

# **Mid Term Evaluation of Orissa Forestry Sector Development Project (OFSDP)**



## Abbreviations

ADDIE	Analysis, Design, Development, Implementation and Evaluation
ANR	Assisted Natural Regeneration
BPL	Below Poverty Line
DMU	Divisional Management Unit
EC	Executive Committee
EPA	Entry Point Activity
FD	Forest Department
FMU	Field Management Unit
GB	Governing Body
IGA	Income Generating Activity
JFM	Joint Forest Management
MIS	Management Information System
NGO	Non-Government Organization
NTFP	Non Timber Forest Produce
OFD	Orissa Forest Department
OFSDP	Orissa Forestry Sector Development Project
PRA	Participatory Rural Appraisal
SAT	Systematic Approach to Training
SHG	Self Help Group
ST/SC	Schedule Tribes and Schedule Caste
TNA	Training Need Analysis
VDF	Village Forest Development Fund
VSS	Van Samrakshan Samiti

## Management Summary

The Orissa Forestry Sector Development Project (OFSDP) aims at promoting sustainable forest management in the state with a larger goal of supporting rural livelihoods. Supported by Japan International Cooperation Agency, OFSDP is a 7 year project (2006-13) and is executed by an autonomous society under Forest and Environment Department, Government of Orissa. The project is being implemented at selected project villages in 14 Forest Divisions of the State, through active participation of the village community organized as Vana Sarakshana Samiti (VSS) or Eco Development Committee (EDC). The project targets to cover 2,275 VSSs/EDCs in the forest fringe villages in the targeted forest divisions. The project has entered into 5<sup>th</sup> year of its implementation and has entered into the stage where it is necessary to consolidate project outputs/ outcomes so far and ensure sustainability. For this a comprehensive Mid-term Evaluation (MTE) has been carried to compile the lessons learnt so far and to make necessary recommendations for further improvement of the project.

A quasi-experimental evaluation design was adopted for the MTE employing a judicious mix of qualitative and quantitative protocols. Mix design approach entailed a detailed household survey in tandem with Focus Group discussions with the SHGs and in depth discussions with the key stakeholders' viz. NGOs and staff of Project Management Unit (PMU), Division Management Unit( DMU) and Field Management Unit( FMU). As part of the assessment, a total of 204 project VSS/EDC and 23 non-project VSS/EDC were sampled. Household survey was done in all the sample VSS/EDC as part of socio-economic assessment with household schedule being the research instrument on 10 percent sampling intensity. Ecological assessment was done in one-third of the sample VSS following standard ecological measurement protocols. In 35 of the select VSS/EDC, institutional assessment was undertaken for assessing health and status of VSS/EDC and SHGs. Focus Group Discussions were held with VSS and SHG members for the same. In-Depth Interview of project personnel and other key stakeholders were also conducted to provide qualitative insights into parameters of assessment.

### Ecological assessment

Ecological assessment entailed assessment of bio-diversity of the ANR areas, regeneration status in these ANR areas, survival and growth in plantations along with indicative assessment of Sustainable Forest Management.

- For assessing biodiversity status of the ANR areas, Shannon-Weiner index was calculated. Only tree diversity was assessed with enumeration of tree species more than 15 cm GBH. The index values range from a minimum of 1.86 to a maximum of 3.23 (out of maximum 4). Majority of the index values are above 2. The values describe the absence of dominance of a single species which would have translated into index values being lower than 1. The index values points towards greater evenness and more biodiverse nature of the community.
- Each of the VSS in the project areas has been assigned on an average about 60 ha for ANR treatment. The regeneration status in the areas varies from 2204 to 3337 established seedling per hectare. With 1500 to 4500 established seedlings per hectare being the norm for classifying an area as adequately naturally regenerating, these ANR areas can be classified as the same.
- Along with ANR, artificial regeneration has also been undertaken in the project area. In JFM mode, four models have been furthered-Economic, NTFP, Fuel and fodder, and Bamboo and cane; while in non-JFM mode, teak plantations have been undertaken. For all the plantation models the average survival percentage is quite high and ranges from a low of approximately 74 percent for Bamboo to high of almost 87 percent for Non-JFM Teak. Large variation in growth has been evidenced across the models.

- One of the outputs is of the conservation of biodiversity in the target protected areas with eco-tourist influx being the key indicator. Data from the Day Visit Centre Goindi ( Satkosia WL) that has been developed as a eco-tourism site reflects on increased tourist influx.
- The envisioned project impact of OFSDP is sustainable management of forests and indicative assessment was undertaken as part of the MTE. Of the purposive sample of 12 VSS/EDC, almost three-fourth of the VSS/EDCs gets categorized as 'potentially sustainable' that reflects on the movement towards sustainable forest management

### **Institutional Assessment**

Institutional assessment entailed assessment of health and status of the VSS/EDC and SHGs and results incidental to project implementation in the state forest department.

#### **VSS/EDC level**

- Majority of the members of the Executive Committee of the institutions belong to SC and ST with almost 64 percent of the members belonging to the two groups. As regards Well-Being categories, almost 82 percent of the members belong to poor and very poor categories. This reflects on the equity focus in constitution of the Executive Committees of these institutions.
- Generally, General Body meetings are conducted quarterly and EC meetings are held every month. Thus, the frequency of GB and EC meetings is higher than that prescribed in the JFM resolution of the state. Overall, high participation of EC members has been found in the assessed institutions with average attendance in the last three EC meetings being 82 percent. However, attendance in GB meetings is on the lower side with average attendance in the last two meetings being 21 percent.
- In all of the assessed VSS/EDC, Micro plan has been prepared. High level of participation in the process of micro-planning has been reported with almost 87 percent of the households reporting participation.
- Well defined systems for documentation have been evidenced and reported during the assessment. Transparency in decision-making and financial transparency has been reported as one of the key feature of institutional functioning

#### **SHG level**

- More than three-fourth (76 percent) of the SHG members belong to SC and ST categories. As regards well-being categories; almost 35 percent were from very poor category and 43 percent were from poor category.
- Well defined norms, adherence to protocols and regular meetings have been evidenced in these SHGs. Regular meetings with high average attendance (90 percent) and regular savings are key characteristics of the groups. However, it has been observed that internal lending is very low and the credit needs are met through external sources only.
- The project has adopted a precautionary principle for enterprise promotion, that of starting small and upscaling once the enterprise stabilizes. Thus, a typical assistance to a groups has been in the range of Rs. 20000/- to Rs. 30000/-. It has been observed that almost all the supported SHGs have initiated enterprises and have earned profits. Most of the SHGs have completed one round of enterprise cycle and many have availed a second loan after repaying the first loan and this reflects on the success of the enterprises. However, the profits from these enterprises have been by far very low.

### **State Forest Department**

- One of the key results of the project is enhanced capacity of the Orissa State Forest Department. The project strategy for the same is of facilitating the necessary infrastructure through creation of assets with concurrent development of individual capacities.
- Various assets have been created both at DMU as well as FMU level. These include buildings, Vehicles, computers with internet facility, printer, GPS devices, camera, almirah and office furniture etc. Almost all the assets are being utilized at both the levels. Project personnel across the hierarchy especially at the frontline level have reported familiarity and use of the introduced technology.
- Across the hierarchy, various trainings have been imparted in cognizance with the envisioned role of the project personnel. Knowledge and skills acquired through project training imperatives have effectively been transferred to the job and have been reported across the departmental hierarchy.

### **Socio-economic Assessment**

- There is significant increase in natural capital for almost 1.7 percent of the households in the project area and for nearly 71 percent of the households, the increase is highly significant. There is significant increase in financial capital for almost 18 percent of the households from project area and nearly 12 percent of the households have highly significant increase. Similarly, resultant to the capacity development, there is highly significant increase in human capital for almost 18 percent of the households and significant increase for nearly 8 percent of the households. As regards to the overall status of the livelihood assets of the VSS members, there is significant increase in the assets for almost 14 percent of the households.
- Almost 83 percent of the project households reported engagement in NTFP collection. Significant number of households (almost 70 percent) has reported increase in amount of NTFP collection as regards the targeted NTFPs- Mahua flowers, Mahua seeds, Sal Seeds, Siali leaves and Tamarind. However, the same could not be attributed to project imperatives..
- Almost 63 percent of the households in the project area have accessed various NTFP related information and services furthered by the project that include marketing support, training/exposure, inputs for processing/value-addition, credit etc.
- There is an increase in access to drinking water in the project area and a marginal increase in the practice of use of toilets. The scenario of access to services under Gram Kalyan Samiti suggests better health services in the form of camps, distribution of medicines and regular health checkups for the community members in the project area
- There is high access to financial services in the project area with nearly 93 percent of the households reporting access to savings and nearly 39 percent of the households reporting access to credit facilities.

### **Performance Review**

Performance of the project was to be analyzed with respect relevance, results, efficiency, effectiveness, impacts and sustainability as well as lessons learnt.

- In all the components, the project interventions have been found to be relevant and best fit given the nature of issues that they target. However, undertaking ANR activities in dense forest areas, uniformity of ANR operations, Teak-based Economic Model of plantation and exotic based fuel and fodder plantation model is questionable.
- There is significant achievement in project results as envisioned. It would be expected that the project delivers the desired results by end-of-project.

- The results as of now reflect on efficient translation of employed inputs into desired outputs. As regard the overall efficiency of the investment, the same could be better commented at end-of project assessment as many of the outputs are in formative stages and require more time to reflect the desired level of change.
- The project employs existing institutional structure and delivery mechanism for project service delivery which makes the interventions cost effective.
- Given the nature of the project, it is premature to comment on the project impacts. Indicative assessment of status of sustainable forest management reflects progress towards sustainable forest management.
- Institution sustainability of crafted institutions necessitates considerable investment in capacity building as well as hand-holding. Interventions sustainability is also a concern with intervention intensity decreasing after third implementation year.
- Key lessons learnt from project implementation are of- harmonizing the conservation-development dichotomy, necessity of stakeholder participation and capacity development, behavior change in implementers, fostering GO-NGO partnerships and inter-institutional linkages.

### **The way forward**

- The project has employed a process oriented approach for institutionalizing JFM in the state and has been quite successful in the endeavour. However, the results so far have been more of Joint Forest Protection rather than management. The microplans form the basis of forest development however majority of the microplans leave forest management prescriptions only at ANR activities also limited to the project duration. There is a need to go beyond the project period as well as plan for forest management in a long-term perspective going beyond ANR activities.
- Silvicultural operations in the VSS areas by far have been limited to cleaning, multiple shoot cutting and stump dressing. Given the growth, forestry management operations are required to reduce congestion and therefore thinning is imperative. Also, there are areas where the canopy density is substantial and require operations for opening the canopy. Appropriate silvicultural operations are required based on the status of forest stands.
- Although largest component of the project relates to ecological interventions for forest rejuvenation, the same doesn't get reflected by the project monitoring protocols and therefore on-time information on indicators for ecological outputs is not available. Thus, there is an immediate need of designing and implementing comprehensive monitoring protocols to cover the same.
- It would still be a long journey before the newly crafted institutions become vibrant self-sustaining institutions. Substantial investment in developing institutional capacities is warranted. It would be prudent engage NGOs for capacity development as well as back-stopping.
- The sheer number of documents to be maintained makes the documentation system cumbersome and difficult to implement. The existing documentation system needs to be reviewed taking into account the user perspective as well from the perspective of persons responsible for maintaining these documents.
- The initial experience of the project with enterprise development has been quite encouraging. However, the net benefit accruing to the enterprise promoters is by far very low. It would be necessary to rethink of the scale of the primary-level (SHG-level) enterprise at the very outset as well bring more rigour in business planning.
- The results of trainings are encouraging and also there has been substantial transfer of learning. However, the training processes require strengthening, especially at the VSS level.
- The early outcomes as a result of interventions are encouraging; however, given the nature of the rural society and slow nature of change process, it will be useful to seek no cost project extension at least for another two years.

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# 1 Introduction

The Orissa Forestry Sector Development Project (OFSDP) aims at promoting sustainable forest management in the state with a larger goal of supporting rural livelihoods. OFSDP is a 7 year project (2006-13) and is executed by an autonomous society under Forest and Environment Department, Government of Orissa, with financial assistance from Japan International Cooperation Agency (JICA). The project is being implemented at selected project villages in 14 Forest Divisions, namely Angul, Balliguda, Bonai, Deogarh, Jeypore, Keonjhar, Koraput, Paralakhemundi, Phulbani, Rayagada, Rourkela, Satkosia WL, Balasore WL and Bhadrak WL, through active participation of the village community organized as Vana Sarakshana Samiti (VSS) or Eco Development Committee (EDC). The project targets to cover 2,275 VSSs/EDCs in the forest fringe villages in the above 14 Forest/ Wild Life Divisions.

The project has 5 major components, namely: 1) Restoration of degraded forests, 2) Coastal plantation, 3) Biodiversity management, 4) Community/ Tribal development and capacity building and, 5) Supporting activities. The basic approach of OFSDP is community participation and ensuring sustainability. Most project activities are implemented by the village-level organizations according to a micro plan prepared by the VSSs/EDCs. The project has established formal linkages with local Non-Government Organizations (NGO), which have been assisting the capacity building of VSS/SHG and in providing hand-holding support to the VSSs in implementing the project activities.

The project has entered into 5<sup>th</sup> year of its implementation. Major works in 1<sup>st</sup> and 2<sup>nd</sup> batch VSSs have been completed, and the 3<sup>rd</sup> batch have taken up the plantation works during the monsoon season of 2010. After this planting season, the project has intervened in 2047 VSSs/ EDCs out of a total target of 2275, and the assets (plantation and other community assets) will be managed by the respective communities during the rest of the project period with required technical and financial input from the project. For biodiversity management, the project has invested primarily in eco-tourism development in Satkosia WL Sanctuary. Other unique works, such as establishment of heritage sites, conservation areas and eco-development by the EDC members are also in progress.

The project is focusing on the Community/ Tribal development, which includes the creation of small scale rural infrastructure/community assets (entry point activities), provision of basic health needs through convergence with other schemes and agencies, strengthening of SHGs, business planning, financial assistance to the SHGs, skill training for SHG members, backward/ forward linkages of income generating activities etc. The project has supported nearly 2000 SHGs so far and will assist additional 2500 plus SHGs during rest of the project period.

To support the process of project activities, a number of support activities have been taken up in the project, such as engagement of experts/ consultants and partner NGOs, GIS base mapping of project sites, establishment of baseline data and proper M&E mechanism, capacity building/ training of community members and project staff, preparation of various manuals and guidelines, research activities, publicity and communication, various workshop/seminars/review meetings, infrastructure development of executing agency etc.

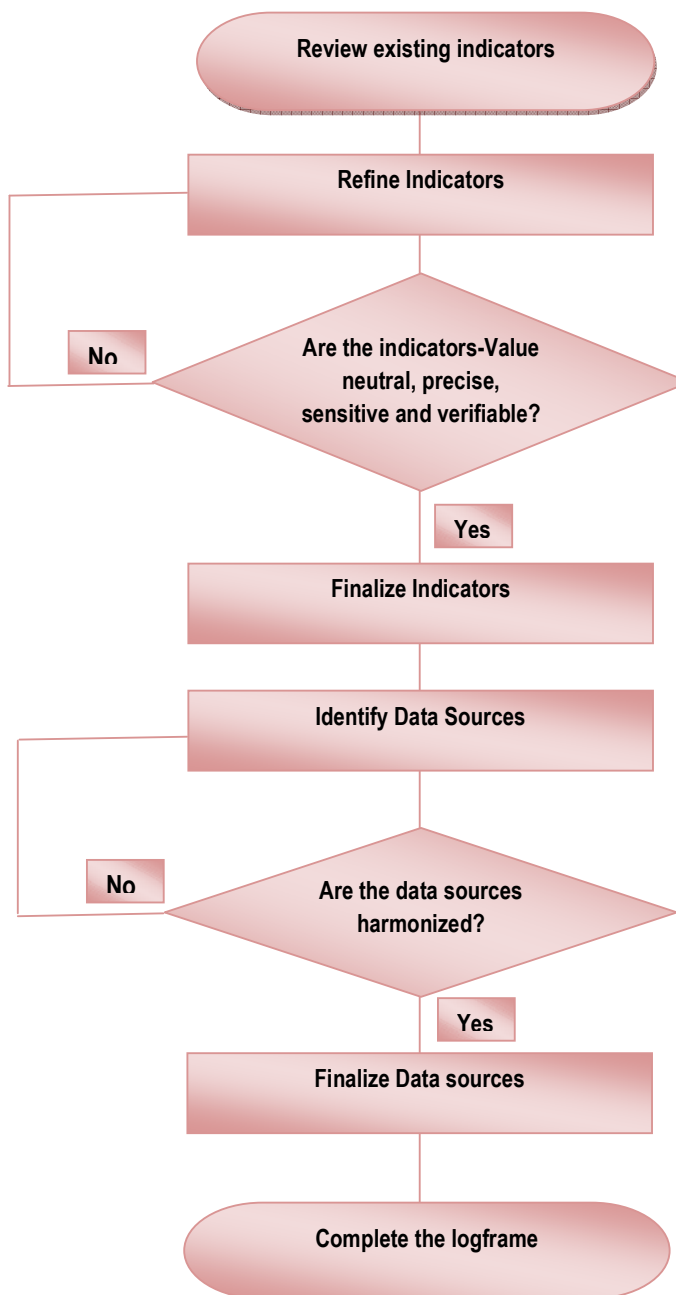
As project has entered into the stage where it is necessary to consolidate project outputs/ outcomes so far and ensure sustainability. For this a comprehensive Midterm Evaluation has been carried out to compile the lessons learnt so far and necessary recommendations have been made for further improvement of the project. These results can be used for midcourse corrections and planning for the remaining project period.

