

**Forest and Environment Department  
The State of Odisha, India**

**The Supplemental Survey  
for  
The Odisha Forestry Sector Development Project  
(Phase II)  
in India**

**Final Report  
(Advanced Version)**

**February 2017**

**Japan International Cooperation Agency (JICA)**

**NIPPON KOEI CO., LTD.**

<b>4R</b>
<b>JR(先)</b>
<b>17-013</b>

**Forest and Environment Department  
The State of Odisha, India**

**The Supplemental Survey  
for  
The Odisha Forestry Sector Development Project  
(Phase II)  
in India**

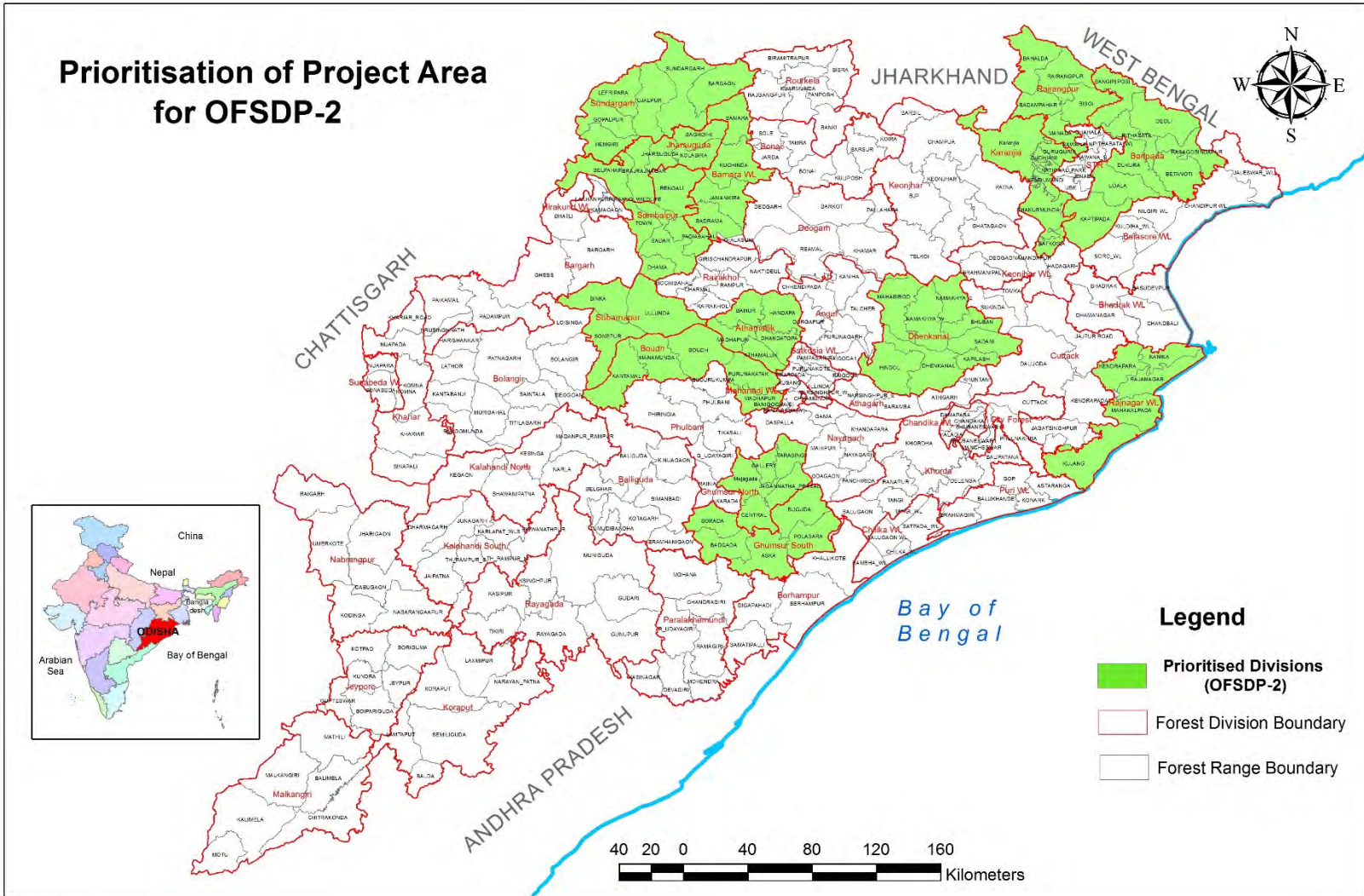
**Final Report  
(Advanced Version)**

**February 2017**

**Japan International Cooperation Agency (JICA)**

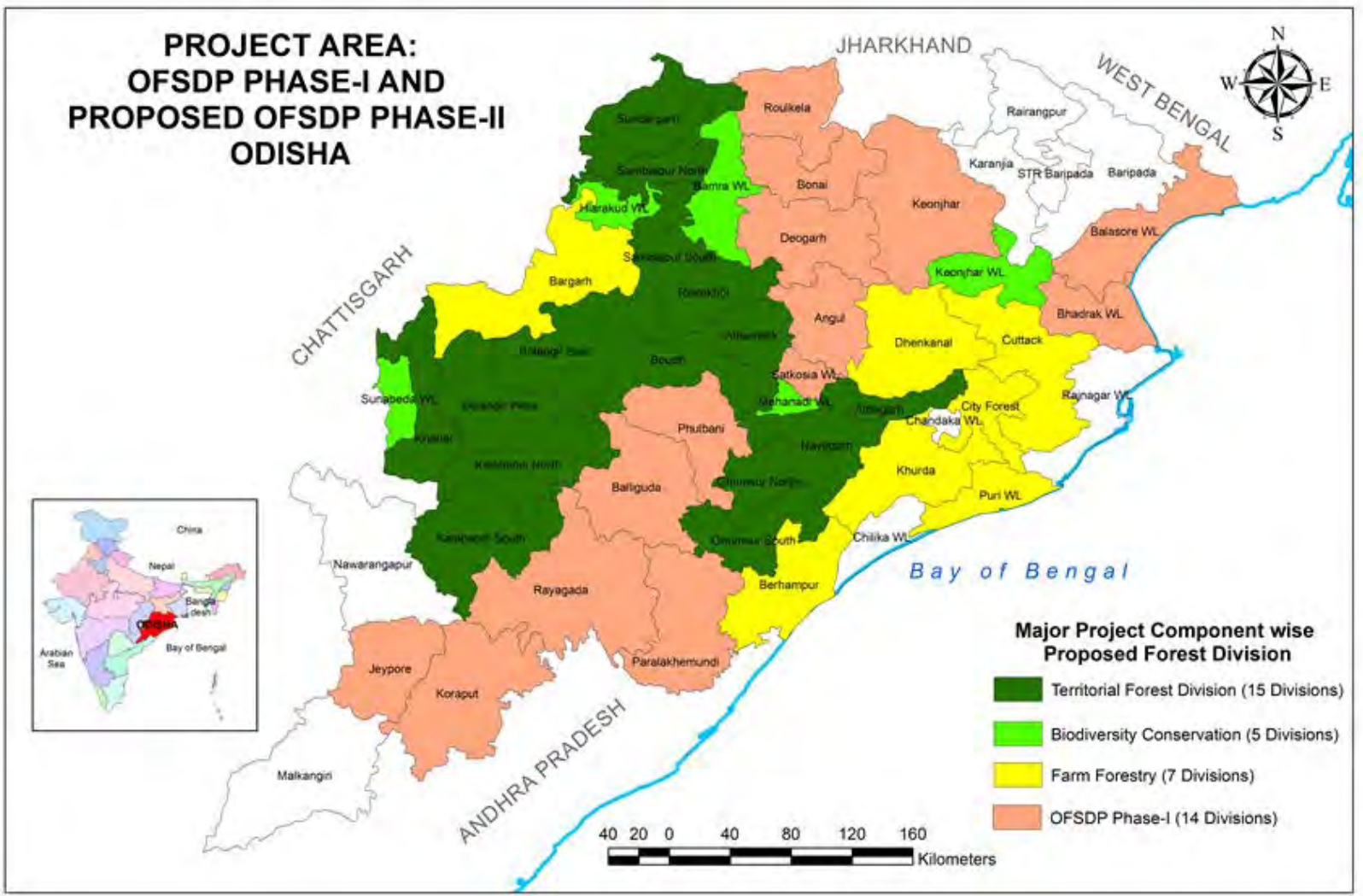
**NIPPON KOEI CO., LTD.**

Map-1 Priority Divisions for OFSDP-II



Source: Prepared by JICA Survey Team (2016)

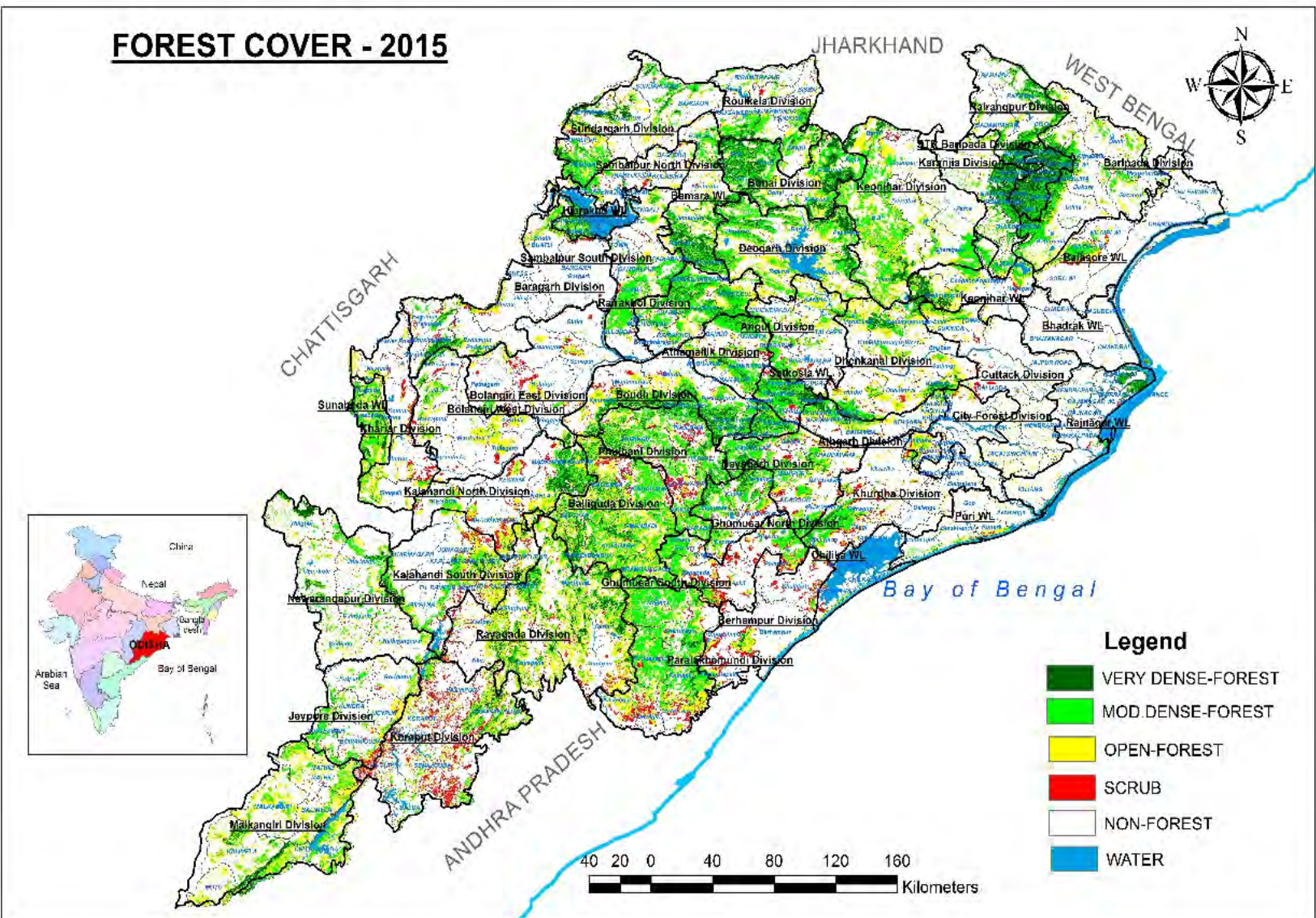
Map-2 Project Areas Proposed in DPR



Source: JICA Survey Team (2016)

