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**COMPENSATORY AFFORESTATION SCHEME  
OVER 46.00 HA**

**FOR**

**FOREST DIVERSION PROPOSAL  
OVER 18.389 HECTARES OR 45.440 ACRES  
OF REVENUE FOREST LAND PROPOSED FOR  
DIVERSION**

**OF**

**“WIDENING OF LOADING PLATFORM AT  
SARDEGA RAILWAY STATION IN SUNDARGARH  
DISTRICT, ODISHA”**

**(A GOVT. OF INDIA ENTERPRISES)**

**Prepared by:-**

**Divisional Forest Officer  
Sundargarh Forest Division**

## **INTRODUCTION**

The linkage of coal from IB vally area and Basudhara area and it transportation to various power plants industrial sectors of Eastern India, Southern India and Western India have been increased. It is a fact that, India recorded a power supply shortage of 1201 million units due to crunch of coal supply to 135 power plants of India.

Accordingly Govt. Of India urged coal India limited & its subsidiaries to make-all-out efforts to ensure proper coal stocks of power plants. For the proper storage of coal at yards for quick loading on Rail wagon, it is found that the width of loading platform at Sardega need to be increased so that the staking area to be developed for effective and quick loading into the wagon.

Considering and accepting the proposal for extension of loading platform at Sardega, S.E Railway has developed the project for widening of platform approximate 50mtr on either side. Accordingly proposal has been made to widen the platform for immediate use of coal dumping & loading.

With this backdrop South Eastern Railway Jharsugada has submitted the forest diversion proposal for the above project.

### **FOREST LAND INVOLVED:**

This Project extends over an area of 31.145 Ha. Comprising of Tenancy Land, Govt. Non-forest land, Govt. Revenue Forest Land covering 2(Two) villages namely Gopalpur & Sardega, under Hemgir Tahasil of Sundargarh forest division. Out of which Revenue Forest Land is 18.389 Ha. Hence the total diversion of Forest land will be 18.389 Ha.

### **LAND SCHEDULE OF THE PROPOSED C.A AREA:**

A Comprehensive site specific compensatory scheme is prepared twice the extent of area is being diverted i.e. 18.389 Ha. X 2 = 36.778Ha. Which has been identified for the purpose of Compensatory Afforestation in Village Kuchedega of Gopalpur Range under Sundargarh Forest Division. The identified area is devoid of forest growth can be replenished with artificial regeneration and other allied forestry operation clubbed with soil and moisture conservation work.

| Sl. No.        | Khata No. | Plot No. | Kisam         | Identify area in Ac. | Identify area in Ha. | No. of seedlings planted per ha. |
|----------------|-----------|----------|---------------|----------------------|----------------------|----------------------------------|
| 1              | 98        | 1/1      | Gramya Jungle | 55.50                | 22.46                | <b>1000</b>                      |
| 2              | 98        | 1/2      | Gramya Jungle | 30.27                | 12.25                | <b>1000</b>                      |
| 3              | 98        | 46/p     | Jungle        | 27.90                | 11.29                | <b>1000</b>                      |
| <b>Total:-</b> |           |          |               | <b>113.67</b>        | <b>46.00</b>         | <b>46000</b>                     |



### **TOPOGRAPHY:**

These sites come within TOPO sheet No F44L12. In 1:50,000 scale The selected patches is slightly hilly terrain having very good drainage system devoid of forest growth except some trees are scatter seen over the area.

### **CLIMATE:**

The climate of this Division is characterized by a hot dry summer and well distributed rainfall in the South-West monsoon season. The hot season starts with the beginning of March and continues till May, which is the hottest month of the year with mean daily maximum temperature of 45°C and the mean daily minimum temperature of 27°C. The rainy season starts from June to September, July being the month with the heaviest shower. Relative humidity is high in the South-West monsoon season. The average rainfall in the Division varies from 1200 to 1600 mm. The rainfall is fairly uniform throughout the Division. Storms and depressions from the Bay of Bengal during the monsoon season pass across the Division causing heavy rainfall and strong wind. The winter starts from October to February .December is the coldest month of the year with the mean daily maximum temperature 27°C and the mean daily minimum temperature of 12°C.

### **DESCRIPTION OF EXISTING VEGETATION.**

The selected patch in Revenue village Kuchedega situated approximately 12 kms from Range headquarter in Gopalpur Range.

The area is hilly having gentle slope on the foot hills and some scattered patches have already become barren due to heavy biotic interference. During the summer season the hill takes a look of bald and the vegetation resumes again during rainy season. Sal is the pre dominant species associated with Asan ,Harida, Karda, Kusum, Mai, Mahul, Sidha, Bandhan, Char, Dhaura, Bija, Palsa, Ratanjali, Kendu, Bahada, Senna, Gamhari, Jamun, Karanja, Tal, Neem, Kasi, Rohini, Kumri, Valua, Khiris, Sunari, karala, Kakad and other miscellaneous species.

### **GEOLOGY:**

This division is occupied by sand stone, Shale clay, Shale Phyllites and Mica-Schist which underlie the Soil throughout the area. The area around Sundargarh and to its North and North-East is occupied by gneisses and granites. To the West of the IB River Coal bearing Gondwana Sand Stone occurs.

