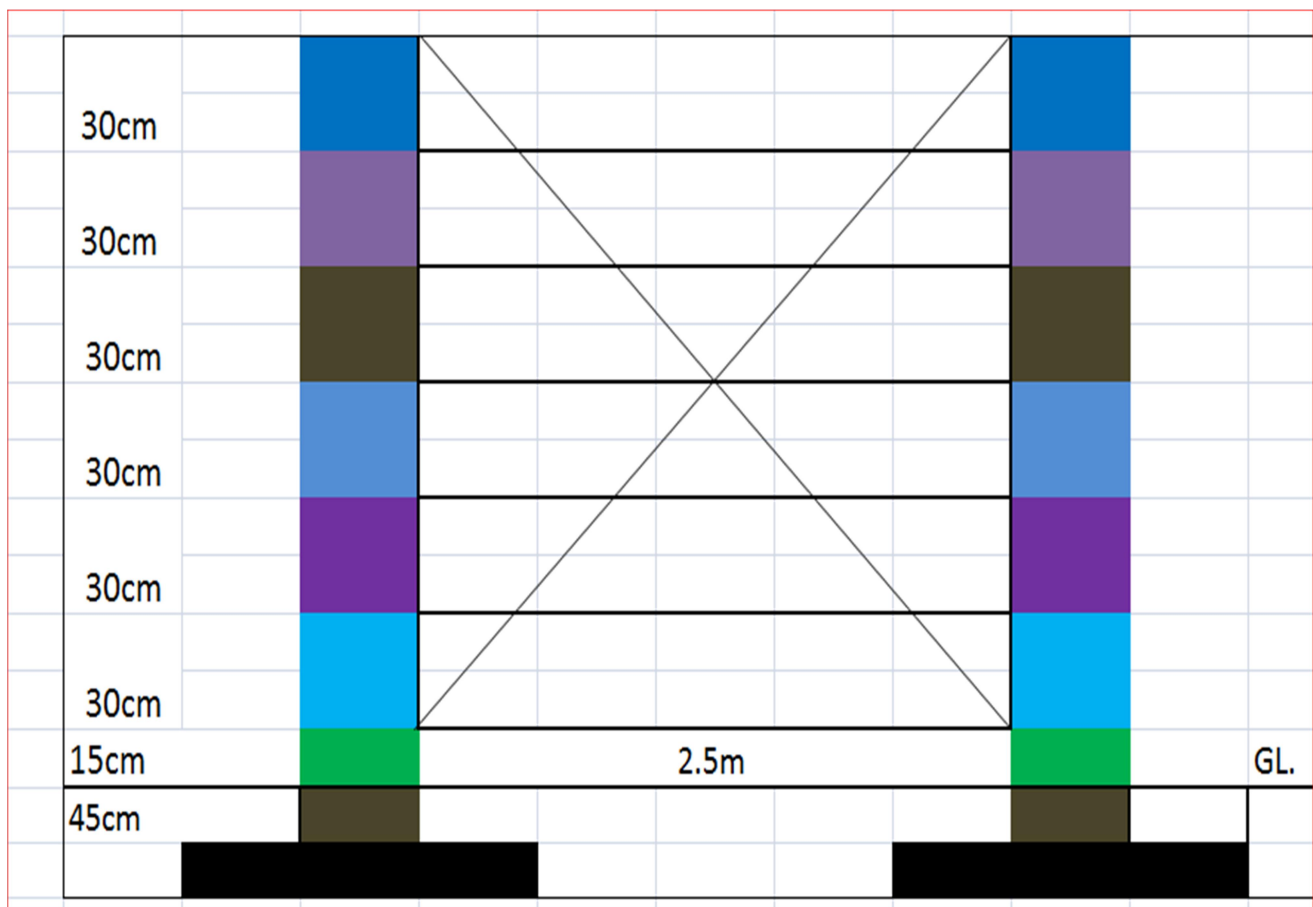
### **d(vii) Fencing:**

The periphery of the patch selected is 1517 meter. There is a provision of fencing in the cost norm of "Block Plantation" as approved by PCCF, Odisha. It is proposed to provide Barbed Wire fencing instead of Brushwood fencing. Approved cost norm @Rs280/- wage rate is Rs 6, 67, 712/- per RKM. The cost has been enhanced to **Rs 6,86,473.86** due to revision of wages to Rs 308.00 per day.(Revised Cost norm is enclosed as **Annexure-IV**) fortheer the cost has been enhanced to **Rs.6,93,160.29 due to revision of wages to Rs.311.00 per Day.**

