

## EXECUTIVE SUMMARY

The Scheme of Compensatory Afforestation over an area of 584.578 Ha. has been prepared in lieu of diversion of forest land over an extent of 292.289 Ha. for construction of Khurdha Road – Bolangir New BG Rail Link Project. The Proposed Compensatory Afforestation area has been identified in 6 Nos. of RF/DPF/PRF patches of Nayagarh Forest Division. And adopted two separate schemes as per Suitability of site specific Land, the details as follows:-

1. (i) Gochha RF over an area 66.242Ha. under Odagaon Range of Nayagarh Division. The said C.A area has been proposed for Compensatory Afforestation @ 200 plants /Ha. in ANR with gap plantation mode of seedlings will be raised of 13248

2. (i) Pithakhai RF over an area 129.794 Ha. under Khandpada Range of Nayagarh Division. The said C.A area has been proposed for Compensatory Afforestation @ 400 plants /Ha. in ANR with gap plantation mode of seedlings will be raised of 51918.

(ii) Arakhataila DPF over an area 51.999 Ha. under Gania Range of Nayagarh Division. The said C.A area has been proposed for Compensatory Afforestation @ 400 plants /Ha. in ANR with gap plantation mode of seedlings will be raised of 20800.

(iii) Hatimunda RF (C/6) over an area 185.907Ha. under Gania Range of Nayagarh Division. The said C.A area has been proposed for Compensatory Afforestation @ 400 plants /Ha. in ANR with gap plantation mode of seedlings will be raised of 74363.

(iv) Binjhagiri Parbat over an area 64.885 Ha. under Pancharida Range of Nayagarh Division. The said C.A area has been proposed for Compensatory Afforestation @ 400 plants /Ha. in ANR with gap plantation mode of seedlings will be raised of 25954.

(v) Ragadimada RF over an area 104.292Ha. under Mahipur Range of Nayagarh Division. The said C.A area has been proposed for Compensatory Afforestation @ 400 plants /Ha. in ANR with gap plantation mode of seedlings will be raised of 41717.

### Details of Compensatory Afforestation Scheme:

Since, sixth sites and 06 Nos of Patches have been selected for raising of Compensatory Afforestation in two separate schemes are prepared as follows:

#### Scheme-I

The scheme for raising of Compensatory Afforestation in ANR with Gap 200 plants/ Ha. mode over 66.242 Ha. of degraded forest land in the Gochaba RF under Odagaon Range of Nayagarh Forest Division in Nayagarh District with maintenance up to ten years (with 0th year) in the current wage rate @ Rs. 311/- per manday to accommodate 13248 nos. of seedlings.


#### Scheme-II

The scheme for raising of Compensatory Afforestation in ANR with Gap 400 plants/ Ha. mode over 536.877 Ha. of degraded forest land in five patches (i) Pithakhai RF over an area 129.794Ha. under Khandpada Range (ii) Arakhataila DPF over an area 51.999 Ha. under Gania Range (iii) Hatimunda RF (C/6) over an area 185.907Ha. under Nayagarh Range (iv) Binjhagiri Parbat over an area 64.885 Ha. under Pancharida Range (v) Ragadimara RF over an area 104.292 Ha. under Mahipur Range of Nayagarh Division. in Nayagarh District with maintenance up to ten years (with 0th year) in the current wage rate @ Rs. 311/- per manday to accommodate 214752 nos. of seedlings



SUMMARY OF THE COMPENSATORY AFFORESTATION SCHEME

| Sl. No. | Scheme    | Mode of Plantation                          | Area in Ha. | No. of seedlings to be planted |
|---------|-----------|---|-------------|--------------------------------|
| 1.      | Scheme-I  | ANR with Gap (Plantation) @ 200 plants/ Ha. | 66.242      | 13248                          |
| 2.      | Scheme-II | ANR (Plantation) @ 400 plants/ Ha.          | 536.877     | 214752                         |
| Total   |           |   | 603.119     | 228000                         |

  
20/09/17  
Divisional Forest Officer  
Nayagarh Division  
Divisional Forest Officer  
Nayagarh Division



# COMPENSATORY AFFORESTATION SCHEME OVER 584.578 HA OF DEGRADED FOREST LAND IN NAYAGARH DISTRICT IN LIEU OF DIVERSION PROPOSAL OVER 292.289 Ha. FOR CONSTRUCTION OF KHURDA ROAD – BOLANGIR NEW B.G. RAIL LINK PROJECT (112 KM TO 180 KM) OF EAST COAST RAILWAY, BHUBANESWAR.

## INTRODUCTION

The Indian Railways have taken up a project of construction of a new B. G. line having an approximate length of 289 km. connecting Khurda Road station on Howrah-Chennai main line to Bolangir situated on Titlagarh-Sambalpur-Jharsuguda branch line.

The line falls entirely in Orissa state and will traverse through six districts of Odisha viz., Puri, Khurda, Nayagarh, Boudh, Sonepur and Bolangir. It will connect the coastal Odisha with Western Odisha leading to emotional and cultural integration of both the parts. Moreover, it will reduce the distance to New Delhi, Mumbai and Western India by 140 Km. from Bhubaneswar and Puri, the state capital and cultural capital of Orissa respectively.

The Industrial and economic growth of the area under which this line falls has not progressed due to poor transport facilities. The concerned area is majorly inhabited by poor and underprivileged population of the society who spend their lives on the edge of modernization who might have never seen a train till date. No major industries can be observed and the region is not at all urbanized. However, there are a number of medium and small scale as well as cottage industries which could prosper with the commissioning of the line. Granite, Graphite, Quartz, Limestone etc. are available in large quantities in the region and the industry seems to be putting efforts to exploit the mineral resources in a productive manner. The line on being commissioned could give further impetus for growth and modernization of the alluded zone.

## LAND INVOLVED

These project extents over an area of 292.289 Ha. Forest land for construction of new BG Rail line from 112 Km. to 143.3 Km. of Khurda Road-Bolangir Rail link Project. Hence, this 292.289 Ha. of forest land has been proposed for Diversion under Forest (Conservation) Act, 1980 in lieu of which the Compensatory Afforestation will be raised over the double extent of degraded forest land i.e. 584.578 Ha. in Nayagarh Forest Division.

## ALLOCATION OF GOVT. LAND

The Scheme of Compensatory Afforestation over an area of 584.578 Ha. is prepared in lieu of diversion of forest land over an extent of 292.289 Ha. for the construction of Khurda Road – Bolangir New BG Railway line. The Compensatory Afforestation area 584.578 Ha. of degraded forest land has been identified in Nayagarh Forest Division. The area so selected is proposed for Compensatory Afforestation two separate schemes are prepared as follows: (i) **Scheme-I:** - ANR with Gap Plantation mode @ 200 plants/Ha. (ii) **Scheme-II:** -ANR with Gap Plantation mode @ 400 plants per Ha.

The scheme for raising of Compensatory Afforestation in **Scheme -I**, ANR with Gap Plantation mode @ 200 plants/Ha. Over an area of 66.242 Ha, **Scheme -II**, ANR with Gap Plantation mode @ 400 plants/Ha. Over an area of 536.877 Ha, degraded forest land has been identified (**List enclosed as Annexure -I**) in Nayagarh Forest Division in Nayagarh Dist. with maintenance up to ten years (with 0<sup>th</sup> year) in the current wage rate @ Rs. 311/- per manday.



## DETAILS OF SELECTION OF SITE

**District :** Nayagarh

**Range :** Khandpada, Gania, Nayagarh, Mahipur, Pancharida and Odagaon

The Compensatory Afforestation has been identified in Nayagarh District. The site located on Survey of India Open Series Topo sheet No. **F45 S/15, F45 S/16, F45 T/4, F45 T/7 & F45 A/13** confined within LATITUDE 19°46'57" & 20°19'17", LONGITUDE: 84°41'20" & 85°23'10" for UTM **Zone - 45** and indicated on the map enclosed as **Annexure -II**. The proposed area is free from encroachment, other encumbrances and found suitable for plantation.

**Description of Area:**

The identified Degraded Forest area is under the possession of Forest Department and classified as RF/DPF/PRF.

**Soil type:** Laterite. Some patches support swallow soil, mixed sand and exposed rock within the site.

**Topography : -**

**Hilly/Undulating/Plain:** The topographical configuration of the identified site is undulating.

**Slope:** The site selected for Compensatory Afforestation have medium to gentle slope.

**Whether the area is bearing any root stock of vegetation:** The site selected for Compensatory Afforestation has root stock and the existing vegetations are in degraded stage.

**Temperature :** The area experiences cold weather between November - January when the temperature drops to less than 13° C. the temperature rises steadily from January onwards reaching 32° C to 45° C in summer ( May). So it is under tropical condition with limited rainy days.

**Climate& Rainfall:** The area has tropical climate with monsoon rains from June to September and occasional rains during the autumn. This area also experiences occasional gusty wind to heavy thunderstorms during summer season (April to June). Monsoon breaks out in early to middle of June and continues up to September. The average annual rainfall is about 1600 mm under the influence of south west monsoon. On average, there are about 100 rainy days. The humidity is maximum in the month of July to September (90%) and minimum in February (36%). The wind velocity varies between 40 KMPH and 80 KMPH, although occasional higher values have also been reported. Lightening incidents are rarely reported in this area.

**Plantation Model :** The identified sites in Nayagarh District over 584.578 Ha. are having degraded in nature. The topography is gentle and has good soil depth. Thus it is proposed to take up two separate schemes of plantation model in the entire area.



