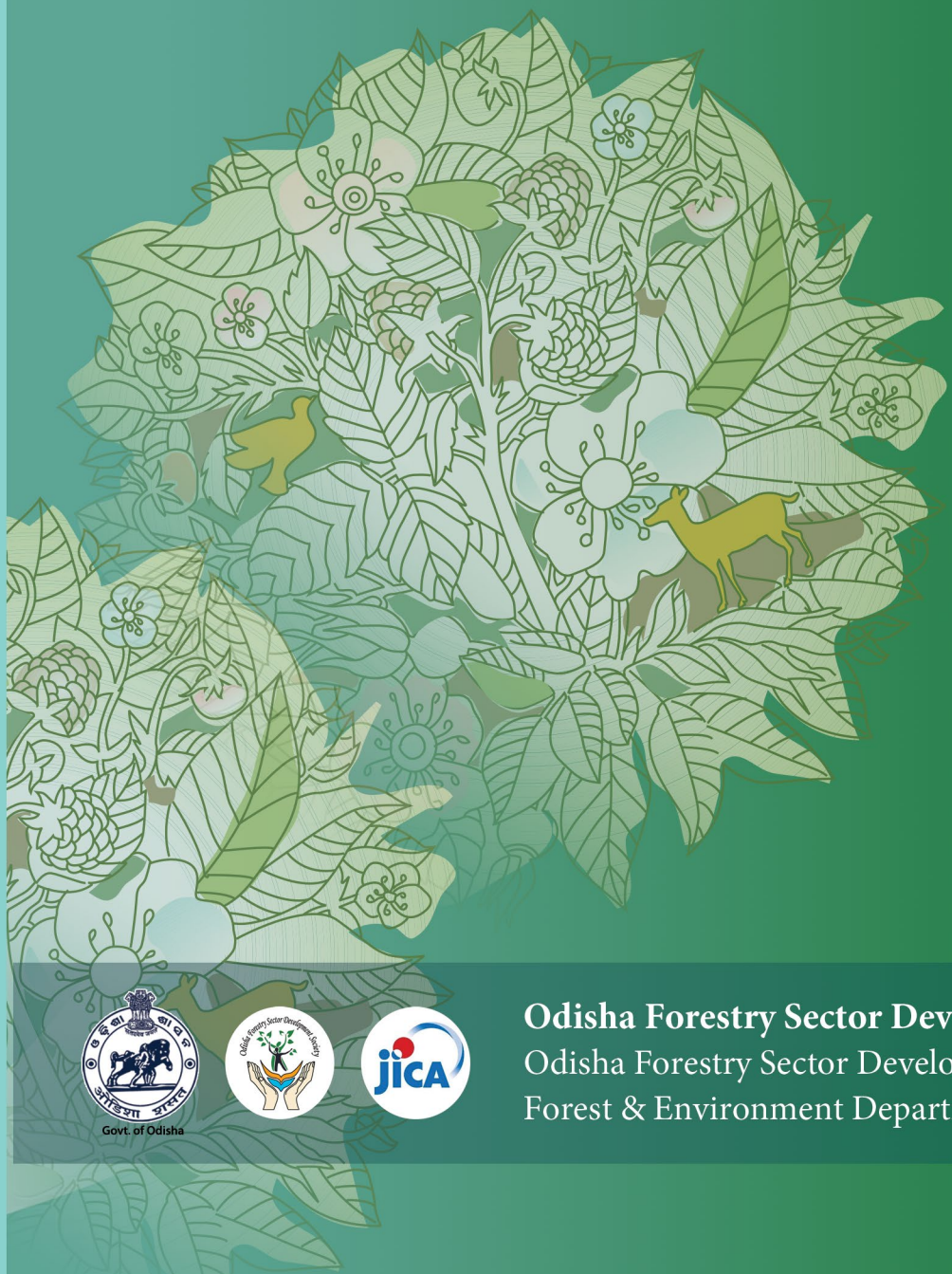
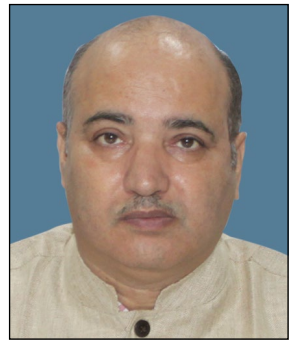
# Compilation of Guidelines & Instructions for the Implementation of OFSDP-II



Govt. of Odisha

**Odisha Forestry Sector Development Project Phase–II**
Odisha Forestry Sector Development Society
Forest & Environment Department, Government of Odisha



**L.K.Tewari**, IFS
Additional PCCF (Projects)-cum-Project Director
Odisha Forestry Sector Development Society

# FOREWORD

Under Odisha Forestry Sector Development Project Phase-ll, Sustainable Forest Management is proposed to be undertaken both in JFM mode and Non-JFM mode. While the targets for executing various components both under the JFM & Non-JFM modes are being communicated in the course of time to the Divisional Management Units (DMUs), guidelines and instructions for execution of these works have been issued by the Project Management Unit (PMU) from time to time.

This book-let is a compilation of various guidelines and instructions issued by the PMU to the DMUs in respect of various activities to be undertaken under the JFM and the Non-JFM mode. The objective of the compilation is to provide the first-hand reference of guidelines and instructions to the field level officers.

**(Lalit Kumar Tewari)**

# INDEX

**Odisha Forestry Sector Development Project, Phase-II**
(Forest & Environment Department, Government of Odisha)
SFTRI Campus, Ghatikia
Bhubaneswar 751 029, Odisha

**Memo No.** 1280/OFSDP-61/2017, Dated 4th October 2017

To

The DFO cum DMU Chiefs, OFSDP, Phase-II

Karanjia, Dhenkanal, Boudh, Athamallik, Ghumusur (North), Ghumsur (South), Subarnapur, Jharsuguda 8s Sundergarh.

Sub: Selection of VSSs for implementation of OFSDP, Phase-II. Ref: This Office Letter No 426, dated 16th May, 2017.

In continuation to this office letter under reference, please find enclosed here with the format for submission of the details of the VSSs, identified at your level, which shall be covered under OFSDP, Phase-II. As intimated earlier, vide letter under reference, you are requested to select at least 10 VSSs in one FMU to be covered in first Phase of the OFSDP-II. The VSSs shall be selected in a cluster for better administrative control and smooth implementation of the project activities. The details of VSSs to be covered for the first phase of OFSDP-II should reach to this office in this format, latest by 15th October, 2017.

You are also requested to start selection of the VSSs for other FMUs following the criteria circulated and in conformity to the target indicated in the Project Summary & Detailed Scope of Work document of OFSDP-II in respect of your division.

Encl: As above.

Project Director
OFSDP, Bhubaneswar

Memo No 1281OFSDP - 61/2017, dated 4th October, 2017.
Copy to RCCF Angul; RCCF Berhampur; RCCF Bhawanipatna 8s RCCF Rourkela for kind information.

Project Director

## Information sheet of VSS proposed to be taken up under OFSDP Phase-II

Name of the Division :

| Sl. No. | Name of the Range | Name of Section | Name of VSS to be covered | Name of block | Name of Gram Panchayat | Assigned area (in Ha.) | | | | | GPS Cordinates of teh VSS of one permanent feature. structure* | | | | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | RF | RPF | VF | Others | Total | Permanent Feature (Brief description) | Latitude | Longitude | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| | | | | | | | | | | | | | | | |

## Selection Criteria of Village for IFM

- The village has not participated in OTELP (Odisha Tribal. Empowerment and Livelihood Program) and, WORJLP (Western Orissa Livelihoods Project), or any other major livelihood projects hi the last 5 years, Except AJY.
- The village is within 3KMs to forestland, and the forestland is having open or Scrub forest
- Majority of village household are dependent on forest resources. The village is a revenue village (not an illegal settlement)
- There is no conflict between the resource users in the village.

| | **Prioritized Parameter** | **Rating** | |
|---|---|---|---|
| | | **Point** | **Awarded** |
| **1** | **Forest Degradation** | | |
| | Village is located in a severely degraded micro watershed identified through the vegetation / present land use map prepared by OFSDP. | 5 | |
| | Village is located at a fairly degraded micro watershed. | 3 | |
| | Only a portion of village is located within the degraded micro watershed. | 1 | |
| **2** | **Size of Forestland on which people are traditionally depending** | | |
| | The size of forestland is more than 150 ha. | 5 | |
| | The size of forestland is more than 80 ha but less than 150 ha. | 3 | |
| | The total size of forestland is less than 80 ha. | 1 | |
| **3** | **Situation on the Catchment of any drainage system** | | |
| | The forestland adjacent to the village is on the catchment of a major drainage system | 5 | |
| | The forestland adjacent to the village is on the catchment of a minor drainage system | 3 | |
| **4** | **Distance of the village from the adjoining forest** | 1 | |
| | Distance to forest is less than 0.5 km. | 4 | |
| | Distance from forest is between 0.5 - 1 kin. | 3- | |
| | Distance from forest is between 1-2 km | 2 | |
| | Distance from forest is more than 2 km. | 1 | |
| **5** | **Prraaience of ST/SC Population** | | |
| | Percentage of ST/SC Households is more than 50% | 3 | |
| | Percentage of ST/SC Households is between 20 - 50% | 2 | |
| | Percentage of ST/SC Households is less than 20% | 1 | |
| **6** | **Poverty in terms of BPL families** | | |
| | Percentage of BPL family to the total population is more than 70% | 5 | |
| | Percentage of BPL family to the total population is between 30 - 70% | 3 | |
| | Percentage of BPL family to the total population is less than 30% | 1 | |
| **7** | **Approachability (Distance to all season Motorable road)** | | |
| | On road head or less man 2 km | 5 | |
| | Motorable road is 2-5 km | 3 | |
| | Motorable road is more than 5KM | 1 | |

| | | | |
|---|---|---|---|
| **8** | **Wafer Availability** | | |
| | The village experience more than 6 months of water scarcity period in a normal year. | 5 | |
| | The village experience more than 4 months of water scarcity period. | 3 | |
| | The village experience less than 4 months of water scarcity period. | 1 | |
| **9** | **NTFP** | | |
| | The village collects more than 10 types of NTFP. | 5 | |
| | The village collects more than 5 but less than 10 types of NTFP | 3 | |
| | The village collects less than 5 types of NTFP. | I | |
| **10** | **VSS** | | |
| | There is already a existing and functional VSS in the village. | 5 | |
| | There is already a existing but non functional VSS in the village | 3 | |
| | There is no VSS yet hi the village. | 1 | |
| **11** | **Conflict** | | |
| | There is no forest boundary conflict with neighbouring villages or other socio-political problems. | 4 | |
| | There is limited conflict and socio-political problems. | 1 | |

Village Scoring above 40% will be eligible for Prioritisation.

**Odisha Forestry Sector Development Project, Phase-II**
(Forest & Environment Department, Government of Odisha)
SFTRI Campus, Ghatikia
Bhubaneswar 751 029, Odisha

**Memo No.** 320/OFSDP-11-67/2017 Date- 02.02.2018

To,

The DFO-cum-DMU Chief, Baripada / Rairangpur / Karanjia / Sambalpur / Jharsuguda / Dhenkanal / Athmallik / Ghumsur (North) / Ghumsur(South) / Boudh / Subarnapur / Sundargarh.

Sub: Guidelines for identification of VSSs and assigned areas being selected under OFSDP, Phase-II.

Ref: This office letter NO.1280/OFSDP-II - 61/2017 dated 04.10.2017.

It is observed that for implementation of OFSDP-II the Divisions have selected VSSs with area less than 50 ha. and with area more than 1000 ha. In many cases, the area assigned to the VSS is as less as 5 ha. or 10 ha. It may be understood that a number of interventions are proposed to be taken up in the treatment area of the VSS like ANR with Gap and without GAP, Block Plantation etc. In case the area is less for some VSS, then finding appropriate treatment area for all VSSs in the divisions will become difficult. Hence, you are requested to revisit the list of VSSs submitted by you and then take up following interventions:-

1. For VSSs where the assigned area is less than 50 ha., for all such VSSs field verification is required to find out whether additional forest land is available in the vicinity, if so then these VSSs can be proposed for inclusion in Phase-I with additional area. If no additional area is available, then these VSS should be removed from the selected list.
2. Where the assigned area is more than 200 ha., each such case need to be revisited for checking whether the area is actually more than 200 ha. If assigned area is 1500 ha. or more, it may be considered to break down the area into the smaller assigned area and to assign them to smaller villages, wherever possible. If this is not possible, then these VSS should be removed from the selected list or alternatively their assigned area may be reduced to approximately 200 ha.
3. If after the final selection of VSS, it is seen that the number of VSS is iess than the target of 2017-18, then the same list shall be augmented with new list by keeping the number of VSSs in a Division equal to the target assigned.
4. Annexure-I shows the target of no.of VSS assigned to each division. The no.of VSS should not be less than the target VSS for a Division.
5. In case the VSS needs to be replaced then a complete proposal for coding of VSS including the identification of permanent structure (giving its coordinates i.e., Latitude & Longitude) may be sent to the PMU under intimation to the GIS Cell.

Phone: 91-674 2386084, Fax: 91-674-2386085. Email:webmail@otsdp,org, website: www, ofsds.in

6. After completing the entire exercise, the final list proposed by the Division shall be sent to the PMU for assigning the State Unique Code.
7. The State Unique Code once assigned will be non transferable and all future reporting will be required to be made against this State Unique Code.

Yours sincerely,

Project Director.

Memo No. 321/OFSDP-II - 612017 Date: 02.02.2018

Copy forwarded to the Field Director, STR-cum-RCCF, Baripada and the Regional Chief Conservator of Forests, Angul / Berhampur / Sambalpur / Rourkela / Bhawanipatna Circle for kind information and necessary action.

Project Director.

**Odisha Forestry Sector Development Project, Phase-II**
(Forest & Environment Department, Government of Odisha)
SFTRI Campus, Ghatikia
Bhubaneswar 751 029, Odisha

**Memo No.** 1280/OFSDP-61/2017, Dated 4th October 2017

To,

The DFO-cum-DMU Chief,
Baripada / Rajrangpur / Karanjia / Sambalpur /
Jharsuguda / Dhenkanal / Athmaliik / Ghumsur (North) /
Ghumsur(South) / Boudh / Subarnapur / Sundargarh.

**Sub: Guidelines for conducting Survey & Demarcation and Cost Norms for OFSDP, Phase-IL**

**Ref: This office letter No.l280/OFSDP-II - 61/2017 dated 04.10.2017.**

Please find enclosed herewith the Guidelines for Survey and Demarcation^and Cost Norms for carrying out on the work of Survey and Demarcation in the assigned area and treatment area in Phase-I VSSs of OFSDP-II.

This is for the favour of your information and necessary action.

Yours sincerely,

End: As a bove.

Additional Project Director(IME).

Memo No. 334 /OFSDP-II - 20/2018 Date: 03.02.2018

Copy forwarded to the Field Director, STR-cum-RCCF, Baripada and the Regional Chief Conservator of Forests, Anguj'V Berhampup / Sambalpur / Rourkela / Bhawanipatna Circle for kind information and necessary action

Additional Project Director(IME).

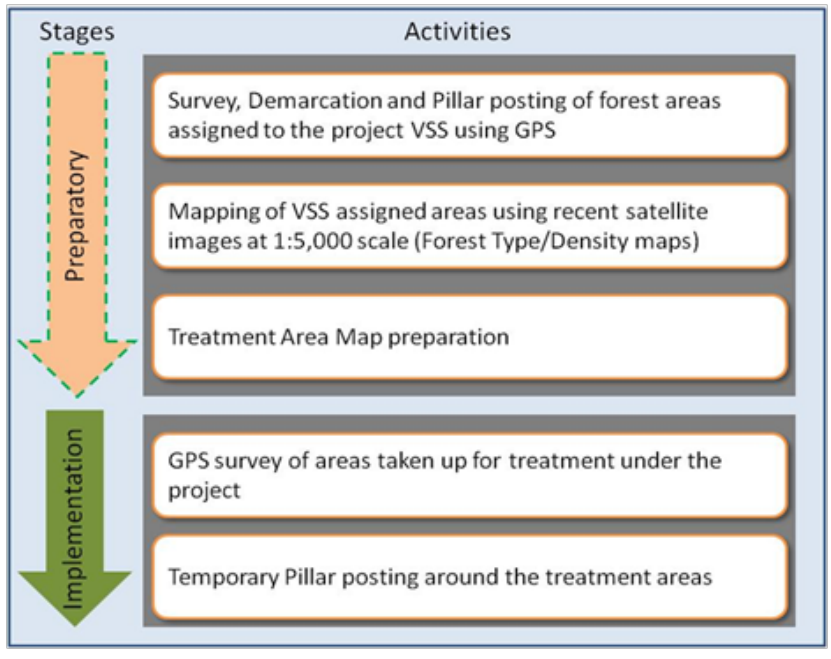
# GUIDELINES
# FOR
# SURVEY & DEMARCATION
# OFSDP-II

# Guidelines for Survey and Demarcation of VSS Area under OFSDP Phase II

## 1.0 Detailed Scope of Work

Survey and demarcation of the forest boundaries of the areas assigned to VSS under JFM mode and all treatment areas using GPS are very important and are to be completed prior to the microplanning exercise. Posting of pillars along the outer limits of the forest areas assigned to the VSS gives a sense of self belongingness among the VSS members towards the forest areas as well as it helps in better management and protection of the areas.

The mapping of the forest resources is required for site specific treatment required for forestry and soil and moisture conservation (SMC). Present Land use/ Forest resource mapping must be done at an appropriate scale, preferably at 1:5,000 scale and must be used for preparation of treatment maps. The work has significance as it is required to be completed so as to utilise the set of maps during microplanning. At present this exercise of preparation of Maps in the 1:5,000 scale is being carried out by the Geomatic Cell of the PMU.




For areas under non-JFM mode also, it is recommended that all the treatment areas/sites under the project must be surveyed using GPS device as part of monitoring mechanism. The broad activities under Survey, demarcation and mapping work are illustrated in following figure.

## 1.1 Survey and Demarcation and pillar posting of VSS assigned areas

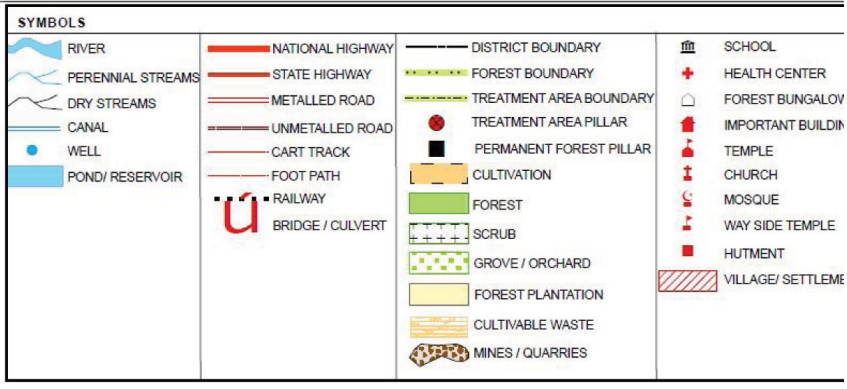
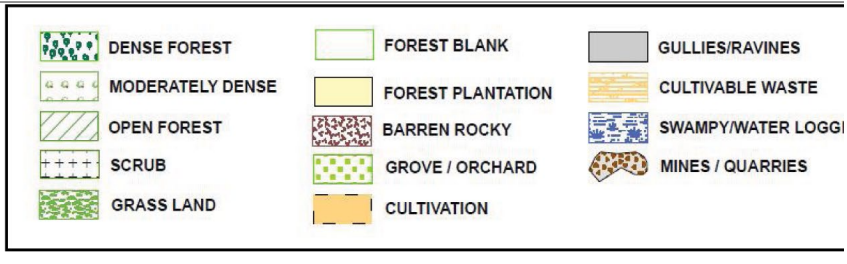
It is necessary to involve the community in the survey, demarcation and pillar posting work. This would also help in conflict resolution between neighbouring villages/VSS. The activity of survey and demarcation work need to start after a resolution in the GB meeting and the date must be informed well in advance. Also, it is advisable to inform the neighbouring villages/VSS so that their representative is also available during the survey and demarcation/pillar posting work. Each pillar with a dimension of 10cm x 10 cm x 100 cm, roughly coming to around 40 boundary pillars per 100 ha area, need to be posted along the boundary of the VSS assigned areas.

Before initiation of posting of pillars, GPS coordinates of each boundary pillar need to be recorded appropriately with required positional accuracy of+/- 3 meters. Respective DMU Staff should do the GPS based boundary survey of the VSS assigned areas under the supervision/guidance of the Geomatics cell of PMU.

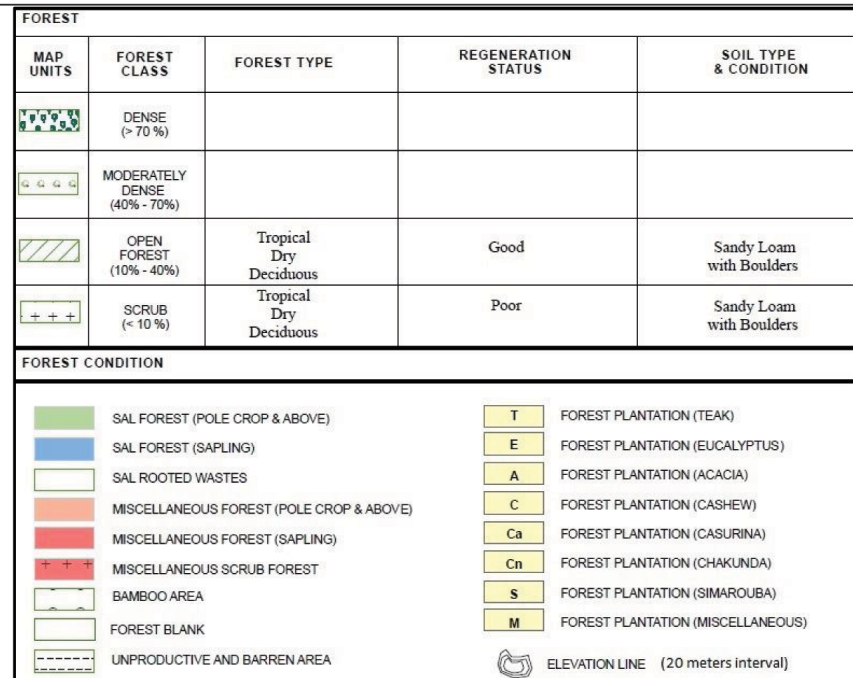
## 1.2 Satellite based Mapping at 1:5,000 scale

During OFSDP Phase I, the survey and mapping work that included Differential GPS survey of VSS assigned areas/boundaries and satellite based maps (base map, land use/cover and forest map) for each VSS, was outsourced to specialized survey and mapping agencies during the microplanning stage. The Geomatic Cell at the PMU was set up much later. The three types of maps prepared are described in the following table.

**Table : Descriptions of Maps Prepared during OFSDP-1**

| Type of Map | Features depicted on the map |
|---|---|
| 1. Base map |   |
| 2. Land use/ Land cover map |   |

3. Forest map




Under OFSDP-II, 'potential treatment map' shall be prepared as part of 1:5,000 scale mapping in addition to the above mentioned three type of maps. The 'Potential Treatment map' will be very useful during microplanning and assist in deciding the treatment activities to be taken up under OFSDP- P-II in each VSS areas. The different types of maps proposed to be prepared under OFSDP-P-II, and the information depicted on each map, is elaborated in table below:

**Table: Descriptions of Maps to be prepared under OFSDP-II**

| Type of Map | Type of information |
|---|---|
| 1. Base map | All base layers like settlements, water bodies, various road types, heath care centre, school, post office, bank, market place, broad land use/cover, different admin boundaries, various admin and forest boundaries. |
| 2. . Land use/ Land cover map | Detailed land use, land cover categories etc. |
| 3. Forest map | Forest density, type, regeneration status, forest condition, soil type, elevation etc. |
| 4. Potential treatment map | Site specific potential treatment based on site conditions - using all above mentioned data layers as input and in line to the Working Plan.' |

The survey and- demarcation work to be done in-house by the respective DMUs. PMU may consider outsourcing 1:5,000 scale mapping work to the specialised mapping agency(s), which are procured prior to the mapping exercises. The contracts with the specialised mapping agency(s) shall be renewed for every batch after reviewing the quality of outputs. It is highly recommended to involve and consult the community and the local forest staff during the field survey and ground training for 1:5,000 scale mapping as well.

GIS cell of the PMU will identify and procure required satellite images, do the QC/QA of the satellite image based output maps prepared delivered by the hired mapping agency.

### 1.2.1 Situational Analysis for Survey, Demarcation and Mapping Activity

The situational analysis for survey and demarcation and 1:5,000 scale mapping of present land use and forest map under OFSDP-II, along with key action points are depicted in below table.