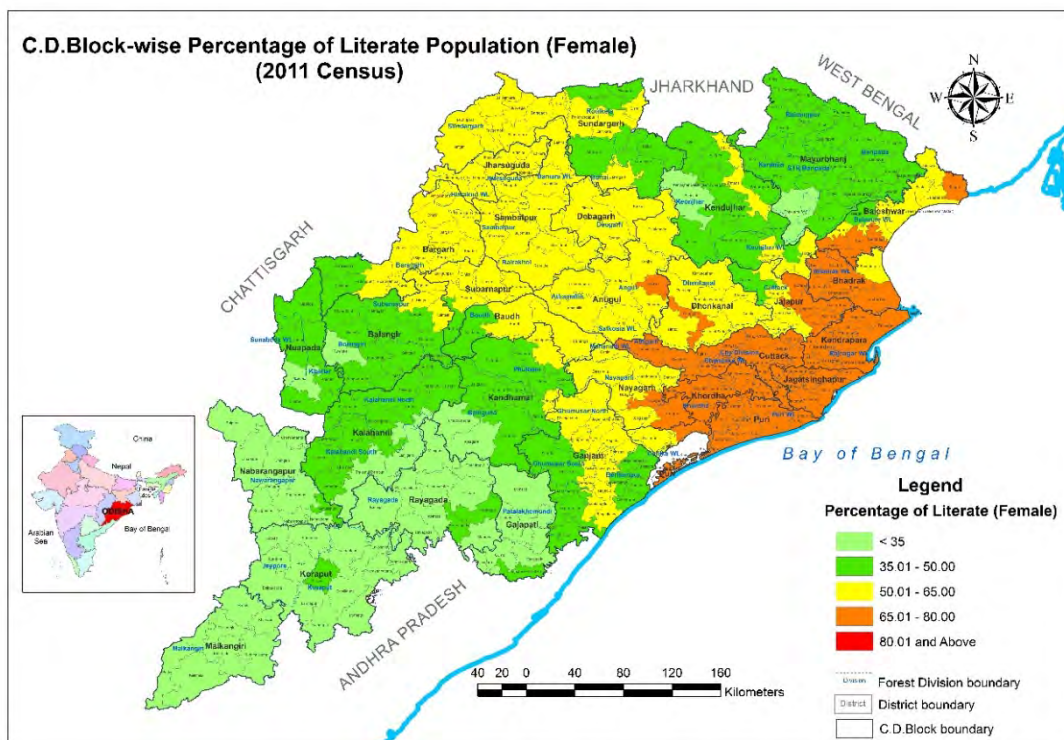


Map-3 Forest Cover of Odisha with Division and Range Boundaries



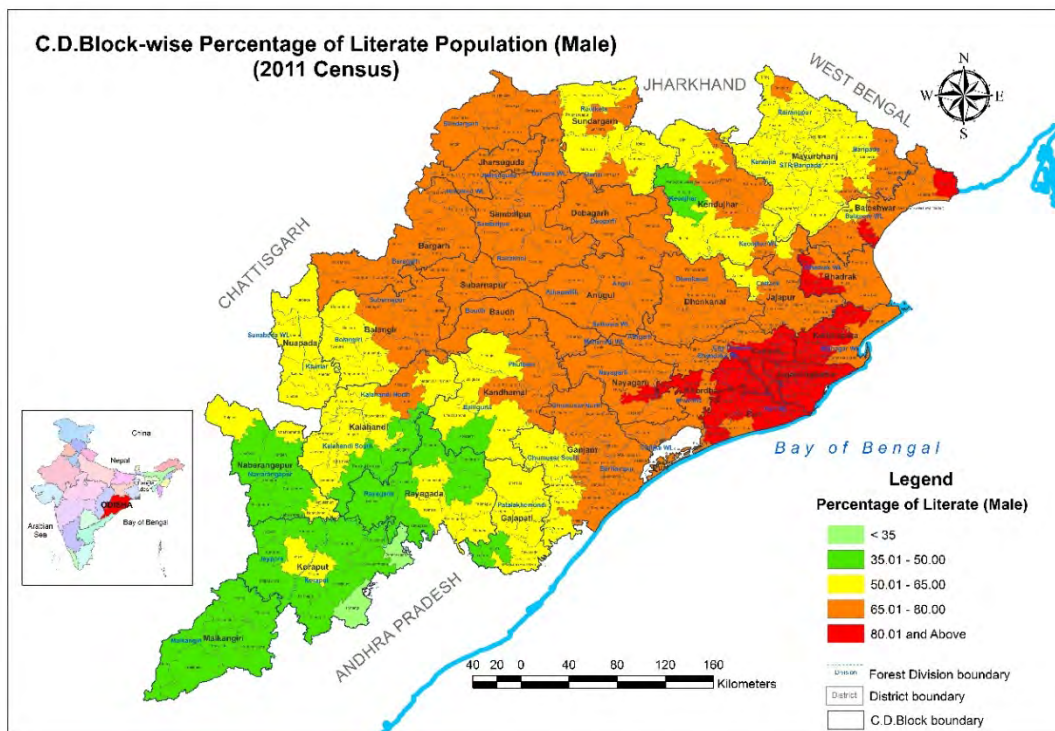
Source: Prepared by JICA Survey Team (2016) based on India State of Forest (2015)

**Map-4 Female Literacy Rate in Odisha**



Source: JICA Survey Team (2016) based on Census 2011

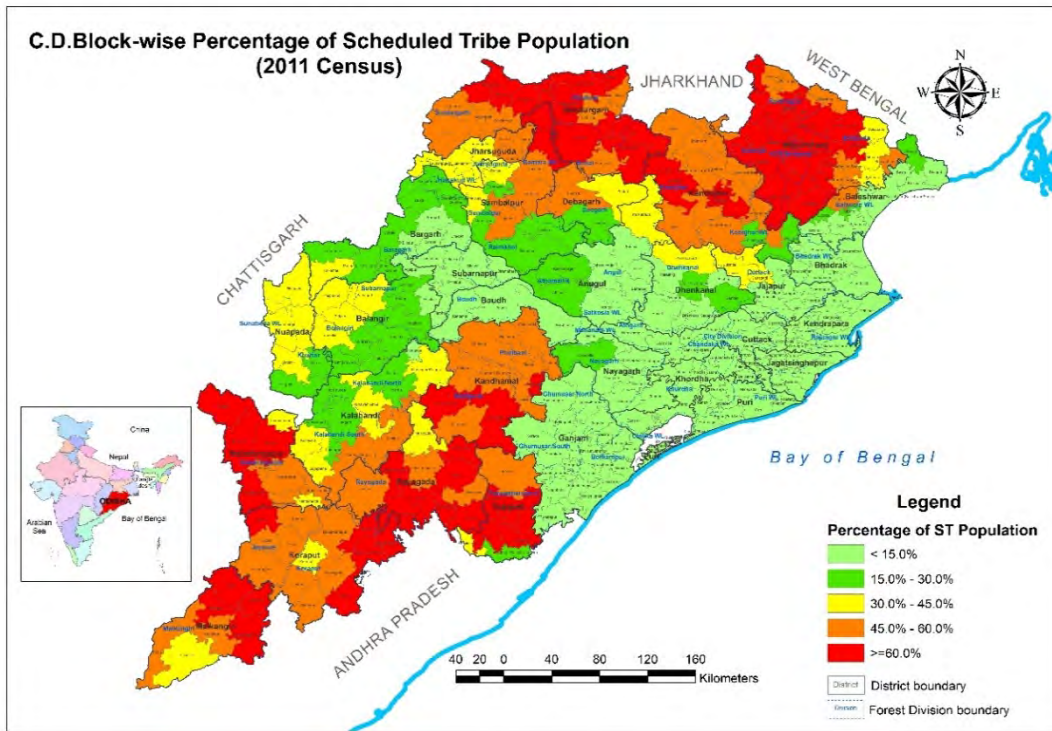
**Map-5 Male Literacy Rate in Odisha**



Source: JICA Survey Team (2016) based on Census 2011

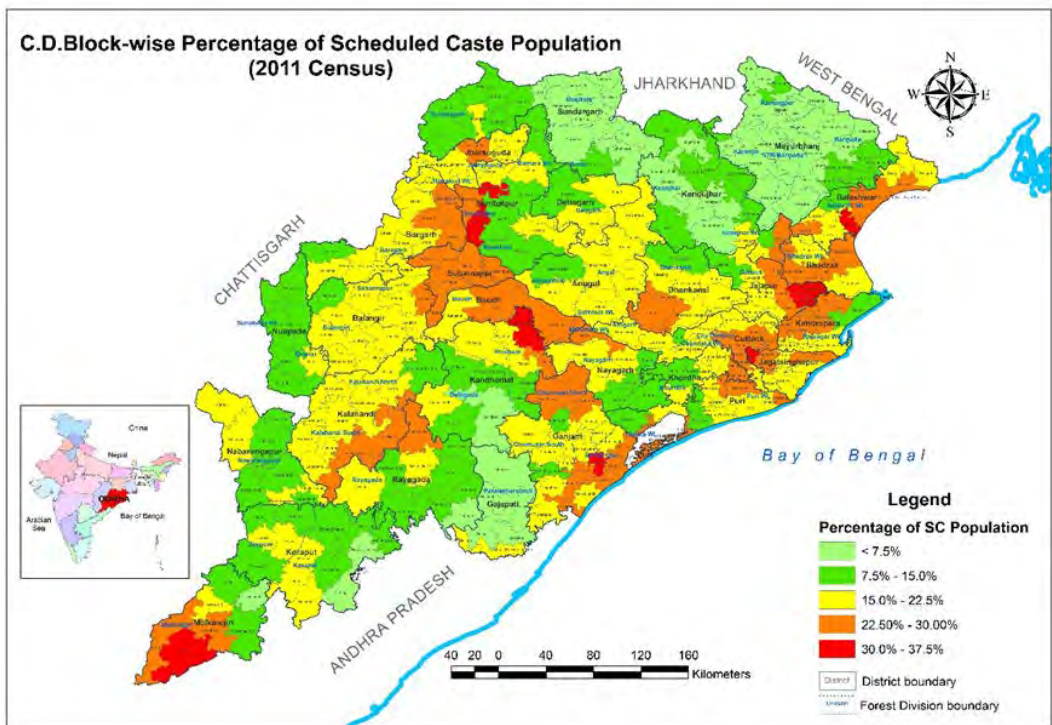


**Map-6 Distribution of Scheduled Tribe Population in Odisha**



Source: JICA Survey Team (2016) based on Census 2011

**Map-7 Distribution of Scheduled Caste Population in Odisha**



Source: JICA Survey Team (2016) based on Census 2011



Photographs



Kick Off Meeting at Bhubaneswar (30 August 2016)



A view from the women's seating, Athagarh Forest Division (OFSDP-II) (16 September 2016)



Village Forest in Ghumsur North Division (15 September 2016)



Permanent Nursery, Khuntuni Forest Range, Athagarh Forest Division. (16 September 2016)



Discussion with SHG members, Ghumsur North Division, (15 September 2016)



Marking the sacred tree, Bolangir Division (18 September 2016)



## **Supplemental Survey for Odisha Forestry Sector Development Project (Phase II) in India Final Report (Advanced Version)**

### **Table of Contents**

Map 1: Priority Divisions for OFSDP-II	
Map 2: Project Areas Proposed in DPR	
Map 3: Forest Cover of Odisha with Division and Range Boundaries	
Map 4: Female Literacy Rate in Odisha	
Map 5: Male Literacy Rate in Odisha	
Map 6: Distribution of Scheduled Tribe Population in Odisha	
Map 7: Distribution of Scheduled Caste Population in Odisha	
Photographs	
List of Abbreviations	
EXECUTIVE SUMMARY .....	S-1
Chapter 1 INTRODUCTION.....	1-1
Chapter 2. ODISHA.....	2-1
2.1 Forests .....	2-1
2.1.1 Forest Cover .....	2-1
2.1.2 Forest Types .....	2-2
2.2 Biodiversity.....	2-3
2.3 Land Conversion from Forest to Non-Forest Uses .....	2-7
2.4 Forest Administration .....	2-8
2.5 Farm Forestry.....	2-16
2.6 Joint Forest Management and Community Forest Management .....	2-17
2.6.1 Comparison between JFM and CFM .....	2-17
2.6.2 Joint Forest Management in Odisha.....	2-19
2.6.3 Community Forest Management in Odisha.....	2-21
2.7 Status of Forest Rights Act, 2006 .....	2-23
2.8 NTFPs in Odisha.....	2-25
2.9 Administrative Units, Panchayat Raj Institutions and Socio Economic Condition .....	2-28
2.9.1 Administrative Units and PRIs .....	2-28
2.9.2 Demography .....	2-29
2.9.3 SC/ ST Population in Districts .....	2-29
2.9.4 Economy .....	2-30
2.9.5 Poverty .....	2-32
2.9.6 Food Security .....	2-33
2.10 Gender .....	2-34