## **Special Objects of Compensatory Afforestation Scheme are as follows:**

To restrict the degradation by reducing the biotic interference to barest minimum and reverse the trend towards the process of restoration of vegetation.

To develop the forest by providing site-specific silvicultural treatment.

To facilitate the boosting of natural regeneration and ensure their establishment.

To take up appropriate soil moisture conservation (SMC) measures to improve the soil and moisture regime.

To improve the bio-diversity of these blocks.

To meet the need of the local villagers with regard to firewood and small timber depending upon the productivity (from silvicultural operations like thinning, subsidiary silvicultural operation, climber cutting, cutting of high stumps, double shoot cutting etc.)

### **Item of works to be taken up:**

To achieve the above objectives, the following items of works are mainly prescribed to be taken up

- **Survey & Demarcation of Boundary.**
- **Fencing.**
- **Site Clearance & Planting in gaps**
- **Soil & Moisture Conservation Measures.**
- **Protection of Plantation**
- **Peoples Participation**
- **Monitoring & Evaluation Mechanism**

**Survey & Demarcation of Boundary:** The identified area has been surveyed by DGPS and also map has been prepared. DGPS Coordinates of Survey Stations of Compensatory Afforestation area is enclosed as **Annexure- III**. The area will be demarcated with RCC pillars of size 1.0 m x 10 cm x 10 cm for clear demarcation of the area.

**Fencing:** To protect the plantation from grazing and other biotic interference, it will be provided with barbed wire fencing along the 35.631 km periphery in as per the following details covering **21555** numbers of RCC pillars. There will be provision of one RCC pillar erected at every 2.5 meter distance with provision of two extra cross pillars for each corner station points. There will be 7 strands of barbed wire fencing for better protection purpose. The cost estimate for barbed wire fencing has been provided in **Annexure – IV**.



**Site Clearance & Planting:** plantation over 584.578 ha. shall be taken up with planting model of ANR with gap 200 & 400 plants per hectares at spacing of 2.5 m x 2.5 m. Site clearance and cleaning to be done in the treatment area to create gap for plantation. Silvicultural cleaning by cutting of high stumps, removal of weeds, singling of multiple shoots, removal of plants in congested areas will be done, so that the plants get optimum condition for growth. All post planting measures like casualty replacement, soil working, manuring, fire protection etc. will be undertaken.

**Species:** Although indigenous species are to be preferred in the plantation, considering adverse soil & moisture conditions, we may go for hardy exotic species where ever required, so that the plants are able to survive. For success of plantation in interior tribal areas, plantation of fruit and NTFP species plays a great role since economic species have a little value for local people. Considering the topography, soil and moisture availability of the plantation area, the following species will be planted.

| Name of species                  | Common name            | Remarks   |
|----------------------------------|------------------------|---|
| <i>Terminalia arjuna</i>         | Arjun                  |   |
| <i>Azadirachta indica</i>        | Neem                   |   |
| <i>Pongamia pinata</i>           | Karanja                |   |
| <i>Emblica officinalis</i>       | Amla                   |   |
| <i>Dalbergia sissoo</i>          | Sissoo                 | In lower areas with good soil depth   |
| <i>Gmelina arborea</i>           | Gambhari               | In lower areas with good soil depth   |
| <i>Dendrocalamus strictus</i>    | Salia<br>Bamboo        | In lower areas with good soil depth healthy seedling from rhizomes may be planted.  |
| <i>Terminalia tomentosa</i>      | Asana                  | In lower areas with good soil depth   |
| <i>Madhuca indica</i>            | Mahul                  | Only two years old seedling may be planted  |
| <i>Terminalia belerica</i>       | Bahada                 |   |
| <i>Albizia lebbeck</i>           | Sirisa                 |   |
| <i>Zizyphus mauritania</i>       | Barakoli               | In rocky area with low soil depth   |
| <i>Acacia catechu</i>            | Khaira                 |   |
| <i>Mangifera indica</i>          | Mango                  | In situ planted (direct placing of mango stone in planting site) during pre-monsoon may be adopted in few lower area or where life-saving watering can be done during summer. |
| <i>Syzygium cumini</i>           | Jamun                  |   |
| <i>Ficus benghalensis</i>        | Bara                   | 10 to 20 plants per Ha.   |
| <i>Ficus religiosa</i>           | Pipal                  |   |
| <i>Artocarpus heterophyllous</i> | Panasa<br>(Jack Fruit) | Minimum 5 % of the total plantation stock.  |
| <i>Ficus Racemosa</i>            | Dimiri                 |   |



**\*Note:** - 15% of the total seedlings should be fruit bearing species i.e Mango, Jamun, Dimiri etc., 5% of the total plantation stock will be Panasa (*Artocarpus heterophyllous*). There should be 10-20 Nos. of Bara seedling planted.

**Soil and Moisture Conservation Works:** - Since most of the areas are hilly and undulating, half-moon trenches on down-hill side of plants should be constructed. In the slopes, staggered trenches of 2m x 50Cm x 50Cm should be dug in between the planting line along the contours, and the excavated earth be piled on the downhill side to form a bond. The staggered contour trenches will act as place of deposit of eroded soil and check soil erosion. In Nallahs, LBCD structures are to be constructed from top to bottom as per the specific site condition, which will retard the velocity of run-off and be helpful in feeding ground water to the plants planted below it.

**Protection of the plantation:** - 7 strand Barbed wire fence with RCC pillars all along the periphery of the plantation will be provided. Few watchers will also be engaged for protection of the plantation. Assistance of V.S.S is necessary for better protection of plantation.

**Peoples Participation:** In the recent times, no scheme shall be effective if the local villagers are not involved in the implementation of the scheme itself. The villagers who are having a right on the NTFP items in the adjoining forest area are to be associated with the implementation of the scheme at all different levels. For that, Van Samrakhyana Samiti (VSS) is proposed to be constituted in all the villages around the Compensatory Afforestation site. The villagers are to be motivated, inspired and above all, explained the benefits they will be getting, if plantation is protected by them.

**Monitoring & Evaluation Mechanism:** - The scheme shall be executed by the Divisional Forest Officer, Nayagarh Division with his staff and all prescribed records are to be maintained. In addition to internal monitoring by Forest Officers of State Government, a Monitoring Committee under item no. 3.4 (iii) of consolidated guidelines under F.C Act 1980 issued by MoEF, shall be established with a nominee of the Central Government to oversee that the stipulations, including those pertaining to Compensatory Afforestation are carried out.

  
20/09/17  
Divisional Forest Officer

Nayagarh Division  
Divisional Forest Officer  
Nayagarh Division



## SCHEME-I

SCHEME FOR ANR WITH GAP 200 PLANT/Ha. FOR COMPENSATORY AFFORESTATION OF 66.242 HA OF DEGRADED FOREST LAND IDENTIFIED IN GOCHHA RF UNDER ODAGAON RANGE IN NAYAGARH DISTRICT TO ACCOMMODATE 13248 NOS. OF SEEDLINGS IN LEIU OF 292.289 HA. DIVERSION OF FORST LAND FOR THE CONSTRUCTION OF KHURDA ROAD-BOLANGIR NEW B.G. RAIL LINK PROJECT OF EAST COAST RAILWAY, BHUBANESWAR.

WAGE RATE Rs. 311.00/- PER MANDAY

Vide Notification No. 2816/LC, Bhubaneswar dt. 25.05.2021 of Labour Commissioner, Odisha

ESTIMATE OF COST FOR 1.00HA. UNDER ANR GAP PLANTATION MODEL

| Sl. No.                   | Item of work   | Period of execution | Mandays | Labour cost @ 311 per day | Material cost | Total |
|---------------------------|--|---------------------|---------|---------------------------|---------------|-------|
| 1                         | 2  | 3                   | 4       | 5                         | 6             | 7     |
| 1                         | Survey, Demarcation & pillar posting. GPS Reading with mapping   | Nov/Dec             | 2       | 622                       | 0             | 622   |
| 2                         | Site Preparation   | Nov/Dec             | 2       | 622                       | 0             | 622   |
| 3                         | Silvi-cultural Operation including clearance of weed, climber cutting, high stump cutting, singling of shoots etc.   | Jan/Feb             | 5       | 1555                      | 0             | 1555  |
| 4                         | Contingency and Unforeseen Expenditures  |                     | 0       | 0                         | 133           | 133   |
|                           | <b>SUB-TOTAL</b>   |                     | 9       | 2799                      | 133           | 2932  |
| 5                         | Monitoring & Supervision Charges 5% of the total cost  |                     |         |                           |               | 147   |
|                           | <b>Grand Total</b>   |                     | 9       | 2799                      | 133           | 3079  |
| <b>1ST YEAR OPERATION</b> |  |                     |         |                           |               |       |
| 1                         | Pitting 45 cm cube size  | Feb/Mar             | 9       | 2799                      | 0             | 2799  |
|                           | (a) Transportation of seedlings from permanent Nursery to planting site including Loading, Unloading and watering @ 14000/- per 1000 seedlings at unloading poing  | Jul/Aug             | 0       | 0                         | 3080          | 3080  |
|                           | (b) Shifting to the planting place   | Jul/Aug             | 3       | 933                       | 0             | 933   |
| 2                         | (c) planting including casualty replacement  | Jul/Aug             | 5       | 1555                      | 0             | 1555  |
| 3                         | Complete weeding, Soil working, Manuring   | Aug/Sep             | 6       | 1866                      | 0             | 1866  |
| 4                         | Cost of Vermi compost/ Bio- fertilizer/ Organic fertilizer @ 200gms / Plant @Rs.20/- per kg = Rs. 800 and Pesticide / Bio- Pesticide 5 gms/ plant @ Rs. 80/- per kg. Rs. 80.00   |                     |         | 0                         | 880           | 880   |
| 5                         | Cost of Chemical fertilizer<br>a. DAP 40 gms/ plant in subsequent dose @ Rs. 24/- per kg = 192.00<br>b. DAP (20gms) @ Rs. 24/- per kg + Urea (40gms) @ Rs. 6/- per kg + MOP (10gms) @ Rs. 16.5/- per kg. Total 70 gms / plant = Rs. 369.00 |                     |         | 0                         | 369           | 369   |
| 6                         | Silvicultural Operation involving clearance of weeds, cutting of climbers, singling of shoots etc.   | Sep/Oct             | 15      | 4665                      |               | 4665  |
| 7                         | Soil Conservation Measures (Staggered trenches of dimension 2m x 0.5m x 0.5m @ 60 nos. per ha) or its equivalent   | Sep/Oct             | 20      | 6220                      |               | 6220  |