### **ROCK:**

The Soil yielded by rocks are soft medium grained Sand stone and red Shale of Cuddapah group. This Division also contains Granite and Granite gneisses. Abundance of quartz veins intersects the rocks making the surface soil rocky. The Lower Gondwana formations contain Pink colored Sand stone usually seen along the

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Forest- road to Hemgir Beheramunda. There are large deposits of carbonaceous clay which is being used in manufacturing of Fire-resistant bricks.

### **MINERALS:**

Important minerals in different parts of Division available are Lime stone, Manganese, Dolomite, Fire clay, Mica, Bauxite, Lead, Zinc and Coal.

### **SOIL**

The soil and sub-soil are very thick and more fertile. They are of well drained fine sandy loam in texture on surface, reddish yellow, yellow, brown to red in colour, Shallow in the slopes. In the forest area, the soil is either loamy or clayey loam variety with poor porosity.

## **CHAPTER-2**

The identified area is located in Revenue Village Kuchedega under Gopalpur Range located 40km.aproximately from Range head quarter. A road from Sundargarh to Toporia passes through the identified land which facilitate for inspection of plantation. The propose management technique is prescribed here with a view to fulfillment of the following objectives.

### **OBJECTIVES:**

1. It is mandatory requirement under the Provision of F.C. Act 1980.
2. To make good the loss of forest land to be diverted and keeping the forest land intact.
3. To generate employment to the villagers living around the area.
4. To restock the blank area through artificial regeneration.
5. To enhance the land productivity through soil and moisture conservation
6. To increase the Biodiversity for improvement of local ecology.

### **PLANTATION- TECHNIQUE:**

Preferably indigenous Species are to be planted in the blank area coupled with soil and moisture measures. Agave plantation should be raised all along the boundary of plantation site not only to act as live wall but to save the Plantation from biotic interference.



### **CHOICE OF SPECIES:**

Considering the edaphic and micro climatic conditions the following species are recommended:

|         |   |                        |
|---------|---|------------------------|
| Sal     | : | Shorea robusta         |
| Gambhar | : | Gmelina arborea        |
| Sissoo  | : | Dalbergia Sissoo.      |
| Karanja | : | Pongamia Pinnata.      |
| Neem    | : | Azartichta indica      |
| Anla    | : | Embliceaofficinalis    |
| Jamun   | : | Sizygium cumini        |
| Asan    | : | Terminalia tomentosa   |
| Bamboo  | : | Dendrocalamus strictus |
| Agave   | : | Agave Sislanoa         |

### **SURVEY AND DEMARCATION:**

- The area should be clearly surveyed on the field with reference to the map available in winter season (October to December) to ascertain the exact area available for plantation and superimposed in 1:4000 scale. There are some Masonry pillars erected on the boundary of the site which are to be numbered with reference to 4"= 1 mile scale map available in the division. GPS reading is to be taken of the plantation site.
- The plantation areas to be indicated by signboards at corners or at points of intersection with roads, inspection paths and boundary lines. The signboard should contain the name of the plantation site, area, year of planting and other details. Year of planting is essential, otherwise after 6-7 years it will be difficult to know the year and area.

### **A.N.R PLANTATION:**

The area is having a degraded of Forest growth it is prescribed to take up A.N.R plantation in the site selected with regeneration cleaning of existing crop & gap planting in the banks at a spacing of 2.50 mtr. x 2.50 mtr. with a pit size of 45cm x 45cm x 45cm. The total requirement of seedling per Hac will be 1000/ Ha plants for this 46000 nos. plants will be required over **46ha.**

### **CALENDAR OF OPERATION:**

The calendar of operation for preparation of site, pre-planting, planting, post-planting are prescribed herewith.

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| OPERATIONS  | PERIOD OF COMPLETION         |
|---|------------------------------|
| i. Advance preparation of site.                     | End of October               |
| ii. Alignment & Digging of pits                     | End of February              |
| iii. Stacking                                       | End of February              |
| iv. Pre sprouted poly potted stump planting.        | 1 <sup>st</sup> week of July |
| v. Casualty replacement                             | End of July                  |
| vi. 1 <sup>st</sup> soil working, weeding, manuring | End of August                |
| vii. Soil & water conservation measuring            | End of September             |
| viii. 2 <sup>nd</sup> soil working, weeding         | During October               |
| ix. 3 <sup>rd</sup> soil working                    | During December              |

#### **Post Planting operation in 2nd year.**

- a. Casualty replacement, 1<sup>st</sup> weeding soil working & manuring. : End of July
- b. 2<sup>nd</sup> weeding & soil working : During October

#### **In 3rd year.**

- a. Soil working, casualty replacement : End of July
- b. Pruning & Singling : September

#### **(Up to 4<sup>th</sup> year to 10<sup>th</sup> year.**

#### **NURSERY**

In a suitable place having proximity to the plantation area a decentralize nursery will be raised.

The site selected for raising nursery should be nearer to a village or hamlet, sufficient good earth and cow dung manure should be available along with man power.