## Description of Barbed Wire Fencing

It is suggested to put T shaped pillars at an interval of 2.5m. The length of such pillar is 2.40 m. (1.95 m above the ground & 0.45m below the ground.) Size:15cmx15cm at bottom and 10cm x10cm at top. The Lower bar of inverted “T” is of 30cm including the width of the pillar. There will be 7 strands of two ply barbed wires and to be placed at a height of 15cm, 45cm, 75cm, 105cm, 135cm, 165cm and 195cm from the ground level. Two strands will be put diagonally (connecting 15cm point to 195 cm point & 195cm point to 15cm point of adjacent pillar).

The total amount for Barbed wire fencing for 1.517 RKM. @ **6,93,106.29** Per RKM comes to Rs.1051442.24/-



**Entry Part activity (EPA):** Participation of local mass is quintessential in forest and environment conservation. Therefore 5% of plantation cost has been earmarked towards VSS (Van Sarakshya Samiti) involvement and incentives.

**d(viii) 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.

**e) 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.

**g) Proposed Monitoring Mechanism:**

Implementation of the planting program will be monitored by the DFO, Jharsuguda 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.

## 7. Abstract of Cost Estimate:

( Wage Rate 311 per Day)		
Sl No	Description	Amount in Rs
1	Cost of UTP Plantation @1000 plants per ha over 5.664ha @ Rs 909975.00 with 10 years maintenance with provision of fencing.	5154098.40
2	Barbed Wire fencing over 1.517 km with 3 years maintenance @2% of initial cost per RKM @ <b>6,93,160.29</b>	1051442.24
	Total CA Cost (A)	6205540.64
3	Add. Soil & Moisture Conservation	
a	@10 MD X 311 (Wage Rate) X 5.664 Ha.	17416.00
	SMC Cost Total (B)	17416.00
4	5% o total Plantation Cost towards Entry Point Activities / Incentive to VSS including monitoring & Evaluation.	311147.83
	Total	65,34,104.47
	Add Escalation Cost (20%)	13,06,820.89
	Grand Total	78,40,925.36 or 78,40,925.00

(Rupees Seventy Eight Lakhs Forty Thousand Nine Hundred Twenty Five) only

  
 Divisional Forests Officer,  
 Jharsuguda Forest Division  
**Divisional Forest Officer**  
 Jharsuguda Forest Division