|                           |  |         |           |              |              |              |
|---------------------------|--|---------|-----------|--------------|--------------|--------------|
| 8                         | Fireline Tracing and Inspection Path   | Feb/Mar | 3         | 933          |              | 933          |
| 9                         | Watch & Ward   | Aug/Mar | 7         | 2177         |              | 2177         |
| 10                        | Contingency and Unforeseen Expenditures  |         |           | 0            | 304          | 304          |
|                           | <b>SUB-TOTAL</b>   |         | <b>68</b> | <b>21148</b> | <b>4633</b>  | <b>25781</b> |
| 11                        | Monitoring & Supervision Charges 5% of the total cost  |         |           | 0            |              | 1289         |
|                           | <b>SUB-TOTAL PLANTATION</b>  |         | <b>68</b> | <b>21148</b> | <b>4633</b>  | <b>27070</b> |
|                           | Construction of Watchman shed on L.S (1 No)  |         |           | 0            | 50000        | 50000        |
|                           | <b>Grand Total 1st Year:</b>   |         | <b>68</b> | <b>21148</b> | <b>54633</b> | <b>77070</b> |
| <b>2nd YEAR OPERATION</b> |  |         |           |              |              |              |
| 1                         | Transportation of seedlings from permanent Nursery to planting site including Loading, Unloading and watering @ 14000/- per 1000 seedlings at unloading poing  | Jul/Aug | 0         | 0            | 280          | 280          |
| 2                         | Casualty replacement (10% of the plantation) including cost of seedling, carriage and planting   | Jul/Aug | 3         | 933          | 780          | 1713         |
| 3                         | Complete weeding and cultural operations   | Sep/Oct | 2         | 622          |              | 622          |
| 4                         | Soil Working and manuring  | Sep/Oct | 2         | 622          |              | 622          |
| 5                         | Cost of Fertilizer and Pesticide / Bio- Pesticide :<br>i. Vermi-compost 200gms/plant @ Rs. 20/- per Kg = Rs. 800.00<br>ii. Pesticide / Bio- Pesticide 5gms/plant for 20 plants 100gms @ Rs.80/-per kg = Rs. 8.00 | Sep/Oct | 0         | 0            | 808          | 808          |
| 6                         | Soil Conservation Measures (Renovation of staggered trenches etc.)   | Sep/Oct | 8         | 2488         |              | 2488         |
| 7                         | Fireline Tracing and Inspection Path   | Feb/Mar | 1         | 311          |              | 311          |
| 8                         | Watch & Ward (Whole Year)  | Apr-Mar | 7         | 2177         |              | 2177         |
| 9                         | Contingency and Unforeseen Expenditures  |         |           | 0            | 181          | 181          |
|                           | <b>SUB-TOTAL</b>   |         | <b>23</b> | <b>7153</b>  | <b>2049</b>  | <b>9202</b>  |
| 10                        | Monitoring & Supervision Charges 5% of the total cost  |         |           | 0            |              | 460          |
|                           | <b>SUB-TOTAL PLANTATION</b>  |         | <b>23</b> | <b>7153</b>  | <b>2049</b>  | <b>9662</b>  |
| 11                        | Maintenance of of Watchman shed 1 No. per year   |         |           | 0            | 5000         | 5000         |
|                           | <b>Grand Total 2nd Year:</b>   |         | <b>23</b> | <b>7153</b>  | <b>7049</b>  | <b>14662</b> |
| <b>3rd YEAR OPERATION</b> |  |         |           |              |              |              |
| 1                         | Transportation of seedlings from permanent Nursery to planting site including Loading, Unloading and watering @ 14000/- per 1000 seedlings at unloading poing  | Jul/Aug | 0         | 0            | 140          | 140          |
| 2                         | Casualty replacement (5% of the plantation) including cost of seedling, carriage and planting  | Jul/Aug | 2         | 622          | 390          | 1012         |
| 3                         | Cost of Pesticide / Bio- Pesticide @ 5 gm per plant for 10 plants @ Rs. 80/- per kg  | Jul/Aug | 0         | 0            | 4            | 4            |
| 4                         | Complete weeding and cultural operations   | Aug/Sep | 1         | 311          |              | 311          |
| 5                         | Soil Working   | Aug/Sep | 1         | 311          |              | 311          |
| 6                         | Fireline Tracing and Inspection Path   | Feb/Mar | 1         | 311          |              | 311          |
| 7                         | Watch & Ward (Whole Year)  | Apr-Mar | 7         | 2177         |              | 2177         |
| 8                         | Contingency and unforeseen items   |         |           | 0            | 200          | 200          |
|                           | <b>SUB-TOTAL</b>   |         | <b>12</b> | <b>3732</b>  | <b>734</b>   | <b>4466</b>  |
| 9                         | Monitoring & Supervision Charges 5% of the total cost  |         |           | 0            |              | 224          |
|                           | <b>SUB-TOTAL PLANTATION</b>  |         | <b>12</b> | <b>3732</b>  | <b>734</b>   | <b>4690</b>  |



|                           |   |           |           |             |             |             |
|---------------------------|---|-----------|-----------|-------------|-------------|-------------|
| 10                        | Maintenance of of Watchman shed 1 No. per year        |           |           | 0           | 5000        | 5000        |
|                           | <b>Grand Total 3rd Year:</b>                          |           | <b>12</b> | <b>3732</b> | <b>5734</b> | <b>9690</b> |
| <b>4th YEAR OPERATION</b> |   |           |           |             |             |             |
| 1                         | Fireline Tracing and Inspection Path                  | Feb/Mar   | 1         | 311         | 0           | 311         |
| 2                         | Watch & Ward and cultural operations                  | Apr-Mar   | 2         | 622         | 0           | 622         |
| 3                         | Counting of Survival of Plantation                    | Dec-March | 3         | 933         | 50          | 983         |
|                           | <b>SUB-TOTAL</b>                                      |           | <b>6</b>  | <b>1866</b> | <b>50</b>   | <b>1916</b> |
| 4                         | Monitoring & Supervision Charges 5% of the total cost |           |           | 0           |             | 96          |
|                           | <b>SUB-TOTAL PLANTATION</b>                           |           | <b>6</b>  | <b>1866</b> | <b>50</b>   | <b>2012</b> |
| 5                         | Maintenance of of Watchman shed 1 No. per year        |           |           | 0           | 5000        | 5000        |
|                           | <b>Grand Total 4th Year:</b>                          |           | <b>6</b>  | <b>1866</b> | <b>5050</b> | <b>7012</b> |
| <b>5th YEAR OPERATION</b> |   |           |           |             |             |             |
| 1                         | Fireline Tracing and Inspection Path                  | Feb/Mar   | 1         | 311         | 0           | 311         |
| 2                         | Watch & Ward and cultural operations                  | Apr-Mar   | 2         | 622         | 0           | 622         |
| 3                         | Counting of Survival of Plantation                    | Dec-March | 3         | 933         | 50          | 983         |
|                           | <b>SUB-TOTAL</b>                                      |           | <b>6</b>  | <b>1866</b> | <b>50</b>   | <b>1916</b> |
| 4                         | Monitoring & Supervision Charges 5% of the total cost |           |           | 0           |             | 96          |
|                           | <b>SUB-TOTAL PLANTATION</b>                           |           | <b>6</b>  | <b>1866</b> | <b>50</b>   | <b>2012</b> |
| 5                         | Maintenance of of Watchman shed 1 No. per year        |           |           | 0           | 5000        | 5000        |
|                           | <b>Grand Total 5th Year:</b>                          |           | <b>6</b>  | <b>1866</b> | <b>5050</b> | <b>7012</b> |
| <b>6th YEAR OPERATION</b> |   |           |           |             |             |             |
| 1                         | Fireline Tracing and Inspection Path                  | Feb/Mar   | 1         | 311         | 0           | 311         |
| 2                         | Watch & Ward and cultural operations                  | Apr-Mar   | 2         | 622         | 0           | 622         |
| 3                         | Counting of Survival of Plantation                    | Dec-March | 3         | 933         | 50          | 983         |
|                           | <b>SUB-TOTAL</b>                                      |           | <b>6</b>  | <b>1866</b> | <b>50</b>   | <b>1916</b> |
| 4                         | Monitoring & Supervision Charges 5% of the total cost |           |           | 0           |             | 96          |
|                           | <b>SUB-TOTAL PLANTATION</b>                           |           | <b>6</b>  | <b>1866</b> | <b>50</b>   | <b>2012</b> |
| 5                         | Maintenance of of Watchman shed 1 No. per year        |           |           | 0           | 5000        | 5000        |
|                           | <b>Grand Total 6th Year:</b>                          |           | <b>6</b>  | <b>1866</b> | <b>5050</b> | <b>7012</b> |
| <b>7th YEAR OPERATION</b> |   |           |           |             |             |             |
| 1                         | Fireline Tracing and Inspection Path                  | Feb/Mar   | 1         | 311         | 0           | 311         |
| 2                         | Watch & Ward and cultural operations                  | Apr-Mar   | 2         | 622         | 0           | 622         |
| 3                         | Counting of Survival of Plantation                    | Dec-March | 3         | 933         | 50          | 983         |
|                           | <b>SUB-TOTAL</b>                                      |           | <b>6</b>  | <b>1866</b> | <b>50</b>   | <b>1916</b> |
| 4                         | Monitoring & Supervision Charges 5% of the total cost |           |           | 0           |             | 96          |
|                           | <b>SUB-TOTAL PLANTATION</b>                           |           | <b>6</b>  | <b>1866</b> | <b>50</b>   | <b>2012</b> |
| 5                         | Maintenance of of Watchman shed 1 No. per year        |           |           | 0           | 5000        | 5000        |
|                           | <b>Grand Total 7th Year:</b>                          |           | <b>6</b>  | <b>1866</b> | <b>5050</b> | <b>7012</b> |
| <b>8th YEAR OPERATION</b> |   |           |           |             |             |             |
| 1                         | Fireline Tracing and Inspection Path                  | Feb/Mar   | 1         | 311         | 0           | 311         |
| 2                         | Watch & Ward and cultural operations                  | Apr-Mar   | 2         | 622         | 0           | 622         |
| 3                         | Counting of Survival of Plantation                    | Dec-March | 3         | 933         | 50          | 983         |
|                           | <b>SUB-TOTAL</b>                                      |           | <b>6</b>  | <b>1866</b> | <b>50</b>   | <b>1916</b> |



