Diversion for 125.24 ha of Forest Land coming within SubhadraOpen Cast Project of MCL, Angul

| Range    | Seedlings Nos. | Location         | Land Type   | Plantation<br>Type | Area    | Fencing in<br>meter | Cost      |
|----------|----------------|------------------|-------------|--------------------|---------|---------------------|-----------|
| Bantala  | 13228          | 13228 Kanja      | Non-Forest  | 1000               | 13.228  | 1680                | 11841173  |
| Bantala  | 30602          | 30602 Nukhripada | Non-Forest  | 1600               | 19.126  | 1930                | 17887833  |
| Bantala  | 34693          | 34693 Jamugadia  | Non-Forest  | 1000               | 34.693  | 2670                | 33743594  |
| Bantala  | 40255          | 40255 Baghuapat  | Rev. Forest | 1000               | 40.255  | 4600                | 34944699  |
| Jarapada | 8719           | 8719 Rodasingha  | Non-Forest  | 200                | 43.593  | 0                   | 7282668   |
|          | 127497         |                  |             |                    | 150.895 | 13880               | 105699967 |

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Project Officer MCL, Subhadra Area रून, सि. एल. सुभद्रा क्षत्र

प्रकल्प अधिकारी

### CHECK LIST SERIAL NUMBER-18 SCHEME FOR COMPENSATORY AFFORESTATION SCHEME OVER AN AREA OF 13.228HA IN NON-FOREST LAND IDENTIFIED IN THE VILLAGE KANJA, BANTALA RANGE

UNDER

ANGUL TAHASIL

OF

DISTRICT ANGUL

IN

LIEU OF PROPOSED FOREST DIVERSION FOR 125.24
HA OF FOREST LAND COMING WITHIN SUBHADRA
OPEN CAST PROJECT

OF M/S MCL, DIST-ANGUL

**Plantation Model:** 

AR Plantation over ha@1000plants per ha

**Prepared By** 

Divisional Forest Officer, Angul Division

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| 2     | Details of Scheme  | -         |           |
| 3     | Land schedule  | 1         |           |
| 4     | ORSAC Authentication Letter  | II        |           |
| 5     | AR Plantation @1000/ha   | Ш         |           |
| 6     | Cost norm & matrix for chain link<br>Fencing                         | IV        |           |
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### **Land Suitability Certificate**

The requirement of suitable non-Forest land at par with the guidelines of MoEF & CC is a vital aspect for raising Compensatory Afforestation in lieu diversion of Forest land for Non forestry purpose of a project under FC Act, 1980.

In the instant case diversion of Forest land to the extent of 125.24ha is required for the project "Subhadra Open Cast Project of M/s MCL in the district of Angul. According required exercises were undertaken in the field by Forest and Revenue Staff jointly to select suitable Non forest land/ Govt degraded forest land for the purpose of Compensatory Afforestation for the said project. Finally One patch of Non forest land over 13.228 of Kanja Village was selected in Bantala Range with suitability criteria to accommodate required no plantations@1000plantations per ha. Criteria of suitability of the sites meet relevant parameters such as management point of view, free from encroachment and encumbrances, not included in Section -4(1) notification, not under DLC status of forest, non allotment of the said areas for other projects etc as narrated against this site furnished in Annexure-I. Besides soil quality, soil depth, terrain, climatic conditions etc are suitable for planting indigenous promising species for sustained growth and establishment and over and above location of the site with respect to closeness to nearby forest block of Angul Division which will ensure proper supervision, monitoring of the plantation raised under Compensatory Afforestation Scheme. Plantations activities will be as done per the approved One time Cost Norm of PCCF, Odisha and it is hoped to ensure proper greenery with improved environmental scenario after implementation of the said plantation.

Place:

Date:

Divisional Forest Officer, Division Division

### Scheme

This scheme is for taking up Compensatory Afforestation is on identified Non forest land in Village Kanja of Bantala Range under Angul Tahasil in the District of Angul in lieu of Proposed Forest Diversion or 125.24 ha of Forest land coming within Subhadra Open Cast Project of M/s MCL, Dist-Angul.

1. Introduction: The Subhadra Open Cast Mining Lease is over an area of 1111.85 ha. Out of which Forest land located in Mining lease is 125.24ha and Non forest area is 986.61ha as per the land schedule. The User Agency M/s MCL has filed forest Diversion Proposal Vide Proposal No FP/OR/MIN/150133/2021.

On application for providing Compensatory Afforestation Land, the Collector and District Magistrate , Angul has allotted 110.640ha of Non forest Revenue land and 40.255ha of Revenue Degraded Forest area spread over in 5 patches vide his letter no dated . This scheme is meant for 13.228ha of Non forest land in village Kanja which has been jointly verified by the Revenue staff and Forest staff. The selected land schedule is coming under Bantala Range of Angul Division (Annexure-I)

### Land schedule:

| Village         | Khata<br>No | Plot No   | Total<br>Plot<br>Area in<br>Hectare | Area<br>taken for<br>plantation<br>in ha | Kisam          | Remark    | Nearest<br>Forest<br>Block | Approximate distance from the proposed site |
|-----------------|-------------|-----------|-------------------------------------|--|----------------|-----------|----------------------------|---|
| Bantal<br>Range |             |           |                                     |  |                |           |                            |   |
| Kanja           | 2/2         | 1657      | 1.752                               | 1.752                                    | PuratanaPatita | Nonforest | Nuakheta                   | 0.25Km                                      |
|                 | 1           | 1656(p)   | 8.167                               | 7.893                                    |                |           | RF                         | 0.3Km                                       |
|                 | 1           | 1648/1(p) | 7.195                               | 3.583                                    |                |           |                            | 0.35Km                                      |
| S.toal          |             |           | 17.114                              | 13.228                                   |                |           |                            |   |

### 2. DGPS Survey, Mapping & Authentication of CA Land.

As per the revised guidelines of Chief Executive, ORSAC, the User Agency has taken up DGPS Survey by empaneled vendors and the same has been authenticated by ORSAC vide his letter no ORSAC/DGPS-FD/1080/2022/3203(2) Dated 03/09/2022 and due endorsement has been furnished on DGPS surveyed Map. The DGPS Map, Corresponding Topo map (Survey of India map F45T2 1:50000 Scale) are enclosed to this Scheme. The KML File of the area is submitted in a CD. (Letter of Authentication by ORSAC at Annexure-II)

The Latitude / Longitude of Survey Points as per DGPS authenticated Map is furnished below.

| SL.NO | MAP ID | LONGITUDE       | LATITUDE        |
|-------|--------|-----------------|-----------------|
| 1     | 1      | 85°07'32.76280" | 20°38'56.91891" |
| 2     | 2      | 85°07'34.91549" | 20°38'57.37527" |
| 3     | 3      | 85°07'38.97949" | 20°38'57.27892" |
| 4     | 4      | 85°07'39.08182" | 20"38'58.85564" |
| 5     | 5      | 85°07'42.45130" | 20°38'58.89083" |
| 6     | 6      | 85°07'42.41153" | 20*38'57.62796" |
| 7     | 7      | 85°07'48.25243" | 20°38'58.79407" |
| 8     | 8      | 85°07'48.31709" | 20°38'51.73080" |
| 9     | 9      | 85°07'42.62337" | 20°38'50.58797" |
| 10    | 10     | 85°07'42.66013" | 20°38'48.93133" |
| 11    | 11     | 85°07'40.40450" | 20°38'49.05139" |
| 12    | 12     | 85°07'40.42536" | 20°38'47.17961" |
| 13    | 13     | 85°07'37.24973" | 20°38'46.48599" |
| 14    | 14     | 85°07'33.42153" | 20"38'45.33148" |
| 15    | 15     | 85°07'33.21290" | 20°38'48.16616" |
| 16    | 16     | 85°07'32.55840" | 20°38'48.34023" |

### Topography & Soil:

The identified area in above village is having partly hilly and partly plain terrain. The soil is lateritic and gravelly but the soil depth is suitable for taking up plantation. Moreover nearby forest blocks is NUAKHETA RF. So for management point of view,

the CA land selected here will be congenial and suitable indigenous species will be planted to ensure a successful plantation.

### 4. Climate

In Angul District, the wet season is oppressive and overcast whereas, the dry season is humid and mostly clear, and it is hot year round. Over the course of the year, the temperature typically varies from 13.89°C to 40.55°C and is rarely below 11.11°C or above 44.44°C.

### 5. Rain fall:

The annual average rainfall is 1602 mm. The maximum rainfall is received during the rainy season and particularly in the month of August.

### 6. Present Vegetation:

The identified land bears dry deciduous mixed vegetation. Species like Sal, Asan, Karada, Kendu, Jamu, Mango, Bahada, Mahul etc are observed.

### 7. Items of work to be taken up

### Planting Model;

The land identified bears natural vegetation. Its tending operation will help maintaining a good forest cover adjacent to habitation. Considering the vegetation, terrain and soil of the area it is proposed to adopt a planting model of AR Planatations @1000seedlings per ha for Village-Kanja) is suggested.

### Spacing

The plant density proposed for planting is @1000plants per ha. The spacing is to be 3m x 3m(Approximately to accommodate 1000seedlings per ha). It is suggested to have the line of planting along the contour and plant to plant in adjacent row over the available blank spaces in the selected site. This will reduce the run off and encourage perculation of water and enrichment of vegetation.

### Choice of Species:

Considering the soil, topography and present vegetation observed in and around, it is proposed to Plant the following indegenous and pormising species on the identified land in suitable available blanks. Species proposed for planting are

- i) Acacia Catechew (Khair)
- ii) Bombax Ceiba (Simili)
- iii) Emblica officinallis ( Anla)
- iv) Terminalia belerica (Bahada)
- v) Terminalia tomentosa (Asana)
- vi) Mangifera indica (Aamba)
- vii) Pterocarpus marsupium ( Bija)
- viii) Syzygium cumini (Jamu)
- ix) Azadia indica (Neem)
- x) Terminalia chebula(Harida)
- xi) Pongamia pinnata (Karanja) etc.

It is proposed for diversion of 125.24 ha of Forest Land . The following detail is furnished in Tabular form

| Description of Site  | Area (in ha) | Total No of<br>Seedlings<br>required for<br>planting | Remark                          |
|--|--------------|--|---------------------------------|
| Bantala Range  |              |  |                                 |
| Compensatory Afforestation<br>Land Identified (NFL)(Kanja) | 13.228       | 13228  | AR Mode 1000nos of seedlings/ha |

### 8. Silvicultural Tending & Planting Technique to be adopted:

### i) Survey, Demarcation and Pillar Posting:

The identified area has been surveyed & pillars posted. It is to be checked and missing pillars if any to be reposted as per Latitude / Longitude provided in the DGPS Map authenticated.

### ii) Preparation of Treatment map (Digital map):

The Kml file of the area has been provided by the user agency after DGPS survey. The same will be updated with treatment design basing on physical position at the time of implementing the Plantation Scheme. The Range Officer will update the position with help of GIS cell of the Division as per requirement.

### iii) Site Preparation:

After demarcation of the area, site preparation mostly clearing of invasive weeds will be taken up at planting site to be identified by field staff.

### iv) Silvicultural Tending Operation:

The selected area is having scattered Sal shoots of promising vigour and of natural regeneration including some other species also. It is proposed to take up Silvicultural cleaning over the area. The activities are intended to achieve healthy growth of existing natural seedlings / saplings / coppice shoots of favored species. The operations include

- Cutting back of high stumps with preference to living stumps and having a good coppicing power.
- Cutting of climbers those are of annual nature and uprooting them wherever possible.
- > Singling out of multiple coppice shoots and retaining most promising ones.
- Pruning of whippy plants available within the area.
- Dead and dying trees if any to be cut and separated from the site.

The natural seedlings available in the treatment area are to be given appropriate attention to ensure its establishment.

### v) Digging of Pits (45cmx45cmx45cm):

It is proposed to dugout pits of size 45cmx45cmx45cm preferably in month of February / March. The dugout earth will be kept at pit head on both sides separately. The top soil will be kept on one side and bottom soil on another side. Soil within 30cm from ground level will be considered as top soil and rest as bottom soil. The pits will be left for weathering due to Sun & Rain.

### vi) Refilling of Pits& application of organic Compounds / CDM/ FYM:

The pits will be refilled by altering the dugout soil of the pits i.e. top soil on bottom of the pit and bottom soil on top. Application of organic Compounds / CDM/ FYM & mixing the same properly before refilling is suggested. This will provide necessary nutrients to the plant as well as help in retaining soil moisture for a longer period.

### vii) Transportation of Seedlings including short carriage & watering at Pit site.

In the approved cost norm, provisions have been made to plant 18month old seedlings. As seedlings will be above 1m height invariably, careful transportation of seedlings will be of paramount importance. In case of top breaking of seedlings, the benefit of 18month old seedlings will be reduced substantially. Transportation of seedlings from Nursery site to Planting site and then short carriage has to be taken up carefully. Wherever water is available, the plants are to be watered before short carriage to minimize the shock to plants during long carriage by tractors / vans etc.

### viii) Planting of Seedlings:

After application of FYM/ CDM/ Organic manure, seedling will be planted carefully. The standard planting procedure is to be followed. As the pit size is of 45cm x 45cm the following care will be taken during planting.

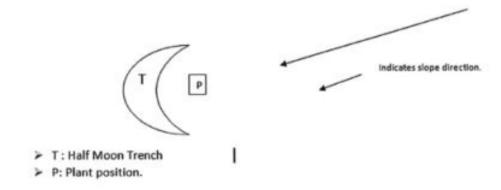
- Chemical fertilizer / insecticides to be applied as basal doze to be thoroughly mixed with soil.
- Seedlings collar zone will be at Ground Level or at best 2.5cm below the ground level. In no case it will not be more than 3cm below Ground Level.
- The Poly bags containing the seedlings are to be carefully removed. It is better to use a blade to cut open the bag so as to cause least disturbance to the ball of earth containing the seedlings.
- After planting the soil is to be compacted leaving 3" around the plant and the compact soil may be at Ground Level or 1" above the Ground level – allowance for soil settlement.
- In no case it should be a sunken around the plant.
- The planted plant should stand erect, if it is tilted due to speedy growth, a support with a stick collected locally to be provided.

### ix) Casualty Replacement:

Casualty replacement is an important operation to achieve a 100% survival in a plantation. After planting there is possibility of casualty in planted seedlings. There is a provision to replace casualty up to 10% in 1<sup>st</sup> year and 10% in 2<sup>nd</sup> year operation in the approved cost norm. The same is to be carried out with good promising seedlings those can come up to a height of previous planted seedlings. During replacement in 2<sup>nd</sup> year application of fertilizers etc as in 1<sup>st</sup> year is to be followed.

### x) Weeding & application of Fertilizer:

Two Weeding around the planted seedlings at a diameter of 1.00m has been prescribed in the approved cost norm. During 2<sup>nd</sup> weeding deep soil working around the plants at 1.00m diameter has also been prescribed. 1<sup>st</sup> weeding will be taken up just after one month of planting and 2<sup>nd</sup> weeding and soil working in month of September / October. As there is occasional rainfall in October, providing half-moon trench in sloppy terrain around each plant is suggested. A half-moon trench model is given below.



During weeding (1<sup>st</sup>& 2<sup>nd</sup>) there is a provision of application of fertilizer to plants. Application of NPK @30gms per plant x 2 times is suggested. In no case 2<sup>nd</sup> weeding can be delayed beyond 15<sup>th</sup> of October.

### xi) Fire line Tracing & Inspection Path:

There is possibility of grasses growing up within plantation area. It is better to allow local people / VSS to cut the grasses take for stall feeding under supervision of Forest Staff. In the present case where AR is under implementation Grass growth is limited. Due to fallen dry leaves (Due to leaf shedding), there is possibility of fire hazards in February / March. It is suggested to have fire line at a width of minimum 3m all around the planting area, maintain inter partitioned line / both sides of foot path as a Fire line ( minimum 3m wide in 1<sup>st</sup> year and 2m in subsequent year). These lines will be maintained as inspection path also. It will be maintained till completion of 10<sup>th</sup> year.

### xii)Watch & Ward

Watch and ward is essentially required against biotic interferences like grazing and fire etc including grasses in first two years and illicit felling in subsequent years. Adequate provisions has been made in the approved cost norm. Watch & ward provisions will be implemented as per provision of cost norm.

### 9. Provision for watering:

The site selected contains partly hilly terrain. All total 13228nos of seedlings will be planted in the site selected depending on extent of blank area available. Watering to be explored and adhered to as per provision of one time cost norm (Annexure-VI).

### 10.Funding Agency

The U/A will deposit required funds as per the approved cost of the scheme.

### 11. Implementing Agency

Divisional Forest Officer, Angul will execute the Compensatory Afforestation Scheme.

## Financial analysis and Cost involved.

|       | PERF   | PERFORMA (Norm For 1.00ha) | ha)                                     |
|-------|--|----------------------------|---|
| SI No | Component  | Unit                       | Base Rate for commencement year 2023-24 |
|       | AR Plantation @1000plants per ha                 | Hectare                    | 258777                                  |
|       | Watering, Solar Borewell fitted with Drip System | Hectare                    | 245476                                  |
|       | SMC  | Hectare                    | 39284                                   |
|       | Fencing (Iron angle with chain link wire mesh)   | chain link Per 250meters   | 462316                                  |
| 5     | Entry point activity                             | 15% of                     | 15% of [(1)+(2)+(3)+(4)]=150878/-       |

प्रकल्प अधिकारी Project Officer MCL, Subhadra Area एम्. सि. एल. सुभद्रा क्षेत्र



Matrix for Compensatory Afforestation Scheme for Plantation of AR mode @1000nos of Seedlings over an area 1ha-Year wise (Commencement Year 2023-24)

| Year                  | Financial   | AR Plantation @ 1000nos seedling per ha | Watering , Solar<br>Borewell fitted<br>with Drip system | SMC   | Fencing(Iron Angle<br>with Chain link wire<br>mesh(250mt per<br>hectare | Total   |
|-----------------------|-------------|---|---|-------|---|---------|
| 0 <sup>th</sup> year  | 2023-24     | 24586                                   | 180243  | 0     | 314886  | 519715  |
| 1st year              | 2024-25     | 110729                                  | 0   | 23401 | 0   | 134130  |
| 2 <sup>nd</sup> year  | 2025-26     | 27105                                   | 9935  | 3684  | 13369   | 54093   |
| 3rd year              | 2026-27     | 20094                                   | 10433   | 3870  | 14040   | 48437   |
| 4th year              | 2027-28     | 9190                                    | 10954   | 4062  | 14741   | 38947   |
| 5 <sup>th</sup> year  | 2028-29     | 9648                                    | 33911   | 4267  | 15478   | 63304   |
| 6" year               | 2029-30     | 11578                                   |   |       | 16251   | 27829   |
| 7" year               | 2030-31     | 10637                                   |   |       | 17065   | 27702   |
| 8" year               | 2031-32     | 11170                                   |   |       | 17918   | 29088   |
| 9 <sup>m</sup> year   | 2032-33     | 11727                                   |   |       | 18813   | 30540   |
| 10 <sup>th</sup> year | 2033-34     | 12313                                   |   |       | 19755   | 32068   |
| GRANE                 | GRAND TOTAL | 258777                                  | 245476  | 39284 | 462316  | 1005853 |

onal Forest Officer ngul, Division

प्रकल्प आधकारी Project Officer MCL, Subhadra Area ५स्. सि. एल. सुभद्रा क्षेत्र

|    |  | Seedlings over an area 13.228ha | Seedlings over an area 13.228ha |           |          |
|----|--|---------------------------------|---------------------------------|-----------|----------|
| SI | Component  | Norm                            | Unit                            | Rate      | Total    |
|    | AR Plantation 258777 @1000plants per ha                  | 258777                          | Ha                              | 13.228    | 3423102  |
|    | Watering , Solar Borewell 245476 fitted with Drip System | 245476                          | На                              | 13.228    | 3247157  |
|    | SMC  | 39284                           | На                              | 13.228    | 519649   |
|    | Fencing (Iron angle with 462316 chain link wire mesh)    | 462316                          | 250meter                        | 1680meter | 3106764  |
|    | Entry point activity                                     |                                 | 15% (1+2+3+4)                   |           | 1544501  |
|    | Total  |                                 |                                 |           | 11841173 |

(One Crore Eighteen Lakh Forty one Thousand One Hundred seventy three) only

न्द्रकेल्प अधिकारी Project Officer MCL, Subhadra Area एम्. सि. एल. सुभद्रा क्षेत्र

> Nivisional Porest Officer Angul, Division

# Calendar of Operation for Compensatory Afforestation Scheme for Plantation of 13228Nos of Seedlings over an

area 13.228ha-Year wise

| 7otal<br>5549339<br>2040412<br>722817<br>631755<br>482146<br>847154<br>301715 | activity 15%<br>(1+2+3+4+5)<br>723827<br>266141<br>94280<br>82403<br>62889<br>110498<br>39354 | Fencing(Iron Angle  with Chain link wire  mesh (1680mt along the perimeter  =6.72mes of 250mt)  2116034  0  89840  94349  99060  104012 | 0<br>309548<br>48732<br>51192<br>53732<br>53732<br>56445 | Watering, Solar Borewell fitted with Drip system 2384254 0 131420 138008 144900 448575 0 |   | AR Plantation @ 1000nos seedling per ha 325224 1464723 358545 265803 121565 127624 153154 140706 |
|---|---|---|--|--|---|--|
|   | 40225   | 120409  | 0  | 0  |   | 147757   |
|   | 40553   |   | ,  | ,  |   | 100  |
| -   | 40223   |   | •  | ,  |   |  |
| 308391  | 40225   | 120409  | 0  |  | 0   | 147757 0   |
| 293690  | 38307   | 114677  | 0  | _  | 0   | 140706 0   |
| 301715  | 39354   | 109207  | 0  |  | 0   | 153154 0   |
| 847154  | 110498  | 104012  | 56445  |  | 448575  |  |
| 482146  | 62889   | 09066   | 53732  | _  | 144900  |  |
| 631755  | 82403   | 94349   | 51192  |  | 138008  |  |
| 722817  | 94280   | 89840   | 48732  |  | 131420  |  |
| 2040412   | 266141  | 0   | 309548   | _  | 0   |  |
| 5549339   | 723827  | 2116034   | 0  |  | 2384254   |  |
| Total   | Entry point<br>activity 15%<br>(1+2+3+4+5)  | Fencing(Iron Angle<br>with Chain link wire<br>mesh (1680mt along<br>the perimeter<br>=6.72mes of 250mt)                                 | SMC  |  | Watering,<br>Solar Borewell<br>fitted with<br>Drip system | on s.  |





### Encl:

- A- Documents:
- The selected land schedule of Non Forest land in Kanja Village coming under Bantala Range of Angul Division attached as (Annexure-I).
- ORSAC, authorization letter vide his letter no ORSAC/DGPS-FD/1080/2022/3203(2)
   Dated 03/09/2022as (Annexure-II).
- 3) Approved cost norm for one ha AR Plantation @1000 Plants per ha (Annexure-III).
- 4) Approved Cost norm & matrix for Chain link Fencing: (Annexure-IV)
- 5) Approved Cost norm Matrix for SMC (Model-C) is at (Annexure -V)
- Approved Cost Norm Matrix for Watering, Solar Borewell fitted with Drip system (Annexure-VI)
- B- Maps & Plates:
- I. Cadastral Map of CA land identified at Village Kanja (Plate-I)
- II. DGPS map of the CA land Authenticated by ORSAC) (Plate-II)
- III. Corresponding Topo map (1:50000 Scale) (Plate-III)
- IV. KML File in CD
- V. Forest Cover density map of CA land
- VI. Satellite map of CA land

Divisional Forest officer, Divisional Forest Officer Angul Division

|   |                        |      |            |       |         | Date           |   |               |
|---|------------------------|------|------------|-------|---------|----------------|---|---------------|
|   |                        |      |            |       |         | Tahasit-ANUGUL |   |               |
| - |                        |      | Total Area |       | Jin.)   |                | Note the Dr. Donner by                  |               |
| - | Krassiliti             |      | Sm. Ha.)   | Black | 1001    |                | Tstal (in Ha.) Unsuthible with Research | Remarks       |
| - | Parataki Parits        | 44.1 | 1,752      |       |         | 1751           |   |               |
| - | Parente Patita         |      | 1357       |       |         | 7.893          |   | NUMBER OF THE |
| 9 | Darphy - Paratan Parts | - 12 | 7.195      |       |         | 3583           |   | 20101000      |
| - |                        |      |            |       | 1016.01 | 000.00         |   |               |

Certifined that the above non-formst Congestiment Bay mentioned as mentioned in column 7, 8 S. 9 S. 9 Combact parches of 4.00 Ha. Or more having adequate soil disjoit variable, for alant account on management point of year

Centified that the above Government and found solidable for plantation is free from encreachment and encumbrances

certification the above Covernment land is not coverned under 4(1) notification.

Cartificititist the above Government land is not covered under DLC

certified that the above Government and is not allained previously

Carchited that the above Gaspinnent and it not covered under any ALL/P.A. area

Certified that the above Government and sited settled activate of including/community under F.P Sct. 2005.

Cettified that the status of the above plots was non forest as on 24 to 3985.

Certified that the above plint are not properly under any proported reserve forests.

entitled that the above pion are unland only for agriculture, but also other developmental inpurements.

Certified that the above pilots have no lature potential for agracian or industrial use.

entitled that the above dentified areasocitams, parks segstation with density at 0.02 and wouldby forest growth its for compository afforestation

I rowalk oshin pr Amus Beetlan

TAMASIBBAR



### ODISHA SPACE APPLICATIONS CENTRE (ORSAC)

Department of Science & Technology, Govt. of Odisha

Annexure-1

ORSAC/DGPS-FD/1080/2022/ 32032 dt. 3 9 22

To

The D.F.O..

Angul Division.

Angul

Sub:

Verification of DGPS Survey of Compensatory Afforestation non-forest land in Jamugaria, Kanja, Nukhuripada, Rodasingha, villages and degraded revenue forest land in Baghuapat villagein Angul Tahsil in lieu of forest areas proposed for diversion for Subhadra OCP, Subhadra Area of MCL in Angul District.

Ref:

Your letter no. 5950 dated 19.08.2022.

Sir

With reference to the subject mentioned above, this is to inform you that, the maps and data forwarded to ORSAC by your office for verification of the DGPS survey of Compensatory Afforestation non-forest land in Jamugaria, Kanja, Nukhuripada, Rodasingha villages and degraded revenue forest land in Baghtapat village in Angul Tahsil in lieu of forest areas proposed for diversion for Subhadra OCP, Subhadra Area of MCL in Angul District has been verified by ORSAC and is certified that the map is correct at a confidence level of 95%. All the Compensatory Afforestation non-forest land comes in Jamugaria, Kanja, Nukhuripada, and Rodasingha villages and degraded revenue forest land in Baghtapat village in Angul Tahsil in Angul district. Total Compensatory Afforestation land works out to 150.954Ha, includes 40.249Ha, degraded Revenue forest and 110.705Ha, non-forest land from the submitted shp files, against the required area of 150.895Ha, (40.255Ha, degraded Revenue forest and 110.640Ha, non-forest land) as mentioned in the submitted record. Detail Patch/village/plot wise comparative statistics of Compensatory Afforestation area is attached herewith.

Yours faithfully,

Encl; 6 hard copy maps

M. K. SANABADA SCIENTIST - 'D'

Copy to: The General Manager (Subhadra Area), MCL, Subhadra Area, Near Biju Maidan, Angui-759122, Odisha for information.

1

STATISTICS OF COMPENSATORY AFFORESTATION LAND IDENTIFIED IN VILLAGE
JAMUGARIA, KANJA, NUKHURIPADA, RODASINGHA ALONG WITH DEGRADED REVENUE
FOREST LAND IN VILLAGE BAGHUAPAT UNDER ANGUL TAHASIL IN LIEU OF FOREST AREAS
PROPOSED FOR DIVERSION FOR SUBHADRA OCP, SUBHADRA AREA OF MCL, ANGUL
DISTRICT

| SL. NO. | VILLAGE NAME    | PLOT NO.  | KI5AM           | ALLOTED AREA HA. | MAP AREA HA |
|---------|-----------------|-----------|-----------------|------------------|-------------|
| 1       | SAGHUAPAT *     | 251(P)    | CHHOTA JUNGLE   | 15.393           | 15.081      |
| 2       | SAGHUAPAT .     | 298(P)    | CHHOTA JUNGLE   | 15.212           | 15:243      |
| 3       | BAGHUAPAT       | 283(P)    | CHHOTA JUNGLE   | 6.029            | 6.035       |
| 4       | BAGHUAPAT       | 284(P)    | CHHOTA JUNGLE   | 3.621            | 3.890       |
| Α       | . TOTAL DEGRADE | D REVENUE | FOREST LAND     | 40.255           | 40,249      |
| 5       | JAMUGARIA       | 1107(p)   | PURATANA PATITA | 7.923            | 7.924       |
| 6       | JAMUGARIA       | 1117(p)   | PURATANA PATITA | 21.643           | 21.854      |
| 7       | JAMUGARIA       | 1089(p)   | PURATANA PATITA | 5.127            | 5.259       |
| 8       | KANJA           | 1657      | PURATANA PATITA | 1.752            | 1.780       |
| 9       | KANJA           | 1656(P)   | PURATANA PATITA | 7.893            | 7.691       |
| 10      | KANJA           | 1648/1(P) | PURATANA PATITA | 3.583            | 3.635       |
| 11      | NUKHURIPADA     | 8(P)      | PURATANA PATITA | 19.126           | 19.129      |
| 12      | RORASINGHA      | 965(P)    | PAHADA          | 43.593           | 43.433      |
|         | B. TOTAL NO     | ON-FOREST |                 | 110.640          | 110.705     |
|         | TOTAL CALL      | AND AREA  | (A+B)           | 150.895          | 150.954     |

Shri M. K. Sanabada Scientist, ORSAC Bhubaneawar

### Annexure-III

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

| SI.No. | Items of work   | Preferable<br>period of<br>Execution | No. of<br>Mandays | Labour<br>Cost (In<br>Rs.) | Material<br>Cos0(In Rs.) | Cost (In |
|--------|---|--------------------------------------|-------------------|----------------------------|--------------------------|----------|
|        | Oth Year (Advance   | ce Work) Pre-                        | Planting ope      |                            |                          | 113.7    |
| 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 debrises)   | Nov/ Dec                             | 12                | 3732                       | 0                        | 3732     |
| 4      | Creation of 4 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 (45cm x 45cm x 45 cm) in hard and gravelly soil   | Feb/ Mar                             | 40                | 12440                      | 0                        | 12440    |
| 7      | Construction of Temporary Labour<br>Shed, Drinking water facility and First-<br>Aid etc.  | Jan/Mar                              | 0                 | 0                          | 3500                     | 3500     |
|        | Total   |                                      | 57                | 17727                      | 3600                     | 21327    |
|        | 1st \   | ear/ Planting                        |                   |                            | 3000                     | 22327    |
| 1      | Refilling of pits by altering the dugout soil of the pits, application of organic compounds/ CDM/ FYM & mixing the same perfectly.  | June/Jul                             | 7.5               | 2332.5                     | 5000                     | 7332.5   |
| 2      | Transportation of 18 months old polythene bag seedlings in hired truck/ tractor from the permanent / Mega Nursery to the planting site including Loading & unloading.  (Average lead of 10Rkm) & stacking the seedlings @Rs. 6/- seedling. (1100 nos.)                                      | Jul/ Aug                             | 0                 | 0                          | 6600                     | 6600     |
| 3      | Watering polythene bag seedlings at stacking site of plantation.  | Jul/ Aug                             | 2                 | 622                        | 0                        | 622      |
| 4      | Conveyance of polythene bag seedlings on head load from the stacking site to individual dugout pits within the planting site, applying insecticide, fertilizer & planting after scooping the soil with other applied materials and pressing the soil perfectly around the planted seedling. | Jul/ Aug                             | 22.5              |                            |                          |          |

| 6 7 | Cost of Fertilizer & Insecticide  (a) NPK/ Bio- fertilizer @50gms/ plant as basal dose = 50 kg @ Rs.30/- per kg =Rs. 1500.00  Urea/ Vermicompost/ Mo khata/ any other fertilizers @Rs. 750.00  (c) Insecticide/ Bio-pesticides @5gms/ plant = 5 kg @ Rs.150/-per kg = Rs. 750/-  Casualty replacement @ 10 % (100 nos.)  1st weeding & Manuring  2nd Weeding, Soil working (1mt. | Jul/ Aug Jul/ Aug Aug/ Sept | 0 2.5 | 0<br>777.5<br>3732 | 3000<br>0<br>0 | 3000<br>777.5<br>3732  |
|-----|--|-----------------------------|-------|--------------------|----------------|--|
| 8   | Diameter around the plants) & Manuring   | Oct/ Nov                    | 15    | 4665               | 0              | 4665   |
| 10  | Fire line tracing & Inspection path  Watch & ward including watering as per requirement  | Feb/ Mar<br>Aug-Mar         | 12    | 933                | 0              | 933  |
|     | Total  |                             | 76.5  | 23791.50           | 14600.00       | 38391.5  |
|     | 2nd  | Year Mainter                | nance |                    |                | - Annual Control of the Control of t |
| 1   | Transportation of 100 seedlings from<br>Nursery to plantation site including<br>loading, unloading & conveyance by<br>Tractor @ Rs.6/- per seedlings   | lut                         | 0     | 0                  | 600            | 600  |
| 2   | Casualty replacement   | Jul                         | 2.5   | 777.5              | 0              | 600  |
| 3   | Cost of Fertilizer & Insecticide  A) Cost of Insecticide/ Bio-pesticides (Themet/ Forate) @ 5 gms/ plant = 0.5 kg @s.150/-per kg = Rs.75/- B) Urea/ NPK/ Bio-fertilizers/ vermicompost/ Mo khata/ any other fertilizers = Rs.2800/-  | July / Aug                  | 0     | 0                  | 2875           | 2875   |
| 4   | Weeding (Complete weeding), Manuring & Soil working (1mt. Diameter around the plants)  | Sept/Oct                    | 15    | 4665               | 0              | 4665   |
| 5   | Fire line tracing (2m. Wide fire line over<br>400 m long) including maintenance of<br>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,<br>Drinking water facility and First-Aid etc.  | Apr-Mar                     | 480   |                    |                | 1  |

|   | Total   |               | 38.5 | 11973.5 | 4475 | 16448 |
|---|---|---------------|------|---------|------|-------|
|   | 3rd   | Year Mainten  | ance |         |      |       |
| 1 | Cost of Fertilizers Urea/ NPK/ Bio-fertilizers/ Vermicompost/ Mo khata/ any other fertilizers = Rs.2800/- | July / Aug    | 0    | 0       | 2800 | 280   |
| 2 | Weeding (Complete weeding),<br>Manuring & Soil working (1mt.<br>Diameter around the plants)               | Sept/ Oct     | 15   | 4665    | 0    | 466   |
| 3 | Fire line tracing (2m. Wide fire line over 400m long) & Inspection path                                   | Feb/ Mar      | 3    | 933     | 0    | 93    |
| 4 | Watch & ward including watering as per requirement  | Apr/ Mar      | 18   | 5598    | 0    | 559   |
| 5 | Maintenance of Temporary Labour<br>Shed, Drinking water facility and First-<br>Aid etc.                   | Apr/ Mar      | 0    | 0       | 1000 | 100   |
|   | Total   |               | 36   | 11196   | 3800 | 1499  |
|   | 4th   | Year Mainten  | ance |         |      |       |
| 1 | Fire line tracing (2m. Wide fire line over 400m length) & including maintenance Inspection path           | Feb/ Mar      | 3    | 933     | 0    | 933   |
| 2 | Watch & ward including watering as per requirement  | Apr/ Mar      | 18   | 5598    | 0    | 559   |
|   | Total   |               | 21   | 6531    | 0    | 653   |
|   | 5th   | Year Mainten  | ance |         |      |       |
| 1 | Fire line tracing (2m. Wide fire line over 400m length) & including maintenance Inspection path           | Feb/ Mar      | 3    | 933     | 0    | 933   |
| 2 | Watch & ward including watering as per requirement  | Apr/ Mar      | 18   | 5598    | 0    | 5598  |
|   | Total   |               | 21   | 6531    | 0    | 653   |
|   |   | rear Maintena | ince |         |      |       |
| 1 | Fire line tracing (2m. Wide fire line over 400m length)   | Feb/ Mar      | 3    | 933     | 0    | 933   |
| 2 | Pruning of branches, singling out of multiple shoots  | Jan/Mar       | 3    | 933     | 0    | 933   |
| 3 | Watch & ward  | Apr/ Mar      | 18   | 5598    | 0    | 5598  |
|   | Total   |               | 24   | 7464    | 0    | 7464  |

|   | 7th   | Year Maintena | nce  |      |   |      |
|---|---|---------------|------|------|---|------|
| 1 | Fire line tracing (2m. Wide fire line over 400m length) | Feb/ Mar      | 3    | 933  | 0 | 933  |
| 2 | Watch & ward  | Apr/ Mar      | 18   | 5598 | 0 | 559  |
|   | Total   |               | 21   | 6531 | 0 | 653  |
|   | 8th   | Year Maintena | nce  |      |   |      |
| 1 | Fire line tracing (2m. Wide fire line over 400m length) | Feb/ Mar      | 3    | 933  | 0 | 933  |
| 2 | Watch & ward  | Apr/ Mar      | 18   | 5598 | 0 | 559  |
|   | Total   |               | 21   | 6531 | 0 | 653  |
|   | 9th 1   | Year Maintena | nce  |      |   |      |
| 1 | Fire line tracing (2m. Wide fire line over 400m length) | Feb/ Mar      | 3    | 933  | 0 | 933  |
| 2 | Watch & ward  | Apr/ Mar      | 18   | 5598 | 0 | 5590 |
|   | Total   |               | 21   | 6531 | 0 | 653  |
|   | 10th  | Year Maintena | ince |      |   |      |
| 1 | Fire line tracing (2m. Wide fire line over 400m length) | Feb/ Mar      | 3    | 933  | 0 | 933  |
| 2 | Watch & ward  | Apr/ Mar      | 18   | 5598 | 0 | 5598 |
|   | Total   |               | 21   | 6531 | 0 | 6531 |

|        |           | ABST              | RACT(Show                  | ving Seedlin                 | g Cost Separately)  |  | _                         |
|--------|-----------|-------------------|----------------------------|------------------------------|---|--|---------------------------|
| SI.No. | Year      | No. of<br>Mandays | Labour<br>Cost (In<br>Rs.) | Material<br>Cost (In<br>Rs.) | Monitoring,<br>Evaluation,<br>Learning,<br>Documentation<br>and other<br>Contingency<br>(5%) of (4+5) | Cost of<br>Seedlings<br>@Rs. 50.31<br>per<br>seedlings | Total<br>Cost (In<br>Rs.) |
| 1      | Oth Year  | 57                | 17727                      | 3600                         | 973   | 0  | 22300                     |
| 2      | 1st Year  | 76.5              | 23791.5                    | 14600                        | 1918.5  | 55341  | 95651                     |
| 3      | 2nd Year  | 38.5              | 11973.5                    | 4475                         | 821.5   | 5031   | 22301                     |
| 4      | 3rd Year  | 36                | 11196                      | 3800                         | 749   | 0  | 15745                     |
| 5      | 4th Year  | 21                | 6531                       | 0                            | 326   | 0  | 6857                      |
| 6      | 5th year  | 21                | 6531                       | 0                            | 326   | 0  | 6857                      |
| 7      | 6th Year  | 24                | 7464                       | 0                            | 373   | 0  | 7837                      |
| 8      | 7th Year  | 21                | 6531                       | 0                            | 326   | 0  | 6857                      |
| 9      | 8th Year  | 21                | 6531                       | 0                            | 326   | 0  | 6857                      |
| 10     | 9th Year  | 21                | 6531                       | 0                            | 326   | 0  | 6857                      |
| 11     | 10th Year | 21                | 6531                       | 0                            | 326   | 0  | 6857                      |
|        | Total     | 358               | 111338                     | 26475                        | 6791  | 60372  | 204976                    |

The Costing for 10 years will be as per One time Cost Norm approved by PCCF(O) vide this letter No 1109 dated 11.11.2021.