**Table: Survey, Demarcation and Mapping Activities**

| Items | Existing Resources | Actions required for OFSDP-II |
|---|---|---|
| Technical Staff | -Existing capacity with. GIS cell is technically equipped in GPS survey and satellite based preparation of maps at 1:5,000 scale for planning purpose -Within GIS cell all the staff members are from technical IT/ GIS/RS fields and are having limited understanding of forestry. | -Under OFSDP-2 it is recommended that a Deputy Conservator of Forest (DCF) ranked officer with expertise in forestry and understanding of GIS may be deputed as Deputy Project Director (DPD), in-charge of the GIS cell. lie can assist in the process of 1:5,000 scale forest mapping as well. -At DMUs one NRM expert would assist in field data collection and verification and data checking. |
| Hardware and Software | -Relevant IT infrastructure required for performing the required mapping activities and preparation of good quality maps is already in place with GIS cell of PMU. | -Additional staff for GIS cell and required IT hardware shall be procured. Required handheld PDA GPS device with survey app would be procured. (Details of identified IT infrastructure requirement of the PMU, that includes GIS cell as well. |
| Satellite images | -IRS LISS-IV Mx (Resourcesat-1) is available from 2004 to 2010 (covering OFSDP-1 areas) -IRS LISS-IV Mx (Resourcesat-2) is available for 3 time periods: 2013-14, 2014-15 and 2015-16 (almost entire State level coverage is available). For details refer Figure below. -Cartosat images available for OFSDP-1 project sites". | -LISS-IV Mx images of IRS Resourcesat-2 satellite or equivalent (multispectral images with 5 meters spatial resolution) shall be procured for the entire state. Images to be procured each year due to staggered implementation in various batches. |
| Forest admin boundary data' | -ORSAG is working on-rationalisation of forest administrative boundaries | -Available forest admin boundaries may be utilised |

### 1.2.2 Proposed Plan of Survey, Demarcation and Mapping

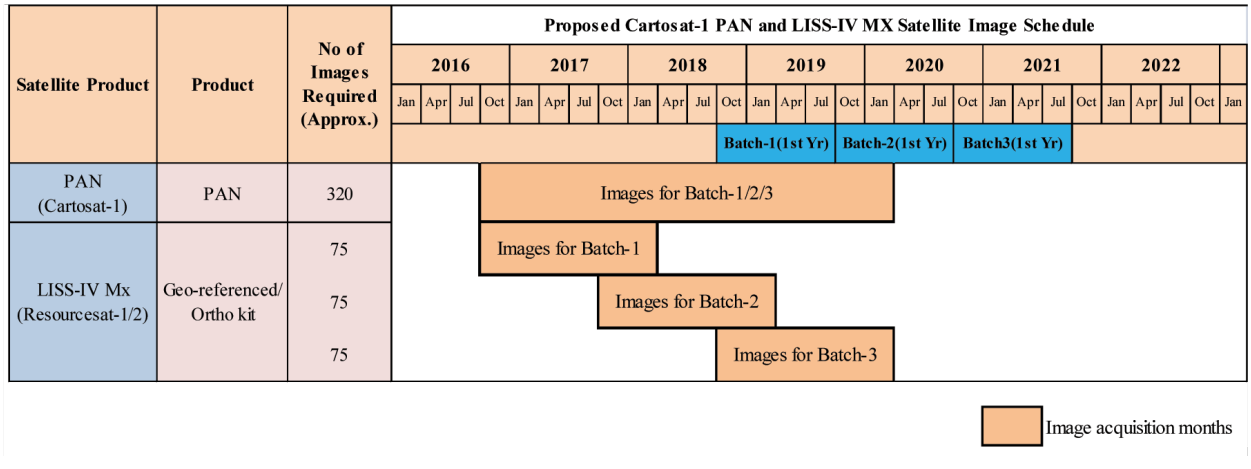
The broad role and responsibility for survey, demarcation work and satellite based mapping work at 1:5,000 scale is elaborated below:

**Table: Plan of survey, demarcation and mapping**

| Proposed Plan | Survey, Demarcation and Pillar Posting | Satellite based Forest Mapping at 1:5,000 scale |
|---|---|---|
| Execution | In-house | May-be outsourced |
| Work and Timeline | -The GPS survey and demarcation work of VSS assigned areas will be completed by the respective DMUs with the technical assistance/guidance from GIS Cell of the PMU using PDA based GAGAN enabled satellite DGPS technique. -The survey, demarcation and pillar posting work for each batch must be completed at least 3 month before the initiation of microplanning process. | -The preparation of satellite based forest maps at 1:5,000 scale may be outsourced to specialized mapping agency . The staff of GIS cell need to closely monitor the work of the mapping agency, thorough QC/QA of the map outputs (Digital and paper maps) delivered. - Immediately after completion of the survey, demarcation and pillar posting in the selected VSS, mapping work should start and must be completed before the initiation of microplanning process. The maps must be available for use during the microplanning. |
| Responsibility of completion of work, Field Verification and Quality Checking | Respective DMUs | Selected specialised mapping agency |
| Coordination/ Supervision | GIS Cell, PMU | GIS Cell, PMU |

### 1.2.3 Procurement of Satellite Imageries

The phase wise details of the required number of satellite images for forest mapping activity at 1:5,000 scale, suitable image acquisition period (date on which satellite captured the image of given area) is given in figure below:



## 1.3 Preparatory Work At DMU and FMU Level

1. The village should have been selected as per the criteria for selection of VSS circulated separately.
2. The Village should not have participated in any major project in last 5 years, except AJY (for Sambalpur, Rairangpur & Baripada Division).
3. The type of Forest should be ideally open or scrub.
4. All conflicts should have been resolved and VSS / EDC should have been constituted. The village should have no law and order problem in the recent past.
5. FMU level Support Maps have been prepared by the Geomatic Cell, with canopy cover classification as background and superimposed with approximate boundaries of Forests (as per the topo sheets) and circulated for identification of villages in close proximity (3 Km. belt). This should be referred to while choosing and locating the villages for formation of VSS to be included in the OFSDP II.
6. Degraded forest patches are to be identified on these maps for implementation of the JFM activities.
7. These maps are also to be used as reference for selection of VSSs in clusters. Habitats traditionally dependent on those degraded patches are to be identified for formation of new VSS. Existing VSS protecting the degraded forest areas may be included based on other eligibility criteria.
8. Approximate boundary of the area proposed to be assigned to the VSS should be marked on the support map. A minimum extent of 50Ha of forest area (including all categories of forests) should be available for for various treatments under the OFSDP by the VSS.
9. A permanent structure is to be identified within the habitation of the proposed VSS and its GPS coordinates recorded and intimated separately to PMU for record and approval.
10. Details regarding the proposed VSS along with GPS coordinates of the permanent structure are to be filled up as mentioned in Annexure-I.
11. Proposed area marked on the map are to be labeled, as per the serial number in the VSS details sheet and both documents sent to PMU after identifying all VSSs in an FMU.
12. On provisional approval of the VSS by PMU, a unique VSS code would be generated for use in all further activities. A State Code once assigned by the PMU shall not be used to label another replacing VSS. If a new VSS is being proposed, then a fresh State Unique Code will be generated on approval by the PMU.

## 1.4 Identification of Assigned Area

1. The assigned area should be found free from conflict as per the provisions in JFM Resolution 2011 read with its Amendment, 2015.
2. It is necessary to involve the community in the Survey, demarcation and pillar posting. This would help in conflict identification and resolution between neighboring villages/VSS.
3. The Survey and demarcation work should start after a resolution is adopted in the GB of the VSS.

4. A working group for carrying out survey and demarcation of VSS assigned and treatment areas shall be formed including the following members for Survey and demarcation.
    i. Both SMSs of the DMU i.e. (GIS, MIS, M&E and REDD+) & (NRM).
    ii. FMU coordinator.
    iii. Member Secretary and forest guard of respective VSS.
    iv. NGO team members of respective VSS.
    v. At least 2 nos of EC members of VSS.
    vi. Ward member/ neighboring village representative.
5. The GPS Co-ordinates for each component of work is to be recorded in degree.decimal' format.
6. Equipment and materials as mentioned in Annexure III to be carried during the field survey and demarcation process.
7. The working group should walk around the boundary of the proposed assigned area for physical verification and gathering baseline information viz. forest cover, current interventions etc. by collecting photographs.
8. Temporary tree or stone marking of the proposed area is to be done during identification of the assigned area. Numbering should be at breast height and in case of stone, at highest point.
9. GPS coordinates of the proposed pillar locations should be collected by the member secretary and submitted to PMU through Web GIS for validation and generation of draft sketch Maps.
10. Overlap with any existing/proposed VSS, AR teak Plantations etc. and other technical parameters like current canopy cover, geographical area, location etc. would be verified at GIS cell, PMU. If the VSS is found to be free from overlaps and technical errors, acceptance of the proposed VSS in the project would be communicated to the DMU. In case of any other conflicts / law and order problems, the VSS should not be considered for inclusion in OFSDP Phase II.

## 1.5 Boundary Clearance and Pillar Posting

1. On acceptance of the proposed assigned area by PMU and the locations by the GB, boundary clearance & pillar posting shall be done in the following manner.
    i. Boundary clearance should be done over 6' width (3' on both sides) without any removal of tree growth and restricted to only weeds and line clearance.
    ii. RCC pillars are to be posted along the cleared boundary.
    iii. Size of RCC pillars (W x L x H): 10cm X 10cm X 100cms.
    iv. 65 cm of the pillar should be under ground and the rest 35 cm would remain exposed above the

ground, which should be colored white as mentioned in Figure 1.

v. All text on the pillar should be marked in black color.

vi. VSS name, pillar no., locational information (latitude & longitude) and direction of the next pillar are to be inscribed on the VSS boundary pillar as mentioned in Figure 2.

vii. Pillars should be posted in such a manner that from each pillar

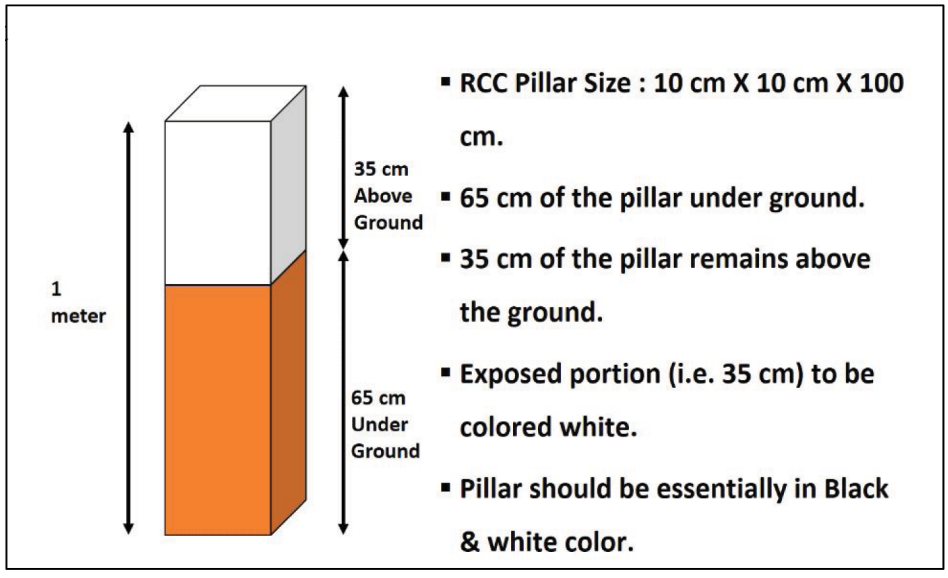



Figure.1

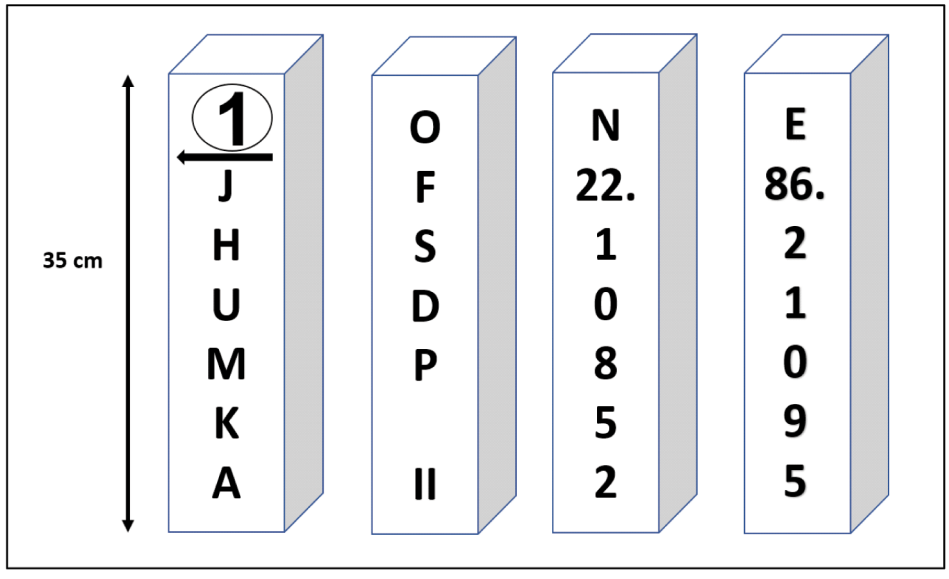



Figure.2

2. If there is any overlap of JFM assigned forest area boundary with RF/PRF/DPF boundary, care must be taken to ensure integrity of the existing pillars. There should not be any change in their alignment and pillar number for the common / overlap portion. For the overlap portion, VSS pillar number should be recorded only on the data collection sheet mentioning the original RF/PRF/DPF pillar number in the 'notes' field.

3. The pillars of the JFM assigned area shall be serially numbered from the South-East corner of the plot in clockwise sequence as indicated in Figure 3.

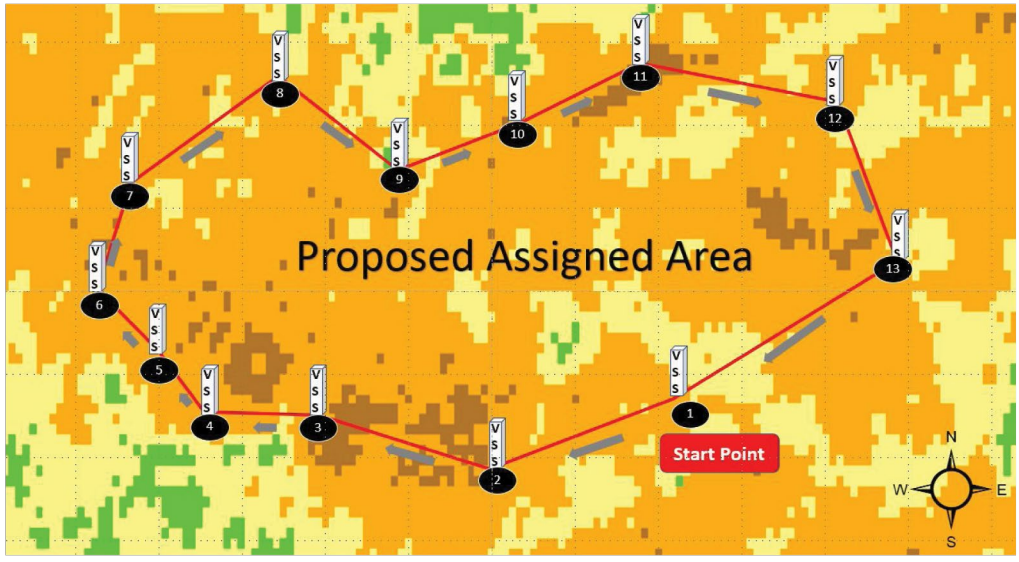



Figure.3

4. The RF/PRF/DPF pillars appearing within the assigned area shall also be mentioned in the remarks, to identify the availability of different categories of forests for demarcation and recording purpose.

## 2.0 Final Survey

1. On completion of pillar posting, the S&D working group should verify the boundary.
2. During the process, GPS coordinates and photographs of the VSS pillars must be collected from the field by the member secretary and uploaded by the DEO using WebGIS application.
3. Uploaded data should be checked by the concerned FMU Chief in the WebGIS and certified for its correctness. Google satellite background image may be used for cross verification before finally certifying in webGIS. GPS coordinates of RF pillars inside the assigned area should also be collected and uploaded separately.
4. Each VSS pillar shall be photographed with inscribed number at right hand bottom of photo showing the detailed view of the assigned area. Wherever the photographs are taken using digital camera, the photos are to be uploaded into web GIS with the corresponding VSS assigned area. Data may be collected using mobile handheld devices with OFSDS Mobile GIS application wherever available.
5. Hand-held GPS devices may also be used and the data shall be recorded in the format as mentioned in Annexure-II, for upload in web GIS at FMU level. If handheld GPS devices are used, the device track logs are to be uploaded for the respective VSS and GPS usage recommendation mentioned in Annexure-IV may be followed. This data need to be uploaded in the webGIS at the FMU level and verified by the FMU Chief.

6. Artificial features passing inside the assigned area should also be mapped with appropriate GPS Co-ordinates recorded at specified interval. In case of straight line, data need to be taken at about 100 meters interval. For curved boundaries data may be captured at intervals ranging from 20 to 50 meters. Water bodies need to be recorded by capturing the four corners.

7. Particulars about recognized forest rights appearing within the assigned area are also to be recorded in the following format

| Particulars of forest rights recognized with certificate within JFM Boundary | | | | |
|---|---|---|---|---|
| SL | Kind of forest right | Name of Right holder | Area in Ha | No. of beneficiary |
| | | | | |

## 3.0 Recommendations for Usage of GPS

1. Fully charge your batteries before starting a survey. Additionally, carry extra sets of batteries, if available.

2. Start your GPS and be sure you have initialized your GPS receiver according to your individual unit's instructions. The first time a GPS unit is used in a new location (or whenever it has been moved 500 miles from where it was last used), the unit will need up to 15 minutes to orient itself. The more often you use the unit in its new location, the faster it will receive satellite data and record positions. After switching on, allow the at-least 5 minutes for the receiver to stabilise before starting data collection.

3. Set the datum of your GPS receiver to WGS 84 and the coordinate display format to decimal degrees (DD.DDDDDDDD). The time should be set to GMT+ 5:30 hour.

4. Start Collecting GPS coordinates after at least 5 satellites are in view and the (error in) accuracy level displayed is less than 8 m.

5. When you have located a feature you wish to record make sure you have as clear a view of the sky as possible. Leaves and branches of trees cause interference and slow the reading process down but they would still function in these conditions.

6. Do not switch off the GPS receiver in between the survey unless the gap is more than half an hour. In case it is switched off, follow receiver initialisation instructions above (from 1 to 5).

7. For lines and polygons, coordinates are to be taken at a distance between 50 to 100 m based on the curvature i.e. closer for curves and farther for straight lines. A coordinate is to be taken at each sharp curve.

8. New track log is to be started for each VSS and submitted along with the coordinate data.

9. Location coordinates should be recorded in 3+ column table with first column as pillar number, second for latitude and third for longitude reading. Optionally fourth column can contain altitude and fifth column onwards for attributes if any.

10. For polygons and lines, use separate table for each feature.

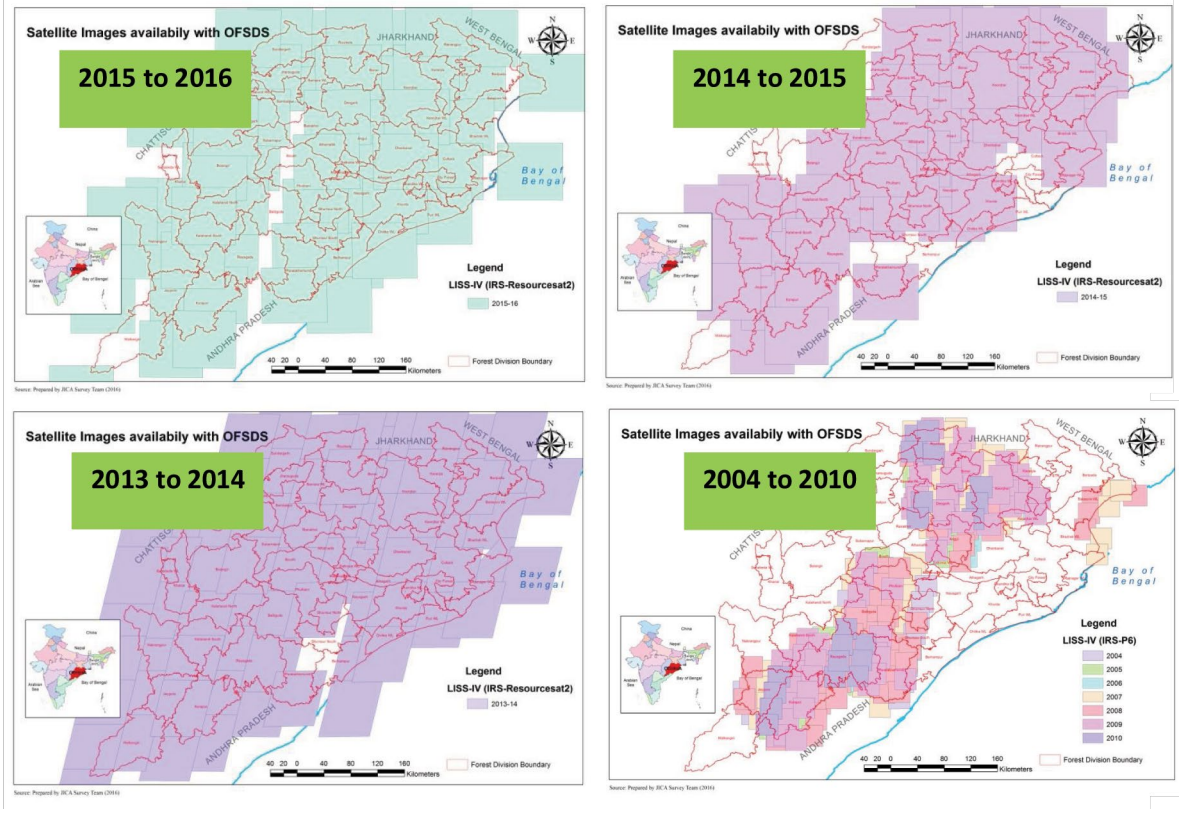
11. Use decimal numbers with at least 6 point precision (six digits after decimal mark) for entering the readings. Do not add any alphabets to the readings.

12. Use any spreadsheet application viz. Libre office, MS Excel etc. to store data and submit soft copy for further use through Web GIS application.

13. Provide description of data and details of data collector along with contact number at the end of the file.

## Appendix 1

**Figure: Existing LISS-IV satellite images along with area coverage available with OFSDP**



# Appendix 2

## Table: Details of existing satellite images with PMU for 1:5000 scale mapping

The details of the existing Cartosat-1 and LISS-IV Mx satellite images available with OFSDS, procured under OFSDP-1 project, are provided in below table.

**Table: Details of existing satellite images with**

| Satellite Product | Product | Swath/ Spatial Resolution | Number/ Area | Year wise availability of number of satellite images | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
| PAN (IRS Cartosat-1) | PAN | N.A. | No. of Images | | | | 31 | 33 | | | | | | | | | |
| | | 2.5 meters | Coverage Area | | | | OFSDP-1 | | | | | | | | | | |
| LISS-IV Mx (Resourcesat-2) | Ortho-rectified (2013-14) | 70 km x 70 km | No. of Images | | | | | | | | | | | 73 | 39 | 51 | |
| | Georef-OrthoKit (2014-15,2015-16) | 5 Meters | Coverage Area | | | | | | | | | | | Entire State* | Entire State* | Entire State* | |
| LISS-IV Mx (Resourcesat-1) | Standard | 23.5 km x 23.5 km | No. of Images | | 12 | 30 | 29 | 70 | 75 | 78 | 27 | | | | | | |
| | | 5 Meters | Coverage Area | | OFSDP-1# | | | | | | | | | | | | |

* Except for few small gaps more or less state level coverage is available.

# Batch wise Images procured as per the requirement of mapping activity; No single year complete coverage of the OFSDP-1 area is available

## Cost Norm for Survey and Demarcation with RCC Pillar Posting for Assigned area anTreatment area of VSS under OFSDP Phase II

(in Rs.)

| S. No. | Activity | Unit | Rate | Mandays | Area per VSS | No. of Pillars | Cost |
|---|---|---|---|---|---|---|---|
| 1 | Boundary Clearance for Survey and Demarcation of Assigned area with a width of 2m or 6' over an area of 100ha. | Rs./ Ha. | 213.5 | 0.75 | 100 | | 16012.5 |
| 2 | GPS Survey of Treatment Area and posting of pillars of size 10 cm x 10cm x 100cm | Rs./ piece | 325 | | | 8 | 2600 |
| 3 | RCC Pillar Construction, Carriage, loading, unloading, digging of pit, posting, coloring and labelling (RCC= 1:2:4) | Rs./ piece | 325 | | | 30 | 9750 |
| 4 | Miscellaneous expenditure | LS | | | | | 637 |
| | **Total** | | | | | | **28999.5** |

**Odisha Forestry Sector Development Project, Phase-II**
(Forest & Environment Department, Government of Odisha)
SFTRI Campus, Ghatikia
Bhubaneswar 751 029, Odisha

**Memo No.** /OFSDP- /2018 **Date**- 31 .10.2018

To

Th e DFO cum - DMU Chiefs,
Athama llik/Baripada/ Boudh / De hnkanal / Ghumsur(N) /
Ghumsur (S)I Sambalpur/ Subar napur/Sundargarh / Rairangpur
KaranjiajJ ha rsu gu da/ Forest Di vi sions.

Sub: Pillar posting in the assigned forest a rea of VSS under OFSD P-II.

Ref: This office letter no. 333IOFSDP-2 0 /2018 dtd . 03.02 . 2 018, no. 813 dtd. 28.03. 2018 & no. 1522 dtd. 18. 06.2018.

With reference to subject cited above and letter u n de r reference the revised Cost Norm for GPS Survey, Demarcation with RCC pillar posting calculated for the assigned area of 100 ha. of the VSS with 40 nos of boundary pillars on average under OFSDP-II are as below:

| Sl. No | Activity | Unit (Rs./ ha.) | Rate | Man-days | Average VSS area (in Ha.) | Cost (in Rs.) | Head of Account |
|---|---|---|---|---|---|---|---|
| 1 | Boundary Clearance for Survey & Demarcation of the assigned area with a width of 2 mtr. | Ha. | 224.30 | 0.4 | 100 | 9000 | A,1,2,1 |
| 2 | RCC Pillar Constructien, Carriage, loading & unloading, digging of pit, posting , coloring and leveling around assigned area (RCC= 1.2.4) | Rs./ Price | 350.00 | | 40 nos for 100 ha. On average | 14000 | A,1,2,1 |
| 3 | GPS Survey of Assigned area | Rs. | 224. 30 | 0.134 | 100 | 3000 | A.l.2.4 |
| 4 | Misc. Expenditure | LS/VSS | 2000. 00 | | | 2000 | A.1. 2.2 |
| **Total** | | | | | | **28000** | |

It is clarified that the cost norm per ha. for boundary clearance for survey and demarcation of the assigned area with a width of 2 mtr. works out to be Rs. 90 I per ha. and that for RCC pillar construction, carriage, loading & unloading, digging of pit, posting, coloring, and leveling around the assigned area works out to be 140I- per ha. The cost norm of GPS survey of assigned area is Rs. 30 I- per ha.