|                                |   |           |     |       |        |        |
|--------------------------------|---|-----------|-----|-------|--------|--------|
| 4                              | Monitoring & Supervision Charges 5% of the total cost |           |     | 0     |        | 96     |
|                                | <b>SUB-TOTAL PLANTATION</b>                           |           | 6   | 1866  | 50     | 2012   |
| 5                              | Maintenance of of Watchman shed 1 No. per year        |           |     | 0     | 5000   | 5000   |
|                                | <b>Grand Total 8th Year:</b>                          |           | 6   | 1866  | 5050   | 7012   |
| <b>9th YEAR OPERATION</b>      |   |           |     |       |        |        |
| 1                              | Fireline Tracing and Inspection Path                  | Feb/Mar   | 1   | 311   | 0      | 311    |
| 2                              | Watch & Ward and cultural operations                  | Apr-Mar   | 2   | 622   | 0      | 622    |
| 3                              | Counting of Survival of Plantation                    | Dec-March | 3   | 933   | 50     | 983    |
|                                | <b>SUB-TOTAL</b>                                      |           | 6   | 1866  | 50     | 1916   |
| 4                              | Monitoring & Supervision Charges 5% of the total cost |           |     | 0     |        | 96     |
|                                | <b>SUB-TOTAL PLANTATION</b>                           |           | 6   | 1866  | 50     | 2012   |
| 5                              | Maintenance of of Watchman shed 1 No. per year        |           |     | 0     | 5000   | 5000   |
|                                | <b>Grand Total 9th Year:</b>                          |           | 6   | 1866  | 5050   | 7012   |
| <b>10th YEAR OPERATION</b>     |   |           |     |       |        |        |
| 1                              | Fireline Tracing and Inspection Path                  | Feb/Mar   | 1   | 311   | 0      | 311    |
| 2                              | Watch & Ward and cultural operations                  | Apr-Mar   | 2   | 622   | 0      | 622    |
| 3                              | Counting of Survival of Plantation                    | Dec-March | 3   | 933   | 50     | 983    |
|                                | <b>SUB-TOTAL</b>                                      |           | 6   | 1866  | 50     | 1916   |
| 4                              | Monitoring & Supervision Charges 5% of the total cost |           |     | 0     |        | 96     |
|                                | <b>SUB-TOTAL PLANTATION</b>                           |           | 6   | 1866  | 50     | 2012   |
| 5                              | Maintenance of of Watchman shed 1 No. per year        |           |     | 0     | 5000   | 5000   |
|                                | <b>Grand Total 10th Year:</b>                         |           | 6   | 1866  | 5050   | 7012   |
| <b>Grand Total Plantation:</b> |   |           | 154 | 47894 | 102899 | 153585 |

Divisional Forest Officer

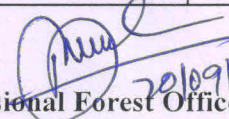
Nayagarh Division

Divisional Forest Officer  
Nayagarh Division



# ABSTRACT FOR SCHEME-I

| Sl. No. | Year   | No. of person Days | Labour cost @ 311.00 per day | Material cost (Rs.) | Monitoring & Supervision Charge 5% of the total cost | Construction and Maintenance of Watchman shed | Total Cost     |
|---------|--|--------------------|------------------------------|---------------------|--|---|----------------|
| 1       | 2  | 3                  | 4                            | 5                   | 6  | 7   | 8              |
| 1       | 0th Year<br>(Advance Year)   | 9                  | 2799                         | 133                 | 147  | 0   | 3079           |
| 2       | 1st Year<br>(Creation Year)  | 68                 | 21148                        | 4633                | 1289   | 50000   | 77070          |
| 3       | 2nd Year   | 23                 | 7153                         | 2049                | 460  | 5000  | 14662          |
| 4       | 3rd Year   | 12                 | 3732                         | 734                 | 224  | 5000  | 9690           |
| 5       | 4th Year   | 6                  | 1866                         | 50                  | 96   | 5000  | 7012           |
| 6       | 5th Year   | 6                  | 1866                         | 50                  | 96   | 5000  | 7012           |
| 7       | 6th Year   | 6                  | 1866                         | 50                  | 96   | 5000  | 7012           |
| 8       | 7th Year   | 6                  | 1866                         | 50                  | 96   | 5000  | 7012           |
| 9       | 8th Year   | 6                  | 1866                         | 50                  | 96   | 5000  | 7012           |
| 10      | 9th Year   | 6                  | 1866                         | 50                  | 96   | 5000  | 7012           |
| 11      | 10th Year  | 6                  | 1866                         | 50                  | 96   | 5000  | 7012           |
|         | <b>Total:</b>  | <b>154</b>         | <b>47894</b>                 | <b>7899</b>         | <b>2792</b>  | <b>95000</b>                                  | <b>153585</b>  |
|         | <b>Total Cost Norm per Ha (Col. No. 4 +5 + 6)</b>                                      |                    |                              |                     |  |   | <b>58585</b>   |
|         | <b>Construction of watchman shed and its maintenance up to 10 th year (Col. No. 7)</b> |                    |                              |                     |  |   | <b>95000</b>   |
|         | <b>Total Cost of plantation (66.242 Ha.):</b>  |                    |                              |                     |  |   | <b>3880788</b> |
|         | <b>Grand Total:</b>  |                    |                              |                     |  |   | <b>3975788</b> |

  
 Divisional Forest Officer  
 Nayagarh Division  
 20/09/13  
 Divisional Forest Officer  
 Nayagarh Division



## SCHEME-II

### SCHEME FOR ANR 400 PLANT/Ha. FOR COMPENSATORY AFFORESTATION OF 536.877 HA OF DEGRADED REVENUE FOREST LAND IDENTIFIED IN

1. (i) Pithakhai RF over an area 129.794 Ha. under Khandpada Range of Nayagarh Division. The said C.A area has been proposed for Compensatory Afforestation @ 400 plants /Ha. in ANR with gap plantation mode of seedlings will be raised of 51918.

(ii) Arakhataila DPF over an area 51.999 Ha. under Gania Range of Nayagarh Division. The said C.A area has been proposed for Compensatory Afforestation @ 400 plants /Ha. in ANR with gap plantation mode of seedlings will be raised of 20800.

(iii) Hatimunda RF (C/6) over an area 185.907Ha. under Gania Range of Nayagarh Division. The said C.A area has been proposed for Compensatory Afforestation @ 400 plants /Ha. in ANR with gap plantation mode of seedlings will be raised of 74363.

(iv) Binjhagiri Parbat (C/6) over an area 64.885 Ha. under Pancharida Range of Nayagarh Division. The said C.A area has been proposed for Compensatory Afforestation @ 400 plants /Ha. in ANR with gap plantation mode of seedlings will be raised of 25954.

(v) Ragadimada RF over an area 104.292Ha. under Mahipur Range of Nayagarh Division. The said C.A area has been proposed for Compensatory Afforestation @ 400 plants /Ha. in ANR with gap plantation mode of seedlings will be raised of 41717.

Of seedling IN LEIU OF 292.289 HA. DIVERSION OF FORST LAND FOR THE CONSTRUCTION OF KHURDA ROAD-BOLANGIR NEW B.G. RAIL LINK PROJECT OF EAST COAST RAILWAY, BHUBANESWAR.