| Total Cost<br>(10 Years) |            | 234718  | 246454  | 1182    | 2000    | 285302  | 195562  | 31856  | 330273  | 346788  | 364170  |
|--------------------------|------------|---------|---------|---------|---------|---------|---------|--------|---------|---------|---------|
| 8                        |            |         |         |         |         |         |         | T      |         |         |         |
| ×                        | T          |         | T       | T       |         |         |         |        |         |         | 2388    |
| Ħ                        |            |         |         |         |         |         |         |        |         | 100     | 19      |
| XVIII                    |            |         |         |         |         |         |         |        | 878     | 16      | 5775    |
| XMI                      |            |         |         |         |         |         |         | 7965   | 1997    | 1691    | 1981    |
| ă                        | T          |         |         |         |         |         | 34055   | 14/24  | 14057   | 14/31   | 3636    |
| ă                        |            |         |         |         |         | 3858    | 1875    | 13578  | 1857    | 25538   | 1855    |
| N.                       |            |         |         |         | 179.75  | 1333    | 138     | 17879  | 2005    | 13939   | 17994   |
| iik                      |            |         |         | 1333    | 1111    | 13355   | 1333    | 14073  | 2323    | 1313    | 26274   |
| D                        |            |         | 11717   | 1223    | 1773    | 1223    | 13403   | 17/I   | IIII    | 26903   | 9038    |
| R                        | 5257       | 911     | 11169   | 21112   | 98111   | 12765   | 1169    | 22111  | 73545   | 16473   | 15/806  |
| *                        | 16857      | 13687   | 10838   | 10937   | 2522    | 1881    | 080     | 3825   | 3838    | 3,6927  | 1654    |
| 8                        | 6857       | 16107   | 10130   | 22522   | 08101   | 10133   | 383     | 17955  | 19100   | 3382    |         |
| Ē                        | 6857       | 3543    | 11007   | 95.48   | 8000    | 20.02   | 31377   | 134591 | 32228   |         |         |
| ş                        | 7837       | 10501   | 6378    | 0518    | 66032   | 23823   | 178182  | 79884  |         |         |         |
| 5                        | 6857       | 8751    | 8752    | 20084   | 28480   | 272278  | 38463   |        |         |         |         |
| >                        | 2589       | 8335    | 19337   | 27,135  | 11636   | 27,106  |         |        |         |         |         |
| ≥                        | 15745      | 38228   | 2882    | 110779  | 25815   |         |         |        |         |         |         |
|                          | 23301      | 24585   | 105456  | 24586   |         |         |         |        |         |         |         |
|                          | 1996       | 300434  | 23415   |         |         |         |         |        |         |         |         |
| -                        | 22802      | 22302   |         |         |         |         |         |        |         |         |         |
| errent<br>Year           | Base North | 2022-22 | 2022.33 | 2023-24 | 2074-25 | 3025-36 | 2036-27 | 307.3  | 3038.79 | 3029-30 | 2030-31 |
| 대 열                      | Bess       |         | ~       | im      | 4       | un.     | 40      | 7      |         | en      | 8       |

### Annexure-IV

| SI<br>no | Item of work  | Preferable<br>period of<br>Execution | Man<br>days | Wages@311/- | Material cost (Rs) | Total Cos<br>(Rs per<br>ha) |
|----------|---|--------------------------------------|-------------|-------------|--------------------|-----------------------------|
|          | Oth Y   | rear (PPO)                           |             |             |                    | -                           |
| 1        | Earth work (excavation of hole) in Hard soll at a distance of 3mt 040m x 0.40m x 0.40m = 0.064X 84=5.376cum @Rs 140/cum = Rs 753/-        |                                      | 2.42        | 752.62      | 0                  | 752.62                      |
| 2        | Cement concrete (1:4:8) using 40mm BHG Metal<br>84x0.40mx0.40mx0.10m=1.344@3755.94/cum  |                                      | 0           | 0           | 5047.4             | 5047.4                      |
| 3        | Angle iron pole of size 50mm x 50mm x 6mm of<br>height 2.40nt 84x 2.40=201.60sqmt<br>@4.50/kg/sqmt=907.20kg@69.50per kg                   |                                      |             | 0           | 63050              | 63050                       |
| 4        | Cement concrete (1:2:4) for fixing the iron angle pole using 12 mm BHG Chips<br>84x0.40mx0.40mx0.30m=4.032cum@5486.77/cum                 |                                      |             | 0           | 22123              | 22123                       |
| 5        | Cost of chain link mess using 4mm Dia GI wire having gap size 50mm x 50mm 250Rmt x 2.10mt=525sqmt@331/sqmt= Rs 173775                     |                                      |             | 0           | 173775             | 173775                      |
| 6        | Double cost painting of iron angel pole over a coat of printer using good quality enamale paint 84X 2.10X 0.20= 35.28sqmt@Rs 108.80/sqmt. |                                      |             | 0           | 3838               | 3838                        |
| 7        | Painting of GI Chain Ink mess 250X 2.10X2= 1050/10=105Sqmt@Rs 108.80sqmt.   |                                      |             | 0           | 11424              | 11424                       |
| 3        | Transportation of chain link mess, Iron angle straighening and tieing of chain link mess etc @2% of the total cost                        |                                      |             | 0           | 5600               | 5600                        |
|          |   |                                      | 2.42        | 752.62      | 284857.4           | 285610                      |
|          | 1st year  | Maintenance                          |             |             |                    |                             |
| 9        | No maintenance required   | Sep/Oct                              | 0           | 0           | 0                  | 0                           |
|          | 2nd year  | maintenance                          |             |             |                    |                             |
| .0       | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%=11.42 say 11  | Sep/Oct                              | 0           | 0           | 11000              | 11000                       |

|    | 3rd year   | maintenand | e    |        |          |          |
|----|--|------------|------|--------|----------|----------|
| 11 | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%=11.42 say 11 | Sep/Oct    | 0    | 0      | 11000    | 11000    |
|    | 4th year   | maintenand | e    |        |          |          |
| 12 | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%=11.42 say 11 | Sep/Oct    | 0    | 0      | 11000    | 11000    |
|    | 5th year   | maintenand | e    | 1      |          |          |
| 13 | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%=11.42 say 11 | Sep/Oct    | 0    | 0      | 11000    | 11000    |
|    | 6th year   | maintenanc | e    |        |          | -        |
| 14 | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%=11.42 say 11 | Sep/Oct    | 0    | 0      | 11000    | 11000    |
|    | 7th year   | maintenanc | e    |        |          |          |
| 15 | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%=11.42 say 11 | Sep/Oct    | 0    | 0      | 11000    | 11000    |
|    | 8th year   | maintenanc | е    |        |          |          |
| 16 | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%=11.42 say 11 | Sep/Oct    | 0    | 0      | 11000    | 11000    |
|    | 9th year   | maintenanc | e    |        |          | -        |
| 17 | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%=11.42 say 11 | Sep/Oct    | 0    | 0      | 11000    | 11000    |
|    | 10th year  | maintenan  | ce   |        |          |          |
| 8  | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%=11.42 say 11 | Sep/Oct    | 0    | 0      | 11000    | 11000    |
| -  | Total  |            | 2.42 | 752.62 | 383857.4 | 384610.0 |

| SI no | Year      | No of<br>Person<br>days | Labour cost @311/-<br>per day | Material cost | Total cost |
|-------|-----------|-------------------------|-------------------------------|---------------|------------|
| 1     | Oth year  | 2.42                    | 752.62                        | 284857.4      | 285610.02  |
| 2     | 1st year  | 0                       | 0                             | 0             | 0          |
| 3     | 2nd year  | 0                       | 0                             | 11000         | 11000      |
| 4     | 3rd year  | 0                       | 0                             | 11000         | 11000      |
| 5     | 4th year  | 0                       | 0                             | 11000         | 11000      |
| 6     | 5th year  | 0                       | 0                             | 11000         | 11000      |
| 7     | 6th year  | 0                       | 0                             | 11000         | 11000      |
| 8     | 7th year  | 0                       | 0                             | 11000         | 11000      |
| 9     | 8th year  | 0                       | 0                             | 11000         | 11000      |
| 10    | 9th year  | 0                       | 0                             | 11000         | 11000      |
| 11    | 10th year | 0                       | 0                             | 11000         | 11000      |
|       | Total     | 2.42                    | 752.62                        | 383857.4      | 384610     |

| Total | Cost (In  | Rupees] |           | 419331  | 440299  | 462316  | 485432  | 509705  | 535191  | 1961951 | 590049 | 619552  | 650531  |
|-------|-----------|---------|-----------|---------|---------|---------|---------|---------|---------|---------|--------|---------|---------|
|       | XX        |         |           |         |         |         |         |         |         |         |        |         | 27798   |
|       | ×         |         |           |         |         |         |         |         |         |         |        | 26474   | 26473   |
|       | XX        |         |           |         |         |         |         |         |         |         | 25213  | 25212   | 25213   |
|       | ₩.        |         |           |         |         |         |         |         |         | 24012   | 24011  | 24012   | 24012   |
|       | ×         |         |           |         |         |         |         |         | 22869   | 22868   | 22869  | 22869   | 22868   |
|       | ×         |         |           |         |         |         |         | 21780   | 21,779  | 21780   | 21780  | 21779   | 21780   |
|       | NIX.      |         |           |         |         |         | 20743   | 20742   | 20743   | 20743   | 20742  | 20743   | 20743   |
|       | ij,       |         |           |         |         | 19755   | 19754   | 19755   | 19755   | 19754   | 19755  | 19755   | 19756   |
|       | X         |         |           | 419331  | 18814   | 18813   | 18814   | 18814   | 18813   | 18814   | 18814  | 18815   | 18812   |
|       | ×         |         | 11000     | 17918   | 17917   | 17918   | 17918   | 17917   | 17918   | 17918   | 17919  | 17916   | 0       |
|       | ×         |         | 11000     | 17064   | 17065   | 17065   | 17064   | 17065   | 17065   | 17066   | 17063  | 0       | 443076  |
|       | ×         |         | 11000     | 16252   | 16252   | 16251   | 16252   | 16252   | 16253   | 16250   | 0      | 421977  |         |
|       | E .       |         | 11000     | 15478   | 15477   | 15478   | 15478   | 15479   | 15476   | 0       | 401883 |         | T       |
|       | ij,       |         | 11000     | 14740   | 14741   | 14741   | 14742   | 14739   | 0       | 382746  |        |         |         |
|       | 5         |         | 11000     | 14039   | 14039   | 14040   | 14037   | 0       | 364520  |         |        |         | T       |
|       | >         |         | 11000     | 13370   | 13371   | 13369   | 0       | 347162  |         | T       |        | T       |         |
|       | ≥         |         | 11000     | 12734   | 12732   | 0       | 330630  |         |         |         |        |         |         |
|       | =         |         | 11000     | 12126   | 0       | 314885  |         |         |         |         |        |         |         |
|       | _         |         | 0         | 0       | 299891  |         |         |         |         |         |        |         |         |
|       | _         |         | 285610    | 285610  |         |         |         |         |         |         |        |         |         |
|       | mencement | 1697    |           | 3031-22 | 3623-23 | 3023-24 | 2024.25 | 2025-26 | 2026-27 | 2027-28 | 303-29 | 2029-30 | 2030-31 |
| -     | d :       | 2       | Base Norm | **      | re      | m       | 4       | un.     | 10      | 1       | 66     |         | 9       |

### Annexure-V

|                   | WAG  | E RATE RS- 311/- PER DAY       |               |
|-------------------|--|--------------------------------|---------------|
| SI.<br>No         | Item of Works  | Preferable Period of Execution | Total<br>Cost |
| O <sup>th</sup> Y | ear (Pre-Planting Operation)   |                                |               |
| 1                 | Nil  |                                | 0             |
|                   | 1 <sup>st</sup> Year   |                                |               |
| 2                 | Soil Conservation measure structures like<br>Staggered Trench, Percolation pit, Contour<br>trench, Graded earthen bund, LBCD Wire<br>mesh LBCD, Sub surface Dyke & WHS as per<br>the slop & site requirement on LS | Apr/sep                        | 20.215        |
|                   | 2 <sup>rd</sup> Year   |                                |               |
| 3                 | Maintenance of SMC structures @ 15 % of initial year cost  | Apr/jul                        | 3,032         |
|                   | 3 <sup>rd</sup> Year   |                                |               |
| 4                 | Maintenance of SMC structures @ 15 % of initial year cost  | Apr/jul                        | 3,032         |
|                   | 4 <sup>th</sup> Year   |                                | -             |
| 5                 | Maintenance of SMC structure @ 15 % of initial year cost   | Apr/jul                        | 3,032         |
|                   | 5 <sup>th</sup> Year   |                                | -             |
| 5                 | Maintenance of SMC structure @ 15 % of initial year cost   | Apr/jul                        | 3,032         |
| Tota              | l:   |                                | 32,343.0      |

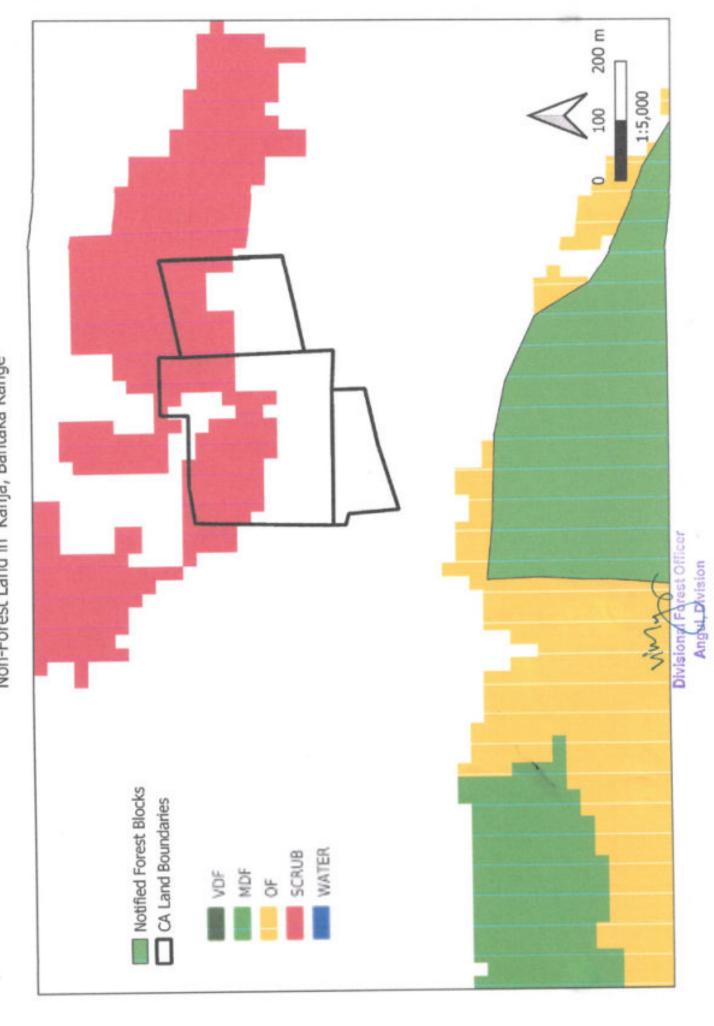
|                  | Total                |           | 35633   | 37415     | 39284   | 41248   | 43310     | 45475   | 47749   | 50136   | 52642   | 55274   |
|------------------|----------------------|-----------|---------|-----------|---------|---------|-----------|---------|---------|---------|---------|---------|
|                  | ž                    |           |         |           |         |         |           |         |         |         |         |         |
|                  | >                    |           |         |           |         |         |           |         |         |         |         | 6003    |
|                  | ΧIX                  |           |         |           |         |         |           |         |         |         | 5717    | 5715    |
|                  | ij.                  |           |         |           |         |         |           |         |         | 5445    | 5443    | 5445    |
|                  | II.                  |           |         |           |         |         |           |         | 5186    | 5184    | 5186    | 5183    |
|                  | ≅                    |           |         |           |         |         |           | 4939    | 4937    | 4939    | 4936    | 32928   |
| Ī                | ×                    |           |         |           |         |         | 4704      | 4702    | 4704    | 4701    | 31360   |         |
|                  | ×                    |           |         | 1         |         | 4480    | 4478      | 4480    | 4477    | 29867   |         |         |
| (SMC)            | =                    |           |         |           | 4267    | 4265    | 4267      | 4264    | 28445   |         |         |         |
| Matrix for (SMC) | =                    |           |         | 4064      | 4062    | 4064    | 4061      | 27090   |         |         |         |         |
| 2                | 5                    | 3032      | 3870    | 3869      | 3870    | 3868    | 25800     |         | 1       | 1       |         |         |
|                  | >                    | 3032      | 3685    | 3686      | 3684    | 24571   |           | 1       | 1       |         | 1       |         |
|                  | ≥                    | 3032      | 3510    | 3509      | 23401   |         |           |         | 1       | 1       | 1       |         |
|                  | =                    | 3032      | 3342    | 22287     |         |         |           |         |         | 1       | 1       |         |
| Ī                | _                    | 20215     | 21226   |           | T       |         |           | T       | 7       | 1       | 1       |         |
| -                | -                    | 0         | 0       | $\forall$ | +       |         | $\forall$ | +       | +       | +       | +       |         |
|                  | Commencement<br>Year | Base Norm | 2021-22 | 2022-23   | 2023-24 | 2024-25 | 2025-26   | 2026-27 | 2027-28 | 2028-29 | 2029-30 | 2030-31 |
|                  | ıs ջ                 |           | н       | 2         | m       | 4       | 25        | 9       | 7       | 00      | 6       | 10      |

|     | Annexure-VI   |             |
|-----|---|-------------|
|     | WATERING MODEL-W -I   |             |
|     | Watering provision to CA Plantation   |             |
| Sol | ar System with Bore well (1 system for 5 Ha Plantation) fitting with Drip system, Wage ra | te@ Rs 311/ |
|     | Year of installation (0 <sup>th</sup> YEAR)   |             |
| 1   | Cost of Borewell  | 1,50,000    |
| 2   | Installation of Solar panel &other System   | 3,00,000    |
| 3   | Cost of 0.5 HP submersable motor with accessories   | 50,000      |
| 4   | Water Storage Tank/ Flexible pipes  | 15,000      |
| 5   | Cost of laying Drip system including all accessories, fittings etc, with 12% GST          | 3,02,431    |
|     | TOTAL   | 8,17,431    |
| 6   | Cost of Water & watering per Ha. (8,17,431/5) =Rs1,63,486/-                               | 1,63,486    |
|     | 1 <sup>st</sup> Year Watering   |             |
| 7   | No maintenance required   | 0           |
|     | TOTAL   | 0           |
|     | 2 <sup>nd</sup> Year Watering   |             |
| 8   | Maintenance of system @5% of Initial cost of installation                                 | 8,174       |
|     | TOTAL   | 8,174       |
|     | 3 <sup>rd</sup> Year Watering   |             |
| 9   | Maintenance of system @ 5% of initial cost of installation                                | 8,174       |
|     | TOTAL   | 8,174       |
|     | 4 <sup>th</sup> Year Watering   | -           |
| 10  | Maintenance of system @ 5%of initial cost of installation                                 | 8,174       |
|     | TOTAL   | 8,174       |
|     | 5 <sup>th</sup> Year Watering   |             |
| 11  | Maintenance of system @ 5% of initial cost of installation                                | 8,174       |
|     | TOTAL   | 8,174       |

|           |                      | Abstract              |  | 200              |                    |
|-----------|----------------------|-----------------------|--|------------------|--------------------|
| SI.<br>no | Year                 | No.<br>person<br>days | Labour<br>Cost @ Rs<br>311/-per<br>day | Material<br>Cost | Total cost<br>(Rs) |
| 1         | 0 <sup>th</sup> year | 0                     | 0.0                                    | 163486.0         | 163486.0           |
| 3         | 1 <sup>st</sup> year | 0                     | 0.0                                    | 0.0              | 0.0                |
| 3         | 2 <sup>nd</sup> year | 0                     | 0.0                                    | 8174.0           | 8174.0             |
| 4         | 3 <sup>rd</sup> year | 0                     | 0.0                                    | 8174.0           | 8174.0             |
| 5         | 4 <sup>th</sup> year | 0                     | 0.0                                    | 8174.0           | 8174.0             |
| 6         | 5 <sup>th</sup> year | 0                     | 0.0                                    | 8174.0           | 8174.0             |
|           | Total:               | 0                     | 0                                      | 196182           | 1,96,182           |

|       | -                     |        | -     |       |        | TAN SILLIPINA IOI VILLERIA |        | Soid  | oreweil | Jutted v | VIEN DE | p syste | (solar borewell) ritted with Drip system (per Ha) | (E    |       |       |    |        |
|-------|-----------------------|--------|-------|-------|--------|----------------------------|--------|-------|---------|----------|---------|---------|---|-------|-------|-------|----|--------|
| No. 5 | Commencem<br>ent year | -      | =     | =     | 2      | >                          | 5      | 5     | N       | ×        | ×       | ×       | ×   | Ex    | XIX   | ×     | N. | Total  |
|       | Base Norm             | 163486 | 0     | 8174  | 8174   | 8174                       | 8174   |       |         |          |         |         |   |       |       |       |    |        |
| 1     | 2021-22               | 163486 | 0     | 1106  | 9463   | 9935                       | 30758  |       |         |          |         |         |   |       |       |       |    | 222653 |
| 2     | 2022-23               |        | 17166 | 0     | 9462   | 9836                       | 10432  | 32296 |         |          |         |         |   |       |       |       |    | 243786 |
| m     | 2023-24               |        |       | 18024 | 0      | 9935                       | 10433  | 10954 | 33911   |          |         |         |   |       |       |       |    | 245476 |
| 4     | 2024-25               |        |       |       | 189255 | 0                          | 10432  | 10955 | 11502   | 35607    |         |         |   |       |       |       |    | 257751 |
| s     | 2025-26               |        |       |       |        | 198718                     | 0      | 10954 | 11503   | 12077    | 37387   |         |   |       |       |       |    | 270639 |
| 9     | 2026-27               |        |       |       |        |                            | 208554 | 0     | 11502   | 12078    | 12681   | 39256   |   |       |       |       |    | 284171 |
| 7     | 2027-28               |        |       |       |        |                            |        | 21908 | 0       | 12077    | 12682   | 13315   | 41219   |       |       |       |    | 298380 |
| 00    | 2028-29               |        |       |       |        |                            |        |       | 230041  | 0        | 12681   | 13316   | 13981   | 43280 |       |       |    | 313299 |
| 6     | 2029-30               |        |       |       |        |                            |        |       |         | 241543   | 0       | 13315   | 13962   | 14680 | 45444 |       |    | 328964 |
| 10    | 2030-31               |        |       |       |        |                            |        |       |         |          | 25362   | 0       | 13981   | 14681 | 15414 | 47716 |    | 345412 |

Non-Forest Land in Kanja, Bantaka Range



Non-Forest Land in Kanja, Bantaka Range



# CHECK LIST SERIAL NUMBER-18

SCHEME FOR COMPENSATORY AFFORESTATION SCHEME OVER AN AREA OF 34.693HA IN NON-FOREST LAND IDENTIFIED IN THE VILLAGE JAMUGARIA, BANTALA RANGE

> UNDER ANGUL TAHASIL 0F DISTRICT ANGUL

IN

LIEU OF PROPOSED FOREST DIVERSION FOR 125.24 HA OF FOREST LAND COMING WITHIN SUBHADRA **OPEN CAST PROJECT** 

> OF M/S MCL, DIST-ANGUL

**Plantation Model:** 

AR plantation over ha @1000plants per ha

**Prepared By** 

Divisional Forest Officer, **Angul Division** 

# Contents

| Sl no | Description   | Annexures | Page No   |
|-------|---|-----------|-----------|
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| 2     | Details of Scheme   |           |           |
| 3     | Land schedule   | 2         |           |
| 4     | ORSAC Authentication Letter                                   | II        |           |
| 5     | AR Plantation @1000/ha  | III       |           |
| 6     | Cost norm & matrix for chain link<br>Fencing                  | IV        |           |
| 7     | Cost norm matrix for SMC (Model -C)                           | V         |           |
| 8     | Watering, Solar Borewell fitted with<br>Drip System           | VI        |           |
|       | MAPS  |           | PLATE     |
| 9     | Cadastral Map of CA land identified at Villages Jamugaria     |           | Plate-I   |
| 10    | DGPS map of the CA land at Jamugaria (Authenticated by ORSAC) |           | Plate-II  |
| 11    | Corresponding Topo map (1:50000 Scale)                        |           | Plate-III |
| 12    | KML File in CD  |           |           |

# **Land Suitability Certificate**

The requirement of suitable Non Forest land at par with the guidelines of MoEF & CC is a vital aspect for raising Compensatory Afforestation in lieu diversion of Forest land for Non forestry purpose of a project under FC Act, 1980.

In the instant case diversion of Forest land to the extent of 125.24ha is required for the project "Subhadra Open Cast Project of M/s MCL in the district of Angul. According required exercises were undertaken in the field by Forest and Revenue Staff jointly to select suitable Non-Forest land/ Govt degraded forest land for the purpose of Compensatory Afforestation for the said project. Finally One patch of Non forest land over 34.693ha of Jamugaria Village was selected in Bantala Range with suitability criteria to accommodate required no of seedlings AR Plantation @1000plantations per ha. Criteria of suitability of the site meet relevant parameters such as management point of view, free from encroachment and encumbrances, not included in Section -4(1) notification, not under DLC status of forest, non-allotment of the said areas for other projects etc as narrated against this site furnished in Annexure-I. Besides soil quality, soil depth, terrain, climatic conditions etc are suitable for planting indigenous promising species for sustained growth and establishment and over and above location of the site with respect to closeness to nearby forest block of Angul Division which will ensure proper supervision, monitoring of the plantation raised under Compensatory Afforestation Scheme. Plantations activities will be as done per the approved One time Cost Norm of PCCF, Odisha and it is hoped to ensure proper greenery with improved environmental scenario after implementation of the said plantation.

Place:

Date:

Divisional Forest Officer,

Angul Division

# Scheme

This scheme is for taking up Compensatory Afforestation on identified Non forest land in Village Jamugaria of Bantala Range under Angul Tahasil in the District of Angul in lieu of Proposed Forest Diversion or 125.24 ha of Forest land coming within Subhadra Open Cast Project of M/s MCL, Dist-Angul.

1. Introduction: The Subhadra Open Cast Mining Lease is over an area of 1111.85 ha. Out of which Forest land located in Mining lease is 125.24ha and non-Forest area is 986.61ha as per the land schedule. The User Agency M/s MCL has filed forest Diversion Proposal Vide Proposal No FP/OR/MIN/150133/2021.

On application for providing Compensatory Afforestation Land, the Collector and District Magistrate, Angul has allotted 110.640ha of Non forest Revenue land and 40.255ha of Revenue Degraded Forest area spread over in 5 patches vide his letter no dated . This scheme is meant for 34.693ha of Non forest land in village Jamugaria which has been jointly verified by the Revenue staff and Forest staff. The selected land schedule is coming under Bantala Range of Angul Division (Annexure-I)

## Land schedule:

| Land Sch     | edule of I  | and jointly           | verified by                         | Revenue and                              | d Forest Staffs for | Compens | satory Aff                 | orestation                                  |
|--------------|-------------|-----------------------|-------------------------------------|--|---------------------|---------|----------------------------|---|
| Village      | Khata<br>No | Plot No               | Total<br>Plot<br>Area in<br>Hectare | Area<br>taken for<br>plantation<br>in ha | Kisam               | Remark  | Nearest<br>Forest<br>Block | Approximate distance from the proposed site |
| Bantala Rang | ge          |                       |                                     |  |                     |         |                            |   |
| Jamugaria    | 1           | 1107(p)               | 9.106                               | 7.923                                    | PuratanaPatita      | Non     | Kanguli                    | 1.12Km                                      |
|              | 1           | 1117(P)               | 21.643                              | 21.643                                   |                     | forest  | PF                         | 0.62km                                      |
|              | 2/2         | 2 1089(p) 5.127 5.127 | 5.127                               | 1  | land                |         | 1.6Km                      |   |
|              | Total       |                       | 35.876                              | 34.693                                   |                     |         |                            |   |

# 2. DGPS Survey, Mapping & Authentication of CA Land.

As per the revised guidelines of Chief Executive, ORSAC, the User Agency has taken up DGPS Survey by empaneled vendors and the same has been authenticated by ORSAC vide his letter no ORSAC/DGPS-FD/1080/2022/3203(2) Dated 03/09/2022 and due endorsement has been furnished on DGPS surveyed Map. The DGPS Map, Corresponding Topo map (Survey of India map F45T2 1:50000 Scale) are enclosed to this Scheme. The KML File of the area is submitted in a CD. (Letter of Authentication by ORSAC at Annexure-II)

The Latitude / Longitude of Survey Points as per DGPS authenticated Map is furnished below.

| SL.NO | MAP ID | LONGITUDE       | LATITUDE        |
|-------|--------|-----------------|-----------------|
| 1     | 1      | 85°06'08.74282" | 20°40'13.49507" |
| 2     | 2      | 85°06'09.90708" | 20°40'14.70949" |
| 3     | 3      | 85°06'11.35651" | 20°40'17.10756" |
| 4     | 4      | 85°06'11.03767" | 20°40'17.97251" |
| 5     | 5      | 85°06'12.93013" | 20°40'18.58537" |
| 6     | 6      | 85°06'13.69864" | 20°40'19.50553" |
| 7     | 7      | 85°06'15.44511" | 20°40'19.21669" |
| 8     | 8      | 85°06'17.73947" | 20°40'21.32217" |
| 9     | 9      | 85°06'18.52405" | 20°40'21.82830" |
| 10    | 10     | 85°06'18.80566" | 20°40'21.97581" |
| 11    | 11     | 85°06'18.91202" | 20°40'21.74480" |
| 12    | 12     | 85°06'19.45320" | 20°40'22.02300" |
| 13    | 13     | 85°06'22.07215" | 20°40'23.54191" |
| 14    | 14     | 85°06'22.17752" | 20°40'24.15357" |
| 15    | 15     | 85°06'22.79444" | 20°40'24.56032" |
| 16    | 16     | 85°06'26.55901" | 20°40'26.22717" |
| 17    | 17     | 85°06'28.04236" | 20"40'25.30528" |
| 18    | 18     | 85°06'29.68862" | 20°40'25.61998" |
| 19    | 19     | 85°06'29.97867" | 20"40'26.20145" |
| 20    | 20     | 85°06'29.85223" | 20°40'27.76197" |
| 21    | 21     | 85°06'31.93639" | 20°40'28.72254" |
| 22    | 22     | 85°06'33.51229" | 20"40'28.68166" |
| 23    | 23     | 85°06'35.03114" | 20°40'28.71448" |
| 24    | 24     | 85°06'37.18513" | 20°40'30.01096" |
| 25    | 25     | 85°06'39.41314" | 20°40'31.41705" |
| 26    | 26     | 85°06'39.00596" | 20°40'32.92451" |

| 27 | 27 | 85°06'41.12205" | 20°40'33.49177" |
|----|----|-----------------|-----------------|
| 28 | 28 | 85°06'44.81982" | 20°40'34.63293" |
| 29 | 29 | 85*06'46.97718" | 20°40'33.73718" |
| 30 | 30 | 85°06'46.33979" | 20°40'32.85658" |
| 31 | 31 | 85*06'43.78306" | 20°40'33.43453" |
| 32 | 32 | 85°06'43.41806" | 20°40'30.30260" |
| 33 | 33 | 85°06'43.27045" | 20°40'28.80662" |
| 34 | 34 | 85°06'41.53066" | 20°40'28.35324" |
| 35 | 35 | 85°06'41.15082" | 20°40'28.22167" |
| 36 | 36 | 85°06'39.32183" | 20°40'24.45433" |
| 37 | 37 | 85°06'40.55051" | 20°40'21.68219" |
| 38 | 38 | 85*06'39.98174" | 20°40'21.04588" |
| 39 | 39 | 85°06'37.40938" | 20°40'16.67318" |
| 40 | 40 | 85°06'37.28437" | 20°40'14.73544" |
| 41 | 41 | 85°06'37.20106" | 20°40'11.96993" |
| 42 | 42 | 85°06'36.24940" | 20°40'09.59999" |
| 43 | 43 | 85°06'35.01450" | 20°40'07.01985" |
| 44 | 44 | 85°06'33.82066" | 20°40'06.76355" |
| 45 | 45 | 85°06'29.12497" | 20°40'04.52463" |
| 46 | 46 | 85°06'28.33856" | 20°40'04.08203" |
| 47 | 47 | 85*06'28.14415" | 20°40'03.80175" |
| 48 | 48 | 85*06'27.60078" | 20°40'01.90509" |
| 49 | 49 | 85°06'24.05907" | 20°39'58.32660" |
| 50 | 50 | 85*06'20.53938" | 20*39'56.36000" |
| 51 | 51 | 85°06'11.60796" | 20°39'58.36159" |
| 52 | 52 | 85°06'14.14539" | 20°39'59.56687" |
| 53 | 53 | 85°06'19.34607" | 20°40'01.04850" |
| 54 | 54 | 85°06'19.26136" | 20°40'01.85440" |
| 55 | 55 | 85*06'21.49854" | 20°40'02.82397" |
| 56 | 56 | 85°06'23.03808" | 20°40'01.80792" |
| 57 | 57 | 85°06'26.04831" | 20°40'04.34788" |
| 58 | 58 | 85°06'25.84450" | 20°40'04.57194" |
| 59 | 59 | 85°06'25.89715" | 20°40'04.96436" |
| 60 | 60 | 85°06'28.93539" | 20°40'04.97620" |
| 61 | 61 | 85°06'30.41915" | 20°40'06.05875" |
| 62 | 62 | 85°06'30.56436" | 20°40'07.38116" |
| 63 | 63 | 85°06'30.74160" | 20°40'20.38187" |
| 64 | 64 | 85°06'30.54703" | 20°40'20.65923" |
| 65 | 65 | 85°06'30.22748" | 20°40'20.69734" |
| 66 | 66 | 85°06'30.24990" | 20°40'21.12208" |
| 67 | 67 | 85°06'19.46783" | 20°40'20.93671" |
| 68 | 68 | 85°06'19.54688" | 20°40'15.60308" |
| 69 | 69 | 85°06'19.66683" | 20°40'08.05798" |

| 70 | 70 | 85°06'17.38217" | 20°40'07.84277" |
|----|----|-----------------|-----------------|
| 71 | 71 | 85°06'17.05037" | 20°40'11.05908" |
| 72 | 72 | 85°06'14.51176" | 20°40'10.68601" |
| 73 | 73 | 85°06'14.56164" | 20°40'11.56491" |
| 74 | 74 | 85°06'14.56105" | 20°40'11.57162" |
| 75 | 75 | 85°06'11.02159" | 20°40'10.90757" |
| 76 | 76 | 85°06'08.75467" | 20°40'12.16106" |

# 3. Topography & Soil:

The identified area in above village is having partly hilly and partly plain terrain. The soil is lateritic and gravelly but the soil depth is suitable for taking up plantation. Moreover nearby forest blocks is KANGULI PF. So for management point of view, the CA land selected here will be congenial and suitable indegenous species will be planted to ensure a successful plantation.

### 4. Climate

In Angul District, the wet season is oppressive and overcast whereas, the dry season is humid and mostly clear, and it is hot year round. Over the course of the year, the temperature typically varies from 13.89°C to 40.55°C and is rarely below 11.11°C or above 44.44°C.

# 5. Rain fall:

The annual average rainfall is 1602 mm. The maximum rainfall is received during the rainy season and particularly in the month of August.

# 6. Present Vegetation:

The identified land bears dry deciduous mixed vegetation. Species like Sal, Asan, Karada, Kendu, Jamu, Mango, Bahada, Mahul etc are observed.

# 7. Items of work to be taken up

# Planting Model;

The land identified bears natural vegetation. Its tending operation will help maintaining a good forest cover adjacent to habitation. Considering the vegetation, terrain and soil of the area it is proposed to adopt a planting model of AR Plantation(@1000seedlings for Village-Jamugaria is suggested.

# Spacing

The plant density proposed for planting is @1000plants per ha. The spacing is to be 3m x 3m(Approximately to accommodate 1000seedlings per ha). It is suggested to have the line of planting along the contour and plant to plant in adjacent row over the available blank spaces in the selected site. This will reduce the run off and encourage perculation of water and enrichment of vegetation.

# Choice of Species:

Considering the soil, topography and present vegetation observed in and around, it is proposed to Plant the following indegenous and pormising species on the identified land in suitable available blanks. Species proposed for planting are

- i) Acacia Catechew (Khair)
- ii) Bombax Ceiba (Simili)
- iii) Emblica officinallis (Anla)
- iv) Terminalia belerica (Bahada)
- v) Terminalia tomentosa (Asana)
- vi) Mangifera indica (Aamba)
- vii) Pterocarpus marsupium (Bija)
- viii) Syzygium cumini (Jamu)
- ix) Azadia indica (Neem)
- x) Terminalia chebula(Harida)
- xi) Pongamia pinnata (Karanja) etc.

It is proposed for diversion of 125.24 ha of Forest Land . The following detail is furnished in Tabular form

| Description of Site                     | e                           | Area (in ha) | Total No of<br>Seedlings<br>required for<br>planting | Remark                             |
|---|-----------------------------|--------------|--|------------------------------------|
| <b>Bantala Range</b>                    |                             |              |  |                                    |
| Compensatory<br>Land<br>(NFL)(Jamugaria | Afforestation<br>Identified | 34.693       | 34693  | AR Mode 1000nos of<br>Seedlings/ha |

# 8. Silvicultural Tending & Planting Technique to be adopted:

# i) Survey, Demarcation and Pillar Posting:

The identified area has been surveyed & pillars posted. It is to be checked and missing pillars if any to be reposted as per Latitude / Longitude provided in the DGPS Map authenticated.

# ii) Preparation of Treatment map (Digital map):

The Kml file of the area has been provided by the user agency after DGPS survey. The same will be updated with treatment design basing on physical position at the time of implementing the Plantation Scheme. The Range Officer will update the position with help of GIS cell of the Division as per requirement.

# iii) Site Preparation:

After demarcation of the area, site preparation mostly clearing of invasive weeds will be taken up at planting site to be identified by field staff.

# iv) Silvicultural Tending Operation:

The selected area is having scattered Sal shoots of promising vigour and of natural regeneration including some other species also. It is proposed to take up Silvicultural cleaning over the area. The activities are intended to achieve healthy growth of existing natural seedlings / saplings / coppice shoots of favored species. The operations include

- Cutting back of high stumps with preference to living stumps and having a good coppicing power.
- Cutting of climbers those are of annual nature and uprooting them wherever possible.
- Singling out of multiple coppice shoots and retaining most promising ones.
- > Pruning of whippy plants available within the area.
- > Dead and dying trees if any to be cut and separated from the site.

The natural seedlings available in the treatment area are to be given appropriate attention to ensure its establishment.

# v) Digging of Pits (45cmx45cmx45cm):

It is proposed to dugout pits of size 45cmx45cmx45cm preferably in month of February / March. The dugout earth will be kept at pit head on both sides separately. The top soil will be kept on one side and bottom soil on another side. Soil within 30cm from ground level will be considered as top soil and rest as bottom soil. The pits will be left for weathering due to Sun & Rain.

# vi) Refilling of Pits& application of organic Compounds / CDM/ FYM:

The pits will be refilled by altering the dugout soil of the pits i.e. top soil on bottom of the pit and bottom soil on top. Application of organic Compounds / CDM/ FYM & mixing the same properly before refilling is suggested. This will provide necessary nutrients to the plant as well as help in retaining soil moisture for a longer period.

# vii) Transportation of Seedlings including short carriage & watering at Pit site.

In the approved cost norm, provisions have been made to plant 18month old seedlings. As seedlings will be above 1m height invariably, careful transportation of seedlings will be of paramount importance. In case of top breaking of seedlings, the benefit of 18month old seedlings will be reduced substantially. Transportation of seedlings from Nursery site to Planting site and then short carriage has to be taken up carefully. Wherever water is available, the plants are to be watered before short carriage to minimize the shock to plants during long carriage by tractors / vans etc.

# viii) Planting of Seedlings:

After application of FYM/ CDM/ Organic manure, seedling will be planted carefully. The standard planting procedure is to be followed. As the pit size is of 45cm x 45cm the following care will be taken during planting.

Chemical fertilizer / insecticides to be applied as basal doze to be thoroughly mixed with soil.

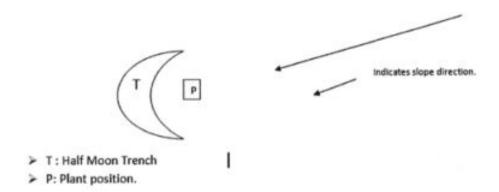
- Seedlings collar zone will be at Ground Level or at best 2.5cm below the ground level. In no case it will not be more than 3cm below Ground Level.
- The Poly bags containing the seedlings are to be carefully removed. It is better to use a blade to cut open the bag so as to cause least disturbance to the ball of earth containing the seedlings.
- ➤ After planting the soil is to be compacted leaving 3" around the plant and the compact soil may be at Ground Level or 1" above the Ground level – allowance for soil settlement.
- In no case it should be a sunken around the plant.
- The planted plant should stand erect, if it is tilted due to speedy growth, a support with a stick collected locally to be provided.

# ix) Casualty Replacement:

Casualty replacement is an important operation to achieve a 100% survival in a plantation. After planting there is possibility of casualty in planted seedlings. There is a provision to replace casualty up to 10% in 1<sup>st</sup> year and 10% in 2<sup>nd</sup> year operation in the approved cost norm. The same is to be carried out with good promising seedlings those can come up to a height of previous planted seedlings. During replacement in 2<sup>nd</sup> year application of fertilizers etc as in 1<sup>st</sup> year is to be followed.

# x) Weeding & application of Fertilizer:

Two Weeding around the planted seedlings at a diameter of 1.00m has been prescribed in the approved cost norm. During 2<sup>nd</sup> weeding deep soil working around the plants at 1.00m diameter has also been prescribed. 1<sup>st</sup> weeding will be taken up just after one month of planting and 2<sup>nd</sup> weeding and soil working in month of September / October. As there is occasional rainfall in October, providing half-moon trench in sloppy terrain around each plant is suggested. A half-moon trench model is given below.



During weeding (1<sup>st</sup>& 2<sup>nd</sup>) there is a provision of application of fertilizer to plants. Application of NPK @30gms per plant x 2 times is suggested. In no case 2<sup>nd</sup> weeding can be delayed beyond 15<sup>th</sup> of October.