## 1.1 Approach and Methodology

### Fine Tuning of Logical Framework

The first task as regards to the assignment was fine-tuning the logframe outcome and output-level indicators. The guiding principles<sup>1</sup> been employed for fine-tuning the indicators are:

- i. **Value neutral:** The indicator is value neutral. Indicators only state what is to be measured – i.e. they do not include elements of the baseline or target. Thus, the indicator statement describe only the information unit to be measured and does not state changes-increase, decrease, reduce, enhance etc.
- ii. **Precise:** The developed indicators are precise- defined in same-way by the key stakeholders. For example, access to government schemes. This can be defined in many ways e.g. knowledge of a scheme, receiving benefit from the scheme, receiving full entitlements from a scheme etc. The definition has been agreed upon with the stakeholder that everybody attached the same meaning to an indicator.
- iii. **Sensitive:** The indicators are sensitive as regards measurement is concerned. So as to say, the indicators are able to capture even smallest amount of changes occurring in a given target condition.
- iv. **Verifiable:** The indicators are measureable so that the achievement in the target condition (output or purpose) is assessed. The indicator does not give 'what is to be achieved' but "what is to be measured" is a condition.



<sup>1</sup> The principles build on the DFID Guidance on using the revised Logical Framework (How to note, February 2009).

The next step is of identification of data sources. Wherever possible, existing data sources is employed, however for indicators that require the response to come from the clients, primary assessment method has been developed. As regards identification of existing data sources, the key consideration is of harmonization.

## Methodology

A “Quasi- Experimental Design” was employed for the MTE following a mix design approach to the study. Mix design approach entailed a detailed household survey in tandem with Focus Group discussions with the SHGs and in depth discussions with the key stakeholders’ viz. NGOs and staff of Project Management Unit (PMU), Division Management Unit( DMU) and Field Management Unit( FMU).

<b>MIX DESIGN APPROACH</b>	
<b>Qualitative Approach</b>	<b>Quantitative Approach</b>
<b>Purpose:</b> To provide qualitative readout to the study and develop a storyline by substantiating quantitative information.	<b>Purpose:</b> To quantify values of log frame indicators
<b>1. Focus Group Discussion with SHG members</b> Focus group discussions have been conducted with selected SHGs for eliciting qualitative insights into business and financial assistance and training imparted to ensure income generating activities.	<b>2. Household Survey</b> The household survey is undertaken using a structured questionnaire administering VSSs/ EDCs.
<b>3. In depth interviews with PMU, DMU and FMU members</b> We have conducted In depth interviews with management units. The in-depth guidelines is a semi-structure questionnaire; and hence provides both qualitative and quantitative insights into effectiveness of GIS database development, administrative and financial planning and other data entry operations.	<b>4. Secondary data collection on indicators</b> It is envisaged that few of the indicators of the log frame will pertain to understanding of Project Memorandum and M&E framework under OFSDP. For this we depend on open source data and reports on third party project asset assessment, socio-economic baseline survey, VSS performance assessment , manuals etc.
<b>5. In-depth Discussions with partner NGOs and consultants</b> To gain understanding of the various objectives and implementation of programmes aimed at the welfare of communities and capacity building. This has also given an insight into the effectiveness of the micro plans prepared and its extent of execution.	<b>6. Assessment of ecological indicators</b> It is understood that few of the indicators of the log frame pertain to measurement of forest regeneration, growth and biodiversity. For this, bio-metric assessments is undertaken to quantify the indicators.
<b>7. Field visits for quality assessments of SMC works and other assets created</b> To assess the quality of works undertaken.	

### 1.1.1 Sampling Design

#### Sample Size

The sample size for the midterm evaluation survey has been worked by taking into cognizance the elaborate process followed for selection of programme VSSs/EDCs in each division.

The primary objective of any evaluation design is to facilitate measurement and compare changes in key programme indicators. To measure changes, which could have occurred due to project interventions, sample size should be statistically adequate to identify and measure those changes. The sample size decision for

detecting changes from midline depends on the power i.e efficiency to detect and measure change, besides depending on level of statistical significance.

The minimum sample size required to assess change will hence depend on:

- a) Expected change programme was designed to make, which needs to be detected – robust enough to even detect a change of **20%** at the project level.
- b) Appropriate significance level i.e assigning probability to conclude that an observed change is a reflection of effort and did not occur by chance i.e at 95% level
- c) Appropriate power i.e the probability to conclude study has been able to detect a specified change i.e at 80 % power.

Based on the above considerations the required sample size (n) for a variable of interest as a proportion for a given group is given by;

$$n = \frac{D[Z_{1-\alpha} \sqrt{2P(1-P)} + Z_{1-\beta} \sqrt{P_1(1-P_1)+P_2(1-P_2)}]^2}{(P_2-P_1)^2}$$

where:

D=Design effect<sup>2</sup>; (Assuming a design effect of 2\*)

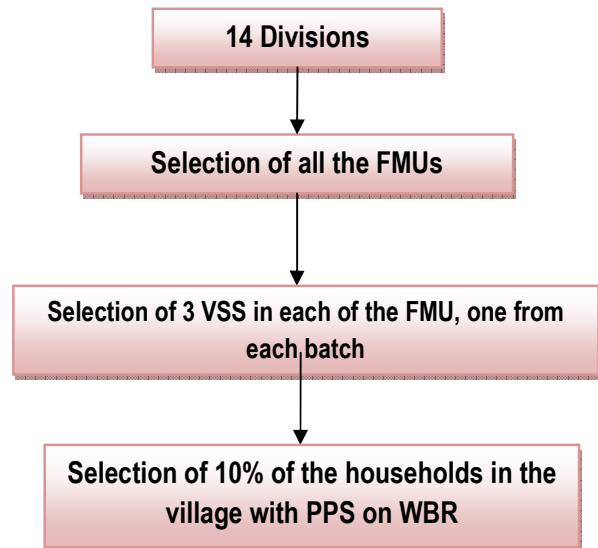
P<sub>1</sub>=the estimated proportion at the time of the first survey;

P<sub>2</sub>=the proportion expected at the time of survey

Z<sub>1-α</sub>=the z-score corresponding to a significance level

Z<sub>1-β</sub>=the z-score corresponding to the power

Based on the above formulae adequate sample size for the divisions are represented in the table below. Division level sample sizes have been inflated by 10 percent to account for any no response. The division level sample comes as 204 VSSs/EDCs. Also, 10% of the total VSSs (i.e. 2047) come as 204. This matches with the sample calculated from the above formula.



**Step 1: Selection of DMUs**

In the first stage of selection, all the DMUs were selected.

**Stage 2: Selection of FMUs**

In each of the DMU, all the FMUs are selected. In all 71 FMUs are selected in the 13 DMUs.

**Stage 3: Selection of VSS/EDC**

In each of the DMU, 3 VSS/EDC were selected randomly. These were selected so as to represent the three batches. Thus, one VSS/EDC from first, second and third batch was selected. However, taking into consideration field situations (viz. law and order problems), some VSS/EDC have to be changed in consultation with field staff.

<sup>2</sup> In case of complex cluster sampling design, two key component of the design effect are intra-class correlation, and the cluster sample sizes. Thus, the design effect is calculated as follows:

Design effect = 1 + ρ(n - 1) .

#### **Stage 4: Selection of VSS/EDC**

In the selected VSS/EDCs, 10% of the households were selected. The households within the VSS/EDC were distributed on the basis of WBR categories. If the VSS/EDC has 80 households then 8 households are selected (10%). If the households in WBR categories were Poor 40, Medium 30 and Rich 10. Then the sampling was:

<b>Category</b>	<b>Poor</b>	<b>Medium</b>	<b>Rich</b>	<b>Total</b>
Population	40	30	10	80
Sample	4	3	1	8

#### **Sample for ecological assessments**

For ecological assessments, the parameters were:

1. Survival percentage of plantations and height of saplings
2. Regeneration status in ANR areas
3. Biodiversity status of the ANR areas- Shannon Weiner index for tree species.

Ecological assessment was done in one-third of the selected sampled VSS. Thus in 69 of the selected VSS, ecological assessments was done. In each of the DMU, 2 FMUs are selected for these assessments. In each of the FMU, ecological assessment was done in one VSS from each of the first, second and third batch. Sample plots were laid in the assessments done with the following sampling intensity.

ANR	0.1 %
Block plantation	0.5 %

Detailed methodology for specific assessments along with the data collection format is given at Annex G.

Along with ecological assessments, indicative assessment of Sustainable Forest Management was also undertaken. Criteria developed under the Bhopal- India Process were adapted to the project for the same and the assessment was done in 12 VSS.

#### **Sample for assessing Soil and moisture conservation activities**

Assessment of quality of soil and moisture conservation work, is done in all the selected 69 VSS for ecological assessments. In each of the selected VSS, one technology has been undertaken for assessment. Five instances of the technology are visited for assessment of the quality of works.

#### **Sample for works done in non-JFM mode**

There are total 258 sites where Teak plantations have been done in non-JFM mode with the total planted area being 9319 ha. For assessment, 10 percent of the sites were selected, thus 27 sites were selected. These sites were distributed across the divisions and across the years (2008-09, 2009-10 and 2010-11). In the selected sites, 0.1% sampling was done.

#### **Sample for non project area**

Quasi-experimental design has been employed for the evaluation and therefore non-project areas were selected as comparison group. 2 VSS per DMU were selected in consultation with project staff, as comparison group. In

these selected VSS, both socio-economic assessment and assessment of regeneration status was done using protocols similar to project VSS.

### Sample overview Quantitative

The matrix below gives the overview of the sampling protocols to be adopted for quantitative assessments.

Parameter	No. of VSS to be sampled	Sampling intensity
<b>Project</b>		
Socio-economic	204 VSS	10 percent of households in the VSS
Regeneration status of ANR area	69 VSS	0.1 percent of the ANR area
Survival % and height of trees in JFM mode	69 VSS	0.5 % of the plantation area
Survival % and height of trees in non-JFM mode	27 sites	0.1 % of the plantation area
Quality of SMC works	69 VSS	One technology per VSS and 5 instances per VSS
<b>Non-project</b>		
Socio-economic	23 VSS	10 percent of households in the VSS
Regeneration status of ANR area	22 VSS	0.1 percent of the ANR area

### 1.1.2 Qualitative Protocols

#### a) Focus Group Discussion

The assessment of SHGs has been done through focus group discussions to know the opinion/ perception of the target groups about joint forest management and its methods. Each FGD lasted for about 60-90 minutes. FGDs were conducted with VSS members and SHG members. It is conducted in half of the VSS selected for ecological assessments. Thus, these were conducted in 35 VSS. Both the FGDs have been conducted in the same VSS and in all 70 FGDs are conducted.

Focus Group discussion guidelines are be used to conduct focus group discussion. The discussion has provided diagnostic insights into institutional aspects of VSS, processes and ecological aspects. Institutional assessment has parameters of participation, transparency, autonomy and governance.

#### b) In-depth Discussions

In-depth interviews have been conducted with key stakeholders- PMU/DMU/FMU personnel, NGO representatives, consultants, line departments and PRI representatives, using in-depth interview guidelines. Interviews have used moderator-led discussion guides to elicit meaningful responses. Each IDI lasted between 30 to 45 minutes.

At the DMU level, IDIs are conducted in 7 of the selected DMUs. In each of the selected DMU, 6 IDIs have been conducted. In this DMU Chief, FMU chief, FLE, one representative of PRI, one representative of NGO and one representative of a line department have been interviewed using the interview guidelines. DMU's where IDI's were conducted are- Angul, Satkosia WL, Deogarh, Rayagada, Koraput, Jeypore and Phulbani.

### c) Field observations

This is for assessing the quality of assets created under the project. Assets created under the Entry Point Activities as well as soil and moisture conservations works have been visited, observed and commented upon.

#### Sample Overview Qualitative

The matrix below gives the overview of the sampling protocols to be adopted for qualitative assessments.

Parameter	Sample
FGDs with VSS members	35 VSS
FGDs with SHGs	35 VSS
IDIs with stakeholders	52 identified stakeholders

#### Parameters of assessment

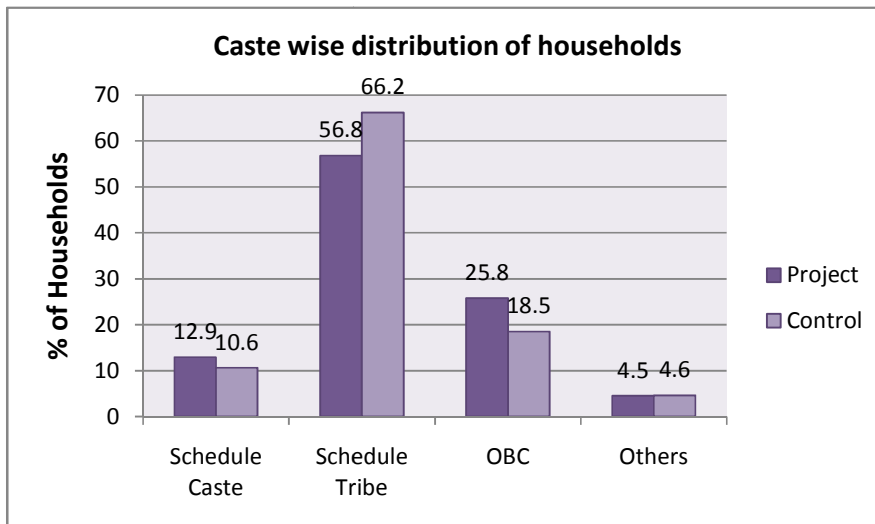
The matrix below gives the indicative list of parameters of assessments with respect to the various tools adopted.

Tool	Parameters of assessment
Household schedule	<ul style="list-style-type: none"><li>▪ Income</li><li>▪ Financial services</li><li>▪ Access to entitlements</li><li>▪ Participation in VSS processes</li></ul>
Regeneration survey	<ul style="list-style-type: none"><li>▪ Regeneration status of ANR</li><li>▪ Survival and height of plantations</li></ul>
FGD with VSS members	<ul style="list-style-type: none"><li>▪ Micro-planning process</li><li>▪ VSS functioning</li><li>▪ Equity</li><li>▪ Ecological impacts</li></ul>
FGD with SHG members	<ul style="list-style-type: none"><li>▪ SHG processes</li><li>▪ Enterprise processes</li><li>▪ Benefits accrued</li></ul>
IDIs with key stakeholders	<ul style="list-style-type: none"><li>▪ Implementation process</li><li>▪ Results of interventions</li><li>▪ Lessons learnt</li><li>▪ Challenges and way forward</li></ul>
Site visits	<ul style="list-style-type: none"><li>▪ Quality of SMC works</li><li>▪ Quality of assets created</li></ul>

## 1.2 Sample Profile of the Respondents for Socio-Economic Assessment

As mentioned earlier, a total of 227 VSS (204 VSS in the Project area and 23 in control area) were interviewed during the assignment. The household level questionnaire was administered to “head of the household”. Approximately 57 percent of the respondents in project villages and 66 percent of the respondents in the control villages belonged to scheduled tribes. In project and control villages, almost 13 percent and 11 percent respectively of the total respondents were from schedule castes. As the schedule was administered to the head of the household, approximately 82 percent of the respondents interviewed were men while the remaining 18 percent were women.





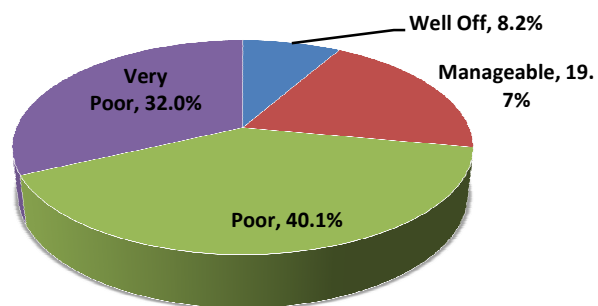
Approximately 74 percent household in the project and 75.5 percent in the control village represented Below Poverty Line (BPL) households.

**Table 1: BPL-APL categorization of sample respondents**

	% Households	
	Project	Control
BPL	74	75.5
APL	26	24.5

The sampling plan of the study was designed to seek proportionate representation of the households selected for the study as per their WBR category. The following chart depicts the same. Almost 32 percent and 40 percent of the households were from very poor and poor category, which is the focus of the project.

**WBR category wise distribution of Households**



### 1.3 Sample Profile for Ecological Assessment

For the ecological assessment, 69 VSSs from project area, 23 VSS from control area and 27 VSS from non JFM teak plantations have been assessed. This comprised of assessing survival percentage of plantations, height growth assessment, biodiversity and regeneration assessment.

## 1.4 Limitations of the study

The following were the limitations of the study:

- The time duration of the study was three months. Considering the scope of OFSDP, a comprehensive evaluation would necessitate more time. Thus, the scope of the MTE has been limited due to this time constraint.
- The project logframe has been the loci of the MTE and therefore more focus has been given to the logframe output and outcome indicators.
- Some amount of randomization has been compromised in selection of VSS. The first list was developed using total random selection. However, taking into consideration field situations (viz. law and order problems), some VSS/EDC have to be changed in consultation with field staff.

## 2 Biophysical Assessment

The overall goal of OFSDP is sustainable forest management and poverty alleviation of local people. In consonance with the overall goal, project imperatives therefore target the two interrelated aspects. Bio-physical assessment was undertaken as part of the MTE for ecological results and outcomes on the basis of predefined indicators. This chapter details the results incidental to bio-physical interventions of the project.

### 2.1 Biodiversity of ANR areas

One of the key mandate of the project is rehabilitation of the degraded forest areas with community participation. In each of the targeted VSS of the project, forest area has been assigned to the VSS for protection and rehabilitation. A part of these areas have been earmarked as ANR areas. The communities under the aegis of JFM are actively engaged in protection and rehabilitation of these forest areas. Improvement in biodiversity status on these ANR areas is one of the key project outcome. Assessment of biodiversity status of these ANR areas was done as part of ecological assessment. The same was done through calculation of Shannon Weiner Index.

The index is one of the most widely used measures of evenness and describes the uncertainty in predicting the species of an individual picked at random from the community. The index values range from 0 to 4. The uncertainty of occurrence increases both as the number of species increases and as the individuals are distributed more and more evenly among the species already present. Higher values of the index indicate more equitable distribution of species and more diversity of species in the community.

The Shannon-Wiener Diversity Index, H, is calculated using the equation,

$$H = - \sum_{i=1}^s P_i (\ln(P_i))$$

Where  $P_i$  is the proportion of a given species in the sample.

Shanon Weiner index was used because it summarizes both species richness (the number of species in the community) and species equitability (how even are the numbers of individuals of each species). Thus, it is a better measure of diversity in the project context compared to Simpson's index that is considered a dominance index because it weights towards the abundance of the most common species.