In the month of November the area required for the nursery will be demarcated and fenced by vegetative growth with close spacing. Inside the nursery three feet wide road all along the periphery and in the middle a gate should be placed at the centre for human trespass.

Inside the nursery beds will be aligned to accommodate 1000 seedling. In each bed provision will be on either side to facilitated watering to the seedling.



Seeds of desired species will be preferable collected one year before. Such seeds should be well dried and paced in polythine.

In each bed polythine bags of 10" x 6" x 125 gages will be filled up with 1:2:4 rating that is one part of sand two part is cow dung manure and four part of good earth. Sufficient insecticide should be added to the mixture. This prefilled polythine bags will be arranged in 1000 nos in each bed. The voids of polythine bags should be compacted by sand.

The collected seeds will be soaked for 24 hours in water. The polythine bags will be presoaked in the evening hours and in the next morning the presoaked seeds will be dibbled with care so that the epiderm will not be damaged.

Daily twice watering will be done preferably early in the morning and late in the evening.

After 15 days or one month the seeds will grow to seedlings. At this stage weeding should be done to improve growth in seedling.

After two months when the seedlings attain the height of 40 to 45 cm frequency and intensity of watering should be diminished.

Our aim should be that each seedling attains 45cm by June 15<sup>th</sup> and the root should have not gone deep into the earth.

10% excess seedling has to be raised in order to accommodate 5% casualty in nursery stage and 5% during transportation to site.

### **PLANTING**

Prior to the onset of monsoon the dug of earth in each pit mixed with an insitu dose of 15 gm manure and filled up in the pits.

At the unset of monsoon the seedlings will be transported from nursery side to plantation side preferably on head load or cart load or in worse case by tractor. In case of tractors, the bed of the trolley should be covered with a thin layer of straw.

The seedling will be distributed in the pits according to the plantation design. The polythine bags from each seedling will be carefully removed and the seedling with ball of earth will be planted at the centre of pit and compacted. The plantation should not be taken up when it is heavily raining.

### **1st soil working and manuring**

In the month of August when the seedling is planted has started giving rise to a pair of new leaf soil working will be done around each plant at a radius of 0.5 mtrs.

Three holes will be made encircling the seedling in slanting manure and 100gm of CAN/NPK will be applied.

### **2nd soil working**

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In the month of October and a 2nd soil working will be done in which the cluts will be over turned.

### **APPLICATION OF FERTILIZER:**

The best time is to apply fertilizer is the basal dose (30grams) to the plants at the time soil working and weeding. Chemical fertilizer should not be placed too close to the plant a it may burn the roots and kill the plants. The fertilizer should be placed in three small holes 10cm. away from the base of the plants all around it. It I advisable to apply fertilizer on a rainy day soon after weeding have been completed.

### **(7) MULCHING:**

Mulching is an operation where cut vegetable materials is placed around planted seeding covering the soil around it. This helps soil climate to a considerable extent. Mulching affects soil temperatures, help condensation, prevent soil erosion and loss of soil moisture through evaporation.

Further it is to be carried out at the time of weeding. Weeds which has not flowered may be pulled out from around the planted seeding and may be used as mulches around the seedling.

### **PRUNNING:**

Lower branches of the tree planted be pruned in the third and subsequent year. This operation is beneficial for the following reason.

- 1) They allow the plants to be healthy, stout and knot free stumps.
- 2) It reduces fire hazard by lessening the chance of ground fire.

### **REPLACEMENT OF CASUALTY:**

Seedlings die due to various causes like heavy rain, draught, fire and grazing etc. but in a well managed plantation, where the planting stock consist of healthy and stout seedling, say five percent may die in the time between plantation and first weeding. The operation of casualty replacement may be earmarked and kept reserved at the time of planting. Only healthy and stout seedling slightly larger than those planted at the time of plantation should be used. This is important because only such seedling can catch of with those which has survived and growing. Before planting the seedling, the following operations are to be taken up.

- I. The failure pit is to be dug again.
- II. Another dose of fertilizer farmyard manure and insecticide be given to the pit.
- III. Watering is to be done generally directly after planting, if the planting is done in dry season.



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Replacement planting can also take up in the second year of the plantation.  
The casualty at this time should be exceeding 20%.

### **PROTECTION:**

The important element of successful plantation is protection. Watchers are to be engaged on daily wage basis for five years.

### **REGENERATION CLEANING:**

This consist of -

- (I) Cleaning operation is to be done in the existing plantation where ever necessary.
- (II) Removal of all kind of unwanted growth in the area including creeper, climber and freeing useful species of competition & suppression. For this the principal species first is to be given preference over secondary species and like wise secondary species over tertiary species.
- (III) Copping malformed stems and singling out of shoots of useful spices when there is more than one shoot.
- (IV) Removal of congestion of thinning out congested strand of useful species.