# xi) Fire line Tracing & Inspection Path:

There is possibility of grasses growing up within plantation area. It is better to allow local people / VSS to cut the grasses take for stall feeding under supervision of Forest Staff. In the present case where AR is under implementation Grass growth is limited. Due to fallen dry leaves (Due to leaf shedding), there is possibility of fire hazards in February / March. It is suggested to have fire line at a width of minimum 3m all around the planting area, maintain inter partitioned line / both sides of foot path as a Fire line (minimum 3m wide in 1<sup>st</sup> year and 2m in subsequent year). These lines will be maintained as inspection path also. It will be maintained till completion of 10<sup>th</sup> year.

# xii)Watch & Ward

Watch and ward is essentially required against biotic interferences like grazing and fire etc including grasses in first two years and illicit felling in subsequent years. Adequate provisions has been made in the approved cost norm. Watch & ward provisions will be implemented as per provision of cost norm.

# 9. Provision for watering:

The site selected contains partly hilly terrain. All total 34693nos of seedlings will be planted in the site selected depending on extent of blank area available. Watering to be explored and adhered to as per provision of one-time cost norm (Annexure-VI).

# 10.Funding Agency

The U/A will deposit required funds as per the approved cost of the scheme.

# 11. Implementing Agency

Divisional Forest Officer, Angul will execute the Compensatory Afforestation Scheme.

# Financial analysis and Cost involved.

| Comp  | ensatory Afforestation scheme for plantation of 34693nos of seedlings over an area 34.693ha o<br>Forest land in Jamugaria village of Angul Tahasil under Bantala Range of Angul Forest Division | Mantation of 34693nos of see Angul Tahasil under Bantala F | Compensatory Afforestation scheme for plantation of 34693nos of seedlings over an area 34.693ha of Non-<br>Forest land in Jamugaria village of Angul Tahasil under Bantala Range of Angul Forest Division |
|-------|---|--|---|
|       | PERF  | PERFORMA (Norm For 1.00ha)                                 |   |
| SI No | Component   | Unit   | Base Rate for commencement year   |
|       |   |  | 2023-24   |
| 1     | AR Plantation @1000plants per ha  | Hectare  | 258777  |
| 2     | Watering , Solar Borewell fitted  | Hectare  | 245476  |
|       | with Drip System  |  |   |
| 3     | SMC   | Hectare  | 39284   |
| 4     | Fencing (Iron angle with chain link   Per 250meters   | Per 250meters  | 462316  |
|       | wire mesh)  |  |   |
| 5     | Entry point activity  | 15% of [(1)+   | 15% of [(1)+(2)+(3)+(4)]= 150878/-  |

Divisional Cohest Officer Angul Division

मुक्तिम्य अधिकारी Project Officer MCL, Subhadra Area ५२. सि. एल. सुभद्रा अत्र

# Matrix for Compensatory Afforestation Scheme for Plantation of AR mode @1000nos of Seedlings over an area 1ha-Year wise (Commencement Year 2023-24)

| Year                  | Financial   | AR Plantation<br>@ 1000nos<br>seedling per ha | Watering, Solar<br>Borewell fitted<br>with Drip system | SMC   | Fencing (Iron Angle<br>with Chain link wire<br>mesh(250mt per<br>hectare | Total   |
|-----------------------|-------------|---|--|-------|--|---------|
| 0 <sup>th</sup> year  | 2023-24     | 24586   | 180243   | 0     | 314886   | 519715  |
| 1st year              | 2024-25     | 110729  | 0  | 23401 | 0  | 134130  |
| 2 <sup>nd</sup> year  | 2025-26     | 27105   | 9935   | 3684  | 13369  | 54093   |
| 3rd year              | 2026-27     | 20094   | 10433  | 3870  | 14040  | 48437   |
| 4 <sup>th</sup> year  | 2027-28     | 9190  | 10954  | 4062  | 14741  | 38947   |
| 5 <sup>th</sup> year  | 2028-29     | 9648  | 33911  | 4267  | 15478  | 63304   |
| 6 <sup>th</sup> year  | 2029-30     | 11578   |  |       | 16251  | 27829   |
| 7 <sup>th</sup> year  | 2030-31     | 10637   |  |       | 17065  | 27702   |
| 8 <sup>th</sup> year  | 2031-32     | 11170   |  |       | 17918  | 29088   |
| 9 <sup>th</sup> year  | 2032-33     | 11727   |  |       | 18813  | 30540   |
| 10 <sup>th</sup> year | 2033-34     | 12313   |  |       | 19755  | 32068   |
| GRANE                 | GRAND TOTAL | 258777  | 245476   | 39284 | 462316   | 1005853 |



प्रमहत्त्व अधिकारी Project Officer MCL. Subhadra Area एम्. सि. एल. सुभद्रा क्षेत्र

|    | Seedlings over an area 34.693ha                         | Seedlings | Seedlings over an area 34.693ha | е         |          |
|----|---|-----------|---------------------------------|-----------|----------|
| SI | Component   | Norm      | Unit                            | Rate      | Total    |
|    | AR Plantation @1000plants per ha                        | 258777    | На                              | 34.693    | 8977750  |
| 2  | Watering, Solar Borewell 245476 fitted with Drip System | 245476    | На                              | 34.693    | 8516299  |
| 8  | SMC   | 39284     | На                              | 34.693    | 1362880  |
| 4  | Fencing (Iron angle with 462316 chain link wire mesh)   | 462316    | 250meter                        | 5670meter | 10485327 |
| 2  | Entry point activity                                    |           | 15% (1+2+3+4)                   |           | 4401338  |
|    | Total   |           |                                 |           | 33743594 |

(Three Crore Thirty-Seven Lakh Forty Three Thousand Five Hundred Ninety Four) Only





# Calendar of Operation for Compensatory Afforestation Scheme for Plantation of 34693Nos of Seedlings over an area 34.693ha-Year wise

| - 0 S   | AR Plantation © 1000nos seedling per | Watering, Solar Borewell fitted with | SMC     | Fencing (Iron Angle with<br>Chain link wire mesh<br>(5670mt along the<br>perimeter =22.68times | Entry point<br>activity 15%<br>(1+2+3+4) | Total    |
|---------|--------------------------------------|--------------------------------------|---------|--|--|----------|
| 852962  | 62                                   | 6253170                              | 0       | 7141614  | 2137162                                  | 16384908 |
| 3841521 | 21                                   | 0                                    | 811851  | 0  | 698007                                   | 5351379  |
| 940354  | 46                                   | 344675                               | 127809  | 303209   | 257407                                   | 1973454  |
| 697121  | 21                                   | 361952                               | 134262  | 318428   | 226765                                   | 1738528  |
| 318829  | 59                                   | 380027                               | 140923  | 334326   | 176115                                   | 1350220  |
| 334718  | 18                                   | 1176474                              | 148035  | 351041   | 301540                                   | 2311808  |
| 401676  | 9/                                   | 0                                    | 0       | 368573   | 115537                                   | 885786   |
| 369029  | 59                                   | 0                                    | 0       | 387034   | 113410                                   | 869473   |
| 387521  | 21                                   | 0                                    | 0       | 406380   | 119085                                   | 912986   |
| 406845  | 45                                   | 0                                    | 0       | 426679   | 125028                                   | 958552   |
| 427175  | 75                                   | 0                                    | 0       | 448043   | 131282                                   | 1006500  |
| 8977751 | 51                                   | 8516298                              | 1362880 | 10485327   | 4401338                                  | 33743594 |

प्रकल्प अधिकारी Project Officer MCL, Subhadra Area एम्. सि. एल. सुभद्रा क्षत्र

> Divisional Porest Officer Angle Division

### Encl:

- A- Documents:
- The selected land schedule of Non Forest land in Jamugaria Village coming under Bantala Range of Angul Division attached as (Annexure-I).
- ORSAC, authorization letter vide his letter no ORSAC/DGPS-FD/1080/2022/3203(2)
   Dated 03/09/2022 as (Annexure-II)
- 3) Approved cost norm for one ha AR Plantation @1000 Plants per ha (Annexure-III).
- 4) Approved Cost norm & matrix for Chain link Fencing: (Annexure-IV)
- 5) Approved Cost norm Matrix for SMC (Model-C) is at (Annexure -V)
- Approved Cost Norm Matrix for Watering, Solar Borewell fitted with Drip System. (Annexure-VI)

# B- Maps & Plates:

- Cadastral Map of CA land identified at Villages Jamugaria (Plate-I)
- II. DGPS map of the CA land Authenticated by ORSAC) (Plate-II)
- III. Corresponding Topo map (1:50000 Scale) (Plate-III)
- IV. KML File in CD
- V. Forest Cover density map of CA land
- VI. Satellite map of CA land

Divisional Forest officer, Divisional Forest Officer Angul Division

|                     |      |                 | Area tin Ba Wannd     | for Describite sort: Remorks<br>Reading | 11 | Donne an an      | 28 30 198 <b>0</b> |                  |
|---------------------|------|-----------------|-----------------------|---|----|------------------|--------------------|------------------|
|                     | Oute | Tarasti-Antidos |                       | Petal (in: fer t.<br>Ha.)               | ,  | 7.923            | 21.643             | \$117            |
|                     |      |                 | Population (in 14.4.) | NOF                                     |    |                  |                    |                  |
| -                   |      |                 | Page                  | Muca                                    | 1  |                  |                    |                  |
| IN PASON ROBATA MCI |      |                 | Acres 100             | 2                                       | 9  | 9.106            | 21.643             | 5.127            |
| SVA NT              |      |                 |                       | Kennen                                  | 1  | Aurotone Patitia | Purchase Portra    | Puratone Paritie |
|                     |      |                 |                       | Med No.                                 | 4  | 1307971          | 1117/01            | 108901           |
|                     |      |                 |                       | Khara Yo                                |    | -                | -                  | 2/2              |
|                     |      | BANTALA         |                       | Name of Village                         | 1  |                  | LAMERSANIA         |                  |
|                     |      | Annan           |                       | SI No                                   | -  | 1                | 1                  | -                |

Centred that the above non-lovest Government land as mentioned in column 2, 8 & 9 is a compact patches of 4,00 Ha. Or more having adequate soil costs suitable for plantistion from management point of view.

Emmilied that the above Sovernment and found suitable for plancation is thee from encroachment and encumbrances

Certified that the about Government land is not covered under 4(1) notification.

Cartified that the above Government and Is not covered under DLC

Certified that the above Government and is not allotted premously.

Certified that the above Generalment and is not covered under any M.I./F.I. area.

Centilled that the above Covernment and is not settled in favour of individual/commitmely under IFR Act, 2006.

Certified that the Hitch of the above alony was non-farest as on 25.10 1980.

Certified that the above plots are not covered under any proposed reserve forest.

Contribution the above plats are unifit not pily for agreedure, but also for other developmental requirements.

Certified that the labour plots have no future potential for agrarian or industrial use

Certified that the above destined area contains spure regeration with density of D.D.C. and smuthy forms, growth fit for compensatory affine station



Single Pange Santaia

Trees 11 Blailer

Karte Sanger

Revenue Inspector



# ODISHA SPACE APPLICATIONS CENTRE (ORSAC) Annexus- 1

Department of Science & Technology, Govt. of Odisha

ORSAC/DGPS-FD/1080/2022/ 3203(2) dr. 3 - 9 - 2.2

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The D.F.O.,

Angul Division.

Augul

Verification of DGPS Survey of Compensatory Afforestation non-forest land in Jamugaria, Kanja, Nukhuripada, Rodasingha, villages and degraded revenue forest land in Baghuapat villagein Angul Tahsil in lieu of forest areas proposed for diversion for Subhadra OCP, Subhadra Area of MCL in Angul District.

Ref:

Your letter no. 5950 dated 19.08.2022

Sir

With reference to the subject mentioned above, this is to inform you that, the maps and data forwarded to ORSAC by your office for verification of the DGPS survey of Compensatory Afforestation non-forest land in Jamugaria, Kanja, Nukhuripada, Rodasingha villages and degraded revenue forest land in Baghuapat village in Angul Tahsil in lieu of forest areas proposed for diversion for Subhadra OCP, Subhadra Area of MCL in Angul District has been verified by ORSAC and is certified that the map is correct at a confidence level of 95%. All the Compensatory Afforestation non-forest land comes in Jamugaria, Kanja. Nukhuripada, and Rodasingha villages and degraded revenue forest land in Baghuapat village in Angul Tahsil in Angul district. Total Compensatory Afforestation land works out to 150.954Ha, includes 40,249Ha, degraded Revenue forest and 110,705Ha, non-forest land from the submitted shp files, against the required area of 150.895Ha. (40.255Ha. degraded Revenue forest and 110,640Ha. non-forest land) as mentioned in the submitted record. Detail Patch/village/plot wise comparative statistics of Compensatory Afforestation area is attached herewith.

Yours faithfully,

Encl; 6 hard copy maps

M. K. SANABADA SCIENTIST - 'D'

Copy to: The General Manager (Subhadra Area), MCL, Subhadra Area, Near Biju Maldan. Angul-759122, Odisha for information.

STATISTICS OF COMPENSATORY AFFORESTATION LAND IDENTIFIED IN VILLAGE
JAMUGARIA, KANJA, NUKHURIPADA, RODASINGHA ALONG WITH DEGRADED REVENUE
FOREST LAND IN VILLAGE BAGHUAPAT UNDER ANGUL TAHASIL IN LIEU OF FOREST AREAS
PROPOSED FOR DIVERSION FOR SUBHADRA OCP, SUBHADRA AREA OF MCL, ANGUL
DISTRICT

| SL. NO. | VILLAGE NAME    | PLOT NO.                            | KISAM           | ALLOTED AREA HA.   | MAP AREA HA |
|---------|-----------------|-------------------------------------|-----------------|--|-------------|
| 1       | BAGHUAPAT *     | 251(P)                              | CHHOTA JUNGLE   | 15.393   |             |
| 2       | BAGHUAPAT       | 298(P)                              | CHHOTA JUNGLE   | 15.212   | 15.081      |
| 3       | BAGHUAPAT       | 283(P)                              | CHHOTA JUNGLE   | 6.029  | 15.243      |
| 4       | BAGHUAPAT       | 284(P)                              | CHHOTA JUNGLE   | The state of the s | 6.035       |
| Д       | , TOTAL DEGRADE | Contraction and Contraction in con- | FOREST LAND     | 3.621<br>40.255  | 3.890       |
| 5       | JAMUGARIA       | 1107(p)                             | PURATANA PATITA | 7.923  | 40.249      |
| 6       | JAMUGARIA       | 1117(p)                             | PURATANA PATITA | 21.643   | 7.924       |
| 7       | JAMUGARIA       | 1089(p)                             | PURATANA PATITA | 5.127  | 21.854      |
| 8       | KANIA           | 1657                                | PURATANA PATITA | 1.752  | 5.259       |
| 9       | KANIA           | 1656(P)                             | PURATANA PATITA | 7.893  | 1.780       |
| 10      | KANJA           | 1648/1(P)                           | PURATANA PATITA | 3.583  | 7.691       |
| 11      | NUKHURIPADA     | 8(P)                                | PURATANA PATITA | 19.126   | 3.635       |
| 12      | RORASINGHA      | 965(P)                              | PAHADA          | THE RESERVE THE PERSON NAMED IN COLUMN 2 I | 19.129      |
|         | B. TOTAL NO     | ON-FOREST L                         | AND             | 43.593   | 43,433      |
| -       | TOTAL CAL       |                                     |                 | 110.640  | 110.705     |
|         |                 | HILL MINEM                          | ATO             | 150.895  | 150.954     |

Shn M. K. Sanabada Scientist, ORSAC Bhubaneswar

## Annexure-III

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

|        | WAGE RA   | TE Rs. 311/- P                       | ER MANDAY  |                            |                          |                          |
|--------|---|--------------------------------------|--|----------------------------|--------------------------|--------------------------|
| SI.No. | Items of work   | Preferable<br>period of<br>Execution | THE RESERVE OF THE PARTY OF THE | Labour<br>Cost (In<br>Rs.) | Material<br>Cos0(In Rs.) | Total<br>Cost (I<br>Rs.) |
|        | 0th Year (Advance   | ce Work) Pre-                        | Planting ope   |                            |                          | 113.7                    |
| 1      | Survey, Demarcation and Pillar posting  | Nov/ Dec                             | 2  | 622                        | 0                        | T                        |
| 2      | Preparation of Treatment Map (Digital Map)  | Nov/ Dec                             | 1  | 311                        | 100                      | 622<br>411               |
| 3      | Site Preparation (Cleaning & removal of debrises)   | Nov/ Dec                             | 12   | 3732                       |                          |                          |
| 4      | Creation of 4 mt wide Inspection Path   | Feb/ Mar                             | 1  | 311                        | 0                        | 3732                     |
| 5      | Alignment and stacking of pits  | Feb/ Mar                             | 1  | 311                        | 0                        | 311                      |
| 6      | Digging of pits (45cm x 45cm x 45 cm) in hard and gravelly soil   | Feb/ Mar                             | 40   | 12440                      | 0                        | 12440                    |
| 7      | Construction of Temporary Labour<br>Shed, Drinking water facility and First-<br>Aid etc.  | Jan/Mar                              | 0  | 0                          | 3500                     | 3500                     |
|        | Total   |                                      | 57   | 17727                      | 3600                     | 21327                    |
|        | 1st \   | ear/ Planting                        | Year   |                            | 3000                     | LAJEI                    |
| 1      | Refilling of pits by altering the dugout soil of the pits, application of organic compounds/ CDM/ FYM & mixing the same perfectly.  | June/Jul                             | 7.5  | 2332.5                     | 5000                     | 7332.5                   |
| 2      | Transportation of 18 months old polythene bag seedlings in hired truck/ tractor from the permanent / Mega Nursery to the planting site including Loading & unloading. (Average lead of 10Rkm) & stacking the seedlings @Rs. 6/- seedling. (1100 nos.)                                       | Jul/ Aug                             | 0  | 0                          | 6600                     | 6600                     |
| 3      | Watering polythene bag seedlings at stacking site of plantation.  | Jul/ Aug                             | 2  | 622                        | 0                        | 622                      |
| 4      | Conveyance of polythene bag seedlings on head load from the stacking site to individual dugout pits within the planting site, applying insecticide, fertilizer & planting after scooping the soil with other applied materials and pressing the soil perfectly around the planted seedling. | Jul/ Aug                             | 22.5   | 6997.5                     |                          | OEZ                      |

| 5  | Cost of Fertilizer & Insecticide  (a) NPK/ Bio- fertilizer @ 50gms/ plant as basal dose = 50 kg @ Rs.30/- per kg =Rs. 1500.00  (b) Urea/ Vermicompost/ Mo khata/ any other fertilizers @Rs. 750.00  (c) Insecticide/ Bio-pesticides @ 5gms/ plant = 5 kg @ Rs.150/-per kg = Rs. 750/- | Jul/ Aug    | 0    | 0             | 3000     | 3000         |
|----|---|-------------|------|---------------|----------|--------------|
| 6  | Casualty replacement @ 10 % (100 nos.)  | Jul/ Aug    |      |               |          |              |
| 7  | 1st weeding & Manuring  | Aug/ Sept   | 2.5  | 777.5<br>3732 | 0        | 777.5        |
| 8  | 2nd Weeding, Soil working (1mt.<br>Diameter around the plants) & Manuring   | Oct/ Nov    | 15   | 4665          | 0        | 3732<br>4665 |
| 9  | Fire line tracing & Inspection path   | Feb/ Mar    | 3    | 933           | 0        |              |
| 10 | Watch & ward including watering as per requirement  | Aug-Mar     | 12   | 3732          | 0        | 933          |
|    | Total   |             | 76.5 | 23791.50      | 14600.00 | 38391.50     |
|    | 2nd   | Year Mainte |      | 123732130     | 14000.00 | 30331.5      |
| 1  | Transportation of 100 seedlings from<br>Nursery to plantation site including<br>loading, unloading & conveyance by<br>Tractor @ Rs.6/- per seedlings  | Jul         |      |               |          |              |
| 2  | Casualty replacement  | Jul         | 0    | 0             | 600      | 600          |
| 3  | Cost of Fertilizer & Insecticide  A) Cost of Insecticide/ Bio-pesticides (Themet/ Forate) @ 5 gms/ plant = 0.5 kg @s.150/-per kg = Rs.75/- B) Urea/ NPK/ Bio-fertilizers/ vermicompost/ Mo khata/ any other fertilizers = Rs.2800/-   | July / Aug  | 0.5  | 777.5         | 2875     | 777.5        |
| 4  | Weeding (Complete weeding), Manuring & Soil working (1mt. Diameter around the plants)   | Sept/Oct    | 15   | 4665          | 0        | 4665         |
| 5  | Fire line tracing (2m. Wide fire line over<br>400 m long) including maintenance of<br>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,<br>Drinking water facility and First-Aid etc.   | Apr-Mar     | 0    | 0             | 1000     | 1000         |

|   | Total   | 1             | 20.5 | 1,,,,,, | T    |        |
|---|---|---------------|------|---------|------|--------|
|   |   | Year Mainter  | 38.5 | 11973.5 | 4475 | 16448. |
| 1 | Cost of Fertilizers Urea/ NPK/ Bio-fertilizers/ Vermicompost/ Mo khata/ any other fertilizers = Rs.2800/- | July / Aug    |      |         |      |        |
| 2 | Weeding (Complete weeding),<br>Manuring & Soil working (1mt.<br>Diameter around the plants)               | Sept/ Oct     | 15   | 4665    | 2800 | 2800   |
| 3 | Fire line tracing (2m. Wide fire line over 400m long) & 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<br>Shed, Drinking water facility and First-<br>Aid etc.                   | Apr/ Mar      | 0    | 0       | 1000 | 1000   |
|   | Total   |               | 36   | 11196   | 3800 | 14996  |
|   | 4th   | Year Mainten  | ance | 1 2220  | 3000 | 14990  |
| 1 | Fire line tracing (2m. Wide fire line over 400m length) & including maintenance Inspection path           | Feb/ Mar      | 3    | 933     | 0    | 933    |
| 2 | Watch & ward including watering as per requirement  | Apr/ Mar      | 18   | 5598    | 0    | 5598   |
|   | Total   |               | 21   | 6531    | 0    | 6531   |
|   | 5th   | Year Maintena | ince |         |      |        |
| 1 | Fire line tracing (2m. Wide fire line over 400m length) & including maintenance Inspection path           | Feb/ Mar      | 3    | 933     | 0    | 933    |
| 2 | Watch & ward including watering as per requirement  | Apr/ Mar      | 18   | 5598    | 0    | 5598   |
| - | Total   |               | 21   | 6531    | 0    | 6531   |
|   | Fire line tracing (2m. Wide fire line over  | 'ear Maintena | nce  |         |      |        |
| 1 | 400m length)  | Feb/ Mar      | 3    | 933     | 0    | 933    |
| 2 | Pruning of branches, singling out of multiple shoots  | Jan/Mar       | 3    | 933     | 0    | 933    |
| 3 | Watch & ward  | Apr/ Mar      | 18   | 5598    | 0    | 5598   |
|   | Total   |               | 24   | 7464    | 0    | 7464   |
|   |   |               |      |         |      | 24     |

|   |   | Year Maintena | nce |      |   |       |
|---|---|---------------|-----|------|---|-------|
| 1 | Fire line tracing (2m. Wide fire line over 400m length) | Feb/ Mar      | 3   | 933  | 0 | 933   |
| 2 | Watch & ward  | Apr/ Mar      | 18  | 5598 | 0 | 5598  |
|   | Total   |               | 21  | 6531 | 0 | 6533  |
|   |   | Year Maintena | nce |      |   |       |
| 1 | Fire line tracing (2m. Wide fire line over 400m length) | Feb/ Mar      | 3   | 933  | 0 | 933   |
| 2 | Watch & ward  | Apr/ Mar      | 18  | 5598 | 0 | 5598  |
|   | Total   |               | 21  | 6531 | 0 | 6531  |
|   |   | rear Maintena | nce |      |   |       |
| 1 | Fire line tracing (2m. Wide fire line over 400m length) | Feb/ Mar      | 3   | 933  | 0 | 933   |
| 2 | Watch & ward  | Apr/ Mar      | 18  | 5598 | 0 | 5598  |
|   | Total   |               | 21  | 6531 | 0 | 6531  |
|   | 10th  | Year Maintena | nce |      |   | 1 000 |
| 1 | Fire line tracing (2m. Wide fire line over 400m length) | Feb/ Mar      | 3   | 933  | 0 | 933   |
| 2 | Watch & ward  | Apr/ Mar      | 18  | 5598 | 0 | 5598  |
|   | Total   |               | 21  | 6531 | 0 | 6531  |

|        |           | ABST              | RACT(Shov                  | ving Seedlin                 | g Cost Separately)  |  |                           |
|--------|-----------|-------------------|----------------------------|------------------------------|---|--|---------------------------|
| Sl.No. | Year      | No. of<br>Mandays | Labour<br>Cost (In<br>Rs.) | Material<br>Cost (In<br>Rs.) | Monitoring,<br>Evaluation,<br>Learning,<br>Documentation<br>and other<br>Contingency<br>(5%) of (4+5) | Cost of<br>Seedlings<br>@Rs. 50.31<br>per<br>seedlings | Total<br>Cost (In<br>Rs.) |
| 1      | Oth Year  | 57                | 17727                      | 3600                         | 973   | 0  | 22300                     |
| 2      | 1st Year  | 76.5              | 23791.5                    | 14600                        | 1918.5  | 55341  | 95651                     |
| 3      | 2nd Year  | 38.5              | 11973.5                    | 4475                         | 821.5   | 5031   | 22301                     |
| 4      | 3rd Year  | 36                | 11196                      | 3800                         | 749   | 0  | 15745                     |
| 5      | 4th Year  | 21                | 6531                       | 0                            | 326   | 0  | 6857                      |
| 6      | 5th year  | 21                | 6531                       | 0                            | 326   | 0  | 6857                      |
| 7      | 6th Year  | 24                | 7464                       | 0                            | 373   | 0  | 7837                      |
| 8      | 7th Year  | 21                | 6531                       | 0                            | 326   | 0  | 6857                      |
| 9      | 8th Year  | 21                | 6531                       | 0                            | 326   | 0  | 6857                      |
| 10     | 9th Year  | 21                | 6531                       | 0                            | 326   | 0  | 6857                      |
| 11     | 10th Year | 21                | 6531                       | 0                            | 326   | 0  | 6857                      |
|        | Total     | 358               | 111338                     | 26475                        | 6791  | 60372  | 204976                    |

The Costing for 10 years will be as per One time Cost Norm approved by PCCF(O) vide this letter No 1109 dated 11.11.2021.

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| Total Cost | 1         | 234718 | 24654   | 258777  | 27,716  | 285302 | 299567  | 314546  | 330273  | 346788  | - Second   |
|------------|-----------|--------|---------|---------|---------|--------|---------|---------|---------|---------|------------|
| 80         |           |        | T       |         |         |        |         |         | T       | 1       | 1          |
| ×          | T         |        | T       |         |         |        | T       | T       | T       | T       | 100        |
| Ħ          |           |        |         |         |         |        |         | 1       |         | 1987    |            |
| NA<br>NA   |           |        |         |         |         |        | T       |         | 187.15  | 120     | 1007 81430 |
| ž          |           |        |         |         |         |        |         | 1961    | 1980    | 1260    | 1980       |
| ä          |           |        |         |         |         |        | MSA     | MISS    | 1435    | 26.30   | 18787      |
| A          |           |        |         |         |         | 13675  | 13575   | 13578   | 18.53   | 1553    | 1858       |
| ×          |           |        |         |         | 2933    | 17579  | 12993   | 1339    | 100     | 2333    | 78.5       |
| 景          |           |        |         | 1283    | 233     | 2305   | 22333   | 14073   | 2333    | 2328    | 2000       |
|            |           |        | um      | 1111    | 11729   | 11777  | 13403   | um      | 11731   | 25938   | 38239      |
| R          | 5857      | 64111  | 9111    | RIII    | 11169   | 2765   | 99111   | E       | 25.66   | 1623    | 153806     |
| ×          | 5857      | 20807  | 10838   | 10837   | 2533    | 10837  | 09801   | 35035   | 16.36   | 34887   | 968        |
| ×          | 685.7     | 20231  | 8102    | 2522    | 35101   | FI I   | 28282   | \$262X  | Man     | 1387    |            |
| š          | 2595      | 356    | 13527   | 85.8    | 9630    | 22.25  | 22525   | 19591   | Milk    |         |            |
| ş          | 7837      | 10501  | 87.58   | 9776    | 21039   | 29833  | 128182  | 29884   |         |         |            |
| 5          | 6857      | 1528   | 8753    | 20094   | 28460   | 122378 | 28462   |         |         |         |            |
| >          | 1657      | 8335   | 3137    | 27,035  | 136365  | 27106  |         |         |         |         |            |
| 2          | 15745     | 18726  | 2324    | 110779  | SHE     |        |         |         |         |         |            |
| =          | 22301     | 24585  | 95835   | 34586   |         |        |         |         |         |         |            |
| 12         | 1999      | 100434 | 23423   |         |         |        |         |         |         |         |            |
| -          | 22300     | 22300  |         |         |         |        |         |         |         |         |            |
| rest       | Base Norm | 2022   | 2022-23 | 2033-24 | 2034.25 | MS-M   | 2026.27 | 2027.38 | 2028.29 | 2025-33 | 2030-31    |
| 1 Q        | Bass      |        | ~       | m       | 4       | un     | 10      | -       | *       | on l    | 8          |

# Annexure-IV

| SI<br>no | Item of work  | Preferable period of | Man  | Wages@311/- | Material<br>cost (Rs) | Total Co<br>(Rs per |
|----------|---|----------------------|------|-------------|-----------------------|---------------------|
|          |   | Execution            |      |             |                       | ha)                 |
|          |   | Year (PPO)           |      |             |                       |                     |
| 1        | Earth work (excavation of hole) in Hard soil at a distance of 3mt 040m x 0.40m x 0.40m = 0.064X 84=5.376cum @Rs 140/cum = Rs 753/-        |                      | 2.42 | 752.62      | 0                     | 752.62              |
| 2        | Cement concrete (1:4:8) using 40mm BHG Metal<br>84x0.40mx0.40mx0.10m=1.344@3755.94/cum  |                      | 0    | 0           | 5047.4                | 5047.4              |
| 3        | Angle iron pole of size 50mm x 50mm x 6mm of<br>height 2.40nt 84x 2.40=201.60sqmt<br>@4.50/kg/sqmt=907.20kg@69.50per kg                   |                      |      | 0           | 63050                 | 63050               |
| 4        | Cement concrete (1:2:4) for fixing the iron angle pole using 12 mm BHG Chips 84x0.40mx0.40mx0.30m=4.032cum@5486.77/cum                    |                      |      | 0           | 22123                 | 22123               |
| 5        | Cost of chain link mess using 4mm Dia GI wire having gap size 50mm x 50mm 250Rmt x 2.10mt=525sqmt@331/sqmt= Rs 173775                     |                      |      | 0           | 173775                | 173775              |
| 5        | Double cost painting of iron angel pole over a coat of printer using good quality enamale paint 84X 2.10X 0.20= 35.28sqmt@Rs 108.80/sqmt, |                      |      | 0           | 3838                  | 3838                |
|          | Painting of GI Chain Ink mess 250X 2.10X2= 1050/10=105Sqmt@Rs 108.80sqmt.   |                      |      | 0           | 11424                 | 11424               |
|          | Transportation of chain link mess, Iron angle straighening and tieing of chain link mess etc @2% of the total cost                        |                      |      | 0           | 5600                  | 5600                |
|          |   |                      | 2.42 | 752.62      | 284857.4              | 285610              |
|          | 1st year I  | Maintenance          |      |             |                       |                     |
| T        | No maintenance required   | Sep/Oct              | 0    | 0           | 0                     | 0                   |
|          | 2nd year  | maintenance          |      |             |                       |                     |
|          | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%=11.42 say 11  | Sep/Oct              | 0    | 0           | 11000                 | 11000               |

R

|    | 3rd yea  | r maintenar | nce |   |       |       |
|----|--|-------------|-----|---|-------|-------|
| 11 | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%=11.42 say 11 | Sep/Oct     | 0   | 0 | 11000 | 11000 |
|    | 4th yea  | r maintenan | ice |   |       |       |
| 12 | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%=11.42 say 11 | Sep/Oct     | 0   | 0 | 11000 | 11000 |
|    | 5th yea  | r maintenan | ce  |   |       |       |
| 13 | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%=11.42 say 11 | Sep/Oct     | 0   | 0 | 11000 | 11000 |
|    | 6th year   | maintenan   | ce  |   |       |       |
| 14 | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%=11.42 say 11 | Sep/Oct     | 0   | 0 | 11000 | 11000 |
|    | 7th year   | maintenand  | e   |   |       |       |
| 15 | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%=11.42 say 11 | Sep/Oct     | 0   | 0 | 11000 | 11000 |
|    | 8th year   | maintenanc  | e   |   |       |       |
| 16 | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%=11.42 say 11 | Sep/Oct     | 0   | 0 | 11000 | 11000 |
|    | 9th year   | maintenanc  | e   | 1 |       |       |
| 7  | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%=11.42 say 11 | Sep/Oct     | 0   | 0 | 11000 | 11000 |
|    |  | maintenanc  | e   |   |       |       |
|    | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%=11.42 say 11 | Sep/Oct     | 0   | 0 | 11000 | 11000 |
|    |  |             | 1   |   |       |       |

| SI no | Year      | No of<br>Person<br>days | Labour cost @311/-<br>per day | Material cost | Total cost |
|-------|-----------|-------------------------|-------------------------------|---------------|------------|
| 1     | Oth year  | 2.42                    | 752.62                        | 284857.4      | 285610.02  |
| 2     | 1st year  | 0                       | 0                             | 0             | 0          |
| 3     | 2nd year  | 0                       | 0                             | 11000         | 11000      |
| 4     | 3rd year  | 0                       | 0                             | 11000         | 11000      |
| 5     | 4th year  | 0                       | 0                             | 11000         | 11000      |
| 6     | 5th year  | 0                       | 0                             | 11000         | 11000      |
| 7     | 6th year  | 0                       | 0                             | 11000         | 11000      |
| 8     | 7th year  | 0                       | 0                             | 11000         | 11000      |
| 9     | 8th year  | 0                       | 0                             | 11000         | 11000      |
| 10    | 9th year  | . 0                     | 0                             | 11000         | 11000      |
| 11    | 10th year | 0                       | 0                             | 11000         | 11000      |
|       | Total     | 2.42                    | 752.62                        | 383857.4      | 384610     |

| Total        | Cost (In<br>Rupees) |           | 419331  | 440299  | 462316  | 485432  | 508705  | 535191  | 561951  | 590049  | 619552  | 650531  |
|--------------|---------------------|-----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
|              | XIX                 |           |         |         |         |         |         |         |         |         |         | 27798   |
|              | ×                   |           |         |         |         |         |         |         |         |         | 26474   | 26473   |
|              | XX                  |           |         |         |         |         |         |         |         | 25213   | 25212   | 25213   |
|              | ii.                 |           |         |         |         |         |         |         | 24012   | 34011   | 24012   | 24012   |
|              | XX                  |           |         |         |         |         |         | 22869   | 22868   | 22869   | 22869   | 22868   |
|              | 2                   |           |         |         |         |         | 21780   | 21778   | 21780   | 21780   | 21779   | 21780   |
|              | À                   |           |         |         |         | 20743   | 20742   | 20743   | 20743   | 20742   | 20743   | 20743   |
|              | ii k                |           |         |         | 19755   | 19754   | 19755   | 19755   | 19754   | 19755   | 19755   | 19756   |
| 3            | į                   |           | 419331  | 18814   | 18813   | 18814   | 18814   | 18813   | 18814   | 18814   | 18815   | 18812   |
| š            | 2                   | 11000     | 17918   | 17917   | 17918   | 17918   | 17917   | 17918   | 17918   | 17919   | 17916   | 0       |
| ,            | <                   | 11000     | 17064   | 17065   | 17065   | 17064   | 17065   | 17065   | 17066   | 17063   | 0       | 443075  |
| 2            | 5                   | 11000     | 16252   | 16252   | 16251   | 16252   | 16252   | 16258   | 16250   |         | 421977  | T       |
| 5            |                     | 11000     | 15478   | 15477   | 15478   | 15478   | 15479   | 15476   | 0       | 401883  | T       | T       |
| 5            |                     | 11000     | 14740   | 14741   | 14741   | 14742   | 14739   | 0       | 382746  | 1       |         | T       |
| 5            |                     | 11000     | 14099   | 14039   | 14040   | 14037   | 0       | 364520  |         | T       | T       | T       |
| >            |                     | 11000     | 13370   | 1337.   | 13369   | 0       | 347162  | T       | T       | T       | T       | T       |
| 2            |                     | 11000     | 12734   | 12732   | 0       | 330630  |         |         |         |         | T       |         |
| =            |                     | 11000     | 12126   | 0       | 314886  |         |         |         |         |         |         | T       |
| -            |                     | 0         | 0       | 299891  |         |         |         |         |         |         |         | 1       |
| -            |                     | 285610    | 285610  |         |         |         |         |         |         |         |         | T       |
| Commencement | Year                |           | 2021-23 | 2022-23 | 2029-24 | 2024-25 | 3025-26 | 2016-27 | 2017-28 | 2018-29 | 2019-30 | 2010-31 |
| ot           | 9                   | Base Norm | ==      | 2       | m       | 4       | 10      | 9       | 2       | -       | 6       | 20 30   |

# Annexure-V

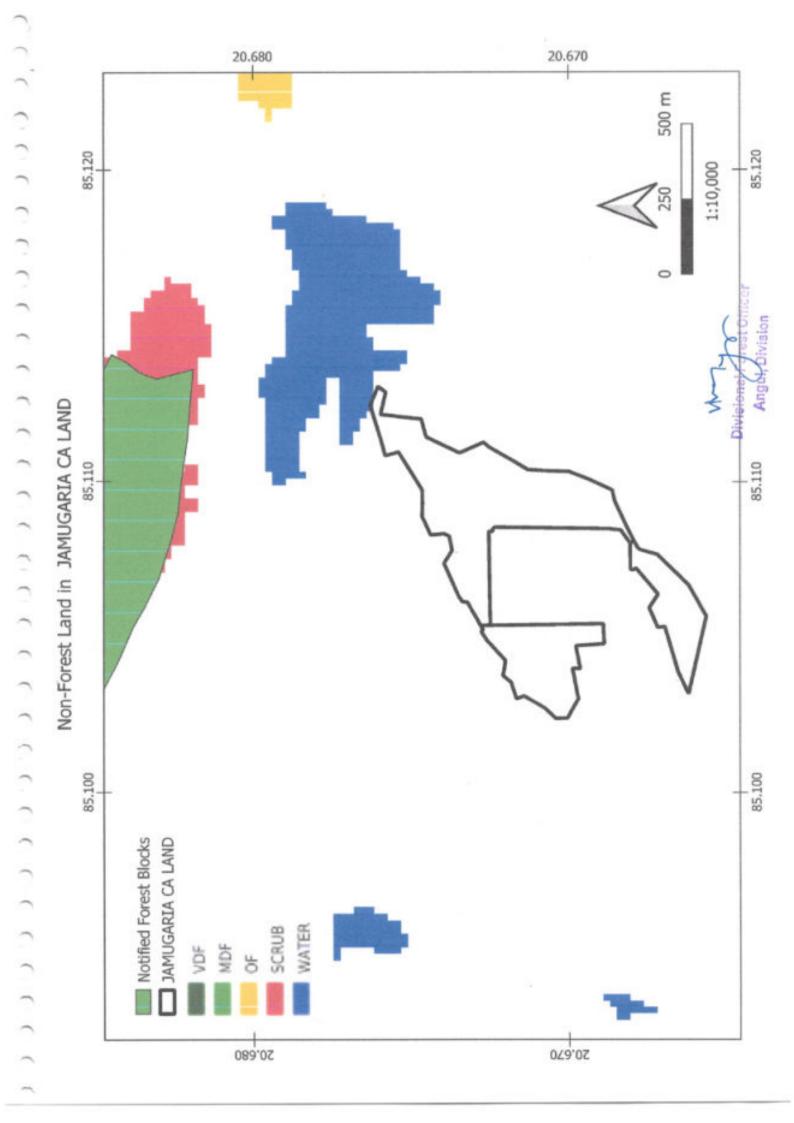
|           |  | SE RATE RS- 311/- PER DAY      |        |
|-----------|--|--------------------------------|--------|
| SI.<br>No | Item of Works  | Preferable Period of Execution | Total  |
| Oth Y     | ear (Pre-Planting Operation)   |                                | Cost   |
| 1         | Nil  |                                |        |
|           |  |                                | 0      |
|           | 1st Year   |                                |        |
| 2         | Soil Conservation measure structures like<br>Staggered Trench, Percolation pit, Contour<br>trench, Graded earthen bund, LBCD Wire<br>mesh LBCD, Sub surface Dyke & WHS as per<br>the slop & site requirement on LS | Apr/sep                        | 20.215 |
|           | 2 <sup>nd</sup> Year   |                                |        |
| 3         | Maintenance of SMC structures @ 15 % of initial year cost  | Apr/jul                        | 3,032  |
|           | 3 <sup>rd</sup> Year   |                                |        |
|           | Maintenance of SMC structures @ 15 % of initial year cost  | Apr/jul                        | 3,032  |
|           | 4 <sup>th</sup> Year   |                                | 10000  |
|           | Maintenance of SMC structure @ 15 % of initial year cost   | Apr/jul                        | 3,032  |
|           | 5 <sup>th</sup> Year   |                                |        |
|           | Maintenance of SMC structure @ 15 % of initial year cost   | Apr/jul                        | 3,032  |
| tal:      |  |                                | 110000 |