WAGE RATE Rs. 311.00/- PER MANDAY

Vide Notification No. 2816/LC, Bhubaneswar dt. 25.05.2021 of Labour Commissioner, Odisha  
ESTIMATE OF COST FOR 1.00HA. UNDER ANR GAP PLANTATION MODEL

| Sl. No.                   | Item of work   | Period of execution | Mandays  | Labour cost @ 311 per day | Material cost | Total       |
|---------------------------|--|---------------------|----------|---------------------------|---------------|-------------|
| 1                         | 2  | 3                   | 4        | 5                         | 6             | 7           |
| 1                         | Survey, Demarcation & pillar posting. GPS Reading with mapping   | Nov/Dec             | 2        | 622                       | 0             | 622         |
| 2                         | Site Preparation   | Nov/Dec             | 2        | 622                       | 0             | 622         |
| 3                         | Silvi-cultural Operation including clearance of weed, climber cutting, high stump cutting, singling of shoots etc.   | Jan/Feb             | 5        | 1555                      | 0             | 1555        |
| 4                         | Contingency and Unforeseen Expenditures  |                     | 0        | 0                         | 133           | 133         |
|                           | <b>SUB-TOTAL</b>   |                     | <b>9</b> | <b>2799</b>               | <b>133</b>    | <b>2932</b> |
| 5                         | Monitoring & Supervision Charges 5% of the total cost  |                     |          |                           |               | 147         |
|                           | <b>Grand Total</b>   |                     | <b>9</b> | <b>2799</b>               | <b>133</b>    | <b>3079</b> |
| <b>1ST YEAR OPERATION</b> |  |                     |          |                           |               |             |
| 1                         | Pitting 45 cm cube size  | Feb/Mar             | 18       | 5598                      | 0             | 5598        |
|                           | (a) Transportation of seedlings from permanent Nursery to planting site including Loading, Unloading and watering @ 14000/- per 1000 seedlings at unloading poing (for 440 plants) | Jul/Aug             | 0        | 0                         | 6160          | 6160        |
|                           | (b) Shifting to the planting place   | Jul/Aug             | 3        | 933                       | 0             | 933         |
| 2                         | (c) planting including casualty replacement  | Jul/Aug             | 10       | 3110                      | 0             | 3110        |
| 3                         | Complete weeding, Soil working, Manuring   | Aug/Sep             | 12       | 3732                      | 0             | 3732        |







|                           |   |           |           |             |              |              |
|---------------------------|---|-----------|-----------|-------------|--------------|--------------|
| 1                         | Transportation of seedlings from permanent Nursery to planting site including Loading, Unloading and watering @ 14000/- per 1000 seedlings at unloading going (for 20 Plants) | Jul/Aug   | 0         | 0           | 280          | 280          |
| 2                         | Casualty replacement (5% of the plantation) including cost of seedling, carriage and planting   | Jul/Aug   | 3         | 933         | 780          | 1713         |
| 3                         | Cost of Pesticide / Bio- Pesticide @ 5 gm per plant for 20 plants @ Rs. 80/- per kg   | Jul/Aug   | 0         | 0           | 8            | 8            |
| 4                         | Complete weeding and cultural operations  | Aug/Sep   | 2         | 622         |              | 622          |
| 5                         | Soil Working  | Aug/Sep   | 2         | 622         |              | 622          |
| 6                         | Fireline Tracing and Inspection Path  | Feb/Mar   | 1         | 311         |              | 311          |
| 7                         | Watch & Ward (Whole Year)   | Apr-Mar   | 7         | 2177        |              | 2177         |
| 8                         | Contingency and unforeseen items  |           |           | 0           | 200          | 200          |
|                           | <b>SUB-TOTAL</b>  |           | <b>15</b> | <b>4665</b> | <b>1268</b>  | <b>5933</b>  |
| 9                         | Monitoring & Supervision Charges 5% of the total cost   |           |           | 0           |              | 297          |
|                           | <b>SUB-TOTAL PLANTATION</b>   |           | <b>15</b> | <b>4665</b> | <b>1268</b>  | <b>6230</b>  |
| 10                        | Maintenance of of Watchman shed 5 No. per year  |           |           | 0           | 25000        | 25000        |
|                           | <b>Grand Total 3rd Year:</b>  |           | <b>15</b> | <b>4665</b> | <b>26268</b> | <b>31230</b> |
| <b>4th YEAR OPERATION</b> |   |           |           |             |              |              |
| 1                         | Fireline Tracing and Inspection Path  | Feb/Mar   | 1         | 311         | 0            | 311          |
| 2                         | Watch & Ward and cultural operations  | Apr-Mar   | 2         | 622         | 0            | 622          |
| 3                         | Counting of Survival of Plantation  | Dec-March | 6         | 1866        | 50           | 1916         |
|                           | <b>SUB-TOTAL</b>  |           | <b>9</b>  | <b>2799</b> | <b>50</b>    | <b>2849</b>  |
| 4                         | Monitoring & Supervision Charges 5% of the total cost   |           |           | 0           |              | 142          |
|                           | <b>SUB-TOTAL PLANTATION</b>   |           | <b>9</b>  | <b>2799</b> | <b>50</b>    | <b>2991</b>  |
| 5                         | Maintenance of of Watchman shed 5 No. per year  |           |           | 0           | 25000        | 25000        |
|                           | <b>Grand Total 4th Year:</b>  |           | <b>9</b>  | <b>2799</b> | <b>25050</b> | <b>27991</b> |
| <b>5th YEAR OPERATION</b> |   |           |           |             |              |              |
| 1                         | Fireline Tracing and Inspection Path  | Feb/Mar   | 1         | 311         | 0            | 311          |
| 2                         | Watch & Ward and cultural operations  | Apr-Mar   | 2         | 622         | 0            | 622          |
| 3                         | Counting of Survival of Plantation  | Dec-March | 6         | 1866        | 50           | 1916         |
|                           | <b>SUB-TOTAL</b>  |           | <b>9</b>  | <b>2799</b> | <b>50</b>    | <b>2849</b>  |
| 4                         | Monitoring & Supervision Charges 5% of the total cost   |           |           | 0           |              | 142          |
|                           | <b>SUB-TOTAL PLANTATION</b>   |           | <b>9</b>  | <b>2799</b> | <b>50</b>    | <b>2991</b>  |
| 5                         | Maintenance of of Watchman shed 5 No. per year  |           |           | 0           | 25000        | 25000        |
|                           | <b>Grand Total 5th Year:</b>  |           | <b>9</b>  | <b>2799</b> | <b>25050</b> | <b>27991</b> |
| <b>6th YEAR OPERATION</b> |   |           |           |             |              |              |
| 1                         | Fireline Tracing and Inspection Path  | Feb/Mar   | 1         | 311         | 0            | 311          |
| 2                         | Watch & Ward and cultural operations  | Apr-Mar   | 2         | 622         | 0            | 622          |
| 3                         | Counting of Survival of Plantation  | Dec-March | 6         | 1866        | 50           | 1916         |
|                           | <b>SUB-TOTAL</b>  |           | <b>9</b>  | <b>2799</b> | <b>50</b>    | <b>2849</b>  |
| 4                         | Monitoring & Supervision Charges 5% of the total cost   |           |           | 0           |              | 142          |
|                           | <b>SUB-TOTAL PLANTATION</b>   |           | <b>9</b>  | <b>2799</b> | <b>50</b>    | <b>2991</b>  |
| 5                         | Maintenance of of Watchman shed 5 No. per year  |           |           | 0           | 25000        | 25000        |
|                           | <b>Grand Total 6th Year:</b>  |           | <b>9</b>  | <b>2799</b> | <b>25050</b> | <b>27991</b> |