### **CONTROL:**

1. The nursery journal, the plantation journal and other records shall be mentioned for each patch separately in accordance with the provision of "The Orissa Forest plantation manual 1977 indicating the physical and financial achievements. Necessary entries with regard to plantation activities undertaken shall be entered in the journals and shall be produced before the inspecting offers.
2. For protection, measures shall be taken to save the plantation for fire incidence. Boundary are will be scrapped to a width of 2 mtr. During February/ March and the cut materials are to be burnt under strict supervision. The inspection path around 4.00 ha plot shall have to be laid out and weed growths are to be scrapped.

### **Chain link fencing wire mesh:**

**The chain link fencing wire mesh over 6737 running meters @ 1761 per running meter is proposed as per one time cost norm vide fencing model**

**No.F-II.**



## **SOIL & WATER CONSERVATION MEASURES:**

It is indispensable to take up the soil & moisture conservation work. Small gullies are to be plugged by live plants. As the area will be dried out quickly water conservation measures will be taken by digging staggered trenches. These trenches will be dug along the contour in a continuous manner. The dimensions of the trenches will be 1.5mtr x 0.5 mtr x 0.5 mtr. and dug out earth will be kept on the lower hill side. Staggered trenches are to be aligned 15mtr.apart along the contour and 7.5mtr. Across the contour. In addition to above, leguminous seeds are to be sown in the inter space between the plants. Check dams are proposed to be constructed out of dry rubbles across the nallahs & gullies.

## **MISCELLANEOUS OPERATION:**

**I. Survey and Demarcation:** The gross area of the plantation sites in Kuchedega village must be surveyed and demarcated. It is necessary for future maintenance and management. The area will be survey with a prismatic compass and. The boundaries of these plots will also act as inspection path and fire line .Masonry would be posted at the boundaries.

**II. Fire lines tracing and management:** Fire is a great destroyer of forest and young shoots. So, the boundaries at the area will be scrapped of any plant growth to a width of 2 meters during February/ March and the cut back materials would be burnt under strict supervision. The inspection path will be scrapped of weak growth to prevent spreading of fire, if any.

## **PROVISION FOR WATCHER:**

In addition to above measure, watches are to be employed on daily wage basis for five years for success of plantation.

## **PEOPLE'S PARTICIPATION:**

The local communities are to be involved for the protection of the plantation. The VSS is to be formed and incentives to be given to the VSS for their active participations in protecting the plantation.

## **TOTAL FINANCIAL OUTLAY:**

The total financial outlay of the scheme is Rs.3,47,86,682.00

## **FUNDING AGENCY:**

South Eastern Railway Jharsuguda division

## **EXECUTIVE AGENCY:**

Divisional Forest Officer, Sundargarh Forest Division.

  
Divisional Forest Officer,  
Sundargarh Forest Division  
Sundargarh Forest Division



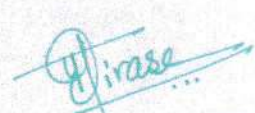
Financial out lay of CA Scheme over 46 ha of Revenue forest land identified at village- Kuchedega under Hemgir Tahasil of Sundargarh Forest Division for the diversion proposal over 18.389 ha of forest land for Widening of Loading platform at Sardega Railway Station under SE Railway.

(As per onetime cost norm with 18 months old seedling)

**TOTAL COST OF PROJECT**

|         |  |                    |
|---------|--|--------------------|
| 1       | Cost of Plantation ANR over 46 ha at village - Kuchedega under Hemgir Tahasil @1000 Plants per ha & its maintenance @Rs.246454/ per ha with 10 years maintenance. ( as per cost norm in Annexure- 4) | Rs. 1,13,36,884.00 |
| 2       | Cost of Chain Link fencing wire mesh over 6232 RMT @1761 per RMT (Fencing Model No- F-II)  | Rs. 1,09,74,552.00 |
| 3       | Soil & Conservation of Moisture Work @Rs.37415/- over 46 ha. (Model No- C)   | Rs. 17,21,090.00   |
| 4       | Watering provision to Compensatory Afforestation (CA) Plantation @ Rs.233786/ha over 46 ha.( Model No- W-I)  | Rs. 1,07,54,156.00 |
| Total:- |  | Rs.3,47,86,682.00  |

(Rupees Three Crore Forty Seven Lakh Eighty Six Thousand Six Hundred Eighty-Two only)

  
Divisional Forest Officer,  
Sundargarh Forest Division.



ANNEXURE-4

BASE COST NORM FOR COMPENSATORY AFFORESTATION (BLOCK PLANTATION)  
@ 1000 PLANTS PER HECTARE (18 months old seedling)