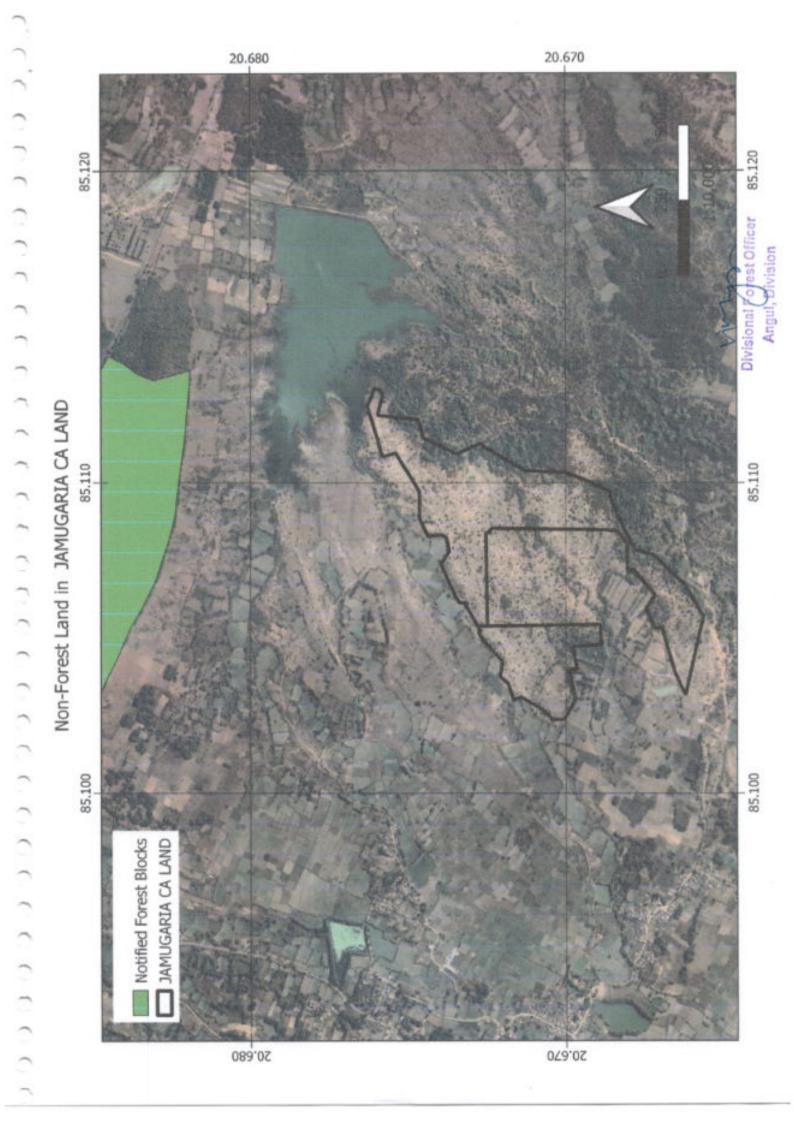
|     |                      |   |       |       |       |       |       | Matrix for (SMC) | or (SMC) |       |       |       |      |      |      |      |   |       |
|-----|----------------------|---|-------|-------|-------|-------|-------|------------------|----------|-------|-------|-------|------|------|------|------|---|-------|
| ≥ 8 | Commencement<br>Year | - | =     | =     | 2     | >     | 5     | ₹                | =        | ×     | ×     | ×     | ×    | EX.  | ΧIX  | \$   | × | Total |
|     | Base Norm            | 0 | 20215 | 3032  | 3032  | 3032  | 3032  |                  |          |       |       |       |      |      |      |      |   |       |
| +4  | 2021-22              | 0 | 21226 | 3342  | 3510  | 3685  | 3870  |                  |          |       |       |       |      |      |      |      |   | 35633 |
| 7   | 2022-23              |   |       | 22287 | 3509  | 3686  | 3869  | 4064             |          |       |       |       |      |      |      |      |   | 37415 |
| m   | 2023-24              |   |       |       | 23401 | 3684  | 3870  | 4062             | 4267     |       |       |       |      |      |      |      |   | 39284 |
| 4   | 2024-25              |   |       |       |       | 24571 | 3868  | 4064             | 4265     | 4480  |       |       |      |      |      |      |   | 41248 |
| N)  | 2025-26              |   |       |       |       |       | 25800 | 4061             | 4267     | 4478  | 4704  |       |      |      |      |      |   | 43310 |
| 9   | 2026-27              |   |       |       |       |       |       | 27090            | 4264     | 4480  | 4702  | 4939  |      |      |      |      |   | 45475 |
| 7   | 2027-28              |   |       |       |       |       |       |                  | 28445    | 4477  | 4704  | 4937  | 5186 |      |      |      |   | 47749 |
| 60  | 2028-29              |   |       |       |       |       |       |                  |          | 29867 | 4701  | 4939  | 5184 | 5445 |      |      |   | 50136 |
| on. | 2029-30              |   |       |       |       |       |       |                  |          |       | 31360 | 4936  | 5186 | 5443 | 5717 |      |   | 52642 |
| 10  | 2030-31              |   |       |       |       |       |       |                  |          |       |       | 32928 | 5183 | 5445 | 5715 | 5003 |   | 55074 |

| _  | Annexure-VI   |             |
|----|---|-------------|
|    | WATERING MODEL-W -I   |             |
| _  | Watering provision to CA Plantation   |             |
| So | lar System with Bore well (1 system for 5 Ha Plantation) fitting with Drip system, Wage r | ate@ Rs 311 |
|    | Year of installation (0th YEAR)   | arc@ 13 311 |
| 1  | Cost of Borewell  | 1,50,000    |
| 2  | Installation of Solar panel &other System   | 3,00,000    |
| 3  | Cost of 0.5 HP submersable motor with accessories   | 50,000      |
| 4  | Water Storage Tank/ Flexible pipes  | 15,000      |
| 5  | Cost of laying Drip system including all accessories, fittings etc, with 12% GST          | 3,02,431    |
| _  | TOTAL   | 8,17,431    |
| 6  | Cost of Water & watering per Ha. (8,17,431/5) =Rs1,63,486/-                               | 1,63,486    |
|    | 1st Year Watering   | 1,4104.00   |
| 7  | No maintenance required   | 0           |
|    | TOTAL   | 0           |
|    | 2 <sup>nd</sup> Year Watering   | -           |
| 8  | Maintenance of system @5% of Initial cost of installation                                 | 8,174       |
|    | TOTAL   | 8,174       |
|    | 3 <sup>rd</sup> Year Watering   | - Cyar T    |
| 9  | Maintenance of system @ 5% of initial cost of installation                                | 8,174       |
|    | TOTAL   | 8,174       |
|    | 4 <sup>th</sup> Year Watering   | 0,274       |
| 10 | Maintenance of system @ 5%of initial cost of installation                                 | 8,174       |
| _  | TOTAL   | 8,174       |
|    | 5 <sup>th</sup> Year Watering   | - Jar -     |
| 11 | Maintenance of system @ 5% of initial cost of installation                                | 8,174       |
| _  | TOTAL   | 8,174       |
|    |   |             |

|           |                      | Abstract              |  |  |                    |
|-----------|----------------------|-----------------------|--|--|--------------------|
| SI.<br>no | Year                 | No.<br>person<br>days | Labour<br>Cost @ Rs<br>311/-per<br>day | Material<br>Cost   | Total cost<br>(Rs) |
| 1         | 0 <sup>th</sup> year | 0                     | 0.0                                    | 163486.0   | 163406.0           |
| 3         | 1 <sup>st</sup> year | 0                     | 0.0                                    | THE RESERVE OF THE PARTY OF THE | 163486.0           |
| 3         | 2 <sup>nd</sup> year | 0                     |  | 0.0  | 0.0                |
| 4         | 3 <sup>rd</sup> year |                       | 0.0                                    | 8174.0   | 8174.0             |
|           |                      | 0                     | 0.0                                    | 8174.0   | 8174.0             |
| 5         | 4 <sup>th</sup> year | 0                     | 0.0                                    | 8174.0   | 8174.0             |
| 6         | 5 <sup>th</sup> year | 0                     | 0.0                                    | 8174.0   | 8174.0             |
|           | Total:               | 0                     | 0                                      | 196182   | 1,96,182           |

**自用班班班班班班班班班班** 





# CHECK LIST SERIAL NUMBER-18 SCHEME FOR COMPENSATORY AFFORESTATION SCHEME OVER AN AREA OF 19.126HA IN NON-FOREST LAND IDENTIFIED IN THE VILLAGE NUKHURIPADA BANTALA RANGE UNDER

ANGUL TAHASIL

OF

DISTRICT ANGUL

IN

LIEU OF PROPOSED FOREST DIVERSION FOR 125.24
HA OF FOREST LAND COMING WITHIN SUBHADRA
OPEN CAST PROJECT

OF M/S MCL, DIST-ANGUL

**Plantation Model:** 

Block Plantation over ha@1600plants per ha

**Prepared By** 

Divisional Forest Officer, Divisional Forest Officer Angul Division

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# **Land Suitability Certificate**

The requirement of suitable Non Forest land at par with the guidelines of MoEF & CC is a vital aspect for raising Compensatory Afforestation in lieu diversion of Forest land for Non forestry purpose of a project under FC Act, 1980.

In the instant case diversion of Forest land to the extent of 125.24ha is required for the project "Subhadra Open Cast Project of M/s MCL in the district of Angul. According required exercises were undertaken in the field by Forest and Revenue Staff jointly to select suitable Non forest land/ Govt degraded forest land for the purpose of Compensatory Afforestation for the said project . Finally One patch of Non forest land over 19.126ha of Nukhuripada Village was selected in Bantala Range with suitability criteria to accommodate required no of seedlings Block plantations@1600plantations per ha. Criteria of suitability of the sites meet relevant parameters such as management point of view, free from encroachment and encumbrances, not included in Section -4(1) notification, not under DLC status of forest, non allotment of the said areas for other projects etc as narrated against this site furnished in Annexure-I. Besides soil quality, soil depth, terrain, climatic conditions etc are suitable for planting indigenous promising species for sustained growth and establishment and over and above location of the site with respect to closeness to nearby forest block of Angul Division which will ensure proper supervision, monitoring of the plantation raised under Compensatory Afforestation Scheme. Plantations activities will be as done per the approved One-time Cost Norm of PCCF, Odisha and it is hoped to ensure proper greenery with improved environmental scenario after implementation of the said plantation.

Place:

Date:

Divisional Forest Officer, Angul Division

# Scheme

This scheme is for taking up Compensatory Afforestation is on identified Non forest land in Village Nukhuripada of Bantala Range under Angul Tahasil in the District of Angul in lieu of Proposed Forest Diversion or 125.24 ha of Forest land coming within Subhadra Open Cast Project of M/s MCL, Dist-Angul.

1. Introduction: The Subhadra Open Cast Mining Lease is over an area of 1111.85 ha. Out of which Forest land located in Mining lease is 125.24ha and Non forest area is 986.61ha as per the land schedule. The User Agency M/s MCL has filed forest Diversion Proposal Vide Proposal No FP/OR/MIN/150133/2021.

On application for providing Compensatory Afforestation Land, the Collector and District Magistrate , Angul has allotted 110.640ha of Non forest Revenue land and 40.255ha of Revenue Degraded Forest area spread over in 5 patches vide his letter no dated . This scheme is meant for 19.126ha of Non-Forest land in village Nukhuripada which has been jointly verified by the Revenue staff and Forest staff. The selected land schedule is coming under Bantala Range of Angul Division (Annexure-I)

# Land schedule:

| Land Sche     | dule of I   | and jointly | y verified b                        | y Revenue a                              | and Forest Staffs | for Compens | satory Affo                | prestation                                  |
|---------------|-------------|-------------|-------------------------------------|--|-------------------|-------------|----------------------------|---|
| Village       | Khata<br>No | Plot No     | Total<br>Plot<br>Area in<br>Hectare | Area<br>taken for<br>plantation<br>in ha | Kisam             | Remark      | Nearest<br>Forest<br>Block | Approximate distance from the proposed site |
| Bantala Range | 2           |             |                                     |  |                   |             |                            |   |
| Nukhuripada   | 1           | 8(p)        | 24.55                               | 19.126                                   | PuratanaPatita    | Nonforest   | Balanga<br>RF              | 0.6Km                                       |

2. DGPS Survey, Mapping & Authentication of CA Land.

As per the revised guidelines of Chief Executive, ORSAC, the User Agency has taken up DGPS Survey by empanelled vendors and the same has been authenticated by ORSAC vide his letter no ORSAC/DGPS-FD/1080/2022/3203(2) Dated 03/09/2022and due endorsement has been furnished on DGPS surveyed Map. The DGPS Map,

Corresponding Topo map (Survey of India map F45T2 1:50000 Scale) are enclosed to this Scheme. The KML File of the area is submitted in a CD. (Letter of Authentication by ORSAC at Annexure-II)

The Latitude / Longitude of Survey Points as per DGPS authenticated Map is furnished below.

|       |        | ION CO-ORDINATES O |                 |
|-------|--------|--------------------|-----------------|
| SL.NO | MAP ID | LONGITUDE          | LATITUDE        |
| 1     | 1      | 85°02'59.65079"    | 20°41'16.90920" |
| 2     | 2      | 85°03'05.78273"    | 20°41'16.89979" |
| 3     | 3      | 85°03'11.88240"    | 20°41'16.87116" |
| 4     | 4      | 85*03'11.98493"    | 20°41'14.68619" |
| 5     | 5      | 85°03'14.05468"    | 20°41'14.72819" |
| 6     | 6      | 85°03'13.99614"    | 20"41'11.37632" |
| 7     | 7      | 85°03'11.63269"    | 20°41'11.39225" |
| 8     | 8      | 85°03'11.62547"    | 20°41'09.05895" |
| 9     | 9      | 85°03'13.90438"    | 20°41'09.07357" |
| 10    | 10     | 85°03'13.93894"    | 20°41'03.99705" |
| 11    | 11     | 85°03'04.62395"    | 20°41'04.06725" |
| 12    | 12     | 85°02'56.90051"    | 20°41'04.12482" |
| 13    | 13     | 85°02'56.81037"    | 20°41'07.02894" |
| 14    | 14     | 85°02'55.30857"    | 20°41'07.00352" |
| 15    | 15     | 85°02'55.24377"    | 20°41'12.39819" |
| 16    | 16     | 85°02'56.74891"    | 20°41'13.64443" |
| 17    | 17     | 85°02'58.31264"    | 20°41'15.45784" |
| 18    | 18     | 85°02'59.38145"    | 20°41'16.43367" |

# 3. Topography & Soil:

The identified area in above village is having partly hilly and partly plain terrain. The soil is lateritic and gravelly but the soil depth is suitable for taking up plantation. Moreover nearby forest blocks is BALANGA RF. So for management point of view, the CA land selected here will be congenial and suitable indegenous species will be planted to ensure a successful plantation.

### 4. Climate

In Angul District, the wet season is oppressive and overcast whereas, the dry season is humid and mostly clear, and it is hot year-round. Over the course of the year, the temperature typically varies from 13.89°C to 40.55°C and is rarely below 11.11°C or above 44.44°C.

# 5. Rain fall:

The annual average rainfall is 1602 mm. The maximum rainfall is received during the rainy season and particularly in the month of August.

# 6. Present Vegetation:

The identified land bears dry deciduous mixed vegetation. Species like Sal, Asan, Karada, Kendu, Jamu, Mango, Bahada, Mahul etc are observed.

# 7. Items of work to be taken up

# Planting Model;

The land identified bears natural vegetation. Its tending operation will help maintaining a good forest cover adjacent to habitation. Considering the vegetation, terrain and soil of the area it is proposed to adopt a planting model of Block Planatations @1600seedlings per ha for Village-Nukhuripada) is suggested.

# Spacing

The plant density proposed for planting is @1600plants per ha. The spacing is to be 3m x 3m(Approximately to accommodate 1600seedlings per ha). It is suggested to have the line of planting along the contour and plant to plant in adjacent row over the available blank spaces in the selected site. This will reduce the run off and encourage perculation of water and enrichment of vegetation.

# Choice of Species:

Considering the soil, topography and present vegetation observed in and around, it is proposed to Plant the following indegenous and pormising species on the identified land in suitable available blanks. Species proposed for planting are

- i) Acacia Catechew (Khair)
- ii) Bombax Ceiba (Simili)
- iii) Emblica officinallis ( Anla)
- iv) Terminalia belerica (Bahada)
- v) Terminalia tomentosa (Asana)
- vi) Mangifera indica (Aamba)
- vii) Pterocarpus marsupium ( Bija)
- viii) Syzygium cumini (Jamu)
- ix) Azadia indica (Neem)
- x) Terminalia chebula(Harida)
- xi) Pongamia pinnata (Karanja) etc.

It is proposed for diversion of 125.24 ha of Forest Land. The following detail is furnished in Tabular form

| Description of Site   | Area (in ha) | Total No of<br>Seedlings<br>required for<br>planting | Remark                         |
|---|--------------|--|--------------------------------|
| Bantala Range   |              |  |                                |
| Compensatory Afforestation<br>Land Identified<br>(NFL)(Nukhuripada) | 19.126       | 30602  | Block Plantation of<br>1600/ha |

# 8. Silvicultural Tending & Planting Technique to be adopted:

# i) Survey, Demarcation and Pillar Posting:

The identified area has been surveyed & pillars posted. It is to be checked and missing pillars if any to be reposted as per Latitude / Longitude provided in the DGPS Map authenticated.

# ii) Preparation of Treatment map (Digital map):

The Kml file of the area has been provided by the user agency after DGPS survey. The same will be updated with treatment design basing on physical position at the time of implementing the Plantation Scheme. The Range Officer will update the position with help of GIS cell of the Division as per requirement.

# iii) Site Preparation:

After demarcation of the area, site preparation mostly clearing of invasive weeds will be taken up at planting site to be identified by field staff.

# iv) Silvicultural Tending Operation:

The selected area is having scattered Sal shoots of promising vigour and of natural regeneration including some other species also. It is proposed to take up Silvicultural cleaning over the area. The activities are intended to achieve healthy growth of existing natural seedlings / saplings / coppice shoots of favored species. The operations include

- Cutting back of high stumps with preference to living stumps and having a good coppicing power.
- Cutting of climbers those are of annual nature and uprooting them wherever possible.
- > Singling out of multiple coppice shoots and retaining most promising ones.
- > Pruning of whippy plants available within the area.
- > Dead and dying trees if any to be cut and separated from the site.

The natural seedlings available in the treatment area are to be given appropriate attention to ensure its establishment.

# v) Digging of Pits (45cmx45cmx45cm):

It is proposed to dugout pits of size 45cmx45cmx45cm preferably in month of February / March. The dugout earth will be kept at pit head on both sides separately. The top soil will be kept on one side and bottom soil on another side. Soil within 30cm from ground level will be considered as top soil and rest as bottom soil. The pits will be left for weathering due to Sun & Rain.

# vi) Refilling of Pits& application of organic Compounds / CDM/ FYM:

The pits will be refilled by altering the dugout soil of the pits i.e., top soil on bottom of the pit and bottom soil on top. Application of organic Compounds / CDM/ FYM &

mixing the same properly before refilling is suggested. This will provide necessary nutrients to the plant as well as help in retaining soil moisture for a longer period.

# vii) Transportation of Seedlings including short carriage & watering at Pit site.

In the approved cost norm, provisions have been made to plant 18month old seedlings. As seedlings will be above 1m height invariably, careful transportation of seedlings will be of paramount importance. In case of top breaking of seedlings, the benefit of 18month old seedlings will be reduced substantially. Transportation of seedlings from Nursery site to Planting site and then short carriage has to be taken up carefully. Wherever water is available, the plants are to be watered before short carriage to minimize the shock to plants during long carriage by tractors / vans etc.

# viii) Planting of Seedlings:

After application of FYM/ CDM/ Organic manure, seedling will be planted carefully. The standard planting procedure is to be followed. As the pit size is of 45cm x 45cm the following care will be taken during planting.

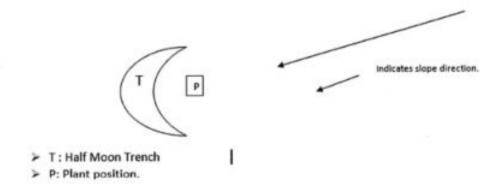
- Chemical fertilizer / insecticides to be applied as basal doze to be thoroughly mixed with soil.
- ➤ Seedlings collar zone will be at Ground Level or at best 2.5cm below the ground level. In no case it will not be more than 3cm below Ground Level.
- The Poly bags containing the seedlings are to be carefully removed. It is better to use a blade to cut open the bag so as to cause least disturbance to the ball of earth containing the seedlings.
- After planting the soil is to be compacted leaving 3" around the plant and the compact soil may be at Ground Level or 1" above the Ground level – allowance for soil settlement.
- In no case it should be a sunken around the plant.
- The planted plant should stand erect, if it is tilted due to speedy growth, a support with a stick collected locally to be provided.

# ix) Casualty Replacement:

Casualty replacement is an important operation to achieve a 100% survival in a plantation. After planting there is possibility of casualty in planted seedlings. There is a provision to replace casualty up to 10% in 1<sup>st</sup> year and 10% in 2<sup>nd</sup> year operation in the approved cost norm. The same is to be carried out with good promising seedlings those can come up to a height of previous planted seedlings. During replacement in 2<sup>nd</sup> year application of fertilizers etc as in 1<sup>st</sup> year is to be followed.

# x) Weeding & application of Fertilizer:

Two Weeding around the planted seedlings at a diameter of 1.00m has been prescribed in the approved cost norm. During 2<sup>nd</sup> weeding deep soil working around the plants at 1.00m diameter has also been prescribed. 1<sup>st</sup> weeding will be taken up just after one month of planting and 2<sup>nd</sup> weeding and soil working in month of September / October. As there is occasional rainfall in October, providing half-moon trench in sloppy terrain around each plant is suggested. A half-moon trench model is given below.



During weeding (1<sup>st</sup>& 2<sup>nd</sup>) there is a provision of application of fertilizer to plants. Application of NPK @30gms per plant x 2 times is suggested. In no case 2<sup>nd</sup> weeding can be delayed beyond 15<sup>th</sup> of October.

# xi) Fire line Tracing & Inspection Path:

There is possibility of grasses growing up within plantation area. It is better to allow local people / VSS to cut the grasses take for stall feeding under supervision of Forest Staff. In the present case where AR is under implementation Grass growth is limited.

Due to fallen dry leaves (Due to leaf shedding), there is possibility of fire hazards in February / March. It is suggested to have fire line at a width of minimum 3m all around the planting area, maintain inter partitioned line / both sides of foot path as a Fire line (minimum 3m wide in 1<sup>st</sup> year and 2m in subsequent year). These lines will be maintained as inspection path also. It will be maintained till completion of 10<sup>th</sup> year.

# xii)Watch & Ward

Watch and ward is essentially required against biotic interferences like grazing and fire etc including grasses in first two years and illicit felling in subsequent years. Adequate provisions has been made in the approved cost norm. Watch & ward provisions will be implemented as per provision of cost norm.

# 9. Provision for watering:

The site selected contains partly hilly terrain. All total 30602nos of seedlings will be planted in the site selected depending on extent of blank area available. Watering to be explored and adhered to as per provision of one time cost norm (Annexure-VI).

# 10.Funding Agency

The U/A will deposit required funds as per the approved cost of the scheme.

# 11. Implementing Agency

Divisional Forest Officer, Angul will execute the Compensatory Afforestation Scheme.

# Financial analysis and Cost involved.

|        | land in Nukhuripada village in PE                        | in Angul Tahasil under Bantala Rar<br>PERFORMA (Norm For 1.00ha) | land in Nukhuripada village in Angul Tahasil under Bantala Range of Angul Forest Division PERFORMA (Norm For 1.00ha) |
|--------|--|--|--|
| SI No  | Component  | Unit   | Base Rate for commencement year 2023-  |
|        | Block Plantation @1600plants per<br>ha                   | per Hectare  | 341903   |
|        | Watering, Solar Borewell fitted Hectare with Drip System | Hectare  | 245476   |
| A12100 | SMC  | Hectare  | 39284  |
|        | Fencing (Iron angle with chain link wire mesh)           | link Per 250meters   | 462316   |
| 5      | Entry point activity                                     | 15% 0  | 15% of [(1)+(2)+(3)+(4)]=163338/-  |

प्रकल्प आंधकारी प्रकल्प आंधकारी Project Officer MCL, Subhadra Area एस्. सि. एल. सुभद्रा क्षेत्र

Visional Forest Officer

Matrix for Compensatory Afforestation Scheme for Block Plantation @1600nos of Seedlings over an area 1ha-Year wise (Commencement Year 2023-24)

| Year                  | Financial<br>year | Block Plantation @ 1600nos seedling per ha | Watering, Solar<br>Borewell fitted<br>with Drip system | SMC   | Fencing (Iron Angle<br>with Chain link wire<br>mesh (250mt per<br>hectare | Total   |
|-----------------------|-------------------|--|--|-------|---|---------|
| 0 <sup>th</sup> year  | 2023-24           | 33626                                      | 180243   | 0     | 314886  | 528755  |
| 1st year              | 2024-25           | 170588                                     | 0  | 23401 | 0   | 193989  |
| 2 <sup>nd</sup> year  | 2025-26           | 36023                                      | 9935   | 3684  | 13369   | 63011   |
| 3rd year              | 2026-27           | 24438                                      | 10433  | 3870  | 14040   | 52781   |
| 4th year              | 2027-28           | 9190                                       | 10954  | 4062  | 14741   | 38947   |
| 5 <sup>th</sup> year  | 2028-29           | 9648                                       | 33911  | 4267  | 15478   | 63304   |
| 6 <sup>th</sup> year  | 2029-30           | 12543                                      |  |       | 16251   | 28794   |
| 7 <sup>th</sup> year  | 2030-31           | 10637                                      |  |       | 17065   | 27702   |
| 8 <sup>th</sup> year  | 2031-32           | 11170                                      |  |       | 17918   | 29088   |
| 9 <sup>th</sup> year  | 2032-33           | 11727                                      |  |       | 18813   | 30540   |
| 10 <sup>th</sup> year | 2033-34           | 12313                                      |  |       | 19755   | 32068   |
| GRANI                 | GRAND TOTAL       | 341903                                     | 245476   | 39284 | 462316  | 1088979 |

Divisional Polest Officer Angul, Division

प्रकल्प अधिकारी Project Officer MCL, Subhadra Area एम्, सि. एल. सुभद्रा क्षेत्र

| Abstr         | act for Operation                                       | of Compensator | Abstract for Operation of Compensatory Afforestation Scheme for Plantation of 30602Nos of | ne for Plantation of | f 30602Nos of |   |
|---------------|---|----------------|---|----------------------|---------------|---|
|               |   | Seediings      | seediings over all area 13.12011a   |                      |               | 1 |
| Con           | Component   | Norm           | Unit  | Rate                 | Total         |   |
| Block<br>@160 | Block Plantation 341903 @1600plants per ha              | 341903         | На  | 19.126               | 6539237       |   |
| ₹ Ķ           | Watering, Solar Borewell 245476 fitted with Drip System | 245476         | На  | 19.126               | 4694974       |   |
| SMC           | C   | 39284          | На  | 19.126               | 751346        |   |
| F. E.         | Fencing (Iron angle with chain link wire mesh)          | 462316         | 250meter  | 1930meter            | 3569080       |   |
| Ent           | Entry point activity                                    |                | 15% (1+2+3+4)   |                      | 2333196       |   |
| Total         | le  |                |   |                      | 17887833      |   |

(One Crore seventy eight lakh eighty seven thousand eight hundred thirty three) Only

मकल्प अधिकारी Project Officer MCL, Subhadra Area

Divisional Forest Officer

Angul, Division

# Calendar of Operation for Compensatory Afforestation Scheme for Plantation of 30602Nos of Seedlings over an area 19.126ha-Year wise

| Ē    | Financial year | Block Plantation @ 1600nos seedling per ha | Watering,<br>Solar Borewell<br>fitted with<br>Drip system | SMC    | Fencing (Iron Angle<br>with Chain link wire<br>mesh (1930mt along<br>the perimeter<br>=7.72times of 250mt) | Entry point<br>activity 15%<br>(1+2+3+4) | Total    |
|------|----------------|--|---|--------|--|--|----------|
| 100  | 2023-24        | 643131                                     | 3447327   | 0      | 2430920  | 978207                                   | 7499585  |
| 100  | 2024-25        | 3262667                                    | 0   | 447567 | 0  | 556535                                   | 4266769  |
| 100  | 2025-26        | 926899                                     | 190017  | 70461  | 103209   | 157899                                   | 1210562  |
|      | 2026-27        | 467401                                     | 199541  | 74018  | 108389   | 127402                                   | 976751   |
| 100  | 2027-28        | 175768                                     | 209506  | 77690  | 113801   | 86515                                    | 663280   |
| 10.5 | 2028-29        | 184528                                     | 648582  | 81610  | 119490   | 155132                                   | 1189342  |
| 2.5  | 2029-30        | 239898                                     | 0   | 0      | 125458   | 54803                                    | 420159   |
|      | 2030-31        | 203444                                     | 0   | 0      | 131742   | 50277                                    | 385463   |
|      | 2031-32        | 213637                                     | 0   | 0      | 138327   | 52794                                    | 404758   |
|      | 2032-33        | 224291                                     | 0   | 0      | 145236   | 55229                                    | 424756   |
|      | 2033-34        | 235498                                     | 0   | 0      | 152509   | 58201                                    | 446208   |
| 5    | GRAND TOTAL    | 6539237                                    | 4694974   | 751346 | 3569080  | 2332994                                  | 17887633 |



Project Officer Cubhadra Area

# Encl:

- A- Documents:
- The selected land schedule of Non Forest land in Nukhuripada Village coming under Bantala Range of Angul Division attached as (Annexure-I).
- ORSAC, authorization letter vide his letter no ORSAC/DGPS-FD/1080/2022/3203(2) Dated 03/09/2022 as (Annexure-II).
- 3) Approved cost norm for one ha Block Plantation @1600 Plants per ha (Annexure-III).
- 4) Approved Cost norm & matrix for Chain link Fencing: (Annexure-IV)
- Approved Cost norm Matrix for SMC (Model-C) is at (Annexure –V)
- Approved Cost norm & matrix of Watering, Solar Borewell fitted with Drip system is at (Annexure-VI)
- B- Maps & Plates:
- I. Cadastral Map of CA land identified at Village Nukhuripada (Plate-I)
- II. DGPS map of the CA land Authenticated by ORSAC) (Plate-II)
- III. Corresponding Topo map (1:50000 Scale) (Plate-III)
- IV. KML File in CD
- V. Forest Cover density map of CA land
- VI. Satellite map of CA land

Divisional Forest Officer,

Angul Division

|                                    |                    | Remarks  | 13  | Kisam as on 25 10 1980 |        |
|------------------------------------|--------------------|--|-----|------------------------|--------|
| 2022                               |                    | Area (in Ha )Found for<br>Unsuitable with<br>Regulon | 10  |                        |        |
| Date 06 07,2022<br>Tahasit: ANUGU. | Hall               | Total  | 6   | 19,120                 | 19,126 |
|                                    | Santathent in Ha.1 | 40%  | 100 |                        | TOTA.  |
|                                    | Part I             | Block  | 1   |                        |        |
|                                    |                    | Area<br>(in Ha.)                                     | 9   | 24.552                 |        |
|                                    |                    | Kissim   | 5   | Puratana Patita        |        |
|                                    |                    | Plot No  | · · | 8(7)                   |        |
|                                    |                    | Khata No Plot No                                     |     | -                      |        |
| RANTALA                            |                    | Name of Village                                      | 2   | Nullthurigada          |        |
| Ranas                              |                    | 8. No  | -   | -                      |        |

and the second of the second o

Certified that the above non-forest Government land as mentioned in column 7, 8 & 9 is a compact patches of 4.00 Ha. Or more having adequate soil depth suitable for plantation from management point of view.

Certified that the above Government land found suitable for plantation is free from encroachment and encumbrances

Certified that the above Government land is not covered under 4(1) notification.

Certified that the above Government land is not covered under DLC.

Certified that the above Government land is not alloted previously.

Certified that the above Government land is not covered under any M.L/P.L area.

Certified that the above Government land is not settled in favour of individual/community under F.R Act, 2006.

Certified that the status of the above plots was non forest as on 25.10.1980.

Certified that the above plots are not covered under any proposed reserve forest.

Certified that the above plots are unfit not only for agriculture, but also for other developmental requrements.

Cest fied that the above plots have no future potential for agrarian or industrial use.

Certified that the above identified area contains sparse vegetation with density of 0.02 and scrubby forest, growth fit for compensatory afforestation.

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Fre Harredona. OTWITTER Phinds 3e Serie

FABASIADAB AMGUA



# ODISHA SPACE APPLICATIONS CENTRE (ORSAC)

Department of Science & Technology, Govt. of Odísha

Amount 1

ORSAC/DGPS-FD/1080/2022/ 35032 dt 3 9 22

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The D.F.O., 'Angul Division, Angul

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Sub. Verification of DGPS Survey of Compensatory Afforestation non-forest land in Jamugaria, Kanja, Nukhuripada, Rodasingha, villages and degraded revenue forest land in Baghuapat villagein Angul Tahsil in lieu of forest areas proposed for diversion for Subhadra OCP, Subhadra Area of MCL in Angul District.

Ref: Your letter no. 5950 dated 19.08.2022

Sir

With reference to the subject mentioned above, this is to inform you that, the maps and data forwarded to ORSAC by your office for verification of the DGPS survey of Compensatory Afforestation non-forest land in Jamugaria. Kanja, Nukhuripada, Rodasingha villages and degraded revenue forest land in Baghuapat village in Angul Tahsil in lieu of forest areas proposed for diversion for Subhadra OCP, Subhadra Area of MCL in Angul District has been verified by ORSAC and is certified that the map is correct at a confidence level of 95%. All the Compensatory Afforestation non-forest land comes in Jamugaria, Kanja, Nukhuripada, and Rodasingha villages and degraded revenue forest land in Baghuapat village in Angul Tahsil in Angul district. Total Compensatory Afforestation land works out to 150.954Ha, includes 40.249Ha, degraded Revenue forest and 110.705Ha, non-forest land from the submitted shp files, against the required area of 150.895Ha, (40.255Ha, degraded Revenue forest and 110.640Ha, non-forest land) as mentioned in the submitted record. Detail Patch/village/plot wise comparative statistics of Compensatory Afforestation area is attached herewith.

Yours faithfully.

Encl; 6 hard copy maps

M. K. SANABADA SCIENTIST - 'D'

Copy to: The General Manager (Subhadra Area), MCL, Subhadra Area, Near Biju Maidan, Angul-759122, Odisha for information.

STATISTICS OF COMPENSATORY AFFORESTATION LAND IDENTIFIED IN VILLAGE
JAMUGARIA, KANJA, NUKHURIPADA, RODASINGHA ALONG WITH DEGRADED REVENUE
FOREST LAND IN VILLAGE BAGHUAPAT UNDER ANGUL TAHASIL IN LIEU OF FOREST AREAS
PROPOSED FOR DIVERSION FOR SUBHADRA OCP, SUBHADRA AREA OF MCL, ANGUL
DISTRICT

|        |  |             | Distinct  |                  |             |
|--------|--|-------------|---|------------------|-------------|
| SL NO. | VILLAGE NAME   | PLOT NO.    | KISAM   | ALLOTED AREA HA. | MAP AREA HA |
| 1      | BAGHUAPAT .  | 251(P)      | CHHOTA JUNGLE   | 15.393           | 15.081      |
| 2      | BAGHUAPAT .  | 298(P)      | ,CHHOTA JUNGLE  | 15.212           | 15:243      |
| 3      | BAGHUAPAT  | 283(P)      | CHHOTA JUNGLE   | 6.029            | 6.035       |
| 4      | <b>BAGHUAPAT</b>   | 284(P)      | CHHOTA JUNGLE   | 3.621            | 3.890       |
| A      | TOTAL DEGRADE  | D REVENUE   | FOREST LAND   | 40.255           | 40,249      |
| 5      | IAMUGARIA  | 1107(p)     | PURATANA PATITA   | 7.923            | 7.924       |
| 6      | JAMUGARIA  | 1117(p)     | PURATANA PATITA   | 21.643           | 21.854      |
| 7      | JAMUGARIA  | 1089(p)     | PURATANA PATITA   | 5.127            | 5.259       |
| 8      | KANJA  | 1657        | PURATANA PATITA   | 1.752            | 1.780       |
| 9      | KANJA  | 1656(P)     | PURATANA PATITA   | 7.893            | 7.691       |
| 10     | KANIA  | 1648/1(P)   | PURATANA PATITA   | 3.583            | 3.635       |
| 11     | NUKHURIPADA  | 8(P)        | PURATANA PATITA   | 19.126           | 19.129      |
| 12     | RORASINGHA   | 965(P)      | PAHADA  | 43.593           | 43.433      |
|        | THE RESIDENCE OF THE PERSON NAMED IN COLUMN 2 IN COLUM | ON-FOREST I | CONTRACTOR OF THE PROPERTY OF | 110.640          | 110.705     |
|        | TOTAL CALL   | AND AREA    | (A+B)   | 150.895          | 150.954     |