2.11 Community Level Institutions for Livelihood Improvements .....	2-37
2.12 Programmes/ Schemes for Livelihood Improvement .....	2-38
2.13 Externally Aided Projects .....	2-39
2.14 Disasters.....	2-40
2.15 REDD+ .....	2-44
Chapter 3. LESSONS LEARNED FROM OFSDP-I AND ISSUES/GAPS .....	3-1
3.1 Odisha Forestry Sector Development Project (OFSDP-I) .....	3-1
3.1.1 An Overview of OFSDP-I.....	3-1
3.1.2 Overall Lessons Learned: Review of the Recommendations of General Consultants of OFSDP-I and the Impact Assessment Survey.....	3-2
3.2 Implementation Framework.....	3-3
3.2.1 Executing Agency .....	3-3
3.3 Biodiversity Management.....	3-7
3.4 Forest Management.....	3-8
3.4.1 JFM Mode .....	3-8
3.4.2 Non JFM Mode .....	3-10
3.4.3 Forest Related Infrastructures .....	3-10
3.5 Farm Forestry.....	3-11
3.6 NTFPs .....	3-13
3.7 Livelihood Improvement .....	3-14
3.7.1 Community Level Institutions (VSS/ EDC/ SHGs).....	3-14
3.7.2 Livelihood Interventions under OFSDP-I Areas .....	3-16
3.7.3 Capacity Building and Training for Promotion of IGAs in OFSDP-I.....	3-21
3.7.4 Hand Holding Support .....	3-21
3.8 Convergence .....	3-22
3.9 Gender .....	3-22
3.10 Forest Researches .....	3-23
3.10.1 Forest Research in OFSDP-I.....	3-23
3.10.2 Carbon Assessment in OFSDP-I Areas: Ghatagaon Range.....	3-25
3.11 Publicity and Communication.....	3-28
3.12 Monitoring and Evaluation (M&E) .....	3-29
3.13 Phase-Out and Phase-In Activities.....	3-31
Chapter 4. REVIEW OF DETAILED PROJECT REPORT (DPR).....	4-1
4.1 Overview of the Proposed Project in DPR .....	4-1
4.2 Project Needs and Rationale.....	4-1
4.3 Project Objectives and Approaches .....	4-1
4.4 Target Areas and Beneficiaries .....	4-2
4.4.1 Initial Prioritisation .....	4-2
4.4.2 Overlapping Areas with Other Similar Interventions.....	4-5



4.5 Strengthening Executing Body .....	4-7
4.6 Community/ Tribal Development .....	4-9
4.6.1 Relevance of the Proposed Interventions .....	4-9
4.6.2 Entry Point Activities .....	4-9
4.6.3 Support for Income Generating Activities.....	4-9
4.6.4 Livelihood Improvement.....	4-10
4.7 Gender .....	4-11
4.8 Biodiversity Conservation .....	4-11
4.9 Forest Management.....	4-13
4.9.1 Selection of Areas and Interventions in the Forest Area .....	4-13
4.9.2 JFM Mode .....	4-14
4.9.3 Non JFM Mode .....	4-15
4.10 Farm Forestry.....	4-16
4.11 Forest Research.....	4-17
4.11.1 Proposed Activities and Relevance .....	4-17
4.11.2 REDD+ Pilot Project.....	4-17
4.12 Support Activities .....	4-19
4.12.1 Monitoring & Evaluation (M&E) .....	4-19
4.12.2 MIS/ GIS .....	4-20
4.13 Phase-Out and Phase-In Activities.....	4-21
4.14 Consulting Services .....	4-21
4.15 Project Cost.....	4-22
4.16 Environmental and Social Considerations.....	4-23
Chapter 5. SITUATIONAL ANALYSIS OF THE PROJECT AREA .....	5-1
5.1 Project Areas .....	5-1
5.1.1 Prioritisation of the Project Areas .....	5-1
5.1.2 Prioritised Divisions.....	5-1
5.2 Forests in the OFSDP-II Priority Divisions.....	5-2
5.2.1 Forest Areas.....	5-2
5.2.2 Human-Wildlife Conflict in the OFSDP-II Priority Divisions.....	5-2
5.2.3 Preliminary Analysis of the Drivers of Forest Degradation in the OFSDP-II Priority Divisions.....	5-3
5.3 Forest Management and Practices .....	5-4
5.3.1 Working Plans .....	5-4
5.3.2 JFM in the Project Areas .....	5-5
5.3.3 Community Forest Management (CFM).....	5-5
5.4 Forest Product and Marketing.....	5-6
5.4.1 Timber and Other Major Forest Products.....	5-6
5.4.2 NTFPs .....	5-8
5.5 Socio Economic Characteristics .....	5-10

5.5.1 Livelihood .....	5-10
5.5.2 SHG Based Livelihood Activities .....	5-11
5.5.3 Gender and Forest Management .....	5-11
5.6 Community Development: Relevant Programmes/ Schemes .....	5-12
5.7 Protected Areas, Wildlife and Biodiversity and Community Level Institutions.....	5-16
5.7.1 Bamra Wildlife Division .....	5-16
5.7.2 Rajnagar Wildlife Division.....	5-18
5.7.3 Stakeholders in the OFSDP-II Areas for Sustainable Biodiversity Management .....	5-19
5.8 Existing IT Infrastructure at OFD and OFSDS.....	5-19
5.8.1 Forest IT and GIS Wing, PCCF Office, OFD .....	5-19
5.8.2 Geomatic Cell, PMU, OFSDS.....	5-21
5.8.3 IT Infrastructure with Forest Divisions .....	5-22
5.8.4 IT Infrastructure with Forest Ranges.....	5-22
Chapter 6. PROPOSED INTERVENTIONS .....	6-1
6.1 Overview of the Proposed Project .....	6-1
6.2 Project Needs and Rationale .....	6-2
6.2.1 Project Needs .....	6-2
6.3. Project Objectives and Approaches .....	6-5
6.3.1 Project Objective .....	6-5
6.3.2 Approaches .....	6-5
6.4 Prioritisation of the Project Sites .....	6-7
6.4.1 Prioritisation Criteria.....	6-7
6.4.2 Priority Divisions for OFSDP-II .....	6-7
6.5. Project Components.....	6-8
6.6 “Component 1: Preparatory Works” .....	6-9
6.6.1 “1.1 Constitution of PMU, DMU, FMU and Deployment of Staff” .....	6-9
6.6.2 “1.2 Deployment of NGOs for Community Development and SFM” .....	6-10
6.6.3 “1.3 Procurement of Project Management Consultants (PMC)”.....	6-10
6.6.4 “1.4 Orientation for PMU/ DMU/ FMU by PMU” .....	6-10
6.6.5 “1.5 Identification of VSSs (by PMU/ DMU/ FMU)” .....	6-10
6.6.6 “1.6 Survey and Demarcation”.....	6-11
6.6.7 “1.7 Review and Revision of Project Manuals/ Training materials”.....	6-17
6.6.8 “1.8 Engagement of VSS/ EDC Animators” .....	6-17
6.6.9 “1.9 Micro Planning” .....	6-18
6.6.10 “1.10 Revisiting Micro Planning (4th Year in each Batch)” .....	6-21
6.6.11 “1.11 Annual Planning” .....	6-21
6.6.12 “1.12 Social and Environmental Consideration” .....	6-22
6.7 Component 2: Sustainable Forest Management .....	6-22
6.7.1 “2.1 JFM Mode”.....	6-22



6.7.2 “2.2 Non JFM Mode”.....	6-27
6.7.3 “2.3 Farm Forestry”.....	6-29
6.8 Component 3: Sustainable Biodiversity Management.....	6-32
6.8.1 “3.1 Sustainable Biodiversity Management Adopting Concepts of SATOYAMA Model”.....	6-32
6.8.2 “3.2 Sustainable Management of Bhitarkanika” .....	6-34
6.9 Component 4: Livelihood Improvement.....	6-35
6.9.1 “4.1 Community Development Fund”.....	6-35
6.9.2 “4.2 Promotion of IGAs” .....	6-37
6.9.3 “4.3 Promotion of NTFP Based Livelihood Activities” .....	6-39
6.9.4 “4.4 Livelihood Resource Centre (LRC)” .....	6-43
6.9.5 “4.5 Annual Partner NGO Meeting” .....	6-45
6.10 Component 5 Capacity Development .....	6-45
6.10.1 “5.1 Executing Agency” .....	6-45
6.10.2 “5.2 Community Institutions” .....	6-51
6.10.3 “5.3 Training of Partner NGOs” .....	6-56
6.10.4 “5.4 Training of Animators” .....	6-58
6.10.5 “5.5 Promotion of Product Cluster at DMU Level” .....	6-58
6.10.6 “5.6 Quality Enhancement of Kendu Leaf” .....	6-59
6.10.7 “5.7 Training and Extension of Farm Forestry” .....	6-60
6.10.8 “5.8 Capacity Development – REDD+ Readiness” .....	6-60
6.11 Component 6 REDD+ Pilot Projects .....	6-61
6.12 Component 7 Supporting Activities.....	6-66
6.12.1 “7.1: Institutional and Project Management Support” .....	6-66
6.12.2 “7.2 Monitoring & Evaluation”.....	6-71
6.12.3 “7.3 Communication and Publicity” .....	6-90
6.13 Component 8 Phase-Out and Phase-In Activities .....	6-93
6.14 Component 9: Consulting Services.....	6-93
Chapter 7. ENVIRONMENTAL AND SOCIAL CONSIDERATIONS.....	7-1
7.1 Legal, Policy and Institutional Framework of Environmental and Social Considerations in India and Odisha .....	7-1
7.1.1 Laws, Regulations Relevant to Environmental and Social Considerations .....	7-1
7.1.2 Institutions Relevant to Environmental and Social Considerations .....	7-8
7.1.3 Environmental Impact Assessment – Environmental Clearance.....	7-9
7.1.4 Land Acquisition and Involuntarily Resettlement.....	7-15
7.2 Draft Environmental and Social Management System Framework of the Project.....	7-18
7.2.1 Project Description and Draft Scoping Matrix.....	7-18
7.2.2 Draft Environmental and Social Management System Framework for the Project .....	7-22
7.3 Draft Indigenous Peoples Plan Framework of the Project.....	7-22
7.3.1 Indigenous Peoples Planning Framework.....	7-22
7.3.2 Overviews of Indigenous, Tribal, and Forest Dwellers.....	7-23

7.3.3 Definition of Indigenous People and the Target of the Project .....	7-27
7.3.4 Legal and Policy Framework for Indigenous People/ Forest Dependents .....	7-29
7.3.5 Draft Scheduled Tribes and Forest Dependents Plan Framework for the Project .....	7-30
Chapter 8. PROPOSED INSTITUTIONAL FRAMEWORK AND RECOMMENDATIONS.....	8-1
8.1 Overview of Organizational Setup for Project Implementation .....	8-1
8.1.1 Approach to Institutional Arrangement – Society Mode.....	8-1
8.1.2 OFSDS Engagement for OFSDP-II .....	8-1
8.1.3 Proposed Institutional Arrangement for OFSDP II .....	8-1
8.1.4 Creation of PMU, DMUs and FMUs for OFSDP-II .....	8-3
8.2 Key Managerial Features of Institutional Arrangement.....	8-4
8.3 Timeframe for Institutional Arrangement .....	8-6
8.4 Details of Components of Institutional Setup for Project Implementation.....	8-7
8.5 Proposed Structure of Project Management Units (PMU) of OFSDP-II.....	8-9
8.6 Proposed Structure of Divisional Management Unit (DMU).....	8-14
8.7 Proposed Structure of Field Management Unit (FMU).....	8-16
8.8 Community Institutions .....	8-18
8.9 Other Implementing/ Facilitating Institutions.....	8-19
Chapter 9. PROPOSED PROJECT IMPLEMENTATION SCHEDULE.....	9-1
Chapter 10. OPERATION AND MAINTENANCE.....	10-1

