



GUIDELINE ON FARM FORESTRY UNDER OFSDP, **PHASE-II**



Odisha Forestry Sector Development Project II
Odisha Forestry Sector Development Society
Forest and Environment Department,
Government of Odisha



Guideline on Farm Forestry under OFSDP, Phase-II



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under OFSDP, Phase-II**

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FOREWORD

Farm forestry was introduced as an activity approved under the saving plan of the Odisha Forestry Sector Development Project, Phase-I. For smooth implementation of the programme, an elaborate Guideline was formulated and a total 9,487 ha of area was covered under farm forestry plantations in 801 VSSs belonging to 12 DMUs/Forest Divisions involving 14,031 farmers. Large number of farmers of different OFSDP-I Divisions imbibed farm forestry component.

Under the ongoing OFSDP, Phase-II Farm Forestry has been included as a project component with a view to provide a more profitable, secure and environmentally responsible alternative livelihood system for the project community. It also aims at improving the forest cover outside the forest area, along with contributing to the improvement of livelihood of project community i.e. VSS/EDC members from the beginning of project. The project is mandated to cover 10000 Ha. of land in the project area involving about 10000 beneficiaries. The concept of multiple use of land with multipurpose tree species mixed with agriculture or horticulture crops and fodder plantation has become immensely important in the present context where land area and green cover, both are diminishing due to ever increasing anthropogenic pressures. The Farm Forestry component under OFSDP, Phase -II is an initiative in this direction.

Under OFSDP, Phase-II, the Farm Forestry Strategy is based on providing an institutionalized platform for timber, NTFP and fruit plantations on private lands to augment Natural Resource Base for sustainable and resilient livelihood. This

component under OFSDP, Phase-II will be promoted in a collaborative and participatory framework, with different stakeholders exclusively from amongst the VSS Community. Forest based industries will be invited to participate in this initiative as per their location and willingness to work with the DMUs for participation in the Farm Forestry intervention under OFSDP, Phase-II and subsequent procurement of material for consumption by the industry.

The Project Management Unit of OFSDS has come up with a set of Guidelines on Farm Forestry under OFSDP, Phase-II with an objective to guide the multiple stakeholders, Project Functionaries, Line Department Authorities and farmers of forest fringe areas of OFSDP, Phase-II and for streamlining the implementation strategy for their initiative.

The sincere efforts and contribution of Dr. Meeta Biswal, IFS, Additional Project Director (IME), Smt. P.Z. Mekro, IFS, Additional Project Director (A&F), Shri Sudhanshu Sekhar Mishra, OFS (SB), Deputy Project Director (CME&S) and Shri Trinath Pattanaik, Subject Matter Specialist (IME) of PMU, OFSDS in preparing and compiling the Guideline are acknowledged profoundly. The efforts of other PMU officials and PMC expert team in preparing this Guideline Booklet are also acknowledged thankfully.

I am hopeful that the Guideline will be helpful for all the stakeholders to augment economic empowerment of forest dependent community and enhance green cover in the OFSDP, Phase-II project area. I am sure this booklet will be helpful in accelerating expected outputs of Farm Forestry in collaboration with other line departments and programmes under OFSDP, Phase-II.

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PREFACE

In an endeavour to increase the forest cover through afforestation activities, non-availability of additional land for afforestation has reportedly been an issue. Hence an option could be to look for additional land in the non-profit or private domain. It has been a practice in India that in many parts of the country, farmers also opt to grow tree species in fallow land or farm bunds to meet some of their fuel wood and timber requirement.

In order to inculcate and develop this activity of growing trees off the forest lands, several models of farm forestry have been developed and practiced in several parts of the country. Farm forestry has thus become an important tool to build resilience of farmers and rural people against threats of climate change and natural calamities. This also helps in creating the rural employment and rural development opportunities by providing farm forestry tree produce based economic opportunities.

Farm Forestry activity under OFSDP, Phase-I was launched as the saving plan of the project. Based on the success of this activity in 12 Divisions of OFSDP-I and successful partnership with industry partners, Farm Forestry has been devised as a major component under Odisha Forestry Sector Development Project, Phase-II, The objectives of this component are to encourage VSS for taking up tree plantation and tree based farming systems on their private lands simultaneously along with restoration of degraded forest under JFM Mode in OFSDP, Phase-II.

The Farm Forestry component of OFSDP, Phase-II- aims at improving the Trees Cover Outside Forest (ToF) which would also contribute to the improvement of livelihood of the VSS/EDC members. The Project is targeted to cover up to 10,000 ha

within the project area. The Project will focus on Timber/ Agri-horticulture models being defined in the present OFSDP, Phase-II Farm Forestry Guidelines. During the micro planning process, the VSS/ EDC working plan groups have been asked to discuss the needs and feasibility of the different models of farm forestry in the respective villages and identify beneficiaries in each VSS. OFSDP, Phase-II proposes to adopt five different models of Farm Forestry viz. 1. Agri-Hort–silvi (mixed) Model, 2. Timber Model, 3. Pulp wood model, 4. Horti-NTFP model, 5. Field Bond-Dyke model.

The principle strategy of Farm Forestry under OFSDP II is based on providing an institutionalized platform for timber, NTFP and fruit plantations on private lands to augment Natural Resource Base for sustainable and resilient livelihood.

To implement this important component, PMU of OFSDP, Phase-II had initiated several rounds of consultations with stakeholder and representatives of various Research Institutions, Paper Industry, Educational Institutions, NGOs, Ply Industry and other Government Departments like Horticulture Department. After these wide consultations, the PMU of OFSDP, Phase-II has come up with an exhaustive Guideline on Farm Forestry under OFSDP, Phase-II to help all the stakeholders in implementing the vital project component. This guideline has outlined all the key points of implementation viz. eligibility criteria's of selection of beneficiary farmers for adopting the strategy of implementation and process along with roles and responsibilities of stakeholders and monitoring and review process. The extents of benefits to the farmers in the form of incentives are also explained in this guideline. Different models of Farm Forestry are also illustrated here as annexure.

The Guideline on Farm Forestry under OFSDP, Phase-II has been prepared under the guidance of Shri L. K. Tewari, IFS, Project Director of OFSDS. The earnest efforts, commitment and contribution made by the experts of PMU in preparing this guideline are highly appreciated. I hope that this document would be widely used by the Project Management Unit, Divisional Management Units, and Field Management Units implementing the OFSDP, Phase-II. I wish all success to the project.

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Additional Principal Chief Conservator of Forests
–cum-Additional Project Director, OFSDS

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1.0 Overview

Odisha Forestry Sector Development Project, Phase-II (OFSDP, Phase-II) is being implemented through Odisha Forestry Sector Development Society (OFSDS) in 12 Forest and 02 Wildlife Divisions of the State, falling under the territorial jurisdiction of 10 Revenue Districts. The broad objective of the Project is primarily to enhance forest eco-systems, biodiversity conservation along with sustainable livelihood of local people in the Project area.

The Farm Forestry sub-component in the ongoing project (OFSDP, Phase-II) aims to provide a more profitable, secure and environmentally responsible alternative system to conventional natural resource management systems in the forestry sector in Odisha. It aims at improving the forest cover outside the forest area, which would also contribute to the improvement of livelihood of project community i.e. VSS/EDC members. The project is mandate to cover 10000 Ha. of land in the project area involving about 10000 beneficiaries. The concept of multiple use of land with multipurpose tree species mixed with agriculture or horticulture crops and fodder plantation has become immensely important in the present context where land area and green cover, both are diminishing with increasing anthropogenic pressure. The Farm Forestry component under OFSDP, Phase-II is an initiative in this direction.

2.0 Background

Farm forestry was introduced as an activity approved under the saving plan of OFSDP-I during 2013. For smooth implementation of the same, an elaborate Guideline was prepared by OFSDS. From 2013 to 2015, a total 9,487 ha of area was covered under farm forestry plantations in 801 VSSs belonging to 12 DMUs/Forest Divisions involving 14,031 farmers. Large number of farmers from Koraput, Jeypore and Rayagada Divisions participated in farm forestry activity i.e., 76% of total beneficiaries and 80% of the areas under farm forestry was covered from amongst these three Divisions. OFSDP-I could successfully rope in with JK Paper Mill, Rayagada to establish Eucalyptus clonal plantations for paper chips/ pulps on farmers' land in Jeypore, Koraput and Rayagada Divisions. Tripartite agreements were signed between Forest Department beneficiary Farmers and JK Paper Mill to ensure supply of inputs, technical support and market access to the farmers.

3.0 The Present Proposal

The Farm Forestry component of OFSDP, Phase-II- aims at improving the Trees Outside Forest (ToF) which would also contribute to the improvement of livelihood of the VSS/ EDC members. The Project is targeted to cover up to 10,000 ha (indicative target) within the project area. The interventions will be planned basing on these Guidelines, which has been developed by the OFSDP, Phase-II on the basis of Guidelines developed for Farm Forestry component under OFSDP-I in November 2012. The Project

will focus on Timber/ Agri-horticulture models being defined in the present OFSDP, Phase-II Farm Forestry Guidelines. During the micro planning process, the VSS/ EDC working plan groups have been asked to discuss the needs and feasibility of the different models of farm forestry in the respective villages and identify beneficiaries in each VSS as presented in Table No 30 of the Micro Plan Guidelines of OFSDP, Phase-II (Appendix-I). The list will further be collated FMU wise and Division wise for taking up the different Models of Farm Forestry plantations.