WAGE RATE Rs- 311/- PER MANDAY

| Sl. No  | Items of work   | Preferable Period of Execution | No of Mandays | Labour Cost (In Rs.) | Material Cost (In Rs.) | Total cost (In Rs.) |
|---|---|--------------------------------|---------------|----------------------|------------------------|---------------------|
| 1   | 2   | 3                              | 4             | 5                    | 6                      | 7                   |
| <b>0th Year (Advance work) Pre-Planting Operation</b> |   |                                |               |                      |                        |                     |
| 1   | Survey, Demarcation and Pillar posting  | Nov/Dec                        | 2             | 622                  | 0                      | 622                 |
| 2   | Preparation of Treatment Map (Digital Map)  | Nov/Dec                        | 1             | 311                  | 100                    | 411                 |
| 3   | Site preparation (Cleaning & removal of debris)   | Nov/Dec                        | 12            | 3732                 | 0                      | 3732                |
| 4   | Creation of 4.00 mt wide Inspection Path  | Feb/Mar                        | 1             | 311                  | 0                      | 311                 |
| 5   | Alignment and stacking of pits  | Feb/Mar                        | 1             | 311                  | 0                      | 311                 |
| 6   | Digging of pits (45 cm x 45 cm X 45 cm) in hard and gravelly soil   | Feb/Mar                        | 40            | 12440                | 0                      | 12440               |
| 7   | Construction of Temporary Labour Shed, Drinking water facility and First-Aid etc.   | Jan/Mar                        | 0             | 0                    | 3500                   | 3500                |
|   | <b>Total</b>  |                                | <b>57</b>     | <b>17727</b>         | <b>3600</b>            | <b>21327</b>        |
| <b>1st Year/Planting Year</b>                         |   |                                |               |                      |                        |                     |
| 1   | Refilling of pits by altering the dugout soil of the pits, application of organic compounds/ CDM/ FYM & mixing the same properly.   | Jun/Jul                        | 7.5           | 2332.50              | 5000                   | 7332.50             |
| 2   | Transportation of 18 months old polythene bag seedlings in hired truck /tractor from the Permanent/Mega nursery to planting site including loading & unloading. (Average lead of 10 Rkm) & stacking the seedling @ Rs.6/- per Seedling. (1100 nos.)   | Jul/Aug                        | 0             | 0                    | 6600                   | 6600                |
| 3   | Watering polypot seedlings at planting site   | Jul/Aug                        | 2             | 622                  | 0                      | 622                 |
| 4   | Conveyance of polypot seedlings on head load from the stacking site to individual dugout pits within the planting site, applying insecticide, fertilizers & planting after scooping the soil with other applied materials & pressing the soil perfectly around the planted seedlings.                                   | Jul/Aug                        | 22.5          | 6997.50              | 0                      | 6997.50             |
| 5   | <b>Cost of Fertilizer &amp; Insecticide</b><br>(a)NPK/Bio-fertilizer @ 50 gms/plant as basal dose = 50kg @ Rs.30/- per kg = Rs. 1500.00<br>(b) Urea/Vermicompost/Mo Khata/any other fertilizer in two subsequent doses @ Rs. 750.00<br>(c) Insecticide/ Bio-pesticide @ 5 gms/plant=5 kg @ Rs.150/- per kg = Rs. 750.00 | Jul/Aug                        | 0             | 0                    | 3000                   | 3000                |
| 6   | Casualty Replacement @ 10% (100 nos.)   | Jul/Aug                        | 2.5           | 777.5                | 0                      | 777.5               |
| 7   | 1st weeding & Manuring .  | Aug/Sept                       | 12            | 3732                 | 0                      | 3732                |
| 8   | 2nd Weeding, Soil working (1mt. diametre around the plants) & Manuring  | Oct/Nov                        | 15            | 4665                 | 0                      | 4665                |
| 9   | Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of inspection path  | Feb/Mar                        | 3             | 933                  | 0                      | 933                 |
| 10  | Watch & Ward including watering as per requirement  | Aug-Mar                        | 12            | 3732                 | 0                      | 3732                |
|   | <b>Total</b>  |                                | <b>76.50</b>  | <b>23791.50</b>      | <b>14600.00</b>        | <b>38391.50</b>     |
| <b>2nd Year Maintenance</b>                           |   |                                |               |                      |                        |                     |
| 1   | Transportation of 100 seedlings from Nursery to plantation site including loading, unloading & conveyance by Tractor @ Rs.6/- per seedling  | Jul                            | 0             | 0                    | 600                    | 600                 |
| 2   | Casualty replacement- 10%   | Jul                            | 2.5           | 777.5                | 0                      | 777.5               |
| 3   | <b>Cost of Fertilizer &amp; Insecticide-</b><br>A) Cost of Insecticide/ Bio-pesticide @ 5 gms/plant = 0.5 Kg @ Rs.150/- per kg = Rs.75/-<br>B)Urea/NPK/Bio-fertilizer/Vermicompost/Mo Khata/any other fertilizer @Rs. 2800/-  | July/Aug                       | 0             | 0                    | 2875                   | 2875                |
| 4   | Weeding (Complete weeding), Manuring & Soil working, (1mt. diametre around the plants)  | Sep/Oct                        | 15            | 4665                 | 0                      | 4665                |
| 5   | Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of inspection path  | Feb/Mar                        | 3             | 933                  | 0                      | 933                 |
| 6   | Watch & Ward including watering as per requirement  | Apr-Mar                        | 18            | 5598                 | 0                      | 5598                |
| 7   | Maintenance of Temporary Labour Shed, Drinking water facility and First Aid etc.  | Apr-Mar                        |               | 0                    | 1000                   | 1000                |
|   | <b>Total</b>  |                                | <b>38.5</b>   | <b>11973.5</b>       | <b>4475</b>            | <b>16448.5</b>      |