Shri M. K. Sanabada Scientist, ORSAC Bhubaneowiti

|         | WAGE RATE Rs-311/- F   | ER MANDAY                            |                  |                            |                              |                             |
|---------|--|--------------------------------------|------------------|----------------------------|------------------------------|-----------------------------|
| SI. No. | Items of work  | Preferable<br>Period of<br>Execution | No of<br>Mandays | Labour<br>Cost<br>(In Rs.) | Material<br>Cost (In<br>Rs.) | Tota<br>cost<br>(In<br>Rs.) |
| 1       | 2  | 3                                    | 4                | 5                          | 6                            | 7                           |
|         | Oth Year (Advance work) Pre-   | Planting Oper                        | ation            |                            |                              |                             |
| 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 debrises)  | 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   | Feb/Mar                              | 2                | 622                        | 0                            | 622                         |
| 6       | Digging of pits (45 cmX45 cm X45 cm) in hard and gravelly soil   | Feb/Mar                              | 64               | 19904                      | 0                            | 19904                       |
| 7       | Construction of Temporary Labour Shed, Drinking water facility and First-Aid etc.  | Jan/Mar                              | 0                | 0                          | 3500                         | 3500                        |
|         | Total  |                                      | 82               | 25502                      | 3600                         | 29102                       |
|         | 1st Year/Plantin   | g Year                               |                  | 23302                      | 3000                         | 23102                       |
| 1       | Refilling of pits by altering the dug-out soil of the pits, application of Organic compounds/CDM/FYM & mixing the same properly.   | Jun/Jul                              | 12               | 3732                       | 8000                         | 11732                       |
| 2       | Transportation of 18 months old polypot seedlings in hired truck/tractor from the permanent/Mega nursery to planting site including Loading & unloading. (Average lead of 10 Rkm) & stacking the seedling @ Rs.6/- per Seedling. (1760 nos.)   | Jun/Aug                              | 0                | 0                          | 10560                        | 10560                       |
| 3       | Watering the polypot seedling at planting site   | Jul/Aug                              | 3                | 933                        | 0                            | 933                         |
| 4       | Conveyance of polypot seedling 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 properly around the planted seedlings.                  | Jul/Aug                              | 36               | 11196                      | 0                            | 11196                       |
| 5       | Cost of Fertilizer & Insecticide  (a) NPK/Bio-fertilizer @ 50 gms/plant as basal dose= 80kg @ Rs.30/- per kg= Rs.2400.00  (b)Urea/Vermicompost/Mo Khata/any other fertilizer in two subsequent doses @ Rs. 1200.00  (c) Insecticide/Bio-pesticide @ 5 gms/plant=8 kg @ Rs. 150/- per kg= Rs. 1200.00 | Jul/Aug                              | 0                | 0                          | 4800                         | 4800                        |
| 6       | Casualty Replacement @ 10 % (160 nos.)   | Jul/Aug                              | 4                | 1244                       | 0                            | 1244                        |
| 7       | 1st weeding & Manuring   | Aug/Sept                             | 15               | 4665                       | -                            | 4665                        |
| 8       | 2nd weeding, soil working (1mt, diameter around the plants) and Manuring   | Oct/Nov                              | 20               | 6220                       | 0                            | 6220                        |
| 9       | Fire line tracing (2 m. wide fire line over 400 m long) including maintenance of inspection path   | Feb/Mar                              | 3                | 933                        | 0                            | 933                         |

|     | Watch & Ward including watering as per requirement  | Aug/Mar  | 12            | 3732                | 0      | 3732                              |
|-----|---|--|---------------|---------------------|--------|-----------------------------------|
|     | Total   |  | 105           | 32655               | 23360  | 5601                              |
|     | 2nd Year Mainte   | enance   |               |                     | 110130 | 1.1                               |
| 1   | Transportation of 160 seedlings from Nursery to<br>Plantation site including loading, unloading &<br>Conveyance by Tractor @ Rs.6/- per seedlings   | Jul  | o             | 0                   | 960    | 960                               |
| 2   | Causality replacement 10%   | Jul  | 4             | 1244                | 0      | 1244                              |
| 3   | Cost of Fertilizer & Insecticide- (A) Cost of Insecticide/Bio-pesticide @ 5gms/plant=0.8kg @ Rs. 150/-per kg=Rs.120/- (B) Urea/NPK/Bio-fertilizer/Vermicompost/Mo Khata/any other fertilizer @ Rs. 4486/- | Aug/Sept   | 0             | 0                   | 4606   | 4606                              |
| 4   | Weeding (Complete weeding), Manuring & Soil working (1 mt diameter around the plants)   | Sep/Oct  | 20            | 6220                | 0      | 6220                              |
| 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.  |  |               | 0                   | 1000   | 1000                              |
|     | Total   |  | 45            | 13995               | 6566   | 20563                             |
|     | 3rd Year Mainte   | nance  |               |                     |        |                                   |
| 3   | perganatay any outer recentage  | Sept/Oct   | 0             | 0                   | 4486   | 4486                              |
| 4   | Weeding, Manuring & Soil working(1mt, diameter around the plants)   | Sept/Oct   | 20            | 6220                | 0      | 6220                              |
| 5   | Fire line tracing (2m. 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<br>water facility and First-Aid etc.   | Apr/Mar  | 10000         | 0                   | 1000   | 1000                              |
|     | Total   |  | 41            | 12751               | 5486   | 18237                             |
|     | 4th Year Mainter  | nance  |               |                     |        |                                   |
| 1   | Fire line tracing (2m. Wide fire line over 400 m long) including maintenance of inspection path   | Feb/Mar  | 3             | 933                 | 0      | 933                               |
|     | watch & Ward  | Apr/Mar  | 18            | 5598                | 0      | 5598                              |
| 2   |   | The second secon |               |                     |        |                                   |
|     | Total   |  | 21            | 6531                | 0      | 6531                              |
|     | Total<br>5th Year Mainter   |  | 21            | 6531                | 0      | 6531                              |
| 1   | Total  5th Year Mainter  Fire line tracing (2m. Wide fire line over 400 m long) including maintenance of inspection path  | nance<br>Feb/Mar   | 3             | 933                 | 0      | 933                               |
| 2   | Total  5th Year Mainter  Fire line tracing (2m. Wide fire line over 400 m long) including maintenance of inspection path watch & Ward   | nance  | 3             | 933<br>5598         | 0      | 933<br>5598                       |
| 1   | Total  5th Year Mainter  Fire line tracing (2m. Wide fire line over 400 m long) including maintenance of inspection path watch & Ward  Total  | Feb/Mar<br>Apr/Mar   | 3             | 933                 | 0      | 933                               |
| 1 2 | Total  5th Year Mainter  Fire line tracing (2m. Wide fire line over 400 m long) including maintenance of inspection path watch & Ward  Total  6th Year Mainten  | Feb/Mar<br>Apr/Mar   | 3<br>18<br>21 | 933<br>5598<br>6531 | 0 0 0  | 933<br>5598<br><b>6531</b>        |
| 1   | Fire line tracing (2m. Wide fire line over 400 m long) including maintenance of inspection path watch & Ward  Total  6th Year Mainten Fire line tracing (2m. Wide fire line over 400 m length)            | Apr/Mar  Apr/Mar  ance Feb/Mar   | 3<br>18<br>21 | 933<br>5598<br>6531 | 0 0 0  | 933<br>5598<br><b>6531</b><br>933 |
| 1 2 | Total  5th Year Mainter  Fire line tracing (2m. Wide fire line over 400 m long) including maintenance of inspection path watch & Ward  Total  6th Year Mainten  | Feb/Mar<br>Apr/Mar   | 3<br>18<br>21 | 933<br>5598<br>6531 | 0 0 0  | 933<br>5598<br><b>6531</b>        |

|   | 7th Year Mainte  | nance   |    |      |   |      |
|---|--|---------|----|------|---|------|
| 1 | Fire line tracing (2m. Wide fire line over 400 m length) | Feb/Mar | 3  | 933  | 0 | 933  |
| 2 | Watch & Ward   | Apr/Mar | 18 | 5598 | 0 | 5598 |
|   | Total  |         | 21 | 6531 | 0 | 6531 |
|   | 8th Year Mainte  | nance   |    |      |   |      |
| 1 | Fire line tracing (2m. Wide fire line over 400 m length) | Feb/Mar | 3  | 933  | 0 | 933  |
| 2 | Watch & Ward   | Apr/Mar | 18 | 5598 | 0 | 5598 |
|   | Total  |         | 21 | 6531 | 0 | 653  |
| _ | 9th Year Mainte  | nance   |    |      |   |      |
| 1 | Fire line tracing (2m. Wide fire line over 400 m length) | Feb/Mar | 3  | 933  | 0 | 933  |
| 2 | Watch & Ward   | Apr/Mar | 18 | 5598 | 0 | 5598 |
|   | Total  |         | 21 | 6531 | 0 | 6531 |
|   | 10th Year Mainte   | nance   |    | -    |   |      |
| 1 | Fire line tracing (2m. Wide fire line over 400 m length) | Feb/Mar | 3  | 933  | 0 | 933  |
| 2 | Watch & Ward   | Apr/Mar | 18 | 5598 | 0 | 5598 |
|   | Total  |         | 21 | 6531 | 0 | 6531 |

| SI. No. | Year      | No.<br>Person<br>days | Labour<br>cost @<br>Rs.<br>311/per<br>day (Rs) | Material<br>Cost | Monitoring. Evaluation, Learning, Documentation and other Contingency (5%) of (4+5) | Cost of<br>Seedlings<br>@<br>Rs.50.31<br>per<br>seedlings | TOTAL COST |
|---------|-----------|-----------------------|--|------------------|---|---|------------|
| 1       | 2         | 3                     | 4  | 5                | 6   | 7   | 8          |
| 1       | Oth year  | 82                    | 25502  | 3600             | 1398  | 0   | 30500      |
| 2       | 1st year  | 105                   | 32655  | 23360            | 2800  | 88546   | 147361     |
| 3       | 2nd year  | 45                    | 13995  | 6566             | 1028  | 8050  | 29639      |
| 4       | 3rd year  | 41                    | 12751  | 5486             | 911   | 0   | 19148      |
| 5       | 4th year  | 21                    | 6531   | 0                | 326   | 0   | 6857       |
| 6       | 5th year  | 21                    | 6531   | 0                | 326   | 0   | 6857       |
| 7       | 6th year  | 26                    | 8086   | 0                | 404   | 0   | 8490       |
| 8       | 7th year  | 21                    | 6531   | 0                | 326   | 0   | 6857       |
| 9       | 8th year  | 21                    | 6531   | 0                | 326   | 0   | 6857       |
| 10      | 9th year  | 21                    | 6531   | 0                | 326   | 0   | 6857       |
| 11      | 10th year | 21                    | 6531   | 0                | 326   | 0   | 6857       |
|         | Total     | 425                   | 132175   | 39012            | 8497  | 96596   | 276280     |

# Annexure-IV

| SI<br>no | Item of work  | Preferable<br>period of<br>Execution | Man<br>days | Wages@311/- | Material cost (Rs) | Total Cos<br>(Rs per<br>ha) |
|----------|---|--------------------------------------|-------------|-------------|--------------------|-----------------------------|
|          | Oth Y   | ear (PPO)                            | -           | -           |                    |                             |
| 1        | Earth work (excavation of hole) in Hard soil at a distance of 3mt 040m x 0.40m x 0.40m = 0.064X 84=5.376cum @Rs 140/cum = Rs 753/-        |                                      | 2.42        | 752.62      | 0                  | 752.62                      |
| 2        | Cement concrete (1:4:8) using 40mm BHG Metal<br>84x0.40mx0.40mx0.10m=1.344@3755.94/cum  |                                      | 0           | 0           | 5047.4             | 5047.4                      |
| 3        | Angle iron pole of size 50mm x 50mm x 6mm of<br>height 2.40nt 84x 2.40=201.60sqmt<br>@4.50/kg/sqmt=907.20kg@69.50per kg                   |                                      |             | 0           | 63050              | 63050                       |
| 4        | Cement concrete (1:2:4) for fixing the iron angle pole using 12 mm BHG Chips 84x0.40mx0.40mx0.30m=4.032cum@5486.77/cum                    |                                      |             | 0           | 22123              | 22123                       |
| 5        | Cost of chain link mess using 4mm Dia GI wire having gap size 50mm x 50mm 250Rmt x 2.10mt=525sqmt@331/sqmt= Rs 173775                     |                                      |             | 0           | 173775             | 173775                      |
| 6        | Double cost painting of iron angel pole over a coat of printer using good quality enamale paint 84X 2.10X 0.20= 35.28sqmt@Rs 108.80/sqmt. |                                      |             | 0           | 3838               | 3838                        |
| 7        | Painting of GI Chain Ink mess 250X 2.10X2= 1050/10=105Sqmt@Rs 108.80sqmt.   |                                      |             | 0           | 11424              | 11424                       |
| В        | Transportation of chain link mess, Iron angle straighening and tieing of chain link mess etc @2% of the total cost                        |                                      |             | 0           | 5600               | 5600                        |
|          |   |                                      | 2.42        | 752.62      | 284857.4           | 285610                      |
|          | 1st year  | Maintenance                          |             |             |                    |                             |
| 9        | No maintenance required   | Sep/Oct                              | 0           | 0           | 0                  | 0                           |
|          | 2nd year  | maintenance                          | 2           |             |                    |                             |
| 10       | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%=11.42 say 11  | Sep/Oct                              | 0           | 0           | 11000              | 11000                       |

|    | 3rd year   | maintenand | ce   |        |          |         |
|----|--|------------|------|--------|----------|---------|
| 11 | Maintenance of wire mess @ 1% per running mt cost  | San IDat   | 10   | 10     | 1,,,,,,, | T       |
| 11 | of installation in 1st year 1142X1%=11.42 say  | Sep/Oct    | 0    | 0      | 11000    | 11000   |
|    | 4th year   | maintenand | ce   |        |          |         |
| 12 | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%=11.42 say 11 | Sep/Oct    | 0    | 0      | 11000    | 11000   |
|    | 5th year   | maintenanc | ce   |        |          |         |
| 13 | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%≈11.42 say 11 | Sep/Oct    | 0    | 0      | 11000    | 11000   |
|    | 6th year   | maintenand | ce   | -      |          |         |
| 14 | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%=11.42 say 11 | Sep/Oct    | 0    | 0      | 11000    | 11000   |
|    | 7th year   | maintenanc | e    |        |          |         |
| 15 | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%=11.42 say 11 | Sep/Oct    | 0    | 0      | 11000    | 11000   |
|    | 8th year   | maintenanc | e    | -      |          |         |
| 16 | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%=11.42 say 11 | Sep/Oct    | 0    | 0      | 11000    | 11000   |
|    | 9th year   | maintenanc | e    | 1      |          |         |
| 17 | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%=11.42 say 11 | Sep/Oct    | 0    | 0      | 11000    | 11000   |
|    | 10th year  | maintenan  | ce   |        |          |         |
| 18 | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%=11.42 say 11 | Sep/Oct    | 0    | 0      | 11000    | 11000   |
|    | Total  |            | 2.42 | 752.62 | 383857.4 | 384610. |

| SI no | Year      | No of<br>Person<br>days | Labour cost @311/-<br>per day | Material cost | Total cost |
|-------|-----------|-------------------------|-------------------------------|---------------|------------|
| 1     | Oth year  | 2.42                    | 752.62                        | 284857.4      | 285610.02  |
| 2     | 1st year  | 0                       | 0                             | 0             | 0          |
| 3     | 2nd year  | 0                       | 0                             | 11000         | 11000      |
| 4     | 3rd year  | 0                       | 0                             | 11000         | 11000      |
| 5     | 4th year  | 0                       | 0                             | 11000         | 11000      |
| 6     | 5th year  | 0                       | 0                             | 11000         | 11000      |
| 7     | 6th year  | 0                       | 0                             | 11000         | 11000      |
| 8     | 7th year  | 0                       | 0                             | 11000         | 11000      |
| 9     | 8th year  | 0                       | 0                             | 11000         | 11000      |
| 10    | 9th year  | 0                       | 0                             | 11000         | 11000      |
| 11    | 10th year | 0                       | 0                             | 11000         | 11000      |
|       | Total     | 2.42                    | 752.62                        | 383857.4      | 384610     |

| ol           | 9       | Base Norm |         | 2      | 100     | 4         | 2       | 9                             | 7       | 100     | 04      | 10      |
|--------------|---------|-----------|---------|--------|---------|-----------|---------|-------------------------------|---------|---------|---------|---------|
| Commencement | Year    | em o      | 3021-22 | 202-23 | 2023-24 | 2014-25   | 2025-26 | 2006-27                       | 2017-28 | 2018-29 | 3029-30 | 2030-31 |
| -            |         | 285610    | 285610  |        |         |           |         |                               |         |         |         |         |
| =            |         | 0         | 0       | 299891 |         |           |         |                               |         |         |         |         |
| п            |         | 11000     | 12126   | o      | 314885  |           |         |                               |         |         |         |         |
| ≥            |         | 11000     | 12734   | 12732  | 0       | 330630    |         |                               |         |         |         |         |
| >            |         | 11000     | 13370   | 13871  | 13369   | a         | 347162  |                               |         |         |         |         |
| 5            |         | 11000     | 14039   | 14039  | 14040   | 14037     | 0       | 364530                        |         |         |         |         |
| ş            |         | 11000     | 14740   | 14741  | 14741   | 14742     | 14739   | 0                             | 382746  |         |         |         |
| Ē            |         | 11000     | 15478   | 15477  | 15478   | 15478     | 15479   | 15476                         | 0       | 401883  |         |         |
| ×            |         | 11000     | 16252   | 16252  | 16251   | 16252     | 16252   | 16253                         | 16250   | 0       | 421977  |         |
| ×            |         | 11000     | 17064   | 17065  | 17065   | 17064     | 17065   | 17065                         | 17066   | 17063   | 0       | 443076  |
| R            |         | 11000     | 17918   | 17917  | 17918   | 17918     | 17917   | 17918                         | 17918   | 17819   | 17916   | 0       |
| Ē            |         |           | 419331  | 18814  | 18813   | 18814     | 18814   | 11<br>10<br>110<br>110<br>110 | 18814   | 18814   | 18815   | 18812   |
| ē            |         |           |         |        | 19755   | 19754     | 19755   | 19755                         | 19754   | 19755   | 19755   | 19756   |
| NX           | i       |           |         |        |         | 20743     | 20742   | 20743                         | 20743   | 20142   | 20743   | 20743   |
| ×            |         | 1         |         | 1      | 1       | $\dagger$ | 21780   | 21779                         | 21780   | 21780   | 21779   | 21780   |
| 500          |         | T         |         |        |         | 1         | T       | 22869                         | 22868   | 22869 3 | 22869 2 | 22868 2 |
| III/X        |         |           |         |        |         | T         | T       | t                             | 24012   | 24011   | 24012 2 | 24012 2 |
| XIX          | e e     |           | T       | T      |         |           | T       | T                             |         | 25213   | 25212   | 25213   |
| ×            |         | T         |         | T      | T       | T         |         | T                             |         | T       | 25474   | 26473   |
| XIX          | 4       |           |         | T      | T       | T         | T       | T                             |         |         |         | 27798   |
| Cost fin     | Supees) |           | 419331  | 440299 | 462316  | 485432    | 50/508  | 535191                        | 561951  | 590049  | 619552  | 650531  |

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# Annexure-V

|           | WAG  | E RATE RS- 311/- PER DAY       |          |
|-----------|--|--------------------------------|----------|
| SI.<br>No | Item of Works  | Preferable Period of Execution | Total    |
| Oth Y     | /ear (Pre-Planting Operation)  |                                | Cost     |
| 1         | Nil  |                                |          |
| _         | NII  |                                | 0        |
|           | 1st Year   |                                |          |
| 2         | Soil Conservation measure structures like<br>Staggered Trench, Percolation pit, Contour<br>trench, Graded earthen bund, LBCD Wire<br>mesh LBCD, Sub surface Dyke & WHS as per<br>the slop & site requirement on LS | Apr/sep                        | 20.215   |
|           | 2 <sup>nd</sup> Year   |                                |          |
| 3         | Maintenance of SMC structures @ 15 % of initial year cost  | Apr/jul                        | 3,032    |
|           | 3 <sup>rd</sup> Year   |                                |          |
| 1         | Maintenance of SMC structures @ 15 % of initial year cost  | Apr/jul                        | 3,032    |
|           | 4th Year   |                                |          |
|           | Maintenance of SMC structure @ 15 % of initial year cost   | Apr/jul                        | 3,032    |
|           | 5 <sup>th</sup> Year   |                                |          |
|           | Maintenance of SMC structure @ 15 % of initial year cost   | Apr/jul                        | 3,032    |
| otal:     |  |                                | 32,343.0 |

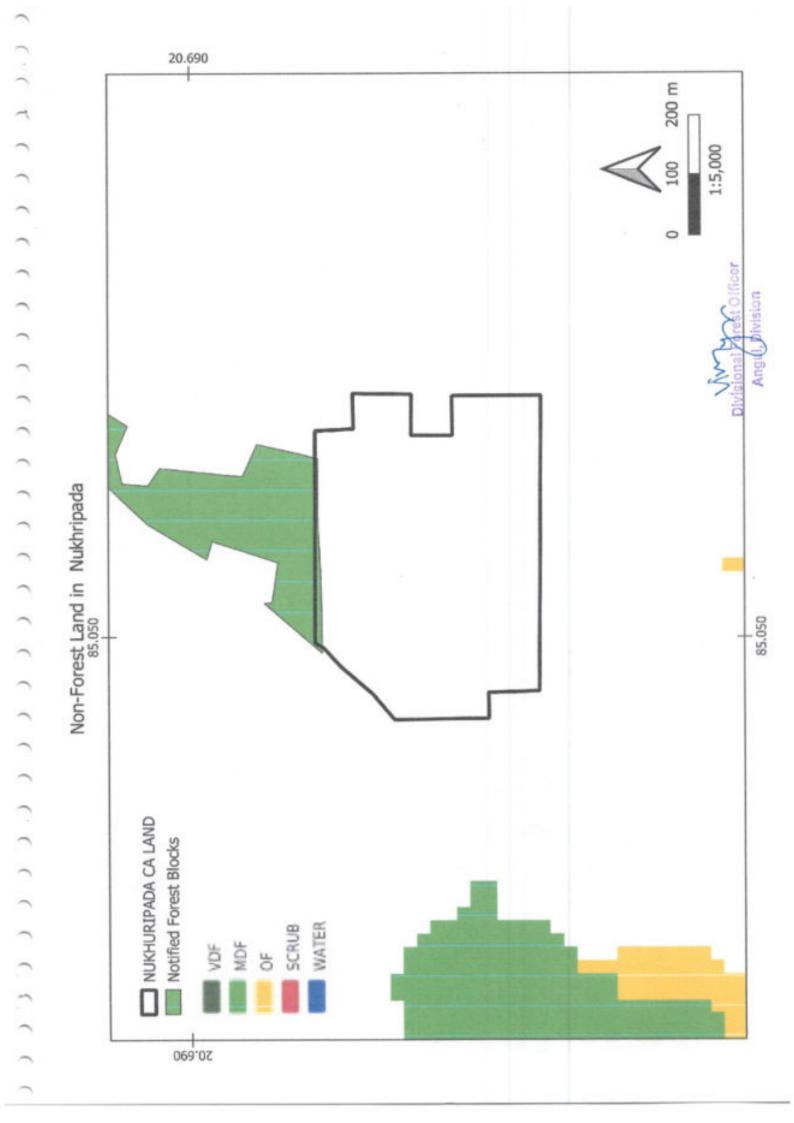
|     |                      |   |       |       |       |       |       | Matrix for (SMC) | or (SMC) |       |       |       |      |      |      |      |   |       |
|-----|----------------------|---|-------|-------|-------|-------|-------|------------------|----------|-------|-------|-------|------|------|------|------|---|-------|
| ≥ 5 | Commencement<br>Year | - | =     | =     | 2     | >     | 5     | ₹                | =        | ×     | ×     | 2     | 5    | E X  | XIX  | 2    | 2 | Total |
|     | Base Norm            | 0 | 20215 | 3032  | 3032  | 3032  | 3032  |                  |          |       |       |       |      |      |      |      |   |       |
|     | 2021-22              | 0 | 21226 | 3342  | 3510  | 3685  | 3870  |                  |          |       |       |       |      |      |      |      |   | 35633 |
| 2   | 2022-23              |   |       | 22287 | 3509  | 3686  | 3869  | 4064             |          |       |       |       |      |      |      |      |   | 37415 |
| m   | 2023-24              |   |       |       | 23401 | 3684  | 3870  | 4062             | 4267     |       |       |       |      |      |      |      |   | 39284 |
| 4   | 2024-25              |   |       |       |       | 24571 | 3868  | 4064             | 4265     | 4480  |       |       |      |      |      |      |   | 41248 |
| S   | 2025-26              |   |       |       |       |       | 25800 | 4061             | 4267     | 4478  | 4704  |       |      |      |      |      |   | 43310 |
| 9   | 2026-27              |   |       |       |       |       |       | 27090            | 4264     | 4480  | 4702  | 4939  |      |      |      |      |   | 45475 |
| -   | 2027-28              |   |       |       |       |       |       |                  | 28445    | 4477  | 4704  | 4937  | 5186 |      |      |      |   | 47749 |
| 00  | 2028-29              |   |       |       |       |       |       |                  |          | 29867 | 4701  | 4939  | 5184 | 5445 |      |      |   | 50136 |
| 0   | 2029-30              |   |       |       |       |       |       |                  |          |       | 31360 | 4936  | 5186 | 5443 | 5717 |      |   | 52642 |
| 10  | 2030-31              |   |       |       |       |       |       |                  |          |       |       | 32928 | 5102 | CAAE | 6716 | 5003 |   | 20000 |

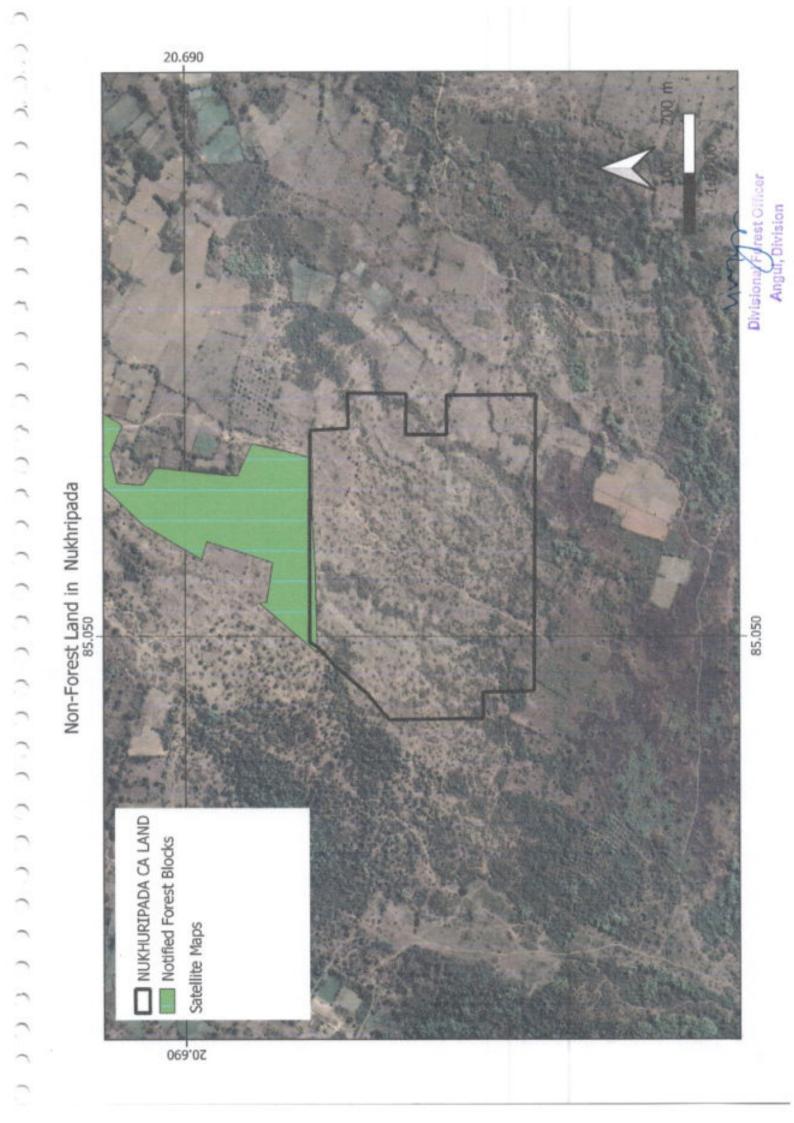
|   |  | TOTAL | 0     |
|---|--|-------|-------|
|   | 2 <sup>nd</sup> Year Watering                              |       |       |
| 8 | Maintenance of system @5% of Initial cost of installation  |       | 8,174 |
|   |  | TOTAL | 8,174 |
|   | 3 <sup>rd</sup> Year Watering                              |       |       |
| 9 | Maintenance of system @ 5% of initial cost of installation |       | 8,174 |
|   |  | TOTAL | 8,174 |
|   | Ath Verr Wetering  |       |       |

|      | Annexure-VI  |             |             |
|------|--|-------------|-------------|
|      | WATERING MODEL-W -I  |             |             |
|      | Watering provision to CA Plantation  |             |             |
| Sola | or System with Bore well (1 system for 5 Ha Plantation) fitting with Drip system | n , Wage ra | te@ Rs 311/ |
|      | Year of installation (0 <sup>th</sup> YEAR)                                      |             |             |
| 1    | Cost of Borewell   |             | 1,50,000    |
| 2    | Installation of Solar panel &other System  |             | 3,00,000    |
| 3    | Cost of 0.5 HP submersable motor with accessories                                |             | 50,000      |
| 4    | Water Storage Tank/ Flexible pipes   |             | 15,000      |
| 5    | Cost of laying Drip system including all accessories, fittings etc, with 12% GST |             | 3,02,431    |
|      |  | TOTAL       | 8,17,431    |
| 6    | Cost of Water & watering per Ha. (8,17,431/5) =Rs1,63,486/-                      |             | 1,63,486    |
|      | 1 <sup>st</sup> Year Watering  |             |             |
| 7    | No maintenance required  |             | 0           |
|      |  | TOTAL       | 0           |
|      | 2 <sup>nd</sup> Year Watering  |             |             |
| 8    | Maintenance of system @5% of Initial cost of installation                        |             | 8,174       |
|      |  | TOTAL       | 8,174       |
|      | 3 <sup>rd</sup> Year Watering  |             |             |
| 9    | Maintenance of system @ 5% of initial cost of installation                       |             | 8,174       |
|      |  | TOTAL       | 8,174       |
|      | 4 <sup>th</sup> Year Watering  |             | 1 -4        |
| 10   | Maintenance of system @ 5%of initial cost of installation                        |             | 8,174       |
|      |  | TOTAL       | 8,174       |
|      | 5 <sup>th</sup> Year Watering  |             | 1 -7        |
| 11   | Maintenance of system @ 5% of initial cost of installation                       |             | 8,174       |
|      |  | TOTAL       | 8,174       |

|           |                      | Abstract              |  |                  |                    |
|-----------|----------------------|-----------------------|--|------------------|--------------------|
| SI.<br>no | Year                 | No.<br>person<br>days | Labour<br>Cost @ Rs<br>311/-per<br>day | Material<br>Cost | Total cost<br>(Rs) |
| 1         | 0 <sup>th</sup> year | 0                     | 0.0                                    | 163486.0         | 163486.0           |
| 3         | 1 <sup>st</sup> year | 0                     | 0.0                                    | 0.0              | 0.0                |
| 3         | 2 <sup>nd</sup> year | 0                     | 0.0                                    | 8174.0           | 8174.0             |
| 4         | 3 <sup>rd</sup> year | 0                     | 0.0                                    | 8174.0           |                    |
| 5         | 4 <sup>th</sup> year | 0                     | 0.0                                    |                  | 8174.0             |
| 6         | 5 <sup>th</sup> year | 0                     | 0.0                                    | 8174.0<br>8174.0 | 8174.0<br>8174.0   |
|           | Total:               | 0                     | 0                                      | 196182           | 1,96,182           |

| Commencem         I         III         III         III         IV         V         VI         VIII         VIII           Base Norm         163486         0         8174         8174         8174         8174         VIII         VIII           2021-22         163486         0         9011         9451         9935         30758         C         VIII         VIII           2022-23         17166         0         9467         9936         10432         32296         15054         33911           2024-25         18024         0         9467         9935         10432         10954         11502           2025-26         18024         0         18935         0         10432         10954         11502           2025-26         18024         0         19878         0         10954         11502           2025-26         180718         0         10432         10954         11502           2025-28         18024         198718         0         10954         11502           2028-29         18024         18054         11503         0         11503           2029-30         18025         18025         0<  | 163486 0 8174<br>163486 0 9011<br>17166 0<br>0 0 18024<br>3   | 163486 0 8174<br>163486 0 9011<br>163486 0 9011<br>17166 0<br>3 3  | 1   11   11   1V   V   VII   VIII   IX   X   XII   XIII     163466   0   8174   8174   8174   8174   XII   | I   II   II   IV   V   VI   VII   VII   IX   X   XI   XI  |   | -         | No.                   | -        | 1       | 2       | 69      | 4       | ro.     | 9       | 7       | 00      | o       |  |
|--|---|--|--|---|---|-----------|-----------------------|----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--|
|  |   | II   | II   | II  | II  |           | commencem<br>ent year | ase Norm | 2021-22 | 2022-23 | 2023-24 | 2024-25 | 2025-26 | 2026-27 | 2027-28 | 2028-29 | 2029-30 |  |
| 31,74 = 31,74 = 3  | 8174 B011 0 0 18024 3   | III  | III   IV   V   VI   VIII   VIII   IX   X   XII   XIII   XIIII   XIIIII   XIIII   XIIII   XIIII   XIIII   XIIII   XIIII   XIIII   XIIII   XIIIII   XIIII   XIIII   XI | III   IV   V   VII   VIII   IX   X   XII   XIII   XIV   XIII   XIIII   XIII   XIII   XIII   XIII   XIII   XIII   XIII   XIII   XIIII   XIII   XIII   XIII   XIII   XIII   XIII   XIII   XIII   XIIII   XIIIII   XIIII   XIIIII   XIIII   XIIII   XIIII   XIIII   XIIII   XIIII   XIIII   XIIII   XIIIII   XIIIII   XIIII   | III   IV   V   VI   VIII   VIII   IX   X   XIII   XIII   XIV   XV   X |           | -                     | 163486   | 163486  |         |         |         |         |         |         |         |         |  |
|  |   | IV   V   VII   VIII   IX   X   XII   XII | IV   V   VI   VII   VIII   IX   X   X   XIII   XIIII   XIII   XIII   XIII   XIII   XIII   XIII   XIII   XIII   XIIII   XIII   XIIII   XIIIII   XIIII   XIII | IV   V   VI   VII   VIII   IX   X   XII   XIII   XIV   XIV   XIV | IV   V   VI   VII   VIII   IX   X   XI   XI                           |           | =                     | 0        | 0       | 17166   |         |         |         |         |         |         |         |  |
| IV   V   VII   VIII   VIIII   VIII   VIII   VIII   VIII   VIII   VIII   VIII   VIII   VIIII   VIII   VIII   VIII   VIII   VIII   VIII   VIII   VIII   VIIII   VIII   VIII   VIII   VIII   VIII   VIII   VIII   VIII   VIIII   VIII   VIII   VIII   VIII   VIII   VIII   VIII   VIII   VIIII   VIII   VIII   VIII   VIII   VIII   VIII   VIII   VIII   VIIII   VIII   VIII   VIII   VIII   VIII   VIII   VIII   VIII   VIIII   VIII   VIII   VIII   VIII   VIII   VIII   VIII   VIII   VIIII   VIII   VIII   VIII   VIII   VIII   VIII   VIII   VIII   VIIII   VIII   VIII   VIII   VIII   VIII   VIII   VIII   VIII   VIIII   VIII   VIII   VIII   VIII   VIII   VIII   VIII   VIII   VIIII   VIII   VIII   VIII   VIII   VIII   VIII   VIII   VIII   VIIII   VIII   VIII   VIII   VIII   VIII   VIII   VIII   VIII   VIIII   VIII   VIII   VIII   VIII   VIII   VIII   VIII   VIII   VIIII   VIII   VIII   VIII   VIII   VIII   VIII   VIII   VIII   VIIII   VIII   VIII   VIII   VIII   VIII   VIII   VIII   VIII   VIIII   VIII   | V V VII   VIII   IX   |  | X X X X X X X X X X X X X X X X X X X  | XIII XIV 43280 45444  | XIII XIV XV 43280 43280 45444   |           | =                     | 8174     | 1106    | 0       | 18024   |         |         |         |         |         |         |  |
| 9935 30758 32296 33311 0954 11502 0 10432 10954 11503 0 10954 11503 0 11502 0 11502 0 11502 0 11502 0 1 11503 0 1 11 | V   VII   VIII   IX   State   State |  | X X X X X X X X X X X X X X X X X X X  | XIII XIV 43280 45444  | XIII XIV XV 43280 43280 45444   | VICTORY   | 2                     | 8178     | 10.00   | 88      | 0       | 189255  |         |         |         |         |         |  |
| 10432 32296 33311 10432 10954 11502 0  | VI   VIII   IX  |  | X X X X X X X X X X X X X X X X X X X  | XIII XIV 43280 45444  | XIII XIV XV 43280 43280 45444   | ioi vydie | >                     | 8174     | 9935    | 9886    | 9935    | 0       | 198718  |         |         |         |         |  |
| VIII VIIII 10954 33911 10954 11502 10954 11503 0 11502 21908 0 7 230041  | VII VIII IX 32296 32296 10954 33911 10954 11502 35607 0 11502 12077 0 11502 12077 0 230041 0 241543   |  | X X X X X X X X X X X X X X X X X X X  | XIII XIV 43280 45444  | XIII XIV XV 43280 43280 45444   | TAN SILL  | 5                     | 8174     | 30758   | 10432   | 10433   | 10432   | 0       | 208654  |         |         |         |  |
| 33911<br>11502<br>11502<br>0<br>0<br>230041  | VIII IX 33911 11502 35607 11502 12077 11502 12078 0 12077 230041 0  |  | X X X X X X X X X X X X X X X X X X X  | XIII XIV 43280 45444  | XIII XIV XV 43280 43280 45444   | Soidr     | 5                     |          |         | 32256   | 10954   | 10955   | 10954   | 0       | 21908   |         |         |  |
|  | 35607<br>12077<br>12078<br>12078<br>0   |  | X X X X X X X X X X X X X X X X X X X  | XIII XIV 43280 45444  | XIII XIV XV 43280 43280 45444   | sorewell  | 3                     |          |         |         | 33911   | 11502   | 11503   | 11502   | 0       | 230041  |         |  |
| 37387 X X 37387 12681 12681 0 0  |   |  | X X X X X X X X X X X X X X X X X X X  | XIII XIV 43280 45444  | XIII XIV XV 43280 43280 45444   | p syste   | ×                     |          |         |         |         |         |         | 39256   | 13815   | 13316   | 13315   |  |
| X XI X 37387 37387 36256 12681 13315 0 13315   | NI XI XI 39256 39256 13315 13315  |  | X X X X X X X X X X X X X X X X X X X  | XIII XIV 43280 45444  | XIII XIV XV 43280 43280 45444   | m (per Ha | ΕX                    |          |         |         |         |         |         |         | 41219   | 13981   | 13982   |  |
| X XI XII XII XII 37387 37387 28256 12681 13915 41219 12681 13915 41219 12681 13915 13981   | XI XII XII XII 88256 13316 13316 13315 13962  |  | XIX ASSAM  |   | ×   |           | IIIX                  |          |         |         |         |         |         |         |         | 43280   | 14680   |  |





# CHECK LIST SERIAL NUMBER-18

SCHEME FOR

COMPENSATORY AFFORESTATION SCHEME OVER AN AREA OF 40.255HA IN REVENUE DEGRADED FOREST LAND IDENTIFIED IN THE VILLAGE BAGHUAPAT, BANTALA RANGE

UNDER

ANGUL TAHASIL

OF

DISTRICT ANGUL

IN

LIEU OF PROPOSED FOREST DIVERSION FOR 125.24 HA OF FOREST LAND COMING WITHIN SUBHADRA **OPEN CAST PROJECT** 

OF

M/S MCL, DIST-ANGUL

Plantation Model:

AR plantation over 40.255ha @1000plants per ha

Prepared By

Divisional Forest Officer, Angul Division

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| 2     | Details of Scheme  | -         |           |
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| 9     | Cadastral Map of CA land identified at<br>Village Baghuapat    |           | Plate-I   |
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## **Land Suitability Certificate**

The requirement of suitable Govt. Degraded Forest land at par with the guidelines of MoEF & CC is a vital aspect for raising Compensatory Afforestation in lieu diversion of Forest land for Non forestry purpose of a project under FC Act, 1980.

In the instant case diversion of Forest land to the extent of 125.24ha is required for the project "Subhadra Open Cast Project of M/s MCL in the district of Angul. Accordingly required exercises were undertaken in the field by Forest and Revenue Staff jointly to select suitable Non forest land/ Govt degraded forest land for the purpose of Compensatory Afforestation for the said project. Finally one patch of Revenue degraded Forest land over 40.255ha of Baghuapat Village was selected in Bantala Range with suitability criteria to accommodate required no of seedlings at the rate of 1000seedlings/ha. Criteria of suitability of the site meets relevant parameters such as management point of view, free from encroachment and encumbrances, not included in Section -4(1) notification, not under DLC status of forest, non allotment of the said areas for other projects etc as narrated against this site furnished in Annexure-I. Besides soil quality, soil depth, terrain, climatic conditions etc are suitable for planting indigenous promising species for sustained growth and establishment and over and above location of the site with respect to closeness to nearby forest block of Angul Division which will ensure proper supervision, monitoring of the plantation raised under Compensatory Afforestation Scheme. Plantations activities will be as done per the approved One-time Cost Norm of PCCF, Odisha and it is hoped to ensure proper greenery with improved environmental scenario after implementation of the said plantation.

Place:

Date:

Divisional Forest Officer,

Angul Division

### Scheme

This scheme is for taking up Compensatory Afforestation on identified Revenue degraded Forest land in Village Baghuapat of Bantala Range under Angul Tahasil in the District of Angul in lieu of Proposed Forest Diversion or 125.24 ha of Forest land coming within Subhadra Open Cast Project of M/s MCL, Dist-Angul.

1. Introduction: The Subhadra Open Cast Mining Lease is over an area of 1111.85 ha. Out of which Forest land located in Mining lease is 125.24ha and Non-Forest area is 986.61ha as per the land schedule. The User Agency M/s MCL has filed forest Diversion Proposal Vide Proposal No FP/OR/MIN/150133/2021.