4.0 Objectives of Promoting Farm Forestry

Objectives of the project's Farm Forestry Component are to encourage VSS for tree plantation and tree based farming systems on their private lands simultaneously along with restoration of degraded forest under JFM Mode. These are further elaborated as below:

- a. To increase the availability of timber, small timber, fuel wood and tree biomass from private lands for enhancing incomes to households by meeting the local demand as well to reduce the pressure on adjoining in degraded forests.
- b. To rehabilitate the land fertility with nitrogen fixing plants like pulses under intercropping models.
- c. To build up capacity of the farmers by creating tree plantations as a viable enterprise.
- d. To provide a collaborative platform for public- private – community partnership around tree planting as a farm forestry model.
- e. Amelioration of the local environment.

5. Strategy and Key Principle of Farm Forestry under OFSDP, Phase-II

The principle strategy of Farm Forestry under OFSDP, Phase-II is based on providing an institutionalized platform for timber, NTFP and fruit plantations on private lands to augment Natural Resource Base for sustainable and resilient livelihood.

The key principles of promoting Farm Forestry Models under OFSDP, Phase-II are listed below:

- a. Farm forestry is to be implemented through VSS following a cluster approach.
- b. Each VSS, for implementation of the programme, should have at least 4 ha area available for farm forestry. The maximum limit for one VSS is 50 ha.
- c. For each farmer minimum area available should be 0.5 acre for block plantation and minimum of 100 plants for planting on the field bunds.

- d. Survival based incentives shall be paid to the farmer through the VSS.
- e. The VSS will be responsible for farmers' mobilization and capacity building, formation of Farmer Interest Groups (FIGs), Self Help Groups (SHGs) etc. Payment towards planting materials, transfer of incentives to farmers will be based on the interest shown by the farmers and their performance etc.
- f. Land used for food grains cultivation will not be converted under farm forestry. If the farmer is willing to use the farm bunds/ dykes for tree planting, then the project may consider it as agro-forestry and support the farmer.
- g. Financial support and incentives may be provided to the farmers to ensure higher survival percentage.
- h. The productivity of the plantations will be enhanced by providing quality planting material.
- i. The post planting technical back up may be provided through industries and merchants.
- j. The cluster approach of choice of farm forestry models will be encouraged to allow for product aggregation and augmentation.
- k. Beneficiary Farmers will be provided with information on the choice of species and planting models.
- l. The farmers will be provided trainings to augment their capacity for proper management of plantations.
- m. A participatory and robust Monitoring mechanism will be installed for all Farm Forestry plantations under OFSDP, Phase-II.

6.0 Eligibility Criteria for selection of Beneficiary Farmers

- a. Availability of recorded fallow land.
- b. Willingness to keep the land under tree cover till harvest,
- c. Willingness to prepare the land for planting and commitment for post-plantation maintenance,
- d. Willingness to form Farmer Interest Group (FIG)/ SHG/ Cooperative as applicable.
- e. Availability of minimum of 0.5 acre and maximum of 2.5 acre for block plantation,
- f. If the farmer is not opting for block plantation then minimum of 100 trees will be permissible to be planted on farm bunds/ dykes,
- g. For VSSs to be selected for undertaking farm forestry component a minimum of 4 ha area has to be there.

7.0 Strategy for Implementation

Farm Forestry Component under OFSDP, Phase-II, will be promoted in a collaborative and participatory framework, with different stakeholders other than the farmers like Forest Department, Industry, p-NGO and VSS Community complementing with contributions as per their inherent strength to achieve synergy. Forest based industries will be invited to participate as per their location and willingness with the DMUs for participation in the Farm Forestry intervention under OFSDP, Phase-II.

A scoping study has been carried out during the 2nd Year in 355 VSS of the 1st batch of OFSDP, Phase-II, while preparing the micro plan at the village level. Further, interactive /brain storming/ consultative meetings were organized in two rounds involving research Institute, (Central Horticulture Experiment Station, Bhubaneswar and Central Institute for Women in Agriculture, Bhubaneswar, both (ICAR Institutes) Paper Industry (JK Paper Mill, Rayagada and Avanthi Agritech, old Balarpur Paper industry) Educational Institute, (Forestry College, OUAT Bhubaneswar) Knowledge Trust Bhubaneswar (NGO), Private Ply Wood Industry (Ori-ply, Bhubaneswar) and other line Departments (Directorate of Horticulture Govt., of Odisha).

Based on the scoping study and the consultative meeting and the outlay of the financial provision in the project the Farm Forestry Models to be implemented have been finalized.

The overall planning for implementation of Farm Forestry sub-component will be carried out by PMU/ DMU/ FMU, basing on the guidelines developed. The field level guidance for pulpwood model will be carried out through FMU, PNGOs and paper industries. Other line departments and institutions along with FMU/ PNGOs will guide the implementation of farm forestry and marketing will be facilitated by the livelihood Resource Centre of OFSDP, Phase-II, LRC, whenever needed. In each cluster, the Project will promote formation and strengthening of cluster level organizations of SHGs/ producers for different livelihood activities including NTFP, agriculture, horticulture etc., and these organizations will help SHGs in marketing of different produces.

In case of farm forestry, the SHGs and FIGs will take the help of cluster level organizations of SHGs in marketing of NTFPs, agriculture and horticulture produces. The PNGOs will also provide help to the SHGs and FIGs- to sell their produces. If there will be large volume of any produce (NTFP and/ or Horticulture), the LRC will negotiate with processing industries and corporate buyers. Most of the NTFPs will be sold to the processing units available within the division or in the nearby areas. Agriculture and horticulture produces will be largely sold in the Mandis (Markets) of Agriculture Produce Market Committee (APMC). Most of the timber marketing will take place after the tenure of the Project, as the timber will be harvested after 15 to 20 years. The FIGs/SHGs will take the help of cluster level organizations and/ or LRC established under the Project or a Government agency like Odisha Forest Development Corporation (OFDC Ltd.) in marketing of the timber. According to the survival rate of the saplings, the incentives will be paid to the farmers.

The Implementation Plan of Farm Forestry is given in the table below: -

Table No. 1: Outline of the Proposed Implementation Plan for Farm Forestry under OFSDP, Phase-II.

Particulars	Outline	
Preparatory Phase	<ul style="list-style-type: none"> ● Yr. 2 ● Scoping study ● Revision of Farm Forestry Guidelines 2012 ● Agri-horticulture, model: Identification of partners - line department, research institute and etc. ● Implementing Agency: PMU through DMU & FMU 	
Selection of targeted areas / VSSs and farmers	<ul style="list-style-type: none"> ● Yr. 3 to Yr. 6 (Batch-wise) ● Implementing Agency: FMUs with the help of PNGOs and areas to be finalized by DMUs 	
Setting up nurseries / procurement of QPM	<ul style="list-style-type: none"> ● Yr. 3 to Yr. 6 Yr ● Implementing Agency: FMUs, Pulp and Paper Industries. ● Primary QPM shall be sourced from the Central Nurseries of the Forest ● Department and line department. ● Some SHGs/Entrepreneurs may be mobilized to set up nursery and provide seedlings to the farmers. 	
Planting activities The preparatory activities for Farm Forestry will commence one year in advance to the year when actual plantation will be taken up.	Year	Target
	Yr. 4 (2020-21)	2,958 ha
	Yr. 5 (2021-22)	3525 ha
	Yr. 6(2022-23)	2500 ha
	Yr. 7(2023-24)	1017ha
	Total	10,000 ha
	Implementing Agency: FMUs, CPTs (Cluster Level Planting Team),Farmers SHGs/ FIGs/ Cooperatives and VSSs	
Implementation	<ul style="list-style-type: none"> i. The Project will follow the Farm Forestry Guideline. ii. The DMUs will identify the VSSs for farm forestry with the help of FMUs and PNGOs. iii. The PNGOs and FMUs will carry out necessary orientation training programmes for the VSSs on farm forestry project component, iv. A Sub-Committee for planning and execution of farm forestry shall be formed at the VSS level with a member of EC, Member Secretary, Forest Guard, beneficiary farmers, and member of P-NGO. v. A Cluster/VSS level Plantation Team (CPT) will be formed by FMU Chief (Range Officer) to take up planting operation, 	

	vi. The VSS with the help of PNGO will select the farmers eligible to undertake farm forestry. Farmers will be mobilized to form Farmers Interest Group or SHG or Cooperative as applicable.
	vii. A farmer has to apply with necessary land documents and undertaking to be a part of the programme. S/he has to prepare (plough) the land, make site clearance for planting and take post-plantation care. Pit digging and tree planting shall be undertaken by the Project through CPT.
	viii. Capacity building trainings will be undertaken by the Project in collaboration with NGOs. The Project will provide farm forestry extension materials to the farmers/ SHGs/ FIGs/ Cooperatives,
	ix. The PNGO and FMU Chief will jointly ensure timely supply of planting materials and other inputs to the farmers, and timely planting of seedlings. They will periodically visit the farms for field inspection and monitoring,
	x. CPT shall visit each site for 100 per cent tree count and report the survival rate to the FMU Chief and then the FMU Chief will undertake 25 % sample check.
	xi. Distribution of incentives to the farmers will base on the survival assessment,
	xii. The PNGO and FMU will provide market information to the farmers,
	xiii. LRC will facilitate market linkages of farmers/SHGs/FIGs with different industries and other buyers.

8. Implementation Process

I. Institutional arrangements

Farm forestry programme under OFSDP, Phase-II will be promoted in collaborative participatory frame work with different stake holders like Forest Department, Other line Departments, Industry, P-NGO and VSS community complementing with contributions as per their inherent strength to optimise synergy. Forest based Industries will be invited to participate as per the location and willing ness by the DMU.