Accordingly, the expenditure on VSS assigned area demarcation, Survey and Pillar posting are to be done on area (ha.) basis, except for the miscellaneous expenditure which will be on actualiLS per VSS. Further allotment will be released on the basis of actual area of assigned area to the DMUs.

This is for favour of your information and necessary action.

Project Director

Copy forwarded to Addl. PCCF & Field Director, Baripada / Angul / RCCF, Sambalpur / Berhampur / Rourkela / Bhawanipatna for information

Project Director

**Odisha Forestry Sector Development Project, Phase-II**
(Forest & Environment Department, Government of Odisha)
SFTRI Campus, Ghatikia
Bhubaneswar 751 029, Odisha

**Memo No.** 2867 /OFSDP-140/2018 **Date**- 31 .10.2018

To

The DFO-cum-DMU / chiefs.
Athamallik/Baripada/ Boudh/Dhenkanal /Ghumsur(N)/ Ghumsur (S)/
Jharsuguda /Sambalpur/Subarnapur/Sundargarh/
Rairangpur/Karanjia/ Forest Divisions.

Sub: Outlay of Physical 86 Financial Target and the Scope for Implementation of field Investigation & Planning under Site specific planning & Monitoring for the FY -2018-19, In JFM Mode for the 1st Batch VSS under OFSDP-II.

This is regarding site specific planning and monitoring under Sustainable Forest Management to be executed by the VSS under JFM mode. The following Forest Management activities will be taken up under the same.

1. Site Specific Planning.

2. Site Specific monitoring.

The scope of work under the above head are as detailed below: -

## 1. Site Specific Planning

The same includes selection of sites, species to be planted, the different treatments of the JFM interventions which are integral part of the Micro planning process of the concerned VSS. In order to achieve more effective sustainable Forest Management by the VSS, field investigations and planning exercise will be conducted to determine site specific treatment for JFM intervention areas (ANR/plantation treatment area and Drainage Line Treatment areas) reflecting the demand /need of the concerned VSS and also of the natural/gengraphiral conditions of the JFM sites.

The field investigations and planning exercise will be conducted by the VSS members with technical guidance and support from DMU/FMU staffs and team members of the P-NGOs. The output of the activities shall be incorporated in the respective micro plan.

This activity is to be taken up during 2018-19 in the l3t batch VSS and to be spent in JFM mode. The total

expenditure to be incurred per VSS in the 1st year is Rs. 4140/- per VSS and the break-up of the norms for the items of work to be spent by the VSS are as follows.

1. Meeting expenses by VSS- Rs. 2000/-

2. Field investigation activities-Rs. 1000/-

3. Contingent and Office Stationary for VSS - Rs. 1140/-

## 2. Site specific Monitoring

The field investigations and other monitoring exercise of the JFM interventions area are to be conducted by the VSS members with technical guidance and support from the DMU/FMU staffs and relevant resources organization including the P-NGOs.

The Monitoring is scheduled to be conducted in the 2nd year and 4th year after the planting work (1st year). The fund outlay for same is Rs. 3685/- per VSS for each year during the 2nd and 4th year of the planting. The detail guide line for the same will be send separately. Funds for this activity will be released separately later.

Accordingly, the financial outlay for the Site Specific Planning for the 1st batch VSS have been furnished in Annexure-I which is to be taken up in JFM mode and the corresponding funds are being release to you. You are to ensure release of funds to be spent during 2018-19 to the concerned VSS of the 1st batch in time bound manner.

This is for favour of information and necessary action.

Project Director

Encl: As above.

**Memo No.** 2868 /OFSDP-140/2018 **Date**- 31 .10.2018

Copy forwarded to Addl. PCCF 8s Field Director, Baripada/Angul/and RCCFs, Berhampur/Sambalpur / Rourkela/ Bhawanipatna for information.

**Odisha Forestry Sector Development Project, Phase-II**
(Forest & Environment Department, Government of Odisha)
SFTRI Campus, Ghatikia
Bhubaneswar 751 029, Odisha

**Memo No.** 2800/OFSDP-70/2018 **Date**- 25.10.2018

To

The DFO-cum-DMU / chiefs.
Athamallik/Baripada/ Boudh/Dhenkanal /Ghumsur(N)/ Ghumsur (S)/
Jharsuguda /Sambalpur/Subarnapur/Sundargarh/
Rairangpur/Karanjia/ Forest Divisions.

Sub: Assisted Natural Regeneration (ANR) work under JFM Mode OFSDP-II-reg.

The ANR works u nder JFM mode are required to be taken up from the current year onwa rds. The Range/ Division wise target for the 1st batch VSS (355 nos) to be taken u p under d i fferent models of ANR have been communicated to you vide this office memo no. 1125 dtd. 30.04.2018 and the revised target vide no. 1619 dtd. 28.06.2018. The target so allotted are based on the total Project target of 15300 ha., 25500 ha., 10200 ha. (totaling 51000 ha.) for ANR (withou t Gap Plantation), ANR (with Gap 400 plantjha.) and ANR (with Ga p 800 pla nt / ha.) respectively. The target assigned to each Division (Copy enclosed) for the Batch 1 VSS are to be reassigned to each VSS at the _ DMU Level. The details of modalities of execution of the work under ANR component are enclosed as Annexure-1.

This is for you r information and necessary action.

Encl: As above.

ProJect D1rector

Memo No. 2801/OFSDP-70/2018 Date- 25.10.2018

Copy fo rwarded to Addl. PCCF & Field Director, Baripada/ Angul/ and RCCFs, Berham pu r I Sambalpur jRourkela / Bhawanipatna for information.

Project Director

**ANNEXURE-I**

# Modality of Execution of ANR

1. The average target of ANR without Gap, ANR 400 plant/ha. and ANR 800 plant /ha. ideallyshould be 12.75 ha., 21.25 ha. and 8.5.ha. respectively, (totalling 42.5 ha.) for each VSS. However, same may not be feasible for all the VSS. The intervention area to be treated under different models of ANR may vary from VSS to VSS. Hence the above figure has to be rationalized at the DMU Level in consultation with the FMU Chiefs. The DMU Chief will make assessment and adjustment within the Division so that area of treatment under different models of ANR are achieved at Division level.

2. Assisted Natural Regeneration (ANR without Gap & ANR with Gap) to be taken up at sites where root stocks are available in the Forest area having density less than 40%.

3. ANR without Gap plantation models are to be taken up in Forest Areas having sufficient root stock and where the regeneration status is satisfactory.

4. ANR with Gap plantation are to be taken up in forest area where crop density and regeneration are poor.

5. The ANR with 400 plant/ha. and ANR with 800 plant /ha. are to be selected basing on the availability of vacant area for Gap plantation.

6. Where sufficient area for Gap Plantation with 400 plant /ha.& 800 Plant/ha. is not available, the model for 200 plant / ha. can be taken up with proper justification and with due recommendations by the concerned RCCF and subsequent approval of PD, OFSDP-II.

7. The area under different model are to be surveyed with GPS reading and demarcated with stone cairns of height and radius of .4 mtr and .5 mtr respectively, painted with white lime with proper numbering.

8. The polygons of the different models of ANR are to be uploaded in the GIS Domain of preparation of treatment maps of the concerned VSS assigned area.

9. The slivicultural treatment underANR during 0th year includes removal of high stumps, singling out of coppice shoots and cutting of unwanted climbers.

10. Areas where sapling /pole crops are very much congested, unless the congestion is reduced the growth of trees will be affected adversely. The member secretary of VSS should discuss the advantage of thinning with the VSS members during the Micro plan preparation of the VSS working group and accordingly proposal to be incorporated to execute the required thinning to remove congestion in the crop while preparing the Micro plan and the same has to be taken up as per the working plan prescription. (where the assigned VSS area is under the management of Forest Department).

11. While executing the thinning work, care should be taken not only to retain the dominant species, but also other NTFP/ Medicinal plants and due opportunity be provided for proper growth of such NTFP

species.

12. The Gap plantations are to be taken up only in areas having patches more than .05 ha. and the seedling are to be planted at a spacing of 2.5.mtr X 25 mtr i.e. In one patch a minimum of 800 seedlings are to be planted. These planting patches are also to be surveyed with GPS reading and to be uploaded in GIS domain for preparation of the treatment area Map.

13. The species to be planted in the ANR Gap plantation shall be mostly indigenous species such asAlbizialebbek(Siris), Anogeissus acuminate (Phasi), Anogeissuslatifolia (Dhaura), Bauhinia variegate (Kanchan), Brideliaretusa (Kasi), Chloroxylonswietiana (Bheru), Gmelinaarborea (Gahmar), Terminalia tomentosa (Asan), Lagerstroemia parviflora (Sidha), Grewiaarborea (Dhaman), Acacia catechu (Khaira),Aegle marmelos (Bela), Artocarpurheterophyllus (Panasa), Buchananialanzan (Char), Dalbergialatifolia (Rose Wood), Madhucalangifolia (Mahula), Emblicaofficinalis (Amla), Pterocarpus marsupium (Bija), Sapindusemarginatus(Ritha), Simaroubaglauca (Simaruba), Schleicheraoleosa (Kusum),Tanarindusindica (Tentuli), Terminalia bellirica (Bahada), Terminalia chebula (Harida), Terminalia arjuna (Arjun),Azadirachta (Neem), Samaneasaman (BadaChakunda), Pongamiapinnata (Karanja), Murayakoenigii (Bhursunga), Acacia nilotica (Babul), Dendrocalamusstrictus (Bamboo) and other local NTFP/ timber/Fuel wood & Fodder species. However, the choice of species should be decided while preparing the micro plan by the VSS taking site suitability in to consideration.

14. If any VSS having bamboo concentrate within their JFM area or have demand for bamboo production, Bamboo silvilicultural operation/plantation can be taken up within the approved cost norm of Forest Department.

15. Good quality seedlings shall be raised in central nursery/temporary nursery well in advance and proper planning should be made accordingly in time to take up the Gap plantations.

16. The details of the year wise cost norm with latest wage rate are to be followed which are communicated to you vide this office letter no. 1162 dtd. 03.05.2018.

17. The expenditure for required GPS Survey and Demarcation with stone cairns for the intervention under different models of ANR and for the different patches of plantation taken up in the Gap Plantation mode are to be taken up with fund provided in the cost norm of survey demarcation of the ANR operation.

18. In the 0th year i.e. during Spring season of 2018-19 (for the 1st batch VSS) high stumps cutting are to be done with site preparation and survey demarcation as per the norm. The high stumps are to be removed flush to the ground with sharp cutting instruments in a slanting manner so as to produce healthy coppice shoots which will be subsequently singled out during the 1st year operation.

19. The other sliviculture operations, SMC work and fire line tracing with inspection path are to be taken up in the subsequent yearsas per norms prescribed by PCCF &HoFF, Odishaat current wage rates.

20. All the ANR intervention sites should have invariably sinages with details, of works to be met out of the contingency fund provided in the norm.

**Odisha Forestry Sector Development Project, Phase-II**
(Forest & Environment Department, Government of Odisha)
SFTRI Campus, Ghatikia
Bhubaneswar 751 029, Odisha

**Memo No.** 2800/OFSDP-70/2018 **Date**- 25.10.2018

To

All Divisiona l Forest Officers,
OFSDP-11 .

Sub:- Target for ANR & AR plantations of Batch-1 VSSs of OFSDP-11.

Ref:- Letter No. 5783 dated 01.09.2018 of Divisional Forest Officer-cum-DMU Chief, Athmallik and letter No. 5026 dated 19.09.2018 of Additional Principal CCF-cum-Regional CCF, Angul Circle.

Tentative target for activities under JFM & Non-JFM mode for the financial year 2018-19 in respect of Batch-1 VSSs of OFSDP-11 were communicated vide this office letter No.1125 dated 30.04.2018. In the said letter, targets for ANR with gap plantation targets in respect of ANR with gap @ 400 seedlings per hectare and ANR with gap @ 800 seedlings per hectare were communicated on the basis of targets stipulated in the Project Document However, in the meantime some of the DMU Chiefs have expressed that adequate gaps for planting 400 seedlings per hectare and 800 seedlings per hectare are not available in some of the VSSs of first batch.

This matter has•be_n re-examined by tAe PMU and it is decided tnaUhe DMU Chiefs are allowed to take up plantations @ 200 seedlings per hectare where-ever adequate gaps for accommodating either 400 or 800 seedlings are not available in the VSSs. However, it may be noted that under no circumstances ANR plantations with less than 200 seedlings per hectare will be permissible. Further, wherever gaps to accommodate 400/800 seedlings per hectare are available the ANR with Gap Plantation may be taken up accordingly.

Besides, the DMU Chiefs are required to raise plantations under AR component for different categories as per the instructions communicated earlier.

Project Director,
Odisha Forestry Sector Development Project.

Memo No. 3093/OFSDP/70/2018-19 Dt: 20.11.2018.

Copy forwarded to the Additional Principal Chief Conservator of Forests-cum Regional Chief Conservator of Forests, AnguliBaripada, Regional Chief Conservator of Forests, Sambalpur/Berhampur/Rourkela/ Bha,\<:Je.a::rt1'for information and necessary action.

Project Director,
Odisha Forestry Sector Development Project

Phone: 91-674 2386084, Fax: 91-674-2386085. Email:webmail@otsdp,org, website: www, ofsds.in

**Odisha Forestry Sector Development Project, Phase-II**
(Forest & Environment Department, Government of Odisha)
SFTRI Campus, Ghatikia
Bhubaneswar 751 029, Odisha

**Memo No.** 3133/OFSDP-70/2018 **Date**- 27.11.2018

To

The DFO-cum-DMU / chiefs.
Athamallik/Baripada/ Boudh/Dhenkanal /Ghumsur(N)/ Ghumsur (S)/
Jharsuguda /Sambalpur/Subarnapur/Sundargarh/
Rairangpur/Karanjia/ Forest Divisions.

Sub: AR work under J FM M ode, OFSDP-II -Reg.

The AR works under JFM Mode are required to be taken up from the curre nt year onwards. The range/ Division wise target for the 1st batch VSS to be taken up under diffe rent model of AR was communicated to you vide this office m emo no. 1125 dtd. 30.04.2018 and the revised target vide no. 1619 dtd . 28.06 2018.

The target so allotted are based on th e total project target of 3300 ha. , und er fuel wood and fodder planta tion, 2250ha. under NTFP plantation and 450 ha. under other block plantation to be achieved in the targeted 1200 nos ofVSS in 4 batches.

Detailed modalities for execution of the work under AR component are enclosed as Annexure-!.

This is for your informatio n and necessary action.

Encl: As above.

Project Director

Memo No. 3134 /OFSDP-70 / 2018 Date- 27- .11.2018

Copy forwarded to Addl. PCCF & Field Director, Baripada/ Angul and RCCFs, Berhampur/Sambalpur / Rourkela/Bhawanipatna for information .

Project Drr<;ctor

## ANNEXURE-I

# Modalities for Execution of AR under JFM Mode

1. The three models of Block Plantation under AR will be taken up under OFSDP-II. There are: -

   i) Fuel Wood & Fodder Plantations

   ii) NTFP Plantations

   iii) Other Block Plantations.

2. On an average 5 ha. AR plantation are to be taken up in ach VSS comprising the above three models. If the, same is not feasible for all the VSSsthen the selection of models of AR plantation may vary from VSS to VSS. Hence, the average target has to be rationalised at FMU level /DMU Level. In this regard concerned DMU Chief will make assessment and adjustment within the Division so that area of treatment under different models of AR is achieved in respect of a batch VSSs at Division level. The different models of AR Plantation shall be taken up as per the site condition and in accordance with the micro plan prepared by the respective VSS.

3. If field conditions allow,grass production such asbroom grass, thorn broom, thatch grass including Hill broom can be introduced as inter-crop. Raising of grasses for fodder productionis permissible to stabilize the forest floor and cater the requirement of VSS community. Such raising of grasses will be taken as soil & Moisture conservation measure and funds must be utilised under SMC Component of the plantation norm.

4. If the Micro plan of any VSS prescribes for bamboo production, same can also be taken up with the prior approval from the PMU.

5. The AR model can be taken up only in Forest areas where the average density is less than 10%.

6. Area less than 1 ha. should not be taken up for any kind of AR model.

7. The density of plantation in Fuel wood and Fodder model, NTFP model and other Block Plantation model will be 2500, 400 and 1600 no of Plants/ ha. respectively, i.e. for fuel & Fodder plantation the spacing will be 2 mtr X 2mtr for NTFP plantation it will be 5 mtr X 5 mtr and for other block plantation the spacing will be 2.5 mtr X 2.5 mtr.

8. The NTFP plantation should be taken up in cluster approach and should not be target oriented rather it should be demand driven.

9. The species to be planted for fuel wood and fodder plantation are Acacia auriculiformis (Acacia) Acacia mangium (Mangium/ Rupajhari)Albizialebbeck (Sirisa), Albiziaprocera ( Dhalasiris), Anogeissusacuminata( Phasi), Brideliaretusa (Kasi) Cassia siamea (San Chakunda) Gmelinaarborea (Gahmar), Samaneasaman (BadaChakunda), Terminalia tomentosa (Asan), Grewiatiliifolia (Dhaman), Garugapinnata (Mai) Chloroxylonswietiana (Bheru), Bauhinia variegate(Kanchan), Lagerstroemia parviflora( Siddha), Anogeissuslatifolia ( Dhaura), Acacia nilotica (Babul).

10. This species to be planted for NTFP plantation are Acacia catechu ( Khaira), Aegle marmelos (Bel), Artocarpusheterophyllus ( Panasa), Azadirachtaindica (Neem), Buchananialanzan (Char), Dalbergialatifolia (Rose wood), Litseaglutinosa (Masania), Madhucalongifolia (Mahula), Orox ylumindicum(Phenphena),Emblicaofficianalis (Amla), Pongamiapinnata (Karanj), Pterocarpus marsupium ( Bija) Sapindusemarginatus (Ritha) Saracaasoca (Ashok), Schleicheraoleosa (Kusuma), Simaroubaglauca (Simaruba) Sterculiaurens (Genduli) Symplocosrecemosa (Lodha), Tamarindusindica (Tentuli), Terminalia arjuna (Arjuna), Terminalia bellirica (Bahada), Terminalia chebula (Harida), Pterocarpussantalinus (Raktachandan),Mengiferraindica (Mango).

11. The species to be planted in other block plantation will include Shorearobusta (Sal), Dalbergiasissoo (Sissoo), and Tectonagrandis (Teak). In addition Dendrocalamusstrictus (Salia) and Bambusaarundinscae (Daba) can also be planted.

12. The AR plantation model and ANR Gap Plantation are to be mutually exclusive in the assigned area of the VSS.

13. The area under different model of AR are to be surveyed with GPS reading and demarcated with stone carina of height and radius of 0.4 mtr and 0.5 mtr respectively, painted with white lime with proper numbering.

14. The polygons with the GPS reading of the different models of AR are to be uploaded in the GIS domain of the OFSDP in respect of of the concerned VSS assigned area.

15. The expenditure required for GPS survey Demarcation with stone carins for the intervention under different models of AR are to be taken up with the fund provided in the cost norm for the survey &demarcation of the AR operation.

16. Good quality seedling shall be raisedin Hi-tech nursery /central nursery/ temporary nursery (VSS level) well in advance and proper planning should be made to take up the AR plantations.

17. The detail of the year wise cost norm with the latest wage rate on to be as communicated by PMU shall be followed. All the items of works mentioned in the cost norm are to be taken up meticulously and in a time bound manner.

18. In the 0th year i.e. during 2018-19 the site preparation including alignment, stacking and pitting works are to be completed.

19. All the AR interventions site should have invariable signages with details of work.

20. The other works such as SMC, Fire line tracing and Inspection Path are to be taken up in the 1st year of plantation i.e. during the creation year and also the maintenance of such work to be taken up as per the cost norm.

●●●

**Odisha Forestry Sector Development Project, Phase-II**
(Forest & Environment Department, Government of Odisha)
SFTRI Campus, Ghatikia
Bhubaneswar 751 029, Odisha

**Memo No.** 3036 /OFSDP-70/2018 **Date-** 16.11.2018

To

The DFO cum- DMU Chiefs,
Athamallik/ Boudh/ Baripada / Dhenkanal / Ghumsur(N) /
Ghumsur(S)/ Jharsuguda/ Karanjia/ Rairangpur/ Sambalpur/
Subarnapur/ Sundargarh Forest Divisions

Sub: Cost Norm for different models of ANR & AR Plantation along with norm of Poly Pot Seedlings for implementation under OFSDP-II.

Ref: This office letter no. 1867 dtd. 24.07.2018.

Plantation cost norms for different models of ANR, Block plantations(AR) and norm for raising of seedlings in Poly Pot with maintenance up to 6 months under OFSDP-II have earlier been communicated vide this office letter under reference. However, on account of revision of minimum wages for labourers @280/- vide labour department Notification no. SRO No. 431/2018 dtd. 30.10.2018, the cost norm prepared by PCCF & HoFF, Odisha have been re-casted. The revised cost norms are enclosed for your information and necessary action.

Project Director

Encl: As above

Memo No. 3037/OFSDP-70/2018 Date- 16 .11.2018

Copy forwarded to Addl. PCCF & Field Director, Baripada/ Angul/ RCCF, Sambalpur/ Berahmpur / Rourkela/ Bhawanipatana for information.

Project Director

Memo No. 3038/OFSDP-70/2018 Date- 16 .11.2018

Copy to Deputy Project Director (A&F), SPM (C&ID), SPM (LLI 85 NRM) 85 SPM(Audit) for information.