On application for providing Compensatory Afforestation Land, the Collector and District Magistrate, Angul has allotted 110.640ha of Non forest Revenue land and 40.255ha of Revenue Degraded Forest area spread over in 5 patches vide his letter no dated . This scheme is meant for 40.255ha of Revenue degraded forest land in village Baghuapat which has been jointly verified by the Revenue staff and Forest staff. The selected land schedule is coming under Bantala Range of Angul Division (Annexure-I)

### Land Schedule:

| Land Sch   | edule o     | f land jo | intly ver                           | ified by Re<br>Affores                   |             | orest St | affs for Co                | ompensatory                                 |
|------------|-------------|-----------|-------------------------------------|--|-------------|----------|----------------------------|---|
| Village    | Khata<br>No | Plot No   | Total<br>Plot Area<br>in<br>Hectare | Area taken<br>for<br>plantation<br>in ha | Kisam       | Remark   | Nearest<br>Forest<br>Block | Approximate distance from the proposed site |
| Bantala Ra | inge        |           |                                     | -  |             |          |                            |   |
| Baghuapat  | 1           | 251(p)    | 17.74                               | 15.393                                   | ChhotaJugle | Forest   | Bhogapal                   | 0.5km                                       |
|            | 1           | 283(p)    | 6.56                                | 6.029                                    |             | land     | RF                         | 0.20km                                      |
|            | 1           | 284(p)    | 9.96                                | 3.621                                    |             |          |                            | 0 Km  |
|            | 1           | 298(P)    | 18.600                              | 15.212                                   |             |          |                            | 0.3Km                                       |
|            | Total       | 10000     | 52.86                               | 40.255                                   |             |          |                            | 1   |

### 2. DGPS Survey, Mapping & Authentication of CA Land.

As per the revised guidelines of Chief Executive, ORSAC, the User Agency has taken up DGPS Survey by empanelled vendors and the same has been authenticated by ORSAC vide his letter no ORSAC/DGPS-FD/1080/2022/3203(2) Dated 03/09/2022 and due endorsement has been furnished on DGPS surveyed Map. The DGPS Map, Corresponding Topo map (Survey of India map F45T2 & F45S14 1:50000 Scale) are enclosed to this Scheme. The KML File of the area is submitted in a CD. (Letter of Authentication by ORSAC at Annexure-II)

The Latitude / Longitude of Survey Points as per DGPS authenticated Map is furnished below.

| DGI   | S OBSERVATION | CO-ORDINATES OF BOU | NDARY PILLARS   |
|-------|---------------|---------------------|-----------------|
| SL.NO | MAP ID        | LONGITUDE           | LATITUDE        |
| 1     | 1             | 84*59'45.93447"     | 20°42'54.63335" |
| 2     | 2             | 84°59'57.88726"     | 20°42'54.23733" |
| 3     | 3             | 84°59'59.29082"     | 20°42'54.18648" |
| 4     | 4             | 85°00'02.75652"     | 20°42'54.92948" |
| 5     | 5             | 85"00'03.96408"     | 20*42'55.73219" |
| 6     | 6             | 85°00'04.19091"     | 20°42'58.37000" |
| 7     | 7             | 85°00'04.67165"     | 20°42'59.66327" |
| 8     | 8             | 85°00'09.60174"     | 20°42'59.80067" |
| 9     | 9             | 85°00'10.87139"     | 20°42'59.82016" |
| 10    | 10            | 85*00'12.43767"     | 20°43'02.09570" |
| 11    | 11            | 85°00'15.79394"     | 20°43'01.58021" |
| 12    | 12            | 85"00'18.97371"     | 20°43'01.31081" |
| 13    | 13            | 85°00'20.05586"     | 20°43'02.35048" |
| 14    | 14            | 85°00'23.46883"     | 20°43'02.20881" |
| 15    | 15            | 85°00'26.52860"     | 20°43'00.98415" |
| 16    | 16            | 85°00'29.28452"     | 20°43'03.65808" |
| 17    | 17            | 85°00'34.38960"     | 20°43'02.26279" |
| 18    | 18            | 85°00'38.75431"     | 20°43'01.18477" |
| 19    | 19            | 85*00'40.09754"     | 20°43'01.27468" |
| 20    | 20            | 85*00'42.87277"     | 20°42'58.31198" |
| 21    | 21            | 85°00'41.86145"     | 20°42'57.22501" |
| 22    | 22            | 85°00'42.55136"     | 20°42'56.61733" |
| 23    | 23            | 85°00'36.86735"     | 20°42'54.59672" |
| 24    | 24            | 85°00'23.67142"     | 20°42'49.02832" |
| 25    | 25            | 85°00'19.22310"     | 20°42'44.08746" |
| 26    | 26            | 85°00'16.13700"     | 20°42'44.25719" |

| 27 | 27 | 85°00'19.89641" | 20°42'50.82876" |
|----|----|-----------------|-----------------|
| 28 | 28 | 85°00'17.44338" | 20°42'51.51059" |
| 29 | 29 | 85*00'09.51608" | 20"42'51.42101" |
| 30 | 30 | 85°00'07.83463" | 20°42'51.46003" |
| 31 | 31 | 85°00'07.62908" | 20°42'47.41874" |
| 32 | 32 | 85°00'02.72033" | 20°42'48.39517" |
| 33 | 33 | 85°00'02.77551" | 20°42'53.05578" |
| 34 | 34 | 84°59'57.10622" | 20°42'52.79966" |
| 35 | 35 | 84°59'53.80584" | 20°42'51.68588" |
| 36 | 36 | 84°59'53.79019" | 20°42'50.01519" |
| 37 | 37 | 84°59'49.52878" | 20°42'50.82679" |
| 38 | 38 | 84°59'47.08058" | 20°42'50.92380" |

### 3. Topography & Soil:

The identified area in above village is having partly hilly and partly plain terrain. The soil is lateritic and gravelly but the soil depth is suitable for taking up plantation. Moreover, nearby forest blocks is BHOGAPAL RF. So, for management point of view, the CA land selected here will be congenial and suitable indegenous species will be planted to ensure a successful plantation.

### 4. Climate

In Angul District, the wet season is oppressive and overcast whereas, the dry season is humid and mostly clear, and it is hot year round. Over the course of the year, the temperature typically varies from 13.89°C to 40.55°C and is rarely below 11.11°C or above 44.44°C.

### 5. Rain fall:

The annual average rainfall is 1602 mm. The maximum rainfall is received during the rainy season and particularly in the month of August.

### 6. Present Vegetation:

The identified land bears dry deciduous mixed vegetation. Species like Sal, Asan, Karada, Kendu, Jamu, Mango, Bahada, Mahul etc are observed.

### 7. Items of work to be taken up

### Planting Model;

The land identified bears natural vegetation. Its tending operation will help maintaining a good forest cover adjacent to habitation. Considering the vegetation, terrain and soil of the area it is proposed to adopt a planting model of AR Plantation@1000seedlings is suggested.

### Spacing

The plant density proposed for planting is @1000plants per ha. The spacing is to be 3m x 3m(Approximately to accommodate 1000seedlings per ha). It is suggested to have the line of planting along the contour and plant to plant in adjacent row over the available blank spaces in the selected site. This will reduce the run off and encourage perculation of water and enrichment of vegetation.

### Choice of Species:

Considering the soil, topography and present vegetation observed in and around, it is proposed to Plant the following indegenous and pormising species on the identified land in suitable available blanks. Species proposed for planting are

- i) Acacia Catechew (Khair)
- ii) Bombax Ceiba ( Simili)
- iii) Emblica officinallis ( Anla)
- iv) Terminalia belerica (Bahada)
- v) Terminalia tomentosa (Asana)
- vi) Mangifera indica ( Aamba)
- vii) Pterocarpus marsupium ( Bija)
- viii) Syzygium cumini (Jamu)

- ix) Azadia indica (Neem)
- x) Terminalia chebula(Harida)
- xi) Pongamia pinnata (Karanja) etc.

The project i.e OCP of M/s MCL is for diversion of 125.24 ha of Forest Land . The scheme is over 40.255ha of Revenue degraded forest land. The following detail is furnished in Tabular form

| Description of Site   | Area (in ha) | Total No of<br>Seedlings<br>required for<br>planting | Remark                             |
|---|--------------|--|------------------------------------|
| Bantala Range   |              |  |                                    |
| CA Land identified (Revenue<br>Degraded Forest) (Baghuapat) | 40.255       | 40255  | AR Mode 1000nos of<br>Seedlings/ha |

### 8. Silvicultural Tending & Planting Technique to be adopted:

### i) Survey, Demarcation and Pillar Posting:

The identified area has been surveyed & pillars posted. It is to be checked and missing pillars if any to be reposted as per Latitude / Longitude provided in the DGPS Map authenticated.

### ii) Preparation of Treatment map (Digital map):

The Kml file of the area has been provided by the user agency after DGPS survey. The same will be updated with treatment design basing on physical position at the time of implementing the Plantation Scheme. The Range Officer will update the position with help of GIS cell of the Division as per requirement.

### iii) Site Preparation:

After demarcation of the area, site preparation mostly clearing of invasive weeds will be taken up at planting site to be identified by field staff.

### iv) Silvicultural Tending Operation:

The selected area is having scattered Sal shoots of promising vigour and of natural regeneration including some other species also. It is proposed to take up

Silvicultural cleaning over the area. The activities are intended to achieve healthy growth of existing natural seedlings / saplings / coppice shoots of favored species. The operations include

- Cutting back of high stumps with preference to living stumps and having a good coppicing power.
- Cutting of climbers those are of annual nature and uprooting them wherever possible.
- > Singling out of multiple coppice shoots and retaining most promising ones.
- > Pruning of whippy plants available within the area.
- > Dead and dying trees if any to be cut and separated from the site.

The natural seedlings available in the treatment area are to be given appropriate attention to ensure its establishment.

### v) Digging of Pits (45cmx45cmx45cm):

It is proposed to dug out pits of size 45cmx45cmx45cm preferably in month of February / March. The dugout earth will be kept at pit head on both sides separately. The top soil will be kept on one side and bottom soil on another side. Soil within 30cm from ground level will be considered as top soil and rest as bottom soil. The pits will be left for weathering due to Sun & Rain.

### vi) Refilling of Pits& application of organic Compounds / CDM/ FYM:

The pits will be refilled by altering the dugout soil of the pits i.e. top soil on bottom of the pit and bottom soil on top. Application of organic Compounds / CDM/ FYM & mixing the same properly before refilling is suggested. This will provide necessary nutrients to the plant as well as help in retaining soil moisture for a longer period.

# vii) Transportation of Seedlings including short carriage & watering at Pit site.

In the approved cost norm, provisions have been made to plant 18month old seedlings. As seedlings will be above 1m height invariably, careful transportation of seedlings will be of paramount importance. In case of top breaking of seedlings, the benefit of 18month old seedlings will be reduced substantially. Transportation of seedlings from Nursery site to Planting site and then short carriage has to be taken

up carefully. Wherever water is available, the plants are to be watered before short carriage to minimize the shock to plants during long carriage by tractors / vans etc.

### viii) Planting of Seedlings:

After application of FYM/ CDM/ Organic manure, seedling will be planted carefully. The standard planting procedure is to be followed. As the pit size is of 45cm x 45cm x 45cm the following care will be taken during planting.

- Chemical fertilizer / insecticides to be applied as basal doze to be thoroughly mixed with soil.
- Seedlings collar zone will be at Ground Level or at best 2.5cm below the ground level. In no case it will not be more than 3cm below Ground Level.
- The Poly bags containing the seedlings are to be carefully removed. It is better to use a blade to cut open the bag so as to cause least disturbance to the ball of earth containing the seedlings.
- After planting the soil is to be compacted leaving 3" around the plant and the compact soil may be at Ground Level or 1" above the Ground level – allowance for soil settlement.
- In no case it should be a sunken around the plant.
- The planted plant should stand erect, if it is tilted due to speedy growth, a support with a stick collected locally to be provided.

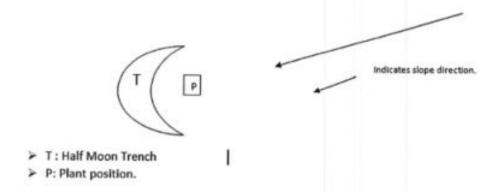
### ix) Casualty Replacement:

Casualty replacement is an important operation to achieve a 100% survival in a plantation. After planting there is possibility of casualty in planted seedlings. There is a provision to replace casualty up to 10% in 1<sup>st</sup> year and 10% in 2<sup>nd</sup> year operation in the approved cost norm. The same is to be carried out with good promising seedlings those can come up to a height of previous planted seedlings. During replacement in 2<sup>nd</sup> year application of fertilizers etc as in 1<sup>st</sup> year is to be followed.

### x) Weeding & application of Fertilizer:

Two Weeding around the planted seedlings at a diameter of 1.00m has been prescribed in the approved cost norm. During 2<sup>nd</sup> weeding deep soil working around the plants at 1.00m diameter has also been prescribed. 1<sup>st</sup> weeding will be taken up just after one month of planting and 2<sup>nd</sup> weeding and soil working in month of

September / October. As there is occasional rainfall in October, providing half moon trench in sloppy terrain around each plant is suggested. A half moon trench model is given below.



During weeding (1<sup>st</sup>& 2<sup>nd</sup>) there is a provision of application of fertilizer to plants. Application of NPK @30gms per plant x 2 times is suggested. In no case 2<sup>nd</sup> weeding can be delayed beyond 15<sup>th</sup> of October.

### xi) Fire line Tracing & Inspection Path:

There is possibility of grasses growing up within plantation area. It is better to allow local people / VSS to cut the grasses take for stall feeding under supervision of Forest Staff. In the present case where AR is under implementation Grass growth is limited. Due to fallen dry leaves (Due to leaf shedding), there is possibility of fire hazards in February / March. It is suggested to have fire line at a width of minimum 3m all around the planting area, maintain inter partitioned line / both sides of foot path as a Fire line (minimum 3m wide in 1<sup>st</sup> year and 2m in subsequent year). These lines will be maintained as inspection path also. It will be maintained till completion of 10<sup>th</sup> year.

### xii)Watch & Ward

Watch and ward is essentially required against biotic interferences like grazing and fire etc including grasses in first two years and illicit felling in subsequent years. Adequate provisions has been made in the approved cost norm. Watch & ward provisions will be implemented as per provision of cost norm.

### 9. Provision for watering:

The site selected contains partly hilly terrain. All total 40255nos of seedlings will be planted in the site selected depending on extent of blank area available. Watering to be adhered to as per approved one time cost norm (Annexure-VI)

### 10.Funding Agency

The U/A will deposit required funds as per the approved cost of the scheme.

### 11. Implementing Agency

Divisional Forest Officer, Angul will execute the Compensatory Afforestation Scheme.

# Financial analysis and Cost involved.

| Com   | Degraded Forest land in Baghuapat village in Angul Tahasil under Bantala Range of Angul Forest Division | lage in Angul Tahasil under B | Degraded Forest land in Baghuapat village in Angul Tahasil under Bantala Range of Angul Forest Division |
|-------|---|-------------------------------|---|
|       | PEF   | PERFORMA (Norm For 1.00ha)    | ia)   |
| SI No | Component   | Unit                          | Base Rate for commencement year 2023-24   |
| -1    | AR Plantation @1000plants per ha  | Hectare                       | 258777  |
| 2     | Watering, Solar Borewell fitted with Drip System  | Hectare                       | 245476  |
| 3     | SMC   | Hectare                       | 39284   |
| 4     | Fencing (Iron angle with chain link Per 250meters wire mesh)  | Per 250meters                 | 462316  |
| 2     | Entry point activity  | 15% of [(1                    | 15% of [(1)+(2)+(3)+(4)]=150878/-   |

प्रकृष्ट्य आध्यकारी Project Officer MCL, Subhadra Area एम्. सि. एल. सुभद्रा क्षेत्र

> Divisional Forest Officer Angul, Division

Matrix for Compensatory Afforestation Scheme for Plantation of AR mode @1000nos of Seedlings over an area 1ha-Year wise (Commencement Year 2023-24)

| Year     | Financial   | AR Plantation @ 1000nos seedling per ha | Watering, Solar<br>Borewell fitted<br>with Drip system | SMC   | Fencing (Iron Angle<br>with Chain link wire<br>mesh(250mt per<br>hectare | Total   |
|----------|-------------|---|--|-------|--|---------|
| 0" year  | 2023-24     | 24586                                   | 180243   | 0     | 314886   | 519715  |
| 1st year | 2024-25     | 110729                                  | 0  | 23401 | 0  | 134130  |
| 2" year  | 2025-26     | 27105                                   | 9935   | 3684  | 13369  | 54093   |
| 3" year  | 2026-27     | 20094                                   | 10433  | 3870  | 14040  | 48437   |
| 4" year  | 2027-28     | 9190                                    | 10954  | 4062  | 14741  | 38947   |
| 5" year  | 2028-29     | 9648                                    | 33911  | 4267  | 15478  | 63304   |
| 6" year  | 2029-30     | 11578                                   |  |       | 16251  | 27829   |
| 7" year  | 2030-31     | 10637                                   |  |       | 17065  | 27702   |
| 8" year  | 2031-32     | 11170                                   |  |       | 17918  | 29088   |
| 9" year  | 2032-33     | 11727                                   |  |       | 18813  | 30540   |
| 10" year | 2033-34     | 12313                                   |  |       | 19755  | 32068   |
| GRANE    | GRAND TOTAL | 258777                                  | 245476   | 39284 | 462316   | 1005853 |

MCL, Subhadra Area एम्. सि. एल. सुभद्रा क्षेत्र प्रकल्प अधिकारी Project Officer

14

|    |  | Seedlin | Seedlings over an area 40.255ha | Ja<br>Ja  |          |
|----|--|---------|---------------------------------|-----------|----------|
| SI | Component  | Norm    | Unit                            | Rate      | Total    |
|    | AR Plantation 258777 @1000plants per ha                  | 258777  | На                              | 40.255    | 10417068 |
|    | Watering , Solar Borewell 245476 fitted with Drip System | 245476  | На                              | 40.255    | 9881636  |
|    | SMC  | 39284   | На                              | 40.255    | 1581377  |
|    | Fencing (Iron angle with chain link wire mesh)           | 462316  | 250meter                        | 4600meter | 8506614  |
|    | Entry point activity                                     |         | 15% (1+2+3+4)                   |           | 4558004  |
|    | Total  |         |                                 |           | 2/0//600 |

(Three Crore Forty Nine Lakh Forty-Four Thousand Six hundred Ninety Nine) Only

est Officer Vision

प्रकल्प अधिकारी Project Officer MCL, Subhadra Area ६स्. सि. एल. सुभद्रा क्षेत्र

Calendar of Operation for Compensatory Afforestation Scheme for Plantation of 40255Nos of Seedlings over an area 40.255ha-Year wise

| Year Year  | 0th year 2023-24 | 1" year 2024-25 | 2" year 2025-26 | 3 <sup>rd</sup> year 2026-27 | 4th vear 2027.28 | +       | +       | +      | +      |        | 9" year 2032-33 | 10 <sup>th</sup> year 2033-34 | GRAND TOTAL |
|--|------------------|-----------------|-----------------|------------------------------|------------------|---------|---------|--------|--------|--------|-----------------|-------------------------------|-------------|
| AR Plantation @ 1000nos seedling per ha  | 989709           | 4457396         | 1091112         | 808884                       | 260042           | 303343  | 388380  | 466072 | 428192 | 449648 | 472070          | 495660                        | 10417066    |
| Watering ,<br>Solar<br>Borewell<br>fitted with<br>Drip system                                | 7255682          | 0               | 399933          | 419980                       | 440000           | 440953  | 1365087 | . 0    | 0      | 0      | 0               | 0                             | 9881635     |
| SMC  | 0                | 942007          | 148299          | 155787                       | 00000            | 163519  | 171768  | 0      | 0      | 0      | 0               | 0                             | 1501200     |
| Fencing(Iron Angle with Chain link wire mesh(4600mt along the perimeter =18.4times of 250mt) | 5793902          | 0               | 245990          | 258336                       | 200000           | 271234  | 284795  | 299018 | 313996 | 329692 | 346159          | 363492                        | 0505644     |
| Entry point<br>activity 15%<br>(1+2+3+4+5)   | 2105894          | 000010          | 000000          | 202000                       | 740448           | 186847  | 331504  | 114763 | 111328 | 116901 | 122221          | 178875                        | 20001       |
| Total  | 16146107         | 6200212         | 21603313        | HCTOOT?                      | 1889435          | 1432496 | 2541534 | 879853 | 853516 | 896241 | 940963          | 088077                        | 20005       |



प्रकल्प अधिकारी Project Officer MCL, Subhadra Area एम्. सि. एल. सुभद्रा क्षेत्र

### Encl:

- A- Documents:
- The selected land schedule of Forest land Baghuapat Village coming under Bantala Range of Angul Division attached as (Annexure-I).
- ORSAC, authorization letter vide his letter no ORSAC/DGPS-FD/1080/2022/3203(2) Dated 03/09/2022 as (Annexure-II).
- Approved cost norm for one ha AR Plantation @1000 Plants per ha (Annexure-III).
- 4) Approved Cost norm & matrix for Chain link Fencing: (Annexure-IV)
- 5) Approved Cost norm Matrix for SMC (Model-C) is at (Annexure -V)
- Approved Cost Norm Matrix for Watering, Solar Borewell fitted with Drip System. (Annexure-VI)
- B- Maps & Plates:
- Cadastral Map of CA land identified at Villages Baghuapat, (Plate-I)
- II. DGPS map of the CA land at Baghuapat, (Authenticated by ORSAC) (Plate-II)
- III. Corresponding Topo map (1:50000 Scale) (Plate-III)
- IV. KML File in CD
- V. Forest Cover density map of CA land
- VI. Satellite map of CA land

Divisional Forest officer, Divisional Porest Officer, Angul Division

Alighi Division

| Г      |   |              |         |               |                  |           | Oute        |  |                            |
|--------|---|--------------|---------|---------------|------------------|-----------|-------------|--|----------------------------|
| Напев. | 844,741,6                                 |              |         |               |                  |           | Tahanil     | Tahanii - AM: NGUL   |                            |
|        | Si No Norme of Vollage Klasta, No Plet No | Schatte, No. | Plot No | Kinnertti     | Arrest (in His.) | 3 L       | ila)        | Area (in Ha, Fourth for  | Remetas                    |
| T      |   | 1            | -       | ,             | 1                | Dates Rur | 9           | TO THE STATE OF THE PARTY OF TH | 11                         |
|        | BAGIOSARA"                                | -            | 253(8)  | CHROTA JUNGLE | 10.34            |           | 15.393      |  | Kispm os ani<br>25.10.1980 |
|        | BAGHUANAT                                 | -            | 283091  | CHROTA JUNGLE | 5.76             |           | 6.029       |  | Kisom os oni<br>25.10.1980 |
|        | BASHUAPAT                                 | -            | 284(7)  | CHHOTA JUNGLE | 9.48             |           | 5.621       |  | Kisam as an<br>25.10.1980  |
|        | BAGHUAPAT                                 | -            | 296(7)  | CHROTA JUNGUE | 18.500           |           | 15,212      |  | Kissm of on<br>25 10,1980  |
|        |   |              |         |               |                  | IDTA      | DTAL 40,255 |  |                            |

Certified that the above forest Covernment land as creentioned in column 2, 8 & 9 is a compact patches of 4,00 Ha. Dr. nor in having adequate coil depth suitable

for plantation from management point of view.

Certifies that the above Government land found found found in the fron encreachment and encumbrances

Certified that the above Government land is not covered under 4(1) notification

Certified that the above Government land is not covered under DLC.

Certified that the above Government land is not alloted previously.

Certified that the above Government land is not settled in tevour of Individual/community under F.R. Act, 2006 Certified that the above Sovernment land is not covered under any MLLP Larea.

Certified that the status of the above plots was non-forest as on 25-10-1980.

certified that the above piots are not covered under any proposed reserve forest.

Certified that the above plots are unfit not only for agricultaire, but also for other developmental requiences

Certified that the labove plots have no future potential for agrarian or industrial uso.

certified that the above identified area contains quase vegetation with censuly of 0.02 and scribby forest growth fit for compensatory afforestation

Beatrals Range Bartail Range Office.

PARASTEBAR AMGUL

Ravenue Inspector



# ODISHA SPACE APPLICATIONS CENTRE (ORSAC) ANNEXULE-1

Department of Science & Technology, Govt. of Odisha

ORSAC/DGPS-FD/1080/2022/ 3203(2) dt. 3 - 9 - 22

To

The D.F.O., Angul Division. Angul

Sub:

Verification of DGPS Survey of Compensatory Afforestation non-forest land in Jamugaria, Kanja, Nukhuripada, Rodasingha, villages and degraded revenue forest land in Bughuspat villagein Angul Tahsit in lieu of forest areas proposed for diversion for Subhadra OCP, Subhadra Area of MCL in Angul District.

Your letter no. 5950 dated 19.08,2022 Ref:

Sir

With reference to the subject mentioned above, this is to inform you that, the maps and data forwarded to ORSAC by your office for verification of the DGPS survey of Compensatory Afforestation non-forest land in Jamugaria, Kanja, Nukhuripada, Rodasingha villages and degraded revenue forest land in Baghuapat village in Angul Tahsil in lieu of forest areas proposed for diversion for Subhadra OCP, Subhadra Area of MCL in Angul District has been verified by ORSAC and is certified that the map is correct at a confidence level of 95%. All the Compensatory Afforestation non-forest land comes in Jamugaria, Kanja, Nukhuripada, and Rodasingha villages and degraded revenue forest land in Baghuapat village in Angul Tahsil in Angul district. Total Compensatory Afforestation land works out to 150.954Ha. includes 40.249Ha. degraded Revenue forest and 110.705Ha. non-forest land from the submitted shp files, against the required area of 150.895Ha. (40.255Ha. degraded Revenue forest and 110,640Ha, non-forest land) as mentioned in the submitted record. Detail Patch/village/plot wise comparative statistics of Compensatory Afforestation area is attached herewith.

Yours faithfully,

Encl; 6 hard copy maps

M. K. SANABADA SCIENTIST - 'D'

Copy to: The General Manager (Subhadra Area), MCL, Subhadra Area, Near Biju Maldan, Anani-759122, Odisha for information.

STATISTICS OF COMPENSATORY AFFORESTATION LAND IDENTIFIED IN VILLAGE
JAMUGARIA, KANJA, NUKHURIPADA, RODASINGHA ALONG WITH DEGRADED REVENUE
FOREST LAND IN VILLAGE BAGHUAPAT UNDER ANGUL TAHASIL IN LIEU OF FOREST AREAS
PROPOSED FOR DIVERSION FOR SUBHADRA OCP, SUBHADRA AREA OF MCL, ANGUL
DISTRICT

| SL. NO. | VILLAGE NAME    | PLOT NO.    | KISAM           | ALLOTED AREA HA. | MAP AREA HA  |
|---------|-----------------|-------------|-----------------|------------------|--|
| 1       | SAGHUAPAT .     | 251(P)      | CHHOTA JUNGLE   | 15.393           | 15.081   |
| 2       | BAGHUAPAT .     | 298(P)      | CHHOTA JUNGLE   | 15.212           | 15,243   |
| 3       | BAGHUAPAT       | 283(P)      | CHHOTA JUNGLE   | 6.029            | 6.035  |
| 4       | BAGHUAPAT       | 284(P)      | CHHOTA JUNGLE   | 3.621            | 3.890  |
| A       | . TOTAL DEGRADE | D REVENUE   | FOREST LAND     | 40.255           | 40.249   |
| 5       | JAMUGARIA       | 1107(p)     | PURATANA PATITA | 7.923 .          | 7.924  |
| 6       | JAMUGARIA       | 1117(p)     | PURATANA PATITA | 21.643           | The same of the sa |
| 7       | JAMUGARIA       | 1089(p)     | PURATANA PAYITA | 5.127            | 21.854<br>5.259  |
| 8       | KANJA           | 1657        | PURATANA PATITA | 1.752            | 1.780  |
| 9       | KANJA           | 1656(P)     | PURATANA PATITA | 7.893            | 7.691  |
| 10      | KANJA           | 1648/1(P)   | PURATANA PATITA | 3.583            | 3.635  |
| 12      | NUKHURIPADA     | 8[P]        | PURATANA PATITA | 19.126           | 19.129   |
| 12      | RORASINGHA      | 965(P)      | PAHADA          | 43.593           | 43.433   |
|         |                 | ON-FOREST L |                 | 110.640          | 110.705  |
|         | TOTAL CA L      | AND AREA    | (A+B)           | 150.895          | 150.954  |

Shri M. K. Sanabada

Solentist, ORSAC Bhubaneswar

### Annexure-III

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

| SI.No. | Items of work   | Preferable<br>period of<br>Execution | No. of<br>Mandays | Labour<br>Cost (In<br>Rs.) | Material<br>Cos0(In Rs.) | Total<br>Cost (In |
|--------|---|--------------------------------------|-------------------|----------------------------|--------------------------|-------------------|
|        | Oth Year (Advance   | e Work) Pre-                         | Planting ope      | ration                     | -                        |                   |
| 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 debrises)   | Nov/ Dec                             | 12                | 3732                       | 0                        | 3732              |
| 4      | Creation of 4 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 (45cm x 45cm x 45 cm) in hard and gravelly soil   | Feb/ Mar                             | 40                | 12440                      | 0                        | 12440             |
| 7      | Construction of Temporary Labour<br>Shed, Drinking water facility and First-<br>Aid etc.  | Jan/Mar                              | 0                 | 0                          | 3500                     | 3500              |
|        | Total   |                                      | 57                | 17727                      | 3600                     | 21327             |
|        | 1st Y   | ear/ Planting                        | Year              |                            | 3000                     | LAJEI             |
| 1      | Refilling of pits by altering the dugout soil of the pits, application of organic compounds/ CDM/ FYM & mixing the same perfectly.  | June/ Jul                            | 7.5               | 2332.5                     | 5000                     | 7332.5            |
| 2      | Transportation of 18 months old polythene bag seedlings in hired truck/ tractor from the permanent / Mega Nursery to the planting site including Loading & unloading. (Average lead of 10Rkm) & stacking the seedlings @Rs. 6/- seedling. (1100 nos.)                                       | Jul/ Aug                             | 0                 | 0                          | 6600                     | 6600              |
| 3      | Watering polythene bag seedlings at stacking site of plantation.  | Jul/ Aug                             | 2                 | 622                        | 0                        | 622               |
| 4      | Conveyance of polythene bag seedlings on head load from the stacking site to individual dugout pits within the planting site, applying insecticide, fertilizer & planting after scooping the soil with other applied materials and pressing the soil perfectly around the planted seedling. | Jul/ Aug                             |                   |                            |                          | V62               |

|    | Cost of Fertilizer & Insecticide   |              |       |          |          |         |
|----|--|--------------|-------|----------|----------|---------|
| 5  | (a) NPK/ Bio- fertilizer @50gms/ plant as basal dose = 50 kg @ Rs.30/- per kg =Rs. 1500.00 (b)  Urea/ Vermicompost/ Mo khata/ any other fertilizers @Rs. 750.00 (c) Insecticide/ Bio-pesticides @5gms/ plant = 5 kg @ Rs.150/-per kg = Rs. 750/- | 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.<br>Diameter around the plants) & Manuring  | Oct/ Nov     | 15    | 4665     | 0        | 4665    |
| 9  | Fire line tracing & Inspection path  | Feb/ Mar     | 3     | 933      | 0        | 933     |
| 10 | Watch & ward including watering as per requirement   | Aug-Mar      | 12    | 3732     | 0        | 3732    |
|    | Total  |              | 76.5  | 23791.50 | 14600.00 | 38391.5 |
|    | 2nd  | Year Mainter | 7.010 |          | 21000100 | 30331.3 |
| 1  | Transportation of 100 seedlings from<br>Nursery to plantation site including<br>loading, unloading & conveyance by<br>Tractor @ Rs.6/- per seedlings   | Jul          |       |          |          |         |
| 2  | Casualty replacement   | Jul          | 2.5   | 777.5    | 600      | 777.5   |
| 3  | Cost of Fertilizer & Insecticide  A) Cost of Insecticide/ Bio-pesticides (Themet/ Forate) @ 5 gms/ plant = 0.5 kg @s.150/-per kg = Rs.75/- B) Urea/ NPK/ Bio-fertilizers/ vermicompost/ Mo khata/ any other fertilizers = Rs.2800/-              | July / Aug   | 0     | 0        | 2875     | 2875    |
| 4  | Weeding (Complete weeding), Manuring & Soil working (1mt. Diameter around the plants)  | Sept/ Oct    | 15    | 4665     | 0        | 4665    |
| 5  | Fire line tracing (2m. Wide fire line over<br>400 m long) including maintenance of<br>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,<br>Drinking water facility and First-Ald etc.  | Apr-Mar      | 0     | 0        | 1000     | 1000    |

|   | Total   |               | 38.5 | 11973.5 | 4475   | 16448. |
|---|---|---------------|------|---------|--|--------|
|   | 3rd   | Year Mainten  | ance |         |  |        |
| 1 | Cost of Fertilizers Urea/ NPK/ Bio-fertilizers/ Vermicompost/ Mo khata/ any other fertilizers = Rs.2800/- | July / Aug    | 0    | 0       | 2800   | 2800   |
| 2 | Weeding (Complete weeding),<br>Manuring & Soil working (1mt.<br>Diameter around the plants)               | Sept/ Oct     | 15   | 4665    | 0  | 4665   |
| 3 | Fire line tracing (2m. Wide fire line over 400m long) & 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<br>Shed, Drinking water facility and First-<br>Aid etc.                   | Apr/ Mar      | 0    | 0       | 1000   | 1000   |
|   | Total   |               | 36   | 11196   | 3800   | 14996  |
|   | 4th   | Year Maintena | ince | 1       | 3000   | 1433   |
| 1 | Fire line tracing (2m. Wide fire line over 400m length) & including maintenance Inspection path           | Feb/ Mar      | 3    | 933     | 0  | 933    |
| 2 | Watch & ward including watering as per requirement  | Apr/ Mar      | 18   | 5598    | 0  | 5598   |
|   | Total   |               | 21   | 6531    | 0  | 6531   |
|   | 5th   | Year Maintena | nce  |         |  |        |
| 1 | Fire line tracing (2m. Wide fire line over 400m length) & including maintenance Inspection path           | Feb/ Mar      | 3    | 933     | 0  | 933    |
| 2 | Watch & ward including watering as per requirement  | Apr/ Mar      | 18   | 5598    | 0  | 5598   |
|   | Total   |               | 21   | 6531    | 0  | 6531   |
|   |   | ear Maintena  | nce  |         |  |        |
| 1 | Fire line tracing (2m. Wide fire line over 400m length)   | Feb/ Mar      | 3    | 933     | 0  | 933    |
| 2 | Pruning of branches, singling out of multiple shoots  | Jan/Mar       | 3    | 933     | 0  | 933    |
| 3 | Watch & ward  | Apr/ Mar      | 18   | 5598    | 0  | 5598   |
|   | Total   |               |      |         | and the same of th | -550   |

|   | 7th   | Year Maintena | ince |      |   |      |
|---|---|---------------|------|------|---|------|
| 1 | Fire line tracing (2m. Wide fire line over 400m length) | Feb/ Mar      | 3    | 933  | 0 | 933  |
| 2 | Watch & ward  | Apr/ Mar      | 18   | 5598 | 0 | 5598 |
|   | Total   |               | 21   | 6531 | 0 | 6531 |
|   | 8th   | Year Maintena | nce  |      |   |      |
| 1 | Fire line tracing (2m. Wide fire line over 400m length) | Feb/ Mar      | 3    | 933  | 0 | 933  |
| 2 | Watch & ward  | Apr/ Mar      | 18   | 5598 | 0 | 5598 |
|   | Total   |               | 21   | 6531 | 0 | 6531 |
|   | 9th   | Year Maintena | nce  |      |   |      |
| 1 | Fire line tracing (2m. Wide fire line over 400m length) | Feb/ Mar      | 3    | 933  | 0 | 933  |
| 2 | Watch & ward  | Apr/ Mar      | 18   | 5598 | 0 | 5598 |
|   | Total   |               | 21   | 6531 | 0 | 6531 |
|   | 10th  | Year Maintena | ince |      |   |      |
| 1 | Fire line tracing (2m. Wide fire line over 400m length) | Feb/ Mar      | 3    | 933  | 0 | 933  |
| 2 | Watch & ward  | Apr/ Mar      | 18   | 5598 | 0 | 5598 |
|   | Total   |               | 21   | 6531 | 0 | 6531 |

|        |           | ABST              | RACT(Show                  | ring Seedlin                 | g Cost Separately)  |  |                           |
|--------|-----------|-------------------|----------------------------|------------------------------|---|--|---------------------------|
| SI.No. | Year      | No. of<br>Mandays | Labour<br>Cost (In<br>Rs.) | Material<br>Cost (In<br>Rs.) | Monitoring,<br>Evaluation,<br>Learning,<br>Documentation<br>and other<br>Contingency<br>(5%) of (4+5) | Cost of<br>Seedlings<br>@Rs. 50.31<br>per<br>seedlings | Total<br>Cost (In<br>Rs.) |
| 1      | Oth Year  | 57                | 17727                      | 3600                         | 973   | 0  | 22300                     |
| 2      | 1st Year  | 76.5              | 23791.5                    | 14600                        | 1918.5  | 55341  | 95651                     |
| 3      | 2nd Year  | 38.5              | 11973.5                    | 4475                         | 821.5   | 5031   | 22301                     |
| 4      | 3rd Year  | 36                | 11196                      | 3800                         | 749   | 0  | 15745                     |
| 5      | 4th Year  | 21                | 6531                       | 0                            | 326   | 0  | 6857                      |
| 6      | 5th year  | 21                | 6531                       | 0                            | 326   | 0  | 6857                      |
| 7      | 6th Year  | 24                | 7464                       | 0                            | 373   | 0  | 7837                      |
| 8      | 7th Year  | 21                | 6531                       | 0                            | 326   | Ö  | 6857                      |
| 9      | 8th Year  | 21                | 6531                       | 0                            | 326   | 0  | 6857                      |
| 10     | 9th Year  | 21                | 6531                       | 0                            | 326   | 0  | 6857                      |
| 11     | 10th Year | 21                | 6531                       | 0                            | 326   | 0  | 6857                      |
|        | Total     | 358               | 111338                     | 26475                        | 6791  | 60372  | 204976                    |

The Costing for 10 years will be as per One time Cost Norm approved by PCCF(O) vide this letter No 1109 dated 11.11.2021.

| Total Cost    |           | 234718   | 346454  | 75877   | 27,775  | 285302  | 39965   | 31.546  | 330273  | 346788  |         |
|---------------|-----------|----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 8             |           |          | T       | T       |         | T       |         |         |         |         | +       |
| ×             |           |          | T       | T       | T       |         | 1       | 1       |         | +       | - No.   |
| ğ             |           |          |         |         |         | 1       | 1       | T       |         | 1887    | 100%    |
| XVIII         |           |          |         |         |         |         | T       | T       | 27.25   | STS     | 0.63    |
| N/X           | -         |          |         |         |         |         |         | 19847   | 1982    | 2691    | 1,080   |
| SA.           |           |          |         |         |         |         | N. N.   | 14754   | 1437    | 14.54   | 16363   |
| A             |           |          |         |         |         | 13575   | 23875   | 13578   | 1855    | 15535   | NSK.    |
| ğ             |           |          |         |         | 12879   | 13939   | 12931   | 12929   | 34277   | 12829   | 2000    |
| Ŗ             |           |          |         | 12833   | 2323    | 12355   | 1333    | 14073   | 1333    | 12318   | 28274   |
|               |           |          | 11727   | 11777   | 11739   | am      | 13408   | 220     | 11731   | 26928   | 18139   |
| R             | 6857      | 11169    | 11169   | MII W   | 1169    | 17765   | 1169    | 11172   | 25646   | 16123   | 155806  |
| ×             | 5857      | 1991     | 1068    | 1001    | 12157   | 10837   | 30640   | 2002    | 9588    | 14887   | 1696    |
| ×             | 6857      | 10131    | 8101    | 11578   | 9000    | 10139   | 3335    | 32365   | 141371  | 1390    |         |
| Ħ             | 6857      | 57%      | 13027   | 87.43   | 9830    | 22154   | nes     | 195361  | 31378   |         |         |
| ¥             | 7837      | 10502    | 6875    | 9730    | 21099   | 29833   | 128182  | 28824   |         |         |         |
| 5             | 6857      | 1228     | 8752    | 20094   | 28460   | 222278  | 38453   |         |         |         |         |
| >             | 6857      | 2032     | 2000    | 20105   | 116265  | 27106   |         |         |         |         |         |
| 2             | 15745     | 18226    | 25874   | 110779  | 282     |         |         |         |         |         |         |
| а             | 22301     | 24585    | 125456  | 34586   |         |         |         |         |         |         |         |
| -             | 95551     | 100434   | 23415   |         |         |         |         |         |         |         |         |
| -             | 22300     | 22500    |         |         |         |         |         |         |         |         |         |
| ement<br>Year | Base Norm | 20:17:02 | 3622-13 | 2023-24 | 2024-35 | 2025-28 | 2026-22 | 2027-28 | 3038-29 | 3029-30 | 2030-11 |
| 러 일           | Bess      | -        | ~       | m       | 4       | 10      | 0       | 1       | -       | 00      | 2       |