### **List of Tables**

Table 2.1.1 Density Classification and Changes in Forest Cover in Odisha based on ISFR 2003 – 2015 .....	2-1
Table 2.1.1 Legal Status of the Forest Areas in Odisha .....	2-1
Table 2.1.2 District Wise Forest Areas.....	2-2
Table 2.1.4 Forest Types in Odisha (Champion and Seth Classification).....	2-2
Table 2.1.5 Important Tree Species in Different Forest Types.....	2-3
Table 2.2.2 Legal Definitions of Areas of Higher Biodiversity Conservation Significance .....	2-4
Table 2.2.3 Protected Areas in Odisha .....	2-5
Table 2.3.1 Forest Land Diverted for Non-Forestry Purposes (1 October 2015) .....	2-7
Table 2.4.1 Forest Administrative Units .....	2-9
Table 2.4.2 Forestry Sector Budget.....	2-9
Table 2.4.3 Sanctioned Strength and Filled Positions – OFD.....	2-11
Table 2.4.4 Policies, Laws and Programmes Relevant to the Forestry Sector in Odisha .....	2-12
Table 2.4.5 Relevant Schemes/ Programmes Implemented by OFD .....	2-14
Table 2.6.1 Comparison between JFM and CFM .....	2-17



Table 2.6.2 Status of VSSs/ EDCs in Odisha.....	2-19
Table 2.6.3 Key Events in the Evolution of JFM in Odisha .....	2-20
Table 2.6.4 Number of VSSs/ EDCs Formed and the Area Protected by VSSs .....	2-20
Table 2.7.1 Linkages of Forest Rights Holders with Other Schemes – Convergence (March 2016) ...	2-23
Table 2.7.2 Types of Rights under FRA.....	2-24
Table 2.7.3 FRA Status as on 30 June 2016.....	2-25
Table 2.8.1 Minimum Support Price for NTFP in Odisha .....	2-27
Table 2.8.2 State Procurement Agencies for 12 NTFPs in Odisha under MSP scheme .....	2-28
Table 2.8.3 Quantity Procured by State Procurement Agencies during 2015-16 in Odisha .....	2-28
Table 2.9.1 PRIs in Odisha .....	2-29
Table 2.9.2 District Wise Population and % of ST/SC Population (Unit: %)......	2-30
Table 2.9.3 2014-15 (Advanced Estimate) GSDP at Current Prices by Sector .....	2-30
Table 2.9.4 Net District Domestic Product 2011-12 at Current Price.....	2-31
Table 2.9.5 Poverty Gap Ratio* .....	2-32
Table 2.10.1 Literacy Rates by Social Group and Gender in Odisha and India (Unit: %) .....	2-34
Table 2.10.2 Distribution of Households by type of fuels used for cooking in India and Odisha, 2011 (Unit: %)......	2-35
Table 2.12.1 Programmes and Schemes for Livelihood Improvement.....	2-38
Table 2.13.1 List of Externally Aided Projects Relevant to OFSDP-II .....	2-40
Table 2.14.1 List of Major Disasters affected Odisha.....	2-41
Table 2.14.2 Donor Assisted Disaster Related Projects .....	2-41
Table 2.14.3 Fire Incidences in Odisha in last 5 years.....	2-43
Table 2.14.4 Fire instances in last two years in fire season as per MODIS data .....	2-43
Table 2.15.1 Gaps and Mitigation Actions: RL .....	2-44
Table 2.15.2 Gaps and Mitigation Actions: MRV .....	2-45
Table 2.15.3 Gaps and Mitigation Actions: Benefit Sharing/ Safeguards Information System.....	2-46
Table 2.15.4 Gaps and Mitigation Actions: Capacity Building .....	2-47
Table 3.1.1 Targets and Achievements of OFSDP-I .....	3-1
Table 3.1.2 Recommendations from the General Consultants of OFSDP-I .....	3-2
Table 3.1.3 Lessons Drawn from OFSDP-I.....	3-2
Table 3.3.1 Issues Emerged Out of the Site Visits .....	3-8
Table 3.4.1 Findings and Lessons Learnt: JFM Mode.....	3-9
Table 3.4.2 Findings and Lessons Learnt: Non JFM Mode Forest Management .....	3-10
Table 3.4.3 Findings and Lessons Learnt: Forest Management Infrastructure .....	3-11
Table 3.5.1 Progress of Farm Forestry in OFSDP-I.....	3-12
Table 3.5.2 Tree Species Requires No Transit Permit in Odisha .....	3-12
Table 3.6.1 NTFP Specific Issues to be Addressed.....	3-13
Table 3.7.1 Status of SHGs in OFSDP-I at the End of the Project .....	3-16
Table 3.7.2 Challenges Faced by Clusters Promoted under OFSDP-I.....	3-18
Table 3.7.3 Profiles of Selected Clusters Formed under OFSDP-I.....	3-19
Table 3.7.4 Outline of the Training Programmes for VSS/EDC/SHGs/Clusters under OFSDP-I.....	3-21

Table 3.7.5 Outline of the Skills Training for Different Products.....	3-21
Table 3.10.1 Research Studies under OFSDP-I.....	3-24
Table 3.10.2 NDVI Based Classification of Forest Area for Year 2006-07 and 2015-16.....	3-26
Table 3.10.3 Change in Carbon Stock in Different Density Classes Unit: tCO <sub>2</sub> -e.....	3-27
Table 3.12.1 M&E Studies under OFSDP-I.....	3-30
Table 4.1.1 Proposed Outline of OFSDP-II in DPR.....	4-1
Table 4.3.1 Goals, Objectives and Approaches.....	4-2
Table 4.4.1 List of Divisions Proposed in DPR.....	4-3
Table 4.4.2 Initial Prioritisation Criteria for Divisions.....	4-4
Table 4.4.3 Proposed Initial Priority Divisions for OFSDP-II.....	4-4
Table 4.4.4 Observations and Clarification on DPR and Findings.....	4-5
Table 4.4.5 AJY Overlapping Divisions and the Number of Ranges and VSSs Covered.....	4-6
Table 4.4.6 Divisions and Ranges under GIM.....	4-6
Table 4.5.1 Observations/Remarks on DPR and Further Considerations: Institutional Arrangement....	4-7
Table 4.5.2 Observations and Remarks on DPR and Further Considerations: Infrastructure Development .....	4-8
Table 4.8.1 Observations and Remarks on DPR and Further Considerations s: Biodiversity Conservation .....	4-11
Table 4.9.1 Observations and Remarks on DPR and Further Considerations: Forest Area and Intervention Selection.....	4-13
Table 4.9.2 Observations and Remarks on DPR and Further Considerations: JFM Mode.....	4-14
Table 4.9.3 Observations and Remarks on DPR and Further Considerations: Non JFM Mode Forest Management.....	4-15
Table 4.9.4 Observations and Remarks on DPR and Further Considerations: Forest Management Infrastructure.....	4-16
Table 4.10.1 Observations and Remarks on DPR and Further Considerations: Farm Forestry.....	4-17
Table 4.11.1 Proposed Research Activities in DPR (Extracted from the Cost Estimate Table).....	4-17
Table 4.11.2 REDD+ Readiness in Odisha and OFSDP-I.....	4-18
Table 4.11.3 Activities Proposed under REDD+ and Further Considerations.....	4-18
Table 4.12.1 Observations and Clarifications: M&E.....	4-19
Table 4.12.2 Observations and Remarks on DPR and Further Considerations: MIS/ GIS.....	4-20
Table 4.13.1 Phase-Out and Phase-In Activities Proposed in DPR.....	4-21
Table 4.15.1 Cost Components and Distribution of Costs proposed in DPR.....	4-22
Table 4.15.2 Observations and Clarifications: Project Cost.....	4-22
Table 4.16.1 Observations and Remarks on DPR and Further Considerations: Environmental and Social Consideration.....	4-23
Table 5.1.1 Priortitisation Criteria for Territorial Divisions.....	5-1
Table 5.1.2 List of Priority Divisions.....	5-1
Table 5.2.1 Forest Areas in OFSDP-II Priority Divisions.....	5-2
Table 5.2.2 Preliminary Analysis of the Human and Wildlife Conflict in OFSDP-II Priority Divisions by the Level of Impact (Unit: %).....	5-3
Table 5.2.3 Compensation Paid for Various Damages Caused by Wild Animals in the OFSDP-II Priority	



Divisions (Unit: Rs.) .....	5-3
Table 5.2.4 Results of the Preliminary Analysis of the Drivers of Degradation in OFSDP-II Priority Divisions .....	5-4
Table 5.3.1 Working Plan Status of Project Priority Divisions.....	5-4
Table 5.3.2 VSSs and EDCs in the Project Area – OFSDP Phase II .....	5-5
Table 5.4.1 Growing Stock of Timber in Odisha .....	5-6
Table 5.4.2 Control and Management of Different Forest Products in Odisha.....	5-6
Table 5.4.3 Revenue Receipts from Forest Products by State Government (Rs. million).....	5-8
Table 5.4.4 Production of Important Forest Products in Last 5 years.....	5-8
Table 5.4.5 Production of Kendu Leaf in Odisha .....	5-8
Table 5.4.6 District-wise Potentiality of NTFPs in Odisha (In MT).....	5-8
Table 5.4.7 Forest Division-wise Important NTFPs .....	5-9
Table 5.4.8 Market/ Trading Centres Dealing with Some Important NTFPs.....	5-9
Table 5.5.1 % of AAY and Priority Households in Odisha.....	5-10
Table 5.6.1 Implementation of MGNREGA in Odisha as of September 2016.....	5-12
Table 5.6.2 Status of NRLM in Odisha as on 31 July 2016.....	5-13
Table 5.6.3 Annual Achievements of NRLM in Odisha (Till July 2016) .....	5-13
Table 5.6.4 NRLP Progress as on Aug 2016.....	5-14
Table 5.6.5 Number of Livelihood Service Providers .....	5-14
Table 5.6.6 Scale of Producer Groups Promoted Under OLM and Supports given .....	5-15
Table 5.6.7 Outcome of the Intensive Block over the Period of 5 years.....	5-15
Table 5.7.1 Key Stakeholders for Sustainable Biodiversity Management.....	5-19
Table 5.8.1 List of Infrastructure with IT/GIS Lab, PCCF Office, OFD .....	5-20
Table 5.8.2 List of Infrastructure with Geomatic Cell, PMU, OFSDS .....	5-21
Table 5.8.3 IT Infrastructure Available at Forest Divisions .....	5-22
Table 6.1.1 Outline of OFSDP-II.....	6-1
Table 6.4.1 Prioritisation Criteria for Ranges .....	6-7
Table 6.4.2 Priority Divisions and Number of Ranges for OFSDP-II .....	6-7
Table 6.5.1 Major Work Quantities of OFSDP-II.....	6-8
Table 6.6.1 Indicative PNGO Deployment Schedule .....	6-10
Table 6.6.2 Indicative Team Composition of the Project Management Consultants (PMC) .....	6-10
Table 6.6.3 Indicative VSS Selection Process and Criteria .....	6-11
Table 6.6.4 Descriptions of Maps Prepared during OFSDP-I and Proposed for OFSDP-II.....	6-13
Table 6.6.5 Survey, Demarcation and Mapping Activities with Key Action Items .....	6-14
Table 6.6.6 Details of Existing Satellite Images with OFSDS.....	6-16
Table 6.6.7 Proposed Plan of Survey, Demarcation and Mapping .....	6-16
Table 6.6.8 Details of Satellite Images to be Procured for 1:5000 Scale Mapping .....	6-17
Table 6.6.9 Guidelines and Manuals for OFSDP-II.....	6-17
Table 6.6.10 Indicative Deployment Plan for the Animators.....	6-18
Table 6.7.1 Overall Description of JFM Treatments in the Project .....	6-25
Table 6.7.2 Indicative Description of Hi-Tech Nurseries to be Established .....	6-28