Project Director

Phone: 91-674 2386084, Fax: 91-674-2386085. Email:webmail@otsdp,org, website: www, ofsds.in

## COST NORM FOR RAISING 1000 SEEDLINGS IN POLY POT WITH MAINTENANCE UPTO 6 (SIX) MONTHS

Wage rate @280 /- Per day

| Sl No | Item of work | Preferable period of execution | unit | Unit Cost | No./ Qty. | Labour cost | Material cost | Total cost |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| A. COST FOR 6 MONTHS OLD SEEDLINGS | | | | | | | | |
| 1 | Cost of polythene (9" * 5" * 160 ) 400 Nos/ Kg= 2.5 Kg' | | Kg. | 170 | 2.5 | 0 | 425 | 425 |
| 2 | Ploypot Mixture (Soil, sand and CDM in ratio (2:1:1) | | | | | | 0 | 0 |
| | (i) Siol @ Rs. 8/cft | | cft | 8 | 22 | 0 | 176 | 176 |
| | (ii) Sand @ Rs. 12/cft | | cft | 12 | 11 | 0 | 132 | 132 |
| | (iii) CDM@Rs. 15/cft | | cft | 15 | 12 | 0 | 180 | 180 |
| | (iv) Insecticide (Thimet) 2kg@80/kg | | kg | 80 | 2 | 0 | 160 | 160 |
| 3 | Preparation of soil Mixture includes pulverisation and straining | Nov/Dec | MD | 280 | 2 | 560 | 0 | 560 |
| 4 | Filling & setting | Nov/Dec | MD | 280 | 2 | 560 | 0 | 560 |
| 5 | Collection of seed grading & treatment | Dec-June | MD | 280 | 2 | 560 | 0 | 560 |
| 6 | Preparation of germination bed, dibbing/transplating and provision of shed. ( including cost of straw, bamboo split etc.) | Jan-June | MD | 280 | 2 | 560 | 0 | 560 |
| 7 | Watering (Jan to March) | Jan-Mar | MD | 280 | 9 | 2520 | 0 | 2520 |
| 8 | Maintenance of Nursery incluccding -- electriccity cost ( in cae of CN) fencing upto March | Jan-Mar | MD | 280 | 8 | 2240 | 400 | 2640 |
| | **Sub total 0th Year** | | | | **25** | **7000.0** | **1473** | **8473.0** |
| 9 | Watering for 3 months | April-Mar | MD | 280 | 9 | 2520 | 0 | 2520 |
| 10 | Sorting, weeding, grading and resetting | May-June | MD | 280 | 3 | 840 | 0 | 840 |
| 11 | Application of Insecticides | May-June | MD | 280 | 0.25 | 70 | 0 | 70 |
| 12 | Cintingencies( Water can, Buckets, Nursery shed etc) | | | | | 0 | 327 | 327 |
| | **Sub Total 1st Year** | | | | 12.25 | **3,430.00** | 327 | **3,757.00** |
| | **Total** | | | | **37.25** | **10,430.00** | **1800** | **12230.00** |

(A) Cost of 6 months old seedlings Rs. 12230/1000=12.23
(B) cost of 0th year 8473/1000= 8.47
(C) Cost of 1st year Rs. 3757/1000=3.76

NB: As per Approved plantation cost norm 2016 (Annxure-I) of PCCF, recasted with present wage rate of Rs.280/- per mandage

**Cost Norm for ANR (Without Gap) wage rate Rs. 280/- per day (2.1.3.1)**

| SL. No | Items of work | Preferrable period of education | Person days | Labour | Material | Total |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| | **0TH YEAR ADVANCE WORK** | | | | | |
| 1 | Survey , Demaracation and Pillar posting , GPS reading with Mapping | Nov/Dec | 2 | 560 | 0 | 560 |
| 2 | Site preparation | Nov/Dec | 2 | 560 | 0 | 560 |
| 3 | Cutting of high stumps | | 5 | 1400 | 0 | 1400 |
| | **Total** | | **9** | **2520** | **0** | **2520** |
| | **1ST YEAR OPERATION** | | | | | |
| 1 | Sliviculture Operation involving clearance of weeds, cutting of Climbers , singling of shoots etc. | Sept/Oct | 15 | 4200 | 0 | 4200 |
| 2 | Soil conservation Measures (staggered trenches of dimension 2m X 0.5 mX 0.5 m @ 60 nos per ha) or its equivalent | Sept/Oct | 20 | 5600 | 0 | 5600 |
| 3 | Fireline Tracing and Inspection path | Feb/Mar | 3 | 840 | 0 | 840 |
| 4 | Watch & Ward incentive | Aug-March | 5 | 1400 | 0 | 1400 |
| 5 | Contivency and Unforeseen expendtures | | | | 500 | 500 |
| | **Total** | | **43** | **12040** | **500** | **12540** |
| | **2ND YEAR OPERATION** | | | | | |
| 1 | Soil conservation measures(Renovation of staggered trenches etc.) | Sept/Oct | 8 | 2240 | 0 | 2240 |
| 2 | Fireline Tracing and Inspection path | Feb/Mar | 1 | 280 | 0 | 280 |
| 3 | Watch & ward incentive (whole year) | Apr/Mar | 7 | 1960 | 0 | 1960 |
| 4 | Contigency and Unforeseen Expendtures | | 0 | | 300 | 300 |
| | **Total** | | **16** | **4480** | **300** | **4780** |
| | **3RD YEAR OPERATION** | | | | | |
| 1 | Fireline Tracing and Inspection Path | Feb/Mar | 1 | 280 | 0 | 280 |
| 2 | Watch & Ward incentive(whole year) | Apr/Mar | 7 | 1960 | 0 | 1960 |
| 3 | Contigency and Unforeseen Expendtures | | 0 | | 300 | 300 |
| | **Total** | | **8** | **2240** | **300** | **2540** |
| | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | **4TH YEAR OPERATION** | | | | | |
| 1 | Fireline Tracing and Inspection Path | Feb/Mar | 1 | 280 | 0 | 280 |
| 2 | Watch & Ward incentive (whole year) | Apr/Mar | 2 | 560 | 0 | 560 |
| 3 | Contigency and Unforeseen Expendtures | | | | 100 | 100 |
| | **Total** | | **3** | **840** | **100** | **940** |
| | **ABSTRACT** | | | | | |
| **Sl No** | **Year** | **Person days** | **Labour Rs.** | **Material** | **Total Cost** | |
| 1 | 0th year operation | 9 | 2520 | 0 | 2520 | |
| 2 | 1st year operation | 43 | 12040 | 500 | 12540 | |
| 3 | 2nd year operation | 16 | 4480 | 300 | 4780 | |
| 4 | 3rd year operation | 8 | 2240 | 300 | 2540 | |
| 5 | 4th year operation | 3 | 840 | 100 | 940 | |
| | **Total** | **79** | **22120** | **1200** | **23320** | |

NB: As per the approved plantation Cost Norm 2016 (Annexure-7) of PCCF, recasted with present wage rate of Rs.280/-

## COST NORM FOR AIDED NATURAL REGENERATION (ANR) @ 200 PLANTS PER HECTARE (2.1.3)

Wage rate Rs.280/Day.

| SL. No. | Item of Work | Preferable Period of Execution | Person days | Lobour (Rs) | Material Cost | Total (Rs.) |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| | **0th Year** | | | | | |
| 1 | Survey, Demarcation and Pillar Posting, GPS Reading with mapping | Nov/Dec | 2 | 560 | 0 | 560 |
| 2 | Site Preparation | Nov/Dec | 2 | 560 | 0 | 560 |
| 3 | Silvicultural Operation including clearance of weed, climber cutting, high stump cutting, singling of shoots etc. | Jan/Feb | 5 | 1400 | | 1400 |
| 4 | Nursery cost (6 months old seedling )**part** @ Rs.12.23p/- seedling (Rs.8.47p in 0th year + Rs.3.76p in 1st year) for 220 seedlings (200+20) | Jan-Mar | 5.5 | 1540 | 323.4 | 1863.4 |
| 5 | Contingency and Unforeseen Expenditures | | 0 | | 132.6 | 132.6 |
| | **Total** | | **14.5** | **4060** | **456** | **4516** |
| | **1st Year** | | | | | |
| 1 | Nursery cost (6 months old seedling) **balance** @ Rs.3.76p for 220 seedlings | Apr-Jul | 2.5 | 700 | 127.2 | 827.2 |
| 2 | Pitting 30 cm cube size | Feb/Mar | 6 | 1680 | | 1680 |
| 3 | Carriage and planting including casualty replacement | Jul/Aug | 5 | 1400 | | 1400 |
| 4 | Complete weeding, Soil working, Manuring | Aug/Sep | 6 | 1680 | | 1680 |
| 5 | Cost of Vermi compost @ 200 gms/plant @ Rs.20/- per kg = Rs.1600.00 and Granular Insecticide 5 gms/plant @ Rs.80/- per kg. =Rs.160.00 | Aug/Sep | 0 | 0 | 880 | 880 |
| 6 | Cost of Chemical fertiliser<br>(a) Urea 70 gms/plant in two subsequent doses @ Rs.6/- per kg =Rs.168.00<br>(b) NPK 50 gms/plant @ Rs.24/- per kg=Rs.480.00 as basal dose | | 0 | 0 | 324 | 324 |
| 7 | Silvicultural Operation involving clearance of weeds, cutting of climbers, singling of shoots etc. | Sep/Oct | 15 | 4200 | | 4200 |
| 8 | Soil Conservation Measures (Staggered trenches of dimension 2 m X 0.5 m X 0.5 m @ 60 nos per ha) or its equivalent | Sep/Oct | 20 | 5600 | | 5600 |
| 9 | Fireline Tracing and Inspection Path | Feb/Mar | 3 | 840 | | 840 |
| 10 | Watch & ward | Aug-Mar | 7 | 1960 | | 1960 |
| 11 | Contingency and Unforeseen Expenditures | | 0 | 0 | 303.8 | 303.8 |
| | **Total** | | **64.5** | **18060** | **1635** | **19695** |
| | **2nd Year** | | | | | |
| 1 | Casualty Replacement including cost of seedling, carriage and planting | Jul/Aug | 1 | 280 | 189 | 469 |
| 2 | Complete weeding and cultural operations | Sep/Oct | 2 | 560 | 0 | 560 |
| 3 | Soil working and manuring | Sep/Oct | 2 | 560 | 0 | 560 |
| 4 | Cost of Fertiliserand insecticide<br>(a) Vermicompost 200gms/plant @ Rs.20/- per kg=Rs.1600.00<br>(b) Granular Insecticides 5 gms/plant for 40 plants 200 gms @ Rs.80/- per kg=Rs.16.00 | Sep/Oct | 0 | 0 | 808 | 808 |
| 5 | Fireline Tracing and Inspection Path | Feb/Mar | 1 | 280 | 0 | 280 |
| 6 | Soil Conservation Measures (Renovation of staggered trenches etc.) | Sep/Oct | 8 | 2240 | 0 | 2240 |
| 7 | Watch & ward (whole year) | Apr-Mar | 7 | 1960 | 0 | 1960 |
| 8 | Contingency and Unforeseen Expenditures | | 0 | 0 | 181 | 181 |
| | **Total** | | **21** | **5880** | **1178** | **7058** |

| SL. No. | Item of Work | Preferable Period of Execution | Person days | Lobour (Rs) | Material Cost | Total (Rs.) |
|---|---|---|---|---|---|---|
| | **3rd Year** | | | | | |
| 1 | Complete weeding and cultural operations | Aug/Sep | 1 | 280 | 0 | 280 |
| 2 | Soil working | Aug/Sep | 1 | 280 | 0 | 280 |
| 3 | Fireline Tracing and Inspection Path | Feb/Mar | 1 | 280 | 0 | 280 |
| 4 | Watch & ward (whole year) | Apr-Mar | 7 | 1960 | 0 | 1960 |
| 5 | Contigency | | 0 | 0 | 200 | 200 |
| | **Total** | | **10** | **2800** | **200** | **3000** |
| | **4th Year** | | | | | |
| 1 | Fireline Tracing and Inspection Path | Feb/Mar | 1 | 280 | 0 | 280 |
| 2 | Watch & ward and cultural operations | Apr-Mar | 2 | 560 | 0 | 560 |
| | | | | | | |
| | **Total** | | **3** | **840** | **0** | **840** |
| | | | | | | |

**A B S T R A C T**

| SL. No. | Years | | Person days | Lobour (Rs) | Material Cost | Total (Rs.) |
|---|---|---|---|---|---|---|
| 1 | 0th Year | | 14.5 | 4060 | 456 | 4516 |
| 2 | 1st Year | | 64.5 | 18060 | 1635 | 19695 |
| 3 | 2nd Year | | 21 | 5880 | 1178 | 7058 |
| 4 | 3rd Year | | 10 | 2800 | 200 | 3000 |
| 5 | 4th Year | | 3 | 840 | 0 | 840 |
| **TOTAL** | | | **113** | **31640** | **3469** | **35109** |

NB:As per the approved plantation cost Norm 2016 (Annexure-8) of PCCF, Odisha recasted with present wage rate of Rs. 280/-per day

## COST NORM FOR AIDED NATURAL REGENERATION (ANR) @ 400 PLANTS PER HECTARE (2.1.3.2)

Wage rate Rs.280/Day.

| SL. No. | Item of Work | Preferable Period of Execution | Person days | Lobour (Rs) | Material Cost | Total (Rs.) |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| | **0th Year** | | | | | |
| 1 | Survey, Demarcation and Pillar Posting, GPS Reading with mapping | Nov/Dec | 2 | 560 | 0 | 560 |
| 2 | Site Preparation | Nov/Dec | 2 | 560 | 0 | 560 |
| 3 | Silvicultural Operation including clearance of weed, climber cutting, high stump cutting, singling of shoots etc. | Jan/Feb | 5 | 1400 | | 1400 |
| 4 | Nursery cost (6 months old seedling )**part** @ Rs.12.23p/- seedling (Rs.8.47p in 0th year + Rs.3.76p in 1st year) for 440 seedlings (400+40) | Jan-Mar | 11 | 3080 | 646.8 | 3726.8 |
| 5 | Contingency and Unforescen Expenditures | | 0 | | 164.2 | 164.2 |
| | **Total** | | **20** | **5600** | **811** | **6411** |
| | **1st Year** | | | | | |
| 1 | Nursery cost (6 months old seedling) **balance** @ Rs.3.76p for 440 seedlings | Apr-Jul | 5 | 1400 | 254.4 | 1654.4 |
| 2 | Pitting 30 cm cube size | Feb/Mar | 12 | 3360 | | 3360 |
| 3 | Carriage and planting including casualty replacement | Jul/Aug | 10 | 2800 | | 2800 |
| 4 | Complete weeding, Soil working, Manuring | Aug/Sep | 12 | 3360 | | 3360 |
| 5 | Cost of Vermi compost @ 200 gms/plant @ Rs.20/- per kg = Rs.1600.00 and Granular Insecticide 5 gms/plant @ Rs.80/- per kg. =Rs.160.00 | Aug/Sep | 0 | 0 | 1760 | 1760 |
| 6 | Cost of Chemical fertiliser<br>(a) Urea 70 gms/plant in two subsequent doses @ Rs.6/- per kg =Rs.168.00<br>(b) NPK 50 gms/plant @ Rs.24/- per kg=Rs.480.00 as basal dose | | 0 | 0 | 648 | 648 |
| 7 | Silvicultural Operation involving clearance of weeds, cutting of climbers, singling of shoots etc. | Sep/Oct | 15 | 4200 | | 4200 |
| 8 | Soil Conservation Measures (Staggered trenches of dimension 2 m X 0.5 m X 0.5 m @ 60 nos per ha) or its equivalent | Sep/Oct | 20 | 5600 | | 5600 |
| 9 | Fireline Tracing and Inspection Path | Feb/Mar | 3 | 840 | | 840 |
| 10 | Watch & ward | Aug-Mar | 7 | 1960 | | 1960 |
| 11 | Contingency and Unforeseen Expenditures | | 0 | 0 | 318.6 | 318.6 |
| | **Total** | | **84** | **23520** | **2981** | **26501** |
| | **2nd Year** | | | | | |
| 1 | Casualty Replacement including cost of seedling, carriage and planting | Jul/Aug | 2 | 560 | 378 | 938 |
| 2 | Complete weeding and cultural operations | Sep/Oct | 4 | 1120 | 0 | 1120 |
| 3 | Soil working and manuring | Sep/Oct | 4 | 1120 | 0 | 1120 |
| 4 | Cost of Fertiliserand insecticide<br>(a) Vermicompost 200gms/plant @ Rs.20/- per kg=Rs.1600.00<br>(b) Granular Insecticides 5 gms/plant for 40 plants 200 gms @ Rs.80/- per kg=Rs.16.00 | Sep/Oct | 0 | 0 | 1616 | 1616 |
| 5 | Fireline Tracing and Inspection Path | Feb/Mar | 1 | 280 | 0 | 280 |
| 6 | Soil Conservation Measures (Renovation of staggered trenches etc.) | Sep/Oct | 8 | 2240 | 0 | 2240 |
| 7 | Watch & ward (whole year) | Apr-Mar | 7 | 1960 | 0 | 1960 |
| 8 | Contingency and Unforeseen Expenditures | | 0 | 0 | 362 | 362 |
| | **Total** | | **26** | **7280** | **2356** | **9636** |
| | **3rd Year** | | | | | |
| 1 | Complete weeding and cultural operations | Aug/Sep | 2 | 560 | 0 | 560 |
| 2 | Soil working | Aug/Sep | 2 | 560 | 0 | 560 |
| 3 | Fireline Tracing and Inspection Path | Feb/Mar | 1 | 280 | 0 | 280 |
| 4 | Watch & ward (whole year) | Apr-Mar | 7 | 1960 | 0 | 1960 |
| | **Total** | | **12** | **3360** | **0** | **3360** |

| SL. No. | Item of Work | Preferable Period of Execution | Person days | Lobour (Rs) | Material Cost | Total (Rs.) |
|---|---|---|---|---|---|---|
| | 4th Year | | | | | |
| 1 | Fireline Tracing and Inspection Path | Feb/Mar | 1 | 280 | 0 | 280 |
| 2 | Watch & ward and cultural operations | Apr-Mar | 2 | 560 | 0 | 560 |
| 3 | Contigency | | | | 100 | 100 |
| | **Total** | | **3** | **840** | **100** | **940** |
| | | | | | | |

**ABSTRACT**

| SL. No. | Years | | Person days | Lobour (Rs) | Material Cost | Total (Rs.) |
|---|---|---|---|---|---|---|
| 1 | 0th Year | | 20 | 5600 | 811 | 6411 |
| 2 | 1st Year | | 84 | 23520 | 2981 | 26501 |
| 3 | 2nd Year | | 26 | 7280 | 2356 | 9636 |
| 4 | 3rd Year | | 12 | 3360 | 0 | 3360 |
| 5 | 4th Year | | 3 | 840 | 100 | 940 |
| | **TOTAL** | | **145** | **40600** | **6248** | **46848** |
| | | | | | | |

NB:As per the approved plantation cost Norm 2016 (Annexure-9) of PCCF, Odisha recasted with present wage rate of Rs. 280

## COST NORM FOR AIDED NATURAL REGENERATION (ANR) @ 600 PLANTS PER HECTARE (2.1.3)

Wage rate Rs.280/Day.

| SL. No. | Item of Work | Preferable Period of Execution | Person days | Lobour (Rs) | Material Cost | Total (Rs.) |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| | **0th Year** | | | | | |
| 1 | Survey, Demarcation and Pillar Posting, GPS Reading with mapping | Nov/Dec | 2 | 560 | 0 | 560 |
| 2 | Site Preparation | Nov/Dec | 2 | 560 | 0 | 560 |
| 3 | Silvicultural Operation including clearance of weed, climber cutting, high stump cutting, singling of shoots etc. | Jan/Feb | 5 | 1400 | | 1400 |
| 4 | Nursery cost (6 months old seedling )part @ Rs.12.23p/- seedling (Rs.8.47p in 0th year + Rs.3.76p in 1st year) for 660 seedlings (600+60) | Jan-Mar | 16.5 | 4620 | 970.2 | 5590.2 |
| 5 | Contingency and Unforeseen Expenditures | | 0 | | 197.8 | 197.8 |
| | **Total** | | **25.5** | **7140** | **1168** | **8308** |
| | **1st Year** | | | | | |
| 1 | Nursery cost (6 months old seedling) **balance** @ Rs.3.76p for 660 seedlings | Apr-Jul | 8 | 2240 | 241.6 | 2481.6 |
| 2 | Pitting 30 cm cube size | Feb/Mar | 18 | 5040 | | 5040 |
| 3 | Carriage and planting including casualty replacement | Jul/Aug | 15 | 4200 | | 4200 |
| 4 | Complete weeding, Soil working, Manuring | Aug/Sep | 18 | 5040 | | 5040 |
| 5 | Cost of Vermi compost @ 200 gms/plant @ Rs.20/- per kg = Rs.1600.00 and Granular Insecticide 5 gms/plant @ Rs.80/- per kg. =Rs.160.00 | Aug/Sep | 0 | 0 | 2640 | 2640 |
| 6 | Cost of Chemical fertiliser<br>(a) Urea 70 gms/plant in two subsequent doses @ Rs.6/- per kg =Rs.168.00<br>(b) NPK 50 gms/plant @ Rs.24/- per kg=Rs.480.00 as basal dose | | 0 | 0 | 972 | 972 |
| 7 | Silvicultural Operation involving clearance of weeds, cutting of climbers, singling of shoots etc. | Sep/Oct | 15 | 4200 | | 4200 |
| 8 | Soil Conservation Measures (Staggered trenches of dimension 2 m X 0.5 m X 0.5 m @ 60 nos per ha) or its equivalent | Sep/Oct | 20 | 5600 | | 5600 |
| 9 | Fireline Tracing and Inspection Path | Feb/Mar | 3 | 840 | | 840 |
| 10 | Watch & ward | Aug-Mar | 7 | 1960 | | 1960 |
| 11 | Contingency and Unforeseen Expenditures | | 0 | 0 | 352.4 | 352.4 |
| | **Total** | | **104** | **29120** | **4206** | **33326** |
| | **2nd Year** | | | | | |
| 1 | Casualty Replacement including cost of seedling, carriage and planting | Jul/Aug | 3 | 840 | 567 | 1407 |
| 2 | Complete weeding and cultural operations | Sep/Oct | 6 | 1680 | 0 | 1680 |
| 3 | Soil working and manuring | Sep/Oct | 6 | 1680 | 0 | 1680 |
| 4 | Cost of Fertiliserand insecticide<br>(a) Vermicompost 200gms/plant @ Rs.20/- per kg-Rs.1600.00<br>(b) Granular Insecticides 5 gms/plant for 40 plants 200 gms @ Rs.80/- per kg=Rs.16.00 | Sep/Oct | 0 | 0 | 2424 | 2424 |
| 5 | Fireline Tracing and Inspection Path | Feb/Mar | 1 | 280 | 0 | 280 |
| 6 | Soil Conservation Measures (Renovation of staggered trenches etc.) | Sep/Oct | 8 | 2240 | 0 | 2240 |
| 7 | Watch & ward (whole year) | Apr-Mar | 7 | 1960 | 0 | 1960 |
| 8 | Contingency and Unforeseen Expenditures | | 0 | 0 | 193 | 193 |
| | **Total** | | **31** | **8680** | **3184** | **11864** |

| SL. No. | Item of Work | Preferable Period of Execution | Person days | Lobour (Rs) | Material Cost | Total (Rs.) |
|---|---|---|---|---|---|---|
| | **3rd Year** | | | | | |
| 1 | Complete weeding and cultural operations | Aug/Sep | 3 | 840 | 0 | 840 |
| 2 | Soil working | Aug/Sep | 3 | 840 | 0 | 840 |
| 3 | Fireline Tracing and Inspection Path | Feb/Mar | 1 | 280 | 0 | 280 |
| 4 | Watch & ward (whole year) | Apr-Mar | 7 | 1960 | 0 | 1960 |
| 5 | Contigency | | 0 | 0 | 0 | 0 |
| | **Total** | | **14** | **3920** | **0** | **3920** |
| | **4th Year** | | | | | |
| 1 | Fireline Tracing and Inspection Path | Feb/Mar | 1 | 280 | 0 | 280 |
| 2 | Watch & ward and cultural operations | Apr-Mar | 2 | 560 | 0 | 560 |
| | | | | | | |
| | **Total** | | **3** | **840** | **0** | **840** |
| | | | | | | |

**ABSTRACT**

| SL. No. | Years | | Person days | Lobour (Rs) | Material Cost | Total (Rs.) |
|---|---|---|---|---|---|---|
| 1 | 0th Year | | 25.5 | 7140 | 1168 | 8308 |
| 2 | 1st Year | | 104 | 29120 | 4206 | 33326 |
| 3 | 2nd Year | | 31 | 8680 | 3184 | 11864 |
| 4 | 3rd Year | | 14 | 3920 | 0 | 3920 |
| 5 | 4th Year | | 3 | 840 | 0 | 840 |
| **TOTAL** | | | **177.5** | **49700** | **8558** | **58258** |

NB:As per the approved plantation cost Norm 2016 (Annexure-10) of PCCF, Odisha recasted with present wage rate of Rs. 280/-per day

## COST NORM FOR AIDED NATURAL REGENERATION (ANR) @ 800 PLANTS PER HECTARE (2.1.3.3)

Wage rate Rs.280/Day.

| SL. No. | Item of Work | Preferable Period of Execution | Person days | Lobour (Rs) | Material (Rs.) | Total (Rs.) |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| | | **0th Year** | | | | |
| 1 | Survey, Demarcation and Pillar Posting, GPS Reading with mapping | Nov/Dec | 2 | 560 | 0 | 560 |
| 2 | Site Preparation | Nov/Dec | 2 | 560 | 0 | 560 |
| 3 | Silvicultural Operation including clearance of weed, climber cutting, high stump cutting, singling of shoots etc. | Jan/Feb | 5 | 1400 | 0 | 1400 |
| 4 | Nursery cost (6 months old seedling )**part** @ Rs.12.23p/- seedling (Rs.8.47p in 0th year + Rs.3.76p in 1st year) for 880 seedlings (800+80) | Jan-Mar | 22 | 6160 | 1293.6 | 7453.6 |
| 5 | Contingency and Unforeseen Expenditures | | 0 | | 229.4 | 229.4 |
| | **Total** | | **31** | **8680** | **1523** | **10203** |
| | | **1st Year** | | | | |
| 1 | Nursery cost (6 months old seedling) **balance** @ Rs.3.76p for 880 seedlings | Apr-Jul | 11 | 3080 | 228.8 | 3308.8 |
| 2 | Pitting 30 cm cube size | Feb/Mar | 24 | 6720 | 0 | 6720 |
| 3 | Carriage and planting including casualty replacement | Jul/Aug | 20 | 5600 | 0 | 5600 |
| 4 | Complete weeding, Soil working, Manuring | Aug/Sep | 24 | 6720 | | 6720 |
| 5 | Cost of Vermi compost 200 gms/plant @ Rs.20/- per kg = Rs.3200.00 and Granular Insecticide 5 gms/plant @ Rs.80/- per kg. =Rs.320.00 | Aug/Sep | 0 | 0 | 3520 | 3520 |
| 6 | Cost of Chemical fertiliser<br>(a) Urea 70 gms/plant in two subsequent doses @ Rs.6/- per kg =Rs.336.00<br>(b) NPK 50 gms/plant @ Rs.24/- per kg=Rs.960.00 as basal dose | Feb/Mar | 0 | 0 | 1296 | 1296 |
| 7 | Fireline Tracing and Inspection Path | | 3 | 840 | 0 | 840 |
| 8 | Silvicultural Operation involving clearance of weeds, cutting of climbers, singling of shoots etc. | | 15 | 4200 | 0 | 4200 |
| 9 | Soil Conservation Measures (Staggered trenches of dimension 2 m X 0.5 m X 0.5 m @ 60 nos per ha) or its equivalent | | 20 | 5600 | 0 | 5600 |
| 10 | Watch & ward | | 7 | 1960 | 0 | 1960 |
| 11 | Contingency and Unforeseen Expenditures | | 0 | 0 | 317.2 | 317.2 |
| | **Total** | | **124** | **34720** | **5362** | **40082** |

| | | | | | | |
|---|---|---|---|---|---|---|
| | **2nd Year** | | | | | |
| 1 | Casualty Replacement including cost of seedling, carriage and planting | | 4 | 1120 | 756 | 1876 |
| 2 | Complete weeding and cultural operations | | 8 | 2240 | 0 | 2240 |
| 3 | Soil working and manuring | | 8 | 2240 | 0 | 2240 |
| 4 | Cost of Fertiliserand insecticide<br>(a) Vermicompost 200gms/plant @ Rs.20/- per kg=Rs.3200.00<br>(b) Granular Insecticides 5 gms/plant for 80 plants 400 gms @ Rs.80/- per kg=Rs.32.00 | | 0 | 0 | 3232 | 3232 |
| 5 | Fireline Tracing and Inspection Path | | 1 | 280 | 0 | 280 |
| 6 | Soil Conservation Measures (Renovation of staggered trenches etc.) | | 8 | 2240 | 0 | 2240 |
| 7 | Watch & ward (whole year) | | 7 | 1960 | 0 | 1960 |
| 8 | Contingency and Unforeseen Expenditures | | 0 | 0 | 224 | 224 |
| | **Total** | | **36** | **10080** | **4212** | **14292** |
| | **3rd Year** | | | | | |
| 1 | Complete weeding and cultural operations | | 4 | 1120 | 0 | 1120 |
| 2 | Soil working | | 4 | 1120 | 0 | 1120 |
| 3 | Fireline Tracing and Inspection Path | | 1 | 280 | 0 | 280 |
| 4 | Watch & ward (whole year) | | 7 | 1960 | 0 | 1960 |
| | **Total** | | **16** | **4480** | **0** | **4480** |
| | **4th Year** | | | | | |
| 1 | Fireline Tracing and Inspection Path | | 1 | 280 | 0 | 280 |
| 2 | Watch & ward and cultural opertions | | 2 | 560 | 0 | 560 |
| 3 | Contigency | | | | 100 | 100 |
| | **Total** | | **3** | **840** | **100** | **940** |
| | | | | | | |
| | **ABSTRACT** | | | | | |
| **SL. No.** | **Item of Work** | | **Person days** | **Lobour (Rs)** | **Material (Rs.)** | **Total (Rs.)** |
| 1 | 0th Year | | 31 | 8680 | 1523 | 10203 |
| 2 | 1st Year | | 124 | 34720 | 5362 | 40082 |
| 3 | 2nd Year | | 36 | 10080 | 4212 | 14292 |
| 4 | 3rd Year | | 16 | 4480 | 0 | 4480 |
| 5 | 4th Year | | 3 | 840 | 100 | 940 |
| | **Total** | | **210** | **58800** | **11197** | **69997** |