II. Selection of VSS

The VSSs will be selected in a cluster batch wise in 4 batches. For a VSS to be qualified for inclusion under the scheme a minimum of 10 acres (4 ha.) have to be ensured with a maximum limit of 125 acres (50 ha.) in a VSS.

III. Selection of farmers

Preference will be given to those farmers having waste land/ fallow/surplus land (which are usually not under any food production system) and who are interested to put land under complete tree cover for a longer period. The minimum plot size of plantation will be 0.25 acre (0.1 ha.) for block plantation in any model and 100 plants under field bund /dyke model. A list of willing farmers with quantity of land (along with land type to be taken up under Farm Forestry will be listed during the micro planning or revisit of the micro planning exercise by the P-NGO.

Willing farmers will submit an application (in Annexure-VI) to VSS which is to be accompanied with copy of duly certified land records, a trace map of proposed plantation area and an under taking about willingness to take up land preparation and maintenance of the plantation till harvesting. VSS will set up a sub committee comprising 1 EC member, 1 Experienced Farmer of the village/VSS, Member Secretary, Forest Guard, one NGO Member, and Industry representative (if pulp wood plantation with MOU is proposed) to screen the applications. Committee will verify the willingness and land availability / quantity and if required will make a field visit. Based on verification the committee will recommend the names to FMU through VSS which will be compiled by the P-NGO and forwarded to DMU/shared with industries (if pulp wood is proposed) for further action. Following verification of the sites and records, industry will execute an agreement with individual farmer/FIG and for providing input, technical back up and buy-back guarantee. In case of financial support through bank linkage Tripartite agreement will be required to be signed. A copy of such agreement has to be shared with concerned FMU chief for record and monitoring.

IV. Awareness generation

Considering the status of tree farming on private land in the state strategic use of extinction channel has to be planned. OFSDP, Phase-II will develop following type of extension/ communication material

Project will organise VSS meetings, industry – farmer interface & CB programmes to facilitate better and effective dissemination of

information. The P-NGO would undertake the supporting/facilitating role for farmers in VSS attended by them. For pulp wood species collaborating industry will provide the communication materials and also facilitate its dissemination.

Sl.	Objective of communication/content	Forms of communication
1	To Explain the details of programme including models	Poster and Brochures in local language/orientation/village meeting
2.	Different Agro forestry models	Brochures/handouts/exposure visit
3.	Utilisation and market linkage, Buy-back option	Brochures/handouts/exposure visit

V. Raising of Nursery/arranging planting material

Based on the final list of applicants and land available for plantation, planning for nursery raising and sourcing of quality planting material will have to be planned at DMU level during the preparatory year. The QPM required for the forest and some NTFP species will be raised in the Hi-tech nursery/Central

nursery of DMU. The concerned DMU Chief has to requisition to the nearby project Division where Hi-tech nursery has been established for procurement of seedlings for Farm Forestry. The QPM for pulp wood model can be outsourced from the paper industry with which buy-back arrangement will be finalised. The Horticulture/Grafted NTFP species will be procured from the nurseries of Horticulture Department /CHESS, Bhubaneswar (ICAR) etc.

VI. Taking of plantation

Plantations will be taken up in the farmer's field by the project under the supervision of FMU Chief, while the land preparation include ploughing, cleaning and plantation lay out of the field will be made by the farmers with the help of P-NGO/VSS members. The digging of pits will be executed by the project.

FMU chief will form cluster plantation team (CPT) VSS wise for taking planting operation and will personally review the progress of work every week with each CPT and member secretary at VSS level one by one during the planting season (JULY and August). CPT will consist of concerned Forest Guard, Animators, NGO team leader and industry representatives (only for pulp wood plantation). Team will coordinate the plantation work in farmer's field in cluster /VSS for land preparation by Farmer and layout with digging of pit by the project latest by June, so as to finish the planting well in time. The team will also have to submit a plantation completion certificate endorsed by the farmer concerned to the FMU Chief.

The concerned farmer will have to complete the land preparation which will include ploughing, cleaning / clearing of field and plantation layout for all types of models. He has to be present in the field during pit digging and planting operations and have to undertake post planting maintenance including casualty replacement till harvesting.

A plantation records sheet (Annexure-VII) will be supplied by the Project and it will be maintained for each site by the farmer himself.

9.0 Roles and Responsibilities of Stakeholders

The overall principle of roles and responsibilities of the project shall be through facilitations and supply of planting material and planting (with pit digging and sapling planting) at farmer's field as well as providing incentives to farmers at two stages of plantation growth in the Farm Forestry Model based on performance assessment. The contribution of farmers shall include providing land for plantation followed by preparation of land with ploughing and clearing prior to pit digging and post plantation maintenance with weeding, soil working, farm manuring, watering, causality replacement, watch and ward, irrigation and tending/ harvesting.

The roles and responsibilities of various stakeholders on different aspects of farm forestry are tabulated below: -

Table No. 2.

Sl. No.	Stakeholder	Responsibility
1.	PMU	<ul style="list-style-type: none"> • Preparation of monitoring formats and collation of DMU wise information on Farm Forestry • Organising capacity building of the staff, p-NGO teams and beneficiaries • Release of funds to DMU for implementing the Farm Forestry Component. • Release of performance based incentive to farmers based on survival and growth of plantation under Farm Forestry models.
2.	DMU	<ul style="list-style-type: none"> • Assist in collation of DMU wise list of beneficiaries in each VSS at the time of preparation of micro plans (Annexure-I). • Collation of FMU wise information in monitoring formats of Farm Forestry • Organising capacity building of the staff, p-NGO teams and beneficiaries • Taking up of Farm Forestry plantation in beneficiaries land and to provide tree plantation records and forms about plantation information forms to beneficiary (Annexure-VII)
3.	FMU	<ul style="list-style-type: none"> • Assist in collation of a list of FMU wise beneficiaries in each VSS at the time of preparation of micro plans • Collation of VSS wise information in monitoring formats of Farm Forestry • Maintain register of Farm forestry plantation details (Annexure-VIII)
4.	P- NGOs	<ul style="list-style-type: none"> • Assist in preparation of a list of beneficiaries in each VSS at the time of preparation of micr oplans • Collation of VSS wise information in monitoring formats of Farm Forestry
		<ul style="list-style-type: none"> • Assist in organising capacity building of the staff, p-NGO teams and beneficiaries • Assist the farmers during execution of planting.

5.	VSS/ Individual	<ul style="list-style-type: none"> • Discuss the needs and feasibility of the different models of farm forestry in the respective villages • Prepare a list of beneficiaries in each VSS which will be identified as per Table No 30 of the Micro plan Guidelines of OFSDP, Phase-II. • Assist the farmers in preparation of applications for taking up the plantation mentioning the species and model in prescribed format along with copy of land records and trace Map of the plantation sites. (Annexure-VI)
6.	Paper and Pulp industry	<ul style="list-style-type: none"> • Will cooperate with DMU in Mobilizing the farmers through sharing of their IEC materials/ platforms and commissioning of extension officials • Provide quality planting material at predefined and subsidized costs at the nearest road point to planting site • Offer buy back guarantee at market price from farmers • Provide assistance in conducting capacity building of beneficiary farmers • Organizing credit linkage with bank if required by the farmers. • Participate in the monitoring and review process; maintain and update database of the farmers and survival/ growth of plantations • Provide any other support as mutually agreed upon

10. Various Models of Farm Forestry

Following farm forestry models are proposed to be taken up under OFSDP, Phase-II are -

- I. Agri-Horti–Silvi(mixed) Model
- II. Timber Model
- III. Pulpwood model
- IV. Horti-NTFP model
- V. Field Bond-Dyke model

The modalities of these model sare discussed below: -

I. Agri-Horti-Silvi (mixed) Model for Entrepreneur/Livelihood Development (For farm lands in 1 ha. Area).

In this model:

1. The pulp wood species like Eucalyptus/ Acacia will be planted at a rate of 480 nos of plants in block at a spacing of 4 mtr X 2mtr in the northern direction of the plot.
2. The Horticulture species (78nos) like Amla/Ber/ Guava/Lemon/Drumstick/Papaya/Banana/ Mango will be planted at a spacing of 8 mtr X 6 mtr in the southern direction of the plot with a lay out from east to west.
3. The timber species mostly teak /mahogany/ Gambhari/ Sisoo will be planted along the periphery of the plantation at a spacing 4 mtr and 96 seedlings will be planted in the periphery of the plot.
4. Inter cropping will be done during the first three years with Arhar/Bengal Gram/Sesame. Fourth year onward inter cropping will be done with species of Pineapple/ Ginger/Turmeric. Raising of Fodder species will also be permissible.
5. Further enhancement of income can be achieved through Apiculture, vermi-composting and growing of Yam plants under this models.
6. The model plan of the plantation lay out and cost norm for this model are given at **Annexure-I (A) & (B)** respectively.
7. The harvesting of the Eucalyptus/Acacia/ will be taken up in 4th, 8th, 12th year of the plantation and the harvesting of the timber species will be taken up on maturity of the tree species.