### Annexure-IV

| SI<br>no | Item of work  | Preferable<br>period of<br>Execution | Man<br>days | Wages@311/- | Material<br>cost (Rs) | Total Co<br>(Rs per<br>ha) |
|----------|---|--------------------------------------|-------------|-------------|-----------------------|----------------------------|
|          | Oth   | Year (PPO)                           | -           |             | 1                     |                            |
| 1        | Earth work (excavation of hole) in Hard soil at a distance of 3mt 040m x 0.40m x 0.40m= 0.064X 84=5.376cum @Rs 140/cum = Rs 753/-         |                                      | 2.42        | 752.62      | 0                     | 752.62                     |
| 2        | Cement concrete (1:4:8) using 40mm BHG Metal<br>84x0.40mx0.40mx0.10m=1.344@3755.94/cum  |                                      | 0           | 0           | 5047.4                | 5047.4                     |
| 3        | Angle iron pole of size 50mm x 50mm x 6mm of<br>height 2.40nt 84x 2.40=201.60sqmt<br>@4.50/kg/sqmt=907.20kg@69.50per kg                   |                                      |             | 0           | 63050                 | 63050                      |
| 1        | Cement concrete (1:2:4) for fixing the iron angle pole using 12 mm BHG Chips<br>84x0.40mx0.40mx0.30m=4.032cum@5486.77/cum                 |                                      |             | 0           | 22123                 | 22123                      |
|          | Cost of chain link mess using 4mm Dia GI wire having gap size 50mm x 50mm 250Rmt x 2.10mt=525sqmt@331/sqmt= Rs 173775                     |                                      |             | 0           | 173775                | 173775                     |
|          | Double cost painting of iron angel pole over a coat of printer using good quality enamale paint 84X 2.10X 0.20= 35.28sqmt@Rs 108.80/sqmt. |                                      |             | 0           | 3838                  | 3838                       |
|          | Painting of GI Chain Ink mess 250X 2.10X2= 1050/10=105Sqmt@Rs 108.80sqmt.   |                                      |             | 0           | 11424                 | 11424                      |
|          | Transportation of chain link mess, Iron angle straighening and tieing of chain link mess etc @2% of the total cost                        |                                      |             | 0           | 5600                  | 5600                       |
|          |   |                                      | 2.42        | 752.62      | 284857.4              | 285610                     |
|          | 1st year  | Maintenance                          |             |             |                       |                            |
|          | No maintenance required   | Sep/Oct                              | 0           | 0           | 0                     | 0                          |
|          | 2nd year  | maintenance                          |             |             |                       |                            |
|          | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%=11.42 say 11  | Sep/Oct                              | 0           | 0           | 11000                 | 11000                      |

|    | 3rd year   | maintenan  | ce   |        |          |          |
|----|--|------------|------|--------|----------|----------|
| 11 | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%=11.42 say 11 | Sep/Oct    | 0    | 0      | 11000    | 11000    |
|    | 4th year   | maintenan  | ce   |        |          |          |
| 12 | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%=11.42 say 11 | Sep/Oct    | 0    | 0      | 11000    | 11000    |
|    | 5th year   | maintenand | ce   | -      |          | 1        |
| 13 | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%=11.42 say 11 | Sep/Oct    | 0    | 0      | 11000    | 11000    |
|    | 6th year   | maintenand | ce   |        |          |          |
| 14 | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%=11.42 say 11 | Sep/Oct    | 0    | 0      | 11000    | 11000    |
|    | 7th year   | maintenand | e    | -      |          |          |
| 15 | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%=11.42 say 11 | Sep/Oct    | 0    | 0      | 11000    | 11000    |
|    | 8th year   | maintenanc | e    |        |          |          |
| 16 | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%=11.42 say 11 | Sep/Oct    | 0    | 0      | 11000    | 11000    |
|    | 9th year   | maintenanc | e    |        |          |          |
| 17 | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%=11.42 say 11 | Sep/Oct    | 0    | 0      | 11000    | 11000    |
|    | 10th year  | maintenand | ce   |        |          |          |
| 8  | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%=11.42 say 11 | Sep/Oct    | 0    | 0      | 11000    | 11000    |
|    | Total  |            | 2.42 | 752.62 | 383857.4 | 384610.0 |

| SI no | Year      | No of<br>Person<br>days | Labour cost @311/-<br>per day | Material<br>cost | Total cost |
|-------|-----------|-------------------------|-------------------------------|------------------|------------|
| 1     | Oth year  | 2.42                    | 752.62                        | 284857.4         | 285610.02  |
| 2     | 1st year  | 0                       | 0                             | 0                | 0          |
| 3     | 2nd year  | 0                       | 0                             | 11000            | 11000      |
| 4     | 3rd year  | 0                       | 0                             | 11000            | 11000      |
| 5     | 4th year  | 0                       | 0                             | 11000            | 11000      |
| 6     | 5th year  | 0                       | 0                             | 11000            | 11000      |
| 7     | 6th year  | 0                       | 0                             | 11000            | 11000      |
| 8     | 7th year  | 0                       | 0                             | 11000            | 11000      |
| 9     | 8th year  | 0                       | 0                             | 11000            | 11000      |
| 10    | 9th year  | 0                       | 0                             | 11000            | 11000      |
| 11    | 10th year | 0                       | 0                             | 11000            | 11000      |
|       | Total     | 2.42                    | 752.62                        | 383857.4         | 384610     |

| 15 S         |         | 836       | **      | P4        | m       | 4       | un.     | 100      |          | 00       |          | 9           |
|--------------|---------|-----------|---------|-----------|---------|---------|---------|----------|----------|----------|----------|-------------|
| Commencement |         | Base Norm | 2021-22 | 2022-23   | 2023-24 | 2024-25 | 3025-26 | 2026-27  | 2027-28  | 2028-29  | 2029-30  | 2030-31     |
| _            |         | 285610    | 285610  |           |         |         |         |          |          |          |          |             |
| =            |         | 0         | 0       | 299851    |         |         |         |          |          |          |          |             |
| E            |         | 11000     | 12126   | 0         | 334886  |         |         |          |          |          |          |             |
| ≥            |         | 11000     | 12734   | 12732     | 0       | 330630  |         |          |          |          |          |             |
| >            |         | 11000     | 13370   | 13371     | 13369   | 0       | 347152  |          |          |          |          |             |
| 5            |         | 11000     | 14039   | 14089     | 14040   | 14037   | 0       | 364520   |          |          |          |             |
| ŝ            |         | 11000     | 14740   | 14741     | 14741   | 14742   | 14739   | 0        | 382746   |          |          |             |
| ij.          |         | 11000     | 15478   | 15477     | 15478   | 15478   | 15479   | 15476    | 0        | 401883   |          |             |
| ×            |         | 11000     | 16252   | 16252     | 16251   | 16252   | 16252   | 16253    | 16250    | 0        | 421977   |             |
| ×            |         | 11000     | 17064   | 17065     | 17065   | 17064   | 17065   | 17065    | 17066    | 17063    | 0        | 443076      |
| ×            |         | 11000     | 17918   | 17917     | 17918   | 17918   | 17917   | 17918    | 17918    | 17919    | 17916    | 0           |
| Ŗ            |         |           | 419331  | 18814     | 18813   | 18814   | 18814   | 16813    | 18814    | 18814    | 18815    | 18812       |
| Ē.           |         |           | 1       |           | 19755   | 19754   | 19755 2 | 19755 2  | 19754 2  | 19755 2  | 19755 2  | 19756 2     |
| NIX N        |         | T         |         | $\dagger$ |         | 20743   | 20742 2 | 20743 2  | 20743 2  | 20742 2  | 20743 22 | 20743 22    |
| ×            |         | t         | +       | +         | +       | +       | 21780   | 21779 22 | 21780 22 | 22 08212 | 21779 22 | 21780 22    |
| ×            |         | t         | +       | +         | +       | +       | +       | 22869    | 22868 24 | 22869 24 | 22869 24 | 22868 24    |
| N N          | 2011    | t         | +       | +         | +       | +       | +       | +        | 24012    | 24011 25 | 24012 25 | 24012 25    |
| XIX          |         | H         | +       | +         | +       | +       | +       | +        | +        | 25213    | 25212 26 | 25213 264   |
| XIX          |         | +         | +       | +         | +       | +       | +       | +        | +        | +        | 26474    | 26473 27798 |
| Cost (In     | Rupees) | +         | 419331  | 440299    | 462316  | 485432  | 508705  | 535191   | 561951   | 590049   | 619552   | 8 650531    |

### Annexure-V

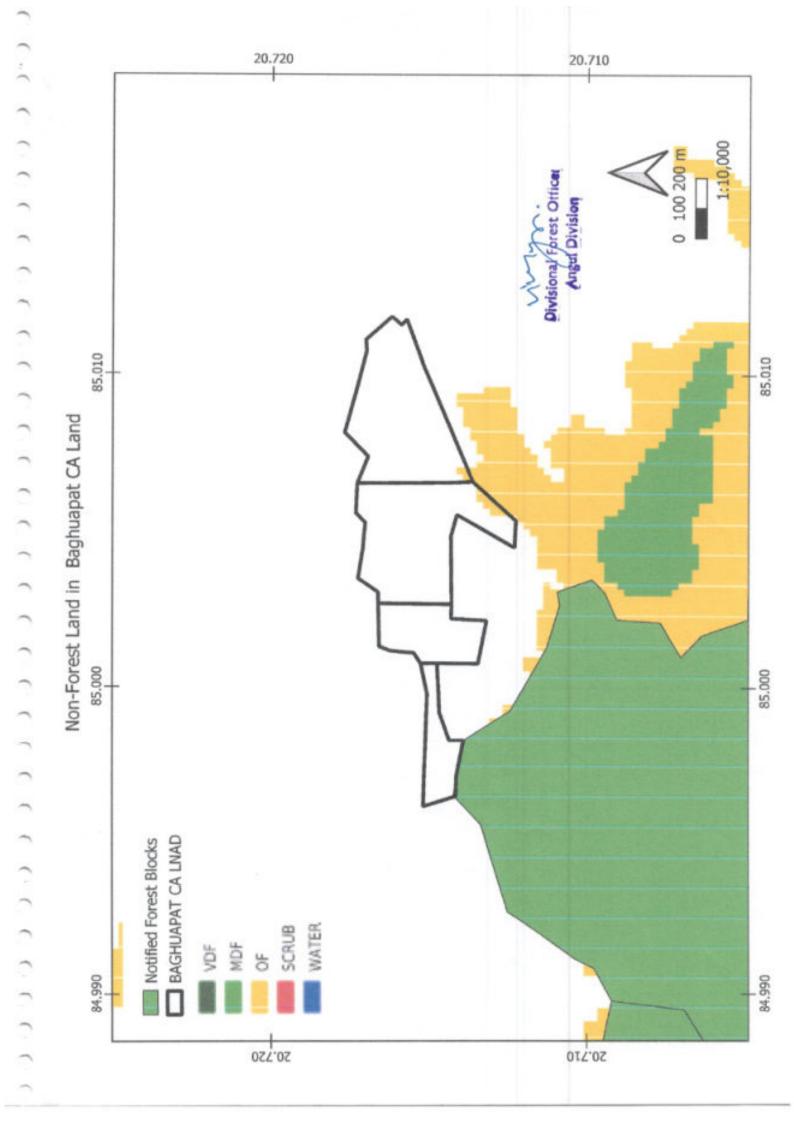
|           | WAG  | E RATE RS- 311/- PER DAY       |               |
|-----------|--|--------------------------------|---------------|
| SI.<br>No | Item of Works  | Preferable Period of Execution | Total<br>Cost |
| Oth 1     | fear (Pre-Planting Operation)  |                                | Cost          |
| 1         | Nil  |                                |               |
|           |  |                                | 0             |
|           | 1 <sup>st</sup> Year   |                                |               |
| 2         | Soil Conservation measure structures like<br>Staggered Trench, Percolation pit, Contour<br>trench, Graded earthen bund, LBCD Wire<br>mesh LBCD, Sub surface Dyke & WHS as per<br>the slop & site requirement on LS | Apr/sep                        | 20.215        |
|           | 2 <sup>nd</sup> Year   |                                |               |
| 3         | Maintenance of SMC structures @ 15 % of initial year cost  | Apr/jul                        | 3,032         |
|           | 3 <sup>rd</sup> Year   |                                |               |
|           | Maintenance of SMC structures @ 15 % of initial year cost  | Apr/jul                        | 3,032         |
|           | 4 <sup>th</sup> Year   |                                |               |
|           | Maintenance of SMC structure @ 15 % of initial year cost   | Apr/jul                        | 3,032         |
|           | 5 <sup>th</sup> Year   |                                | -             |
|           | Maintenance of SMC structure @ 15 % of initial year cost   | Apr/jul                        | 3,032         |
| otal:     |  |                                | 32,343.0      |

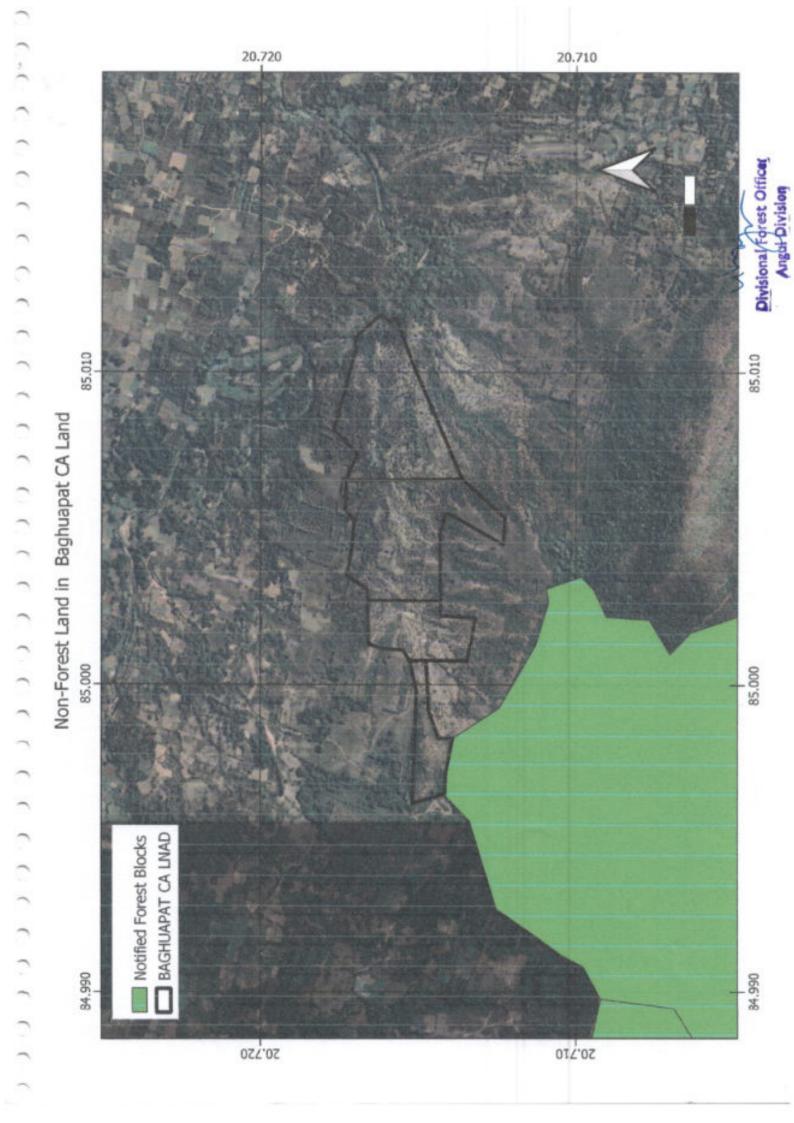
|     |                      |   |       |       |       |       |       | Matrix for (SMC) | or (SMC) |       |       |       |      |      |      |      |   |       |
|-----|----------------------|---|-------|-------|-------|-------|-------|------------------|----------|-------|-------|-------|------|------|------|------|---|-------|
| S 5 | Commencement<br>Year | - | =     | =     | 2     | >     | 5     | ₩.               | IIIA     | ×     | ×     | ≅     | ΠX   | IIX  | XIX  | 2    | Š | Total |
|     | Base Norm            | 0 | 20215 | 3032  | 3032  | 3032  | 3032  |                  |          |       |       |       |      |      |      |      |   |       |
| *** | 2021-22              | 0 | 21226 | 3342  | 3510  | 3685  | 3870  |                  |          |       |       |       |      |      |      |      |   | 35633 |
| 2   | 2022-23              |   |       | 22287 | 3509  | 3686  | 3869  | 4064             |          |       |       |       |      |      |      |      |   | 37415 |
| m   | 2023-24              |   |       |       | 23401 | 3684  | 3870  | 4062             | 4267     |       |       |       |      |      |      |      |   | 39284 |
| 4   | 2024-25              |   |       |       |       | 24571 | 3868  | 4064             | 4265     | 4480  |       |       |      |      |      |      |   | 41248 |
| w   | 2025-26              |   |       |       |       |       | 25800 | 4061             | 4267     | 4478  | 4704  |       |      |      |      |      |   | 43310 |
| 9   | 2026-27              |   |       |       |       |       |       | 27090            | 4264     | 4480  | 4702  | 4939  |      |      |      |      |   | 45475 |
| 7   | 2027-28              |   |       |       |       |       |       |                  | 28445    | 4477  | 4704  | 4937  | 5186 |      |      |      |   | 47749 |
| œ   | 2028-29              |   |       |       |       |       |       |                  |          | 29867 | 4701  | 4939  | 5184 | 5445 |      |      |   | 50136 |
| 6   | 2029-30              |   |       |       |       |       |       |                  |          |       | 31360 | 4936  | 5186 | 5443 | 5717 |      |   | 52642 |
| 10  | 2030-31              |   |       |       |       |       |       |                  |          |       |       | 32928 | 5183 | 5445 | 5715 | 6003 |   | 55274 |

|    | Annexure-VI  |        |              |
|----|--|--------|--------------|
|    | WATERING MODEL-W -I  |        |              |
|    | Watering provision to CA Plantation  |        |              |
| 50 | lar System with Bore well (1 system for 5 Ha Plantation) fitting with Drip system, W   | age ra | ate@ Rs 311/ |
|    | Year of installation (O <sup>th</sup> YEAR)  |        | 100 10022    |
| 1  | Cost of Borewell   |        | 1,50,000     |
| 2  | Installation of Solar panel &other System  |        | 3,00,000     |
| 3  | Cost of 0.5 HP submersable motor with accessories  |        | 50,000       |
| 4  | Water Storage Tank/ Flexible pipes   |        | 15,000       |
| 5  | Cost of laying Drip system including all accessories, fittings etc, with 12% GST   |        | 3,02,431     |
|    | TO   | TAL    | 8,17,431     |
| 6  | Cost of Water & watering per Ha. (8,17,431/5) =Rs1,63,486/-  |        | 1,63,486     |
|    | 1 <sup>st</sup> Year Watering  |        |              |
| 7  | No maintenance required  |        | 0            |
|    | TO   | TAL    | 0            |
|    | 2 <sup>nd</sup> Year Watering  |        | 10           |
| 8  | Maintenance of system @5% of Initial cost of installation  |        | 8,174        |
|    | The state of the s | TAL    | 8,174        |
|    | 3 <sup>rd</sup> Year Watering  |        | - OJAF 4     |
| 9  | Maintenance of system @ 5% of initial cost of installation   |        | 0.174        |
|    |  | TAL    | 8,174        |
|    | 4 <sup>th</sup> Year Watering  | IAL    | 8,174        |
| 0  | Maintenance of system @ 5%of initial cost of installation  |        | Ta           |
|    |  |        | 8,174        |
|    | 5 <sup>th</sup> Year Watering  | IAL    | 8,174        |
| 11 | Maintenance of system @ 5% of initial cost of installation   |        |              |
|    |  |        | 8,174        |
| -  | T01  | IAL    | 8,174        |

| -         |                      | Abstract              |  |                  |                    |
|-----------|----------------------|-----------------------|--|------------------|--------------------|
| SI.<br>no | Year                 | No.<br>person<br>days | Labour<br>Cost @ Rs<br>311/-per<br>day   | Material<br>Cost | Total cost<br>(Rs) |
| 1         | 0 <sup>th</sup> year | 0                     | 0.0  | 163486.0         | 163486.0           |
| 3         | 1 <sup>st</sup> year | 0                     | 0.0  | 0.0              | -                  |
| 3         | 2 <sup>nd</sup> year | 0                     | The second secon |                  | 0.0                |
| 4         | 3 <sup>rd</sup> year |                       | 0.0  | 8174.0           | 8174.0             |
| -         |                      | 0                     | 0.0  | 8174.0           | 8174.0             |
| 5         | 4 <sup>th</sup> year | 0                     | 0.0  | 8174.0           | 8174.0             |
| 6         | 5 <sup>th</sup> year | 0                     | 0.0  | 8174.0           | 8174.0             |
|           | Total:               | 0                     | 0  | 196182           | 1,96,182           |

| 1     | ŀ                     |        |       |       |        |        | -      |       | The same of the same of the same of |        |       |       | (no and) marked door marked | -     |       |       |   |        |
|-------|-----------------------|--------|-------|-------|--------|--------|--------|-------|-------------------------------------|--------|-------|-------|-----------------------------|-------|-------|-------|---|--------|
| No. 5 | Commencem<br>ent year | -      | =     | =     | 2      | >      | 5      | 7     | 5                                   | ×      | ×     | ×     | ž                           | Ī     | XIX   | ×     | X | Total  |
|       | Base Norm             | 163486 | 0     | 8174  | 8174   | 8174   | 8174   |       |                                     |        |       |       |                             |       |       |       |   |        |
| 1     | 2021-22               | 163486 | 0     | 1106  | 9463   | 9935   | 30758  |       |                                     |        |       |       |                             |       |       |       |   | 222653 |
| 2     | 2022-23               |        | 17166 | 0     | 3462   | 9836   | 10432  | 32296 |                                     |        |       |       |                             |       |       |       |   | 233786 |
| m     | 2023-24               |        |       | 18024 | 0      | 9935   | 10433  | 10954 | 33911                               |        |       |       |                             |       |       |       |   | 245476 |
| 4     | 2024-25               |        |       |       | 189255 | 0      | 10432  | 10955 | 11502                               | 35607  |       |       |                             |       |       |       |   | 257751 |
| S     | 2025-26               |        |       |       |        | 198718 | 0      | 10954 | 11503                               | 12077  | 37387 |       |                             |       |       |       |   | 270639 |
| 9     | 2026-27               |        |       |       |        |        | 208654 | 0     | 11502                               | 12078  | 12681 | 39256 |                             |       |       |       |   | 284171 |
| 7     | 2027-28               |        |       |       |        |        |        | 21908 | 0                                   | 12077  | 12682 | 13315 | 41219                       |       |       |       |   | 298380 |
| 00    | 2028-29               |        |       |       |        |        |        |       | 230041                              | 0      | 12681 | 13316 | 13981                       | 43280 |       |       |   | 313299 |
| 6     | 2029-30               |        |       |       |        |        |        |       |                                     | 241543 | 0     | 13315 | 13982                       | 14680 | 45444 |       |   | 328964 |
| 10    | 10 2030-31            |        |       |       |        |        |        |       |                                     |        | 25362 | 0     | 13981                       | 14681 | 15414 | 47716 |   | 345412 |





# **CHECK LIST SERIAL NUMBER-18**

SCHEME FOR
COMPENSATORY AFFORESTATION SCHEME
OVER AN AREA OF 43.593HA IN NON-FOREST
LAND IDENTIFIED IN THE VILLAGE
RODASINGHA, JARPADA RANGE

UNDER
ANGUL TAHASIL
OF
DISTRICT ANGUL

IN

LIEU OF PROPOSED FOREST DIVERSION FOR 125.24
HA OF FOREST LAND COMING WITHIN SUBHADRA
OPEN CAST PROJECT

OF

M/S MCL, DIST-ANGUL

Plantation Model:

ANR mode@200 Plants/ha

**Prepared By** 

Divisional Forest Officer, Angul Division

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### **Land Suitability Certificate**

The requirement of suitable Non Forest land at par with the guidelines of MoEF & CC is a vital aspect for raising Compensatory Afforestation in lieu diversion of Forest land for Non forestry purpose of a project under FC Act, 1980.

In the instant case diversion of Forest land to the extent of 125.24ha is required for the project "Subhadra Open Cast Project of M/s MCL in the district of Angul. Accordingly required exercises were undertaken in the field by Forest and Revenue Staff jointly to select suitable Non forest land/ Govt degraded forest land for the purpose of Compensatory Afforestation for the said project. Finally One patch of Non forest lands over 43.593ha of Rodasingha Village was selected in Jarpada Range with suitability criteria to accommodate required no of balance seedlings under ANR Plantation @200Seedlings per ha. Criteria of suitability of the site meets relevant parameters such as management point of view, free from encroachment and encumbrances, not included in Section -4(1) notification, not under DLC status of forest, non allotment of the said areas for other projects etc as narrated against this site furnished in Annexure-I. Besides soil quality, soil depth, terrain, climatic conditions etc are suitable for planting indigenous promising species for sustained growth and establishment and over and above location of the site with respect to closeness to nearby forest block of Angul Division which will ensure proper supervision, monitoring of the plantation raised under Compensatory Afforestation Scheme. Plantations activities will be as done per the approved One-time Cost Norm of PCCF, Odisha and it is hoped to ensure proper greenery with improved environmental scenario after implementation of the said plantation.

Place:

Date:

Divisional Forest Officer, Angul Division

### Scheme

This scheme is for taking up Compensatory Afforestation is on identified Non forest land in Village Rodasingha of Jarpada Range under Angul Tahasil in the District of Angul in lieu of Proposed Forest Diversion or 125.24 ha of Forest land coming within Subhadra Open Cast Project of M/s MCL, Dist-Angul.

1. Introduction: The Subhadra Open Cast Mining Lease is over an area of 1111.85 ha. Out of which Forest land located in Mining lease is 125.24ha and Non forest area is 986.61ha as per the land schedule. The User Agency M/s MCL has filed forest Diversion Proposal Vide Proposal No FP/OR/MIN/150133/2021.

On application for providing Compensatory Afforestation Land, the Collector and District Magistrate, Angul has allotted 110.640ha of Non forest Revenue land and 40.255ha of Revenue Degraded Forest area spread over in 5 patches vide his letter no dated.

This scheme is meant for 43.593ha of Non forest land in village Rodasingha which has been jointly verified by the Revenue staff and Forest staff. The selected land schedule is coming under Jarpada Range of Angul Division (Annexure-I)

### Land Schedule:

| Land Sc      | hedule o    | of land jo | intly verifi                        | ed by Rever<br>Afforestat                |       | Forest Staff | s for Com                  | pensatory                                   |
|--------------|-------------|------------|-------------------------------------|--|-------|--------------|----------------------------|---|
| Village      | Khata<br>No | Plot No    | Total<br>Plot<br>Area in<br>Hectare | Area taken<br>for<br>plantation<br>in ha | Kisam | Remark       | Nearest<br>Forest<br>Block | Approximate distance from the proposed site |
| Jarpada Rang | e           |            |                                     |  |       |              |                            |   |
| Rodasingha   | 1           | 965(p)     | 47.328                              | 43.593                                   | Pahad | Nonforest    | Antulia<br>RF              | 1.1Km                                       |

### 2. DGPS Survey, Mapping & Authentication of CA Land.

As per the revised guidelines of Chief Executive, ORSAC, the User Agency has taken up DGPS Survey by empaneled vendors and the same has been authenticated by ORSAC vide his letter no ORSAC/DGPS-FD/1080/2022/3203(2) Dated 03/09/2022 and due endorsement has been furnished on DGPS surveyed Map. The DGPS Map, Corresponding Topo map (Survey of India map F45S13 1:50000 Scale) are enclosed to this Scheme. The KML File of the area is submitted in a CD. (Letter of Authentication by ORSAC at Annexure-II)

The Latitude / Longitude of Survey Points as per DGPS authenticated Map is furnished below.

| SL.NO | MAP ID | LONGITUDE       | LATITUDE        |
|-------|--------|-----------------|-----------------|
| 1     | 1      | 84°47'38.56044" | 20°50'58.27882" |
| 2     | 2      | 84°47'45.96267" | 20°51'04.30524" |
| 3     | 3      | 84°47'49.47755" | 20°51'05.49857" |
| 4     | 4      | 84°47'50.76632" | 20°51'05.62657" |
| 5     | 5      | 84°47'56.43343" | 20°51'06.85131" |
| 6     | 6      | 84°47'58.69145" | 20°51'07.35584" |
| 7     | 7      | 84°48'02.10718" | 20°51'08.79254" |
| 8     | 8      | 84°48'03.82578" | 20°51'07.73757" |
| 9     | 9      | 84°48'05.40427" | 20"51'06.92032" |
| 10    | 10     | 84°48'07.57509" | 20°51'06.61208" |
| 11    | 11     | 84°48'07.57480" | 20°51'05.36063" |
| 12    | 12     | 84°48'06.50053" | 20°51'05.61548" |
| 13    | 13     | 84°48'06.11460" | 20"51'04.22388" |
| 14    | 14     | 84°48'06.99089" | 20°51'03.49764" |
| 15    | 15     | 84°48'07.74009" | 20°51'02.84342" |
| 16    | 16     | 84°48'08.03588" | 20°51'02.66918" |
| 17    | 17     | 84°48'12.68952" | 20°50'58.94786" |
| 18    | 18     | 84°48'12.41951" | 20°50'58.29786" |
| 19    | 19     | 84°48'12.16729" | 20°50'57.46327" |
| 20    | 20     | 84°48'13.05342" | 20°50'54.45707" |
| 21    | 21     | 84°48'13.21090" | 20°50'52.69654" |
| 22    | 22     | 84°48'13.05684" | 20*50'50.50615" |
| 23    | 23     | 84°48'12.37877" | 20°50'50.59827" |
| 24    | 24     | 84°48'11.92629" | 20°50'50.49788" |
| 25    | 25     | 84°48'10.36471" | 20*50'48.11617" |

| 26 | 26 | 84°48'11.37875" | 20*50'47.58983" |
|----|----|-----------------|-----------------|
| 27 | 27 | 84°48'10.82224" | 20*50'47.61618" |
| 28 | 28 | 84°48'10.23004" | 20°50'46.56300" |
| 29 | 29 | 84°48'09.50348" | 20°50'46.57069" |
| 30 | 30 | 84°48'09.01145" | 20°50'45.35394" |
| 31 | 31 | 84°48'08.68225" | 20°50'45.44682" |
| 32 | 32 | 84°48'07.33603" | 20°50'44.62176" |
| 33 | 33 | 84°48'06.90095" | 20°50'44.75941" |
| 34 | 34 | 84°48'06.68087" | 20°50'44.48064" |
| 35 | 35 | 84°48'04.81440" | 20°50'44.63396" |
| 36 | 36 | 84°48'04.73543" | 20°50'44.52316" |
| 37 | 37 | 84°48'03.85652" | 20°50'44.65021" |
| 38 | 38 | 84°48'03.05932" | 20°50'44.91133" |
| 39 | 39 | 84°48'01.39932" | 20°50'45.28806" |
| 40 | 40 | 84°48'00.46728" | 20°50'45.32923" |
| 11 | 41 | 84°47'54.97166" | 20°50'48.85809" |
| 12 | 42 | 84°47'54.94869" | 20°50'49.54580" |
| 13 | 43 | 84°47'52.63176" | 20°50'51.94591" |
| 14 | 44 | 84°47'53.77539" | 20°50'53.36616" |
| 45 | 45 | 84°47'52.42084" | 20°50'55.03296" |
| 16 | 46 | 84*47'49.25887" | 20°50'54.50200" |
| 17 | 47 | 84°47'46.35009" | 20°50'54.25557" |
| 48 | 48 | 84°47'44.66754" | 20°50'54.15626" |
| 19 | 49 | 84°47'44.10524" | 20°50'54.04379" |

### 3. Topography & Soil:

The identified area in above village is having partly hilly and partly plain terrain. The soil is lateritic and gravelly but the soil depth is suitable for taking up plantation. Moreover, nearby forest blocks is ANTULIA RF. So for management point of view, the CA land selected here will be congenial and suitable indigenous species will be planted to ensure a successful plantation.

### 4. Climate

In Angul District, the wet season is oppressive and overcast whereas, the dry season is humid and mostly clear, and it is hot year-round. Over the course of the year, the temperature typically varies from 13.89°C to 40.55°C and is rarely below 11.11°C or above 44.44°C.

### 5. Rain fall:

The annual average rainfall is 1602 mm. The maximum rainfall is received during the rainy season and particularly in the month of August.

### 6. Present Vegetation:

The identified land bears dry deciduous mixed vegetation. Species like Sal, Asan, Karada, Kendu, Jamu, Mango, Bahada, Mahul etc are observed.

### 7. Items of work to be taken up

### Planting Model;

The land identified bears natural vegetations. This area has been taken to accommodat balance no. of seedlings required for the purpose of the extent of forest area to be diverted. Though this area contents good crop of different species it is required to execute various Silvicultural operations and by supplementing plantations of 200 nos of seedlings per ha with adequate protection measures. So as to ensure high density of vegetation. It will help maintaining a good forest cover adjacent to habitation. Considering the vegetation, terrain and soil of the area it is proposed to adopt a planting model of ANR Plantation is suggested.

**Spacing:** Since no uniform spacing can be adherd to here due to present crop density of different species the required no. of seedlings will be planted in available blanks.

### Choice of Species:

Considering the soil, topography and present vegetation observed in and around, it is proposed to Plant the following indegenous and pormising species on the identified land in suitable available blanks. Species proposed for planting are

- i) Acacia Catechew (Khair)
- ii) Bombax Ceiba ( Simili)
- iii) Emblica officinallis ( Anla)
- iv) Terminalia belerica (Bahada)
- v) Terminalia tomentosa (Asana)
- vi) Mangifera indica ( Aamba)
- vii) Pterocarpus marsupium (Bija)
- viii) Syzygium cumini (Jamu)

- ix) Azadia indica (Neem)
- x) Terminalia chebula(Harida)
- xi) Pongamia pinnata (Karanja) etc.

The detail of land schedule below is furnished in Tabular form

| Description of Site  | Area (in ha) | Total No of Seedlings required for planting | Remark         |
|--|--------------|---|----------------|
| Jarpada Range  |              |   |                |
| Compensatory Afforestation<br>Land Identified<br>(NFL)(Rodasingha) | 43.593       | 8719  | ANR<br>@200/ha |

### 8. Silvicultural Tending & Planting Technique to be adopted:

### i) Survey, Demarcation and Pillar Posting:

The identified area has been surveyed & pillars posted. It is to be checked and missing pillars if any to be reposted as per Latitude / Longitude provided in the DGPS Map authenticated.

### ii) Preparation of Treatment map (Digital map):

The Kml file of the area has been provided by the user agency after DGPS survey. The same will be updated with treatment design basing on physical position at the time of implementing the Plantation Scheme. The Range Officer will update the position with help of GIS cell of the Division as per requirement.

### iii) Site Preparation:

After demarcation of the area, site preparation mostly clearing of invasive weeds will be taken up at planting site to be identified by field staff.

### iv) Silvicultural Tending Operation:

The selected area is having considerable extent of Sal shoots of promising vigor of natural regeneration along with other species. It is proposed to take up Silvicultural cleaning over the area. The activities are intended to achieve healthy growth of existing natural seedlings / saplings / coppice shoots of favored species. The operations include

- Cutting back of high stumps with preference to living stumps and having a good coppicing power.
- Cutting of climbers those are of annual nature and uprooting them wherever possible.
- Singling out of multiple coppice shoots and retaining most promising ones.
- Pruning of whippy plants available within the area.
- Dead and dying trees if any to be cut and separated from the site.

The natural seedlings available in the treatment area are to be given appropriate attention to ensure its establishment.

### v) Digging of Pits (45cmx45cmx45cm):

It is proposed to dugout pits of size 45cmx45cmx45cm preferably in month of February / March. The dugout earth will be kept at pit head on both sides separately. The top soil will be kept on one side and bottom soil on another side. Soil within 30cm from ground level will be considered as top soil and rest as bottom soil. The pits will be left for weathering due to Sun & Rain.

### vi) Refilling of Pits& application of organic Compounds / CDM/ FYM:

The pits will be refilled by altering the dugout soil of the pits i.e., top soil on bottom of the pit and bottom soil on top. Application of organic Compounds / CDM/ FYM & mixing the same properly before refilling is suggested. This will provide necessary nutrients to the plant as well as help in retaining soil moisture for a longer period.

## vii) Transportation of Seedlings including short carriage & watering at Pit site.

In the approved cost norm, provisions have been made to plant 18month old seedlings. As seedlings will be above 1m height invariably, careful transportation of seedlings will be of paramount importance. In case of top breaking of seedlings, the benefit of 18month old seedlings will be reduced substantially. Transportation of seedlings from Nursery site to Planting site and then short carriage has to be taken up carefully. Wherever water is available, the plants are to be watered before short carriage to minimize the shock to plants during long carriage by tractors / vans etc.

### viii) Planting of Seedlings:

After application of FYM/ CDM/ Organic manure, seedling will be planted carefully. The standard planting procedure is to be followed. As the pit size is of 45cm x 45cm the following care will be taken during planting.

- Chemical fertilizer / insecticides to be applied as basal doze to be thoroughly mixed with soil.
- Seedlings collar zone will be at Ground Level or at best 2.5cm below the ground level. In no case it will not be more than 3cm below Ground Level.
- The Poly bags containing the seedlings are to be carefully removed. It is better to use a blade to cut open the bag so as to cause least disturbance to the ball of earth containing the seedlings.
- After planting the soil is to be compacted leaving 3" around the plant and the compact soil may be at Ground Level or 1" above the Ground level – allowance for soil settlement.
- In no case it should be a sunken around the plant.
- The planted plant should stand erect, if it is tilted due to speedy growth, a support with a stick collected locally to be provided.

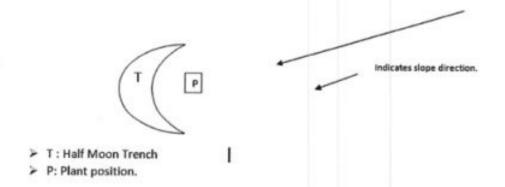
### ix) Casualty Replacement:

Casualty replacement is an important operation to achieve a 100% survival in a plantation. After planting there is possibility of casualty in planted seedlings. There is a provision to replace casualty up to 10% in 1<sup>st</sup> year and 10% in 2<sup>nd</sup> year operation in the approved cost norm. The same is to be carried out with good promising seedlings those can come up to a height of previous planted seedlings. During replacement in 2<sup>nd</sup> year application of fertilizers etc as in 1<sup>st</sup> year is to be followed.

### x) Weeding & application of Fertilizer:

Two Weeding around the planted seedlings at a diameter of 1.00m has been prescribed in the approved cost norm. During 2<sup>nd</sup> weeding deep soil working around the plants at 1.00m diameter has also been prescribed. 1<sup>st</sup> weeding will be taken up just after one month of planting and 2<sup>nd</sup> weeding and soil working in month of September / October. As there is occasional rainfall in October, providing half-moon

trench in sloppy terrain around each plant is suggested. A half-moon trench model is given below.



During weeding (1<sup>st</sup>& 2<sup>nd</sup>) there is a provision of application of fertilizer to plants. Application of NPK @30gms per plant x 2 times is suggested. In no case 2<sup>nd</sup> weeding can be delayed beyond 15<sup>th</sup> of October.

### xi) Fire line Tracing & Inspection Path:

There is possibility of grasses growing up within plantation area. It is better to allow local people / VSS to cut the grasses take for stall feeding under supervision of Forest Staff. In the present case where AR is under implementation Grass growth is limited. Due to fallen dry leaves (Due to leaf shedding), there is possibility of fire hazards in February / March. It is suggested to have fire line at a width of minimum 3m all around the planting area, maintain inter partitioned line / both sides of foot path as a Fire line (minimum 3m wide in 1<sup>st</sup> year and 2m in subsequent year). These lines will be maintained as inspection path also. It will be maintained till completion of 10<sup>th</sup> year.

### xii)Watch & Ward

Watch and ward is essentially required against biotic interferences like grazing and fire etc including grasses in first two years and illicit felling in subsequent years. Adequate provisions has been made in the approved cost norm. Watch & ward provisions will be implemented as per provision of cost norm.

### 9. Provision for watering:

The site selected contains partly hilly terrain. All total 8719 nos of seedlings will be planted in the site selected depending on extent of blank area available. Watering to be adhered to as per approved one time cost norm (Annexure-VI).

### 10.Funding Agency

The U/A will deposit required funds as per the approved cost of the scheme.

### 11. Implementing Agency

Divisional Forest Officer, Angul will execute the Compensatory Afforestation Scheme.

# Financial analysis and Cost involved.

|       | d                        | PERFORMA (Norm For 1.00ha) | PERFORMA (Norm For 1.00ha)              |
|-------|--------------------------|----------------------------|---|
| SI No | Component                | Unit                       | Base Rate for commencement year 2023-24 |
|       | ANR @200seedlings per ha | Hectare                    | 105986                                  |
|       | SMC                      | Hectare                    | 39284                                   |
|       | Entry point activity     |                            | 15% of [(1)+(2)]=21790/-                |

Divisional Forest Officer Angul Division

प्रकल्प अधिकारी Project Officer MCL, Subhadra Area एम्, मि. एल. सुभद्रा शंत्र

Matrix for Compensatory Afforestation Scheme for Plantation of ANR mode @200nos of Seedlings over an area 1ha-Year wise (Commencement Year 2023-24)

| Year                 | Financial   | ANR mode Plantation @ 200nos seedling per ha | Watering, Solar<br>Borewell fitted<br>with Drip system | SMC   | Fencing (Iron Angle<br>with Chain link wire<br>mesh (250mt per<br>hectare | Total  |
|----------------------|-------------|--|--|-------|---|--------|
| 0 <sup>th</sup> year | 2023-24     | 10364  | 180243   | 0     | 314886  | 505493 |
| 1st year             | 2024-25     | 24967  | 0  | 23401 | 0   | 48368  |
| 2 <sup>nd</sup> year | 2025-26     | 9730   | 9935   | 3684  | 13369   | 36718  |
| 3rd year             | 2026-27     | 8551   | 10433  | 3870  | 14040   | 36894  |
| 4th year             | 2027-28     | 6432   | 10954  | 4062  | 14741   | 36189  |
| 5 <sup>th</sup> year | 2028-29     | 6754   | 33911  | 4267  | 15478   | 60410  |
| 6th year             | 2029-30     | 7092   |  |       | 16251   | 23343  |
| 7th year             | 2030-31     | 7447   |  |       | 17065   | 24512  |
| 8th year             | 2031-32     | 7819   |  |       | 17918   | 25737  |
| 9th year             | 2032-33     | 8209   |  |       | 18813   | 27022  |
| 10th year            | 2033-34     | 8621   |  |       | 19755   | 28376  |
| GRANI                | GRAND TOTAL | 105986                                       | 245476   | 39284 | 462316  | 853062 |

प्रकल्प अधिकारी Project Officer MCL, Subhadra Area एम्. सि. एल. सुभद्रा क्षेत्र

> Divisional Forest Officer Angul, Division

|       |   | 2000   | secumes over all alea 43,393ma | Sild   |         |
|-------|---|--------|--------------------------------|--------|---------|
| No No | Component                                   | Norm   | Unit                           | Rate   | Total   |
|       | ANR mode Plantation<br>@200seedlings per ha | 105986 | На                             | 43.593 | 4620248 |
|       | SMC   | 39284  | На                             | 43.593 | 1712507 |
|       | Entry point activity                        |        | 15% (1+2)                      |        | 949913  |
|       | Total                                       |        |                                |        | 7282668 |

(Seventy Two Lakh Eighty Two Thousand Six Hundred Sixty Eight) Only

प्रकल्प अधिकारी Brel

Project Officer MCL, Subhadra Area ਪ੍ਰਮੂ, ਜਿ. एਯ. सुभद्रा अंत्र

Divisional Fordst Officer Angul, Division

# Calendar of Operation for Compensatory Afforestation Scheme for Plantation of 8719Nos of Seedlings over an

area 43.593ha-Year wise

| Year                 | Financial year | ANR Plantation @ 200nos<br>seedling per ha | SMC     | Entn   | Entry point activity<br>15% (1+2) |
|----------------------|----------------|--|---------|--------|-----------------------------------|
| 0" year              | 2023-24        | 451798                                     | 0       | 29     | 07770                             |
| year                 | 2024-25        | 1088386                                    | 1020120 | 316276 | 76                                |
| 2"d year             | 2025-26        | 424160                                     | 160597  | 87714  | 4                                 |
| 3'd year             | 2026-27        | 372764                                     | 168705  | 81220  |                                   |
| " year               | 2027-28        | 280390                                     | 177075  | 68620  |                                   |
| 5 <sup>th</sup> year | 2028-29        | 294427                                     | 186011  | 72066  |                                   |
| 6th year             | 2029-30        | 309162                                     | 0       | 46374  | T                                 |
| 7th year             | 2030-31        | 324637                                     | 0       | 48696  |                                   |
| 8th year             | 2031-32        | 340854                                     | 0       | 51128  |                                   |
| 9th year             | 2032-33        | 357855                                     | 0       | 53678  |                                   |
| 10" year             | 2033-34        | 375815                                     | 0       | 56372  |                                   |
| GRAN                 | GRAND TOTAL    | 4620248                                    | 1712507 | 949913 | _                                 |

प्रमहत्त्व अधिकारी Project Officer MCL, Subhadra Area ५२, सि. एल. सुभद्रा क्षत्र

> Sional Forest Officer Angul, Division

### Encl:

### A- Documents:

- The selected land schedule of Non forest land in Rodasingha Village coming under Jarpada Range of Angul Division attached as (Annexure-I).
- ORSAC, authorization letter vide his letter no ORSAC/DGPS-FD/1080/2022/3203(2) Dated 03/09/2022as (Annexure-II).
- Approved cost norm for one ha ANR Plantation @200 Plants per ha(Annexure-III)
- 4) Approved Cost norm & matrix for Chain link Fencing: (Annexure-IV)
- 5) Approved Cost norm Matrix for SMC (Model-C) is at (Annexure -V)
- Approved Cost Norm for Watering, Solar Borewell fitted with Drip System is at (Annexure-VI).