For the assessment, only tree diversity was assessed with enumeration of tree species more than 15 cm GBH. Table 2 gives the Shannon-Weiner index values of calculated for the various FMUs.

**Table 2: Shanon Weiner Index (H) values for the DMUs**

DMU	H(Project)
Angul	2.56
Balliguda	2
Bonai	2.09
Deogarh	2.18
Jeypore	1.86
Keonjhar	2.36
Koraput	2.37
Parlekhamundi	3.23
Phulbani	1.93
Rayagada	2.14
Rourkela	2.16

The index values range from a minimum of 1.86 (Jeypore DMU) to a maximum of 3.23 (Palakhemundi DMU). Majority of the index values are above 2. The index values thereby describe the absence of dominance of a single species that would have translated into index values being lower than 1. Given that forest in the project target area are Moist Sal Forest, dominance of Sal it being a dominant as well as climatic climax species is observed. However, the index values points towards greater evenness and more biodiverse nature of the community. Along with Sal, other species observed include Kendu, Char, Dhawada, Baheda, Amla, Arjuna, Bija, Bela, Gambhari, Rahuni, Karanja etc. This is pointer towards earlier succession stages given that the forests in a stage of rehabilitation. Thus it can be said that along with Sal there is a larger presence of associate species that makes these areas rich in biodiversity. As there are no baseline figures available for the project areas, change or improvement in the biodiversity status cannot be qualified. However, the values generated would serve as reference for end-of-project evaluation to trace changes over the remaining project duration. The index values also point towards the future management alternatives that the project has to undertake so that the at least the existing biodiverse crop composition is maintained that has a natural tendency of Sal dominating along with a few co-dominants.

## 2.2 Regeneration Status

Each of the VSS in the project areas has been assigned on an average about 60 ha for ANR treatment. With adequate root stock being present in these areas, protection and minimal operations of cleaning, singling (multiple shoot cutting) and stump dressing are required for rejuvenation of the degraded stands; and these have been undertaken across the project area. As a result of ANR areas, forest patches in the VSS have been rehabilitated in the project VSS. Good coppice growth and stocking is observed in the ANR areas. In some of the VSS, the communities were protecting the forest area before initiation of the project. Growth in these areas is particularly very good. In such areas the stands have converted into a pole stage crop. Natural regeneration status in these areas was also assessed as part of the ecological assessment. Table 3 below gives the regeneration status of the project DMUs.

**Table 3: Regeneration status in the project DMUs**

DMU	Regeneration status (Established seedlings/ha)
Angul	3100
Balliguda	3212
Bonai	3277
Deogarh	3267
Jeypore	3133
Keonjhar	3028
Koraput	2979
Parlekhamundi	3337
Phulbani	2971
Rayagada	2867
Rourkela	2204

As per the national norm (National Working Plan Code), forest area with regeneration status of 1500-4500 established seedlings per ha is categorized as 'adequately regenerating'. From the table, it is evident that natural regeneration in project VSS across the forest division is adequate. While there is adequate natural regeneration, almost three-fourth (73.4 percent) of this regeneration is of coppice origin. This again relates to the fact that the

forest area is being rehabilitated from the existing root stock and would take a while to have adequate seed origin recruitment.

## 2.3 Survival and Growth in Plantations

Along with ANR, artificial regeneration has also been undertaken in the project area. This has been taken in JFM and non-JFM mode. In JFM mode, VSS has implementation responsibility while in non-JFM mode the plantations are taken by the Forest Department. In JFM mode, four models have been furthered-Economic, NTFP, Fuel and fodder, and Bamboo and cane. In non-JFM mode, teak plantations have been undertaken. Plantations have also been undertaken in the ANR areas as gap/block plantations as per the need. Survival and growth of the plantations was also assessed as part of bio-physical assessment. Table 4 below gives the survival statistics of these plantation models.

**Table 4: Survival in plantations**

Plantation model	Survival percentage(Project)		
	Average	Minimum	Maximum
Economic	82.03	56.00	100.00
NTFP	80.14	13.00	100.00
Bamboo	73.95	0.00	100.00
ANR	79.99	36.00	100.00
Fuel & Fodder	86.06	60.00	100.00
Non-JFM Teak	87.34	60.00	100.00

For all the plantation models the average survival percentage is quite high and ranges from a low of approximately 74 percent for Bamboo to highest almost 87 percent for Non-JFM Teak. Further, for each of the plantations the range (Maximum-Minimum) is different. Highest range is for Bamboo plantations (73.97) with a minimum of zero which implies that some of the plantations have failed. Similarly for NTFP plantations, the range is quite high with a minimum of 13 percent indicating low survival in some of the plantations. ANR gap/block plantations also have a considerable higher range with a low of 36 percent survival. However, higher mean in these three indicators that such instances are very few. For the other models, the range is lower as well minimum

### **Mangrove's of Mohanpur**

Mohanpur VSS in Bhadrak DMU boasts of an innovative model for mangrove restoration. An area of 220 ha has been planted with the innovative Fish-Bone model. The Fishbone comprises of main channels and sub-channels of 50m dug at 45° to this. 125 plants of Avicennia have been planted in a sub. Line transact of 6 subs showed survival of 44, 40, 105, 89, 145 and 156. The 145 and 156 are because of natural regeneration of seed origin. New mangrove species Soneratia is also seen now.

### **Soil and water conservation works**

Soil and moisture conservation works have been undertaken in plantations as well as ANR areas. Specific treatment measures include staggered contour trenches, percolation pits, loose boulder check dams and half-moon trenches. These interventions have resulted into amelioration of soil and moisture regime in the micro-climate. Siltation is observed in the structures that reflects on check on soil erosion. The low scale and localized nature of interventions have had limited effect localized to plantation or ANR area only.

As regards technical quality of work, percolations pits, loose boulder checks and half-moon trenches were found to be of quality and as per technical specification. With staggered trenches however it has been found that contour lines have not been followed by a uniform spacing of 5 meters has been kept.

values of more than half the planted seedlings surviving.

Growth in all the models is different and heterogeneously distributed. For example in a Teak plantation three year old, there are saplings that are 75 cms tall and also there are

saplings of almost 3.20 meters. Similar is case seen in all the plantations and the growth data vis-à-vis height of the saplings is heterogeneously distributed. Table 5 below summarizes the growth statistics of the four major species planted across the various models- Teak (Economic, Non-JFM, ANR gap), Karanj (NTFP, ANR), Acacia (Fuel and Fodder) and Bamboo (Bamboo).

**Table 5: Growth of major species planted**

S.No.	Species	Average Height (in cm)	Standard Deviation
1	Teak	85.4	104.1
2	Karanjia	77.0	44.0
3	Acacia	179.9	151.7
4	Bamboo	158.7	163.4

As is seen, all the four major species have a very large standard deviation that reflects of the heterogeneity of growth. This variation can be attributed to many local factors like slope, soil depth, moisture, soil and water conservation activities etc. Overall, the growth of the plantations can be considered as satisfactory.

## 2.4 Biodiversity conservation in Protected areas: Ecotourism

One of the outputs of the project is of the conservation of biodiversity in the target protected areas. A key indicator defining the output is of eco-tourist influx in the tourism sites. On the basis of interventions fostered during the project duration, assessment of influx was done at the developed tourism site of Goindi Day Visit Centre in Satkoshia Wildlife Sanctuary.

The Goindi Day Visit Centre is a riverside site in the Satkoshia WLS frequented by picnickers. Gazebos have been developed at the site along with provision of basis amenities of provision of fuelwood and kitchen utensils for cooking, snack bar, swings and boating facilities. A 15 member ecotourism group has been formed of the locals for management of facility management. The group has been trained in hospitality management and is functional since 2009. The group runs the snack bar, sells firewood to the picnickers, rents kitchen utensils, manages boating, levying user fees for use of gazebos and also collects user fees from vehicles of the incoming picnickers. Last year 6026 tourists visited the centre in 715 private vehicles and 62 buses. This generated a total revenue of Rs. 72, 728/- for the ETG. This year, almost 5012 tourist in 738 private vehicles have visited the centre as of January 12, 2011. This has led to generation of total revenue of Rs. 80,910 for the EGT so far with still almost two and half months of the financial year remaining. The income from the facility management services are shared equitably among the ETG members based on their engagement that is recorded in attendance register.

As is evident, there is an increase in the number of tourists visiting the centre. The increase has also translated into increased income for the ETG members engaged in facility management.

## 2.5 Sustainable Forest Management

The envisioned project impact of OFSDP is sustainable management of forests. Although, at this stage, it would be too early to make an assessment of the same, indicative assessment was undertaken as part of the MTE. The same was done adapting the Criteria and Indicators developed under the Bhopal-India process to the project. The 8 criteria of the Bhopal-India process

### Criteria under Bhopal India Process

- C1: Maintenance/increase in extent of tree & forest cover
- C2: Maintenance, conservation and enhancement of biodiversity
- C3: Maintenance and enhancement of forest health and vitality
- C4: Conservation and maintenance of soil & water resources
- C5: Maintenance and enhancement of forest resource productivity
- C6: Optimization of forest resource utilization
- C7: Maintenance and enhancement of social, cultural and spiritual benefits
- C8: Adequacy of policy, legal and institutional framework

were taken as it is while 31 related indicators were adapted after field testing. Each of the indicators was scored on a binary scale and the total score out of 31 was converted into percent score. The overall grading sheet (table 5) prescribed by Measure of Success<sup>3</sup> was employed for categorization.

**Table 6: SFM categories**

Category	Score
Unsustainable	0-20
Potentially unsustainable	20-40
Medium	40-60
Potentially sustainable	60-80
Sustainable	80-100

The scores and percent scores of the 12 VSS/EDC assessed are given in table 6 below.

**Table 7: C&I scores**

S.No.	Score (Out of 31)	Percent (score out of 100)	Categorization
1	19	61	Potentially sustainable
2	21	68	Potentially sustainable
3	20	65	Potentially sustainable
4	20	65	Potentially sustainable
5	21	68	Potentially sustainable
6	19	61	Potentially sustainable
7	23	74	Potentially sustainable
8	16	52	Medium
9	16	52	Medium
10	18	58	Medium
11	20	65	Potentially sustainable
12	19	61	Potentially sustainable

Of the total 12 VSS/EDC assessed three are in the medium category whereas the remaining 9 are in the 'potentially sustainable' category. Of the purposive sample, almost three-fourth of the VSS/EDCs gets categorized as 'potentially sustainable'. The indicative assessment reflects on the movement towards sustainable forest management in the project target area. It also reflects on holistic management incorporating ecological, economic and societal aspects. The contribution of ecological parameters on the overall status is the maximum followed by social parameters and lower when it comes to economic parameters. More rigorous and robust assessment of the same would be part post-project evaluations when contribution to the project goal would be assessed.

<sup>3</sup> Pandey, D.N. (2000). Measure of Success. Himanshu publications, New Delhi, ISBN 81-86231-99-4

### 3 Institutional Assessment

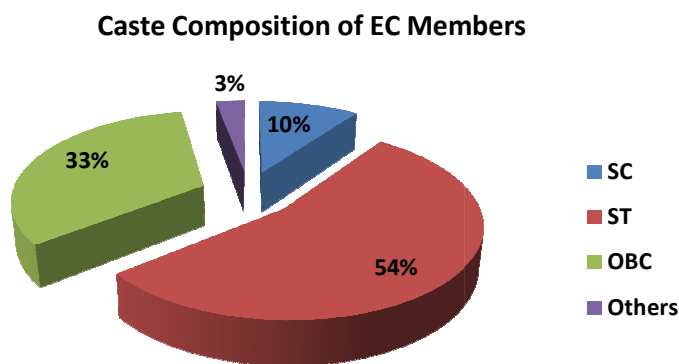
One of the key focal areas of OFSDP is of institutional change. For this purpose, concerted initiatives of community mobilization, institution building and capacity development have been undertaken in the project. Concurrent to this has been initiatives for enhancing capabilities of the Forest Department. The assignment has also looked at these institutional dimensions of the project and tried to ascertain the institutional results thereof. The following sections summarize the salient findings of the institutional assessment.

#### 3.1 At VSS Level

The OFSDP has initiated the process of institutionalization of JFM in the project area. This has been furthered through formation of VSS/EDC following the prescriptions of the state resolution of JFM. Orissa state also boasts of the largest number of self-initiated forest protection groups. Many have also been in existence in the project area. The following sub-sections describe analyses of institutional aspects these developed institutions. .

##### 3.1.1 Composition of VSS

Management responsibility in the VSS/EDC is with the Executive Committee (EC) of the institution. Caste composition of the EC members of the assessed VSS/EDC is given in the adjoining figure. Majority of the members belong to SC and ST with almost 64 percent of the members belonging to the two groups. Of these, STs constitute almost 54 percent of the EC members. This is approximately similar to total percentage of SC(13%) and ST(57%) members in the sample area and reflects proportionate representation. Women representation has also received focus and almost 17 percent of the members are women.



The project employs the participatory mechanism of Well-Being Ranking for project positioning as well as inclusion. The figure below shows the well being categorization of EC members. It has been observed that 35% of the members belong to very poor category and 47% belong to are poor category. This composition is approximately the same as VSS composition where almost 72 percent of the households belong to the two categories. The above analyses reflect on the equity focus of the project in constitution of the EC. As is evident, majority of the members of the EC members belong to poor and marginalized communities. These are also the communities' highest dependence on forest. The project imperatives therefore have brought these communities at the helm of forestry governance and associated decision-making.

##### 3.1.2 Meetings

In the studied project VSS's; regular meetings of the VSS members have been evidenced. In majority of the VSS, there is a fixed date for the VSS meeting. Generally, GB meetings are conducted quarterly and EC



meetings are held every month. In all the assessed institutions, this has been a phenomenon and thus in almost all the sample institutions the frequency of GB and EC meetings is higher than that prescribed in the JFM resolution of the state ( Six-monthly GB meetings and once in two months EC meetings). For these meetings, both Animator and President are responsible for making all the arrangements. Initiatives are taken to inform the VSS members of the meeting date. In some VSS, “Chalan or Barik” (an institution in tribal villages of South Orissa) goes to every household prior to the meeting date for informing about the meeting. Added to this, he also conducts home visit on the meeting day.

Regular meeting of the executive body with high participation of the members is a prerequisite for effective institutional functioning. Overall, high participation of EC members has been found in the assessed institutions. In the last three EC meetings held in the assessed VSS/EDC, average attendance has been almost 82 percent. The standard error of mean is 4.63. On the basis of these it can be said that average attendance in the EC meetings in the project would be from 73 percent to 91 percent (95% confidence interval). This reflects on the very high overall participation of the members in the EC meetings. Along with EC members, participation of general VSS/EDC members has also been found in these meetings. Also is evident from the attendance records of the VSS that in the last three meetings conducted in the assessed VSS/EDC, almost 93 percent of the meetings had the presence of the Member Secretary.

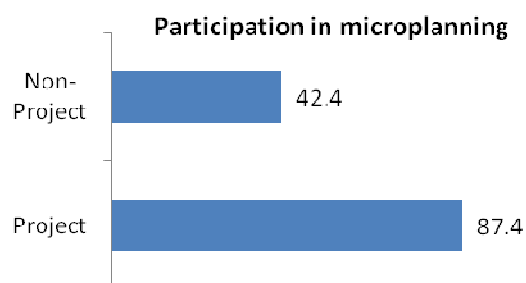
Further, participation of VSS members in the General Body Meetings (GBM) was also probed for assessing their participation in governance. It has been observed that on an average 34 members are present in GB meetings of these almost 54 percent were women. However, the attendance in GBM meetings is on the lower side. Average attendance in the last two GBMs in the assessed institutions was approximately 21 percent. Higher participation levels would be warranted so that there is informed engagement of these members in the governance processes.

As regards overall level of engagement in the institutional governance and management processes, almost 88 percent of the VSS/EDC members have reported participation in a GB meeting till date while almost 49 percent have reported participation in an EC meeting. The figures for the control villages are 78 percent for GB meetings and 48 percent for EC meetings.

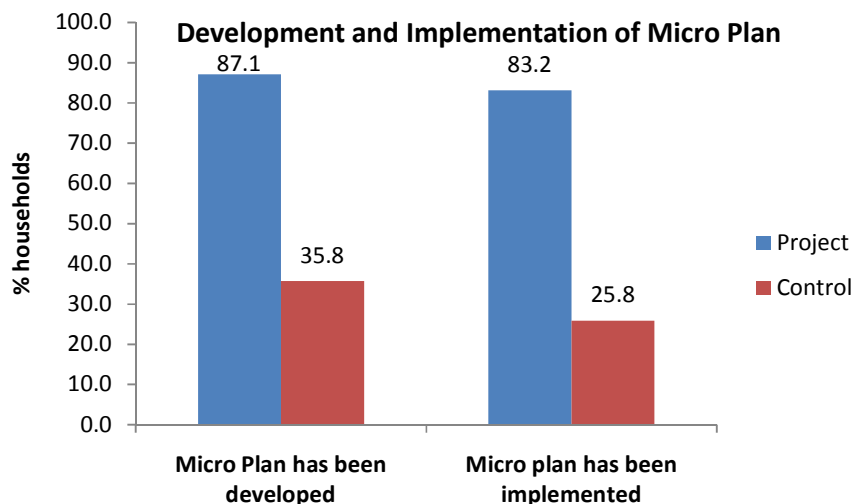
### 3.1.3 Micro- Plan

Micro plan holds a very important component for carrying out development activities in the VSS. In all of the assessed VSS/EDC, Micro plan has been prepared.

These plans have been developed following participatory processes effectively factoring resource rehabilitation needs and the livelihoods needs. These processes have been facilitated by the local Non-Government Organizations (NGO). This has been a crucial factor for community mobilization and soliciting participation of the communities. The same has been the distinguishing factor in the OFSDP as compared to non-project areas. During the household survey, almost 87 percent of the member households in project VSS/EDC reported participation in the micro-plan processes whereas only 42 percent reported participation in control area.



As regards awareness about microplan and knowledge of plan implementation, the figure below shows the percent of members in the project and control areas.



In the project area, majority i.e. 87 percent of the households reported that the micro plan has been developed and 83 percent reported that the micro plan is being implemented. In comparison with control area, only 36 percent of the households reported that micro plan has been developed and half of the households reported that the micro plan is been implemented in the VSS. The same reflects on the higher awareness and participation levels in the project area.