<b>COST NORM FOR URBAN PLANTATION FOR 1000 SAPLINGS</b>						
<b>(Tall seedlings plantation of One year Six months old)</b>						
<b>(Labour Cost @ 311/-per mandays)</b>						
SL. No.	Item of work	Preferable period of execution	Labour in Mandays	Labour Cost in Rs.	Material cost in Rs.	Total Cost
<b>PREVIOUS YEAR (ADVANCE WORK) NURSERY RAISING</b>						
1	Nursery Cost (18 month Old Seedlings) @ Rs. 38.0136/-Part (Rs.10.431 to be released) for 1100 Seedlings (1000+100) (Nov to March)	Nov-March	28.5	8863.5	1568	10431.5
	<b>TOTAL</b>		<b>28.5</b>	<b>8863.5</b>	<b>1568</b>	<b>10431.5</b>
2	Monitoring & Supervision charge 5% of the total cost				522	522
	<b>GRAND TOTAL (A)</b>		<b>28.5</b>	<b>8863.5</b>	<b>2090</b>	<b>10953.5</b>
<b>0TH YEAR OPERATION</b>						
1	Nursery Cost ( 1yr 6 months old seedlings) part @ Rs. 38.0136 per seedlings ( Rs.26.555 to be released) for 1100 seedlings (1000+100)	April-March	71	22081	4474	26555
			<b>71</b>	<b>22081</b>	<b>4474</b>	<b>26555</b>
2	Monitoring & Supervision charge 5% of the total cost				1328	1328
	<b>GRAND TOTAL (B)</b>		<b>71</b>	<b>22081</b>	<b>5802</b>	<b>27883</b>
<b>1ST YEAR OPERATION</b>						
1	Nursery Cost (6 months old seedling) balance @ Rs. 4.828 for 1100 seedlings	April-June	14.5	4509.5	362	4871.5
2	Alignment & stacking at 4M spacing including clearance sites in avenue & 2.5m X 2.5m in case of block plantation	April-May	15	4665	0	4665
3	Excavation of pits-45cm x 45 cm x 45 cm in hard soil with vertical cut edges to make an uniform cube & heaping the excavated soil out side the pits	May-June	52	16172	0	16172
4	Refilling of pits with excavated soil after breaking the clouds completely	June	8	2488	0	2488
5	Carriage and transport of saplings from Nursery site to plantation site over an average lead of 10kms @ Rs. 6 per seedling for 1100 seedlings	July	0	0	6600	6600
6 (a)	Cost of FYM 0.25 CFT per plant @ Rs. 15 per cft for 250 cft		0	0	3750	3750
6 (b)	Cost of vermicompost 250 gm per plant @ Rf.20 per kg for 250 kg		0	0	5000	5000
6 (C)	Cost of NPK 50 gm per plant as basal dose @ Rs.24 per kg for 50 kg		0	0	1200	1200
6 (d)	Cost of Granular insecticide 10 gm per plant @ Rs. 80 per kg for 10 kg		0	0	800	800
7	Planting of sapling after carefully removing from sacks including mixing of FYM, Vermicompost, Granular Insecticides & Scooping the soil to required depth & pressing the soil around the plants.	July-Aug	25	7775	0	7775
8	Cost of chemical fertilizer(Urea/DAP/NPK etc.)		0	0	1200	1200



9	1st weeding around the plant to a radius of 45 cm. application of fertilizer	August	25	7775	0	7775
10	2nd weeding around the plant to a radius of 50 cms	September	20	6220	0	6220
11	Soil working around 0.5 Mt radius of the plant & application of fertilizer, mulching with available materials	Sept-Oct	32	9952	0	9952
12	Watering for 5 months. 10 days per month-from Nov. to March, including cost of water, labour & Transportation through tractor/tanker @ Rs.84 per seedling for 1000 seedlings	November-March	0	0	84000	84000
13	Watch & ward for 9 months from July to March. 270 Days	July-March	140	43540	0	43540
14	Cointigency Expenditure		0	0	455	455
	<b>TOTAL</b>		<b>331.5</b>	<b>103096.5</b>	<b>103367</b>	<b>206463.5</b>
15	Monitoring & Supervision charge 5% of the total cost				10324	10324
	<b>GRAND TOTAL (C)</b>		<b>331.5</b>	<b>103096.5</b>	<b>113691</b>	<b>216787.5</b>
<b>2nd year operation</b>						
1	Cost of Sapling 1 year & 6 months old for casualty replacement @ Rs.38.0136 per seedlings for 100 seedlings				3801.00	3801.00
2	Carriage and transport of saplings from Nursery site to plantation site to plantation site over an average lead of 10kms @ Rs. 6 per seedling for 100 seedlings				600	600
3	Replacement of casualty after reopening the pits & planting of sapling 100 nos. with application of FYM, Vermicompost and Granular insecticide		4	1244	0	1244
4 (a)	Cost of FYM 0.25 CFT per plant @ Rs. 15 per cft for 250 cft for 100 Plants		0	0	375.00	375.00
(b)	Cost of Granular insecticide 10 gm per plant @ Rs. 80 per kg for 1 kg		0	0	80.00	80.00
(C)	Cost of NPK 50 gm per plant as basal dose @ Rs.24 per kg for 5 kg		0	0	120.00	120.00
(d)	Cost of vermicompost 250 gm per plant @ Rs.20 per kg for 25 kg		0	0	500.00	500.00
(e)	Cost of chemical fertilizer(Urea/DAP/NPK etc.)		0	0	1200.00	1200.00
5	1st weeding around the plant to a radius of 30 cm & application of Fertilizer	August	20	6220.00	0.00	6220.00
6	Soil working around 0.5 Mt radius of the plant & application of fertilizer,Moisture Conservation mulching	Aug-Sept	24	7464.00	0.00	7464.00
7	2nd weeding around the plant to a radius of 0.5 Mtr.	Oct-Nov	16	4976.00	0.00	4976.00