### B- Maps & Plates:

- I. Cadastral Map of CA land identified at Village Rodasingha(Plate-I)
- DGPS map of the CA land at Rodasingha Village(Authenticated by ORSAC)
   (Plate-II)
- III. Corresponding Topo map (1:50000 Scale) (Plate-III)
- IV. KML File in CD
- V. Forest Cover density map of CA land
- VI. Satellite map of CA land

Divisional Forest officer, Divisional Jorest Officer, Angul Division

|                       | GUIL                     | Area fin<br>HajFound Remarks<br>for  |     | 25.10.1980    |        | Or more having  |   |  |  |   |   |   |   |   |  |  |   | Autropados sp   | (R)                 |
|-----------------------|--------------------------|--------------------------------------|-----|---------------|--------|---|---|--|--|---|---|---|---|---|--|--|---|---|---------------------|
| N Isawan an           | Date-<br>Tahasil:-ANUGUL | Ho.                                  | is. | 43.593        | 43.593 | patches of 4 00 Ha  |   | nd encumbrances  |  |   |   |   | II Act, 2006.   |   |  | purements.   |   | forest growth fir   | WARASTRDAR          |
| IN PAYANTE OF MA MET. |                          | Plantation(in Ha.)<br>Block RDF Tota | 1 8 |               | TOTAL  | Certified that the above non-forest Soveriment land as mentioned in column 7, 8 & 9 is a compact patches of 4 00 Ha. Or more having |   | Cartified that the above Government and found suitable for plantation is free from encroachment and encumbrances | thors.   |   |   | Larea   | Certified that the above Government land is not settled in favour of individual/community under FII Act, 2006 |   | forest   | Certified that the above plots are unlited only for agriculture, but also tor other developmental requirements | trial use   | Certified that the above identified area contains sparse vegetation with density of 0.02 and scrubby forest growth fir for copercatory afforestation. | p orsates           |
| IN EAVOUR OF MO MEET. |                          | Kissaam Area (in Ha.)                | 9 . | Pahade 47,328 |        | d as mentioned in colun   | adequate soil depth suitable for plantation from management point of view | table for plantation is fr   | Certified that the above Government land is not covered under 4(1) notification. | ered under DIC  |   | Certified that the above Government land is not covered under any MAL/P.L. area | tled in favour of individ   | Certified that the status of the above piots was non forest as on 25 10 1990. | Cirtified that the above plots are rul covered under any proposed reverse forest | agriculture, but also for  | Certified that the above plots have no latture potential for agrarian or industrial use | irse vegetation with der  |                     |
| 2                     |                          | Plot No                              |     | entry Pate    |        | forest Government lan   | for plantation from ma  | riment land found suit   | soment and is not con  | Certified that the above Government and is not covered under DEC. | Certified that the above Government land is not alloted previously. | connect land is not can   | consent land is not set   | above piets was non   | abre est covered under   | are until not only for   | have no lature potent   | ofied area contains spa   | Forest Range Office |
|                       |                          | Khata No                             | -   | -             |        | the above non-t   | depth suitable  | the above Gove   | the above Gove   | the above Gove  | the above Gove  | the above Gove  | the above Gove  | the status of the   | the above plots  | he above plot  | the above plots   | the above ideo  | 7                   |
|                       | Ranger-                  | Nome of<br>Village                   |     | Rodeueghe     |        | Certified that t  | pos atenbape  | Certified that t   | Certified that t   | Certified that!   | Certified that t  | Certified that t  | Certified that t  | Certified that t  | Certified that t   | Certified that t   | Centilité d'One :   | Critified that a  | 0                   |



# ODISHA SPACE APPLICATIONS CENTRE (ORSAC) Annexure-1

Department of Science & Technology, Govt. of Odisha

ORSAC/DGPS-FD/1080/2022/ 32032 dt. 3.9 22

To

The D.F.O. Augul Division. Angul

Verification of DGPS Survey of Compensatory Afforestation non-forest land in Jamugaria, Kanja, Nukhuripada, Rodasingha, villages and degraded revenue forest land in Baghuapat villagein Angul Tahsil in lieu of forest areas proposed for diversion for Subhadra OCP, Subhadra Area of MCL in Angul District.

Your letter no. 5950 dated 19.08.2022

Sir

With reference to the subject mentioned above, this is to inform you that, the maps and data forwarded to ORSAC by your office for verification of the DGPS survey of Compensatory Afforestation non-forest land in Jamugaria, Kanja, Nukhuripada, Rodasingha villages and degraded revenue forest land in Baghuaput village in Angul Tahsil in lieu of forest areas proposed for diversion for Subhadra OCP, Subhadra Area of MCL in Angul District has been verified by ORSAC and is certified that the map is correct at a confidence level of 95%. All the Compensatory Afforestation non-forest land comes in Jamugaria, Kanja, Nukhuripada, and Rodasingha villages and degraded revenue forest land in Baghuapat village in Angul Tahsil in Angul district. Total Compensatory Afforestation land works out to 150,954Ha. includes 40.249Ha. degraded Revenue forest and 110.705Ha. non-forest land from the submitted shp files, against the required area of 150.895Ha. (40.255Ha. degraded Revenue forest and 110.640Hs. non-forest land) as mentioned in the submitted record. Detail Patch/village/plot wise comparative statistics of Compensatory Afforestation area is attached herewith.

Yours faithfully.

Encl; 6 hard copy maps

M. K. SANABADA SCIENTIST - 'D'

PA19122

Copy to: The General Manager (Subhadra Area), MCL, Subhadra Area, Near Biju Maidan. Angul-759122. Odisha for information.

STATISTICS OF COMPENSATORY AFFORESTATION LAND IDENTIFIED IN VILLAGE
JAMUGARIA, KANJA, NUKHURIPADA, RODASINGHA ALONG WITH DEGRADED REVENUE
FOREST LAND IN VILLAGE BAGHUAPAT UNDER ANGUL TAHASIL IN LIEU OF FOREST AREAS
PROPOSED FOR DIVERSION FOR SUBHADRA OCP, SUBHADRA AREA OF MCL, ANGUL
DISTRICT

| SL NO. | VILLAGE NAME    | PLOT NO.    | KISAM           | ALLOTED AREA HA. | MAP AREA HA |
|--------|-----------------|-------------|-----------------|------------------|-------------|
| 1      | BAGHUAPAT *     | 251(P)      | CHHOTA JUNGLE   | 15.393           | 15,081      |
| 2      | BAGHUAPAT -     | 298(P)      | CHHOTA JUNGLE   | 15.212           | 15:243      |
| 3      | BAGHUAPAT       | 283(P)      | CHHOTA JUNGLE   | 6.029            | 6.035       |
| 4      | BAGHUAPAT       | 284(P)      | CHHOTA JUNGLE   | 3.621            | 3.890       |
| A      | L TOTAL DEGRADE | D REVENUE   | FOREST LAND     | 40.255           | 40,249      |
| 5      | JAMUGARIA       | 1107(p)     | PURATANA PATITA | 7.923            | 7.924       |
| 6      | SAMUGARIA       | 1117(p)     | PURATANA PATITA | 21.643           | 21.854      |
| 7      | JAMUGARIA       | 1089(p)     | PURATANA PATITA | 5.127            | 5.259       |
| 8      | KANIA           | 1657        | PURATANA PATITA | 1.752            | 1.780       |
| 9      | KANJA           | 1656(P)     | PURATANA PATITA | 7.893            | 7.691       |
| 10     | KANIA           | 1648/1(P)   | PURATANA PATITA | 3,583            | 3.635       |
| 11     | NUKHURIPADA     | 8(P)        | PURATANA PATITA | 19.126           | 19,129      |
| 12     | RORASINGHA      | 965(P)      | PAHADA          | 43.593           | 43,433      |
|        | B. TOTAL N      | ON-FOREST I | AND             | 110.640          | 110.705     |
|        | TOTAL CAL       | AND AREA    | (A+B)           | 150.895          | 150.954     |

Shri M. K. Sanabada Scientist, ORSAC Bhubaneswa

|            | Wage Rate Rs.311   | /-per Manda                          | y                 |                         |                           |                       |
|------------|--|--------------------------------------|-------------------|-------------------------|---------------------------|-----------------------|
| SI.<br>No. | Items of work  | Preferable<br>Period of<br>Execution | No. of<br>Mandays | Labour<br>Cost<br>(Rs.) | Material<br>Cost<br>(Rs.) | Tota<br>Cost<br>(Rs.) |
|            | 0th Year (Adva   | ince Work)                           |                   |                         |                           |                       |
| 1          | Survey, Demarcation and Pilar posting  | Nov/Dec                              | 2                 | 622                     | 0                         | 652                   |
| 2          | Preparation of Treatment Map (Digital Map)   | Nov/Dec                              | 1                 | 311                     | 100                       | 411                   |
| 3          | Site preparation   | Nov/Dec                              | 2                 | 622                     | 0                         | 622                   |
| 4          | Silvicultural operations including clearance of weed, cutting of climber, High stump cutting, singling of shoots & removal of cut out after drying from the field to the blank space.  | Jan/Feb                              | 15                | 4665                    | 0                         | 4665                  |
| 5          | Alignment and stacking for digging of pits   | Feb/Mar                              | 0.5               | 156                     |                           | 156                   |
| 6          | Digging of pits (45cm x 45cm x 45cm) /50cm diameter augur hole in hard &gravelly soil  | Feb/Mar                              | 8                 | 2488                    | 0                         | 2488                  |
|            | Total  |                                      | 28.5              | 8863,5                  | 100                       | 8963.                 |
|            | Ist Year Plan  | ting Year                            |                   |                         | 200                       | 0,500,                |
| 1          | Refilling of pits by altering the dugout soil of the pits, application of organic compounds/ CDM/ FYM & mixing the same properly.  | June/Jul                             | 1.5               | 466.5                   | 1000                      | 1467                  |
| 2          | Transportation of 18 months old polypot seedlings in hired truck/ tractor from the Permanent/ Mega nursery to planting site including loading & unloading. (Average lead of 10 Rkm) & stacking the seedling @ Rs.6/- per seedling. (220 nos.)  | Jul/Aug                              | 0                 | 0                       | 1320                      | 1320                  |
| 3          | Watering polypot seedling at stacking site of plantation   | Jul/Aug                              | 0.5               | 155.5                   | 0                         | 156                   |
| 4          | Conveyance of polypot seedlings on head load from<br>the stacking site to individual dugout pits with in the<br>planning site, applying insecticide, fertilizers &<br>planting after scooping the soil with other applied<br>materials and pressing the soil properly around the<br>planted seedlings. | Jul/Aug                              | 4.5               | 1399.5                  | 0                         | 1400                  |
| 5          | Cost of Fertilizers & Insecticide  (a)NPK/ Bio-fertilizers @50gm/plant as basal dose =10kg @ Rs. 30/-per kg = Rs. 300.0  (b) Urea / Vermicompost/ Mo khata / any other fertilizers @Rs.150.0  (c)Insecticide/ Bio-pesticide @5gms/ plant= 1kg@ Rs.150/-per kg= Rs.150/-                                | Jul/Aug                              | 0                 | 0                       | 600                       | 600                   |

| 6  | Casualty Replacement @ 10% (20 nos.)   | Jul/Aug   | 0.5  | 156    | 0    | 156    |
|----|--|-----------|------|--------|------|--------|
| 7  | 1st Weeding & Manuring   | Aug/ Sept | 2    | 622    | 0    | 622    |
| 8  | 2nd Weeding, Soil working (1mt. Diameter around the plants) & Manuring   | Oct/Nov   | 3    | 933    | 0    | 933    |
| 9  | Fire line tracing & Inspection path  | Feb/Mar   | 3    | 933    | 0    | 933    |
| 10 | Watch & Ward including watering as per requirement   | Aug-Mar   | 8    | 2488   | 0    | 2488   |
|    | Total  |           | 23   | 7153   | 2920 | 10073  |
|    | 2nd Year Ma  | intenance |      |        |      | 1 2000 |
| 1  | Transportation of 20 seedlings from Nursery to plantation site including loading, unloading & conveyance by tractor @Rs.6/-per seedling  | Jul       | 0    | 0      | 120  | 120    |
| 2  | Casualty Replacement   | Jul       | 0.5  | 155.5  | 0    | 155.5  |
| 3  | Cost of Fertilizers & Insecticide A) Cost of Insecticide/ Bio-pesticide (Themet/Forate) @ 5gms/plant = 0.1kg@ Rs.150/- per kg =Rs.15/- B) Urea /NPK/Bio-fertilizers/ Vermicompost/ Mokhata / any other fertilizers =Rs.560/- | Jul       | 0    | 0      | 575  | 575    |
| 4  | Weeding (Complete weeding), Manuring & Soil<br>working, (1mt. Diameter around the plants   | Sept/Oct  | 4    | 1244   | 0    | 1244   |
| 5  | Fire line tracing (2m. Wide fire line over 400m long)<br>& Inspection Path   | Feb/Mar   | 3    | 933    | 0    | 933    |
| 6  | Watch & Ward including watering as per requirement   | Apr/Mar   | 12   | 3732   | 0    | 3732   |
|    | Total  |           | 19.5 | 6064.5 | 695  | 6759.5 |
|    | 3rd year Mai   | ntenance  | 1710 | 000410 | 093  | 0/3943 |
| 1  | Cost of Fertilizer Urea/ NPK/ Bio-fertilizer/ Vermicompost/ Mokhata/ Any other fertilizers = Rs.560/-  | Sept/Oct  | 0    | 0      | 560  | 560    |
| 2  | Weeding (Complete weeding), Manuring & Soil<br>working, (1mt. Diameter around the plants   | Aug/ Sept | 4    | 1244   | 0    | 1244   |
| 3  | Fire line tracing (2m. Wide fire line over 400m long) & Inspection Path  | Feb/Mar   | 3    | 933    | 0    | 933    |
| 4  | Watch & Ward including watering as per requirement   | Apr/Mar   | 12   | 3732   | 0    | 3732   |
|    | Total  |           | 19   | 5909   | 560  | 6469   |
|    | 4th Year Mai   | ntenance  |      | -      | 200  | 0403   |
| 1  | Fire Line tracing (2 m. wide fire line over 400 m long) & Inspection path  | Feb/Mar   | 3    | 933    | 0    | 933    |
| 2  | Watch & Ward including watering as per requirement   | Apr/Mar   | 12   | 3732   | 0    | 3732   |

|   | Total  |            | 15 | 4665 | 0 | 4665 |
|---|--|------------|----|------|---|------|
|   | 5th Year Mai   | intenance  |    |      |   |      |
| 1 | Fire Line tracing (2 m. wide fire line over 400 m long) & Inspection path    | Feb/Mar    | 3  | 933  | 0 | 933  |
| 2 | Watch & Ward including watering as per requirement                           | Apr/Mar    | 12 | 3732 | 0 | 3732 |
|   | Total  |            | 15 | 4665 | 0 | 4665 |
|   | 6th Year Mai   | intenance  |    |      |   | -02  |
| 1 | Fire Line tracing (2 m. wide fire line over 400 m long)<br>& Inspection path | Feb/Mar    | 3  | 933  | 0 | 933  |
| 2 | Watch & Ward including watering as per requirement                           | Apr/Mar    | 12 | 3732 | 0 | 3732 |
|   | Total  |            | 15 | 4665 | 0 | 4665 |
|   | 7th Year Mai   | ntenance   |    |      |   |      |
| 1 | Fire Line tracing (2 m. wide fire line over 400 m long)<br>& Inspection path | Feb/Mar    | 3  | 933  | 0 | 933  |
| 2 | Watch & Ward including watering as per requirement                           | Apr/Mar    | 12 | 3732 | 0 | 373  |
|   | Total  |            | 15 | 4665 | 0 | 4665 |
|   | 8th Year Mai   | ntenance   |    |      |   |      |
| 1 | Fire Line tracing (2 m. wide fire line over 400 m long)<br>& Inspection path | Feb/Mar    | 3  | 933  | 0 | 933  |
| 2 | Watch & Ward including watering as per requirement                           | Apr/Mar    | 12 | 3732 | 0 | 3732 |
|   | Total  |            | 15 | 4665 | 0 | 4665 |
|   | 9th Year Mai   | ntenance   |    |      |   | (14) |
| 1 | Fire Line tracing (2 m. wide fire line over 400 m long)<br>& Inspection path | Feb/Mar    | 3  | 933  | 0 | 933  |
| 2 | Watch & Ward including watering as per requirement                           | Apr/Mar    | 12 | 3732 | 0 | 3732 |
|   | Total  |            | 15 | 4665 | 0 | 4665 |
|   | 10th Year Ma   | intenance  |    |      |   |      |
| 1 | Fire Line tracing (2 m. wide fire line over 400 m long)<br>& Inspection path | Feb/Mar    | 3  | 933  | 0 | 933  |
| 2 | Watch & Ward including watering as per requirement                           | Apr/Mar    | 12 | 3732 | 0 | 3732 |
|   | Total  | V33 14 (1) | 15 | 4665 | 0 | 4665 |

| Sl.<br>No. | Year      | No.<br>Person<br>days | Labour<br>cost @<br>Rs.326/-<br>per day<br>(RS) | Material<br>Cost<br>(Rs.) | MELD &<br>Other<br>Contingency | Seedling<br>Cost@Rs.50.31<br>per seedling | Total cost (Rs.) |
|------------|-----------|-----------------------|---|---------------------------|--------------------------------|---|------------------|
| 1          | 0th Year  | 28.5                  | 8863.5  | 100                       | 436.50                         | 0   | 9400             |
| 2          | 1st Year  | 23                    | 7153  | 2920                      | 427                            | 11068                                     | 21568            |
| 3          | 2nd Year  | 19.5                  | 6064.5  | 695                       | 240.50                         | 1006                                      | 8006             |
| 4          | 3rd Year  | 19                    | 5909  | 560                       | 231                            | 0   | 6700             |
| 5          | 4th Year  | 15                    | 4665  | 0                         | 135                            | 0   | 4800             |
| 6          | 5th Year  | 15                    | 4665  | 0                         | 135                            | 0   | 4800             |
| 7          | 6th Year  | 15                    | 4665  | 0                         | 135                            | 0   | 4800             |
| 8          | 7th Year  | 15                    | 4665  | 0                         | 135                            | 0   | 4800             |
| 9          | 8th Year  | 15                    | 4665  | 0                         | 135                            | 0   | 4800             |
| 10         | 9th Year  | 15                    | 4665  | 0                         | 135                            | 0   | 4800             |
| 11         | 10th Year | 15                    | 4665  | 0                         | 135                            | 0   | 4800             |
|            | Total     | 195                   | 60645   | 4275                      | 2280                           | 12074                                     | 79274            |

<sup>\*</sup>This Cost Norm is applicable for the scheme as per Office Order No. 1109/9F (Misc.) 387/2021 Dt. 08.11.2021 of PCCF & HoFF, Odisha.

### Annexure-IV

| SI<br>no | Item of work  | Preferable<br>period of<br>Execution | Man<br>days | Wages@311/- | Material<br>cost (Rs) | Total Cos<br>(Rs per<br>ha) |
|----------|---|--------------------------------------|-------------|-------------|-----------------------|-----------------------------|
|          | Oth Y   | ear (PPO)                            | -           |             |                       |                             |
| 1        | Earth work (excavation of hole) in Hard soil at a distance of 3mt 040m x 0.40m x 0.40m = 0.064X 84=5.376cum @Rs 140/cum = Rs 753/-        |                                      | 2.42        | 752.62      | 0                     | 752.62                      |
| 2        | Cement concrete (1:4:8) using 40mm BHG Metal<br>84x0.40mx0.40mx0.10m=1.344@3755.94/cum  |                                      | 0           | 0           | 5047.4                | 5047.4                      |
| 3        | Angle iron pole of size 50mm x 50mm x 6mm of<br>height 2.40nt 84x 2.40=201.60sqmt<br>@4.50/kg/sqmt=907.20kg@69.50per kg                   |                                      |             | 0           | 63050                 | 63050                       |
| 4        | Cement concrete (1:2:4) for fixing the iron angle pole using 12 mm BHG Chips<br>84x0.40mx0.40mx0.30m=4.032cum@5486.77/cum                 |                                      |             | 0           | 22123                 | 22123                       |
| 5        | Cost of chain link mess using 4mm Dia GI wire having gap size 50mm x 50mm 250Rmt x 2.10mt=525sqmt@331/sqmt= Rs 173775                     |                                      |             | 0           | 173775                | 173775                      |
| 5        | Double cost painting of iron angel pole over a coat of printer using good quality enamale paint 84X 2.10X 0.20= 35.28sqmt@Rs 108.80/sqmt. |                                      |             | 0           | 3838                  | 3838                        |
| 7        | Painting of GI Chain Ink mess 250X 2.10X2= 1050/10=105Sqmt@Rs 108.80sqmt.   |                                      |             | 0           | 11424                 | 11424                       |
| В        | Transportation of chain link mess, Iron angle straighening and tieing of chain link mess etc @2% of the total cost                        |                                      |             | 0           | 5600                  | 5600                        |
|          |   |                                      | 2.42        | 752.62      | 284857.4              | 285610                      |
|          | 1st year  | Maintenance                          |             |             |                       |                             |
| 9        | No maintenance required   | Sep/Oct                              | 0           | 0           | 0                     | 0                           |
|          | 2nd year  | maintenance                          |             |             |                       |                             |
| 10       | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%=11.42 say 11  | Sep/Oct                              | 0           | 0           | 11000                 | 11000                       |

| 11  |  | maintenan   |      | To     | 44000    | 44800    |
|-----|--|-------------|------|--------|----------|----------|
| 11  | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%=11.42 say 11 | Sep/Oct     | 0    | 0      | 11000    | 11000    |
|     | 4th year   | maintenan   | e    |        |          |          |
| 12  | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%=11.42 say 11 | Sep/Oct     | 0    | 0      | 11000    | 11000    |
|     | 5th year   | maintenand  | e    |        |          |          |
| 13  | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%=11.42 say 11 | Sep/Oct     | 0    | 0      | 11000    | 11000    |
|     | 6th year   | maintenand  | e    |        |          |          |
| 14  | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%=11.42 say 11 | Sep/Oct     | 0    | 0      | 11000    | 11000    |
|     | 7th year   | maintenand  | e    |        |          |          |
| 15  | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%=11.42 say 11 | Sep/Oct     | 0    | 0      | 11000    | 11000    |
| 100 | 8th year   | maintenand  | e    |        |          | -        |
| 16  | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%=11.42 say 11 | Sep/Oct     | 0    | 0      | 11000    | 11000    |
|     | 9th year   | maintenanc  | e    | -      |          | -        |
| 17  | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%=11.42 say 11 | Sep/Oct     | 0    | 0      | 11000    | 11000    |
|     | 10th year  | r maintenan | ce   |        |          |          |
| 18  | Maintenance of wire mess @ 1% per running mt cost of installation in 1st year 1142X1%=11.42 say 11 | Sep/Oct     | 0    | 0      | 11000    | 11000    |
|     | Total  |             | 2.42 | 752.62 | 383857.4 | 384610.0 |

| SI no | Year      | No of<br>Person<br>days | Labour cost @311/-<br>per day | Material<br>cost | Total cost |
|-------|-----------|-------------------------|-------------------------------|------------------|------------|
| 1     | Oth year  | 2.42                    | 752.62                        | 284857.4         | 285610.02  |
| 2     | 1st year  | 0                       | 0                             | 0                | 0          |
| 3     | 2nd year  | 0                       | 0                             | 11000            | 11000      |
| 4     | 3rd year  | 0                       | 0                             | 11000            | 11000      |
| 5     | 4th year  | 0                       | 0                             | 11000            | 11000      |
| 6     | 5th year  | 0                       | 0                             | 11000            | 11000      |
| 7     | 6th year  | 0                       | 0                             | 11000            | 11000      |
| 8     | 7th year  | 0                       | 0                             | 11000            | 11000      |
| 9     | 8th year  | 0                       | 0                             | 11000            | 11000      |
| 10    | 9th year  | 0                       | 0                             | 11000            | 11000      |
| 11    | 10th year | 0                       | 0                             | 11000            | 11000      |
|       | Total     | 2.42                    | 752.62                        | 383857.4         | 384610     |

| Total<br>Cost (in | Rupees)   | 419331  | 440299  | 462316  | 485432  | \$00,605 | 535191  | 561951  | 690065  | 619552  | 650531  |
|-------------------|-----------|---------|---------|---------|---------|----------|---------|---------|---------|---------|---------|
| ĕ                 |           |         |         |         |         |          |         |         |         |         | 27798   |
| ×                 |           |         |         |         |         |          |         |         |         | 26474   | 26473   |
| XX                |           |         |         |         |         |          |         |         | 25213   | 25212   | 25213   |
| XVIII             |           |         |         |         |         |          |         | 24012   | 24011   | 24012   | 24012   |
| ×                 |           |         |         |         |         |          | 22869   | 22868   | 22869   | 22869   | 22368   |
| *                 |           |         |         |         |         | 21780    | 21779   | 21780   | 21780   | 21779   | 21780   |
| Š                 |           |         |         |         | 20743   | 20742    | 20743   | 20743   | 20742   | 20743   | 20743   |
| III.              |           |         |         | 19755   | 19754   | 19755    | 19755   | 19754   | 19755   | 19755   | 19756   |
| 菜                 |           | 419331  | 18814   | 18813   | 18814   | 18814    | 18813   | 18814   | 18814   | 18815   | 18812   |
| ×                 | 11000     | 17918   | 17917   | 17918   | 17918   | 17917    | 17918   | 17918   | 17919   | 17916   | 0       |
| ×                 | 11000     | 17064   | 17065   | 17065   | 17064   | 17065    | 17065   | 17066   | 17063   | 0       | 443076  |
| ĸ                 | 11000     | 16252   | 16252   | 16251   | 16252   | 16252    | 16253   | 16250   | 0       | 421977  | T       |
| ₽                 | 11000     | 15478   | 15477   | 15478   | 15478   | 15479    | 15476   | 0       | 401883  |         | Ī       |
| Ē                 | 11000     | 14740   | 14741   | 14741   | 14742   | 14739    | 0       | 382746  |         |         | Ī       |
| 5                 | 11000     | 14039   | 14039   | 14040   | 14037   | 0        | 364520  |         |         |         | T       |
| >                 | 11000     | 13378   | 13871   | 13369   | 0       | 347162   |         |         | T       |         | T       |
| 2                 | 11000     | 12734   | 12732   | 0       | 330630  |          |         |         |         |         | T       |
| =                 | 11000     | 12126   | 0       | 314886  |         |          |         |         | П       |         | T       |
|                   | 0         | 0       | 299891  |         |         | T        |         | T       | T       |         | T       |
| _                 | 285610    | 285610  | T       |         |         | T        |         |         | T       |         |         |
| Commencement      | mo        | 2021-22 | 2022-23 | 2023-24 | 2014.25 | 3025-26  | 2016-27 | 2017-28 | 2028-29 | 2029-30 | 2030-31 |
| R 8               | Base Norm | +1      | 14      | m       | -       | un.      | 10      | -       | 00      | 0       | 10      |

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### Annexure-V

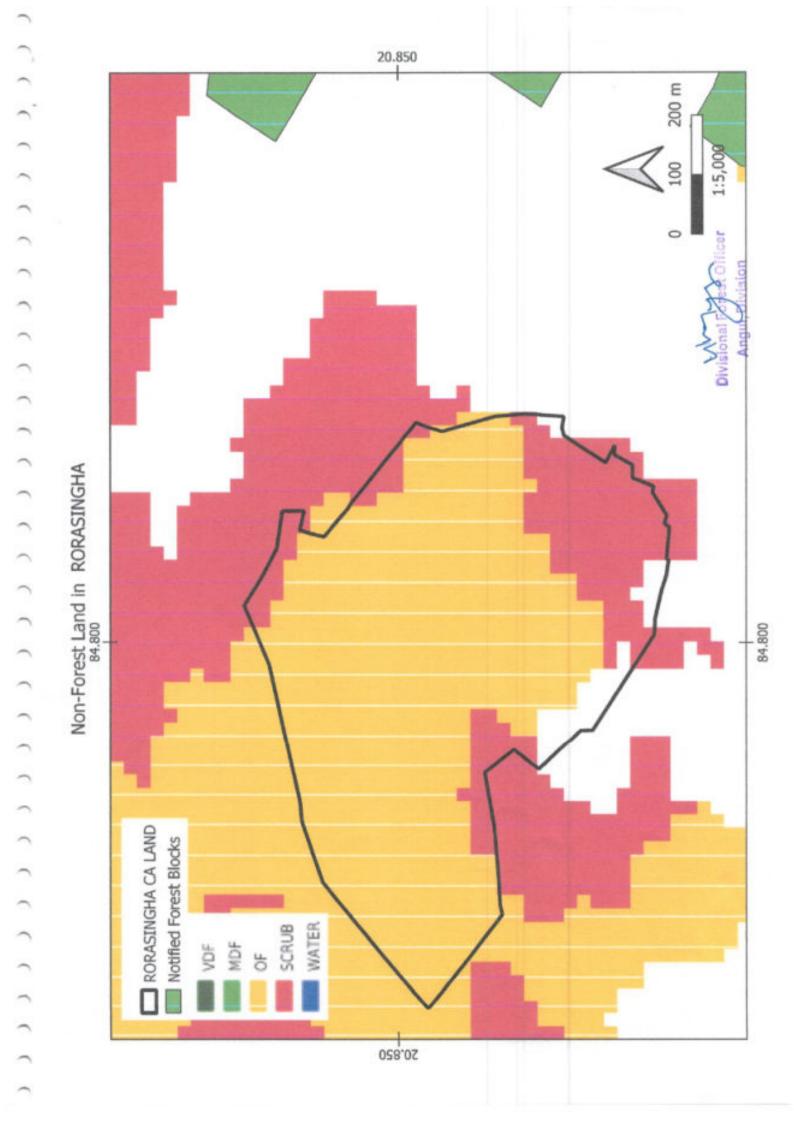
|           | WAG  | E RATE RS- 31 | 1/- PER DAY         |        |
|-----------|--|---------------|---------------------|--------|
| SI.<br>No | Item of Works  |               | Period of Execution | Total  |
| Oth Y     | ear (Pre-Planting Operation)   |               |                     | Cost   |
| 1         | Nil  |               |                     |        |
|           |  |               |                     | 0      |
|           | 1st Year   |               |                     |        |
| 2         | Soil Conservation measure structures like<br>Staggered Trench, Percolation pit, Contour<br>trench, Graded earthen bund, LBCD Wire<br>mesh LBCD, Sub surface Dyke & WHS as per<br>the slop & site requirement on LS | Apr/sep       |                     | 20.215 |
|           | 2 <sup>nd</sup> Year   |               |                     |        |
| 3         | Maintenance of SMC structures @ 15 % of initial year cost  | Apr/jul       |                     | 3,032  |
|           | 3 <sup>rd</sup> Year   |               |                     |        |
|           | Maintenance of SMC structures @ 15 % of initial year cost  | Apr/jul       |                     | 3,032  |
|           | 4th Year   |               |                     |        |
|           | Maintenance of SMC structure @ 15 % of initial year cost   | Apr/jul       |                     | 3,032  |
|           | 5 <sup>th</sup> Year   |               |                     |        |
|           | Maintenance of SMC structure @ 15 % of initial year cost   | Apr/jul       |                     | 3,032  |

|                  | XIII XIV XV XVI Cost |           | 35633   | 37415   | 39284   | 41248   | 43310   | 45475   | 47749     | 1 5445 50136 | 5 5443 5717 52642 |  |
|------------------|----------------------|-----------|---------|---------|---------|---------|---------|---------|-----------|--------------|-------------------|--|
|                  | ×                    |           |         |         |         |         |         | 4939    | 4937 5186 | 4939 5184    | 4936 5186         |  |
|                  | ×                    |           |         |         |         |         | 4704    | 4702 49 | 4704 49   | 4701 49      | 31360 49          |  |
|                  | ×                    |           |         |         |         | 4480    | 4478    | 4480    | 4477      | 29867        |                   |  |
| r (SMC)          | =                    |           |         |         | 4267    | 4265    | 4267    | 4264    | 28445     |              |                   |  |
| Matrix for (SMC) | 5                    |           |         | 4064    | 4062    | 4064    | 4061    | 27090   |           |              |                   |  |
|                  | 5                    | 3032      | 3870    | 3869    | 3870    | 3868    | 25800   |         |           |              |                   |  |
|                  | >                    | 3032      | 3685    | 3686    | 3684    | 24571   |         |         |           |              |                   |  |
|                  | 2                    | 3032      | 3510    | 3509    | 23401   |         |         |         |           |              |                   |  |
|                  | =                    | 3032      | 3342    | 22287   |         |         |         |         |           |              |                   |  |
|                  | =                    | 20215     | 21226   |         |         |         |         |         |           |              |                   |  |
|                  | -                    | 0         | 0       |         |         |         |         |         |           |              |                   |  |
|                  | Commencement<br>Year | Base Norm | 2021-22 | 2022-23 | 2023-24 | 2024-25 | 2025-26 | 2026-27 | 2027-28   | 2028-29      | 2029-30           | TO SECTION OF THE PERSON OF TH |
|                  | No Si                |           |         | 2       | m       | 4       | S       | 9       | 7         | 00           | 6                 | -  |

|     | Annexure-VI  |                         |              |
|-----|--|-------------------------|--------------|
|     | WATERING MODEL-W -I  |                         |              |
|     | Watering provision to CA Plantation  |                         |              |
| Sol | ar System with Bore well (1 system for 5 Ha Plantation) fitting w  | vith Drip system . Wage | rate@ Rs 311 |
|     | Year of installation (0 <sup>th</sup> YEAR   | ()                      | 110 011      |
| 1   | Cost of Borewell   | 7                       | 1,50,000     |
| 2   | Installation of Solar panel &other System  |                         | 3,00,000     |
| 3   | Cost of 0.5 HP submersable motor with accessories  |                         | 50,000       |
| 4   | Water Storage Tank/ Flexible pipes   |                         | 15,000       |
| 5   | Cost of laying Drip system including all accessories, fittings etc.  | , with 12% GST          | 3,02,431     |
|     |  | TOTAL                   | 8,17,431     |
| 6   | Cost of Water & watering per Ha. (8,17,431/5) =Rs1,63,486/-  |                         | 1,63,486     |
|     | 1 <sup>st</sup> Year Watering  |                         | 1            |
| 7   | No maintenance required  |                         | 0            |
|     |  | TOTAL                   | 0            |
|     | 2 <sup>nd</sup> Year Watering  | TOTAL                   | -            |
| 8   | Maintenance of system @5% of Initial cost of installation  |                         | 8,174        |
|     |  | TOTAL                   | 8,174        |
|     | 3 <sup>rd</sup> Year Watering  |                         | 1            |
| 9   | Maintenance of system @ 5% of initial cost of installation   |                         | 8,174        |
|     |  | TOTAL                   | 8,174        |
|     | 4 <sup>th</sup> Year Watering  | TOTAL                   | 0,1/4        |
| 10  | Maintenance of system @ 5%of initial cost of installation  |                         | 8,174        |
|     | , and a second s | TOTAL                   | 8,174        |
|     | 5 <sup>th</sup> Year Watering  | TOTAL                   | 0,174        |
| 11  | Maintenance of system @ 5% of initial cost of installation   |                         | 8,174        |
|     | , and the second | TOTAL                   | 8,174        |
|     |  | TOTAL                   | 0,274        |

|           |                      | Abstract              |  |                  |                    |
|-----------|----------------------|-----------------------|--|------------------|--------------------|
| SI.<br>no | Year                 | No.<br>person<br>days | Labour<br>Cost @ Rs<br>311/-per<br>day | Material<br>Cost | Total cost<br>(Rs) |
| 1         | 0 <sup>th</sup> year | 0                     | 0.0                                    | 163486.0         | 163486.0           |
| 3         | 1 <sup>st</sup> year | 0                     | 0.0                                    | 0.0              | 0.0                |
| 3         | 2 <sup>nd</sup> year | 0                     | 0.0                                    | 8174.0           | 8174.0             |
| 4         | 3 <sup>rd</sup> year | 0                     | 0.0                                    | 8174.0           | 8174.0             |
| 5         | 4 <sup>th</sup> year | 0                     | 0.0                                    | 8174.0           | 8174.0             |
| 6         | 5 <sup>th</sup> year | 0                     | 0.0                                    | 8174.0           | 8174.0             |
|           | Total:               | 0                     | 0                                      | 196182           | 1,96,182           |

| 1   | -                     |        |       |       |        |        | 0      | Solar S | O CALCIII | 1000   |       | - chore | Matrix for Watering W. (Solar boleweil) litted with Dilp System (per na) |       |     |          |             |        |
|-----|-----------------------|--------|-------|-------|--------|--------|--------|---------|-----------|--------|-------|---------|--|-------|-----|----------|-------------|--------|
| No. | Commencem<br>ent year | -      | =     | =     | 2      | >      | 5      | 5       | NIII      | ×      | ×     | ×       | EX.  |       | EX. | XIII XIV | -           | NX XIX |
|     | Base Norm             | 163486 | 0     | 8174  | 8174   | 8174   | 8174   |         |           |        |       |         |  |       |     |          |             |        |
| 1   | 2021-22               | 163486 | o     | 1106  | 9463   | 9935   | 30758  |         |           |        |       |         |  |       |     |          |             |        |
| 2   | 2022-23               |        | 17166 | 0     | 29862  | 9936   | 10432  | 32296   |           |        |       |         |  |       |     |          |             |        |
| m   | 2023-24               |        |       | 18024 | 0      | 9935   | 10433  | 10954   | 33911     |        |       |         |  |       |     |          |             |        |
| 4   | 2024-25               |        |       |       | 189255 | 0      | 10432  | 10955   | 11502     | 35607  |       |         |  |       |     |          |             |        |
| 'n  | 2025-26               |        |       |       |        | 198718 | 0      | 10954   | 11503     | 12077  | 37387 |         |  |       |     |          |             |        |
| 9   | 2026-27               |        |       |       |        |        | 208654 | 0       | 11502     | 12078  | 12681 | 39256   |  |       |     |          |             |        |
| 7   | 2027-28               |        |       |       |        |        |        | 21908   | 0         | 12077  | 12662 | 13315   | 41219  |       |     |          |             |        |
| 00  | 2028-29               |        |       |       |        |        |        |         | 230041    | 0      | 12681 | 13316   | 13981  | 43280 | - 1 |          |             |        |
| 6   | 2029-30               |        |       |       |        |        |        |         |           | 241543 | ٥     | 13315   | 13962  | 14680 |     | 45444    | 45444       | 45444  |
| 10  | 2030-31               |        |       |       |        |        |        |         |           |        | 25362 | 0       | 13981  | 14681 |     | 15414    | 15414 47716 |        |



Non-Forest Land in RORASINGHA 84.800