The study has also tried to assess participation in various activities in the micro-planning processes (table 6). It has been analyzed that majority of the members participated in initial meeting and nearly half of the households participate in plan formulation. While in control area, the participation is reported low in plan formulation and for motivating others for participation. Added to this, 40 percent of the households from project area and nearly 29 percent from the control area participate in PRA activities.

**Table 8: Participation in micro planning**

Activity	% Households	
	Project	Control
Participated in initial meeting	88.6	53.0
PRA exercises	40.2	29.1
In plan formulation	42.8	4.0
Motivating others for participation	37.8	7.3
Participated in GBM for Approval of plan	36.5	14.6

Significance Value=0.00( Mann- Whitney U Test)

### 3.1.4 Documentation

Well defined systems for documentation have been evidenced and reported during the assessment. The various records maintained in majority of the VSS buildings are VSS meeting register, asset register, notice register, visitor register, VDF register, ledger, stock and stores register, IGA register, nursery journal, plantation journal etc.. Added to these registers, various other records been maintained are cash book, bank pass book, cleaning material register, voucher, GIS maps and micro plan. The prime responsibility of maintaining the records is taken up by the Animator. Regarding expenditure recordings however, financial documentation is maintained by the Member Secretary. Well maintained records have been evidenced during the assessment. Financial documentation in the form of ledger, cash-book etc are maintained which to a large extent the VSS members can list. However, one of the observations has been of practice of writing financial records in English which the EC members cannot relate to. Legal stamp papers are used when some agreement is there between the VSS and SHG members.

### **3.1.5 Transparency**

The study also attempted to assess the levels of transparency in the functioning of the institutions. Transparency in decision-making and financial transparency has been reported as one of the key feature of institutional functioning. All the decisions are taken in VSS meetings and final decisions are read out after the meetings including expenditure statements. The records are also updated immediately upon completion of the meetings. There is provision of transparency board in the VSS building that has been devised as an instrument for enhancing transparency. At the public display board on the VSS building, the information maintained is about the date of formation, position holders name with their respective joining dates, forest protection area, date and day of monthly meetings, area under project plantation programme, amount sanctioned under different heads and other activities in the project. However, maintenance of these boards is a key issue and the same has been observed during the assessment. Also, uniformity in the contents of the board is another issue and wide variation in the contents has been evidenced.

### **3.1.6 Capacity Building**

During the FGD's, assessment on trainings imparted to the VSS members has been done. It has been reported that majority of the EC members have been imparted trainings on plantation, SMC work, IGA activities and on preparation and implementation of micro plan. Similarly, the Animators, which are the local resource person for institutional facilitation, have been imparted trainings especially on documentation. Various trainings been imparted to the animators are root trainer nursery preparation, SMC training, micro plan development, SHG capacity building, IGA , book keeping, mushroom and fishery cultivation and training on enterprise development. With these trainings they have learnt new methods and technologies for plantation and protection of forest and have been able to motivate the members with new business and livelihood opportunities. These trainings have helped and resulted in proper forest management and improvement in the working of these institutions. During the FGDs and interviews with the animators, translation of acquired skills and knowledge into day-to-day work has been reported. Technical skills for plantations and SMC works have been reported as the most employed skills while documentation skills have fared lower on utilization. Financial documentation as discussed in the preceding section has been the onus of the Member Secretary. More exposure visits with trained people, training on NTFP processing, frequent IGA and on documentation especially financial documentation have been identified as training needs. .

### **3.1.7 Operations and Maintenance of Assets**

As part of Entry Point Activities (EPA), various assets have been created in the project VSS/EDCs. These include assets facilitating institutional functioning, meeting basic needs, and assets for livelihoods support. VSS assets include VSS/EDC building, chairs, tables, mats, almirah etc while livelihoods assets include weighing machine, solar light, utensils, tent houses, radio, KB pumpset, rice haulers, farm equipments etc and basic needs assets like tube wells, school building repair, pond digging/renovation etc. The responsibility of Operations and Maintenance (O&M) of these assets has been entrusted with the VSS. It has been envisaged that the VSS would levy a user fee on the livelihoods assets. This user fees would then be used for upkeep of these assets. In all the assessed institutions, operation of the assets created has been evidenced. The VSS buildings are well maintained and at places have been instruments for convergence with schools and ICDS centres being run from these buildings. It also needs to be mentioned that there have been substantial contribution from people in construction of these buildings in terms of free labour and material. Because of the same, the constructions are of much larger scale than that could be achieved through the cost-norm. Day to day upkeep of assets is being undertaken by the VSS/EDC. As regards, levying fees towards maintenance of assets, there is a thinking in the project VSS/EDCs on these line and mechanisms are being crafted for the same. However, anecdotal evidence of the same has been evidenced during the assessment.

### 3.1.8 Interaction with other Parallel Committees

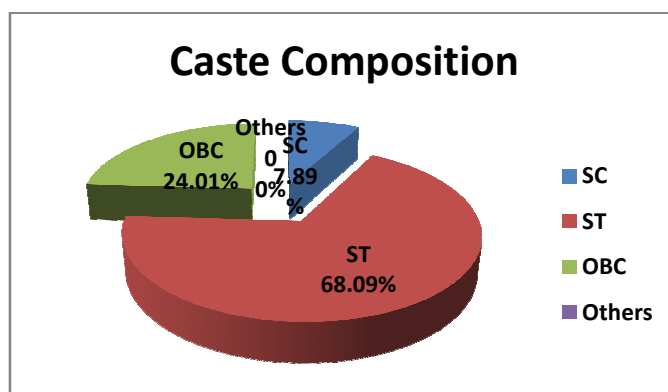
In order to sufficiently discharge its mandate, it is prerequisite for the VSS/EDC to foster linkages with other committees and institutions in the village. This would remove redundancies as well facilitate synergy in action. Linkages with Gram Kalyan Samiti (GKS) have been the most effective linkage that has been observed during the assessment as it has resulted into substantial enhancement in access to health services by the communities (discussed in socio-economic assessment). Although, there is representation of Panchyati Raj Institution Member in the EC, participation of these has been limited with almost negligible participation of Sarpanch. Similarly, linkages with Palli Sabha are by far been limited

## 3.2 Self-Help Groups

As part of the livelihoods promotion strategy, the project adopts the approach of supporting existing Self-Help Groups (SHGs) in the VSS for enterprise promotion. These SHGs were also assessed as part of the institutional assessment. The findings of the assessment are detailed in the following sub-sections

### 3.2.1 Composition

Among the assessed SHGs, majority of the members i.e. 68 percent of the members belong to ST category and 8 percent of the members belong to SC category. As regards well-being categories, almost 35 percent were from very poor category and 43 percent were from poor category. This reflects on the positioning strategy of the project so that the poorest are supported by the project.



### 3.2.2 SHG functioning

The project has employed the efficiency argument of supporting existing SHGs in the VSS/EDC. Majority of these SHGs have been promoted by ICDS department and have been in existence before the project. Well defined norms, adherence to protocols and regular meetings have been evidenced in these SHGs. In majority of the SHGs, the meeting date is pre-decided and is more or less adhered to. Initiatives are taken so as to inform the SHG members of the meeting date. These are held once or twice in a month and average attendance in the meetings is 90% of the total SHG members. Regular savings is a key feature of these SHG and the per month savings range from Rs. 30/- to Rs. 50/- per month. Almost all of the SHGs assessed have been linked to the banks and have taken loans from banks at least once. Many have taken bank loans upto 3 times. High repayment of the bank loans has been found during the assessment. The common practice is of distributing the taken loan to all the members equally. Also, agriculture inputs are the primary purpose for which these loans have been consumed. Thus, there is financial discipline in these SHGs as well high access to formal institutional credit.

However, it has been observed that internal lending is very low and the credit needs are met through external sources only. Well defined systems for documentation have been evidenced and reported during the assessment. The various records been maintained by the SHG members are personal details register, attendance register, cash book, members personal ledger and meeting book. The project has intervention in terms of simplified documentation has been in the form of a single register prescribed by Mission Shakti. These

were also found to be more or less maintained. However, a key observation has been of limited knowledge of individual savings by the group members.

### **3.2.3 Enterprise support by VSS**

In the study, attempt has been made to assess the formation of livelihood enterprise by the SHG groups. In each of the VSS/EDC, 2-3 SHGs have been identified for enterprise promotion. Trainings have been imparted to these SHGs for enterprise promotion. Business-plan of the SHG is developed which is presented in the EC meeting and upon merit, the same is approved by the EC. The enterprise is then financed through the Revolving Fund with the VSS/EDC, the total of which amounts to rupees one lakh.

The project has adopted a precautionary principle in developing promoting these enterprises. The approach is of starting small and upscaling once the enterprise stabilizes. Thus, a typical assistance from the revolving fund has been in the range of Rs. 20000/- to Rs. 30000/-. At times the amount has been lower than what the SHG has already availed from the bank. Variation in interest rate has been evidenced and ranges from interest free to 1 percent per month. By July 2010, 1954 SHGs (78 percent) of the targeted 2519 SHGs under 1<sup>st</sup> and 2<sup>nd</sup> batch VSS/EDC (2519 SHGs) have been covered through the support. During the assessment, it has been observed that almost all the supported SHGs have initiated enterprises and have earned profits. The key choice of enterprise has been trading in agricultural produce especially Paddy, and thus the most preferred enterprise activity has been of aggregation. Aggregation of NTFPs viz. Tamarind, Mahua etc has also been evidenced in a few SHGs with a few engaged in broom making, vegetable cultivation.

Most of the SHGs have completed one round of enterprise cycle and are on a steep learning curve. Several SHGs have availed a second loan after repaying the first loan and this reflects on the success of the enterprises. However, the profits from these enterprises have been by far very low. The per member benefit from the enterprises is very low given that the scale of the enterprise is very low. Further, while most SHGs had repaid loans back to their respective VSSs, almost all the SHGs took much longer in repaying loans than specified in the loan application/resolutions. While cluster development of the enterprises has been envisaged in the project area, the same is at formative stages.

## **3.3 State Forest Department**

One of the key results of the project is enhanced capacity of the Orissa State Forest Department. The project strategy for the same is of facilitating the necessary infrastructure through creation of assets with concurrent development of individual capacities. Assessment of asset creation and use; and transfer of learning incidental to trainings was also assessed during the study.

At the DMU level, assets created include DMU building, Vehicles, computers with internet facility, printer, GPS devices, camera, almirah and office furniture. Similar is at the FMU level that include EMU building, Motor cycles, furniture, meeting hall (at some places), computer with internet and printer, office cabinets, GPS etc. Almost all the assets are being utilized at both the levels. Use of GPS requires special mention and project personnel across the hierarchy especially at the frontline level have reported familiarity and use of the said technology.

As regards training, across the hierarchy, various trainings have been imparted in cognizance with the envisioned role of the project personnel. At the cutting edge level is the Member Secretary who is in direct interface with the local institutions. These Member Secretaries have received training for Microplan preparation, Soil and Moisture Conservation, Vermicompost, Livelihoods promotion and MIS. The FEOs have been undergone Training of Trainers along with other trainings viz. Soil and Moisture Conservation, Non-Destructive Harvest of NTFPs, Micro-enterprise promotion and business planning, and management of assets and funds. Management trainings have been imparted to RO, ACFs and DFOs including JFM training, preparation of maps using GPS and common property resource management. During the interviews the project personnel across the

hierarchy have reported increase in knowledge and skills. At the management level, key results reported are in terms of enhanced administration capability, e-governance, project management and multi-tasking. Of the frontline staff, almost all the personnel interviewed have transfer of learning from the training to real-time project implementation.

Thus, it can be said that there is 100 percent utilization of assets created under the project both at the DMU and FMU level. Also, the knowledge and skills acquired through project training imperatives have effectively been transferred to the job. Together these have contributed to enhanced capacity of the Orissa Forest Department both in term of hardware and software.

## 4 Socio- Economic Assessment

One of the core result area of OFSDP relates with livelihoods of the resident populace. As part of this assessment, socio-economic results incidental to project implementation were also ascertained. This chapter provides details of the socio-economic results evidenced in the project..

### 4.1 Livelihood Assets of the Poor

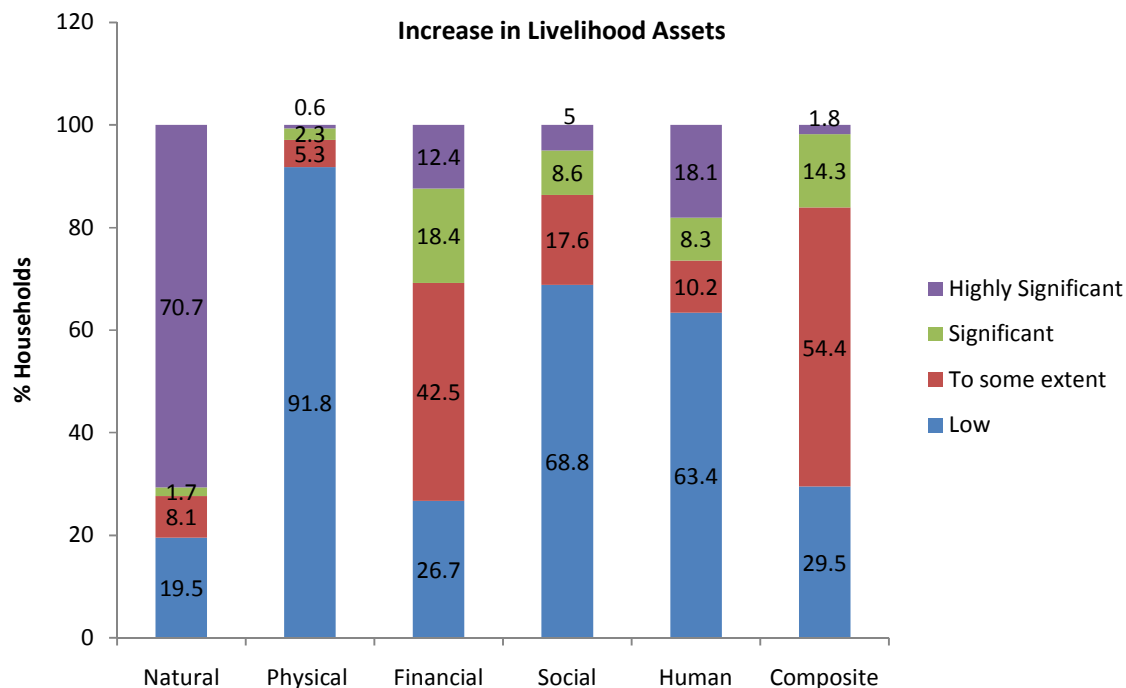
Project interventions directly aim at improving the livelihood assets of the VSS/EDC members in the project area. The study employed Livelihoods Monitoring and Evaluation System (LIMES™) for assessing the increase in livelihoods assets. LIMES is a tool that summarizes changes in the five capitals-Natural, Physical, Financial, Social and Human, with respect to various indicators. LIMES employs reliability analysis for correlating and selecting indicators and Principal Component Analysis for providing and summarizing the changes in the form of comprehensive indices. These indices provide a project level picture changes in the individual capitals as well summary of overall changes. For the index values arrived at through analyses, quartiles are calculated to classify the changes as, highly significant, significant, to some extent and low.

LIMES uses Principal Component Analysis (PCA) as the main statistical tool along with reliability analysis which measures correlation amongst a set of indicators at different levels to shortlist, retain and categorize statistically relevant ones. LIMES require each of the livelihood criteria to be measured in terms of a number of subsidiary variables or indicators. The objective is to determine a single composite variable for each of the five livelihood criteria. Further, the livelihood index constructed as part of LIMES is segmented into four quintiles to help identify the more vulnerable sections within the target community.

Standardized scores are added for each household, and each individual is assigned the total household score. Individuals, households and other units of impact assessment may be ranked according to their total scores, and divided into five quintiles or groups of equal size. Interpretation of devised quintile will be based on the statistical weights derived after principal component analysis.

LIMES has an inbuilt mechanism to constantly gauge programme progress and provide useful insights about the impact of intervention at various levels viz. individual or enterprise level, a family or household, a number of families forming a group or an entire community. Also, LIMES scores will differ from findings of conventional M&E in a number of ways. They shall provide a broader, more dynamic and objective view of project impacts throughout the project lifetime that may be comparable over space and time.

After the calculation of the individual capital indices, quartiles are calculated to arrive at the categorization for increase in the asset as low, to some extent, significant and highly significant. Similarly, on the basis of the five capitals, the comprehensive total increase in assets is arrived and categorized. LIMES analyses are summarized in the figure below.



There is significant increase in natural capital for almost 1.7 percent of the households in the project area and for nearly 71 percent of the households, the increase is highly significant. In control villages in natural capital is for almost 14.9 percent of the households while for almost 61 percent of the households this increase is highly significant. With respect to the Physical capitals created, nearly 2 percent of the project households reported significant increase in physical assets while 1 percent of the project households have reported highly significant increase in physical assets (significant for 6.4 percent households in control and highly significant for 2.9 percent). . Similarly, there is significant increase in financial capital for almost 18 percent of the project households from project area and nearly 12 percent of the households have highly significant increase. Resultant to capacity development, in Human capital, there is significant increase for almost 8.3 percent of the project households (15.1 percent in control) while for almost 18.1 percent project households (10.8 percent in control) .

As regards to the overall status of the livelihood assets of the VSS members, there is significant increase in the assets for almost 14 percent of the households. And for almost 2 percent of the households, the project initiatives have translated into highly significant improvement in livelihood assets.

Though there is increase in livelihoods assets reported by the project households, attribution of the same to the project is premature. While some increase in human and social capital can be attributed to project, interventions related with financial and physical capital have has a very limited scale. Further, in natural capital, it would be a take a while for the project interventions to increase in natural capital.

The table below shows the percentage increase in respondent's household income in the past three years. It can be interpreted that 4 percent perceive that there is significant increase in their income and approximately 92 percent of the households feel that their income has increased to some extent.