II. Timber Model. (for farm lands in 1 ha. area)

1. Timber species like teak/Gambhar/Mahogany/Sisoo(1000 nos. will be planted in block at a distance 4 mtr X 2.5 mtr
2. Inter cropping is done during the first three years with Arhar/Bengal Gram/Sesame. Fourth year onward inter cropping is done with pineapple/ Ginger/Turmeric. Fodder plantation can also be taken.
3. Further enhancement of income can be achieved through Apiculture, vermi-composting and growing Yam plants.
4. The details of plantation lay out and cost norm are given at **Annexure-II (A) & (B)** respectively.
5. The harvesting of Timber will be taken up after 15-20 year of the plantation (After the project period)

III. Pulp wood model (for lands in 1 ha. area)

1. Soft wood (pulp wood) species like Eucalyptus/ Acacia (1000 nos.) will be planted in block at a distance 5 mtr X 2 mtr
2. Inter cropping will be done during the first three years with Arhar/Bengal Gram/Sesame. Fourth year onward inter cropping will be done with pineapple/ Ginger/Turmeric. Fodder plantation can also be taken.

3. Further enhancement of income can be achieved through Apiculture, vermi-composting and growing Yam plants.
4. The details of plantation lay out and cost norm are at **Annexure-III (A) & (B)** respectively.
5. The harvesting of the Eucalyptus/Acacia/ will be taken up in 4th, 8th and 12th year of the plantation respectively.

IV. Horti- NTFP Models (for lands over 1ha. area)

1. Grafted Horticulture and NTFP species like Mango/Tamarind/Amla/Bel/Jamun/Cashew will be planted in blocks (400 nos) at a distance 5 mtr X 5 mtr.
2. Inter cropping will be done during the first three years with Arhar/Bengal Gram/Sesame. Fourth year onward inter cropping will be done with pineapple/ Ginger/Turmeric. Fodder plantation can also be taken up.
3. Further enhancement of income can be achieved through Apiculture, vermi-composting and growing Yam plants.
4. The model plan of the plantation lay out and cost norm are at **Annexure-IV (A) & (B)** respectively.

V. Field Bund/Dyke model.

1. Farmers willing to use farm bunds/ dykes for tree planting and willing to continue the food grain cultivation in agriculture lands will be considered for taking up this model.
2. Minimum no of trees to be planted will be 100 nos at a linear spacing of 4 mtrs
3. The species planted will be either forest species (Teak/Mahogany/ Sisoo/Gambhar/ Eucalyptus /Acacia) or Horticulture species (Ata/Drumstick/Papaya/Guava/Ber/Lemon).
4. The details of plantation lay out and cost norm are at **Annexure-V (A) & (B)** respectively.

11. Incentive to farmers

Incentive to farmers for raising good plantation with a higher survival percentage will be admissible under the scheme. In this regard following modalities will be observed: -

1. Each farmer will be informed about the provision of survival based incentives and accordingly encouraged to maintain better survival and growth.
2. Incentive from the project is neither a compensation to farmers for his effort nor a means to share with the project from the plantation in future.
3. As such it will be the responsibility of the farmer to maintain the plantation for realizing maximum benefit for themselves, once planting is done by the project.
4. If required industry may help eligible farmers to avail the bank linkage to bear the cost of post planting maintenance.

5. **The 1st Monitoring of survival and growth** for incentives will be taken up during the post monsoon period (Oct- Dec) of 2nd year by the Cluster Plantation team(CPT). The CPT will visit each site and take up 100% tree count to report survival and also make a qualitative observation about growth & maintenance. FMU chief will randomly cross check at least 25% of the sample. Based on the survival and growth the FMU Chief will recommend list of farmers for providing incentives as per following schedule.

Table No. 3

Model Type	Assessment Criteria	Rate of incentives for plant surviving and growing well
Agri –Horti-Silvi (mixed) model)	Above 90% of the planted seedlings growing well.	Rs. 3.25/ plant
Timber Model		Rs. 2.40/plant
Pulp Wood Model		Rs. 2.40/plant
Horti -NTFP Model		Rs. 5.50/plant
Field Bond-Dyke Model		Rs. 2.40/plant

After monitoring and cross checking the FMU Chief will forward the list of eligible farmers VSS wise with fund requirement to DMU Chief with a copy to concerned VSS. The VSS will display the list at the VSS building and inform the concerned farmer. The DMU Chief will have release fund to the VSS, who will subsequently transfer the incentive amount to the concerned person through their bank accounts. The VSS has to ensure receipt of the incentive to the farmers soon after release of the funds by the DMU chief.

6. The 2nd monitoring of Survival and growth for the second and last incentive to the farmers will be taken up during the post monsoon period (Oct-Dec) of 4th year by the CPT. CPT will visit each site and take up 100% tree count and report the survival % and also make a qualitative observation about the growth and maintenance. FMU Chief will randomly cross check at least 25 % of the samples and send the final list of eligible farmers to DFO within December. The DMU chief will release fund to the VSS, who will subsequently pass on the incentives to the concerned person through Bank transfer. The VSS has to ensure the receipt of the incentives by the farmers. Based on the survival and growth remark each farmer will be provided with incentives as per the following schedule: -

Table No. 4

Model Type	Assessment Criteria	Rate of incentives for plant surviving and growing well
Agri –Horti-Silvi (mixed) model)	Above 90% of the planted seedlings growing well.	Rs. 5/ plant
Timber Model		Rs. 3/plant
Pulp Wood Model		Rs. 3/plant
Horti -NTFP Model		Rs. 8/plant
Field Bond-Dyke Model		Rs. 5/plant

12. Monitoring & review

1. Progress of Farm forestry will be reviewed at FMU and DMU level in the monthly review meetings and the periodic review will be taken by RCCF and at PMU level. During the plantation season FMU chief will review the progress fortnightly with each CPT one by one at VSS level.
2. The team leader of P-NGO will be responsible for reporting the monthly progress of the farm forestry component to FMU chief. The NGO team leader will collect information on all models from the farmers/ VSS. In all cases the information has to be corroborated with the records of nursery/ plantation record and the registered VSS resolution.
3. At DMU level a FMU wise and cluster/ VSS wise Data base of farmers will be maintained for follow up of technical support and market linkage. Industry will maintain the data base with respect to pulp wood farmers and share that with DMU.
4. During pre-planting season and planation season a team constituted by DMU Chief will visit some sample VSS to check the quality of planting operation and that of the QPM.
5. The information of the beneficiary taking up plantation such as land details, Farm Forestry model, area, no of seedlings planted, the GPS reading of the polygon of the individual plantation area, survival and growth data etc., will be uploaded in the IMS portal of OFSDS for web based monitoring of the Farm forestry component. The Member Secretary of the VSS, Field co-ordinator (Planning & Documentation) of the FMU and the SMS (GIS /MIS) will ensure proper reporting of the same under the overall supervision of the DMU Chief. Accordingly, the periodical report will be generated in the GIS Cell of OFSDP for various purposes.



Annexure-I (A)

Cost Norm per/ha. for Farm Forestry under OFSDP, Phase-II

Model-A -Agroforestry for Entrepreneur Development/Nutritional plantation (Mixed Model)

Forest Plant (Eucalyptus /Acacia) Area-.48 ha.-Spacing (4mtr X 2.5 Mtr)-480 nos. Teak/Mahogany/Sisoo (In periphery, area .15ha)-4mtr spacing -96 plants

Horticulture plant (Amla /Ber/Guava/Lemon/Drumstick/Papaya/Banana/Mango)- Area- .37ha. Spacing-8 mtr X 6mr- 78 plants

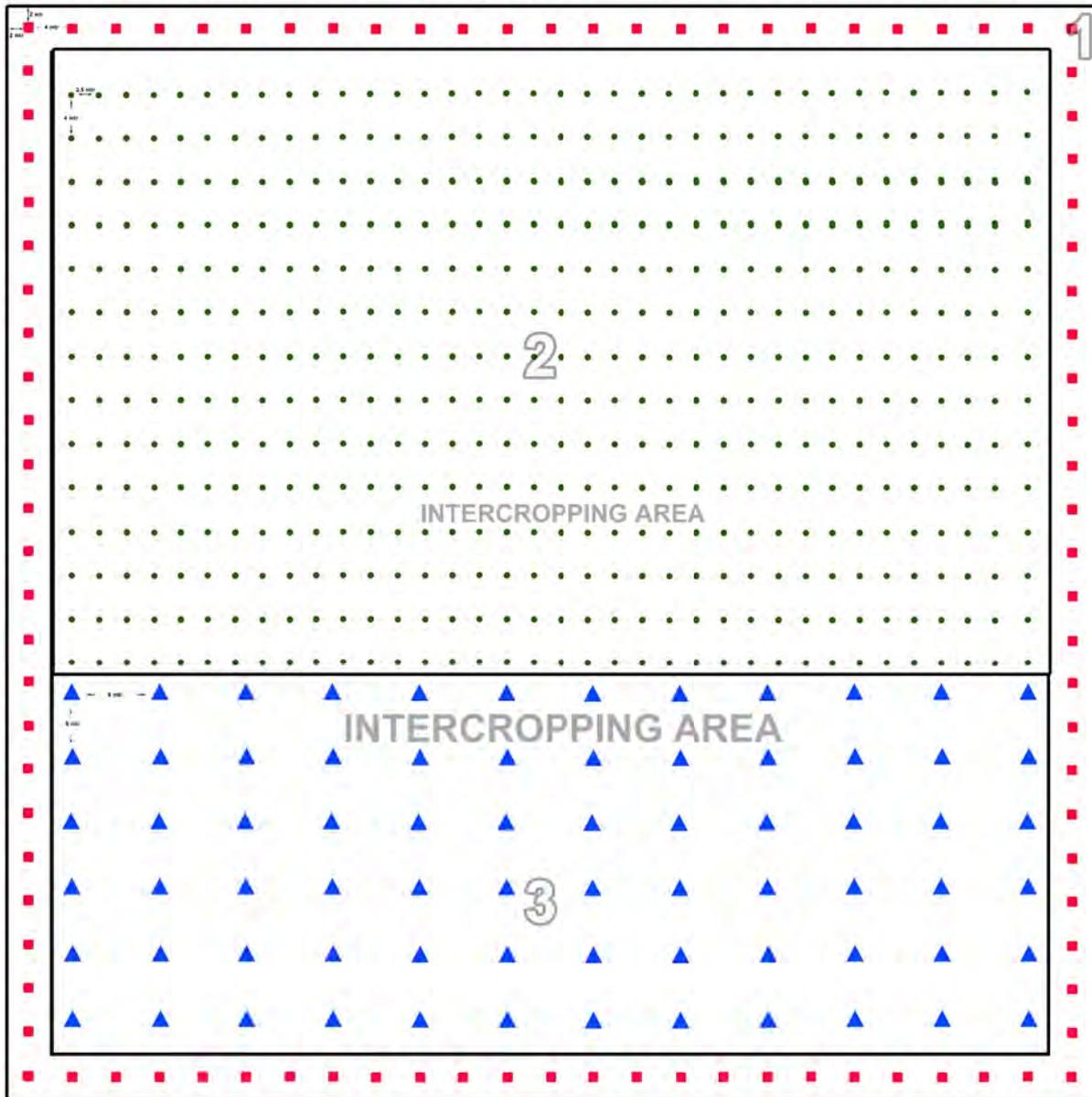
**Intercropping- 1st 3 years (Arhar/Sesamee/Bengle Gram) 4th year onwards
(Pine Apple/Ginger/Turmeric) Total plant-480+96+78=654**