| 7th YEAR OPERATION  |   |           |            |              |               |               |
|---------------------|---|-----------|------------|--------------|---------------|---------------|
| 1                   | Fireline Tracing and Inspection Path                  | Feb/Mar   | 1          | 311          | 0             | 311           |
| 2                   | Watch & Ward and cultural operations                  | Apr-Mar   | 2          | 622          | 0             | 622           |
| 3                   | Counting of Survival of Plantation                    | Dec-March | 6          | 1866         | 50            | 1916          |
|                     | <b>SUB-TOTAL</b>                                      |           | <b>9</b>   | <b>2799</b>  | <b>50</b>     | <b>2849</b>   |
| 4                   | Monitoring & Supervision Charges 5% of the total cost |           |            | 0            |               | 142           |
|                     | <b>SUB-TOTAL PLANTATION</b>                           |           | <b>9</b>   | <b>2799</b>  | <b>50</b>     | <b>2991</b>   |
| 5                   | Maintenance of of Watchman shed 5 No. per year        |           |            | 0            | 25000         | 25000         |
|                     | <b>Grand Total 7th Year:</b>                          |           | <b>9</b>   | <b>2799</b>  | <b>25050</b>  | <b>27991</b>  |
| 8th YEAR OPERATION  |   |           |            |              |               |               |
| 1                   | Fireline Tracing and Inspection Path                  | Feb/Mar   | 1          | 311          | 0             | 311           |
| 2                   | Watch & Ward and cultural operations                  | Apr-Mar   | 2          | 622          | 0             | 622           |
| 3                   | Counting of Survival of Plantation                    | Dec-March | 6          | 1866         | 50            | 1916          |
|                     | <b>SUB-TOTAL</b>                                      |           | <b>9</b>   | <b>2799</b>  | <b>50</b>     | <b>2849</b>   |
| 4                   | Monitoring & Supervision Charges 5% of the total cost |           |            | 0            |               | 142           |
|                     | <b>SUB-TOTAL PLANTATION</b>                           |           | <b>9</b>   | <b>2799</b>  | <b>50</b>     | <b>2991</b>   |
| 5                   | Maintenance of of Watchman shed 5 No. per year        |           |            | 0            | 25000         | 25000         |
|                     | <b>Grand Total 8th Year:</b>                          |           | <b>9</b>   | <b>2799</b>  | <b>25050</b>  | <b>27991</b>  |
| 9th YEAR OPERATION  |   |           |            |              |               |               |
| 1                   | Fireline Tracing and Inspection Path                  | Feb/Mar   | 1          | 311          | 0             | 311           |
| 2                   | Watch & Ward and cultural operations                  | Apr-Mar   | 2          | 622          | 0             | 622           |
| 3                   | Counting of Survival of Plantation                    | Dec-March | 6          | 1866         | 50            | 1916          |
|                     | <b>SUB-TOTAL</b>                                      |           | <b>9</b>   | <b>2799</b>  | <b>50</b>     | <b>2849</b>   |
| 4                   | Monitoring & Supervision Charges 5% of the total cost |           |            | 0            |               | 142           |
|                     | <b>SUB-TOTAL PLANTATION</b>                           |           | <b>9</b>   | <b>2799</b>  | <b>50</b>     | <b>2991</b>   |
| 5                   | Maintenance of of Watchman shed 5 No. per year        |           |            | 0            | 25000         | 25000         |
|                     | <b>Grand Total 9th Year:</b>                          |           | <b>9</b>   | <b>2799</b>  | <b>25050</b>  | <b>27991</b>  |
| 10th YEAR OPERATION |   |           |            |              |               |               |
| 1                   | Fireline Tracing and Inspection Path                  | Feb/Mar   | 1          | 311          | 0             | 311           |
| 2                   | Watch & Ward and cultural operations                  | Apr-Mar   | 2          | 622          | 0             | 622           |
| 3                   | Counting of Survival of Plantation                    | Dec-March | 6          | 1866         | 50            | 1916          |
|                     | <b>SUB-TOTAL</b>                                      |           | <b>9</b>   | <b>2799</b>  | <b>50</b>     | <b>2849</b>   |
| 4                   | Monitoring & Supervision Charges 5% of the total cost |           |            | 0            |               | 142           |
|                     | <b>SUB-TOTAL PLANTATION</b>                           |           | <b>9</b>   | <b>2799</b>  | <b>50</b>     | <b>2991</b>   |
| 5                   | Maintenance of of Watchman shed 5 No. per year        |           |            | 0            | 25000         | 25000         |
|                     | <b>Grand Total 10th Year:</b>                         |           | <b>9</b>   | <b>2799</b>  | <b>25050</b>  | <b>27991</b>  |
|                     | <b>Grand Total Plantation:</b>                        |           | <b>202</b> | <b>62822</b> | <b>489811</b> | <b>556513</b> |

  
 Divisional Forest Officer  
 Nayagarh Division  
 Nayagarh Division



# **ABSTRACT FOR SCHEME-II**

| Sl. No. | Year   | No. of person Days | Labour cost @ 311.00 per day | Material cost (Rs.) | Monitoring & Supervision Charge 5% of the total cost | Construction and Maintenance of Watchman shed | Total Cost      |
|---------|--|--------------------|------------------------------|---------------------|--|---|-----------------|
| 1       | 2  | 3                  | 4                            | 5                   | 6  | 7   | 8               |
| 1       | 0th Year<br>(Advance Year)   | 9                  | 2799                         | 133                 | 147  | 0   | 3079            |
| 2       | 1st Year<br>(Creation Year)  | 88                 | 27368                        | 8962                | 1817   | 250000  | 288147          |
| 3       | 2nd Year   | 27                 | 8397                         | 4098                | 625  | 25000   | 38120           |
| 4       | 3rd Year   | 15                 | 4665                         | 1268                | 297  | 25000   | 31230           |
| 5       | 4th Year   | 9                  | 2799                         | 50                  | 142  | 25000   | 27991           |
| 6       | 5th Year   | 9                  | 2799                         | 50                  | 142  | 25000   | 27991           |
| 7       | 6th Year   | 9                  | 2799                         | 50                  | 142  | 25000   | 27991           |
| 8       | 7th Year   | 9                  | 2799                         | 50                  | 142  | 25000   | 27991           |
| 9       | 8th Year   | 9                  | 2799                         | 50                  | 142  | 25000   | 27991           |
| 10      | 9th Year   | 9                  | 2799                         | 50                  | 142  | 25000   | 27991           |
| 11      | 10th Year  | 9                  | 2799                         | 50                  | 142  | 25000   | 27991           |
|         | <b>Total:</b>  | <b>202</b>         | <b>62822</b>                 | <b>14811</b>        | <b>3880</b>  | <b>475000</b>                                 | <b>556513</b>   |
|         | <b>Total Cost Norm per Ha (Col. No. 4 +5 + 6)</b>                                      |                    |                              |                     |  |   | <b>81513</b>    |
|         | <b>Construction of watchman shed and its maintenance up to 10 th year (Col. No. 7)</b> |                    |                              |                     |  |   | <b>475000</b>   |
|         | <b>Total Cost of plantation (536.877 Ha.):</b>   |                    |                              |                     |  |   | <b>43762455</b> |
|         | <b>Grand Total:</b>  |                    |                              |                     |  |   | <b>44237455</b> |

*(Signature)*  
20/09/17  
Divisional Forest Officer

Nayagarh Division

*Divisional Forest Officer  
Nayagarh Division*



**18 month old seedlings (1000 seedlings) for CA Plantation**

| Sl. No  | Item of work  | Period       | unit | Unit cost | Quant ity | Labour cost           | Material cost | Total           |
|---|---|--------------|------|-----------|-----------|-----------------------|---------------|-----------------|
| 1   | 2   | 3            | 4    | 5         | 6         | 7                     | 8             | 9               |
| 1   | Cost of P.bags (9" x 5")  |              | Kg   | 212       | 2.5       | 0                     | 530           | 530             |
| 2   | Cost of Soil  |              | cft  | 8         | 22        | 0                     | 176           | 176             |
| 3   | Cost of Sand  |              | cft  | 12        | 11        | 0                     | 132           | 132             |
| 4   | Cost of CDM   |              | cft  | 15        | 12        | 0                     | 180           | 180             |
| 5   | Cost of insecticide   |              | Kg   | 80        | 2         | 0                     | 160           | 160             |
| 6   | Preparation of soil mixture including pulverisation and straining           | Nov-Dec      | MD   | 311       | 2         | 622                   | 0             | 622             |
| 7   | Filling setting   | Nov-Dec      | MD   | 311       | 2         | 622                   | 0             | 622             |
| 8   | Collection of seed, grading and treatment                                   | Dec          | MD   | 311       | 2         | 622                   | 0             | 622             |
| 9   | Preparation of germination bed, dibbling / transplanting, provision of shed | Jan          | MD   | 311       | 2         | 622                   | 200           | 822             |
| 10  | Watering from January to March  | Jan-March    | MD   | 311       | 9         | 2799                  | 0             | 2799            |
| 11  | Maintenance of nursery including fencing up to March                        | Jan - March  | MD   | 311       | 8         | 2488                  | 400           | 2888            |
| 12  | Watering from April to June   | April - June | MD   | 311       | 9         | 2799                  | 0             | 2799            |
| 13  | Shorting, Weeding, Grading and resetting                                    | May- June    | MD   | 311       | 3         | 933                   | 0             | 933             |
| 14  | Application of insecticide  | May - June   | MD   | 311       | 0.25      | 77.75                 | 0             | 77.75           |
| 15  | Contingency   |              |      |           | 0         | 0                     | 327           | 327             |
| <b>Total:</b>                                       |   |              |      |           |           | <b>11584.8</b>        | <b>2105</b>   | <b>13689.75</b> |
| 1   | Watering October to March   | Oct - March  | MD   | 311       | 19        | 5909                  | 0             | 5909            |
| 2   | Shorting, weeding, grading and resetting over one year period               | Oct-Nov      | MD   | 311       | 9         | 2799                  | 0             | 2799            |
| 3   | Application of insecticide cost   | Nov - Dec    | MD   | 311       | 0.2       | 62.2                  | 30            | 92.2            |
| 4   | Contingency   |              |      |           | 0         | 0                     | 550           | 550             |
| <b>Total:</b>                                       |   |              |      |           |           | <b>8770.2</b>         | <b>580</b>    | <b>9350.2</b>   |
| 1   | Polythene bags (12" x 10" x 300 gauge)                                      |              | Kg   | 212       | 12.50     | 0                     | 2650          | 2650            |
| 2   | Cost of Soil  |              | cft  | 8         | 58        | 0                     | 464           | 464             |
| 3   | Cost of Sand  |              | cft  | 12        | 29        | 0                     | 348           | 348             |
| 4   | Cost of CDM   |              | cft  | 15        | 29        | 0                     | 435           | 435             |
| 5   | Cost of insecticide   |              | Kg   | 80        | 2         | 0                     | 160           | 160             |
| 6   | Preparation of potting mixture including pulverization and straining        | January      | MD   | 311       | 4         | 1244                  | 0             | 1244            |
| 7   | Filling of polythene bags including repotting and setting                   | March        | MD   | 311       | 20        | 6220                  | 0             | 6220            |
| 8   | Watering from April to June   | April - June | MD   | 311       | 10        | 3110                  | 0             | 3110            |
| 9   | Weeding, shifting and grading through out the year                          | May- June    | MD   | 311       | 2         | 622                   | 0             | 622             |
| 10  | Application of insecticide  | May- June    | MD   | 311       | 0.5       | 155.5                 | 100           | 255.5           |
| 11  | Contingency   | -            | -    | 0         | 0         | 0                     | 425           | 425             |
| <b>Total:</b>                                       |   |              |      |           |           | <b>11351.5</b>        | <b>4582</b>   | <b>15933.5</b>  |
| <b>Grand Total:</b>                                 |   |              |      |           |           | <b>31706.5</b>        | <b>7267</b>   | <b>38973.5</b>  |
| <b>Or Say</b>                                       |   |              |      |           |           |                       |               | <b>38974.00</b> |
| <b>Total cost of Nursery (for 285000 seedlings)</b> |   |              |      |           |           | <b>1,11,15,000.00</b> |               |                 |