**Table 9: Increase in income in last three years**

Increase in income	% Households	
	Project	Control
Yes, Significantly	4.0	2.0
Yes, to some extent	92.4	84.1

Significance Value=0.00(Mann- Whitney U Test)



## 4.2 NTFP Collection

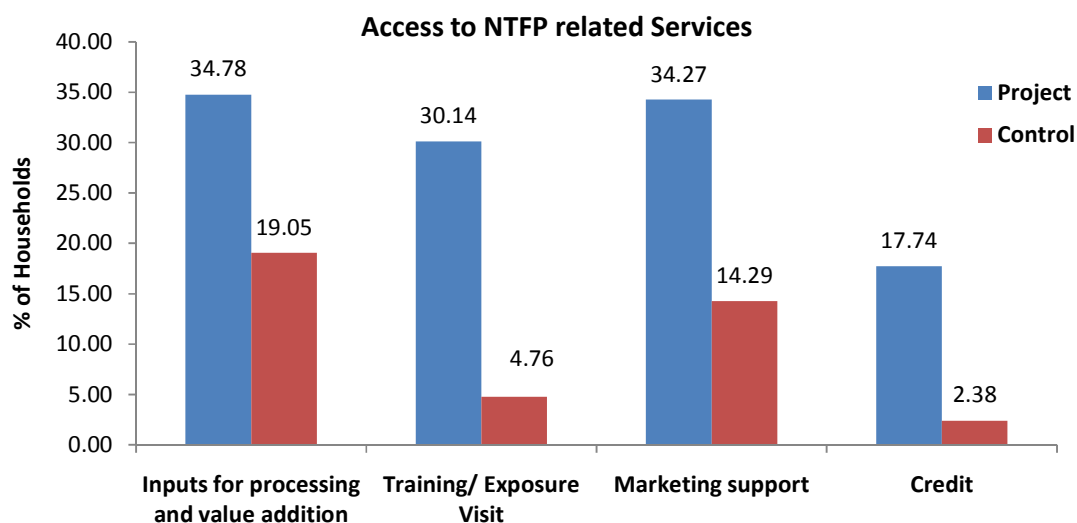
In Orissa, NTFPs have become an important source of cash income for local people living in or near the forests. Poor households are more dependent on NTFP collection than other groups. During the household survey, almost 83 percent of the project households reported engagement in NTFP collection while almost 72 percent reported the same in control area. Various services and information have been made available to the people to ensure proper selling of produce at the right price in the market. These services are in the form of marketing support, collective marketing, input processing and value addition and also through some exposure visits and training. These have been over and above the project imperatives for forest rehabilitation. The study also tried to assess changes in amount of NTFP collected. Significant number of households has reported increase in amount of NTFP collection. With respect to key NTFPs, changes increase in amount is detailed in the table below.

**Table 10: Percentage change in amount of NTFP collected**

NTFP	% HHs reporting increase	Average increase	95% Confidence Interval	
			Lower limit	Upper Limit
Mahua Flowers	70.5	24.42	22.04061	26.79939
Mahua Seeds	68	26.46	23.04782	29.87218
Sal Seeds	66.4	28.67	20.82949	36.5073
Sal Leaves	63.4	26.45	20.36054	32.53449
Tamarind	58.8	21.72	17.69328	25.74672
Siali Leaves	61.3	18.21	13.64051	22.77949

The table above shows the percentage increase in amount of NTFP collected from pre project and present situation, the pre-project being start of project activities in the VSS/EDC (thus varying with respect to batches).. It depicts that 70.5 percent and 68 percent households engaged in NTFP collection have experienced increase in amount of Mahua flowers and Mahua seeds respectively. Average increase is nearly 24 and 26 percent respectively. Based on this it can be said that there would be approximately almost 22 to 27 percent and 23 to 30 percent increase in Mahua flower and Mahua seeds collection respectively. Similarly for Sal seeds and Sal leaves, nearly 66 percent and 63 percent households respectively have reported increase in its collection. Average increase in its collection is nearly 29 percent and 26 percent respectively. For the former, it can be said that there would be approximately 21 to 37 percent increase in its collection and for the latter it is 21 to 33 percent increase in collection. Further, 59 percent and 61 percent households have reported increase in Tamarind and Siali leaves collection. On an average there is increase of nearly 22 percent and 18 percent respectively in the amount of collection. Further, it has been interpreted that the average increase in tamarind collection is from 18 percent to 26 percent and for Siali leaves, it is from 14 percent to 23 percent. While some amount of improvements can be attributed to forest rehabilitation, NTFP yield gets influenced by phonological cycle and seed years. Therefore, attribution of the enhanced yields to project imperatives is difficult.

The study also attempted at ascertaining access to NTFP related information and services. Almost 63 percent of the households in the project area have accessed various NTFP related information and services while the figure for control is at almost 29 percent. The chart below shows that from the households having access to NTFP related services and information, majority of them have access to marketing support and collective marketing in both project and control area. Also, it can be said that trainings, linkage with other institutions and credit accessibility has improved because of the project interventions. Also, there is enhanced access to key NTFP related information and services in project area as compared to control areas.



### 4.3 Access to Services

The project targets enhancement of access to services of drinking water, sanitation, education and of health being provided by Gaon Kalyan Samiti. The following sub-sections describe the results in these services.

#### 4.3.1 Access to drinking water

Approximately 40 percent of the households in project area and 48 percent of the households in control area were dependent on public hand pumps for drinking water. The scenario has changed across the implementation years as now around 44.7 percent and 51.7 percent of the households are using public hand pumps as primary source of drinking water in project and control area respectively. Further the dependence on piped water in residence has increased from 1 percent to 2.3 percent over the project implementation period. The same is detailed in the table below.

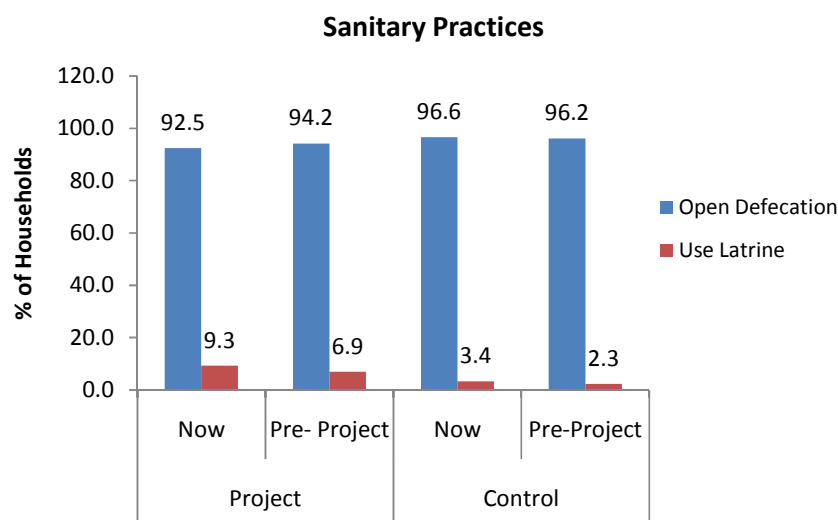
Table 11: Major source of drinking water

Source	% Households			
	Project		Control	
	Now	Pre- Project	Now	Pre- Project
Piped water in residence/yard/plot	2.3	1.0	-	-
Well water in residence/yard/plot	5.8	5.6	6.0	6.0
Public Hand pump	44.7	40.2	51.7	47.7
Public tap	18.7	10.3	27.8	4.0
River	2.1	6.0	3.3	3.3
Public well	16.6	21.9	7.9	11.3

As is evident from the table above, there is an increase in access to drinking water in the project. It also reflects that the control villages were better off given the fact the OFSDP works in the remotest and most inaccessible areas.

### 4.3.2 Sanitation

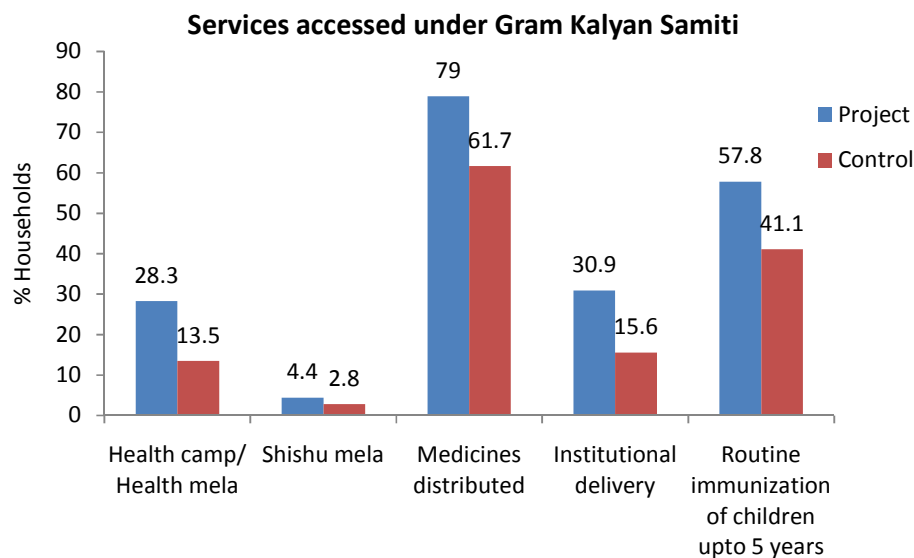
Usage of home based toilet is one of the key practice that sanitation interventions target. The adjoining chart gives the status of toilet use and that of practice of open defecation by the households. There is a marginal improved increase in the practice of use of toilets in the project area though



in comparison to the control area, the same change is significant. One of the reasons for the same has been project facilitation of convergence with Total Sanitation Campaign with almost 2 percent of the households reporting the support.

### 4.3.3 Health services by Gram Kalyan Samiti

The study also tried to capture information on access to health services from Gram Kalyan Samiti. The project has intervened into health services in the form of health camps as well as fostering linkages with the Samiti for enhancing access to various health services. The chart below gives access to various services by the households in the project and control area.



The scenario of access to services under Gram Kalyan Samiti suggests better health services in the form of camps, distribution of medicines and regular health checkups for the community members in the project area. Nearly three fourth and more than half percentage of households have been received medicines from Gram Kalyan Samiti in project area and control area respectively. Nearly 30 percent of the households in project area have access to health camp and institutional delivery as compared to approximately 15 percent in the control area. Very few households have received seed capital for toilet construction and very minute percent have been provided information on sanitation and hygiene.

#### 4.4 Access to Financial Services

OFSDP has undertaken various interventions like vouching saving and internal credit, provisioning of credit through the VSS/EDC, capacity development support for enhancing access to financial services to ensure better livelihood opportunities. Various means of saving money have been available through this project. The table below shows the percentage of households having access to various financial services. It can be said that majority of the households i.e. nearly 93 percent of the households have now access to savings in the project area, while only 80 percent of the households had access in the control area. Apart from saving, nearly 39 percent of the households now have access to credit facilities as compared to 24 percent households in the control area. Access to other financial services is very low in both project and control villages.

**Table 12: Access to financial services**

Financial services	% Households			
	Project		Control	
	Now	Pre- Project	Now	Pre- Project
Savings	93.4	80.0	93.4	91.0
Credit	49.3	38.9	28.8%	24.1
Insurance	9.8	9.7	3.6%	2.9
Money Order	1.8	1.7	1.8%	1.5
Pension	10.6	9.7%	8.0	8.1

## 5 Performance Review

As part of the mid-term evaluation, performance of the project was to be analyzed with respect relevance, results, efficiency, effectiveness, impacts and sustainability. Further, the lessons learnt through project implementation were also to be delineated. This chapter presents analyses of the project performance on the assessment criteria and the lessons learnt.

### 5.1 Relevance

The overall goal of OFSDP is “to promote Sustainable Forest Management (SFM) and to enhance poverty alleviation of local people’. The same is to be contributed through achievement of the twin objectives of restoration and productivity enhancement of degraded forests; and income enhancement of people dwelling in and around the forest area. The project area of OFSDP is endowed with richness of forest wealth but is also the home to the majority of the poor in the state, especially the tribal. Further, the forests are under biotic pressure given the genuine livelihoods needs of the resident populace. This calls for restoration at the same time instrumenting means to alleviate this pressure from the forest area.

In this context, OFSDP is best-fit project that attempts at comprehensively addressing the core issues for sustainable forest management in the project target area. The strategy of the project to functionally engage the resident populace in the forest protection and management is the most appropriate towards the envisioned goal. Further, the project has adopted a adaptive management approach with learning's and iterations factoring into implementation processes as is exemplified by the revised microplanning process (with Forest PRA etc.), revised ANR guideline, revisit to microplans, small IGA as an entry point to microenterprise development etc. Relevance of the core project components is commented below.

- Enhanced capacity of the Orissa forest department: The component focus on enabling the Forest Department personnel for resource security and productivity enhancement. This necessitates investment in hardware as well as software. The project activities have targeted developing capacities of the project personnel for undertaking forest management activities as well as in soliciting participation of communities in forest management. There has been a concurrent provision for infrastructure development in the form of providing building, enhancing mobility as well bringing in state-of-art technology in the form of GPS and GIS. Thus, the project imperatives in the said component are most appropriate.
- Enhanced VSS/EDC capacities; The project attempts at establishing a participatory forest management regime for sustainable management of forest through development of local institutions. Developing requisite capacities of these institutions is quintessential for the same. The project has fostered an array of capacity development initiatives for the same such that these institutions can discharge their mandate. The project activities hence are the apt for achieving the desired results.
- Enhanced Assisted Natural regeneration and plantation: The component is designed for rehabilitation of degraded forests, reforestation, productivity enhancement as well as meeting the local needs. Given the adequate root stock that present in the target area, protection and simple silvicultural operations are required to rejuvenate the forests. The same have been fostered across the project area. Reforestation of blanks in these areas has also been undertaken. The operations undertaken for ANR are appropriate suited for degraded area, however, it has been observed that the same have been carried across the project areas. Similar operations have been carried out in forest areas where the density is as high as

0.7 and above. Some of the ANR areas assigned to the VSS are good forest areas with high crown density. Here, ANR operations would have been thinning rather than cleaning and singling. The same also holds good for stands that have been protected from time earlier than project initiation. The stem density in these areas and the growth necessitate thinning. The process of microplanning provides the platform where management prescriptions best suited for the particular forest area can be devised. Also, different areas would require different prescriptions and one prescription cannot be applicable across the spectrum. Planning of appropriate prescriptions also gives a distinct and localized flavor to the microplan developed.

The four models of plantations taken are adequately designed to address the multiple needs associated with forests. However, the economic model, the fuel and fodder model and the non-JFM Teak model may not be considered as best-fit interventions. The economic model has been essentially interpreted as Teak Plantation. Given that all the forests in the project area are Sal forests, introduction of Teak also at a very large scale cannot be considered a right option. A Sal associate species of high economic value could have been the better option. Bija could have been one such option given that the species is towards extinction. Best option would have been to have a species of high economic value to the resident populace. Similarly, the fuel and fodder model is based on Simuruba (*Simarouba glauca*), Subabool (*Leucaena leucocephala*) and *Acacia auruculiformis*, all the three being exotics). Furthermore the aggressive invasion of Subabool in agricultural fields has been commented a lot. The local biodiversity options could have been explored for designing the model.

- Improved livelihoods of the targeted households: The project imperatives in the component are for development of livelihoods assets, enhancing access to services and enterprise promotion. Project has fostered activities for livelihoods enhancement that have been identified through participatory processes and therefore are the appropriate. They also build on the existing resources and institutions as in the case of enterprise where rather than forming new SHGS, existing SHGs have been targeted. With the envisioned result, the activities appropriately dove-tail with the need and context and are therefore appropriate.
- Conservation of biodiversity in targeted protected areas: Interventions towards the output are for promoting eco-development, reduction of man-animal conflict and establishment of Community Conservation Reserves. The initiatives are apt considering the issues of engaging the communities in the protected areas and other areas for conservation at the same time development of the communities.

## 5.2 Results

The project logframe describes five result areas and related indicators for these results. In the preceding chapters these results along with the outcomes have been discussed in details. Summary of these project results with respect to the targets is given in the matrix below.