Sl.	Activities	Labor/ Mandays	Material Cost			Total Cost (in Rs.)	Remarks
			Unit Rate (in Rs.)	Quantity (in Nos)	Amount (in Rs.)		
1	Cost of Seedling of Teak /RT seedling (Forest Species)		7	96	672	672	To be raised in Hi-tech nursery though RT
2	Cost of seedlings Eucalptus including transportation (from Paper industries)		7	480	3360	3360	to be procured from paper industries/ Forest Department
3	Cost of Horticulture seedlings		30	78	2340	2340	To be procured from Horticulture Department/ CHES (ICAR)
4	Site Preparation (cleaning, ploughing)				0	0	to be taken up beneficiary
5	Pitting of Forest Species (30 cm cube)	14.4	7	480	3360	3360	To be done by Project
6	Carriage & Planting of Forest species	7.5	3.7	480	1776	1776	Do
7	Pitting for Horticulture species (45 cm cube)	6.4	22	78	1716	1716	Do
8	Planting of Horticulture species	1.8	6	78	468	468	Do
9	Cost of Manuer (654 Plant) @ 50g/ plant NPK@ Rs. 24/kg		24	32.7	784.8	784.8	Borne by Project (on LS)
10	2 nd year operation (including casualty and replacement)				3523.2	3523.2	Borne by Project
11	Inter cropping, Arhar/Sesamee/ Bengle gram/ Pineapple/Ginger/ Turmeric						To be taken by the beneficiary under convergence of Agriculture /Horticulture
	Total	30.1			18000	18000	

- NB:**
- 1) cost per unit plant for the 1st year Rs. 22.135, Cost for 2nd year Rs. 5.387
 - 2) Basing on unit rate of plant and the area of plantation the cost can be decided
 - 3) Cost of incentives- Rs. 5400/ha. (90% survival rate) Rs. 8.25/ plant
(1st year after plantation -Rs. 3.25 and 2nd year after plantation Rs.5)

Annexure-I (B)

Model layout of Agri-Horti-Silvi (Mixed) Farm Forestry Model in 1 Ha. Area



REFERENCE :

- Timber Species Plants
- ▲ Horticulture Plant
- Pulp Wood Plant

- 1 TIMBER WOOD PLANTATION AREA (0.15 Ha) Average 96 Plants, Spacing 4 mtr.
- 2 PULP WOOD PLANTATION AREA (0.48 Ha) Average 480 Plants Spacing 4x2.5 mtr
- 3 HORTICULTURE PLANTATION AREA (0.37 Ha) Average 78 Plants Spacing 8x6 mtr.

Annexure-II (A)**Cost Norm per/ha. for Farm Forestry under OFSDP, Phase-II**

Model-B Timber Species Plantation

Forest Plant (Teak/Sisoo/Gambhar/ Mahogany) -Spacing (4mtr X 2.5 Mtr)-1000 nos.

Intercropping- 1st to 3rd year- (Arher/Sesame/Bengal Gram) 4th year onwards
(Turmeric/Pineapple/Ginger)

Sl.	Activities	Labour/ Mandays	Material Cost			Total Cost (in Rs)	Remarks
			Unit Rate (in Rs.)	quantity (in Nos)	Amount (in Rs.)		
1	Cost of seedlings Eucalyptus (from paper industry)/Acacia (RT Seedling		7	1000	7000	7000	to be procured from paper industries/ Forest Department RT seedling)
2	Site Preparation (cleaning, ploughing						to be taken by beneficiary
3	Pitting of Forest Species (30 cm cube)	14.4	7	1000	7000	7000	To be done by Project
4	Carriage & Planting of Forest species	15	3.7	1000	3700	3700	Do
7	Cost of Manure (1000 Plant) @ 25g /plant, NPK @Rs. 24.per Kg.		24	25	600	600	Borne by Project
8	Post Planting operation & casualty Replacement						to be taken by the beneficiary
9	Inter cropping, (Arhar, Sesum,/ Bengal Gram/ Pineapple/Ginger/ Turmeric						to be taken by the beneficiary under convergence of Horticulture/Agriculture
	Total	29.4			18300	18300	

- NB:** 1) Cost per unit plant Rs. 18.00 (1st year)
2) Cost of incentives-Rs. 5400/ha. (90% survival rate) Rs. 5.4/ plant
(1st year after plantation -Rs. 2.4 and 2nd year after plantation Rs.3)

Annexure-II (B)

Model layout of Farm Forestry (Timber Model) in Area 1 Ha, Spacing 4x2.5 mtr, Average 1000 Plants



REFERENCES

- TIMBER Plants

Annexure-III (A)**Cost Norm per/ha. for Farm Forestry under OFSDP, Phase-II**

Model-C.Pulp wood Plantation

Forest Plant (Eucalyptus/Acacia) -Spacing (5 mtr X 2 Mtr)-1000 nos

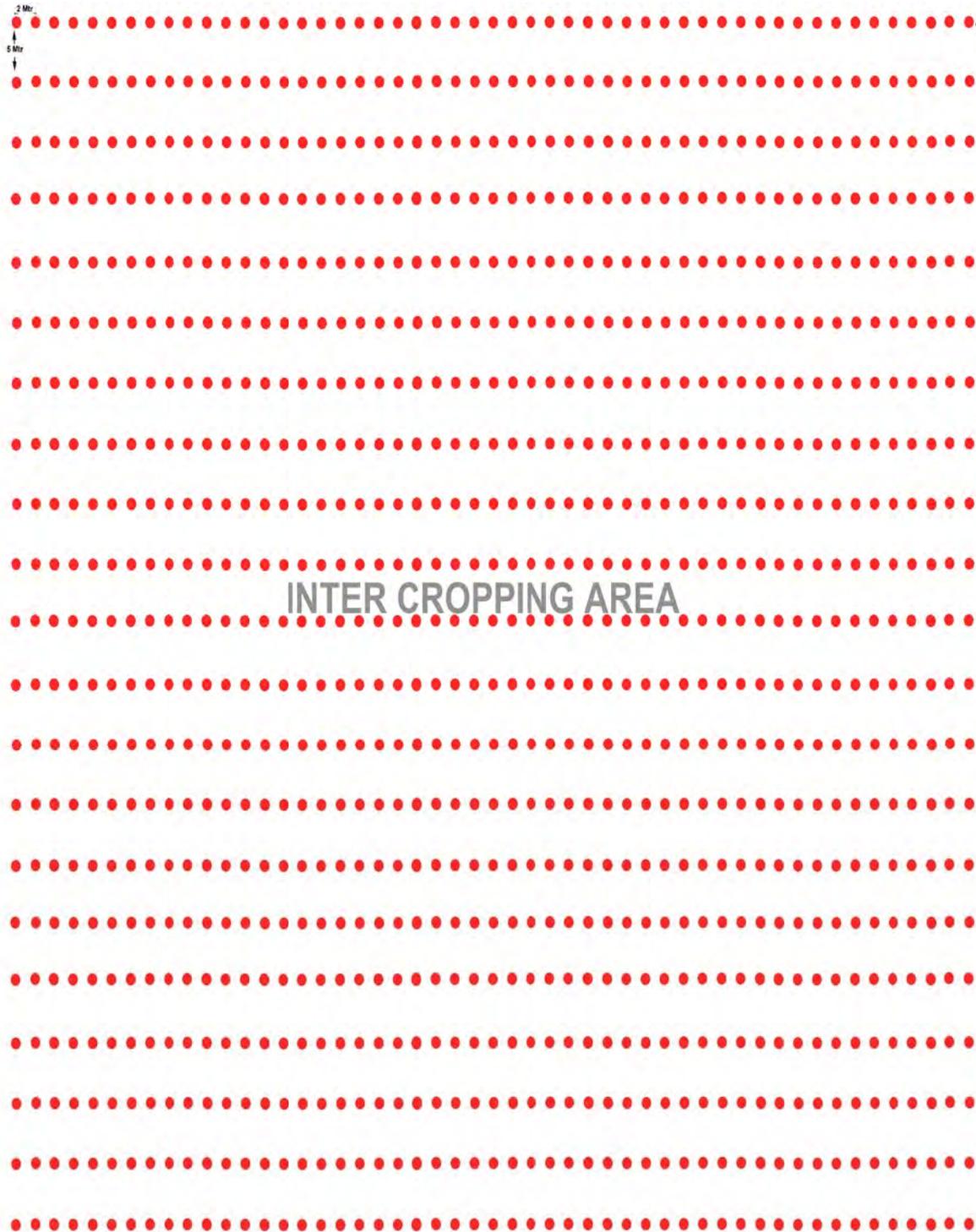
Intercropping- 1st to 3rd year- (Arher/Sesum/Bengal Gram) 4th year onwards
(Turmeric/Pineapple/Ginger)