Table 6.7.3 Suggested Outline of the Farm Forestry Component under OFSDP-II .....	6-30
Table 6.7.4 Suggested Outline of the Proposed Implementation Plan for Farm Forestry .....	6-30
Table 6.8.1 Proposed Activities and Applicable SATOYAMA Principles .....	6-34
Table 6.8.2 Indicative Work Component for Scientific Monitoring for Bhitarkanika .....	6-35
Table 6.9.1 Indicative Criteria for Identification of WSHGs in OFSDP-Areas.....	6-38
Table 6.9.2 Indicative NTFP Based Livelihood Activities .....	6-39
Table 6.9.3 Suggested Outline of Awareness Creation for MSP.....	6-42
Table 6.10.1 Indicative Training Batches by Area of Training and Key Stakeholders .....	6-46
Table 6.10.2 Suggested Topics of Training.....	6-47
Table 6.10.3 Suggested Training Plan for Environmental and Social Safeguards at PMU .....	6-48
Table 6.10.4 Indicative Training Plan for Environmental and Social Safeguards at DMUs .....	6-48
Table 6.10.5 Indicative Refresher Training Batches by Area of Training and Key Stakeholders.....	6-49
Table 6.10.6 Suggested Outline of the SHG Training .....	6-51
Table 6.10.7 Suggested Outline of the Skills Training for IGAs .....	6-52
Table 6.10.8 Indicative List of Training and Capacity Building Activities .....	6-53
Table 6.10.9 Suggested Outline of the Exposure Visits for VSS/ EDCs .....	6-55
Table 6.10.10 Suggested Outline of the Exposure Visits Outside of the State .....	6-55
Table 6.10.11 Indicative Outline of VSS/ EDC Gender Training.....	6-56
Table 6.10.12 Indicative Outline of the Gender Training for SHGs .....	6-56
Table 6.10.13 Indicative Outline of PNGO Trainings (TOT) .....	6-57
Table 6.10.14 Indicative Outline of the Gender Training for Partner NGOs (TOT).....	6-57
Table 6.10.15 Indicative Outline of Animator Training.....	6-58
Table 6.10.16 Suggested Training Outline for the Product Cluster Promotion at DMU Level .....	6-58
Table 6.11.1 Review of the REDD+ Options for OFSDP II .....	6-61
Table 6.11.2 Options for Mitigating Forest Degradation.....	6-62
Table 6.11.3 Safeguards in REDD+ under the Cancun Agreement .....	6-65
Table 6.11.4 Options for Mitigating Forest Degradation .....	6-66
Table 6.12.1 Proposed IT Infrastructure at PMU.....	6-66
Table 6.12.2 Proposed IT Infrastructure at DMUs.....	6-68
Table 6.12.3 Proposed IT Infrastructure at FMUs .....	6-69
Table 6.12.4 Evaluation Framework for OFSDP II .....	6-72
Table 6.12.5 Key Reporting Requirement at Various Level .....	6-74
Table 6.12.6 Frequency of Monitoring & Review Meetings .....	6-77
Table 6.12.7 Inter-Sectoral Coordination Meetings Schedule .....	6-78
Table 6.12.8 Situation Analysis of Information Systems.....	6-79
Table 6.12.9 Implementation Schedule for MIS, WebGIS, Mobile Apps.....	6-81
Table 6.12.10 Proposed Satellite Image for Monitoring – Schedule of Procurement.....	6-82
Table 6.12.11 Proposed List of Key Spatial Data Sets Required for Project Monitoring.....	6-82
Table 6.12.12 Operation Indicators.....	6-87
Table 6.12.13 Effect Indicators .....	6-89

Table 6.12.14 Knowledge Management Activities .....	6-91
Table 6.12.15 Internal Communication Activities .....	6-92
Table 6.12.16 Knowledge Management and Information Dissemination.....	6-92
Table 7.1.1 National Level Legal/ Regulatory Framework for Environmental and Social Considerations .....	7-2
Table 7.1.2 State Level Legal Framework for Environmental and Social Considerations .....	7-5
Table 7.1.3 Labour Laws that maybe Pertinent to OFSDP Phase-II.....	7-7
Table 7.1.4 Stages in Environmental Clearance Procedure as per EIA Notification 2006 .....	7-11
Table 7.2.1 Preliminary Results of Scoping for Environmental and Social Impact Assessment.....	7-19
Table 7.3.1 Scheduled Tribe and Scheduled Caste Population in Odisha.....	7-23
Table 7.3.2 Scheduled Areas in Odisha .....	7-24
Table 7.3.3 Primitive Tribal Groups in Odisha .....	7-25
Table 7.3.4 Techno-Economic Stages of Primitive Tribal Groups in Odisha .....	7-25
Table 7.3.5 Major Habitats of Primitive Tribal Groups in Odisha.....	7-26
Table 7.3.6 ST and SC Population at Forest Divisions of Prioritized Project Area .....	7-26
Table 8.1.2 The Number of Offices to be created in the Project.....	8-3
Table 8.1.1 Comparison of Institutional Arrangements .....	8-3
Table 8.3.1 Indicative Time Bound Action Plan for Institutional Arrangements.....	8-6
Table 8.4.1 Proposed Composition of High Powered Committee for OFSDP-II .....	8-7
Table 8.4.2 Proposed Composition of Governing Body for OFSDS .....	8-8
Table 8.5.1 Proposed PMU Staffing .....	8-12
Table 8.5.2 Responsibilities of Key Staff in Project Management Unit (PMU) of OFSDP-II .....	8-12
Table 8.6.1 DMU Staffing (Proposed – Deputation/ Direct Hire/ Outsourcing) .....	8-15
Table 8.6.2 Responsibilities of Key Staff in Divisional Management Unit (DMU) of OFSDP-II .....	8-16
Table 8.7.1 FMU Staffing (Proposed – Deputation/ Direct Hire/ Outsourcing).....	8-17
Table 8.7.2 Responsibilities of Key Staff in Field Management Unit (FMU).....	8-18
Table 9.1.1 Summary of Proposed Project Implementation Schedule.....	9-2
Table 10.1.1 Operation and Maintenance Framework.....	10-1

### **List of Figures**

Figure 2.2.1 Elephant related Compensation.....	2-7
Figure 2.4.1 Organisation of Forest and Environment Department, Odisha .....	2-8
Figure 2.4.2 Administrative Hierarchy of Forest Administrative Units.....	2-9
Figure 2.4.3 Budgets of Forest& Environment Department, Odisha.....	2-10
Figure 2.4.4 Gender Segregated Data of OFD.....	2-11
Figure 2.4.5 Forest Research Wing, OFD.....	2-16
Figure 2.9.1 PRI in Odisha .....	2-29
Figure 2.9.2 Estimated Incidence of Poverty by Social Group as per Tendulkar Committee Methodology for Rural India .....	2-32
Figure 2.9.3 Incidence of Poverty by Social Group as per Tendulkar Committee Methodology for Rural Odisha (Unit: %) .....	2-33

Figure 2.9.4 Incidence of Poverty by NSS Regions as per Tendulkar Committee Methodology for Rural Odisha 2004-05 and 2011-12 (Unit: %)	2-33
Figure 2.11.1 SHGs in Odisha	2-37
Figure 2.14.1 Multi-hazard Map of Odisha	2-41
Figure 3.2.1 Institutional Arrangement of AJY	3-4
Figure 3.2.2 Institutional Arrangement of CATP	3-5
Figure 3.10.1 Research Studies under OFSDP I - Financial year-wise Expenditure	3-24
Figure 3.10.2 Location Map of the Ghatagaon Range	3-26
Figure 3.10.3 Changes in the Carbon Stock – A Comparison between 2006 and 2015	3-27
Figure 3.10.4 Trend in Carbon stock in A Comparison between 2006 and 2015	3-28
Figure 3.11.1 Publicity and Communication - Financial year-wise Expenditure	3-28
Figure 3.12. 1 Financial Year-wise Expenditure under M&E	3-30
Figure 3.13.1 VSS level Trainings by Project Divisions	3-32
Figure 4.4.1 Proposed Project Areas under OFSDP-II	4-2
Figure 6.1.1. Organisations of Project Components and Flow of the Phases	6-2
Figure 6.2.1. Livelihood-Forest Degradation Nexus	6-3
Figure 6.2.2. Distribution of SC/ ST Population	6-3
Figure 6.3.1. Challenges faced by the Cluster Level Organisations – Lessons Learnt from OFSDP-I and Other Similar Projects	6-5
Figure 6.6.1. Suggested Steps in Identifying VSSs to be Covered under OFSDP-II	6-11
Figure 6.6.2 Flow of Survey and Demarcation Activities	6-12
Figure 6.6.3 Proposed Size and Design of Pillar for Boundary of VSS Assigned Areas	6-12
Figure 6.6.4 Existing LISS-IV Satellite Images Along with Area Coverage Available with OFSDP ..	6-15
Figure 6.6.5 Suggested Steps of Micro Planning in OFSDP-II	6-19
Figure 6.8.1 Conceptual Framework of Satoyama Initiative	6-33
Figure 6.9.1 Roles of Project Implementing Units at Different Levels in Convergence	6-35
Figure 6.9.2 Proactive Facilitation for Convergence	6-35
Figure 6.9.3 Trajectory of SHG/ Cluster Development in OFSDP-II	6-37
Figure 6.9.4 Intensive Blocks in OFSDP-II Project Areas	6-38
Figure 6.9.5 Indicative Structure of Livelihood Support Unit under OFSDP-II	6-43
Figure 6.11.1 Proposed Historical Images to be Procured	6-63
Figure 6.11.2 Proposed community level MRV system	6-64
Figure 6.12.1 Monitoring & Evaluation Framework for OFSDP-II	6-72
Figure 6.12.2 Information Flow and Reporting Arrangement for OFSDP-II	6-76
Figure 6.12.3 Present Manpower of GIS Cell of PMU	6-80
Figure 6.12.4 Proposed Manpower for GIS Cell of PMU	6-81
Figure 6.12.5 Technological Tools, Type of Information and Expected Outputs	6-83
Figure 6.12.6 Project Communication	6-91
Figure 7.1.1 Major Institutions involved in the environment and social considerations	7-9
Figure 7.1.2 Flow for Environmental Clearance Procedure as per EIA Notification 2006	7-12
Figure 7.1.3 Flow diagram depicting Forest Clearance process	7-14



Figure 7.1.4 Flow Diagram for Land Acquisition Process .....	7-16
Figure 7.1.5 Flow diagram for Resettlement and Rehabilitation.....	7-17
Figure 8.1.1 Institutional Arrangements for OFSDP-II .....	8-2
Figure 8.2.1 Budget Request, Fund Flow and submission of SOE/ Utilization Certificates .....	8-5
Figure 8.5.1 Proposed Structure of PMU of OFSDP-II.....	8-11
Figure 8.6.1 Proposed Structure of DMU of OFSDP-II .....	8-15
Figure 8.7.1 Proposed Structure of Field Management Unit (FMU).....	8-17

### **List of Attachment**

Attachment 2.4.1 Budget Allocation for Wildlife and Biodiversity related Activities (2014-15 & 2015-16)	
Attachment 2.4.2 Gender Segregated Data for Forest Position	
Attachment 2.4.3 Implementation of National Afforestation Programme (NAP) in Odisha	
Attachment 2.4.4 CAMPA Fund Utilisation in Odisha	
Attachment 2.4.5 Note on Ama Jangala Yojana (AJY)	
Attachment 2.9.1 Poverty Reduction in Odisha	
Attachment 2.13.1 List of Externally Aided Projects (Annual Plan of Odisha 2016-17)	
Attachment 3.2.1 Catchment Area Treatment Plan (CATP)	
Attachment 3.3.1 Summary of Situation Analysis in Five Proposed Wildlife Divisions	
Attachment 3.4.1 Case Observations and Findings of Infrastructure Development in OFSDP-I	
Attachment 3.4.2 Findings of General Infrastructure Development in OFSDP-I	
Attachment 3.5.1 Farm Forestry in Other JICA Forestry Sector Projects	
Attachment 3.7.1 List of Clusters Organised under OFSDP-I	
Attachment 3.7.2 Field Observations on SHG and SHG Cluster in Keonjhar (OFSDP-I area)	
Attachment 4.4.1 Initial Prioritisation of the Project Divisions	
Attachment 4.8.1 Sub-Component wise DPR Review on Biodiversity	
Attachment 5.1.1 Prioritisation Criteria and Scoring/ Ranking for Priority Territorial Divisions Selection	
Attachment 5.2.1 Division wise Change Analysis	
Attachment 5.3.1 Field Observations: Interaction with VSS in OFSDP-II Area	
Attachment 5.5.1 Findings from the Socio Economic Survey	
Attachment 5.5.2 Field Observations: Women in VSS and SHG in OFSDP-II Area	
Attachment 5.6.1 Number of Intensive Blocks under National Rural Livelihood Mission (NRLM) in Odisha	
Attachment 5.8.1 Status of IT Infrastructure in Division	
Attachment 5.8.2 Status of IT Infrastructure in Ranges	
Attachment 6.3.1 Gender Mainstreaming and Action Plan	
Attachment 6.4.1 Scores for Range Selection Criteria	
Attachment 6.5.1 Indicative Detail Project Work Quantity	
Attachment 6.6.1 Terms of Reference for Partner NGOs	
Attachment 6.6.2 Village Selection Criteria of OFSDS	
Attachment 6.6.3 Terms of Reference of Animator	
Attachment 6.7.1 Description of Potential SMC Works for Drainage Line Treatment	
Attachment 6.7.2 Potential Types, Species for ANR and Block Plantation	
Attachment 6.7.3 Key Principles and Processes of the Farm Forestry Component of OFSDP-II	
Attachment 6.9.1 Potential IGAs for SHGs	