Output	Objectively Verifiable Indicator	Achievement
Enhanced ability of Orissa Forest Department	<ul style="list-style-type: none"> <li>▪ At least 50% of frontline staff describing use of project introduced technologies by EOP</li> <li>▪ At least 60% of Member Secretaries assisting VSS as per the prescriptions of JFM</li> </ul>	<ul style="list-style-type: none"> <li>▪ All the frontline staff have reported use introduced technology</li> <li>▪ All the member secretaries assigned are supporting the VSS</li> </ul>

Output	Objectively Verifiable Indicator	Achievement
	resolution by EOP <ul style="list-style-type: none"> <li>▪ At least 80% of staff at different levels (DMU/FMU) reporting use of project created assets by EOP</li> </ul>	<ul style="list-style-type: none"> <li>▪ All the staff have reported use of project created assets</li> </ul>
Enhanced VSSs / EDCs capacity in the PTA	<ul style="list-style-type: none"> <li>▪ At least 60% of VSS/EDC engaged in Operations and Maintenance (O&amp;M) of project created assets by EOP</li> <li>▪ At least 50% of VSS/EDC in Grade B*and above by EOP</li> <li>▪ At least 50% of VSS/EDC developing annual plans by EOP</li> <li>▪ At least 60% attendance in VSS/EDC meetings (EC and GBM) after Y2 of intervention.</li> <li>▪ At least 40% of the VSS/EDC have frequency of VSS/EDC meetings higher than that prescribed in the JFM resolution 2008 by EOP</li> </ul>	<ul style="list-style-type: none"> <li>▪ All the VSS are engaged in operations and upkeep of assets.</li> <li>▪ 97 % of VSS/EDC in grade B as on Januray 2010<sup>4</sup></li> <li>▪ All the VSS develop annual plans</li> <li>▪ Almost 87% attendance in EC meetings</li> <li>▪ All the VSS/EDC have frequency as prescribed in the resolution</li> </ul>
Enhanced Assisted Natural Regeneration (ANR) areas and plantations in the PTA	<ul style="list-style-type: none"> <li>▪ At least 80% of area treated with respect to target by EOP</li> <li>▪ Improved Regeneration status in ANR areas by EOP</li> <li>▪ At least 60% survival percentage of plantations by EOP</li> </ul>	<ul style="list-style-type: none"> <li>▪ All the target area by far has been treated</li> <li>▪ During the sample assessment, all the areas assed are categorized as having adequate natural regeneration</li> <li>▪ Above 74% survival in all the plantation models</li> </ul>
Improved livelihoods of targeted households in the PTA	<ul style="list-style-type: none"> <li>▪ At least 40% of HHS reporting increase in livelihoods assets ( Natural, Physical and Human assets) created through EPA by third year of intervention</li> <li>▪ At least 20% of the households access services<sup>5</sup></li> <li>▪ At least 80% of Self-Help Groups (SHG) are supported with respect to target by EOP</li> <li>▪ At least 80% of households within supported SHGs reporting project promoted livelihoods by EOP</li> <li>▪ At least 80% of members of the supported SHGs reporting</li> </ul>	<ul style="list-style-type: none"> <li>▪ Almost 16% of the households have reported significant increase in livelihoods assets</li> <li>▪ More than half of the households have accessed services</li> <li>▪ Almost 78% of the targeted SHGs in Batch I and II have been supported as of July 2010<sup>6</sup></li> <li>▪ Almost all the households within supported SHGS report project promoted livelihoods.</li> <li>▪ All the SHGS have reported access to institutional credit.</li> </ul>

<sup>4</sup> Performance assessment conducted by the project for Batch I and II

<sup>5</sup> Services to include- Drinking water, sanitation, health and education

<sup>6</sup> From project records

Output	Objectively Verifiable Indicator	Achievement
	access to institutional credit by EOP <ul style="list-style-type: none"> <li>▪ Atleast 60% of group enterprises repaying the Revolving Fund loan by EOP</li> <li>▪ Atleast 60 cluster level enterprises established by EOP</li> <li>▪ Atleast 25% of supported SHGs covered by cluster level enterprises by EOP</li> </ul>	<ul style="list-style-type: none"> <li>▪ Almost all the group enterprises are repaying the loans</li> <li>▪ Is at formative stages</li> <li>▪ Is at formative stages</li> </ul>
Conserved biodiversity in target Protected Areas within the PTA	<ul style="list-style-type: none"> <li>▪ Increase in eco-tourist influx in eco-tourism sites by EOP</li> <li>▪ Decrease in Incidents of man-animal conflict by EOP</li> <li>▪ Atleast 5 Community Reserves (CRs) /Heritage Sites (HS) established by EOP</li> </ul>	<ul style="list-style-type: none"> <li>▪ Increased influx reported in the site developed</li> <li>▪ Not assessed</li> <li>▪ Not assessed</li> </ul>

As is evident from the matrix above, there is significant achievement in project results as envisioned. As the present assessment is at mid-implementation duration, it would be expected that the project delivers the desired results by end-of-project.

### 5.3 Efficiency

As has been discussed in the preceding section, there is considerable achievement in all the five project results. With the project being at the halfway implementation stage, these achievements can be categorized as significant. This reflects on efficient translation of employed inputs into desired outputs. As regard the overall efficiency of the investment, the same could be better commented at end-of project assessment as many of the outputs are in formative stages and require more time to reflect the desired level of change. As of now, the level of translation of inputs to outputs makes the project an efficiency argument.

### 5.4 Effectiveness

The delivery mechanism of OFSDP consists of State Project Management Unit as the strategic hub for project implementation supported by the Management Consultants. In the project Divisions, the DMU spearheads the implementation process while the Field Management Unit at the Range-level has the direct implementation responsibility. The units have been crafted out of the existing forest department and are housed within the department. At the outset, this makes the interventions cost effective with existing institutional structure being employed for service delivery. Thus it can be said that the project has employed least cost way for delivering the project services and thereby has been highly effective.

### 5.5 Impacts

The envisioned project impact is of sustainable management of forests and movement out of poverty of the people living in and around the forest areas. Given the nature of the project, it is premature to comment on the project impacts. However, indicative assessment of status of sustainable forest management employing C&I of



Bhopal India process adapted for the project progress towards sustainable forest management. Assessment of project impacts would be more appropriate at end-of-project and ex-post evaluations.

## 5.6 Sustainability

Sustainability in the project context has three inter-related dimensions-institution, intervention and result sustainability.

- **Institution sustainability:** The project has been successful in institutionalizing JFM in the project areas with VSS and EDCs being the vehicles for sustainable forest management. Institutional processes have received particular attention that has led to well defined governance and management mechanisms. Further, concerted efforts have been made for developing capacities of the institutions for forestry governance along with handholding support provided by the NGOs. The institutional strengthening review by the project has categorized majority of these institutions as good institutions. However, there are still some areas of concern that needs to be strengthened such that the institutions translate into vibrant self-sustaining institutions. These have been discussed in the next chapter on the way forward.
- **Intervention sustainability:** Intervention sustainability is a key concern in the project target area if the intensity of project interventions is analyzed. Intensity of project interventions in a given VSS decrease substantially after project year III. The only interventions that remain are that of maintenance and casualty replacement along with IGA support and other livelihoods support interventions. Furthermore, NGO intervention also has not been planned during this phase. The project hypothesis here can be described as that of crafted institutions leveraging resources through convergence for sustained action. Given the capacities of the institutions, it would be some time before they can do the same all by themselves.
- **Result sustainability:** Commenting on result sustainability would require atleast three assessments so that the trend in results could be projected. There is significant achievement in the targeted results however there is still time for achieving the targets. Halfway at project implementation, it would be premature to comment on result sustainability. The same would be better analyzed and commented during end-of-project and ex-post evaluations.

## 5.7 Lessons Learnt

Following are the key lessons learnt on the basis of OFSDP implementation experience till date.

- **Conservation and development**

The vicious cycle of poverty-degradation-poverty is a universally acknowledged phenomenon equally applicable to sustainable forest management. One school of thought takes poverty as the cause of degradation while the other looks at degradation as the cause of poverty. However, effective interventions would require both the issues to be addressed simultaneously and thus conservation and development initiatives have to designed and implemented concurrently.

- **Necessity of Community participation**

For effective resource security and management, participation of communities is quintessential. Here participation is not an efficiency argument that reduced costs associated with resource management. Participation would ensure that the interventions are “owned” by the community. The sense of ownership created in the communities contributes significantly towards sustainability of the interventions.

- **Capacity development for empowerment**

Participatory interventions need to focus on empowerment of the communities collaborated with. Empowerment here would mean 'enabling communities to take greater control over their environment'. This empowerment would only ensure functional participation of the communities in governance. However, for this to happen institution building and capacity development holds the key as they provide the platform and skills for informed engagement, as has been the case in OFSDP. The first step has been of formation of the institutions in the form of VSS/EDC that has been followed up with intensive capacity development. The knowledge and skill transfer to the institution members has facilitated participatory governance and management.

- **Behavior change holds the key**

Participation is not an activity that can happen without behavior change of the implementing personnel. Participation at the outset requires faith in ability of people at the same devolution of power. There is also a shift in role from that of a 'doer' to a 'catalyst'. This calls of change in mindset on the part of implementers for the intervention to be participatory in real terms. This behavior change in the project implementing personnel has by far been instrumental in delivering the project results.

- **Government-Non-Government partnerships**

Non-Government Organizations have institutional capabilities for mobilizing and organizing people. The same is not the forte of Government organizations. Thus, for an intervention of participatory nature government-non-government partnerships offers an ideal combination. The social skills of NGOs and the technical skills of GOs have to employed in complement so as to maximize results of such interventions. The mutual complementarity of the two has been acknowledged in OFSDP and has contributed to implementation effectiveness.

- **Convergence is necessity**

There are various agencies working at the intervention level for delivery of various development services. For all these services, the target client is the same. Also, the final beneficiary requires a range of services and services provided by one actor is not a sufficient condition for requisite development. Collaboration between these service providers can thus help converge various services to this ultimate client and maximize his benefits so that development interventions are more effective. Enterprise promotion with existing SHGs promoted by a different agency, schools in VSS buildings, convergence with Total Sanitation Campaign etc reflect on the same.

- **Inter-institutional linkages**

There is multiplicity of institutions at the local level. Though these institutions may have different mandates again the ultimate beneficiary is the same. While the Pani Panchayat may address core livelihoods needs of a household, Gaon Kalyan Samiti plays an equal role in assuring good health of the household members. Thus, there is a need for fostering inter-institutional linkages such the synergies can be sought between these institutional mandates. Enhanced access to services especially those by Gram Kalyan Samiti in the project area exemplify the same.

## 6 Issues and Opinions

In the preceding chapters, programme outputs and outcomes resultant to activity implementation have been discussed. There is considerable achievement in the outputs and the envisioned outcomes of the project. Along with ascertaining the outputs and outcomes, the study also looked at issues and options so as to provide diagnostics for efficient programme delivery for the remaining project duration. The following sub-sections discuss some of the critical issues and some of the options for addressing these concerns.

### 6.1 From Protection to Management

The OFSDP per se has started the implementation of the Joint Forest Management Regime in Orissa. While there have been other initiatives they have by far been notional. The project has employed a process oriented approach for institutionalizing JFM in the state and has been quite successful in the endeavour. However, the results so far have been more of Joint Forest Protection rather than management.

Project implementation in the target VSS is initiated through an environment building phase with sensitization, formation of VSS and development of the	Snapshot Strength and weakness analysis of OFSDP	
	Strength	Weakness
	<ul style="list-style-type: none"> <li>▪ Process orientation and high participation in planning process</li> <li>▪ Focus on capacity development and empowerment so that communities can manage forests as well as development</li> <li>▪ NGO support for community mobilization so as to best use their skill set</li> <li>▪ Convergence and linkages with other departments that facilitates maximization of benefits to the clients</li> <li>▪ Technical forestry management prescription for rejuvenating forests</li> <li>▪ Well defined M&amp;E system</li> <li>▪ Augmentation of income through enterprise development</li> <li>▪ Well designed project activities and well-defined withdrawal phase</li> </ul>	<ul style="list-style-type: none"> <li>▪ Inadequate translation into higher participation in governance</li> <li>▪ Recall of trainings by the participants is poor that also reflects on the rigour of training processes adopted</li> <li>▪ No support envisaged during the remaining project period that is critical</li> <li>▪ Inter-institutional linkages within the VSS are limited especially with Panchayat /Palli Sabha</li> <li>▪ Blue print approach at places rather than as may be required on the basis of stand status</li> <li>▪ Ecological monitoring need augmentation</li> <li>▪ Low per person benefits and scale of the enterprises</li> <li>▪ The project duration is relatively small for developing sustainable institutions</li> </ul>

microplan being the key activities. The microplans thus form the basis of forest development and village development imperatives. The microplans have tried to address the twin objectives; however, the focus on forest management has by far been limited. Majority of the microplans leave forest management prescriptions only at ANR activities also limited to the project duration.

There is a need to go beyond the project period as well as plan for forest management in a long-term perspective. A management plan for the designated area needs to be developed going beyond ANR activities. With the appropriate timeframe, appropriate operations viz. thinning be planned and the micro-plan should reflect the same.

### 6.2 Appropriate Silvicultural Operations

Silvicultural operations in the VSS areas by far have been limited to cleaning, multiple shoot cutting and stump dressing. Given that larger part of the VSS area is degraded but has sufficient root-stock, these become the best-fit operations. However, the status of stands in the VSS necessitate much more. Many of the VSS are self-initiated forest protection groups actively engaged in regenerating forests prior to the project. These protection groups have now been institutionalized as VSS with the protected areas assigned to these VSS. Due to protection, these forest patches have been rehabilitated and at places have had substantial growth. While

management operations have been undertaken for ANR, these stands demand much more. Given the growth, forestry management operations are required to reduce completion and therefore thinning is imperative. Further, it has also been observed that in many a places, the VSS areas have density of more than 0.5 going upto 0.8. Similar operations have to be undertaken in these stands also. Here, the requisite operations would be for opening up the canopy so that natural regeneration is facilitated. Thus, there is a need undertaking appropriate silvicultural operations that are required based on the status of forest stands.

### **6.3 Ecological Monitoring Protocols**

The OFSDP boasts of one of the most technology enabled decentralized forest management planning process with GIS being the mainstay of technology. This provides geo-spatial interface to project monitoring systems. Although largest component of the project relates to ecological interventions for forest rejuvenation, the same doesn't get reflected by the project monitoring protocols and therefore on-time information on indicators for ecological outputs is not available. As these outputs (regeneration status, survival percentage) are the 'deliverables' of the project, it is necessary to monitor these indicators such that timely feedback can be provided for management decision-making. Thus, there is an immediate need of designing and implementing comprehensive monitoring protocols to cover the project output indicators. The protocols should define measurement metrics and prescribe standardized methodologies for measuring these ecological indicators. State working plan code may be referred for the same.

### **6.4 Support to VSS**

The project per se has institutionalized JFM as the decentralized forest governance mechanism in the project target area. It has also institutionalized various governance norms and protocols to be operationalized through functional community participation. Substantial investments have been made into developing capacities of VSS so that they become autonomous institutions for sustainable forest management. The same is visible in terms of the energy at the VSS level. However, at this juncture, it can be said that only the first milestone has been achieved that is of community organization. It would still be a long journey before these newly crafted institutions become vibrant self-sustaining institutions responding to the dynamic needs of ecosystem well being and peoples' well-being. Transforming these institutions into required shape would warrant a lot of support to these institutions for developing institutional capacities. This becomes more crucial in view of the fact that implementation intensity in the VSS would substantially decrease now. Here also, the role of NGOs in developing capabilities is critical. Over the experience during the implementation period has underscored the role of NGOs in the institution building processes. However, no further engagement of NGOs is planned for the rest of implementation duration. It would be prudent to review this strategically and craft space for engaging NGOs for capacity development as well as back-stopping.

As regards institutional arrangements for NGO engagement, arrangements similar to those that have been adopted till date may be adopted. Also, it would ensure that that there is continuance of the NGO in the given area and the relationship established with the communities is built upon. Critical here is to identify the specific areas of support, developing specific terms of reference and monitoring the same.

### **6.5 Simplifying documentation at VSS level**

A well-defined documentation system has been designed and implemented at the VSS level. The system defines the various records that need be maintained at the VSS level, many with predefined formats. These have been designed to comprehensively cover all the various aspects of VSS functioning and mandate. However, the sheer number of documents make the system cumbersome and difficult to implement. As of now, there are as many as

16 registers/records that need to be maintained at the VSS level. Along with accountability and transparency concerns, key to record maintenance is timely updation so that up-to-date information is available for decision-making. Given the expanse of the present system, the system by far falls short of the objective. Furthermore, key financial documents are maintained in English that the communities cannot relate to.

The existing documentation system needs to be reviewed taking into account the user perspective as well from the perspective of persons responsible for maintaining these documents. Only necessary records sufficiently covering the essential aspects need be maintained at the VSS level. The financial records also need be maintained in the local language. This needs to be followed by intensive training package comprising of trainings, refresher trainings and back-stopping support. Developing a perspective of the users (VSS executive committee) of the need, use, updation oversight and interpretation is also required such that the system does not end at just record-keeping.

## **6.6 Scaling the Enterprise**

The initial experience of the project with enterprise development has been quite encouraging. With focus on aggregation, these enterprises engaging the targeted SHGs have been profitable translating into enhanced economic returns to the participating households. However, the net benefit accruing to the enterprise promoters is by far very low. The project has adopted precautionary principle while fostering enterprises so that workable models could be experimented and crystallized before scaling-up. The plan for federating the enterprises and cluster development during the remaining project period reflects the same. While these imperatives are undertaken, it would be necessary to rethink of the scale of the primary-level (SHG-level) enterprise at the very outset. The quantum of returns to the member households need be considered before designing the enterprise model. This consideration would facilitate enterprise scale decisions and business planning. Further, the process of business planning itself requires revision. As of now, business planning has been more or less tentative. There is an immediate need for enhancing rigour in the business planning process specifically addressing the areas of scale, growth, costing, cash flow projections and per member returns.

## **6.7 Strengthening Trainings**

Capacity development has been key strategy cutting across various project components with training being the mainstay of the activities. The results of these trainings are encouraging and also there has been substantial transfer of learning. However, the training processes require strengthening, especially at the VSS level. There is very little to no recall of trainings at both VSS and the SHG level. The entire approach to training for this target audience requires review bringing in systematic design, implementation and assessment protocols. The continuity concerns of the local institutions and the enterprises make this more critical and therefore require to be at the loci of continuity strategy.

Rigour in training can be brought in by employing the generic ADDIE (Analyze, Design, Develop, Implement and Evaluate) model of instructional design or its variants like the Systematic Approach to Training (SAT). The first step is the analysis of training needs. Here training needs need to be broken down into the required skills and knowledge for a particular task. Thus, job-task analysis is required for finalization of the knowledge and skills component. On the basis of these skills and knowledge as the terminal behavior of the training, the training needs to be designed. A sample format of a training design is given in the adjoining box. Here the most critical part is of delineating the training objectives that form the terminal behavior. Each of the objectives should be defined with an action verb describing what the participant would be able to do after the training. Evaluation of training has to be thought out at this level only. Also, both training assessment (fulfillment of training objectives in the training room) and evaluation (removal of the performance problem) needs to be factored into the design. Mechanism for ensuring transfer of learning also needs to be part of the design. The issue in OFSDP is not of

training delivery mechanism, but of 'how' is delivered. This rigour and systematic process would go a long way in enhancing the efficacy of the training imperatives.

### Training Design

#### Context

It is intended to conduct training of trainers for .....

#### Aim

To develop trainers for imparting quality trainings

#### Objectives

At the completion of the training programme, the participants would be able to:

- Define training
- Describe the Systematic Approach to Training
- Distinguish between conventional and participatory training

#### Learning Event

Objective	Content	Method	Time	Learning Aids	Performance Aids
At the completion of the training, the participants would be able to:					
Define Training	Training definition	Facilitated Discussion	60 minutes	White Board, Markers	-
Describe the systematic approach to training	SAT and Training cycle	Exercise-The Aryabhata and Bhaskar codes	90 minutes	WhiteBoard markers, Aryabhata and Bhaskar codes photocopied for the number of participants	
.....					

#### Assessment

Summative assessment would be using a structured post-test.

## 6.8 Enhancing the Project Duration

The project has made impressive headways with whole range of process inputs leading institutionalization of participatory forest management, rehabilitation of forest resources and reducing biotic pressure on the forests. The early outcomes as a result of interventions are encouraging; however, given the nature of the rural society and slow nature of change process, it will be useful to seek no cost project extension at least for another two years.