8	Watering for 8 months. 5 days per month-from April. to June & Nov-March), including cost of water, labour & Transportation through tractor/tanker @ Rs.67.20 per seedling for 1000 seedlings	April-June Nov-March			67200.00	67200.00
9	Watch & ward for 12 months from April to March. 365 Days	April-March	186	57846.00		57846.00
10	Contingency Expenditure				1380.00	1380.00
	<b>Total</b>		<b>250</b>	<b>77750</b>	<b>75256.00</b>	<b>153006.00</b>
	Monitoring & Supervision charge 5% of the total cost				7650.00	7650.00
	<b>Grand Total</b>		<b>250</b>	<b>77750</b>	<b>82906.00</b>	<b>82906.00</b>
<b>3rd year operation</b>						
1	Weeding, manuring & soil working	Sept-Oct	20	6220.00	0.00	6220.00
2	Cost of chemical fertilizer(Urea/DAP/NPK etc.)		0	0	1200.00	1200.00
3	Watch & ward for 12months from April to March 365 Days	April-March	186	57846.00	0.00	57846.00
	<b>TOTAL</b>		<b>206</b>	<b>64066.00</b>	<b>1200.00</b>	<b>65266.00</b>
	Monitoring & Supervision charge 5% of the total cost				3263.00	3263.00
	<b>Grand Total</b>		<b>206</b>	<b>64066.00</b>	<b>4463.00</b>	<b>68529.00</b>
<b>4th year operation</b>						
	Watch & ward for 12months from April to March 365 Days	April-March	186	57846.00	0.00	57846.00
	<b>TOTAL</b>		<b>186</b>	<b>57846.00</b>	<b>0.00</b>	<b>57846.00</b>
	Monitoring & Supervision charge 5% of the total cost				2892.00	2892.00
	<b>Grand Total</b>		<b>186</b>	<b>57846.00</b>	<b>2892.00</b>	<b>60738.00</b>
<b>5th year operation</b>						
	Watch & ward for 12months from April to March 365 Days	April-March	186	57846.00	0.00	57846.00
	<b>TOTAL</b>		<b>186</b>	<b>57846.00</b>	<b>0.00</b>	<b>57846.00</b>
	Monitoring & Supervision charge 5% of the total cost				2892.00	2892.00
	<b>Grand Total</b>		<b>186</b>	<b>57846.00</b>	<b>2892.00</b>	<b>60738.00</b>
<b>6th year operation</b>						
	Watch & ward for 12months from April to March 365 Days	April-March	186	57846.00	0.00	57846.00
	<b>TOTAL</b>		<b>186</b>	<b>57846.00</b>	<b>0.00</b>	<b>57846.00</b>
	Monitoring & Supervision charge 5% of the total cost				2892.00	2892.00
	<b>Grand Total</b>		<b>186</b>	<b>57846.00</b>	<b>2892.00</b>	<b>60738.00</b>
<b>7th year operation</b>						
	Watch & ward for 12months from April to March 365 Days	April-March	186	57846.00	0.00	57846.00
	<b>TOTAL</b>		<b>186</b>	<b>57846.00</b>	<b>0.00</b>	<b>57846.00</b>
	Monitoring & Supervision charge 5% of the total cost				2892.00	2892.00