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| Sl. No                       | Items of work  | Preferable Period of Execution | No of Mandays | Labour Cost (In Rs.) | Matrrial Cost (In Rs.) | Total cost (In Rs.) |
|------------------------------|--|--------------------------------|---------------|----------------------|------------------------|---------------------|
| 1                            | 2  | 3                              | 4             | 5                    | 6                      | 7                   |
| <b>3rd Year Maintenance</b>  |  |                                |               |                      |                        |                     |
| 1                            | Cost of Fertilizer(Urea/NPK/Bio-fertilizer/Vermicompost/Mo Khata/any other fertilizer)           | July/Aug                       | 0             | 0                    | 2800                   | 2800                |
| 2                            | Weeding (Complete weeding), Manuring & Soil working (1mt. diametre around the plants)            | Sep/Oct                        | 15            | 4665                 | 0                      | 4665                |
| 3                            | Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of inspection path | Feb/Mar                        | 3             | 933                  | 0                      | 933                 |
| 4                            | Watch & Ward including watering as per requirement   | Apr/Mar                        | 18            | 5598                 | 0                      | 5598                |
| 5                            | Maintenance of Temporary Labour Shed, Drinking water facility and First Aid etc.                 | Apr/Mar                        | 0             | 0                    | 1000                   | 1000                |
|                              | <b>Total</b>   |                                | <b>36.0</b>   | <b>11196</b>         | <b>3800</b>            | <b>14996</b>        |
| <b>4th Year Maintenance</b>  |  |                                |               |                      |                        |                     |
| 1                            | Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of inspection path | Feb/Mar                        | 3             | 933                  | 0                      | 933                 |
| 2                            | Watch & Ward including maintenece of vegetative fencing  | Apr-Mar                        | 18            | 5598                 | 0                      | 5598                |
|                              | <b>Total</b>   |                                | <b>21</b>     | <b>6531</b>          | <b>0</b>               | <b>6531</b>         |
| <b>5th Year Maintenance</b>  |  |                                |               |                      |                        |                     |
| 1                            | Fire line tracing (2 m. wide fire line over 400 m length)  | Feb/Mar                        | 3             | 933.00               | 0                      | 933                 |
| 2                            | Watch & Ward   | Apr/Mar                        | 18            | 5598.00              | 0                      | 5598                |
|                              | <b>Total</b>   |                                | <b>21</b>     | <b>6531</b>          | <b>0</b>               | <b>6531</b>         |
| <b>6th Year Maintenance</b>  |  |                                |               |                      |                        |                     |
| 1                            | Fire line tracing (2 m. wide fire line over 400 m length)  | Feb/Mar                        | 3             | 933.00               | 0                      | 933.0               |
| 2                            | Pruning of branches, Singling out of multiple shoots   | Jan/Mar                        | 3             | 933.00               | 0                      | 933.0               |
| 3                            | Watch & Ward   | Apr/Mar                        | 18            | 5598.00              | 0                      | 5598.0              |
|                              | <b>Total</b>   |                                | <b>24</b>     | <b>7464</b>          | <b>0</b>               | <b>7464.0</b>       |
| <b>7th Year Maintenance</b>  |  |                                |               |                      |                        |                     |
| 1                            | Fire line tracing (2 m. wide fire line over 400 m length)  | Feb/Mar                        | 3             | 933.00               | 0                      | 933                 |
| 2                            | Watch & Ward   | Apr/Mar                        | 18            | 5598.00              | 0                      | 5598                |
|                              | <b>Total</b>   |                                | <b>21</b>     | <b>6531</b>          | <b>0</b>               | <b>6531</b>         |
| <b>8th Year Maintenance</b>  |  |                                |               |                      |                        |                     |
| 1                            | Fire line tracing (2 m. wide fire line over 400 m length)  | Feb/Mar                        | 3             | 933.00               | 0                      | 933                 |
| 2                            | Watch & Ward   | Apr/Mar                        | 18            | 5598.00              | 0                      | 5598                |
|                              | <b>Total</b>   |                                | <b>21</b>     | <b>6531</b>          | <b>0</b>               | <b>6531</b>         |
| <b>9th Year Maintenance</b>  |  |                                |               |                      |                        |                     |
| 1                            | Fire line tracing (2 m. wide fire line over 400 m length)  | Feb/Mar                        | 3             | 933.00               | 0                      | 933                 |
| 2                            | Watch & Ward   | Apr/Mar                        | 18            | 5598.00              | 0                      | 5598                |
|                              | <b>Total</b>   |                                | <b>21</b>     | <b>6531</b>          | <b>0</b>               | <b>6531</b>         |
| <b>10th Year Maintenance</b> |  |                                |               |                      |                        |                     |
| 1                            | Fire line tracing (2 m. wide fire line over 400 m length)  | Feb/Mar                        | 3             | 933                  | 0                      | 933                 |
| 3                            | Watch & Ward   | Apr/Mar                        | 18            | 5598.00              | 0                      | 5598                |
|                              | <b>Total</b>   |                                | <b>21</b>     | <b>6531</b>          | <b>0</b>               | <b>6531</b>         |