A extension at this juncture of project implementation will not only help in consolidation the gains already made, but would as well go a long way in ensuring that the project impacts are maximized and continuity is firmly in place.

Actions on the abovementioned parameters would not only facilitate consolidation of the project outcomes and sustained outcomes, but also ensure intervention sustainability and institutional sustainability on a longer run.

## Annex A: Household schedule

### DFSDP MID-TERM EVALUATION-HOUSEHOLD SCHEDULE

Date of Interview

#### IDENTIFICATION

I. Name of District \_\_\_\_\_

II. Name of the DMU \_\_\_\_\_

III. Name of FMU \_\_\_\_\_

IV. Name of the VSS \_\_\_\_\_

V. Name of the Gram Panchayat \_\_\_\_\_

VI. Batch Number- 1/2/3

VI. WBR-Well Off-1, Manageable-2, Poor-3, Very Poor-4

VII. BPL-1/APL-2

VIII If BPL, whether possess BPL Card? Yes-1, No-2

IX. Whether women headed household? Yes-1, No-2

RESULT STATUS OF THE INTERVIEW				
COMPLETED ..... 1 PARTIALLY COMPLETED ..... 2 REFUSED ..... 3 OTHER (SPECIFY) ..... 9				<input type="checkbox"/>
NAME	SPOT CHECKED BY	FIELD EDITED BY	OFFICE EDITED BY	KEYED BY
DATE	_____	_____	_____	_____
_____ <b>NAME OF THE INVESTIGATOR</b>			_____ <b>SIGNATURE OF THE SUPERVISOR</b>	

Schedule Number

District	DMU	VSS		Schedule		



**I: Demographic Profile**

	Description	Options	Codes	Skip
101	Name of the respondent			
102	Age of the respondent	<input type="text"/> <input type="text"/>		
103	Sex of respondent	Male	1	
		Female	2	
104	Marital Status	Married	1	
		Unmarried	2	
		Divorced	3	
		Widow/Wodower	4	
		Separated	5	
105	Religion	Hindu	1	
		Muslim	2	
		Sikh	3	
		Christians	4	
		Others	8	
106	Caste of the household	Schedule Caste	1	
		Schedule Tribe	2	
		OBC	3	
		Others	4	
107	Please specify the caste/tribe			
108	Type of Family	Nuclear	1	
		Joint	2	
		Extended <sup>7</sup>	3	
109	Type of houses Observe roof, wall and floor, and record		<b>Pre</b>	<b>Post</b>
		Pucca with RCC roof	1	1
		Pucca with asbestos or tile roof	2	2
		Pucca with thatched roof	3	3
110	Do you have electricity in your house?	Yes.....	1	
		No.....	2	
111	What is the major source of lighting in your household? <b>(SINGLE RESPONSE)</b>	Electricity.....	1	
		Kerosene Lamp.....	2	
		Paraffin Lamp.....	3	
		Candle.....	4	
		Solar Energy.....	5	
		Others.....	6	
112	What is the main fuel your household uses for cooking? <b>(SINGLE RESPONSE)</b>		<b>Pre</b>	<b>Post</b>
		Wood	1	1
		Crop residues	2	2
		Dung cakes	3	3
		Coal/charcoal	4	4
		Kerosene	5	5
		Electricity	6	6
		Liquid petroleum gas	7	7
		Bio-gas	8	8
		Smokeless Chulha		
Other (specify _____)	9	9		
113	Toilet Use <b>(SINGLE RESPONSE)</b>		<b>Pre</b>	<b>Post</b>
		Home based toilet	1	1
		Community Toilet	2	2
		Open Defecation	3	3

<sup>7</sup> A group of relatives, such as those of three generations, who live in close geographic proximity rather than under the same roof

114	What is the main source of DRINKING water for members of your household? (SINGLE RESPONSE)	Now		Pre-project	
		Source	Avg. Distance (mts) (Fill only for one response)	Source	Avg. Distance (mts) (Fill only for one response)
		Piped water in residence/yard/plot	1	1	
		Public tap	2	2	
		Hand pump in residence/yard/plot	3	3	
		Well water in residence/yard/plot	4	4	
		Public Hand pump	5	5	
		Public well	6	6	
		River	7	7	
	Other sources (specify)	8	8		
115	Does your household own any of the following: (Items are to be in working condition)	<b>Asset</b>		<b>Now</b>	<b>Pre-project</b>
		Pressure cooker		1	1
		Mixer/Grinder		2	2
		Chair		3	3
		Cot or bed		4	4
		Table		5	5
		Clock or watch		6	6
		Electric fan		7	7
		Bicycle		8	8
		Radio or transistor		9	9
		Sewing machine		10	10
		Telephone		11	11
		Mobile		12	12
		Refrigerator		13	13
		Black and white television		14	14
		Colour television		15	15
		Moped, scooter, or motor cycle		16	16
		Car/Jeep		17	17
		Water pump		18	18
		Bullock cart		19	19
		Thresher		20	20
Tractor		21	21		

**Q116: Household Member Details**

Q119a. Please mention the names of persons living in your household. (Starting with head of the HH)	Q119b. Relationship with Head of HH	Q119c. Age in complete Years		Q119d. Sex Male-1 Female-2	Q119e. Educational Qualification	Q119f. Education status (school age children)	Q119g. Marital status	Q119h. Primary Occupation	Q119i. Kind of vulnerability	Q119j. Member of any CBO (mention name of the CBO if member)	
		Yes-1, No-2	If yes Specify								

119(b) Self-1, Spouse-2, Father-3, Mother-4, Son-5, Daughter-6, Daughter-in-law -7, Grand son/ grand daughter-8,Relatives-9

119(e) Illiterate-1, Lower Primary( upto 5<sup>th</sup> Standard)-2, Primary(5<sup>th</sup> Pass) -3, Middle(7<sup>th</sup> Pass)-4, Senior Secondary(10<sup>th</sup> Pass)-5, Higher Secondary(12<sup>th</sup> Pass) -6, Graduation-7, Post Graduation – 8, Others-9

119(f) Presently studying-1, Dropped out-2, Never attended school- 3

119(g) Married-1, Unmarried-2, Divorcee-3, Separated- 4, Widow / Widower -5

119(h) Agriculture -1, Local Labour -2, Migrant labour -3, Sale of NTFP-4, Traditional Occupation -5, Unemployed-6,Student- 7, Others (if any)-8

119(i) Old and infirm-1, Deserted/widow women-2, Mentally challenged-3, Physically Handicap-4, Severe long term illness-5

119(j) SHG-1, PRI-2, Producer Coop/company -3, Others-4

■ **II: LIVELIHOOD PORTFOLIO**

201	Detail description of sources of income <b>MULTIPLE RESPONSE</b>	a. Activities undertaken now (Yes-1, No-2)	b. Activities undertaken Pre-project (Yes-1, No-2)	c. Whether increase in months of employment (Yes-1, No-2)
1	Agriculture			
2	Horticulture			
3	Vegetable cultivation			
4	Dairy			
5	Goat and Sheep Rearing			
4	Poultry and duck rearing			
5	Fisheries			
6	Local labour activities			
7	Migration for labour			
8	Processing/Sale of NTFP			
10	Traditional skill based occupation			
11	Petty trade			
11	Services			
12	Entitlement (cash and subsidy)			
13	Others; Specify			
14	Others; Specify			
15	Others; Specify			
	<b>Description</b>		<b>Options</b>	<b>Codes</b>
202	Has there been an overall increase in your household income since the project has started?		Yes, Significantly	1
			Yes, to some extent	2
			No	3
			Deteriorated	4

**III. COLLECTION OF NTFP**

	Description	Options	Codes		Skip
301	Does members of your household engage in NTFP collection	Yes	1		If 2, Skip to 303
		No	2		
302	Name of the NTFP	a. Quantity Collected-Now (Kg)	b. Quantity Collected Pre-project (kg)	c. Quantity Sold (kg)	d. Rate (Rs./kg)
1	Mahua flowers				
2	Mahua seeds				
3	Tendu Leaves				
4	Tamarind				
5	Sal seeds				
6	Sal leaves				
7	Siali leaves				
8	Cashew nuts				
9	Hill Broom grass				
10	Aonla				
11	Char (chironji)				
12					
13					
14					
15					
16					
303	Please specify whether HH has accessed any NTFP	Yes	1		If 2, skip to next

	related services and information from the project. MULTIPLE RESPONSE	No	2	section
304	If yes, Please specify the services and information accessed?			
		Yes	No	
	Marketing Support	1	2	
	Collective marketing	1	2	
	Inputs for processing and value addition	1	2	
	Training/exposure visit	1	2	
	Linkage with other institutions	1	2	
	Credit	1	2	
	Others specify(_____)	1	2	
	Others specify(_____)	1	2	
Others specify(_____)	1	2		
	<b>Description</b>	<b>Options</b>	<b>Codes</b>	
305	Has the access to services and information improved your income from the activity?	Yes, Significantly	1	
		Yes, to some extent	2	
		Not improved	3	

#### IV. ENTERPRISE PROMOTION

	Description	Options	Codes	Skip
401	Is your family involved in any enterprises?	Yes	1	If 2, Skip section
		No	2	
402	Is the enterprise group based/individual?	Group based	1	
		Individual	2	
403	Please specify the type of enterprise/s (MULTIPLE RESPONSE)		1	
	NTFP collection and processing	Specify _____	1	
	NTFP trading	Specify _____	2	
	Group Agriculture/vegetable cultivation	Specify _____	3	
	Agricultural produce trading	Specify _____	4	
	Handicraft making	Specify _____	5	
	Other manufacturing	Specify _____	6	
	Other	Specify _____	7	
<b>In case of more than one enterprises, answer questions below with respect to most significant (in terms of scale and income) of the activities mentioned above</b>				
404	Has the activity/enterprise been promoted through the project?	Yes	1	If 1, Skip to 406
		No	2	
405	Have you received any support from the project for the activity?	Yes	1	If 2, Skip to 407
		No	2	
406	What support has been provided to the enterprise through the project?	<b>Options</b>	<b>Codes</b>	
		Grant capital	1	
		Credit	2	
		Technology	3	
		Information/demonstration	4	
		Training/exposure	5	
		Input supply/linkage with suppliers	6	
		Marketing/linkage with buyers	7	
		Value addition/design development	8	
Other Specify: _____	9			
407	Has there been an improvement in returns (in case of	Yes	1	

	existing activity) or increase on HH income (in case of new activity) due to the interventions?	No				2	If 2, Skip to next section
408	If yes, by how much?	Rs.					

### V. INCOME AND EXPENDITURE

Q 501. Agriculture Income

Crops*	Whether crop was sown now  Yes-1 No-2	Whether crop was sown pre-project  Yes-1 No-2	Area under cultivation (In Acre units)	Production (in quintals)	Whether production has increased (Yes-1, No-2)	If yes, by what %	% Sold	Rates per qt. (in RS.)	Remark (for increase or decrease in production)
<b>Cereals</b>									
Paddy									
Wheat									
Maize									
Jowar									
Others									
<b>Pulses</b>									
Chana Dal									
Uraad									
Tur									
Moong									
<b>Oil Seeds</b>									
Soybean									
Groundnut									
Mustard									
Others									
<b>Vegetables</b>									
Potato									
Others									
<b>Total Income</b>									
Q 502 Expenses on agriculture (INR)	<b>Sowing</b>	<b>Weeding</b>	<b>Seeds</b>	<b>Fertilizer</b>	<b>Pesticides</b>	<b>Irrigation</b>	<b>Hiring/maintenance of equipment</b>	<b>Others</b>	<b>Total</b>



Q 503. Income from other Sources

S. No.	Sources of Income	Number of Members Involved	Days of Involvement in a year	Total Income	Pl. specify whether income has increased (Yes-1, No-2)	If yes by what %
1	Agriculture					
2	Horticulture					
3	Vegetable cultivation					
4	Dairy					
4	Goat and Sheep Rearing					
5	Poultry and duck rearing					
6	Fisheries					
7	Local labour activities					
8	Migration for labour					
9	Processing/Sale of NTFP					
10	Traditional skill based occupation					
11	Petty trade					
12	Services					
13	Entitlement (cash and subsidy)					
14	Others; Specify					
15	Others; Specify					

Q 504. Details of HH Expenditure (MONTHLY EXPENDITURE)

On average, out of your monthly income of Rs _____, how much did your household spend on:		(Amount in Rupees)
1.	Food	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
2.	Rent / Housing	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
3.	Utilities (Electricity, Water, Cable, Phone etc.)	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
4.	Healthcare	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
5.	Education	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
6.	Recreation, festivals and Social activities (Including expenses on alcohol & tobacco)	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
7.	Savings	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
8.	Clothing (Specify Whether a. Annual - <input type="checkbox"/> b. Every Six months <input type="checkbox"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
9.	Traveling	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>

10.	Gift to relatives	<input type="text"/>
11.	Other (specify: _____)	<input type="text"/>

Q 505. Debt details of HH

505a	Has your household used any debts, either from formal or informal sources, in the last 2 years?	No	1	If 1, skip to next section		
		Yes	2			
505 b	If yes, provide the following details:					
Loan no.	Time of taking loan (MM/YY)	Amount of loan (INR)	Purpose <sup>8</sup>	Source <sup>9</sup>	Interest rate monthly % DK/CS - 99	Outstanding amount (INR)
1						
2						
3						
4						
5						
6						
	<b>TOTAL</b>					

**VI. FINANCIAL SERVICES**

	Description	Options	Now (yes-1, no-2)	Pre-project (yes-1, no-2)
601	What are the financial services you are accessing? MULTIPLE RESPONSE	Savings		
		Credit		
		Insurance		
		Money Order		
		Pension		
		Others specify _____		
		602	Where do you save? MULTIPLE RESPONSE	Options
SHG				
Cooperative				
Bank				
Post Office				
MFI/NGO				
Friends/Relative				
Employer				
Others specify _____				

<sup>8</sup> Buying land for house/buying or construction of house – 1, Working capital for livelihood activity – 2, Buying asset for livelihood activity- 3, Buying household asset – 4, Health expenses – 5, Education – 5, Food and other routine household expenses - 6, Marriage in family – 7, Other social occasions – 8, Other specify – 9

<sup>9</sup> Employer – 1, Local mahajan/moneylender – 2, Credit purchase from supplier – 3, SHG – 4, VDC/Gram Sabha – 5, Bank – 6, Cooperative – 7, MFI – 8, ROSCA – 9, Friends/relatives/neighbours – 10

603	Do you access the following sources of credit? MULTIPLE RESPONSE	<b>Options</b>	<b>Now</b> (yes-1, no-2)	<b>Pre-project</b> (yes-1, no-2)
		Employer		
		Local Mahajan/moneylender		
		SHG		
		VSS		
		Bank		
		Cooperative		
		MFI/NGO		
		Friends/relative/neighbors		
Other sources specify				

## VII. SANITARY PRACTICES

	Description	Now	Pre-project	Skip
		Yes -1, No- 2	Yes – 1, No -2	
701	Do you follow the following practices?			
	Open defecation			
	Use latrine			
	Cover stored drinking water			
	Cover stored water for domestic use			
	Hand washing before meals			
702	Have you constructed a toilet during the project implementation period	<b>Yes</b>	<b>1</b>	
		<b>No</b>	<b>2</b>	
703	Is any treatment done for drinking water? (SINGLE RESPONSE)	<b>Now</b>	<b>Pre-project</b>	
	Filtration			
	Boiling			
	Chlorine tablets			
	Alum			
	Other specify _____			
	No treatment			

## VIII. HEALTH SERVICES FROM GRAM KALYAN SAMITI

	Description	Options	Codes	Skip
		Yes	No	
801	Have you accessed any health related services from the Gram Kalyan Samiti	Yes	1	If 2, skip the section
		No	2	
802	In what services have you accessed? (Multiple Response)			
	Health camp/ Health mela		1	
	Shishu mela		2	
	Medicines distributed		3	
	Institutional delivery		4	
	Routine immunization of children upto 5 years		5	
	Village Sanitation		6	
	Seed capital for toilet construction		7	
	Information on sanitation and hygiene		8	
	Others specify _____		9	

## IX. PARTICIPATION IN VSS

	Description	Options	Codes	Skip
		Yes	No	
901	Have you participated in the VSS micro-planning process	Yes	1	
		No	2	
902	In what activities have you participated (Multiple Response)			
	Participated in initial meeting		1	
	PRA exercises		2	

	Description	Options	Codes	Skip
		In plan formulation	3	
		Motivating others for participation	4	
		Participated in GBM for Approval of plan	5	
		Others specify _____	6	
903	Please give the following information on micro plan in Yes-1, and No-2		Yes-1, No-2	
		It has been developed		
		It has been Implemented		
904	Do you attend the VSS GBM	Yes	1	If 2, skip to 906
		No	2	
905	Did you attend the last VSS GBM	Yes	1	
		No	2	
906	Do you participate in VSS EC/monthly meetings	Yes	1	
		No	2	
907	Did you attend the last EC/Monthly meeting	Yes	1	
		No	2	

## X. INDICATORS OF FIVE CAPITALS

Natural capital	Yes-1/No-2	Physical capital	Yes-1/No-2	Financial capital	Yes-1/No-2	Social capital	Yes-1/No-2
Purchased land		Constructed/repaired bunds		Increased savings in SHG		Became member of SHG	
Purchased livestock		Constructed/repaired pond		Took loan from SHG		Became member of VSS	
Got land entitlement		Constructed/repaired well		Repaid earlier loan		Got elected to Panchayat	
Able to collect Non-Wood Forest products		Purchased irrigation equipment		Started an enterprise		Developed relationships with Banks, other CBOs	
Leased land		Purchased agriculture implements		Got pension from government		Became leader of a SHG or any other group	
Get more returns from NTFP		Accessed agriculture implements from VSS		Getting better wage rate		Became a member of Executive Committee of VSS	
Got water for irrigation		Repaired house				Became a member of VLSC	

**End of interview**

**\*\*\*\*\* Thank You \*\*\*\*\***

## Annex B: Checklist for FGD with VSS/EDC members

Name of DMU: .....

Name of FMU: .....

Name of the VSS: .....

Date: .....