## B. ADDITIONAL COST PROPOSED

| Sl. No. | Particulars   | SCHEME-I<br>C.A over 66.242<br>Ha. in ANR<br>plantation mode<br>@200 plants/Ha.<br>(Amount in Rs.) | SCHEME-II<br>C.A over 536.877<br>Ha. in ANR<br>plantation mode<br>@400 plants/ Ha.<br>(Amount in Rs.) | Total Amount<br>(in Rs.) |
|---------|---|--|---|--------------------------|
| 1       | Barbed wire fencing @ Rs. 688/- over (35631 Mtr.), Maintenance of 3 years including provision of 1 no. Iron Gate (only planting area)   | 14,27,600  | 2,30,89,280   | 2,45,16,880              |
| 2       | Soil Moisture Conservation with LBCD of size ( Length 5 Mtr, Height 1Mtr, Top with 1Mtr, Bottom width 7Mtr, Aprone 1Mtr.) of 200 nos. @18358/- per LBCD (Lum -sum) as per field requirement.  | -  | -   | 36,71,600                |
| 3       | Additional incentive (3%) of Plantation Cost for VSS/Fr./FG Proposed for more than 80% survival and very good growth during 4 <sup>th</sup> year of maintenance as per recommendation of DFO and RCCF.  | 92,479   | 9,64,849  | 10,57,328                |
| 4       | Additional EPA expenses if implemented through VSS @ Rs. 1200/- in 0 <sup>th</sup> year, Rs. 2400/- in 1 <sup>st</sup> year, Rs. 1800/- in 2 <sup>nd</sup> year, Rs. 600/- in 3 <sup>rd</sup> year, Rs.600/- in 4 <sup>th</sup> year, Rs. 600/- in 5 <sup>th</sup> year, Rs 600/- in 6 <sup>th</sup> year, Rs. 600/- in 7 <sup>th</sup> year, Rs. 600/- in 8 <sup>th</sup> year, Rs. 600/- in 9 <sup>th</sup> year, Rs. 600/- in 10 <sup>th</sup> year, total Rs. 10200/- per Ha. | 6,75,668   | 54,76,145   | 61,51,813                |
| 5       | Cost of Preparation and erection of 04 nos. sign board with maintenance of boundary pillar. (LS)  | 1,00,000   | 5,00,000  | 6,00,000                 |
| 6       | Watcher shed @ 50000/- (Creation in Panting year) with 9 years maintenance @ 5000/- per year at Six plantation site {50000+ (9x5000)} = 95000/-   | 95,000   | 4,75,000  | 5,70,000                 |
|         | Sub Total (B)   | 23,90,747  | 3,05,05,274   | 3,65,67,621              |
|         | Add Plantation Cost (A)   | 39,75,788  | 4,42,37,455   | 4,82,13,243              |
|         | Add 18 month old seedlings Nursery cost (C)   | -  | -   | 1,11,15,000              |
|         | (A+B +C):   | 63,66,535  | 7,47,42,729   | 9,58,95,864              |




D. Over Head & Contingencies

| Sl. No. | Particulars  | Amount (Rs) |
|---------|--|-------------|
| 1.      | Office Expenses, Stationery, TA/DA, Repairer of Vehicles/ Computer etc @ 5% of above | 47,94,793   |

TOTAL PROJECT COST OF COMPENSATORY AFFORESTATION

| Sl. No. | Particulars   | Amount (Rs)  |
|---------|---|--------------|
| 1.      | Plantation Cost (584.578 Ha.) (A)                                       | 4,82,13,243  |
| 2.      | Total Additional cost (B)   | 3,65,67,621  |
| 3.      | Total cost of Nursery 18 month old seedlings (for 285000 seedlings) (C) | 1,11,15,000  |
| 4.      | Total Overhead & Contingencies (D)                                      | 47,94,793    |
|         | Sub Total   | 10,06,90,657 |
|         | Add 20% escalation  | 2,01,38,131  |
|         | Grand Total   | 12,08,28,788 |

(Rupees: Twelve Crore Eight Lakh Twenty Eight Thousand Seven Hundred and Eighty Eighty) only.

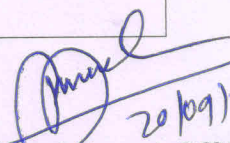
  
 Division Forest Officer  
 Nayagarh Forest Division  
 Division Forest Officer  
 Nayagarh Division



**Annexure- I**

Compen Satary Afforestation in Nayagarh Forest Division in Leiu of 292.289 Ha. Forest Land  
Proposed for Division (Total Land Required for C.A.=292.289X2=584.578Ha.)

| SL.NO               | Forest Name        | Under Range | Area in Ha. | Seedlings<br>including<br>Casualty<br>2 <sup>nd</sup> Year &<br>3 Year | Patch No. |
|---------------------|--------------------|-------------|-------------|--|-----------|
| 1                   | Pithakhai RF       | Khandpada   | 129.794     | 64897  | Patch-I   |
| 2                   | Arakhataila DPF    | Gania       | 51.999      | 26000  | Patch-II  |
| 3                   | Hatimunda RF (C/6) | Nayagarh    | 185.907     | 92955  | Patch-III |
| 4                   | Binjhagiri Parbat  | Pancharida  | 64.885      | 32442  | Patch-IV  |
| 5                   | Ragadimada RF      | Mahipur     | 104.292     | 52145  | Patch-V   |
| 6                   | Gochha RF          | Odagaon     | 66.242      | 16561  | Patch-VI  |
| Total Area Surveyed |                    |             | 603.119     | 285000   |           |

  
20/09/20  
Divisional Forest Officer  
Nayagarh Forest Division.  
Divisional Forest Office  
Nayagarh Division



### Annexure- III

#### ESTIMATE FOR BARBED WIRE FENCING

- 01) 02 ply barbed wire (5 Rtm per kg)  
7 straight strand X 1000 Mt. = 7000 Mt.  
2 Diagonal strand =  $2 \times \sqrt{(6.5')^2 + (8.2')^2} = 2 \times 10.50 \text{ ft.}$   
= 21.00 ft. x 400 nos. = 8400 ft or = 2560 Mt.  
= 9560 Mt.

Requirement of Barbed wire per Km.

Cost per KM =  $9560/5 = 1912 \text{ Kg} \times @ \text{Rs. } 80/\text{Kg.} =$  **Rs.1,52,960.00**

- 02) Construction of RCC pillars of size-  
Length-8ft, Bottom Width 6"x6", Top width-4"x4"  
Reinforced with 6mm rods with proper curing

$$\left\{ \frac{8' \times 6'' + 4''}{2} \right\} \times \frac{6'' + 4''}{2} = 1.34 \text{ cft or } 0.038 \text{ cum}$$

i) Cost of c.c work 1:2:4 =  $0.038 \text{ cum} \times @ \text{Rs. } 5423.59/\text{cum} = 206.10$

ii) Cost of rod including cutting, bending & binding  
 $0.038 \times 0.9 \text{ qtl.} = 0.0342 \text{ qtl.} @ \text{Rs. } 11003.44/\text{qtl.}$

= 376.32

Total Rs. 582.42

= 87.36

iii) Contingency (15%) including  
Curing, stacking, provision of hooks etc.

-----  
Rs.669.78 or 670/-

#### Requirement of pillars per KM-

Spacing = 2.5 mt. x 2.5 mt.

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 Kilometer =  $480 \times @ 670/- =$

**Rs.3,21,600.00**

- 03) Fitting 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  $45.86 \text{ cum} \times @ \text{Rs. } 13,373/100 \text{ cum} = \text{Rs. } 6132.86$

ii) Fixing of pillars with 4cm hbg metals in C.M 1:4:8

pit size-  $1.5' \times 1.5' \times 1.5'$

= 3.375 cft.

Deduct  $1/3^{\text{rd}}$  of butt of pillar i.e.  $3.375/3$

= (-) 1.125 cft.

Total c.c. work per pillar

-----  
2.25 cft.