NB: As per approved plantation cost Norm 2016 (Annexure-11) of PCCF, Odisha recasted with presetn wage rate of Rs. 280/mandage

## PROPOSED COST NORM FOR FUEL FODDER PLANTATION @ 2500 PLANTS PER HECTARE (JFM 2.1.4.1)

**WAGE RATE Rs. 280/- PER DAY**

| Sl No | Item of work | Preferable period of work | Person days | Labour cost | Material cost Rs. | Total in Rs. |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| | | | **0TH YEAR** | | | |
| 1 | Survey, demarcation and pillar posting | Nov/Dec | 2 | 560 | 0 | 560 |
| 2 | Site preparation | Nov/Dec | 8 | 2240 | 0 | 2240 |
| 3 | Aligment and stacking of pits | Jan/Feb | 2 | 560 | 0 | 560 |
| 4 | Digging of Pits (30 cm cube) | Feb/Mar | 62.5 | 17500 | 0 | 17500 |
| 5 | Nursery cost (6 month old seedling) @ 12.23p per seedling ( Rs. 8.47p in 0th year + 3.76p in 1st year) for 2750 seedlings ( 2500+ 250) | Jan/Mar | 68.75 | 19250 | 4042 | 23292 |
| | **Total** | | **143.25** | **40110** | **4042** | **44152** |
| | | | | | | |
| | | | **1st YEAR / PLANTING YEAR** | | | |
| | Nursery cost ( 6month old seedling balance Rs.3.76p for 2750 seedling | Apr-July | 33.5 | 9380 | 960 | 10340 |
| 7 | Carriage & planting, Casualty replacement and application of insecticides, manure etc. | Jul/Aug | 32.5 | 9100 | 0 | 9100 |
| 8 | Cost of insecticide and fertilizoer (a) NPK @ 50 gms/plant as basal dose=80kg @ 24/- per kg= 1920.00 (b) Urea @ 70gms/plat in two subsequest does @ Rs.6/- per kg=Rs. 672.00 (c) Granular insecticide ( Themet, Forate etc. ) @ gms/Plant @ Rs. 80 /- per kg=Rs. 640.00 | | 0 | 0 | 5050 | 5050 |
| 9 | 1st weeding ( complete weeding ) | Aug/Sept | 10.9 | 3052 | 0 | 3052 |
| 10 | MANURING Urea 35 gm | Aug/Aept | 7.8 | 2184 | 0 | 2184 |
| 11 | 2nd Weeding ( complete weeding) | Sept/Oct | 7.8 | 2184 | 0 | 2184 |
| 12 | Soil working (50 cms. Radious around plants) & manuring Urea 35gm per plant | Spet/Oct | 10.9 | 3052 | 0 | 3052 |
| 13 | Soil conservation measures in the form of stragged trenches of size 2 m X 0.5 m X 0.5 m @ 30 nos per ha. | Sept /Oct | 10 | 2800 | 0 | 2800 |
| 14 | Fire line tracing & inspection path | Feb/Mar | 3 | 840 | 0 | 840 |
| 15 | Watch & Ward | Aug-Mar | 7 | 1960 | 0 | 1960 |
| | **Total** | | **123.4** | **34552** | **6010** | **40562** |

| Sl No | Item of work | Preferable period of work | Person days | Labour cost | Material cost Rs. | Total in Rs. |
|---|---|---|---|---|---|---|
| | | | | | | |
| | **2ND YEAR MAINTENANCE** | | | | | |
| 16 | Casualty replacement (10%) with Nursery cost including carriage , pitting and palanting | Jul/Aug | 6.25 | 1750 | 1512 | 3262 |
| 17 | Weeding (complete weeding) | Sept/Oct | 9.35 | 2618 | 0 | 2618 |
| 18 | Cost of fertilizer (NPK @ 70gms/ plat (Rs. 24/- per kg & insecticide @ 5 gms/plant for 160 plants 800 gms @ Rs. 80 /- per kg | | 0 | 0 | 4300 | 4300 |
| 19 | Soil working ( 50 cms. Radius around plants) | Oct/Nov | 10.9 | 3052 | 0 | 3052 |
| 20 | Application of fertilizer & insecticide | Sept/Oct | 6.25 | 1750 | 0 | 1750 |
| 21 | Fire line tracing (2m .wide fire line over 400 m long) | Feb/Mar | 3 | 840 | 0 | 840 |
| 22 | Watch & Ward | Apr- mar | 15 | 4200 | 0 | 4200 |
| | **Total** | | **50.75** | **14210** | **5812** | **20022** |
| | | | | | | |
| | **3RD YEAR MAINRENANCE** | | | | | |
| 3 | Weeding and application of fertilizer | Aug/Spet | 10.9 | 3052 | 0 | 3052 |
| 24 | Cost of fertilizer (NPK @ 50 gms/plant) @ Rs. 24 per kg | | 0 | 0 | 3000 | 3000 |
| 25 | Soil working ( 50 cms. Radius around plants) & application of fertilizer | Oct/Nov | 10.9 | 3052 | 0 | 3052 |
| 26 | Fire line tracing (2 m wide fire line over 400 m length & cultural operation | Feb/Mar | 3 | 840 | 0 | 840 |
| 27 | Watch & Ward | Apr- Mar | 15 | 4200 | 0 | 4200 |
| | **Total** | | **39.8** | **11144** | **3000** | **14144** |
| | | | | | | |
| | **4TH YAR MAINTENANCE** | | | | | |
| 28 | Fire line tracing (2 m wide fire line over 400 m length & cultural operation | Feb/Mar | 3 | 840 | 0 | 840 |
| 29 | Watch & Ward | Apr- Mar | 15 | 4200 | 0 | 4200 |
| | **Total** | | **18** | **5040** | **0** | **5040** |

**ABSTRACT**

| Sl | Year | No. Person days | Labour cost | Material | Total cost |
|---|---|---|---|---|---|
| 1 | 0th year | 143.25 | 40110 | 4042 | 44152 |
| 2 | 1st year | 123.4 | 34552 | 6010 | 40562 |
| 3 | 2nd year | 50.75 | 14210 | 5812 | 20022 |
| 4 | 3rd year | 39.8 | 11144 | 3000 | 14144 |
| 5 | 4th year | 18 | 5040 | 0 | 5040 |
| | **Total** | **375.2** | **105056** | **18864** | **123920** |

NB: As per Extrapolating to 2500 plant /ha. of approved plantation cost Norm of 2016 for 1600 plant (Annexure-6) by PCCF recasted with present wage rate @ 280/mandage

| PROPOSED COST NORM FOR NTFP PLANTATION @ 400 PLANTS PER HECTARE (JFM 2.1.4.2) WAGE RATE Rs. 280/- PER DAY | | | | | | |
|---|---|---|---|---|---|---|
| **Sl No** | **Item of work** | **Preferable period of work** | **Person days** | **Labour cost** | **Material cost Rs.** | **Total in Rs.** |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| | | | **0TH YEAR** | | | |
| 1 | Survey, demarcation and pillar posting | Nov/Dec | 2 | 560 | 0 | 560 |
| 2 | Site preparation | Nov/Dec | 8 | 2240 | 0 | 2240 |
| 3 | Aligment and stacking of pits | Jan/Feb | 2 | 560 | 0 | 560 |
| 4 | Digging of Pits (30 cm cube) | Feb/Mar | 10 | 2800 | 0 | 2800 |
| 5 | Nursery cost (6 month old seedling) @ 12.23p per seedling ( Rs. 8.47p in 0th year + 3.76p in 1st year) for 440 seedlings ( 400+ 40) | Jan/Mar | 11 | 3080 | 647.5 | 3727.5 |
| | **Total** | | **33** | **9240** | **647.5** | **9887.5** |
| | | | **1st YEAR / PLANTING YEAR** | | | |
| 6 | Nursery cost ( 6month old seedling balance Rs.3.76p for 1760 seedling | Apr-July | 5.5 | 1540 | 119.75 | 1659.75 |
| 7 | Carriage & planting, Casualty replacement and application of insecticides, manure etc. | Jul/Aug | 4.7 | 1316 | 0 | 1316 |
| 8 | Cost of insecticide and fertilizoer (a) NPK @ 50 gms/plant as basal dose=80kg @ 24/- per kg= 1920.00 (b) Urea @ 70gms/plat in two subsequest does @ Rs.6/- per kg=Rs. 672.00 (c) Granular insecticide ( Themet, Forate etc. ) @ gms/Plant @ Rs. 80 /- per kg=Rs. 640.00 | | 0 | 0 | 808 | 808 |
| 9 | 1st weeding ( complete weeding ) | Aug/Sept | 1.75 | 490 | 0 | 490 |
| 10 | MANURING Urea 35 gm | Aug/Aept | 1.25 | 350 | 0 | 350 |
| 11 | 2nd Weeding ( complete weeding) | Sept/Oct | 1.25 | 350 | 0 | 350 |
| 12 | Soil working (50 cms. Radious around plants) & manuring Urea 35gm per plant | Spet/Oct | 1.75 | 490 | 0 | 490 |
| 13 | Soil conservation measures in the form of stragged trenches of size 2 m X 0.5 m X 0.5 m @ 30 nos per ha. | Sept /Oct | 10 | 2800 | 0 | 2800 |
| 14 | Fire line tracing & inspection path | Feb/Mar | 3 | 840 | 0 | 840 |
| 15 | Watch & Ward | Aug-Mar | 7 | 1960 | 0 | 1960 |
| | **Total** | | **36.2** | **10136** | **927.75** | **11063.75** |
| | | | | | | |

| Sl No | Item of work | Preferable period of work | Person days | Labour cost | Material cost Rs. | Total in Rs. |
|---|---|---|---|---|---|---|
| | **2ND YEAR MAINTENANCE** | | | | | |
| 16 | Casualty replacement (10%) with Nursery cost, carriage, pitting and planing | Jul/Aug | 1 | 280 | 1512 | 1792 |
| 17 | Weeding (complete weeding) | Sept/Oct | 1.5 | 420 | 0 | 420 |
| 18 | Cost of fertilizer (NPK @ 70gms/ plat (Rs. 24/- per kg & insecticide @ 5 gms/plant for 160 plants 800 gms @ Rs. 80 /- per kg | | 0 | 0 | 688 | 688 |
| 19 | Soil working ( 50 cms. Radius around plants) | Oct/Nov | 1.75 | 490 | 0 | 490 |
| 20 | Application of fertilizer & insecticide | Sept/Oct | 1 | 280 | 0 | 280 |
| 21 | Fire line tracing (2m .wide fire line over 400 m long) | Feb/Mar | 3 | 840 | 0 | 840 |
| 22 | Watch & Ward | Apr- mar | 15 | 4200 | 0 | 4200 |
| | **Total** | | **23.25** | **6510** | **2200** | **8710** |
| | **3RD YEAR MAINRENANCE** | | | | | |
| 23 | Weeding and application of fertilizer | Aug/Spet | 1.75 | 490 | 0 | 490 |
| 24 | Cost of fertilizer (NPK @ 50 gms/plant) @ Rs. 24 per kg | | 0 | 0 | 480 | 480 |
| 25 | Soil working ( 50 cms. Radius around plants) & application of fertilizer | Oct/Nov | 1.75 | 490 | 0 | 490 |
| 26 | Fire line tracing (2 m wide fire line over 400 m length & cultural operation | Feb/Mar | 3 | 840 | 0 | 840 |
| 27 | Watch & Ward | Apr- Mar | 15 | 4200 | 0 | 4200 |
| | **Total** | | **21.5** | **6020** | **480** | **6500** |
| | **4TH YAR MAINTENANCE** | | | | | |
| 28 | Fire line tracing (2 m wide fire line over 400 m length & cultural operation | Feb/Mar | 3 | 840 | 0 | 840 |
| 29 | Watch & Ward | Apr- Mar | 15 | 4200 | 0 | 4200 |
| | **Total** | | **18** | **5040** | **0** | **5040** |

**ABSTRACT**

| Sl No | Year | No. Person days | Labour cost | Material | Total cost |
|---|---|---|---|---|---|
| 1 | 0th year | 33 | 9240 | 647.5 | 9887.5 |
| 2 | 1st year | 36.2 | 10136 | 927.75 | 11063.75 |
| 3 | 2nd year | 23.25 | 6510 | 2200 | 8710 |
| 4 | 3rd year | 21.5 | 6020 | 480 | 6500 |
| 5 | 4th year | 18 | 5040 | 0 | 5040 |
| | **Total** | **131.95** | **36946** | **4255.25** | **41201.25** |

NB: as per interpolting to 400 plant per ha. of the approved plantation cost Norm of 2016 for 1600 plant per ha. (Annexure-6) by PCCF recasted with present wage rate @ 280/mandage

## COST NORM FOR BLOCK PLANTATION @ 1600 PLANTS PER HECTARE (2.1.4.3)
## WAGE RATE Rs. 280/- PER DAY

| Sl No | Item of work | Preferable period of work | Person days | Labour cost | Material cost Rs. | Total in Rs |
|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| | **0TH YEAR (Advnace Work) pre-planting operation** | | | | | |
| 1 | Survey, demarcation and pillar posting | Nov/Dec | 2 | 560 | 0 | 560 |
| 2 | Site preparation | Nov/Dec | 8 | 2240 | 0 | 2240 |
| 3 | Aligment and stacking of pits | Jan/Feb | 2 | 560 | 0 | 560 |
| 4 | Digging of Pits (30 cm cube) | Feb/Mar | 40 | 11200 | 0 | 11200 |
| 5 | Nursery cost (6 month old seedling) @ 12.23p per seedling ( Rs. 8.47p in 0th year + 3.76p in 1st year) for 1760 seedlings ( 1600+ 160) | Jan/Mar | 44 | 12320 | 2592 | 14912 |
| | **Total** | | **96** | **26880** | **2592** | **29472** |
| | **1st YEAR /PLANTING YEAR** | | | | | |
| 6 | Nursery cost ( 6 month old seedling balance Rs.3.76p for 1760 seedling | Apr-July | 21.5 | 6020 | 583.75 | 6603.75 |
| 7 | Carriage & planting, Casualty replacement and application of insecticides, manure etc. | Jul/Aug | 21 | 5880 | 0 | 5880 |
| 8 | Cost of insecticide and fertilizoer (a) NPK @ 50 gms/plant as basal dose=80kg @ 24/- per kg= 1920.00 (b) Urea @ 70gms/plat in two subsequest does @ Rs.6/- per kg=Rs. 672.00 (c) Granular insecticide ( Themet, Forate etc. ) @ gms/Plant @ Rs. 80 /- per kg=Rs. 640.00 | | 0 | 0 | 3232 | 3232 |
| 9 | 1st weeding ( complete weeding ) | Aug/Sept | 7 | 1960 | 0 | 1960 |
| 10 | MANURING Urea 35 gm | Aug/Aept | 5 | 1400 | 0 | 1400 |
| 11 | 2nd Weeding ( complete weeding) | Sept/Oct | 5 | 1400 | 0 | 1400 |
| 12 | Soil working (50 cms. Radious around plants) & manuring Urea 35gm per plant | Spet/Oct | 7 | 1960 | 0 | 1960 |
| 13 | Soil conservation measures in the form of stragged trenches of sizc 2 m X 0.5 m X 0.5 m @ 30 nos per ha. | Sept /Oct | 10 | 2800 | 0 | 2800 |
| 14 | Fire line tracing & inspection path | Feb/Mar | 3 | 840 | 0 | 840 |
| 15 | Watch & Ward | Aug-Mar | 7 | 1960 | 0 | 1960 |
| | **Total** | | **86.5** | **24220** | **3815.75** | **28035.75** |
| | | | | | | |

| Sl No | Item of work | Preferable period of work | Person days | Labour cost | Material cost Rs. | Total in Rs |
|---|---|---|---|---|---|---|
| | **2ND YEAR MAINTENANCE** | | | | | |
| 16 | Casualty replacement (10%) with Nursery cost, carriage,pitting and planting | Jul/Aug | 4 | 1120 | 1512 | 2632 |
| 17 | Weeding (complete weeding) | Sept/Oct | 6 | 1680 | 0 | 1680 |
| 18 | Cost of fertilizer (NPK @ 70gms/ plat (Rs. 24/- per kg & insecticide @ 5 gms/plant for 160 plants 800 gms @ Rs. 80 /- per kg | | 0 | 0 | 2752 | 2752 |
| 19 | Soil working ( 50 cms. Radius around plants) | Oct/Nov | 7 | 1960 | 0 | 1960 |
| 20 | Application of fertilizer & insecticide | Sept/Oct | 4 | 1120 | 0 | 1120 |
| 21 | Fire line tracing (2m .wide fire line over 400 m long) | Feb/Mar | 3 | 840 | 0 | 840 |
| 22 | Watch & Ward | Apr- mar | 15 | 4200 | 0 | 4200 |
| | **Total** | | **39** | **10920** | **4264** | **15184** |
| | | | | | | |
| | **3RD YEAR MAINRENANCE** | | | | | |
| 23 | Weeding and application of fertilizer | Aug/Spet | 7 | 1960 | 0 | 1960 |
| 24 | Cost of fertilizer (NPK @ 50 gms/plant) @ Rs. 24 per kg | | 0 | 0 | 1920 | 1920 |
| 25 | Soil working ( 50 cms. Radius around plants) & application of fertilizer | Oct/Nov | 7 | 1960 | 0 | 1960 |
| 26 | Fire line tracing (2 m wide fire line over 400 m length & cultural operation | Feb/Mar | 3 | 840 -- | 0 | 840 |
| 27 | Watch & Ward | Apr- Mar | 15 | 4200 | 0 | 4200 |
| | **Total** | | **32** | **8960** | **1920** | **10880** |
| | **4TH YAR MAINTENANCE** | | | | | |
| 28 | Fire line tracing (2 m wide fire line over 400 m length & cultural operation | Feb/Mar | 3 | 840 | 0 | 840 |
| 29 | Watch & Ward | Apr- Mar | 15 | 4200 | 0 | 4200 |
| | **Total** | | **18** | **5040** | **0** | **5040** |

**ABSTRACT**

| Sl No | Year | No. Person days | Labour cost | Material | Total cost |
|---|---|---|---|---|---|
| 1 | 0th year | 96 | 26880 | 2592 | 29472 |
| 2 | 1st year | 86.5 | 24220 | 3815.75 | 28035.75 |
| 3 | 2nd year | 39 | 10920 | 4264 | 15184 |
| 4 | 3rd year | 32 | 8960 | 1920 | 10880 |
| 5 | 4th year | 18 | 5040 | 0 | 5040 |
| | **Total** | **271.5** | **76020** | **12591.75** | **88611.75** |

NB: As per approved plantation cost Norm 2016 by PCCF recasted with present wage rate and recasting the 6 month seedling raising cost norm 2016 (Annexure-6)

**Odisha Forestry Sector Development Project, Phase-II**
(Forest & Environment Department, Government of Odisha)
SFTRI Campus, Ghatikia
Bhubaneswar 751 029, Odisha

**Memo No.** 3100 /OFSDP-144/2018 **Date-** 22.11.2018

To

The DFO-cum-DMU / chiefs.
Athamallik/Baripada/ Boudh/Dhenkanal /Ghumsur(N)/ Ghumsur (S)/
Jharsuguda /Sambalpur/Subarnapur/Sundargarh/
Rairangpur/Karanjia/ Forest Divisions.

Sub: Fire Protection work in JFM Mode und er OFSDP-II-reg.

Ref: This office letter no. 2848 dtd. 30.10.2018.

A detailed guide line on fire protection work under JFM Mode to be taken up in the assigned area of the VSS of OFSDP-II was send to you vide above mentioned letter under reference, where in the fire line creation will be done in the 1st year and the subsequent maintenance of the fire lines so created will be taken up from the 2nd year onwards up to 4th year.

'fh addition to the fire line creation and maintenance there is a prov1s10n incentive measures for the VSS which did not experience forest fires or successfully tackled frre incidents in and around their JFM area during the dry season, for the first 3 years after the commencement of OFSDP-II, will be awarded with a "No !ire Bonus" (money incentives), 25% of each batch of VSSs will receive the incentives-for the annual average amount of Rs. 4,900-/- -per-eligible VSS.

In this regard a concept note on Assessment of Forest Fire protection by VSS under OFSDP-11, for selection of such VSS getting award of "no fire bonus" have been developed by the PMU. The Criteria & Evaluation Methodology is enclosed herewith as Annexure-!along with the concept note.

Such, VSS are to be selected from each Batch after 3rd year i.e, from 2021-22 onwards up to 2025-26 at Division level meticulously, by constituting a committee under the Chairmanship of FMU Chief with FMU Coordinator (Microplanning & Livelihood) I FMU Coordinator (Training & Process Documentation), P-NGO Team Leader, VSS President/ Vice President as members. The Member Secretary of the VSS will be the Member Convener of this Committee. The Committee will evaluate each VSS of the FMU on the basis of the criteria and evaluation methodology developed, and on the points mentioned in the note of Annexure-I.

This is for your information and necessary action.

End: As above.

Project Director

Memo No. 3107 /OFSDP- 144/2018 Date- 22.11.20 18

Copy forwarded to Addl. PCCF & Field Director, Baripadal Angul/ and
RCCFs, Berhampur /Sambalpur jRourkela/ Bhawanipatn a for information.

Project Director

Phone: 91-674 2386084, Fax: 91-674-2386085. Email:webmail@otsdp,org, website: www, ofsds.in

# CONCEPT NOTE ON ASSESSMENT OF FOREST FIRE PROTECTION BYVSSs UNDER OFSDP-II

## Introduction

Forest fires are known for several undesirable impacts. Loss of biodiversity, increase in atmospheric pollution, change in nature of crops, adverse impact in the soil profile and its productivity, reduction in eco-system services, etc. are few of them. The tropical forests in India, more particularly the forests of Odisha, are mostly deciduous in nature. Due to heavy fall of rich leaf litter and its accumulation on the forest floor in autumn, winter and spring seasons, the forests become vulnerable to ground fire during the dry and hot summer months of the year, unless they are intensely protected against fire. Due to global climate change, the intensity and frequency of forest fires has increased many fold in last few decades.

Most of the firesreported from forest areas in Odisha are of anthropogenic origin. In early summer months burning of forest floor for collection of Non Timber Forest Products like Mahua(Madhucaindica) flowers and for augmentation ofKendu (Diaspyrosmelanoxylon) leaf production is a common site. Besides, unintentional throwing of ignited cigarette and beedibuttsby trespassers on forest floor andignition of fire in forest for cooking and other recreational purposes and abandoning the area without completely extinguishing the fires is also very much prevalent. Theseare some known causes responsible for origin of forest fires.

For control forest fires, people's initiative is critical. Under the aegisof JICA supported Odisha Forestry Sector Development Project Phase II (OFSDP-II), Van SurakshyaSamities (VSSs) have been entrustedprotection and management of forests in project villages.The OFSDP-II, inter-alia, has a component on forest fire protection by the community, i.e. VSSs. Under this component, there is a provision to incentivize those VSSs, which will contribute significantly towards forest fire protection. It is therefore, imperative to evaluate theperformance of all project VSSs in control of forest fires, for giving them the benefit of the incentive.

Forest fire protection by Communities under OFSDP-II

To address the issue of protection of forests from fire the component of will be executed by the community (VSS) in JFM mode and it will cover the following –

(a) Creation and maintenance of fire lines, and

(b) Provision of incentive measures.

### a. Creation and maintenance of fire line

The VSSs are expected to protect forest blocks within their JFM area from forest fire by construction and maintenance of fire line. The required cost of the work will be paid to the VSSs. Description of the work under this is as below:-

- 4 meter wide fire line will be established surrounding the JFM areas.
- The fire lines will be constructed between October and February i.e., period after monsoon and before dry season.
- Maintenance of the fire lines such as re-cleaning and brush wood removal will be conducted for 3 years after the establishment of fire lines.
- Fire watch and ward and fire line tracing of JFM treatment (ANR & Block Plantation) areas, the activity and cost to be covered under the respective component of the treatment.

### b. Provision of incentive measures.

VSSs which did not experience forest fires or successfully tackle fire incidents in and around their JFM area during the dry season, for the first 3 years after the commencement of OFSDP-II, will be awarded with a "No fire bonus" (monetary incentives). 25% of each batch of VSSs will receive the incentive for the annual average amount of Rs. 4,900/- per eligible VSS. The actual incentive amount will be categorised based on the achievement.