	<b>Grand Total</b>		<b>186</b>	<b>57846.00</b>	<b>2892.00</b>	<b>60738.00</b>
<b>8th year operation</b>						
	Watch & ward for 12months from April to March 365 Days	April-March	186	57846.00	0.00	57846.00
	<b>TOTAL</b>		<b>186</b>	<b>57846.00</b>	<b>0.00</b>	<b>57846.00</b>
	Monitoring & Supervision charge 5% of the total cost				2892.00	2892.00
	<b>Grand Total</b>		<b>186</b>	<b>57846.00</b>	<b>2892.00</b>	<b>60738.00</b>
<b>9th year operation</b>						
	Watch & ward for 12months from April to March 365 Days	April-March	186	57846.00	0.00	57846.00
	<b>TOTAL</b>		<b>186</b>	<b>57846.00</b>	<b>0.00</b>	<b>57846.00</b>
	Monitoring & Supervision charge 5% of the total cost				2892.00	2892.00
	<b>Grand Total</b>		<b>186</b>	<b>57846.00</b>	<b>2892.00</b>	<b>60738.00</b>
<b>10th year operation</b>						
	Watch & ward for 12months from April to March 365 Days	April-March	186	57846.00	0.00	57846.00
	<b>TOTAL</b>		<b>186</b>	<b>57846.00</b>	<b>0.00</b>	<b>57846.00</b>
	Monitoring & Supervision charge 5% of the total cost				2892.00	2892.00
	<b>Grand Total</b>		<b>186</b>	<b>57846.00</b>	<b>2892.00</b>	<b>60738.00</b>

<b>ABSTRACT</b>						
SL. No.	Year op Operation	No. Person D	Labour Cost @ 311/- Per Day	Material Cost	Monitoring & Supervision charge 5 % of total cost	Total cost
1	Previous Year	28.5	8863.50	1568.00	522.00	10953.50
2	0th Year Planting	71	22081.00	4474.00	1328.00	27883.00
3	1st Year Planting	331.5	103096.50	103367.00	10324.00	216787.50
4	2nd Year maintenance	250	77750.00	75256.00	7650.00	160656.00
5	3rd year maintenance	206	64066.00	1200.00	3263.00	68529.00
6	4th year maintenance	186	57846.00	0.00	2892.00	60738.00
7	5th year maintenance	186	57846.00	0.00	2892.00	60738.00
8	6th year maintenance	186	57846.00	0.00	2892.00	60738.00
9	7th year maintenance	186	57846.00	0.00	2892.00	60738.00
10	8th year maintenance	186	57846.00	0.00	2892.00	60738.00
11	9th year maintenance	186	57846.00	0.00	2892.00	60738.00
12	10th year maintenance	186	57846.00	0.00	2892.00	60738.00
13	Total Project Cost	<b>2189</b>	<b>680779.00</b>	<b>185865.00</b>	<b>43331.00</b>	<b>909975.00</b>

(Rupees Nine Lakh Twelve Thousand One Hundred Sixty-Four) only

  
**Divisional Forest Officer**  
**Jharsuguda Forest Division**

Estimate for BARBED WIRE FENCING

- 1) 02 PLY barbed wires 5 rmt per kg)  
7 Straight stand x 1000mt = 7000mt  
2 diagonal stand =  $2 \times \sqrt{\{(6.5)^2 + (8.2)^2\}} = 2 \times 10.50\text{ft}$   
= 21.00 ft x 400nos = 8400 ft or = 2560 mt  
9560mt

Requirement of Barbed wire per km

Cost per k m =  $9560/5 = 1912\text{kg @ Rs } 80/\text{kg}$  **Rs 1,52,960.00**

- 2) Construction of RCC Pillar size of length 8ft, Bottom width 6" x 6" ,  
Top width – 4"x4" Reinforced with 6mm rods with proper curing  
 $\{8 \times (6''+4'')/2\} \times (6''+4'')/2 = 1.34\text{ft or } 0.038\text{ cum}$

- i) Cost of CC work 1:2:4 0.038cum @5408.17/cum = 205.51  
ii) Cost of rod including cutting bending & binding  
 $0.038 \times 0.9\text{ qtl} = 0.0342\text{qtl @Rs } 10966.12/\text{qtl}$  = 375.04  
iii) Contingency (15% ) including = 87.08  
curing, stacking ,provision of hooks etc  

---

Rs 667.63 or 668/-

Requirement of pillars per kilometer

Spacing = 2.5m x 2.5mt

Requirement =  $1000\text{mt}/2.5\text{mt}$  = 400

Strut pillar in every 10<sup>th</sup> pillar =  $(400/10) \times 2 = 80$

-----  
480 nos

Cost of pillars per km =  $480 \times 668/-$  **Rs 3,20,640.00**

- 3) Fitting of fixing of RCC pillars in position with hbg metal (4cm) in C.M (1:4:8)