For 480 pillars=480x2.25=1080cft or 30.577 cum. X @ **Rs.3755.98/cum.** =**Rs.1,14,846.60**

04) Labour for straightening the barbed wire and fixing & clipping with pillars  
70M.D per km @ 311/- =**Rs.21,770.00**

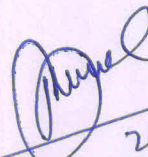
05) Carriage of Barbed wire & pillars to work site  
@Rs.1000/tl. and cost of loading & unloading within 5 km distance  
Approximately 10 tld @ 800/tld =**Rs.18,000.00**

06) Provision of one Iron Gate of size (4'x5') on LS = **Rs. 7,500.00**  
Total = Rs.6,42,809.46  
Labour Cess 1%= Rs. 6,428.09  
Expenditure per 1 km of barbed wire fencing = **Rs.6,49,237.55**  
**Or say, Rs. 649.24/- or Rs. 649/-**

07) Expenditure towards maintenance for 3 years (3<sup>rd</sup>, 6<sup>th</sup> & 9<sup>th</sup> year)  
@ 2% of cost per RKM = 3 x 2% X Rs.6,49,237.55/- = Rs.38,954.25

**Expenditure per 1 km of fencing including maintenance = Rs.6,88,191.80**  
**Or say Rs. 6,88,192/-**

So, expenditure per running meter for fencing = Rs. 688.19 Per Mtr. **or say Rs. 688/- per Mtr.**

  
20/09/17  
Divisional Forest Officer,  
Nayagarh Forest Division.  
Nayagarh Forest Division



## ANALYSIS OF RATE

1. Earth work excavation of foundation in hard soil with in initial lead 50m. and lift 1.5m. including rough dressing and breaking clods Maximum 5 to 7 cm. size including leveling & dressing etc. per % Cum.  
Male Mulia 43.00 Nos.@ 311/-day Rs.13,373/-  
Female Mulia

**Rs.13,373/Cum**

2. C.C/(1:4:8) using 4 cm. size hard granite metal including lying compacting. Curing with all cost, conveyance, royalty of materials etc. per Cum.  
(A/R 24 item no.4)

|                               |      |                   |            |
|-------------------------------|------|-------------------|------------|
| H.G. Metal                    | 0.96 | cum.@ Rs.1223.40  | Rs.1174.46 |
| Sand                          | 0.48 | cum.@ Rs.443.42   | Rs. 212.84 |
| Cement                        | 1.72 | Qntl.@ Rs.630.00  | Rs.1083.60 |
| Massion 2 <sup>nd</sup> class | 0.18 | Nos.@ Rs.401/day  | Rs. 72.18  |
| Man Mulia                     | 1.80 | Nos.@ Rs.311/day  | Rs. 559.80 |
| Woman Mulia                   | 1.40 | Nos.@ Rs. 311/day | Rs. 435.40 |
| Man Mulia                     | 0.70 | Nos.@ Rs. 311/day | Rs. 217.70 |

**Rs. 3755.98/Cum.**

**Or Rs. 3756/-**

3. Cement Concrete (1:2:4) with 12mm size C.B.H.G. Chips including Cost. Carriage & Royalty etc. complete.

|                               |      |                   |            |
|-------------------------------|------|-------------------|------------|
| HG Chips 12mm                 | 0.96 | cum.@ Rs.1581.40  | Rs.1518.14 |
| Sand                          | 0.45 | cum.@ Rs.443.00   | Rs. 199.35 |
| Cement                        | 3.23 | Qntl.@ Rs.630.00  | Rs.2034.90 |
| Massion 2 <sup>nd</sup> class | 0.60 | Nos.@ Rs. 401/day | Rs. 240.60 |
| Man Mulia                     | 4.60 | Nos.@ Rs. 311/day | Rs.1430.60 |

**Rs. 5423.59/Cum.**

**Or Rs 5424/-**

4. Cutting bending, binding, straightening and tying the grills and placing In position including cost of M.S. of Tor Steel & binding wires etc.  
Ref-A/R-2006 item No.9 pages 52  
Taking output for 1QT.

Cost & carriage of HYDS steel including 5%

|   |      |      |         |            |
|---|------|------|---------|------------|
| For wastage & overlapping   | QT   | 1.05 | 5500.00 | Rs.5775.00 |
| Binding wire (GI)   | Kg   | 8.00 | 80.00   | Rs. 640.00 |
| Labour for cutting bending shifting of site lying & placing in position. Mate | Each | 0.44 | 401.00  | Rs. 176.44 |
| Black smith special   | Each | 4.00 | 401.00  | Rs.1604.00 |
| Semi-skilled Mulia  | Each | 8.00 | 351.00  | Rs.2808.00 |

**Rs. 11,003.44/QT.**

**Or 11003/-**



## Annexure- IV

### **DETAILED ESTIMATE FOR LOOSE BOULDER CHECK DAM (LBCD) (Length 5Mtr., Height 1Mtr., Top width 1Mtr., Bottom width 7Mtr., Aprone 1Mtr.)**

1. Excavation of foundation of LBCD

$$\text{Step-1} = 5\text{Mtr.} \times (7+1)\text{ Mtr.} \times 0.03\text{ Mtr.} = 12.00\text{cum}$$

$$\text{Step-2} = 5\text{Mtr.} \times 1\text{ Mtr.} \times 0.5\text{Mtr.} = 2.50\text{cum}$$

Or say 14.50cum @ Rs. **177/cum**..... Rs. 2566.50

2. Construction of LBCD by RR Stone (HG)

$$\text{Foundation as above} = 14.50\text{cum}$$

$$\text{Super Structure} - \frac{1}{2} \times 1\text{Mtr.} \times (7\text{Mtr.} + 1\text{Mtr.}) = 4.00\text{cum}$$

$$\text{Total} = 18.50\text{cum}$$

Or say 18.50cum @ Rs. **835.66/cum**..... Rs. 15459.71

3. Sign board..... Rs. 150.00

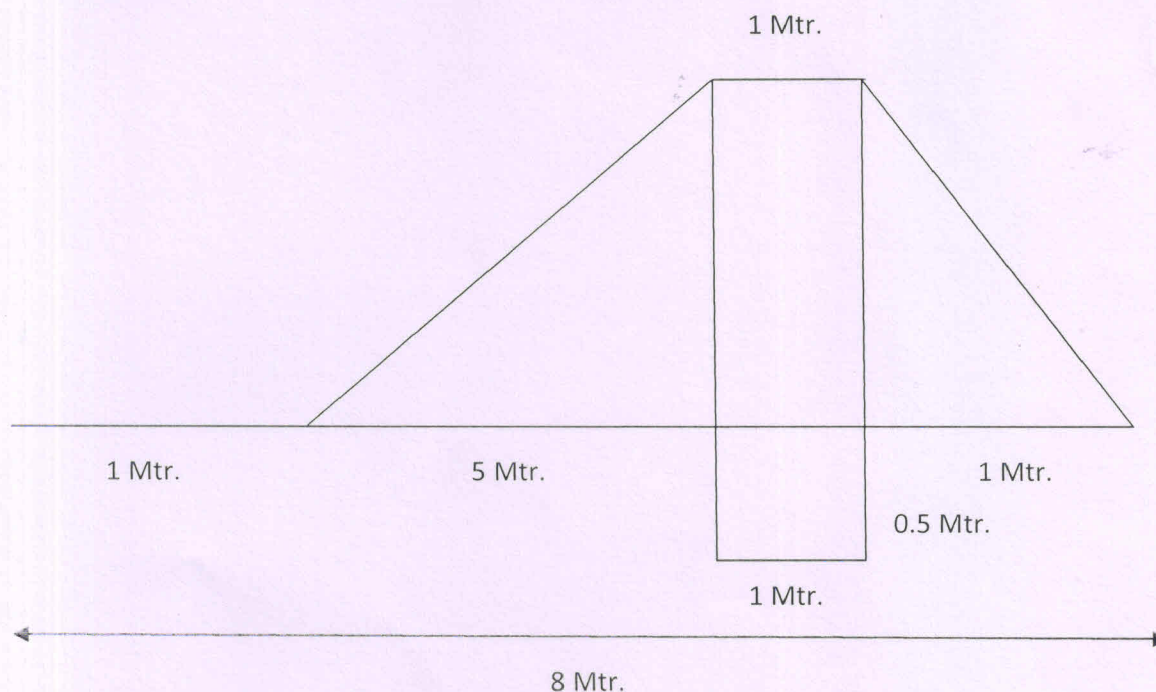
4. Labour Cess @ 1%..... Rs. 181.76

**Total Rs. 18357.97**

**Or Rs. 18358.00**

**(Rupees twenty two thousand five hundred thirty seven) only**

### PLAN





## Analysis

### A. Data for 100 cum

Earth work in all kinds of soil for excavation with initial lead & lift etc. complete.

Mulia 47.35 nos. @ Rs. 311/each  
Add for 20% excavation

Rs. 14725.85  
Rs. 2945.17/cum

---

Total:- Rs. 17671.02/100cum

Or Say Rs. **177.00/cum**

### B. Data for 1 cum

i. R.R stone dry packing in aprons & revetment of size 30cm above etc. completed.

Collection of Stone 1.00cum by engaging labour 1MD @ Rs. 311/cum Rs. **311.00**

ii. Mason Special 0.17nos. @ Rs. 461.00/each  
Semi skilled 0.35nos. @ Rs. 351.00/each  
Male Mulia 1.04nos. @ Rs. 311.00/each

Rs. 78.37  
Rs. 122.85  
Rs. 323.44

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Total Rs. 524.66/cum

---

**Total per cum 835.66**

iii. Cost of Transportation within lead of Km per Cum 0.00

**Grand Total 835.66**

  
20/09/17  
Divisional Forest Officer  
Nayagarh Forest Division  
Raha  
Divisional Forest Officer  
Nayagarh Division