While selecting the VSSs for giving such an incentive for fire protection, following points need to be taken into consideration:-

(i) Type of forests in the vicinity of the VSS.

(ii) History of forest fire occurrence in the VSS area, which can be assessed by collecting information on number of forest fires reported in the forests in and adjoining to the VSS assigned area in the past (10 years).

(iii) Incidences of fire reported in the vicinity of the VSS after implementation of OFSDP-II.

(iv) Prevalent activities in VSS area responsible for forest fires such as collection of Mahua (Madhucaindica) flowers, Kendu (Diaspyrosmelanoxylon)leaf etc.

An analysis of factors causing forest fires, such as nature of forest vegetation, magnitude of leaf litter fallen on the forest floor, abundance of species like Mohul, Kendu etc. whose collection is known to cause forest fire, accessibility of the forest to the community for recreational purposes etc. also need to be taken into consideration as these are attributable to the emergence of forest fires of anthropogenic origin.

The Forest Department is maintaining record of forest fires occurring in the forest areas on the basis of satellite based information provided by the Forest Survey of India during the fire season. These information can be used while assessing the fire history in the forests around the VSSs. The measures taken by the community, in particular by the VSS to prevent forest fires need to be recorded meticulously. In the event of forest fire, the time taken in extinguishing the forest fire for preventing its spread is of significance.

Regeneration status of indigenous fire sensitive forest tree species like, Sal, Bija, Ashok, Jamun, Myrobalans, Ficus spp. etc.) as per the local site, is a good indicator of no fire occurrence in a forest area. Similarly absence of xerophytic /pyrophilic forest tree species and weeds, such as, Phoenix sylvestris, Diospyrosmelanoxylon,Butea monosperma, Lantana camara, Eupatorium, Cassia tora, Partheniumare also good indicator of no fire occurrence in forest area. Enumeration of these species is therefore suggested for according weightage to assess the efficacy of fire control by the VSSs. Likewise, abundance of earthworms/molluscs/insects etc. and

presence of presence of indicator vertebrates like ground nesting birds/snakes/frogs etc. are also suggestive of no fire occurrence in the forests.

While evolving the criteria for incentivization of VSS, the special measures taken by the VSS for prevention of forest fire also deserve consideration. These will include public awareness measures for prevention of forest fire including display of hoardings/wall writings etc. for prevention of forest fire, number of VSS meetings in which protection of forest from fire deliberated with the villagers etc. Besides, information provided by the VSS members about forest fire to the Forest Department and efforts made by the VSS community in providing support to the Forest Department for extinguishing the forest fires also need to be given due weightage.

## Criteria & EvaluationMethodology

Criteria & methodology to evaluate the efficacy of forest fire protection activities undertaken by the VSSs of OFSDP-II are enclosed in Annexure-I.

The evaluation of each VSS will be done annually by a Fire Control Committee from third year onwards. The committee shall have following members: -

1. FMU Chief- Chairman.
2. FMU Coordinator- Microplanning & Livelihood/ FMU Coordinator/ Training & Process Documentation- Member.
3. P-NGO Team Leader-Member.
4. VSS President/Vice President of that Village-Member.
5. Member Secretary-Member Convenor.

## ANNEXURE-I

## Evaluation sheets for each VSS will be maintained in the following proforma:-

| Sl. No. | Evaluation Criteria | Evaluation method | Weightage& Score | | |
|---|---|---|---|---|---|
| 01 | Forest fire occurrence in and around the VSS assigned area since start of OFSDP works in the VSS. | Verification of fire occurrence on the basis of records available in the DMU Office | **No. of reported Incidences** | **Weigh-tage** | **VSS Score (Out of 10)** |
| | | | >05 | 0 | |
| | | | 03-04 | 2 | |
| | | | 01-02 | 5 | |
| | | | 01 | 7 | |
| | | | 00 | 10 | |
| 02 | Regeneration and establishment of fire sensitive forest tree species in VSS assigned areas | Enumeration of fire sensitive regenerated & established indigenous species in VSS assigned forest areas. | **No of regenerated and established indigenous species** | **Weigh-tage** | **VSS Score (Out of 10)** |
| | | | 02 | 00 | |
| | | | 02-04 | 02 | |
| | | | 04-06 | 04 | |
| | | | 06-08 | 06 | |
| | | | 08-10 | 08 | |
| | | | > 10 | 10 | |
| 03 | Presence / absence of xerophytic /pyrophilic forest tree species& weeds | Presence / absence of xerophytic /pyrophilic forest tree species such as Phoenix sylvestris, Diospyrosmelanoxylon, Butea monosperma; Weeds likeLantana camara, Eupatorium, Casiatora, Parthenium etc. Enumeration shall be made in accordance with the procedure laid in the National Working Plan Code-2014 in 10 sample plots selected randomly and average values be taken for VSS score | **No of species regenerated & established** | **Weigh-tage** | **VSS Score (Out of 10)** |
| | | | 00 | 10 | |
| | | | 01 | 04 | |
| | | | 02 | 03 | |
| | | | 03 | 02 | |
| | | | 04 | 01 | |
| | | | >04 | 00 | |

<table>
<tr><td>04</td><td>Abundance of herb/ shrubs/climbers/ground orchids & grasses.</td><td>01 mts. x 01mts. (01mt Sq.) area / Hectare of assigned VSS area to be evaluated in the centre points of 100 mts x 100 mts grids during the period of 15th Nov-15th Dec (Post monsoon evaluation.)</td><td colspan="5"><table>
<tr><th>Indicator flora species regenerated & established</th><th>Weight-age</th><th>VSS score (Out of 10)</th></tr>
<tr><td>Herbs</td><td>02</td><td rowspan="5"></td></tr>
<tr><td>Shrubs</td><td>02</td></tr>
<tr><td>Climbers</td><td>02</td></tr>
<tr><td>Ground orchids</td><td>02</td></tr>
<tr><td>Grasses</td><td>02</td></tr>
</table></td></tr>
<tr><td>05</td><td>Abundance of Earthworms/Molluscs/ insects.</td><td>10 cms x 10 cms (100 Sq.cm)/ Hectare of assigned VSS area to be evaluated in the cross points of 100 mts x 100 mts grids during the period of 15th Nov-15th Dec (Post monsoon evaluation.)</td><td colspan="5"><table>
<tr><th>Indicator Invertebrate species</th><th>Weigh-tage</th><th>VSS score (Out of 10)</th></tr>
<tr><td>Earthworms</td><td>04</td><td></td></tr>
<tr><td>Molluscs</td><td>02</td><td></td></tr>
<tr><td>Insects</td><td>04</td><td></td></tr>
</table></td></tr>
<tr><td>06</td><td>Presence of indicator vertebrates like ground nesting birds/snakes/ frogs.</td><td>100 mts x 100 mts (01 Ha.)/50 Ha of assigned VSS area to be evaluated during the period of 15th Nov-15th Dec (Post monsoon evaluation.)</td><td colspan="5"><table>
<tr><th>Indicator Invertebrate species</th><th>Weig-htage</th><th>VSS score (Out of 10)</th></tr>
<tr><td>Birds</td><td>02</td><td rowspan="3"></td></tr>
<tr><td>Snakes</td><td>02</td></tr>
<tr><td>Frogs</td><td>01</td></tr>
</table></td></tr>
<tr><td>07</td><td>VSS assigned area protected from forest fire.</td><td>100% of the VSS assigned area to be verified during the period 15th May-15th June (Post fire season evaluation.)</td><td colspan="5"><table>
<tr><th colspan="5">Ground truthing& Satellite report (SNPP Points).</th></tr>
<tr><th>Ground truthing</th><th>Score</th><th>Satellite report (Fire spots)</th><th>Score</th><th>Total(2+4) (Out of 10)</th></tr>
<tr><th>1</th><th>2</th><th>3</th><th>4</th><th>5</th></tr>
<tr><td>Fully Protected</td><td>05</td><td>00</td><td>05</td><td></td></tr>
<tr><td>Up to 95 % area Protected</td><td>04</td><td>01</td><td>04</td><td></td></tr>
<tr><td>85-95 % area Protected</td><td>03</td><td>02</td><td>03</td><td></td></tr>
<tr><td>75-85 % area protected</td><td>02</td><td>03</td><td>02</td><td></td></tr>
<tr><td>50-75 % area protected</td><td>01</td><td>04</td><td>01</td><td></td></tr>
<tr><td>Less than 50 % area</td><td>00</td><td>05</td><td>00</td><td></td></tr>
</table></td></tr>
</table>

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 08<br>. | Forest area outside VSS assigned area protected from fire by the VSS along with FD staff. | Forest area coming within 05 K.M radius of village to be verified during the period 15th May-15th June (Post fire season evaluation.) | **20 Points (10 +10)<br>05 Points for Ground truthing& 05 points for Satellite report (MODIS Points).** | | | | |
| | | | **Ground truthing** | **Weightage** | **Satellite report** | **Weightage** | **VSS Score (Out of 20)** |
| | | | No fire with in 05 KM radius | 10 | 00 Fire spots with in 05 KM radius | 10 | |
| | | | No fire with in 04 KM radius | 08 | 01 Fire spots with in 05 KM radius | 08 | |
| | | | No fire with in 03 KM radius | 06 | 02 Fire spots with in 05 KM radius | 06 | |
| | | | No fire with in 02 KM radius | 04 | 03 Fire spots with in 05 KM radius | 04 | |
| | | | No fire with in 01 KM radius | 02 | 04 Fire spots with in 05 KM radius | 02 | |
| | | | Fire with in 01 KM radius | 00 | 05 Fire spots with in 05 KM radius | 00 | |

| | | | | |
|---|---|---|---|---|
| 09 | Awareness made by the VSS for Fire Protection | Evaluation will be made by FMU chief on the basis of public awareness measures taken by the VSS for prevention of forest fire. Display of hoardings/wall writings etc. for prevention of forest fire; number of VSS meetings in which protection of forests from fire deliberated. Besides, information provided by the VSS members to the Forest Department and efforts made by the VSS community in providing support to the Forest Department staffin extinguishing forest fires also need to be given due weightage. | **Weightage** | **VSS score (Out of 10)** |
| | | | **10** | |
| **Total VSS Score (out of 100)** | | | | |

**Note:**

1. These evaluation sheets are required to be maintained at DMU office on yearly basis and to be submitted along with the proposal while recommending the proposals for payment of incentive amount to the VSSs.

2. Pre fire season/Post monsoon & Post fire season/Pre monsoon evaluation of each VSS has to be made on grid based sampling.

3. GPS coordinates in respect of observations made under points at Sl. No. 2 to 8shall be recorded and furnished while submitting recommendation.

4. The VSSs will be awarded grading in the manner prescribed below on the basis of total score secured by them:-

| **Sl. No.** | **Marks secured by VSS** | **Grade** |
|---|---|---|
| 1. | 90-100 | Inspiring |
| 2. | 80-90 | Outstanding |
| 3. | 70-80 | Excellent |
| 4. | 60-70 | Needs improvement |
| 5. | Less than 60 | Alarming |

5. DMU Chiefs will maintain the annual record of each project VSS on Forest Fire Protection on yearly basis in the following proforma and submit the same to the PMU in the month of September, succeeding the fire year, for record and reference:-

| S.N. | FMU | Name of the VSS | Batch | Marks Secured | Grade |
|---|---|---|---|---|---|
| 1. | | | | | |
| 2. | | | | | |
| | | | | | |

6. On completion of three years a formal proposal in respect of award of incentive amount to the project VSSs on fire control will be submitted by the respective DMU Chiefs to the PMU recommending 25% of the VSSs of a particular batch for the award.While submitting the proposal average value of marks secured by the VSS in past three years will be taken into account for ensuring eligibility of the VSS for incentive amount. Further, the evaluation sheets of recommended VSSs for the past three years along with GPS information sheets will also be required to be submitted along with the proposal.

7. Only 25% of the VSSs of each batch will be entitled for the incentive amount, on the basis of highest score secured by them and therefore only there cases need to be included in the proposal that will be submitted to the PMU.

●●●

**Odisha Forestry Sector Development Project, Phase-II**
(Forest & Environment Department, Government of Odisha)
SFTRI Campus, Ghatikia
Bhubaneswar 751 029, Odisha

**Memo No.** 3100 /OFSDP-144/2018 **Date**- 22.11.2018

To

The DFO-cum-DMU / chiefs.
Athamallik/Baripada/ Boudh/Dhenkanal /Ghumsur(N)/ Ghumsur (S)/
Jharsuguda /Sambalpur/Subarnapur/Sundargarh/
Rairangpur/Karanjia/ Forest Divisions.

Sub:- Drainage Line Treatment (DLT) works under JFM & Non JFM mode - regarding.

Drainage Line Treatment (DLT) works under JFM & Non-JFM modes are required to be taken up from the current year onwards. Targets for both JFM & Non-JFM mode DLT works for 2018-19 have already been communicated to you vide this office L. No.1162/0FSDP-70/2018 Dated 03.05.20128. In this context, you are required to take up adequate planning well in advance for DLT works both in JFM & non-JFM areas. Execution of these works shall commence immediately after the rainy season.

2. Potential SMC works for the drainage line treatment for both JFM and Non JFM modes will comprise of following four categories-

   a) Gully Bed/ Head Stabilization b) Gully Bank Protection

   c) Water Harvesting

   d) In-Situ SMC Works and Others A list of potential SMC Works for Drainage Line Treatment is given in

**Annexure-I.**

It may be noted that certain DLT works/interventions within the above four categories are interchangeable between the groups. Also within each group, certain interventions are interchangeable, say for example, stone masonry water harvesting structures can be changed with earthen embankments depending on site conditions and specific requirements for such interventions.

3. The drainage line treatment under JFM mode will be taken up in a participatory mode through the VSS concerned. Details of these works will be incorporated in the micro-plan of the VSS and these works will also become a part of the annual work plan of the VSS.

4. The drainage line treatment under non-JFM mode will be taken up departmentally, preferably in continuity to the drainage line treatment under JFM mode if such field situations exist in the vicinity of the VSS assigned areas. However, if such areas are not available in the vicinity of the VSS assigned

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areas they may be taken up elsewhere, more particularly in ecologically sensitive vulnerable sites prone to land erosion and degradation. Details of these works will be incorporated in the micro-plan of the VSS and these works will also become a part of the annual work plan of the VSS.

5. Indicative model drainage line treatment work quantities (for per 10 ha area under JFM mode and 20 ha area under non JFM mode)) can be assumed for cost estimation in respect of both JFM and Non JFM mode, which are given in Annexure-If (A) and Annexure-II (B) respectively. The actual types and quantities of SMC works to taken, however, shall be determined based on results of the site specific planning.

6. It will be mandatory to maintain the geographical coordinates (Lat. & Long.) in respect of all DLT structures constructed under JFM & non JFM mode. Further, instructions regarding monitoring of water table in area of soil and moisture conservation works taken up under OFSDP-11 communicated vide this office L. No.1290/0FSDP-70/2018 Dated 17.05.20128, may be strictly adhered to.

7. Indicative designs of some potential SMC works are given for reference in Annexure-III.

Accordingly, you may initiate the planning for taking up DLT worksboth in JFM and non JFM areas as per targets communicated to you. The JFM mode DLT works shall be included in the micro-plan of the VSS and these will also be a part of the Annual Work Plan of the VSS. The cost estimates both for the JFM & non JFM work plan may be worked out and submitted to this office for further necessary action at this end.

Project Director
Odisha Forestry Sector Development Project

**Annexure-/**

## List of Potential SMC Works for Drainage Line Treatment

| Type of SMC Work | Description |
|---|---|
| **A) Gully Bed/ Head Stabilization** | |
| I. Live hedges | Placement of woody plant and tree cuttings in lines to grow and stabilize the gully beds and banks by the formation of roots and aboveground growth. |
| 2. Brush-wood check dams I gully plugs | Established at steeper slopes (>20%) by using locally available brushwood supported by wooden stakes. Brushwood check dams made of posts and brush are placed across the gully. Major expected functions/ outputs are as follows:<br>• To hold fine material carried by flowing water in the gully.<br>• To stabilse small gully heads, no deeper than I meter |
| 3. Loose boulder check dams I gully plugs | Made up of loose stones and boulders in upper reach gullies. It reduces velocity of runoff water and trap silt and soil which promotes vegetation in the upstream side. Major expected functions/ outputs are as follows:<br>• To reduce runoff available rain water inside the forest area of particular catchment.<br>• To enhance forest regeneration<br>• To provide protective rroisture retention in the forest area for plant growth |
| 4. Earthen check dams Igully plugs | Generally constructed on a nallah in order to break the flow of water and allows it to percolate in the soil. Major expected functions/ outputs are as follows:<br>• Cuts the velocity and reduces erosive activity<br>• Improves soil moisture of the adjoining area and allows stored water percolation to recharge the aquifers |
| 5. Concrete check dams/ gully plugs | Used to act as a control point along the gully bed. and also used at the gully head. Major expected functions/ outputs are as follows:<br>• To control gradient in slope either natural or in constructed channel<br>• To control tail water at the outlet of a spillway or conduit<br>• To serve as reservoir spillway where the total drop is low<br>• To serve as inlet/ outlet structure of tile drainage system |

| | |
|---|---|
| 6. Earthen bund\ | Earthen walls built across a slope, normally along contours, to act as a barrier to runoff particularly for shallow slopes (2-5 percent), and are frequently established together with contour plantation.<br><br>Earthen bunds help in reducing soil erosion and increasing water retention capacity of soil |
| 7. Stone bund | A single line of stones, or a stone bund, is laid along a contour. For rehabilitation of barren and crusted soils, a combination of stone bunds are used. Major expected functions/ outputs are as follows:<br><br>• To Arrest runoff partly, to enable spread of surface water in order to recharge the ground water table.<br>• To enhance water infiltration and reduces soil erosion (Runoff water can pass through the stone lines slowly the water gets filtered and spread over the field).<br>• To provide protective moisture retention |
| **B) Gully Bank Protection** | |
| | Gully bank protection works are intended to stabilise banks of gullies/gully beds to avoid further runoff and erosio1.s into gullies<br><br>Following structures can be considered.<br><br>I. Vegetative spurs<br>2. Crate-wire spurs<br>3. Retaining walls<br>4. Earthen bund<br>5. Stone bund |

| | |
|---|---|
| **C) Water Harvesting** | |
| Water harvesting Structure | Water harvesting structures are intended to store rainwater flowing from the catchment for ground water recharge and irrigation Small-scale water harvesting is most effective when operated as a system with three components:<br>1. The watershed or catchment area that generates the runoff,<br>2. The reservoir which holds or collects the runoff,<br>3. The serviced area where the harvested water is used for production. Major expected functions/ outputs are as follows:<br>• To reduce runoff of the avai Iable rain water inside of particular catchment.<br>• To create irrigation potential in small commands<br>• To enhance forest regeneration<br>• To provide protective/assured irrigation/moisture retention to the lands<br>• To intercept and reduce runoff thereby inducing larger and extensive absorption of available rain water.<br>• To trap eroded materials thus reduces sediment production rate either in to streams or to the reservoirs.<br>Following structures can be considered<br>1. Earthen embankments (check dams)<br>2. Concrete structures (check dams)<br>3. Stone masonry structures (check dams)<br>4. Ponds |
| Run Off Water Harvesting Structure | Runoff harvesting structures are meant to preserve rainwater flowing from the catchment for ground water recharge in forest areas and assured irrigation<br>Construction of earthen embankment across a natural basin to store water for various uses is always not feasible and in such cases dug out or excavated ponds can be constructed in a relatively flat terrain. In this method storage space is manmade.<br>Similar structures as the water harvesting structure can be considered. |
| **D) In-Situ SMC Works and Others** | |
| Staggered trench | Staggered trenching is mainly aimed to slope stabilization and drainage line treatment. Major expected functions/ outputs are as follows:<br>• To reduce runoff available rain from bald hills/barren hills in forest area.<br>• To enhance ground water recharge for moisture retention<br>• To provide protective moisture retention in the forest area for plant growth |

| | |
|---|---|
| Contour trench | A single line of continuous trench on the contour line is laid along a contour. The contour trench arrest runoff for percolation in the ground. Bunds are formed downstream along the trenches with material taken out of them. Major expected functions/ outputs are as follows:<br>• To arrest runoff fully, to enable percolation of water in order to recharge the ground water table.<br>• To create more favourable moisture conditions and thus accelerate the growth of vegetation. |
| Percolation Pit and trench ridge | Percolation Pit is constructed in relatively permeable soils in the upper reaches of the hilly area to facilitate groundwater recharge. The runoff from the catchment gets harvested in the percolation pit where it gets sufficient time to slowly recharge the groundwater. Major expected functions/ outputs are as follows:<br>• To arrest runoff, to enable collection and percolation of surface water in order to recharge the ground water table.<br>• To provide protective moisture retention in the forest area for plant growth |
| Half moon Trenches | Saucer pits (larger for hardwood plants and smaller for fuelwood plants) on upper side and half-moon trench-ridge on the down hill side near the pit will be made for water harvesting purpose. |
| vegetative barriers (seed sowing and protection) | Ecologically pioneer tree/ shrub species with soil binders (grasses/legumes/ creepers) will be directly sown with protection against fire and grazing for stabilisation of forest floors.. |

## Annexure-II (A)

### Indicative JFM Mode Model Drainage Line Treatment (per 10 ha)

| Items | Specification | Unit | Quantity |
|---|---|---|---|
| Concrete Core Check Dam | Head length 1Om | no | 0 |
| Earthen Check Dam | Head length 1Om | no | 0 |
| Brushwood Check Dams | Ll2m x Ht lm | no | 5 |
| Loose Boulder Check Dam (LBCD) | I 0' x 5' (9.9 cum) | no | 30 |
| Water Harvesting Structure | Size: 30mX30mX3m EartheP Excavation | no | 0 |
| Run-off Water Harvesting Structure | Size: I0mX10mX3m Earthen excavation | no | 2 |
| Continuous Contour Trench | 1m depth x 1 m width | running m | 0 |
| Percolation Pit | lmXlmXlm/ pit | pit | 0 |
| Stone Bund | lmX1mX100m | no (per 100m) | 3 |
| Staggered Contour Trenches | 1mX1mX4m | no | 0 |

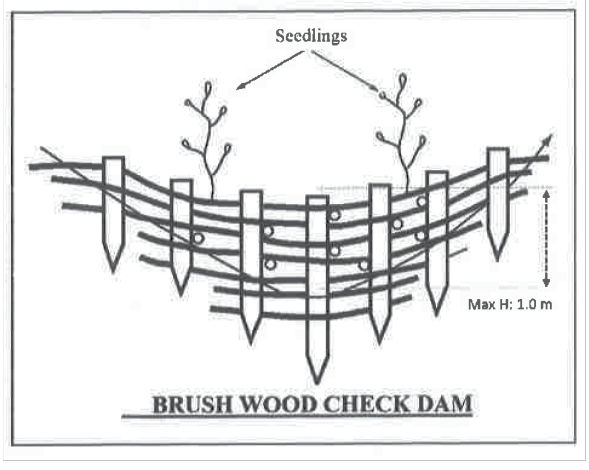
## Annexure-// (B)

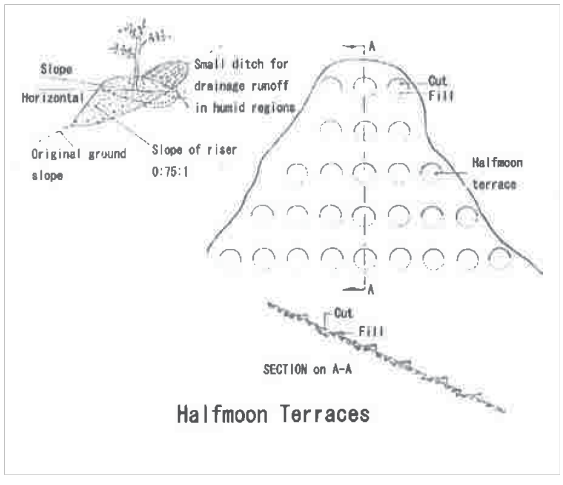
### Indicative Non JFM Mode MCJdel Drainage Line Treatment (per 20 ha)

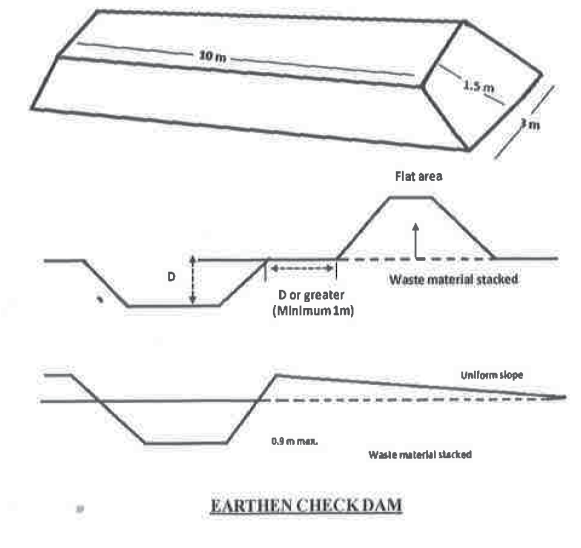
| Items | Specification | Unit | Quantity |
|---|---|---|---|
| Concrete Core Check Dam | Head length 1Om | no | 1 |
| •Earthen Check Dam | Head length 1Om | no | |
| Brushwood Check Dams | Ll2m x Ht lm | no | 10 |
| Loose Boulder Check Dam (LBCD) | l 0' x 5' (9.9 cum) | no | 60 |
| Water Harvesting Structure | Size: 30mX30mX3m Earthen excavation | no | |
| Run-off Water Harvesting Structure | Size: 10mXlOmX3m Earthen excavation | no | 4 |
| Continuous Contour Trench | 1m depth x 1 m width | running m | 1000 |
| Percolation Pit | 1mX1mXlm/ pit | pit | 300 |
| Stone Bund | lmX1mXlOOm | no (per 1OOm) | 10 |
| Staggered Contour Trenches | 1mXlmX4m | no | 150 |