SI No.	Activities	Labour/ Mandays	Material Cost			Total Cost (in Rs)	Remarks
			Unit Rate (in Rs.)	quantity (in Nos)	Amount (in Rs.)		
1	Cost of seedlings Eucalyptus (from paper industry)/Acacia (RT Seedling)		7	1000	7000	7000	to be procured from paper industries/ Forest Department RT seedling)
2	Site Preparation (cleaning, ploughing)						to be taken by beneficiary
3	Pitting of Forest Species (30 cm cube)	14.4	7	1000	7000	7000	To be done by Project
4	Carriage & Planting of Forest species	15	3.7	1000	3700	3700	Do
7	Cost of Manure (1000 Plant) @ 25g /plant, NPK @Rs. 24.per Kg.		24	25	600	600	Borne by Project
8	Post Planting operation & casualty Replacement						to be taken by the beneficiary
9	Inter cropping, (Arhar, Sesum,/ Bengal Gram/Pineapple/ Ginger/Turmeric						to be taken by the beneficiary under convergence of Horticulture/ Agriculture
	Total	29.4			18300	18300	

- NB:** 1) Cost per unit plant - Rs. 18.00 (1st year)
2) Cost of incentives - Rs. 5400/ha. (90% survival rate) Rs. 5.4/ plant
(1st year after plantation - Rs. 2.4 and 2nd year after plantation 3)

Annexure-III (B)

Model Layout of Farm Forestry (Pulp Wood Model) in 1 Ha Spacing 5x2mtr Average 1000 Plants



REFERENCES

- Pulp Wood Plant

Annexure-IV (A)**Cost Norm per/ha. for Farm Forestry under OFSDP, Phase-II**

Model-D Horti-NTFP Model Plantation

NTFP Plant (Amla/Bel/Mango/ Tamarind/ Jamun/Cashew) -Spacing (5mtr X 5 Mtr)-400 nos

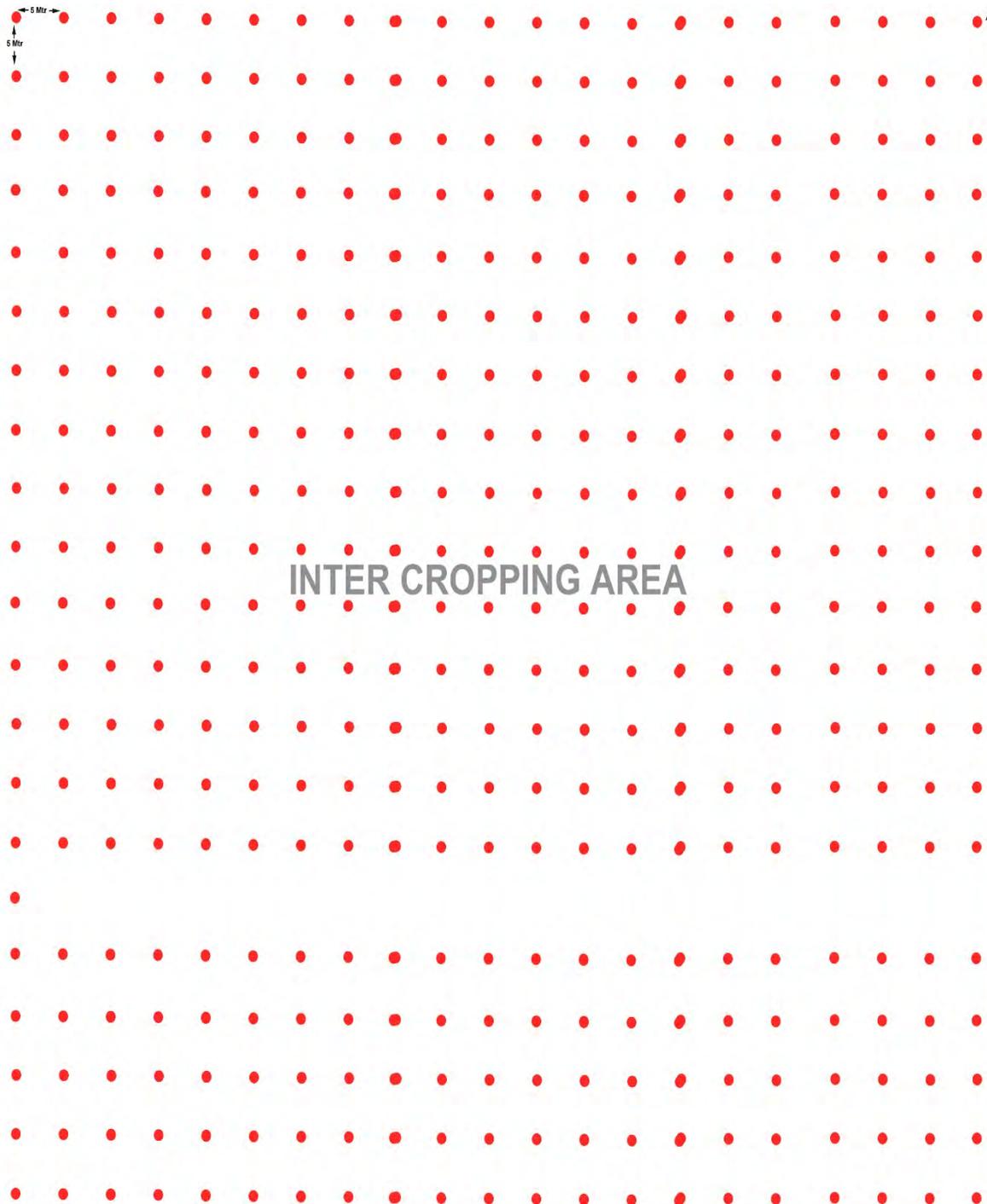
Intercropping- 1st to 3rd year- (Arher/Sesame/Bengal Gram) 4th year onwards (Turmeric/Pineapple/ Ginger)

SI No.	Activities	Labour/ Mandays	Material Cost			Total Cost (in Rs)	Remarks
			Unit Rate (Rs.)	quantity (in Nos)	Amount (in Rs.)		
1	Cost of seedlings NTFP plant (Grafted)		30	400	12000	12000	to be procured from Horticulture Department/ CHES (ICAR)
2	Site Preparation (cleaning, ploughing)						to be taken by beneficiary
3	Pitting of Forest Species (30 cm cube)	14.4	7	400	2800	2800	To be done by Project
4	Carriage & Planting of Forest species	15	3.7	400	1480	1480	Do
7	Cost of Manure (400 Plant) @ 50g /plant, NPK @Rs. 24.per Kg.		24	20	480	480	Borne by Project
8	Post Planting operation & casualty Replacement						to be taken by the beneficiary
9	2nd Year operation including casualty replacement				1240	1240	on LS
9	Inter cropping, (Arhar, Sesum,/ Bengal Gram/ Pineapple/Ginger/Turmeric						to be taken by the beneficiary under convergence of Agriculture/ Horticulture
Total		29.4			18000	18000	

- NB:**
- 1) Cost per unit plant - Rs. 18.90 (1st year)
 - 2) Cost of incentives - Rs. 5400/ha. (90% survival rate) Rs. 13.50/ plant (1st year after plantation - Rs. 5.50 and 2nd year after plantation - Rs.8)

Annexure-IV (B)

Model Layout of Farm Forestry (HORTI-NTFP Model) in 1 Ha Spacing 5x5mtr Average 400 Plants



REFERENCES

- HORTI-NTFP Plants

Annexure-V (A)

Cost Norm per/100 nos of plants in field bond /Dyke for Farm Forestry under OFSDP, Phase-II

Model-E Agri-Silviculture (mixed model of Forest and Horticulture species)

Forest Plant- (Teak/Sisoo/Gambhar/ Mahogany/ Eucalyptus) 75%

Horticulture Plant-(Guava/Lemon/Drumstick/Ber/ Amla/Tamarind/Ata) 25%

Spacing - (4 mtr)-100 nos in Field bond-Dyke

No of forest plant -75 and no of Horticulture plant -25

Cropping- usual food grain cultivation

SI No.	Activities	Labour/ Mandays	Material Cost			Total Cost (in Rs)	Remarks
			Unit Rate (in Rs.)	quantity (in Nos)	Amount (in Rs.)		
1	Cost of seedlings Teak (RT Seedling)		7	75	525	525	to be procured from paper industries/ Forest Department (RT seedling)
2	Site Preparation (cleaning, ploughing)						to be taken up beneficiary
3	Pitting of Forest Species (30 cm cube)	14.4	7	75	525	525	To be done by Project
4	Carriage & Planting of Forest species	15	3.7	25	92.5	92.5	Do
5	Cost of Horticulture Species		30	25	750	750	To be procured from Horticulture Department/ CHES(ICAR)
6	Pitting for Horticulture Species	6.4	22	25	550	550	Do
7	Carriage & planting Horticulture Species	1.8	6	25	150	150	Do
8	Cost of Manure (100 Plant) @ 25g /plant, NPK @Rs. 24.per Kg.		24	2.5	60	60	Borne by Project
9	Post Planting operation & casualty Replacement						to be taken by the beneficiary
10	Cropping of Food grains						to be taken by the beneficiary under convergence of Agriculture/Horticulture
	Total	37.6			2652.5	2,652.5	

- NB: 1. Accordingly the cost of unit plant are to be calculated @ Rs.26.52/plant (mixed model).
2. In case of planting of only forestry plant / Horticulture plant, the cost/seedling are to be calculated reciprocally
3. Cost of incentives - (90% survival rate) Rs. 8.25/ plant (1st year after plantation -Rs. 3.25 and 2nd year after plantation Rs.5)

Annexure-V (B)

Model Layout of Farm Forestry (Field Bond-DYKE Model) Average 100 Plants, Spacing 4 Mtr.