**Year wise Abstract of Cost Norm (showing seedling cost separately)**

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CUZ

| SL No | Items of work | Preferable Period of Execution | No of Mandays       | Labour Cost (In Rs.)  | Matrrial Cost (In Rs.)   | Total cost (In Rs.)                       |                   |
|-------|---------------|--------------------------------|---------------------|-----------------------|--|---|-------------------|
|       | 2             | 3                              | 4                   | 5                     | 6  | 7   |                   |
| SL No | Year          | No. of Mandays                 | Labour cost (In Rs) | Material Cost(In Rs.) | Monitoring, Evaluation, Learning, Documentat ion and Other Contingency (5%) of (4+5) | Cost of Seedlings @Rs.50.31 per seedlings | TOTAL COST(In Rs) |
| 1     | 2             | 3                              | 4                   | 5                     | 6  | 7   | 8                 |
| 1     |               | 57.0                           | 17727.0             | 3600.0                | 973.00   | 0.00                                      | 22300.00          |
| 1     | 0th year      | 76.5                           | 23791.5             | 14600.0               | 1918.50  | 55341.00                                  | 95651.00          |
| 2     | 1st year      | 38.5                           | 11973.5             | 4475.0                | 821.50   | 5031.00                                   | 22301.00          |
| 3     | 2nd year      | 36.0                           | 11196.0             | 3800.0                | 749.00   | 0.00                                      | 15745.00          |
| 4     | 3rd year      | 21.0                           | 6531.0              | 0.0                   | 326.00   | 0.00                                      | 6857.00           |
| 5     | 4th year      | 21.0                           | 6531.0              | 0.0                   | 326.00   | 0.00                                      | 6857.00           |
| 6     | 5th year      | 24.0                           | 7464.0              | 0.0                   | 373.00   | 0.00                                      | 7837.00           |
| 7     | 6th year      | 21.0                           | 6531.0              | 0.0                   | 326.00   | 0.00                                      | 6857.00           |
| 8     | 7th year      | 21.0                           | 6531.0              | 0.0                   | 326.00   | 0.00                                      | 6857.00           |
| 9     | 8th year      | 21.0                           | 6531.0              | 0.0                   | 326.00   | 0.00                                      | 6857.00           |
| 10    | 9th year      | 21.0                           | 6531.0              | 0.0                   | 326.00   | 0.00                                      | 6857.00           |
| 11    | 10th year     |                                |                     |                       |  |   |                   |
|       | Total:        | 358.0                          | 111338.0            | 26475.0               | 6791.0   | 60372.0                                   | 204976.0          |

**Note:**

- 1 Priority must be given to the indigenous local species available nearby to the site of plantation.
- 2 10 % indigenous fruit bearing trees must be preferred to Plantation.
- 3 Site specific Soil conservation work like LBCD, Gully Plugging, Staggered Trench, Contour Trench, Graded Bund, etc. may be taken up
- 4 Chain link fencing can be adopted in the CA plantation taken up outside the forest area and Bamboo twigs fencing may be preferred
- 5 Watering facilities for procurement of water & watering may be adopted as per the availability of water.
- 6 The Cost Norm of various items can be changed with the approval of the concerned RCCFs keeping the overall cost norm fixed for each Financial Year

  
APCCF (Forest Diversion & NO, FC Act)



Matrix for Model-I A Conventional CA Plantation (AR) 1000 plants per Ha

| Sl. NO. | Comment Year | I     | II     | III    | IV     | V      | VI     | VII    | VIII   | IX     | X      | XI     | XII   | XIII  | XIV   | XV    | XVI   | XVII  | XVIII | XIX   | XX    | XXI | Total Cost (10 Years) |
|---------|--------------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|-----------------------|
|         | Base Norm    | 22300 | 95651  | 22301  | 15745  | 6857   | 6857   | 7837   | 6857   | 6857   | 6857   | 6857   |       |       |       |       |       |       |       |       |       |     | 234718                |
| 1       | 2021-22      | 22300 | 100434 | 24585  | 18226  | 8335   | 8751   | 10502  | 9648   | 10131  | 10637  | 11169  |       |       |       |       |       |       |       |       |       |     | 246454                |
| 2       | 2022-23      |       | 23415  | 105456 | 25814  | 19137  | 8752   | 9189   | 11027  | 10130  | 10638  | 11169  | 11727 |       |       |       |       |       |       |       |       |     | 258777                |
| 3       | 2023-24      |       |        | 24586  | 110729 | 27105  | 20094  | 9190   | 9648   | 11578  | 10637  | 11170  | 11727 | 12313 |       |       |       |       |       |       |       |     | 271716                |
| 4       | 2024-25      |       |        |        | 25815  | 116265 | 28460  | 21099  | 9650   | 10130  | 12157  | 11169  | 11729 | 12313 | 12929 |       |       |       |       |       |       |     | 285302                |
| 5       | 2025-26      |       |        |        |        | 27106  | 122078 | 29883  | 22154  | 10133  | 10637  | 12765  | 11727 | 12315 | 12929 | 13575 |       |       |       |       |       |     | 299567                |
| 6       | 2026-27      |       |        |        |        |        | 28461  | 128182 | 31377  | 23262  | 10640  | 11169  | 13403 | 12313 | 12931 | 13575 | 14254 |       |       |       |       |     | 314546                |
| 7       | 2027-28      |       |        |        |        |        |        | 29884  | 134591 | 32946  | 24425  | 11172  | 11727 | 14073 | 12929 | 13578 | 14254 | 14967 |       |       |       |     | 330273                |
| 8       | 2028-29      |       |        |        |        |        |        |        | 31378  | 141321 | 34593  | 25646  | 11731 | 12313 | 14777 | 13575 | 14257 | 14967 | 15715 |       |       |     | 346788                |
| 9       | 2029-30      |       |        |        |        |        |        |        |        | 32947  | 148387 | 36373  | 26928 | 12318 | 12929 | 15516 | 14254 | 14970 | 15715 | 16501 |       |     | 364127                |
| 10      | 2030-31      |       |        |        |        |        |        |        |        |        | 34594  | 155806 | 38139 | 28274 | 12934 | 13575 | 16292 | 14967 | 15719 | 16501 | 17326 |     |                       |