- Attachment 6.9.2 Draft Terms of Reference for LRC Staff
- Attachment 6.9.3 Value Chain Assessment
- Attachment 6.10.1 Draft Terms of Reference for Training Needs Assessment (TNA)
- Attachment 6.10.2 Draft Terms of Reference for Institutional Capacity Impact Assessment
- Attachment 6.12.1 Monitoring and Evaluation Odisha Forest Department
- Attachment 6.12.2 Log Frame Narrative Summary
- Attachment 7.1.1 Applicable International Policies related to Environmental and Social Considerations
- Attachment 7.1.2 Major Institutions Involved in the Environmental and Social Consideration
- Attachment 7.1.3 Projects or Activities Requiring Prior Environmental Clearance
- Attachment 7.1.4 Details of Stages in the Environmental Clearance as per the EIA Notification
- Attachment 7.1.5 Details of Requirements and Systems related to Land Acquisition and Involuntary Resettlement
- Attachment 7.2.1 Draft Environmental Checklist
- Attachment 7.2.2 Draft Environmental and Social Management System (ESMS) Checklist
- Attachment 7.2.3 Environmental and Social Management System Framework (ESMSF)
- Attachment 7.3.1 Scheduled Tribes in Odisha
- Attachment 7.3.2 Scheduled Tribe and Scheduled Caste Population in the Prioritized Project Area
- Attachment 7.3.3 Scheduled Tribe and Forest Dependents Plan Framework
- Attachment 8.1.1 Roles and Responsibilities within Institutional Arrangements
- Attachment 8.2.1 Draft Procurement and Implementation Methods
- Attachment 9.1.1 Draft Detailed Implementation Schedule

**List of Abbreviations**

Abbreviation	Full Name
AAJ	Antyodaya Anna Yojana
ABS	Access Benefit Sharing
ACF	Assistant Conservator of Forests
AGM	Annual General Meetings
AJY	Ama Jangala Yojana
ANR	Assisted natural re-generation
APC	Agricultural Producer Company
APO	Annual Plan of Operation
AR	Assisted/ artificial re-generation
BMC	Biodiversity Management Committees
BRGF	Backward Regions Grant Fund
CAMPA	Compensatory Afforestation Fund Management and Planning Authority
CATP	Catchment Area Treatment Plan
CBO	Community Based Organisation
CBSA	Capacity Building Support Agencies
CCF	Chief Conservator of Forests
CDA	Chilika Development Authority
CFC	Commonwealth Forestry Conference
CFM	Community Forest Management
CFPMP	Community Forest Protection and Management Program
CFR	Community Forest Rights
CIF	Community Investment Fund
CLF	Cluster Level Federation
COP	Conference of the Parties
CP	Construction Phase
CPCB	Central Pollution Control Board
CPT	Conservation Planning Tool
CSO	Clonal Seed Orchards
CSR	Corporate Social Responsibility
DAC	District Advisory Committee
DC	District Collector
DCF	Deputy Conservator of Forest
DF/R	Draft Final Report
DfID	Department for International Development
DFO	Divisional Forest Officer
DIC	District Industries Centres
DLAC	District Level Advisory Committee
DLC	Divisional Level Committee Forest
DLT	Drainage Line Treatment
DMU	Divisional Management Unit
DPF	Demarcated Protected Forest
DPR	Detail Project Report
EA	Executing Agency (sometimes may also refer to “Environmental Assessment”)
EAC	Expert Appraisal Committees
EB	Executing Body
EC	Executing Committee (sometimes may also refer to “Environmental Clearance”)
EDC	Eco Development Committee
EIA	Environmental Impact Assessment

<b>Abbreviation</b>	<b>Full Name</b>
EIRR	Economic Internal Rate of Return
EoP	End of the Project
EPA	Entry Point Activity
ESC	Environmental and Social Considerations
ESMS	Environmental and Social Management System
ESMSF	Environmental and Social Management System Framework
F/R	Final Report
FAO	Food and Agriculture Organisation
FDA	Forest Development Agency
FIG	Farmers Interest Group
FMU	Field Management Unit
FPC	Forest Protection Committee
FPIC	Framework for Free, Prior, Informed Consent
FPO	Farmers Producer Organisation
FRA	Forest Rights Act
FREL	Forest Reference Emission Level
FRL	Forest Reference Level
FSI	Forest Survey of India
FY	Financial Year
GB	Governing Board/Body
GEF	Global Environment Facility
GIM	Green India Mission
GIS	Geographic Information System
GoI	Government of India
GoO	Government of Odisha
GP	Gram Panchayat
GPLF	Gram Panchayat Level Federation
GPS	Global Positioning System
GSDP	Gross State Domestic Product
HH	Households
HOFF	Head of Forest Force
HPC	High Power Committee
IA	Implementing Agency
IC/R	Inception Report
ICZMP	Integrated Coastal Zone Management Project
IEC	Information, Education and Communication
IFAD	International Fund for Agricultural Development
IGA	Income Generation Activity
IMR	Infant Mortality Rate
INDC	Intended Nationally Determined Contribution
IPPF	Indigenous Peoples Plan/Planning Framework
IPSI	International Partnership for the Satoyama Initiative
ISFR	India State of Forest Report
IT	Information Technology
IT/ R	Interim Report
ITK	Indigenous Technology & Knowledge
IWMP	Integrated Watershed Management Programme
JFM	Joint Forest Management
JFMC	Joint Forest Management Committee
JICA	Japan International Cooperation Agency



<b>Abbreviation</b>	<b>Full Name</b>
KBK	Kalahandi, Balangir, and Koraput
KVIC	Khadi and Village Industries Commission
LBCD	Loose Boulder Check Dam
LPG	Liquified Petroleum Gas
LRC	Livelihood Resource Centre
M&E	Monitoring and Evaluation
MDG	Millennium Development Goals
MFP	Minor Forest Produce
MGNREGA	Mahatma Gandhi National Rural Employment Generation Act
MIDH	Mission for Integrated Development of Horticulture
MIS	Management Information System
MKSP	Mahila Kisan Sashaktikaran Pariyojana (A NRLM scheme to improve women's status in agriculture.
MM	Man Month
MMR	Maternal Mortality Rate
MOA	Memorandum of Association
MOD	Minutes of Discussion
MOEF	Ministry of Environment and Forests
MoEF&CC	Ministry of Environment, Forests and Climate Change
MoRD	Ministry of Rural Development
MoTA	Ministry of Tribal Affairs
MOU	Memorandum of Understanding
MRV	Monitoring, Reporting, Verification
MSP	Minimum Support Price
MT	Metric Tons
NABARD	National Bank For Agriculture and Rural Development
NADP	National Agriculture Development Programme
NAEB	National Afforestation and Eco- Development Board
NAP	National Afforestation Programme
NAPCC	National Action Plan on Climate Change
NDDP	Net District Domestic Product
NDVI	Normalized Difference Vegetation Index
NFSA	National Food security Act
NFSM	National Food Security Mission
NGO	Non-Governmental Organisation
NGT	National Green Tribunal
NIC	National Informatics Centre
NMSA	National Mission on Sustainable Agriculture
NRLM	National Rural Livelihood Mission
NRLP	National Rural livelihoods Project
NRM	National Resource Management
NSSO	National Sample Survey Organisation
NTCA	National Tiger Conservation Authority
NTFP	Non Timber Forest Produces
OBC	Other Backward Case(s)
OBDA	Odisha Biodiversity Authority
ODA	Official Development Assistance
OFD	Odisha Forest and Environment Department
OFDC	Odisha Forest Development Corporation
OFSDP	Odisha Forestry Sector Development Project

<b>Abbreviation</b>	<b>Full Name</b>
OFSDP-I	Odisha Forestry Sector Development Project Phase I
OFSDP-II	Odisha Forestry Sector Development Project Phase II
OFSDS	Odisha Forestry Sector Development Society
OHPC	Odisha Hydro Power Corporation
OISCA	The Organization for Industrial, Spiritual and Cultural Advancement-International (An NGO based in Japan)
OLM	Odisha Livelihood Mission
OP	Operational Policy
OPELIP	Odisha Particularly Vulnerable Tribal Groups Empowerment and Livelihoods Improvement Programme
ORMAS	Odisha Rural marketing Society
ORSAC	Odisha Space Applications Centre
OSDMA	Odisha State Disaster Management Authority
OSMEFWC	Online Submission & Monitoring of Environmental, Forests and Wildlife Clearance
OSPCB	Odisha State Pollution Control Board
OTELP	Odisha Tribal Empowerment and Livelihoods Programme
OWDA	Odisha Wetland Development Authority
OWDM	Odisha Watershed Development Mission
PA	Protected Area
PBR	People's Biodiversity Register
PCCF	Principal Chief Conservator of Forests
PD	Project Director
PDD	Project Description Document
PESA	The Provisions of the Panchayat (Extension to Scheduled Areas) Act
PMC	Project Management Consultants
PMEGP	Prime Minister's Employment Generation Programme
PMU	Project Management Unit
PNGO	Partner Non-Governmental Organisation
POPI	Producer Organizations Promoting Institutions
PPA	Primary Procuring Agency
PPCP	Public Private Community Partnership
PPP	Public Private Partnership
Pre-CP	Pre-Construction Phase
PRF	Protected Reserve Forest
PRI	Panchayat Raj Institute
PS	Panchayat Samiti
PS	Panchayat Samiti
PVTG	Particularly Vulnerable Tribal Groups
QA/QC	Quality Assurance and Quality Control
QPM	Quality Planting Materials
RCCF	Regional Chief Conservator of Forests
REDD	Reducing Emission from Deforestation and Forest Degradation
REDD+	REDD Plus (including conservation of forest carbon stocks, sustainable management of forests, and enhancement of forest carbon stocks to REDD).
REL	Reference Emission Levels
RF	Reserved Forest
RKVY	Rastriya Krishi Vikash Yojana
RL	Reference Level
RLTAP	Revised Long Term Action Plan

Abbreviation	Full Name
RO	Range Officer (in some cases may also refer about “Regional Office”)
RPRC	Regional Plant Resource Centre
Rs.	Indian National Rupees
RSETI	Rural Self Employment Training Institutes
RTI	Right to Information
SAA	State Appellate Authorities
SC	Scheduled Caste
SDM	Sub-Divisional Magistrate
SEAC	State Expert Appraisal Committee
SEIAA	State Environment Impact Assessment Authority
SEPLS	Socio-Ecological Production Landscapes and Seascapes
SFDA	State Forest Development Agency
SFDA	State Forest Development Agency
SFM	Sustainable Forest Management
SHG	Self Help Group
SIA	Social Impact Assessment
SIDA	Swedish International Development Cooperation Agency
SMC	Soil and Moisture Conservation
SMPB	State Medicinal Plants Board
SPA	State Procurement Agency
SPCB	State Pollution Control Board
SSP	Site Specific
ST	Scheduled Tribe
STFDP	Scheduled Tribes and Forest Dependents Plan
STFDPF	Scheduled Tribes and Forest Dependents Plan Framework
SWOT	Strengths, Weaknesses, Opportunities, Threats
TAT	Turn Around Time
TBO	Tree Borne Oilseed
TCPL	Tree Cultivation in Private Land
TDCC	Tribal Development Cooperative Corporation of Odisha Ltd.
TNA	Training Needs Assessment
TOR	Terms of Reference
TPDS	Targeted Public Distribution System
TRIFED	Tribal Cooperative Marketing Development Federation
UDPF	Un-demarcated Protected Forest
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
USD	United States Dollar
VAT	Value Added Tax
VDF	Village Forest Development Fund
VFPC	Village Forest Protection Committee
VSS	Vana Surakshya Samities (Forest Protection Committees)
WB	World Bank
WB OP	World Bank Operational Policies and Procedures
WFP	World Food Programme
WSHG	Women Self Help Group
ZP	Zilla Parishad

**Measurement Units**

<b>Extent:</b>	<b>Weight:</b>
1 km <sup>2</sup> = 100 ha	1 Quintal / qtl. = 100 kg
1 acres = 0.40468ha	

<b>Number:</b>	<b>Currency:</b>
Lakh = 100,000	Rs. =INR = Indian Rupees (INR)
Crore = 10,000,000	JPY = Japanese Yen
	USD = \$ = United State Dollars



## EXECUTIVE SUMMARY

### 1. Introduction

The state of Odisha is located in the eastern India with the population of 41,974,000 including scheduled tribes (ST/ 22.8%) and scheduled castes (SC/ 17.1 %)/ It is endowed with rich natural resources. The forest areas in the state are mostly found in the Eastern Ghats, central plateau, northern hill regions and account for 32.3 % of the total geographical area of the state, where most of the tribal habitation is seen. Forests of the state are under constant threat because of increased biotic pressure, mining and other development activities. Incidences of man-animal conflict are on the rise.