REFERENCES

- Timber/Horticulture Plant

Annexure-VI

**Application for Registration With VSS for Farm Forestry Under
 OFSDP, Phase-II**

1. Name of applicant	:	
2. Name of father/husband	:	
3. Date of Birth	:	
4. Sex (Male/Female)	:	
5. Marital Status (Single/married)	:	
6. Address in full with telephone/mobile/ email which ever available	:	
7. Profession (self-employed/farmer/housewife/student/ employed in govt. organization/non-government organization etc.)	:	
8. Proof of identify /phot identify	:	
9. Details of land		
(a) Location (District/Tehsil/Village)	:	
(b) Holding - Plot No.	:	
Khata No.	:	
Kisam	:	
Area in (acre/hectare)	:	
Details of Surrounding plots (Located in North, South, East and West Direction)	:	
10. Farm Forestry models to be raised.		

DECLARATION

I Sri _____ hereby declare that the particulars submitted by me are true to the best of my knowledge and belief I under take to take up tree plantation on my private holdings and I am willing to undertake this as per OFSDP guidelines for farmers to cultivate, protect, maintain and harvest on maturity.

Place:.....

Signature

Date:.....

Name in full

List of documents enclosed:

- (1) Identity Certificate –Voter identity Card/Aadhara Card or identity certificate form Sarpanch, Ward Member (Xerox copy)
- (2) Copy of RoR
- (3) Trace map of plot with surrounding plots(certified by the applicant)
- (4) Any other material (please specify)

For VSS use

Registration

Accepted /Registered. Date.....

Plantation record sheet

Not issued /Issued. Date.....

Signature of VSS President

Annexure-VII

Format of Tree plantation record with farmer

(in a card size of 21 cm X 28 cm from OFSDP for issue by VSS)

PART-I (entries to be made by VSS)

..... Range(FMU) (Block)

..... Forest Section G P

..... Forest Beat Village

Name Plot No.....

Address..... Khata No.....

..... Mouza Kissam No.....

Area (in acre/in ha.)

PART-II (Entries to be made by farmer)

(a) About plantation and maintenance

Date of entry by farmer	Period of planting followed by period of maintenance	Tree plantation particulars						No of plants surviving	Remark
		Species	No of plants plated	Farm Forestry model and area planted (in ha.)	Post planting activities taken up	Minimum & maximum in plantation noted (In meter)	Minimum & maximum diameter in plantation noted (in centimeter)		
1	2	3	4	5	6	7	8	9	10

(b) About trees disposed at intervals and recorded by farmer

Date of disposal	About trees harvested / removed		About timber/Pulp wood quantity obtained		Remarks (for own use or for sale)
	Species	Number	Timber (in cft) poles in number	Fire wood (in Qtl/metric ton)	
1	2	3	4	5	6

(c) About Production of Horticulture/NTFP plantation

Year of production	No of Plant	About trees		About production/quantity obtained on yearly basis		Remarks (Financial gain) (in Rs.)
		Species	Number	Quantity of product obtained	Rate/kg	
1	2	3	4	5	6	7

Annexure-VIII

Information on Farm Forestry Plantation (to be maintained at FMU)

Name of the FMU: _____

Name of the VSS	Year of F.F.plantation	No of beneficiary	Model Type	Area of Plantation	No of seedlings planted

Appendix: 1

Farm Forestry Beneficiary details:

Name of the beneficiary	Total holding of area in ha.	Area proposed for farm forestry	Type/model of farm forestry	No of trees to be planted (in case of field bund)



Odisha Forestry Sector Development Project Phase-II

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

SFTRI Campus, Ghatikia, Bhubaneswar-751 029

Revised Cost Norm per/ha. for Farm Forestry under OFSDP-II

Model-A –Agro-forestry for Entrepreneur Development/Nutritional plantation (Mixed Model)

Forest Plant (Eucalyptus /Acacia) Area-.48 ha.-Spacing (4mtr X 2.5 Mtr)-480 nos

Teak/Mahogany/ Sisoo (In periphery, area .15ha)-4mtr spacing -100 plants

Horticulture plant (Amla /Ber/Guava/Lemon/Drumstick/Papaya/Banana/Mango)- Area- .37ha.Specing- 8 mtr X 6mr- 78 plants

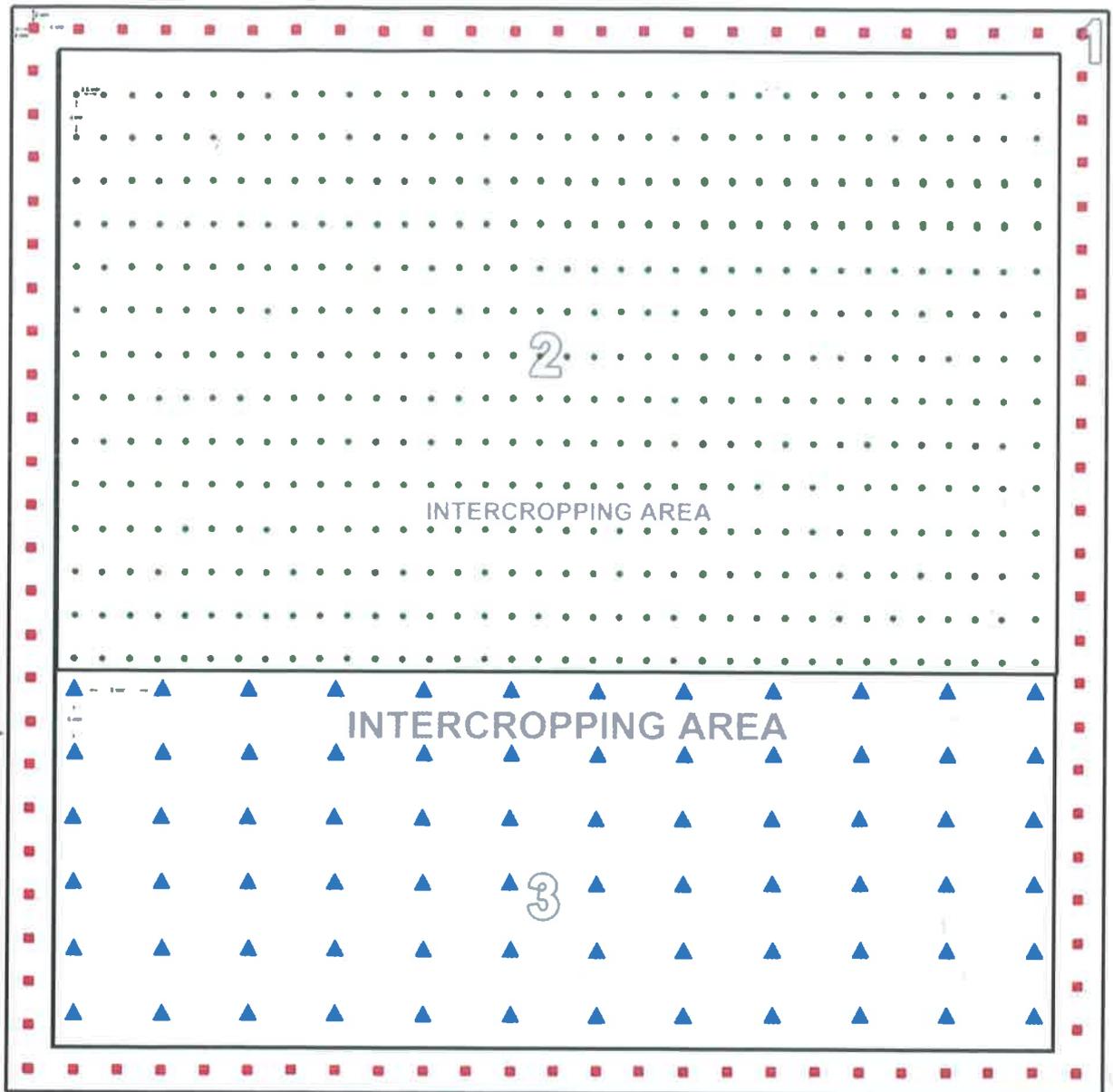
Intercropping- 1st 3 years Year (Arhar/Sesame/Bengle Gram) 4th year onwards (Pine Apple/Ginger/Turmeric)Total plant-480+96+78=654