- i) Digging of pits  $1.5' \times 1.5' \times 1.5' = 3.375\text{cft/pit}$   
For 480 pits  $480 \times 3.375 = 1620\text{ cft or } 45.86\text{ cum @}13244/100\text{cum} =$  **Rs 6073.70**  
ii) Fixing of pillars with 4cm hbg metals in C.M 1:4:8  
Pit size  $1.5' \times 1.5' \times 1.5'$  = 3.375cft  
Deduct 1/3th of butt of pillar i.e  $3.375/3 = (-) 1.125\text{ cft}$   
Total C.C work per pillar -----  
2.25 cft  
For 480 pillars =  $480 \times 2.25 = 1080\text{cft or } 30.577\text{ cum @ } 3743.70/\text{cum}$  **Rs 1,14,471.10**

- 4) Labour for straightening the barbed wire and fixing & clipping with pillars 70M.D per km **@308.00 Rs 21,560.00**
- 5) Carriage of Barbed wire & pillars to work site @ Rs 1000/tl and cost of loading & unloading within 5km distance Approximately 10tld @800/tld **Rs 18000.00**
- 6) Provision of one iron Gate of size (4'x5') on LS **Rs 7500.00**
- Total =
- 
- Rs 641204.80**
- Labour Cess 1% = **Rs 6412.05**
- Rs 6,47,616.85**
- Expenditure per 1km of barbed wire fencing*
- Or say, Rs 644.68/- or 645/ per meter
- 7) Expenditure towards maintenance for 3 years 3<sup>rd</sup>, 6<sup>th</sup> & 9<sup>th</sup> year) @ 2% cost per rkm = 3 X 2% of Rs 647616.85 **Rs 38857.01**
- Expenditure per 1km of barbed wire fencing including mentainance **Rs 6,86,473.86**

**@ 308.00 per MD = ₹ 686473.86**

**Now @ 311.00 per MD = ₹ 693160.29**

**So expenditure per running for fencing = Rs 693.16/Mt**  
**(Rupees Six Hundred Ninety Three and One Six paise) only.**

**Annexure- III**

### **Estimate for Staggered Trench**

Earth Work in hard Soil of Staggered Trenches of Size 2mt x 0.5 mt x 0.5 mt=0.5 cum.  
Male and Female Mulia 43 no @ 311.00 per MD =13373/per cum.  
For 100 cum earth work is required =13373/-  
For 0.5 cum earth is required =13373 x 0.5 =66.865 Or 67/-

100

**(Rupees Sixty siven ) Only**

**Analysis of Rate for Earth Work (100Cum) for Rs311.00 Wage Rate.**

Sl No	Description	Unit Required	Rate	Amount.
1	Earth Work in hard Soil or gravelly soil within 50m initial lead and 1.5m initial lift including rough dressing and breaking clods to maximum 5cm to 7 cm and laying in layers not exceeding 0.3m in depth and as per the direction of the Engineer –in charge.	Labour Man Mulia 21.5 no	311.00	6686.50
		Woman Mulia 21.5	311.00	6686.50
I	Sub Total(Labour)			13373.00
ii.	Overhead charges @10% of (i)			1337.30
iii.	2% Sundries and T&P etc. on (i)			267.46
	Total Earth Work			14977.76
iv.	Add 20% excess for Foundation / trenches etc			2995.55
2	Compacting of soil on embankment (for 28.31 Cum)			
I	Ramming or Rolling earth work with Light H.R.R in embankment in layers not exceeding 0.30m for 28.31 cum	Labour man mulia 0.75 nos	311.00	233.25
		Woman mulia 0.50 nos	311.00	155.5
	Sub Total			388.75
ii.	Overhead charges @10% of (i)			38.87
iii.	2% Sundries and T&P etc. on (i)			7.77
iv.	Total			435.39
v	Compacting for 100 Cum= $531.20 \times 100 / 28.31$			1537.94
A.	For 1 Cum (Earth Work & Compacting )	$= (14833.28 + 2995.55 + 1876.39) / 100$		193.67
	Contractors Profit @7.50%			14.53
	Add 1% labour Cess			1.94
	<b>Total</b>			<b>210.14</b>
	Total after deduction of Contractors profit due to Forest Department work.			<b>195.61</b>

**(Rupee One Hundred Ninety Five and Sixty One paise only)**