Odisha Forest Department/ Odisha Forestry Sector Development Society (OFD/ OFSDS) implemented Odisha Forestry Sector Development Project (OFSDP-I) between 2009 and 2015. Based on the lessons learned from OFSDP-I, its phase 2 project (Odisha Forestry Sector Development Project –II/ OFSP-II) was proposed by OFD. The supplemental survey team for reviewing the OFSDP-II Detailed Project Report (DPR) was dispatched by the Japan International Cooperation Agency (JICA) with the following objectives.

- 1) To undertake a survey to supplement information on project cost, contents, implementation framework etc. presented in DPR to fulfil the eligibility of a Japanese Yen Loan Project
- 2) To deliberate on the improvements based on issues emerged from the on-going/ completed Loan Projects
- 3) To provide appropriate and timely assistance for the formulation of a Japanese Yen Loan Project

The Survey Team commenced its field Survey work on 28 August 2016 and completed it on 17 December 2016. The background of the OFSDP-II, rationale, project design, institutional arrangement and cost are given in this report. The Survey work was undertaken in close coordination with Odisha Forestry Sector Development Society (OFSDS).

### 2. Review of DPR

The Survey team reviewed the data and relevant information to understand the basis for DPR. The availability of such data was limited. OFSDS and the Survey team jointly reviewed the log frame and revised the project goal, objectives and outputs. Now the project objective is “to enhance sustainable forest and biodiversity management practices and livelihood improvement in the project areas”. This exercise has helped to streamline the project activities. The standalone farm forestry component has been dropped but its components will implemented along with other activities. The biodiversity component was also reviewed with reference to the project objective. Since the project activities were not finalised at the time of log frame review, indicators are tentatively set by OFSDS, which needs to be finalised in the latter half of the Survey period. The narrative summary of the revised log frame is given in **Attachment 6.12.2**.

### 3. Lessons Learned from OFSDP-I and Issues

Lessons learned from OFSDP-I are many. Some of the areas that incorporated such lessons include micro planning and cluster enterprise promotion. As for the micro planning, OFSDP-II will evolve the forest management focused plan to the comprehensive sustainable forest management and community development plan. For efficient implementation of the plan, annual plan and annual convergence plan will be given more emphasis. To facilitate the convergence, the linkage with the PRI and line departments will be strengthened by soliciting their participation during the micro planning process and placing a coordinator at the range level Field Management Unit (FMU). The roles of each implementing unit are defined so that they effectively approach the different levels of the stakeholders.

Women's working group will also be constituted to enhance the opportunity for women to voice their perspectives during the micro planning process.

Another important lesson drawn from OFSDP-I was the need for a strategic planning for the cluster business promotion. The plan must visualise how ordinary SHGs can build a profit earning entity. The lessons also suggest that this entire process requires time and specialised support. Thus it is proposed for OFSDP-II to have a state level strategic plan based on the fully fledged value chain/ market survey including SHG capacity building and bridging strategy, and to establish an exclusive livelihood support unit under PMU as Livelihood Resource Centre (LRC) to provide business related support, which would eventually be visualised to become an profit earning entity and thus, continue to provide support for cluster enterprises and SHGs.

## 4. Project Needs

### 4.1 Need to Enhance Forest Quality

Forests in Odisha state are under constant threat because of increased biotic pressure, mining and other development activities. Incidences of man-animal conflict are on the rise due to the disruption in the habitat of the wildlife caused by the developmental activities and other human interferences. Unsustainable usage of forest resource by the forest dependent communities is also seen as one of the main drivers of forest degradation in Odisha. As the number of households depending on the fuelwoods and use of the forests for grazing are very high, the forests in Odisha are under constant threats induced by various causes.

The forest statistics indicate the increasing trend in the Open Forest Areas (less than 10% canopy density) which accounts for 43.4% of the total forest areas of 50,354 sq. km. This could be interpreted as an indication of the degradation as well as the need for improvement of the forest quality. The key is how we improve the quality of open forest areas and bring them under the moderately dense and dense forest. Also from the carbon sequestration point of view, this would contribute to achieving the INDC submitted to UNFCCC which indicated that the 2.5 to 3 billion tons of carbon sinks to be created through enhancing the forest and tree cover.

### 4.2 High Dependency on the Forest Resources

In Odisha, fuel wood still remains a major source of household energy in the rural area. 71.1% of the rural households use fuelwood and only 3.1% of the households have access to LPG (Census of India 2011). This is seen one of the drivers of forest degradation in Odisha. Many of the forest fringe villages also derive income from NTFPs. For instance, in districts like Mayurbanj, Sundergarh, Keonjhar, Boudh, Phulbani, and Gajapati in Odisha, a tribal family could earn 50% of its annual income from forests by collecting NTFPs between April and September<sup>1</sup>. Kendu leaves, one of the main NTFPs in Odisha, are mostly collected by women and provides substantial income for them<sup>2</sup>.



Source: JICA Survey Team (2016)

Figure S-1: Livelihood-Forest Degradation Nexus

<sup>1</sup> Saxena, N.C. (2002). Livelihood Diversification and Non-Timber Forest Products in Orissa: Wider Lessons on the scope for policy Change. ODI working Paper 223.

<sup>2</sup> ibid

These households dependent on the forest resources are largely SC/ ST communities. Wide gaps in socio economic indicators between the SC/ ST communities and other communities are seen. Although significant improvements were made in the poverty incidences in the state level poverty incidences from 2004-05 to 2011-12, the poverty among the SC/ ST communities persists. The incidences of poverty are the highest among the ST communities (63.53%) followed by SC communities (41.4%) in 2011/12<sup>3</sup>. These figures are significantly higher than those of India indicating 45.3% for ST communities and 31.5% for SC communities<sup>4</sup>.

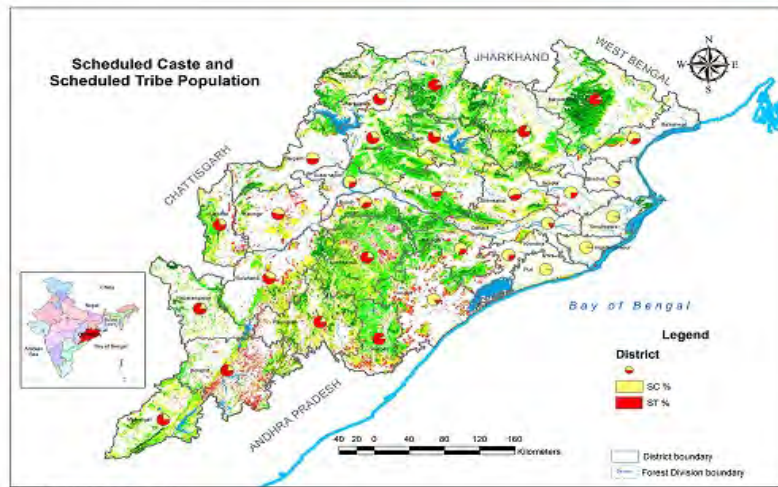


Figure S-2: Distribution of SC/ ST Population

In the OFSDP-II project areas, high concentration of ST population is seen in the northern part of the project areas and the same for SC population constitutes a central corridor across western and eastern Odisha where the forest cover is high. Thus, most of the OFSDP-II beneficiaries are likely to belong to ST/SC communities, whose economic status is poor. This is partly due to the limited livelihood options and increases their dependency on the forest resources which are common property resources and mostly available free of cost and nearby their homes. This leads to the vicious cycle of overharvesting and degradation of the forest resources. As a consequence, vulnerability of the forest dependent households is aggravated. In this context, livelihood interventions envisaged in OFSDP-II are highly relevant, which provide opportunities for such forest dependent communities to gain access to alternative livelihood options and help them manage the forest resources in a sustainable manner.

#### 4.3 Relevance of OFSDP-II to Japanese Policies toward Official Development Assistance and Opportunities for Collaboration with Local Government/ Community in Japan

Japanese ODA policies also provide a rationale for OFSDP-II. As the project aims at sustainable forest management while promoting women empowerment and ultimately to climate change mitigation and adaptation, they are very much in consistent with the Japanese ODA policies.

➤ Japanese Priorities in Official Development Assistance (ODA) (FY 2016-17)

The underlying principles of the Japanese Official Development Assistance (ODA) are to contribute to the peace, stability and sustainable development of the global society. In its ODA strategy, “disaster relief and capacity development towards disaster preparedness”, “gender” and “climate change” are the important areas. Partnership with international and regional institutions, private sector and NGOs is encouraged in implementing ODA.

➤ MOU between the Ministry of Agriculture, Forestry and Fisheries of Japan and MoEF&CC, India (December 2015)

In December 2015, the Forest Agency of Japan and the Director of Forest Department of MoEF&CC exchanged an MOU towards enhanced collaboration between India and Japan in forestry sector for the duration of 5 years. In this MOU, both countries agreed to strengthen the collaboration in the following areas in the forestry and related sectors.

- 1) Human resource development and collaboration between the training institutions

<sup>3</sup> Annual Plan 2015-16, Government of Odisha.

<sup>4</sup> Panagariya, Arvind. (2013). Poverty by Social, Religious & Economic Groups in India and Its Largest States 1993-94 to 2011-12. Columbia University. Institute for Social and Economic Research and Policy. Working Paper No. 2013-02.

- 2) Sustainable forest management
- 3) Forest conservation and disaster prevention in the hilly areas
- 4) Effective utilisation of forest resources
- 5) Sharing of knowledge and technology concerning forestry and forest policy
- 6) Research and Development in forestry sector.

In the MOU, both countries agreed to establish a working group to prepare a roadmap to concretise the interventions related to above listed areas.

➤ Other relevant areas for potential collaboration between OFSDP-II and Japan

Two approaches to sustainable forest management and livelihood improvement originate in Japan would provide useful lessons for the project design and implementation. One is SATOYAMA Initiative and Rural Livelihood Improvement as known as “Seikatsu Kaizen. In these aspects, OFSDP-II would benefit through collaboration with Japanese Local Government/ Civil Society Organisations and Research Institute, which can be effectively facilitated through JICA.

## 5. Project Objective

The objective of the OFSDP-II is “to enhance sustainable forestry management, biodiversity conservation, and livelihood improvement of local people in the project area”. Ultimately, OFSDP-II aims at contributing to the improvement of forest ecosystem in Odisha.

## 6. Approaches

Based on the lessons learned from OFSDP-I and for the enhanced sustainability of the project impacts, following core approaches are adopted in OFSDP-II.

### 1) Micro Plan as a Community Development Plan

One of the lessons learnt from OFSDP-I was that, in order to achieve sustainable forest management in JFM mode, it is important that the Micro Plan is holistic and addresses wider needs of the forest dependent communities. Therefore, OFSDP-II will adopt an approach to develop the Micro Plan at the VSS level as a platform for optimizing community development activities in addition to the sustainable management of forest. Furthermore, in order to make the Micro Plan a need-based community development plan and ensure optimum convergence with other government schemes and programs, coordination mechanism would be streamlined from State, District, Block, Gram Panchayat to the village level.