Sl. No.	Activities	Material Cost			Total Cost (in Rs)	Remarks
		Unit Rate (in Rs.)	quantity (In Nos)	Amount (in Rs.)		
1	Cost of Seedling of Teak/Mahogany/ Sisoo (Forest Species)	13.10	100	1310	1310	To be raised in Poly pot in departmental Nursery
2	Cost of seedlings Eucalptus including transportation (from Paper industries)	7	480	3360	3360	to be procured from paper industries/ Forest Department
3	Cost of Horticulture seedlings	30	78	2340	2340	To be procured from Horticulture Department/ CHES(ICAR)
4	Site Preparation (cleaning, ploughing)			0	0	to be taken up beneficiary
5	Pitting of Forest Species (30 cum)	7	100	700	700	To be done by Project
6	Carriage & Planting of Forest species	3.7	100	370	370	Do
7	Pitting of Pulp wood Species (30 cum)	7	480	3360	3360	To be done by Project
8	Carriage & Planting of Pulp wood Species	3.7	480	1776	1776	Do
9	Pitting for Horticulture species (45 cum)	22	78	1716	1716	Do
10	Planting of Horticulture species	6	78	468	468	Do
11	cost of Manure (658 Plant) @ 50g/plant NPK@ Rs. 24/kg	24	33	792	792	Borne by Project (on LS)
12	2nd year Operation (including 10% Casualty/ One Man day/ Cost of Manure)			1797	1797	borne by Project
13	Inter cropping , Arhar/Sesame/Bengal Gram/ Pineapple/Ginger/Turmeric					To be taken by the beneficiary under convergence of Agriculture /Horticulture
	Total			17989	17989	

Incentives to the Beneficiaries (Subject to above 90% Survival of Plants)

Sl No.	Year of Incentive	Criteria	Amount in Rs. (Per Plant)
1	2nd Year	Above 90% Survival Rate after casualty replacement (Oct-Nov)	Rs. 3.25
2	4th Year	Above 90% Survival Rate (Oct-Nov)	Rs. 5.00

MODEL LAYOUT OF AGRI-HORTI-SILVI(MIXED) FARM FORESTRY MODEL OVER 1 Ha. AREA



REFERENCES

■ Timber Wood Plant

▲ Horticulture Plant

• Pulp Wood Plant

1 TIMBER WOOD PLANTATION AREA (0.15 Ha) Average 96 Plants , Spacing 4 mtr

2 PULP WOOD PLANTATION AREA (0.48 Ha) Average 480 Plants Spacing 4 x 2.5 mtr

3 HORTICULTURE PLANTATION AREA (0.37 Ha) Average 78 Plants Spacing 8 x 6 mtr

Annexure-II (A)

Revised Cost Norm per/ha. for Farm Forestry under OFSDP-II

Model-B Timber Wood Plantation

Forest Plant (Teak/Sisoo/Gambhar/ Mahogany) -Spacing (4mtr X 2.5 Mtr)-1000 nos

Intercropping- 1st to 3rd year- (Arhar/Sesum/Bengal Gram) 4th year onwards

(Turmeric/Pineapple/Ginger)

Sl No	Activities	Material Cost			Total Cost (in Rs)	Remarks
		Unit Rate (in Rs.)	quantity (in Nos)	Amount (in Rs.)		
1	Cost of seedlings Forest Plant	13.10	1000	13100	13100	To be raised in Poly pot in departmental Nursery
2	Site Preparation (cleaning, ploughing)					to be taken up beneficiary
3	Pitting of Forest Species (30 cum)	7	1000	7000	7000	To be done by Project
4	Carriage & Planting of Forest species	3.7	1000	3700	3700	Do
5	cost of Manure (1000 Plant) @ 50g /plant, NPK @Rs. 24.per Kg.	24	50	1200	1200	Borne by Project
6	Post Planting operation & casualty Replacement					to be taken up by the beneficiary
7	Intter cropping, (Arhar, Sesum,/ Bengal Gram /Pineapple /Ginger/Turmeric					to be taken up by the beneficiary under convergence of Agriculture/Horticulture
	Total			25000	25000	

Incentives to the Beneficiaries (Subject to above 90% Survival of Plants)			
Sl No.	Year of Incentive	Criteria	Amount in Rs. (Per Plant)
1	2nd Year	Above 90% Survival Rate after casualty replacement (Oct-Nov)	Rs. 2.40
2	4th Year	Above 90% Survival Rate (Oct-Nov)	Rs. 3.00


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MODEL LAYOUT OF FARM FORESTRY (TIMBER MODEL) OVER AREA 1 Ha , Spacing 4 x 2.5 mtr, Average 1000 Plants



REFERENCES

- TIMBER Plants

Annexure-III (A)

Revised Cost Norm per/ha. for Farm Forestry under OFSDP-II**Model-C. Pulp wood Plantation**

Forest Plant (Eucalyptus/Acacia) -Spacing (5 mtr X 2 Mtr)-1000 nos

Intercropping- 1st to 3rd year- (Arhar/Sesam/Bengal Gram)

4th year onwards (Turmeric/Pineapple/Ginger)

SI No.	Activities	Material Cost			Total Cost (in Rs)	Remarks
		Unit Rate (in Rs.)	quantity (in Nos)	Amount (in Rs.)		
1	Cost of seedlings Eucalyptus (from paper industry)/Acacia (RT Seedling)	7	1000	7000	7000	to be procured from paper industries/ Forest Department RT seedling)
2	Site Preparation (cleaning, ploughing)					to be taken up beneficiary
3	Pitting of Pulp Wood Species (30 cum)	7	1000	7000	7000	To be done by Project
4	Carriage & Planting of Pulp Wood Species	3.7	1000	3700	3700	Do
5	Cost of Manure (1000 Plant) @ 50g /plant, NPK @Rs. 24.per Kg.	24	50	1200	1200	Borne by Project
6	Post Planting operation & casualty Replacement					to be taken up by the beneficiary
7	Inter cropping, (Arhar, Sesam,/ Bengal Gram/Pineapple /Ginger/ Turmeric					to be taken up by the beneficiary under convergence of Horticulture/Agriculture
	Total			18900	18900	

Incentives to the Beneficiaries (Subject to above 90% Survival of Plants)			
SI No.	Year of Incentive	Criteria	Amount in Rs. (Per Plant)
1	2nd Year	Above 90% Survival Rate after casualty replacement (Oct-Nov)	Rs. 2.40
2	4th Year	Above 90% Survival Rate (Oct-Nov)	Rs. 3.00


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MODEL LAYOUT OF FARM FORESTRY (PULP WOOD MODEL) OVER 1 Ha Spacing 5 x 2 mtr Average 1000 Plants



INTER CROPPING AREA

REFERENCES

- Pulp Wood Plant

Annexure-IV (A)

Cost Norm per/ha. for Farm Forestry under OFSDP-II**Model-D Horti-NTFP Model Plantation**

NTFP Plant: (Amla / Tamarind/ Jamun / Ber / Dillenia indica / Neem / Karanja / Ritha / Sikakai) -Spacing (5mtr X 5 Mtr)- 200 Nos

Horti Plant: (Mango/ Litchi/Lemon/ Cashew/ Guava/ Custard Apple/ Jack Fruit)- 200 Nos

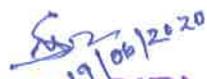
Intercropping- 1st to 3rd year- (Arhar/Sesam/Bengal Gram/ Groundnut/ Maize)

4th year onwards (Turmeric/Pineapple/Ginger/Arrowroot/Tapioca/Dioscorea Sp.)- Climbers like Pepper/Gudmari/Guluchi)

SI No.	Activities	Material Cost			Total Cost (in Rs)	Remarks
		Unit Rate (Rs.)	quantity (in Nos)	Amount (in Rs.)		
1	Cost of Seedlings NTFP plant	13.10	200	2620	2620	to be procured from Horticulture Department/ CHES (ICAR)
2	Cost of Horti Plant (Grafted)	30.00	200	6000	6000	
3	Site Preparation (cleaning, ploughing					to be taken up beneficiary
4	Pitting of Forest Species (30 cum)	7	200	1400	1400	To be done by Project
5	Carriage & Planting of Forest species	3.7	200	740	740	Do
6	Pitting of Horti Species (45 cum)	22	200	4400	4400	To be done by Project
7	Carriage & Planting of Forest species	3.7	200	740	740	Do
8	Cost of Manure (400 Plant) @ 50gm /plant, NPK @Rs. 24.per Kg.	24	20	480	480	Borne by Project
9	Post Planting operation & casualty Replacement					to be taken up by the beneficiary
10	2nd Year operation including casualty			1640	1640	on LS
11	Inter cropping, (Arhar, Sesam,/ Bengal Gram/Pineapple/Ginger/Turmeric					to be taken up by the beneficiary under convergence of Agriculture/Horticulture
	Total			18020	18020	

Incentives to the Beneficiaries (Subject to above 90% Survival of Plants)

SI No.	Year of Incentive	Criteria	Amount in Rs. (Per Plant)
1	2nd Year	Above 90% Survival Rate after casualty replacement (Oct-Nov)	Rs. 5.50
2	4th Year	Above 90% Survival Rate (Oct-Nov)	Rs. 8.00


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MODEL LAYOUT OF FARM FORESTRY (HORTI-NTFP MODEL) OVER 1 Ha Spacing 5 x 5 mtr Average 400 Plants



REFERENCES

- HORTI-NTFP Plants

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