APCCF (Forest Diversion & NO, FC Act)




Financial Outlay for Compensatory Afforestation Scheme over 46 ha of Revenue forest land identified at village **Kuchedega under Hemgiri Tahasil of Sundargarh Forest Division** against diversion over 18.389 ha of forest land for widening of Loading platform at Sardega Railway Station under SE Railway

(As per one-time cost norm within 18 months old seedlings)

| Sl. No. | Description   | Amount (Rs.)   |
|---------|---|--|
| 1.      | Cost of Plantation AR over 46 ha at village <b>Kuchedega under Hemgiri Tahasil @ 1000 plants per ha &amp; its maintenance @ Rs.2,46,454/- per ha with 10 years maintenance (as per cost onrm in Annexure-4)</b> | 1,13,36,884.00   |
| 2.      | Cost of Chain Link fencing wire mesh over 6232 RMT @ Rs.1761/- per RMT (Fencing Model No. F-II)   | 1,09,74,552.00   |
| 3.      | Soil & Conservation of Moisture Work @ Rs.37,415/- over 46 ha (Model No.C)  | 17,21,090.00   |
| 4.      | Watering provision to Compensatory Afforestation (CA) Plantation @ Rs.233786/ ha over 46 ha (Model No.W-1)  | 1,07,54,156.00   |
|         | <b>Grand Total</b>  | <b>3,47,86,682.00</b><br><b>Or rounded off to</b><br><b>3,47,86,700.00</b> |

(Rupees Three Crore forty seven lakhs eighty six thousand and seven hundred) only

Approved

  
 Chief Conservator of Forests  
 Forest Diversion & Nodal Officer, FC Act





OFFICE OF THE COLLECTOR & DISTRICT MAGISTRATE, SUNDARGARH

(Revenue Section)

No. 10834 /VIII-67/2022 Dt. 13.9.22

The Divisional Forest Officer,  
Sundargarh Forest Division.

Sub: Submission of land schedule of 113.67 acre or 46.00 Ha. of degraded revenue forest land suitable for Compensatory Afforestation against diversion of 18.40 ha. of Forest land for widening of Loading Platform at Sardega Railway Station.

Ref: Copy of Letter No. 1668 dated 12.09.2022 of Dy. Chief Engineer (CON), S.E. Railway, Jharsuduga.

Sir,

With reference to the letter on the subject cited above, I am to say that the following schedule of Degraded Revenue Forest land measuring 46.00 Ha has been identified by the Tahasildar, Hemgir for the purpose of compensatory afforestation against diversion of 18.40 ha. of Forest land for widening of Loading Platform at Sardega Railway Station.

The land schedule in details along with original land plan is furnished herewith for further course of action at your end.

LAND SCHEDULE

| Tehsil | Mouza    | Khata No. | Plot No. | Kisam         | Required area in Ac. |
|--------|----------|-----------|----------|---------------|----------------------|
| Hemgir | Kuchdega | 98        | 1 / 1    | Gramya Jungle | 55.50                |
|        |          |           | 1 / 2    | Gramya Jungle | 30.27                |
|        |          | 46/p      | Jungle   | 27.90         |                      |
| Total  |          |           |          |               | 113.67 or 46.00 ha   |

Yours faithfully,

Collector Sundargarh

Memo No. 10835 /Rev. Dt. 13.9.22

Copy forwarded to the Divisional Forest Officer, Sundargarh Forest Division for information & necessary action.

Collector Sundargarh

Memo No. 10836 /Rev. Dt. 13.9.22

Copy forwarded to the Tahasildar, Hemgir for information & necessary action.

Collector Sundargarh

Memo No. 10837 /Rev. Dt. 13.9.22

Copy forwarded to Dy. Chief Engineer (CON), South Eastern Railway, Jharsuguda-768201 for information & necessary action.

Collector Sundargarh