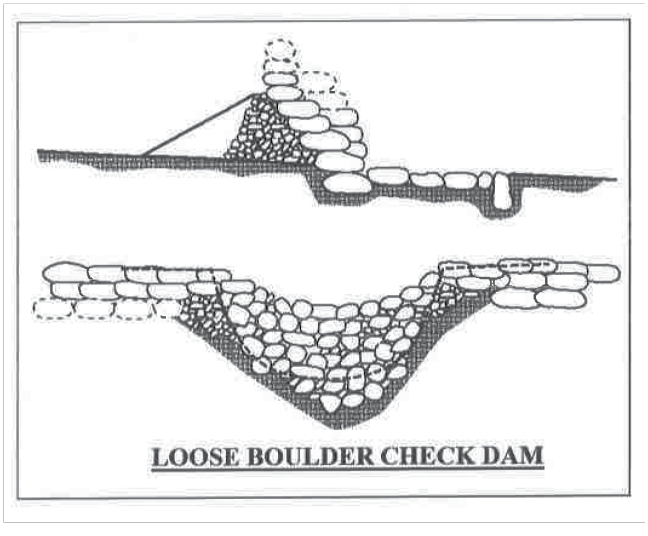
## Annexure-III

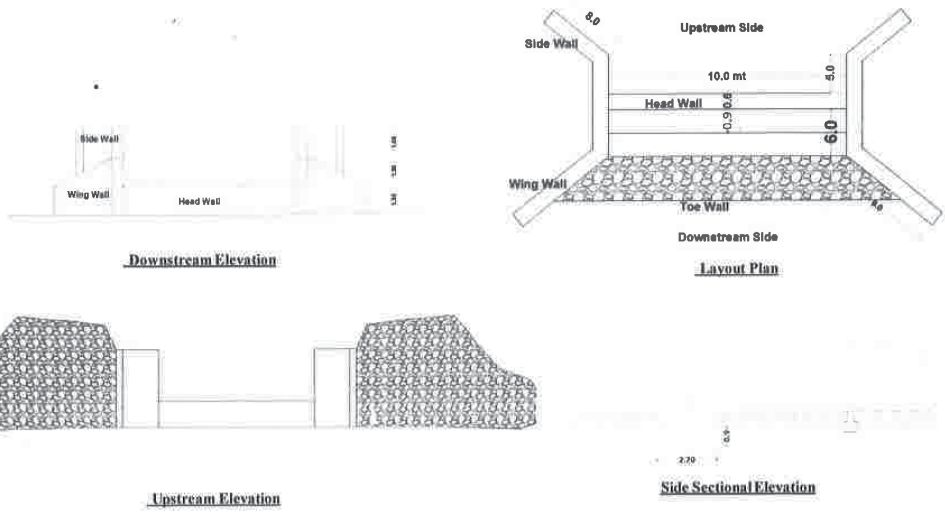
### Indicative designs of some of potential SMC works



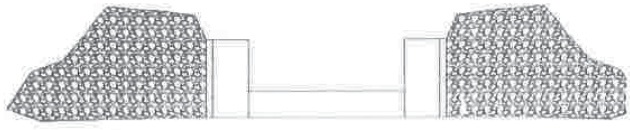






Downstream Elevation

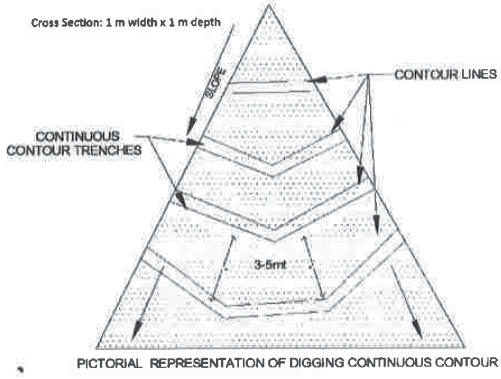
Layout Plan



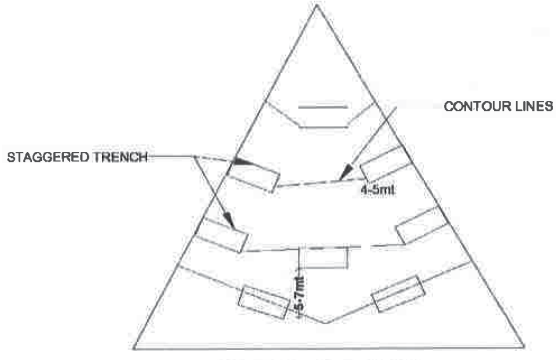
Upstream Elevation

Side Sectional Elevation

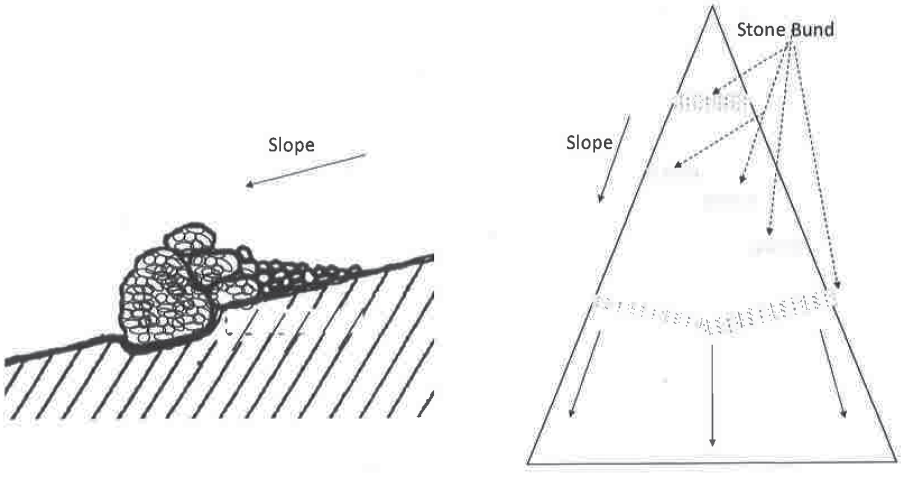
CONCRETE CHECKDAM



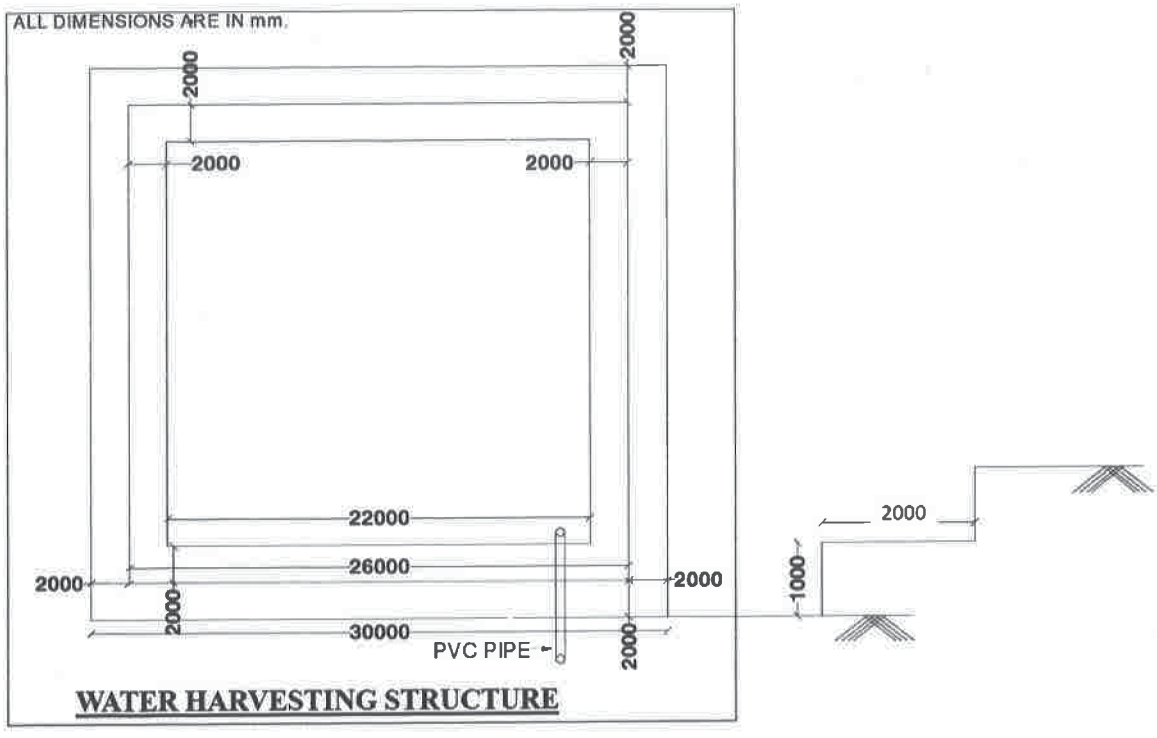

CONTOUR TRENCH

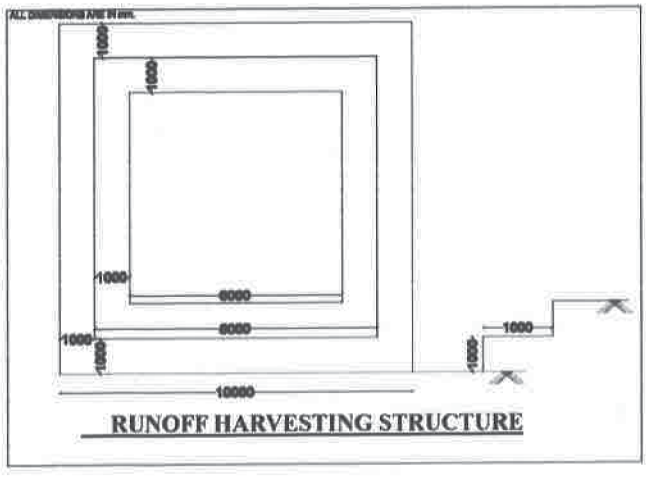



STAGGERED TRENCH




STONE BUND


ALL DIMENSIONS ARE IN mm.
2000
2000
2000
2000
22000
26000
2000
2000
2000
30000
PVC PIPE
2000
2000
1000
WATER HARVESTING STRUCTURE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RUNOFF HARVESTING STRUCTURE

**Odisha Forestry Sector Development Project, Phase-II**
(Forest & Environment Department, Government of Odisha)
SFTRI Campus, Ghatikia
Bhubaneswar 751 029, Odisha

**Memo No.** 2057/OFSDP-107/2018 **Date**- 10.08.2018

To

The DFO-cum-DMU / chiefs.
Athamallik/Baripada/ Boudh/Dhenkanal /Ghumsur(N)/ Ghumsur (S)/
Jharsuguda /Sambalpur/Subarnapur/Sundargarh/
Rairangpur/Karanjia/ Forest Divisions.

Sub:- Consolidation and demarcation of forest boundaries to be taken up under Non -JFM mode during 2018-19-regarding.

Ref: This office letter no. 1125 dtd. 30.04 2018 and 1619 dtd. 28.06.2018. (Proceeding of the last review meeting on dtd. 25.06.2018).

There is a provision for Consolidation and demarcation of Forest Block boundaries in Non-JFM mode which is to be taken up from current year (i.e

2018-19) onwards. The Physical target of Non-JFM Mode work under consolidation and demarcation of forest boundaries has already been communicated to you vide this office letter no. 1125 dtd. 30.04.2018 mention above. After the last review meeting with DMU Chiefs the final target of all the Division have been communicated to you vide this office letter no. 1619 dtd. 28.06.2018.

In this context you are required to start planning well in advance for the said work to be taken up in the Forests Blocks of your Division. Following are the guidelines for initiating the consolidation and demarcation of Forest Block boundary:-

1. The forest block boundary pillars construction and repair is to be taken strictly as per the guideline issued by PCCF, Odisha vide his memo no. 15931/ 10F (cons) 8/07 dtd. 11.06.2007. copy of the same is enclosed herewith for your information.

2. The boundary pillars of RF and PRF and the block boundary pillars of inter Divisional boundary are to be taken up under the said work.

3. Where ever the new construction or repair of the boundary pillars are taken up its GPS readings will be taken and simultaneously the GPS reading of the entire polygon of the concerned Forest Block will also be taken and uploaded in the GIS portal of OFSDP-11 in order to prepare Geo Reference Map of the said Forest Block by the GIS cell.

4. Preferably the Forest Blocks under this work are to be selected where the JFM interventions under OFSDP-II are being taken.

5. Before taking of the work the existing documents/ Notification and maps of the said Forest Block are to be reviewed properly and planning should be done accordingly as per requirement. Please note that any lapse in this regard will be your personal liability.

6. The Financial Outlay is Rs. 8947/km for consolidation and demarcation of Boundary and Rs. 3338/Km will be for maintenance of Forest Boundaries. The detail item wise break up of norm will be sent to you separately while allocating the funds.

Further you are requested to furnished the information of the Forest Block where this work will be taken up in the following proforma.

| Sl. No. | Name of the Forest | Legal Status of the Block RF/PRF | Area of the Block as per notification (in Ha.) | Length of boundary (in Km) (As per W.P) | No of Boundery pillars in the Forest Block (as per notification) in Nos. | Target in Km | Proposal | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Boundary Clearance (in Km.) | Pillar construction (in Nos.) | Repair of Pillar (in Nos.) |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

Your proposal should be limited to the target allotted to concerned Division as per letter no. 1619 dtd. 28.06.2018.

This is for information and necessary action. .

Project Director

Memo No OFSDP-107/2018 Date- 10.08.02018.

Copy forwarded to Addl. PCCF & Field Director, Baripada/ Angul/ and RCCF, Sambalpur /Rourkela/ Bhawanipatana for information.

Project Director

**Odisha Forestry Sector Development Project, Phase-II**
(Forest & Environment Department, Government of Odisha)
SFTRI Campus, Ghatikia
Bhubaneswar 751 029, Odisha

**Memo No.** 2311/OFSDP-107/2018 **Date**- 01.09.2018

To

The DFO cum - DMU Chief s,
Athamallik/ /Baripada/Ghum sur(N)/Sambalpur I
SubarnapurI Sundargarh Fore st Divisions.

Sub: Timeline for development and functioning of Hi-Tech Nursery. (April, 2018 to July 2019) .

Ref: - This office letter no. 1121IOFSDP-7012018 dtd.30.04.2018.

Please find enclosed herewith the Timeline for development, functioning and production of seedlings in Root trainer and poly pot in the Hi-Tech Nursery for the above mentioned period. The same may be followed meticulously.

Encl: As above.

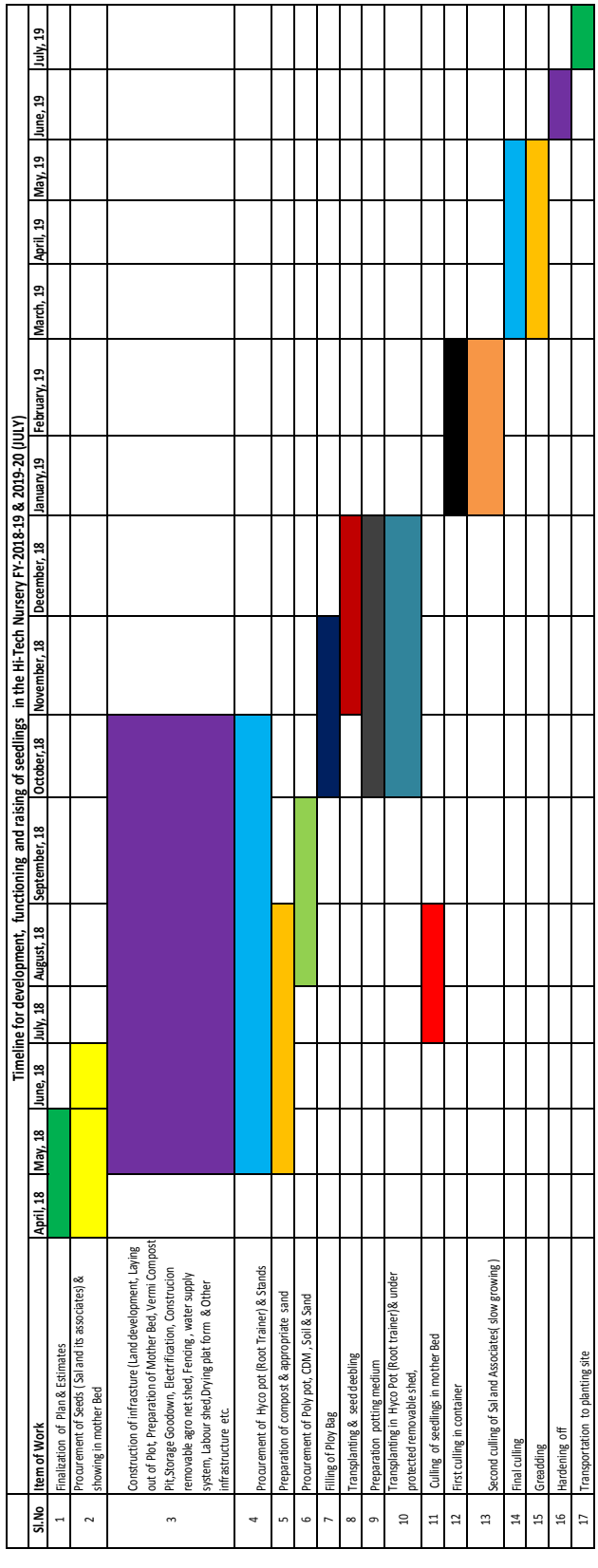
Addl. Project Director

Memo No.23122/OFSDP-58/2018(Vol-II) Date-01.09.2018

Copy to Addl. PCCF cum- Field Director -STR Baripada, Angul and RCCF Berhampur I Bhawanipatnal Sambalpur IRourkela for information.

Addl. Project Director

# Timeline for development, functioning and raising of seedlings in the Hi-Tech Nursery FY-2018-19 & 2019-20 (JULY) Under OFSDP-II.



**Odisha Forestry Sector Development Project, Phase-II**
(Forest & Environment Department, Government of Odisha)
SFTRI Campus, Ghatikia
Bhubaneswar 751 029, Odisha

**Memo No.** 2999/OFSDP-58/2018 **Date**- 18.11.2018

To

The DFO -cum DMU Chiefs,
Athamallik , Baripada , Ghumsur(N), Sambalpur,
Subarnapur & Sundargarh Forest Division.

Sub: Instruction on Development and setting of Hi-Tech Nursery and raising of seedlings (RT &Poly Pot) under OFSDP-II.

Ref: This office letter no. 1121 dtd. 30.04.2018, and 01.09.2018. 2311 dtd.

With reference to subject cited above, this is to inform that a set of insut ction in the form of proceedings of the meeting on Hi-tech Nursery on dtd. 25.04.2018 and the time line for setting up of the Hi-Tech Nursery and raising of RT & Poly pot seedlings were communicated to you in the letters mentioned above. Now a detailed Instructions on development and

setting up of Hi-Tech• Nursery and raising of seedlings (RT &Poly Pot) its utilization and concept of a revolving fund for continuous raising of seedlings in the Hi-tech Nursery under OFSDP-II are send herewith for your information and necessary action, which should be followed strictly according to the instructions.

Encl: As above.

Project Director

Memo No. 3000/OFSDP-58/2018 Date- 13 .11.2018

Copy forwarded to Field Director & Addl. PCCF, Baripadaf Angul/ and RCCF, Berhampur /Sambalpur /Rourkela/Bhawanipatna for information.

Project Director

Phone: 91-674 2386084, Fax: 91-674-2386085. Email:webmail@otsdp,org, website: www, ofsds.in

# Instructions on Development of Hi-Tech Nursery and Raising of Seedlings (RT & Poly Pot) Under OFSDP-II.

## Introduction.

The Sustainable Forest Management is one of the main component of work under OFSDP-II. **Construction/ Improvement of Permanent Nurseries** have been taken up under Non-JFM Mode in six Divisions **(Athamallik, Subarnapur, Sambalpur, Sundargarh, Baripada, and Ghumsur North)** in six Forest Circles, implementing OFSDP-IIunderthis component,existing central Nurseries of the concerned Division are to be developed into Hi-tech Nursery and no new setupsare taken up. The construction /setting up of the Hi-tech Nursery are to be taken up in 2018-19. The subsequent maintenance of the infrastructures createdand replacement of the Root Trainer and Root Trainers Stand will be taken up in the coming yearsas per requirement. The findings and lessonslearnt from establishment of the Hi-tech nurseries under the Project and seedling production at such Hi-tech nursery will be compiled as a guideline for future reference.

## Objective:

The objectives are as follows.

i) Diversification of planting stock production Methodologies /techniques

ii) Improving production quality of Higher quality planting stock of local species including NTFP and Agro Forestry species to be used in the Plantations by the project VSSs.

iii) Examining effective planting stock production method for seedlings having high preference by VSS and farmers.

iv) Extension of diversified standardize procedures for production of QPM.

## Construction of Hi-Tech Nursery

### 1. Infrastructure Development Work

The site specific infrastructural development works such as **Land development, fencing, office with equipment storage room, internal roads, pump house with overhead tank, bore well with pump, water pipe line network, shed for storage of compost, potting media ( compost and coarse sand) , Root Trainer etc., washing and disinfecting tank , labour shed, drying yard construction, compost pit area, vermi compost unit, potting medium mixture area, chopping machine unit, Ramp for loading and unloading and common toilet etc.**,are taken up by concerned Division as per the approved site specific plan & estimatesfor the same. In addition, there will be one small **Nakhetravan** created in each of the Hi- Tech nursery site at a prominent location.

**The other infrastructural development work** for seedling production facility such as procurement of **Root trainer (150cc & 300cc),raised stand forRoot Trainer (both 150cc & 300cc), Hygropitfor seed germination &removable agronet sheds with overhead sprinkling systems** are procuredat Division level.

## 2. Seedling production

The construction/ setting up of Hi-Tech Nursery and raising of seedling will start from 2018-19. In each,nursery **2.2 lakhs seedlings are to be raised each by root trainer and by Poly pots and other method (totalling 4.4 lakhs seedling)** per year for the 4 years. **(Starting from 2018-19 to 2022-23). Some excess seedlings are to be raised taking culling into consideration for getting the targeted QPM.**Thecost normapproved by the PCCF and HoFF Odishafor raising of seedlings in poly pot and Root Trainer (150 cc & 300cc)has been re-casted with present wage rate and the same has been communicated vide letter no.1867 dtd. 24.07.2018 to concerned DMU Chiefs.

The following instructions are to be followed for seedling raising in the Hi-Tech Nurseries.

### i. Orientation of Nursery bed

The orientation of the nursery beds should always be from East to West.

ii. Procurement of seeds

It should be made on sound analysis of viability and other silivicultural consideration for a particular species and the collection of same should done in time and from proper source well in advance. The source, time and quantity of the seeds of different speciescollected are to be mentioned in the nursery journal.

### iii. Germination Bed/Hygro-pits

The tree species having large seeds are to be dibbled directly in their end use containers after due treatment. Small seeds are to be germinated first in mother bed (raised)/ coarse sterilized sand filled in hygro pits with heavy gauze plastic dome.

### iv. Preparation of potting medium for Root Trainer seedlings

The potting medium will contain 50% compost and 50% coarse sand only.

**A. Compost**

The compost is to be made by **Berkely** method **(aerobic or hot process),** The Berkely method was told o the participants of DMUs who attended exposure visit cum training p programme on High tech nurseries in West Bengal exposure visit and compost preparation shall be made under their In this process, high quality compost can be produced in about three-weeks' time. In each nursery about 32 m3 ofcompost is required for production of 2lakhs RT seedling which are to be prepared well in advance of raising of seedlings. Same are to be stored properly in the storage area.

**B. Coarse Sand :**

The coarse sandis to be prepared by 1st sieving through a 2 mm sieve (to discard sand particlesof bigger size more than 2000 microni.e 2mm) andthen 2nd sieving through a .3mm to .4 mm sieve to separate the smaller particles (silt, clay and fine sand). All sands passing through the 2nd sieve are to be discarded and only the sand particles which did not pass through the 2nd sieve is the

desired coarse sand to be used as potting medium. The coarsesand so collected are to be washed to remove dust, harmful dissolved substance and weed seeds, and should besterilized by spreading the wet coarse sand in5-10 cm thick layer on a dry surface under sun light and are to be stored properly.

**v. Filling ofmixture in the Root Trainer.**

The mixture of compost and coarse sand in equal proportionate (50% each) are to bemixed, preferably in a mixture machine and to be filed in the RT by hands byjust moistening(not wet) the mixture by water and care must be taken that the containers will indeed be filled completely while neither compacting the substrate too much by tapping down on the media with force, nor packing them too loosely leaving large open air pockets.

**vi. Checking of potting medium.**

Before filling of the containers the growth media should be tested for availability of nutrients, pH and Electrical Conductivity(EC). For such testing about 10 root trainers filled up with potting mixture are to be saturated with water and after 2 hours of saturation approximately 1/8 cup of water should bepoured in the container toobtain about few ml of leachate for checking of the pHand EC. The pH of the potting medium should range 5.5.-6.5 and the EC should be 2.7 – 4.6 mmhos/cm. The requiredpHand EC measuringequipments are to be procured and available at the nursery site for measuring the sameand it hasto be done before use of the potting medium. The staff should be trained to use and measure thepH and EC.