### Formation of VSS

1. When was the VSS formed?
2. Whose initiative was it - Forest Department or Community?
3. How many members are there in the committee?

### Composition of EC

Composition						
Total members	SC	ST	OBC	Others	Women	PRI Members

Well being categories				
Total members	Very Poor	Poor	Manageable	Rich

### General Body (GB) Meetings

4. How is the meeting date decided? How is it conveyed?
5. What steps are taken to ensure that all know about the meeting?
6. What is the frequency of GB meetings?

### Attendance in last two GB meetings

Date of the meeting	Total members	Members present	
		Men	Women

7. What is the frequency of (Executive Committee )EC meetings? Last one year, how many meetings were held?

### Attendance in last three EC meetings

Date of the meeting	Total members	Members present	Whether Member Secretary present (Yes/No)

### Documentation

8. What all documentation is maintained in the VSS? (Compare with the checklist)
9. Who maintains the various records?

10. What is the time between decision-taken and recording?
11. What is the time between expenditure incurred and recording?
12. What is the role of Animator in maintenance of records?

**Transparency**

13. Who all have access to records and to what extent?
14. Is the transparency board (in prescribed format) maintained at the wall of VSS building?
15. Can anybody view the records on personal initiative?
16. Are the minutes and decisions read out to the participants after they are recorded?
17. Are decisions taken in the meetings displayed at a public place?
18. Is the expenditure during the month/period displayed at a public place?

**Capacity Building**

19. What trainings have been imparted/exposure visits undertaken?

S.No.	Trainings/Exposure visits	Contents	Methods Used
1			
2			
3			
4			
5			

20. Who has been part of these trainings?
21. What have been the changes because of these trainings?
22. What are the areas in which you require trainings?

**Micro-plan**

23. Has the micro-plan been prepared?
24. Is the micro-plan available in VSS building?
25. Who were the members of Microplan Working Group? How participatory was the preparation of microplan?
26. Has the plan been discussed and approved in the General Body Meeting of the VSS?
27. Is the micro-plan being implemented? Upto what extent?
28. What is the role of Member Secretary in implementation of the plan?
29. What is the role of Animator in preparing and implementing the plan?
30. Has the micro-plan been revised since formulation? How many times? Have the revisions been recorded in microplan or in VSS Meeting Register?
31. How is the micro-plan monitored?
32. Has the annual plan been prepared? What is the process of preparation of the annual plan?

**O&M of assets**

33. What assets have been created?
34. Who is responsible for O&M of the assets and what mechanism has been developed for O&M of the assets?
35. Is there a provision of levying fees for use of assets? If, yes of what assets and how much has been collected so far? Is it being recorded?

Asset	Fees/levy	Collected Fees till date
Total		

**Convergence**

36. Has the VSS/project leveraged resources from other Departments/Schemes?

Activity	Department	Amount (in Rs.)

37. What processes have been adopted/followed for achieving convergence?

**Man Animal Conflict (only to be asked in EDC)**

38. What is the incidence of man-animal conflict after formation of the VSS/EDC?
39. What is the status of damages to –property, Crop and Life after formation of the EDC?

**Interaction with other parallel committees**

40. What is relationship of VSS with
- Palli Sabha
  - Gram Panchayat
  - Forest Committees under FRA
  - Others- MNREGA , VHSC, GKS, VEC, Anganwadi



## Annex C: Checklist of FGD with SHG

DMU \_\_\_\_\_

FMU \_\_\_\_\_

VSS \_\_\_\_\_

Date: \_\_\_\_\_

Name of the SHG:

Date of formation:

Grade of the SHG:

1. Caste composition of the SHG:

Number of members				
SC	ST	OBC	Others	Total

2. Well-being category of members

Number of members				
Very Poor	Poor	Manageable	Rich	Total

### Norms

3. Are there well defined norms?
4. Does everybody know these norms?
5. What are the provisions for penalties for breaking norms?
6. Is any of these being followed? (Yes/No)

### Meeting

7. What is the frequency of meetings of the group?
8. What is the average attendance in the meetings?

### Saving

9. Do all the members regularly save?
10. What's the frequency of saving and amount saved? What is the total saving?
11. Does every member know her saving?

### Credit

12. Has the group initiated credit activities?
13. Whether it is inter-lending or based on external loans?
14. How many members have been given loan?
15. What is the repayment status?

### Documentation

16. What all documentations are maintained by the group?
17. Who maintains the documents?

18. Are the documents up to date?

**Trainings on group functioning**

19. What all trainings have been imparted on group functioning?

S.No.	Trainings Attended	Contents	Methods Used
1			
2			
3			
4			

20. What have been the benefits of the trainings?

**Enterprise**

21. Has the group accessed loan from revolving fund of VSS?

22. Has the group accessed loan from any other source?

23. What is the total amount? What are the terms of repayment?

24. Has the group taken up any livelihoods enterprise? Describe the enterprise

25. Has the business plan been prepared and approved?

26. Has there been any business development support provided by the project?

27. Have trainings been provided on enterprise development?

S.No.	Trainings/Exposure visits	Contents	Methods Used
1			
2			
3			
4			

28. How many members are engaged in the enterprise?

29. How much was the turnover and profit of the enterprise during the year.

30. Have the profits been distributed among the group? What is the mechanism for distribution? What is the per member benefit?

31. Is the SHG linked with cluster level enterprise?

## Annex D: C&I based assessment of Sustainable Forest Management

DMU: \_\_\_\_\_

FMU: \_\_\_\_\_

VSS: \_\_\_\_\_

Date of assessment: \_\_\_\_\_

### C1: Maintenance/ increase in extent of tree and forest cover

S.No.	Indicator	Yes	No
1.	Has the micro- plan for the VSS been developed?	1	2
2.	Is the micro-plan being implemented?	1	2
3.	Have the forest boundaries been demarcated and secured by construction of boundary pillars?	1	2
4.	Has the forest density in the area improved?	1	2

### C2: Maintenance, conservation and enhancement of biodiversity

S.No.	Indicator	Yes	No
1.	Has the sightings of important wild animals increased in the areas?	1	2
2.	Any species/species which had declined, is now coming-up/seen in the areas?	1	2
3.	Are the NTFPs harvested in a non-destructive manner (harvesting only mature fruits/seeds and selectively leaving some on the tree)?	1	2
4.	Are existing biodiversity rich areas improving?	1	2

### C3: Maintenance and enhancement of forest health and vitality

S.No.	Indicator	Yes	No
1.	Is the natural regeneration in the area showing improvement?	1	2
2.	Has there been an improvement in number of seed origin seedlings?	1	2
3.	Has the frequency of forest fires decreased?	1	2
4.	Has the incidence of grazing reduced?	1	2

### C4: Conservation and maintenance of soil and water resources

S.No.	Indicator	Yes	No
1.	Whether soil and water conservation works have been undertaken in the area as per the plan? (Treated under watershed, water bodies created, SMC works in ANR/plantations)	1	2
2.	Has the duration of stream flow in seasonal streams improved?	1	2
3.	Is there any perceptible change in water levels in the wells during summer?	1	2
4.	Has there been a decrease in soil erosion?	1	2

### C5: Maintenance and enhancement of forest resource productivity

S.No.	Indicator	Yes	No
1.	Is the stocking of the principle species in the area improving?	1	2

2.	Is the collection of key NTFPS in the area improving?	1	2
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**C6: Optimization of forest resource utilization**

S.No.	Indicator	Yes	No
1.	Is bamboo bearing forests increasing?	1	2
2.	Has there been any increase in availability of bamboo from the area?	1	2
3.	Any hi-tech plantation (raised with root-trainers, and other inputs) been raised?	1	2
4.	Has there been decline in fuel wood head-load removals because of increased availability of better livelihoods options?	1	2
5.	Have employment opportunities in the forestry works increased?	1	2

**C7: Maintenance and enhancement of social, cultural and spiritual benefits**

S.No.	Indicator	Yes	No
1.	Has the overall attendance in VSS meetings improved?	1	2
2.	Has the participation of women in VSS meetings increased?	1	2
3.	Is there a benefit sharing arrangement in place?	1	2
4.	Has the frequency of inter-village conflicts reduced?	1	2
5.	Has local knowledge been used for management and value addition of NTFPs?	1	2
6.	Are the existing sacred groves in the area being managed, as in the past?	1	2

**C8: Adequacy of policy, legal and institutional framework**

S.No.	Indicator	Yes	No
1.	Has there been a decrease in forest offences in the area?	1	2
2.	Is there a system of social sanctions/fines/penalties for violating VSS norms?	1	2
3.	Have there been initiatives for capacity building of VSS members for forest management?	1	2
4.	Has there been an increase in the VSS implemented forestry works?	1	2
5.	Is there any practice of community patrolling/social fencing?	1	2

## Annex E: Training Assessment Questionnaire

Name of DMU: .....  
 Name of FMU: .....  
 Name of the VSS:.....  
 Date of interview: .....  
 Name of Animator: .....

1. What trainings have you participated?

S.No.	Trainings Attended	Contents	Methods Used
1			
2			
3			
4			
5			

2. What new information you have learnt?

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3. What skill sets (physical and mental) has been developed due to these trainings?

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4. Of the knowledge/skills acquired through participation in trainings; what knowledge/skills are you using in your day-to-day work?

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5. What is the change in your attitude after training?

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6. What more areas you need trainings in?

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7. Any suggestions to improve or make the trainings more effective?

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## Annex F: Checklist for IDI with key stakeholders

Name of the project personnel: \_\_\_\_\_

Designation: \_\_\_\_\_

Date: \_\_\_\_\_

1. How would you summarize the experience of OFSDP?
2. What in your opinion are the key distinguishing features of OFSDP approach?
3. What are the strategies/activities which the project is successful with?
4. What are the strategies/ activities in which the project is not so successful?
5. What are the issues that emerged during the implementation till this date that needs to given due attention during the remaining project period?
6. What learnings are there from the implementation till date that needs to be incorporated in implementation processes for the remaining project period?
7. What you think are the three key impacts of project on the target group?
8. What do you think are the three key impacts on 'you' ( In-terms of Knowledge, skills, attitude/mindset, practice)
9. What do you think are the project priorities for the remaining implementation period?
10. What do you think needs to be taken care of so that after the project period:
  - a. The interventions continue after the project period
  - b. The institutions keep on functioning as they are functioning now

### Only to be asked to DMU/FMU head

- What are the assets that have been created by the project at the DMU/ FMU?
- What proportion of staff is using this project created assets?

# Annex G: Ecological measurement protocols

## METHODOLOGY NOTE FOR SURVIVAL AND GROWTH (HEIGHT) IN PLANTATION

(GIS maps with 4 ha grids available with VSS can be preferably used for sampling and locating plots)

### 1. Block plantations

There are four models of block plantations in VSS assigned forest areas:

1. Fuel and fodder (2ha)
2. NTFP (14ha)
3. Bamboo (1ha)
4. Economic (2ha)

Each of the models has to be assessed for survival and height growth of planted species. The following methodology is to be adopted for assessment.

#### a. Fuel and Fodder Plantations/ Economic

1. Sampling intensity would be 0.5% Sampling Intensity, however minimum 2 plots have to be laid out in the plantation area.
2. Divide the plot area into roughly four equal parts, by drawing perpendiculars.
3. Layout sample quadrats of size 10m x 10m halfway from each of the ends of the perpendicular and at the intersection of the perpendiculars.
4. Record survival in format 1 and height in format 2.

#### b. NTFPs/ Bamboo

1. Sampling intensity would be 2% and minimum 2 plots have to be drawn.
2. Divide the plot area into roughly four equal parts, by drawing perpendiculars. Layout sample quadrats of size 20m x 20m halfway from each of the ends of the perpendicular and at the intersection of the perpendiculars.
3. Record survival in format 1 and height in format 2.

### 2. Teak Plantation

1. Sampling intensity would be 0.5% however maximum number of plots would be 10.
2. Select the required number of plots random plots of size 10x10m; locate them taking into consideration the natural fertility/slope aspect as visible on ocular estimation. Care should be taken that two plots are at least 100m apart. In each of the plots, record survival and plant height using format 1 and 2.
3. Rough sketch map to be marked on the treatment map of the VSS.

### 4. Plantations within ANR areas

**Block:** Same as teak plantation

**Gap:** Sample plots to be laid in 2-3 plantation patches. In each patch a sample plot of 10x10m needs to be laid. Survival and height in the quadrat would be recoded using format 1 and 2.



**FORMAT 1**  
**PLANTATION SURVIVAL ASSESSMENT FORMATS**

DMU: \_\_\_\_\_

FMU: \_\_\_\_\_

VSS: \_\_\_\_\_

Plantation Model: \_\_\_\_\_

Plantation Area: \_\_\_\_\_ ha

Year of plantation: \_\_\_\_\_

Date of assessment: \_\_\_\_\_

QUADRAT NO. \_\_\_\_\_ Main species: \_\_\_\_\_

Total number of pits	Surviving Seedlings	Survival percent

QUADRAT NO. \_\_\_\_\_

Total number of pits	Surviving Seedlings	Survival percent

QUADRAT NO. \_\_\_\_\_

Total number of pits	Surviving Seedlings	Survival percent

QUADRAT NO. \_\_\_\_\_

Total number of pits	Surviving Seedlings	Survival percent

QUADRAT NO. \_\_\_\_\_

Total number of pits	Surviving Seedlings	Survival percent

QUADRAT NO. \_\_\_\_\_

Total number of pits	Surviving Seedlings	Survival percent

**FORMAT 2**  
**GROWTH (HEIGHT) ASSESSMENT FORMATS**

DMU: \_\_\_\_\_

FMU: \_\_\_\_\_

VSS: \_\_\_\_\_

Plantation Model: \_\_\_\_\_

Plantation Area: \_\_\_\_\_ ha

Year of plantation: \_\_\_\_\_

Date of assessment: \_\_\_\_\_

QUADRAT NO. \_\_\_\_\_

S.No.	Species	Height (cm)	Remark
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			

## METHODOLOGY NOTE FOR REGENERATION ASSESSMENT OF ANR AREAS AND BIODIVERSITY ASSESSMENT

Regeneration assessment has to be done in the Assisted Natural Regeneration (ANR) areas in the sample VSS. For every 10 hectare of area or part thereof 1 sample plot has to be laid out for assessing regeneration. These sample plots would be of 10X10m. Within each of these 10X10m plots, 5 sub-plots of 2X2m have to be drawn for assessing regeneration. These would be at the corners of the two cross-diagonals and one at the intersection of the diagonals

The steps to be followed for assessment are:

1. Collect the treatment map from the VSS.
2. Count the number of grids in the ANR area and calculate the sampling interval.  
Sampling interval= Total number of grids/6 =N
3. Select any one of the grids randomly. The first sample plot would be in this grid. From this grid, count clockwise and mark every Nth grid. These would be the grids where the 6 sample plots would be drawn.
4. In each of the grid, randomly select a point and layout a 10x10m quadrat. Within this quadrat, first will enumerate all the trees with more than 15 cm GBH, species wise (Format 1).
5. Then layout five sub-plots of 2x2m on the 4 corners and at the centre of the quadrat as described above.
6. Enumeration of regeneration in the sub-plots using Format 2 (species wise and four classes).

**FORMAT 1**  
**BIODIVERSITY ASSESSMENT FORMAT**

DMU: \_\_\_\_\_

FMU: \_\_\_\_\_

VSS: \_\_\_\_\_

Total ANR area: \_\_\_\_\_ ha

Date of assessment: \_\_\_\_\_

QUADRAT NO. \_\_\_\_\_

<b>S.No.</b>	<b>Species (Only trees &gt;20 cm gbh)</b>	<b>Tally Mark</b>	<b>Total</b>
21.			
22.			
23.			
24.			
25.			
26.			
27.			
28.			
29.			
30.			
31.			
32.			
33.			
34.			
35.			
36.			
37.			
38.			
39.			
40.			

**FORMAT 2**  
**REGENERATION ASSESSMENT FORMAT**

DMU: \_\_\_\_\_

FMU: \_\_\_\_\_

VSS: \_\_\_\_\_

Total ANR area: \_\_\_\_\_ ha

Date of assessment: \_\_\_\_\_

Quadrat No. \_\_\_\_\_

Sub-Plot no. \_\_\_\_\_

S.No.	Species (local name)	Recruit (1-15cm ht)	Young Plant (15-30 cm ht)	Established (>30 cm ht)	Coppice shoots (only established)
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					

## Annex H: List of VSS/EDCs for ecological assessment

DMU	FMU	VSS	DMU	FMU	VSS
Angul	Raigoda	Nuakheta- II	Koraput	Balda	Chatwa
		Gadatarash			Sindhicut
		Pokatunga			Amlaguda
	Kaniha	Titirima Kantapal		Semiliguda	Renu
		Durgapur Swamivivekananda			Chataput
Saradhapur		Badliguda			
Balliguda	Belghar	Karkudi	Paralekhemundi	Devagiri	Arli
		Bhandarngi			Lalusahi
		Kusumunda			Karadabana
	Shimonbadi	Kutubadi		Mohona	Mohana
		Salabadi			Bhaliaguda (M)
Takimaha		Rangaguda			
Bonai	Kuliposh	Badjal	Phulbani	Phiringia	Kurkunapali
		Banki			Latapangia
		Lunga			Kamankamba
	Bonai	S.Bolang		Raikia	Kajuri
		Bandhabhuin			Alimaha
Barghat		Katedikia			
Deogarh	Barkot	Jagannathpur	Rayagada	K. Singpur	Aguru
		Koduogoda			Badatodra
		Mandasila(B)			Kotaguda
	Pallahara	Makarchuan		Tikiri	Badapukel
		Godapada			Kopadanga
Bhandhabhuin		Baliakhada			
Jeypore	Gupteswar	Chilipadar	Rourkela	Kuarmunda	Tangarani
		Chadeipani			Ganjutola
		Murgachua			Chainpur
	Kotpad	Rabanaguda		Panposh	Nayatoli
		Narahandi			Karlakhaman
Kurmakote		Kharuatoli			
Keonjhar	Ghatgaon	Parsurampur	Balasore	Jaleswar	Khadibil
		Kundapitha		Chandipur	Bagada
		Kalimati	Bhadrak	Basudevpur	Mohanpur
	Patna	Chadheibhol			
		Belposi			
	Saharpada				