**vii. Species to be raised.**

In the Hi-Tech Nursery recommended species to be raised are Sal. Karanja, Neem,Khaira, bel,Amla, Bija, harida, Bahada, Kasi,,Dhaura, Mai, Ghamar, Asana, Panasa, Kusum, Ashok, Mahula, Char, sishu, ata, maha Neem, Kadmba, Acasia, AkasiamengiuemSirisa, Phasi, Babul,Simili,DhalaSirisa, Kanchana, Sidhha, RaktaChandan, Ritha,Simaruba , Padhel, Tentuli, Agasti, Moringa, Teaketc. mostly Sal associates local species are to be raised in poly pot and Root trainer.

More presizely in the Root Trainer 150 ccthe species to be raised are Bija, Neem , Amla, Haldu, Acacia and other tree species whose seeds are small.

In 300cc Root Trainer the species to be raised are Sal, mahula, bahada, Karnja, Ashok, Kusum, Char, Arjun, Ritha, Ghambar, Asana, Teak etc, Tree species whose seeds are biggershall be used after due seed treatment as per slivicultural requirement.

**viii. Culling.**

In order to raise an even and uniform vigorous plantand to getQuality Planting Material (QPM), the culling operations of seedling are required. Culling of the seedling are to be taken up as follows:

1. Culling in germination bed- it is to be taken after 21-25 days of the germination itself. Late germinators, diseased and drying seedling should be culled at every week.
2. The 1st culling of the seedling (Fast Growing) are to be taken up at the time of transfer of plant from the protected removable shed area to the harding area. At this stage diseased and inferior

seedling are culled out. However, Sal seedling and slow growing species will be culled after 6 weeks after germination of seed.

3. The 2nd culling of the slow growing species like Sal are to be carried out again after 5months.

4. Final Culling;

The final culling of the seedlings is to be taken up just before the seedling are ready for plantation. A random sample of 50 seedlings per lot is measured in height and root collar at base. Calculate the average of height and collar diameter. The seedlings having height 20% above or below the average height/collar girth of the seedling should be culled. Few sample seedlings selected for culling (using measurement criteria as above) and same to be used for comparison to speed up the culling.

**ix. Grading;**

The grading ofseedlings of fast growing species are to be done after culling has been completed. Sal should not be graded after the first culling but after the last culling i.e. just before planting-out. Grading will be done on the basis on height and collar in each bed species wisebefore transportation to the field for planting-out.

**x. Hardening of Seedlings:**

It refers to progressive withdrawal of the favourable conditions in which the seedling have been developed in the nursery with the objective of conditioning of the plant for survival in the harsher environment in the field. This treatment should begin not later than halfway through the life of the seedling in the nursery. The seedlings should be exposed to full sun light and reduction of frequency of watering, well in advance of transporting out.

## 3. Transportation of seedling:

Utmost care is to be taken while transporting seedlings to the planting site. The main problem during transportation, aredamage at the root collor, bad lifting, vibration on the way,wind damage, drying out and sun scorch. Seedling should be handled as little as possible to minimise physical damage. The seedling at any stage should not be lifted by holding their stem. Care must be taken during handling of seedlings at every step of transportation i.e from bed to waiting area in the nursery, from waiting area to the vehicle, from the vehicle to the plantation site and from plantation site to planning pit. The transportation of the seedling should be done by end of June just after the monsoon rain preferable in the early morning or during evening hours. The additional cost for transportation can be provisioned as required separately if the same could not be accommodated in the plantation norm to be done in JFM mode by the VSS.

## 4. Maintenance of records.

As per plantation manual 1977 the following Nursery register journal are to be maintain for both the Root Trainer and Poly pot seedlings raised in the Hi- tech nursery each year.

i. Form No. 1 (General) Such as situation, Area etc. (details as per the plantation manual 1977)

ii. Form No-2(Detail cost) such as site clearance, cost of seed etc., (Detail as per the plantation manual 1977)

iii. Form No. -3 (Account of Planting Stock) The planting stock details species wise to be maintain as per the manual. The stock details should also be displayed in the website of OFSDP-II.

In addition to the above the MIS modules developed for the Hi-tech Nursery are to be uploaded in the IMS portal of GIS cell of OFSDS on a monthly basis.

## 5. Utilization of seedling

The seedlings so raised will be primarily utilised by the VSS for plantation to be done in JFM Mode under OFSDP-II.

If there will surplus of seedlings, the same can be provided to nearby project Division under OFSDP-II or to other departmental plantation activities based on the requisition of demand for the supply of the seedlings.

The cost for selling of the seedling (RT & poly pot) and the transportation cost will be decided by the DFO by 31st April each year with prior approval of the PMU.

## 6. Revolving fund of Hi-tech Nursery:

The seedling cost for raising 2.2 lakhs poly pot seedling and 2.2 lakhs RT seedlings for the 1st batch raising of seedlings will be borne by OFSDP-II once only. From the 2nd batch onward the seedling will be raised out of the sale proceeds of the seedlings utilized by the concerned VSS in JFM Mode or sold to other Division/ utilization in other scheme. The sale proceeds of the seedlings of the 1st batch raised in the Hi-tech nursery will include the seed money for the revolving fundfor raising of seedlings in the subsequent years.

## 7. Separate Bank Account

A separate Bank Account for the said revolving fund is to be maintained by the concerned DMU Chiefnamed revolving Fund Accountof the Hi-tech nursery and each year the sale proceeds of the seedlings are to be ploughed back for raising of 4 .4 akhsseedlings(2.2 lakhs RT seedling and 2.2 lakhs poly pot seedlings) for use/sale in the subsequent year. Separate Audit is to be taken up ofthis account, each year and a report to that effect is to be submitted to PMU.

The decision of the Project Director, OFSDP-II will be final and binding on account of any clarification.

●●●

**Odisha Forestry Sector Development Project, Phase-II**
(Forest & Environment Department, Government of Odisha)
SFTRI Campus, Ghatikia
Bhubaneswar 751 029, Odisha

**Memo No.** 3060/OFSDP-58/2018 **Date**- 17.11.2018

To

The DFO cum - DMU Chief s,
Athamallik/ /Baripada/Ghum sur(N)/Sambalpur I
SubarnapurI Sundargarh Fore st Divisions.

Sub: Raising of species in RT Seedlings in 300 cc & 150 cc in the Hi-tech N ursery under OFSDP-II.

Ref: This office letter no.2999 dtd 13.11.2018.

With reference to subject cited above and letter under reference, this is to inform that 4.40 lakh seedlings (2.20 lakh in poly pot and 2.20 lakh in RT, including 10% casualty) are to be raised in the Hi-Tech nursery under OFSD P-II per year. The details of species to be raised have been communicated in the above mentioned guideline at para 2.vii. You are further requested to ensure raising of at least 5-10% of the following Medicinal plant species out of the total seedlings being raised in the Hi tech Nursery. The seeds can be collected from suitable mother tree in your locality or can be procured form silviculturist Bhubaneswar.

1. Ashoka (Saraca asoca)
2. Lodhra (Simplocos recemosa)
3. Medha j Masania( Lipsa chinensis)
4. Phenfena (Oroxylon indicom)
5. Amla (Emblica officinalis)
6. Harida (Terminelia Chebula)
7. Bahada (Terminalia Bellerica)
8. Arjuna (Terminalia Arjuna)
9. Nageswar (Messua ferra)
10. Gugool (Commiphora wrigh tia)

This is for your information and necessary action:

Project Director

Memo No.306 I /OFSDP-58/2018 Date-17-.11.2018

Copy forwarded to Field Director & Addl. PCCF, BaripadajAngul/ and RCCF, Berahmpur/Sambalpur/ Rourkela/Bhawanipatna for information.

Project Director

Phone: 91-674 2386084, Fax: 91-674-2386085. Email:webmail@otsdp,org, website: www, ofsds.in

**Odisha Forestry Sector Development Project, Phase-II**
(Forest & Environment Department, Government of Odisha)
SFTRI Campus, Ghatikia
Bhubaneswar 751 029, Odisha

**Memo No.** 3060/OFSDP-58/2018 **Date-** 17.11.2018

To

The DFO cum - DMU Chief s,
Athamallik/ /Baripada/Ghum sur(N)/Sambalpur I
SubarnapurI Sundargarh Fore st Divisions.

Sub: Cost Norm for Raising of RT Seedlings in 300 cc & 150 cc in the Hitech Nursery under OFSDP-11.

Ref: This office letter no.1941 dtd. 31.07.2018.

With reference to subject cited above and letter under reference, please find herewith the Cost Norm for raising of Root Trainer seedlings in 300cc & 150 cc Hyco Pot, and poly Pot seedling with 6-month maintenance in the Hi-Tech Nursery, at current minimum wage rate @ 280/-. The hike in cost norms has been necessiated in view of increase in minimum wage rates effected vide Govt., of Odisha Labour & ESI Department Notification S.R.O. No. 431/2018 dtd. 30th October, 2018.You are requested to send requisition for additional funds accordingly.

This is for favour of your information and necessary action.

Encl: As above

Project Director

Memo No. 3040/OFSDP-58/2018 Date- 16.11.2018

Copy forwarded to Field Director & Addl. PCCF, Baripada/ Angul/ Berahmpur and information.RCCF, Sambalpur jRourkelajBhawanipatna for information.

Project Director

Cost Norm for Raising of Root Trainer Seedling in Removable Agro Net Shed Exculding cost of Root Trainers and Stands (Production Cost of 1.0 Lakh no of Rt Seedlings in 150 cc (wage rate)

**280/- in the Hi-Tech Nursery of OFSDP-II**

| Sl. No. | Item of Work | Man-days | labour cost (In Rs.) | Material cost (In Rs.) | Total Cost |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| 1 | Site clerance along with leveling of sites | 10 | 2,800 | | 2,800 |
| 2 | Preparation of potting medium/ Mixture(Compost and sand) 16.5 cum (including 10% extra) 150 ccX100000 =15000000cc/1cum= 15cum + 10 % pulverisation of compost/ seiving of desired dimention sand | 75 | 21,000 | 21,000 | 42,000 |
| 3 | Mixing of Potting medium, filling of the cell, setting of stand in rows and setting of filled blocks over the stands | 70 | 19,600 | | 19,600 |
| 4 | Showing , re-showing and transplanting of treated seeds | 140 | 39,200 | | 39,200 |
| 5 | watering and electicity cost (up to March) | 300 | 84,000 | | 84,000 |
| 6 | Weeding & refilling for RT block inclusive of weeding over the exposed areas 80 Mandays/month for 4 months (up to March) | **320** | **89,600** | | 89,600 |
| 7 | Cost of plant hormone and micro-nutrients & application | **30** | **8,400** | 30,000 | 38,400 |
| 8 | Collection cost of seeds inclusive of seed treatiment | **65** | **18,200** | 25,000 | 43,200 |
| 9 | Culling, grading and shiftmg of seedlings tor hardening | **120** | **33,600** | | 33,600 |
| 10 | Carnage and storage of stands and RT blocks from stroage, site to net house | **70** | **19,600** | | 19,600 |
| 11 | Mise contigencies, Traly for transportation of seedlings etc | | | 5,000 | 5,000 |
| | **Oth Year Total** | **1200** | **3,36,000** | **81,000** | **4,17,000** |
| 12 | Cost of vermi wash, plant hormone and micronutrient multimixed fertilizer & insecticides including application. | **20** | **5,600** | 20,000 | 25,600 |
| 13 | Carriage/handling of planting stock, removal & fixing of Agro Net Shed,setting in rows, Maintanance of Agro Net Shed & sprinkller | **100** | **28,000** | 2,243 | 30,243 |
| 14 | Watering and electricity cost | **300** | **84,000** | | 84,000 |
| 15 | Culling , grading of seedlings | **120** | **33,600** | | 33,600 |
| 16 | Mise contigencies | | | 2,250 | **2,250** |
| | **1st Year Total** | **540** | **1,51,200** | **24,493** | **1,75,693** |
| | **Grand Total ( Oth + 1st Year)** | **1740** | **4,87,200** | **1,05,493** | **5,92,693** |
| | **Cost of Oth year ( 4,17,000/100000=** | **4.17** | | | |
| | **Cost of 1st year ( 1,75,693/ 100000=** | **1.76** | | | |
| | **Per seedling cost 5,92,693/ 1,00,000=** | **5.93** | | | |

**NB.** Same is recsted at present wage @ 280/- rate and interpolating for 150 cc of the Norm approved at Annexure-29 vide o/o no. 143/12F (Affn.) 247/2012 dtd. 29.01.2016 ofPCCF,

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**Odisha Forestry Sector Development Project, Phase-II**
**SFTRI Campus, Ghatikia,**
**Bhubaneswar 751 029, Odisha**

Letter No. 2303 /OFSDP-107/2018 Date- 01 .09.2018

To

The DFO cum- DMU Chiefs,
Athamallik/Baripada/ Boudh/Dehnkanal /Ghumsur(N)/Ghumsur (S)/
Sambalpur/Subarnapur/Sundargarh/Rairangpur/
Karanjia/Jharsuguda/ Forest Divisions.

Sub: Outlay of Physical and Financial Target for Consolidation and Demarcation of Forest Boundary in Non-JFM Mode for the financial year 2018-19 (1st Batch).

Ref: This office letter no. 1125 dtd. 30.04.2018 and 2057 dtd. 10.08.2018.

The Physical Target for Consolidation and Demarcation of Forest Boundaries to be executed in Non-JFM Mode during the financial year 2018-19 have been sent to you vide this office letter no. 1125 dtd. 30.04.2018. Again the detailed guideline on the same was also sent to you vide PMU letter no. 2057 dtd. 10.08.2018.

Now, the Physical and Financial allotment with the item wise break up of Cost Norm for the said work are enclosed herewith for your information and necessary action.

You should be in readiness with proper planning to take up the work just after the rainy season is over and to complete the targeted work within this financial year.

The MIS formats for the said work was sent to you earlier vide this office letter no. 1191 dtd. 04.05. 2018. Necessary entries on monthly basis shall be uploaded for proper monitoring of the work.

This is for favour of your information and necessary action.

Encl: As above.

Project Director

Memo No. 2304 /OFSDP-107/2018 Date-01.09.2018.

Copy forwarded to Addl. PCCF & Field Director, Baripada/Angul/ and RCCF, Berhampur/Sambalpur /Rourkela/ Bhawanipatna for information.

Project Director

Phone: 91-674-2386084, Fax: 91-674-2386085, E-mail:webmail@ofsdp.org, website: www. ofsds.in

| Item wise break up of Cost Norm for Consolodation and Demarcation of Forest Boundary under OFSDP-II | | | | | |
|---|---|---|---|---|---|
| Sl No. | Activities | Unit, Rs/Km | Cost (in Rs.) | Head of Account | Remarks |
| 1 | **Consolidation and Demarcation of Forest** | | | 2.2.1.1 | |
| a | Boundary Clearance, GPS Survey and Demarcation of the Forest Block (RF/PRF) Boundary | LS/KM | 2243 | | The Boundary line to be cleared over a width of 6 mtr without damageing the standing tree ( as per working plan) |
| b | Boundary Pillar constrction( new)/ repair | LS/KM | 6500 | | New pillar is to be constructed as per PCCF circular |
| c | Sinage -contigency etc. | LS/ KM | 204 | | At least one permanent sinage of the forest block is to be affixed |
| | **Total** | | **8947** | | |
| 2 | **Maintenance of forest Boundary** | | | 2.2.1.2 | To be taken up from the 4th year onward |
| a | Boundary Clearance | Ls/KM | 2000 | | |
| b | Repair of Boundary pillar | LS /KM | 1339 | | |
| | **Total** | | **3339** | | |

Ashok
Steno to DPD (CME)

P. Tripathy
DEO-Accounts

Accounts Manager

DPD (CME&S)

Cost Norm for Raising of Root Trainer Seedling in Removable Agro Net Shed exculding cost of Root Trainers and Stands (Production Cost of 1.0 lakh no of RT Seedlings in150cc (wage rate

**280/- in the Hi-Tech Nursery of OFSDP-II**

| Sl. No. | Item of Work | Man-days | labour cost (In Rs.) | Material cost (In Rs.) | Total Cost |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
| 1 | Site clerance along with leveling of sites | 10 | 2,800 | - | 2,800 |
| 2 | Preparation of potting medium/ Mixture(Compost and sand) 16.5 cum (including 10% extra) 150 ccX100000 =15000000cc/1cum= 15cum + 10 % pulverisation of compost/ seiving of desired dimention sand | **150** | **42,000** | 42,000 | 84,000 |
| 3 | Mixing of Potting medium, filling of the cell, setting of stand in rows and setting of filled blocks over the stands | 140 | **39,200** | | 39,200 |
| 4 | Showing , re-showing and transplanting of treated seeds | **140** | **39,200** | | 39,200 |
| 5 | watering and electicity cost (up to March) | **300** | **84,000** | | 84,000 |
| 6 | Weeding & refilling for RT block inclusive of weeding over the exposed areas 80 Mandays/month for 4 months (up to March) | **320** | 89,600 | | 89,600 |
| 7 | Cost of plant hormone and micro-nutrients & application | **30** | **8,400** | **30,000** | **38,400** |
| 8 | Collection cost of seeds inclusive of seed treatiment | | **18,200** | **25,000** | **43,200** |
| 9 | Culling, grading and shiftmg of seedlings tor hardening | 65 | **33,600** | | **33,600** |
| 10 | Carnage and storage of stands and RT blocks from stroage, site to net house | 120 | **19,600** | | **19,600** |
| 11 | Mise contigencies, Traly for transportation of seedlings etc | 70 | | **5,000** | **5,000** |
| | **Oth Year Total** | 1345 | **3,76,600** | **1,02,000** | **4,78,600** |
| 12 | Cost of vermi wash, plant hormone and micronutrient multimixed fertilizer & insecticides including application. | 20 | **5,600** | **20,000** | **25,600** |
| 13 | Carriage/handling of planting stock, removal & fixing of Agro Net Shed,setting in rows, Maintanance of Agro Net Shed & sprinkller | 100 | **28,000** | **2,243** | **30,243** |
| 14 | Watering and electricity cost | 300 | **84,000** | | **84,000** |
| 15 | Culling , grading of seedlings | 120 | **33,600** | | **33,600** |
| 16 | Mise contigencies | | | **2,250** | **2,250** |
| | **1st Year Total** | 540 | **1,51,200** | **24,493** | **1,75,693** |
| | **Grand Total ( Oth + 1st Year)** | 1885 | **5,27,800** | **1,26,493** | **6,54,293** |
| | **Cost of Oth year ( 4,78,600/100000)=** | 4.79 | | | |
| | **Cost of 1st year ( 1,75,693/100000)=** | 1.75 | | | |
| | **Per seedling cost (6,54,293/ 1,00,000l=** | 6.54 | | | |

**NB.** Same is recsted at present wage @ 280/- rate and interpolating for 150 cc of the Norm approved at Annexure-29 vide o/o no. 143/12F (Affn.) 247/2012 dtd. 29.01.2016 ofPCCF,

## COST NORM FOR RAISING 1000 SEEDLINGS IN POLY POT WITH MAINTENANCE UPTO 6 (SIX) MONTHS
## Wage rate w280 /-Per day

| Sl. No. | Item of Work | Preferable Period of Execution | Unit | Unit Cost | No./ Qty. | labour cost (In Rs.) | Material cost (In Rs.) | Total Cost |
|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| **A. Cost for 6 Months Old Seedlings** | | | | | | | | |
| 1 | Cost of polythene (9" * 5" * 160 ) 400 Nos / Kg= 2 .5 Kg' | | K g. | 170 | 2.5 | 0 | 425 | 425 |
| 2 | Ploypot Mixture (Soil, sand and CDM in ratio !2: 1: 1) | | | | | | 0 | 0 |
| | (i ) Siol ((iJ Rs. 8/cft | | **eft** | 8 | 22 | 0 | 176 | 176 |
| | (ii) Sand (iii Rs. 12 / cft | | **eft** | 12 | 11 | 0 | **132** | **132** |
| | (iii) CDM@)Rs. 15/cft | | **eft** | **15** | **12** | **0** | **180** | **180** |
| | (iv) Insecticide (Thimet) 2k?@)80 / kg | | **kg** | 80 | **2** | **0** | **160** | **160** |
| 3 | Preparation of soil Mixture includes pulverisation and straining | Nov/Dec | **M D** | **280** | 2 | **560** | 0 | **560** |
| 4 | Filling & setting | NovJDec | **M D** | **280** | **2** | **560** | 0 | **560** |
| 5 | Collection of seed grading & treatment | Dec-June | **M D** | **280** | **2** | **560** | **0** | **560** |
| 6 | Preparatwn or germination bed, dibbingjtransplating and provision of shed . ( including cost of straw, bamboo split etc.) | Jan-June | **M D** | 280 | **2** | **560** | **0** | 560 |
| 7 | **Watering (Jan to March)** | Jan-Mar | **M D** | **280** | 9 | **2520** | **0** | **2520** |
| **8** | Maintenance of Nursery incluсding electriccity cost ( in cae of CN) fencing unto March | Jan-Mar | **M D** | **280** | 8 | 2240 | **400** | 2640 |
| | **Sub Total Oth Year** | | **M D** | | **25** | 7000.0 | **1473** | 8473.0 |
| 9 | Watering for J months | April-Mar | **M D** | 280 | **9** | 2520 | **0** | 2520 |
| 10 | Sorting, weeding, grading and resetting | May-June | **M D** | **280** | **3** | 840 | **0** | **840** |
| 11 | Application of Insecticides | May-June | **M D** | 280 | **0.25** | 70 | **0** | 70 |
| 12 | **Cintingencies(Water can, Buckets, Nursery shed etc)** | | | | | 0 | 327 | **327** |
| | | | | | **12.25** | 3,430.00 | 327 | 3,757.00 |
| | | | | | **37.25** | 10,430.00 | 1800 | 12230.00 |

(A) Cost of 6 months old seedlings Rs. 12230/1000=12.23 (B) cost ofO th year 8473/1000= 8.47

(C) Cost of 1st year Rs. 3757/1000=3.76

NB: As per Approved plantation cost norm 2016 (Annxure-I) of PCCF, recasted with present wage rate of Rs.280 /- per mandage

**Odisha Forestry Sector Development Project, Phase-II**
(Forest & Environment Department, Government of Odisha)
SFTRI Campus, Ghatikia
Bhubaneswar 751 029, Odisha

**Memo No.** 3135/OFSDP-70/2018 **Date-** 27.11.2018

To

The DFO-cum-DMU / chiefs.
Athamallik/Baripada/ Boudh/Dhenkanal /Ghumsur(N)/ Ghumsur (S)/
Jharsuguda /Sambalpur/Subarnapur/Sundargarh/
Rairangpur/Karanjia/ Forest Divisions.

Sub:- Modality of raising of seedlings in Central Nursery to be utilized in JFM Mode by the VSS under OFSDP-11 -Reg.

Ref: TThis office letter no. 1547 dtd. 21.06.2018 and letter no. 2049 dtd. 10.08.2018.

With reference to subject cited above and letter under reference, the modality of raising of seedlings in the Central Nursery to be utilized in JFM Mode by the VSS under OFSDP-11 are enclosed herewith for your information and necessary action.

Encl: As above.

Project Director

Memo No. 3136/OFSDP-10612018 Date- 27.11.2018

Copy forwarded to Addl. PCCF & Field Director, RF1ripF1clF1/ Ane,lJl , ::mel RCCFs, Bhawanipatna for information. Berhampur / Sambalpur / Rourkelal.

Project Director

# Modality for raising of seedlingsin Central Nursery to be utilized in JFM Mode for AR and ANR Gap Plantation.

1. Under normal circumstances raising of seedling required for the ANR gap plantation and AR Plantation, including a provision of 10% extra seedlings for causality replacement, under Sustainable Forest Management Component of OFSDP-II, shall be taken up in respect of all VSSs of particular batche(s) including the six Divisions, where Hi-tech nurseries have been set up.The seedling raised in the Hi-tech Nursery shall be primarily utilized in the JFM Plantations and if there is any furtherrequirement it can be raised in any central nursery/ temporary nurseries. Raising of seedlings to cater the requirement of neighbouring OFSDP-II Divisions may also be considered in High Tech nurseries if such a request in received.

2. Where ever seedling requirement is lessandit is not feasible to take up the nursery work in the VSS area, same can be raised in the nearest central nursery of the Division. The concerned VSSs will make specificresolution to that effect well in advance and transmit it to FMU Chief, who in turn will seek approval of the DMU Chief.

3. As the AR& ANR Gap plantation are to be taken up in JFM Mode, if the seedlings required for the plantation are raised in the central nursery, the concerned VSS can transfer the fund to concerned DMU Chief, as advance for procurement of seedlings for plantation, after making a resolution to that effect by the concerned VSS. The DMU Chief will permit raising of the seedlings in the central nursery by utilizing the advance received from the different VSSs.

4. A separate account shall be maintained by the DMU Chief of such receipts of advances from the VSSs and the fund to be spent by the concerned FMU Chief for raising of the required seedlings in the central nursery to be utilized by the different VSSs of OFSDP-II of that concerned FMU.

5. The species to be raised in the central nursery for plantation under AR &ANR shall be as per the guideline of ANR and AR issued from the PMU separately. The cost norm for raising of seedlings in poly pot have been communicated to the DMUs vide PMU letter no. 3036 dtd. 16.11.2018.

6. The additional cost for transportation can be provisioned as required separately, if the same could not be accommodated in the plantation norm to be done in JFM Mode by the VSS.

7. Good quality seedlings with proper culling (to get QPM)shall be raised well in time for making success of the plantations taken up in the JFM Mode under OFSDP-II.

8. Any deviation of these modalities shall not be made. However, in specific cases if a deviation will be necessary, the DMU Chief will route his proposal through respective Regional Chief Conservator of Forests for seeking the approval of Project Management Unit.

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**Odisha Forestry Sector Development Project Phase–II**

**Odisha Forestry Sector Development Society**
**Forest & Environment Department, Government of Odisha**

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