### 2) Enhanced Support for Cluster Business Development and Developing Partnership Ecosystem

OFSDP-I succeeded in the livelihood improvement among the Women SHGs (WSHG) and managed to promote cluster based business activities. However, the lessons were learnt including: 1) necessity to aggregate the small scale livelihood activities at a cluster level to improve access to market through aggregation of products; 2) necessity of long term hand holding; 3) further improvement in quality of products and accommodate the market demands; and 4) limited access to financial institutions for working capital. In the post project period, OFSDS has been



Source: JICA Survey Team (2016)

**Figure S-3 Challenges faced by the Cluster Level Organisations – Lessons Learnt from OFSDP-I and Other Similar Projects**



attempting to develop an ecosystem that can lead to private-community partnership in cluster business development that is market driven and sustainable.

In OFSDP-II, cluster based business promotion will also be planned and promoted from the early stage of the project and establishes an exclusive unit, Livelihood Resource Centre (LRC) will be established under PMU to provide specialised business promotion support for business planning, marketing, product development and facilitating linkages with financial institutions and other resource organisations. The partnership ecosystem will further be nurtured by LRC in the OFSDP-II areas to create an enabling environment for the cluster organisations in OFSDP-II to sustain themselves.

### **3) Creating Models for Community-Based Measurement, Reporting, Verification (CMRV) System for Sustainable Forest Management for Odisha and Beyond**

OFSDP-II will also adopt REDD+ framework for enhanced monitoring of the project outcomes. The MRV system will enable the project to monitor the changes in the carbon stock in the assigned areas of VSSs and also EDC areas where the biodiversity management interventions are planned. Such an attempt has not been made in many sites under the JICA assisted forestry sector projects so far. The attempts made by OFSDP-II will contribute to create a model for enhanced monitoring mechanism to assess the effectiveness of JFM interventions that can be adopted in other JICA assisted forestry sector projects and beyond.

Initially, OFSDP-II will select three pilot sites to establish the methodology for community based MRV and consolidate the data at PMU level, based on which the MRV system will gradually be rolled out to the rest of the project area. OFSDP-II can also function as a knowledge hub of REDD+ for the JICA assisted forestry sector project. Once OFD establishes a state level carbon monitoring system, the data collection system and data will be integrated.

### **4) Gender Mainstreaming**

The National Forest Policy 1988 has brought a paradigm shift to the forest management in India by mandating Joint Forest Management and recognizing the role of women's participation for sustainable forest management. The large number of the collectors of fuelwoods, fodder, and NTFPs are women and it continues to be so. As the forest resources get degraded, they spend more time to look for what they require for their family. In these days, they also need to take part in the economic activities to meet the household expenses while their domestic chore remains the same. Many households in Odisha still depend on fuelwoods and thus, the availability of the fuelwood especially affects their work load.

OFSDP-II, therefore, develops a gender mainstreaming strategy and action plan at the beginning of the project implementation and monitor the progress on a regular basis which enable the project not only to empower women in the project areas but also to safeguard their entitlement to their own well-being. Further, the project also ensures an opportunity for the communities to understand the role of women in forest management in the context of every-day-life and help them come up with the solution through micro planning process while offering livelihood options and improving forest resource base through forestry interventions. One way is to organize women's working group during the micro planning to ensure the opportunity for them to discuss and plan interventions reflecting their own needs. This will be reflected as a gender action plan of each VSS/ EDC and budget will also be prepared separately.

OFSDP-II also integrates the gender training as part of the training programmes for the project staff of all levels, partner NGO staff and VSS/ EDC/ SHG members. The project also places a nodal officer of gender mainstreaming at PMU and DMU levels and adopts monitoring indicators that capture gender dimensions. An indicative Gender Mainstreaming Strategy and Action plan is given in **Attachment 6.3.1**. The status of the gender monitoring indicators will be assessed by the gender nodal officer at PMU on a quarterly basis.

## 7. Project Area

Out of the divisions proposed in DPR, prioritisation exercise was undertaken by adopting the following criteria.

**Table S-1: Prioritisation Criteria for Divisions and Ranges**

Division	Range
<p><b>【Exclusion Criteria】</b></p> <ol style="list-style-type: none"> <li>Divisions for OFSDP-I to be excluded</li> <li>Divisions with "High" and "Medium" security levels* to be excluded (only the Divisions with low and no security Range&gt;50% will be included)</li> <li>Concerns during implementation (physical contiguity and conflict) to be excluded</li> </ol>	<p><b>【Exclusion Criteria】</b></p> <ol style="list-style-type: none"> <li>Ranges coming under the High or Medium Security Risks</li> </ol> <p>Geographical Contiguity – only one range available for interventions has been excluded.</p>
<p><b>【Prioritisation Criteria】</b></p> <ol style="list-style-type: none"> <li>% of Degraded Forest in the Division</li> <li>Changes in the Density of the Forest</li> <li>Status of Soil Erosion</li> <li>Number of VSS</li> <li>Concentration of SC/ST Population</li> </ol>	<p><b>【Prioritisation Criteria】</b></p> <ol style="list-style-type: none"> <li>% of Degraded Forest in the Range</li> <li>Number of VSS</li> <li>Concentration of SC/ST Population</li> <li>% of female population who is literate (Higher the literacy/ lower the score)</li> </ol>

Source: JICA Survey Team (2016)

After the prioritisation based on the above division criteria, 12 territorial divisions and 2 wildlife divisions indicated in the table below have been identified for the project interventions.

**Table S-2: Priority Divisions and Number of Ranges for OFSDP-II**

No.	Division	No of Ranges	No of Potential OFSDP-II Ranges	Total No of VSSs in the potential OFSDP-II Ranges
T-1	Athamalik	5	3	99
T-2	Baripada	8	8	349
T-3	Boudh	5	3	103
T-4	Dhenkanal	8	8	320
T-5	Ghumsur North	5	4	179
T-6	Ghumsur South	5	3	102
T-7	Jharsuguda	5	5	137
T-8	Karanjia	6	6	193
T-9	Rairangpur	5	5	154
T-10	Sambalpur	5	5	216
T-11	Subarnapur	3	3	183
T-12	Sundargarh	6	6	331
W-1	Bamwar WL	-	1	26 (EDCs)
W-2	Rajnagar WL	-	-	
<b>Total of Territorial Divisions</b>		66	60	2,366+26

Source: JICA Survey Team (2016)

## 8. Proposed Interventions

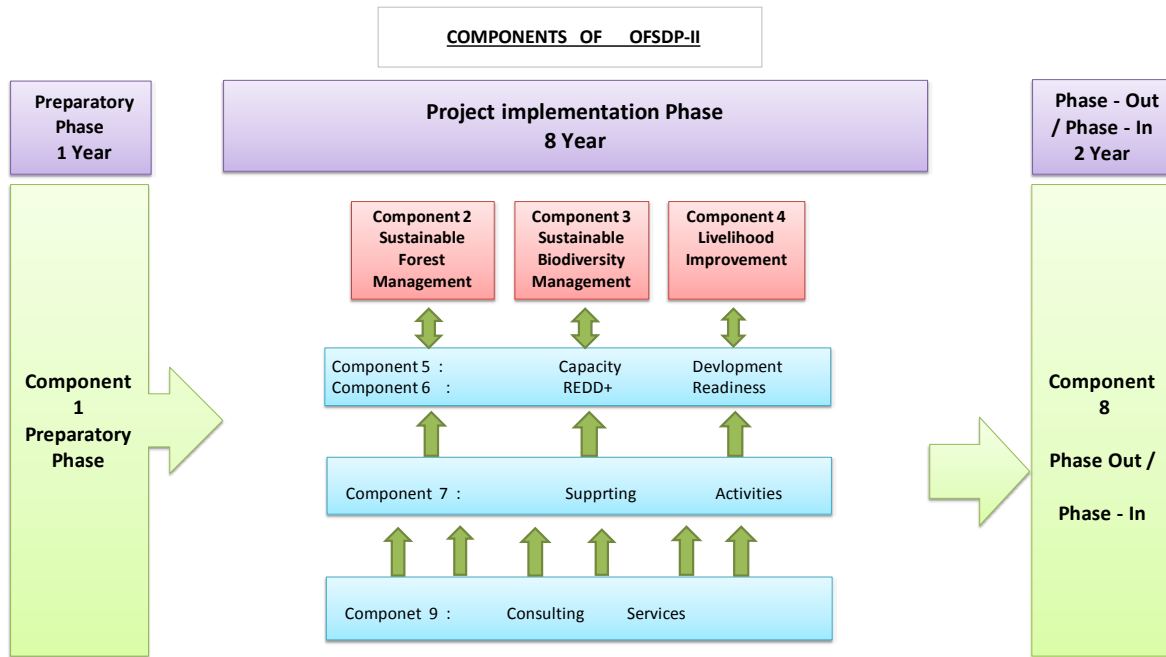
The components of proposed interventions are given at table and figure below.

**Table S-3: Outline of OFSDP-II**

Outline
Project Goal: The forest ecosystem in Odisha is improved.
Project Objective: To enhance sustainable forest and biodiversity management practices and livelihood improvement in the project areas.
Project Outputs <ul style="list-style-type: none"> <li>- To improve the forest in degraded forest areas</li> <li>- To enhance livelihoods to the forest fringe dwellers</li> <li>- To improve governance in sustainable forest management</li> <li>- To enhance the capacity of other stakeholders</li> <li>- To enhance biodiversity in the project areas</li> </ul>
Duration of the Project: 10 Years (2017 – 2027)

<b>Outline</b>	
Total No of Divisions: 14 (including 2 Wildlife Divisions) Total No of Ranges: 50 No of VSSs to be covered: 1,200/ EDC: 25 JFM Mode Treatment Area: 60,000 ha Farm Forestry: 10,000 ha No of SHGs to be covered: 3,600 SHGs 3 REDD+ pilot divisions	
<b>Component/ Sub-Component</b>	
<b>1. Preparatory Works</b>	
1.1 Constitution of PMU, DMU, FMU and deployment of Staff 1.2 Deployment of NGOs for Community Development and SFM 1.3 Procurement of PMC (Component 9) 1.4 Orientation for PMU/ DMU/ FMU) 1.5 Identification of VSSs 1.6 Survey and Demarcation	1.7 Review and Revision of Project Manuals/ Training materials 1.8 Engagement of VSS Animators 1.9 Micro Planning 1.10 Revisiting Micro Plan (4 <sup>th</sup> year) 1.11 Annual Planning 1.12 Social and Environmental Consideration
<b>2. Sustainable Forest Management</b>	
2.1 JFM Mode 2.1.1 Site Specific Plan (SSP) & Monitoring 2.1.2 Drainage Line Treatment (Ex-situ SMC Work) 2.1.3 ANR 2.1.4 Block Plantation 2.1.5 Fire Protection 2.2 Non JFM Mode 2.2.1 Consolidation and Demarcation of Forest Boundaries	2.2.2 Construction/ Improvement of Permanent Nurseries 2.2.3 Non-JFM Drainage Line Treatment (DLT) (Ex-situ SMC Work) 2.3 Farm Forestry 2.3.1 Promotion of Mixed Model 2.3.2 Scientific Management of Bamboo involving VSSs
<b>3. Sustainable Biodiversity Management</b>	
3.1 Sustainable Biodiversity Management Incorporating Concept of SATOYAMA Model 3.2 Establishment of Scientific Monitoring System at Bhitarkanika	
<b>4. Livelihood Improvement</b>	
4.1 Community Development Fund 4.2 Promotion of IGAs 4.3 NTFP Based Livelihood Interventions	4.4 Livelihood Resource Centre 4.5 Annual Partner NGOs Review Meeting
<b>5. Capacity Development</b>	
5.1 Executing Agency 5.2 Community Institutions 5.3 Training of Partner NGOs 5.4 Training of Animators	5.5 Promotion of Product Cluster at DMU Level 5.6 Quality Enhancement of Kendu Leaf 5.7 Training & Extension of Farm Forestry 5.8 Capacity Development – REDD+ Readiness
<b>6. Research: REDD+ Readiness</b>	
<b>7. Supporting Activities</b>	
7.1 Institutional and Project Management Support 7.2 Monitoring & Evaluation 7.3 Communication/ Publicity	
<b>8. Phase-Out/ Phase-In</b>	
<b>9. Consulting Services</b>	

Source: JICA Survey Team (2016)



Source: JICA Survey Team (2016)

Figure S-4 Organisations of Project Components and Flow of the Phases

## 9. Environmental and Social Consideration

The Environment and Social Management System Framework (ESMSF/ **Attachment 7.2.3**) and the Scheduled Tribe and Forest Dependents Plan Framework (STFDPF/ **Attachment 7.3.3**) have been prepared and drafted during the Survey as safeguards documents for the OFSDP-II.

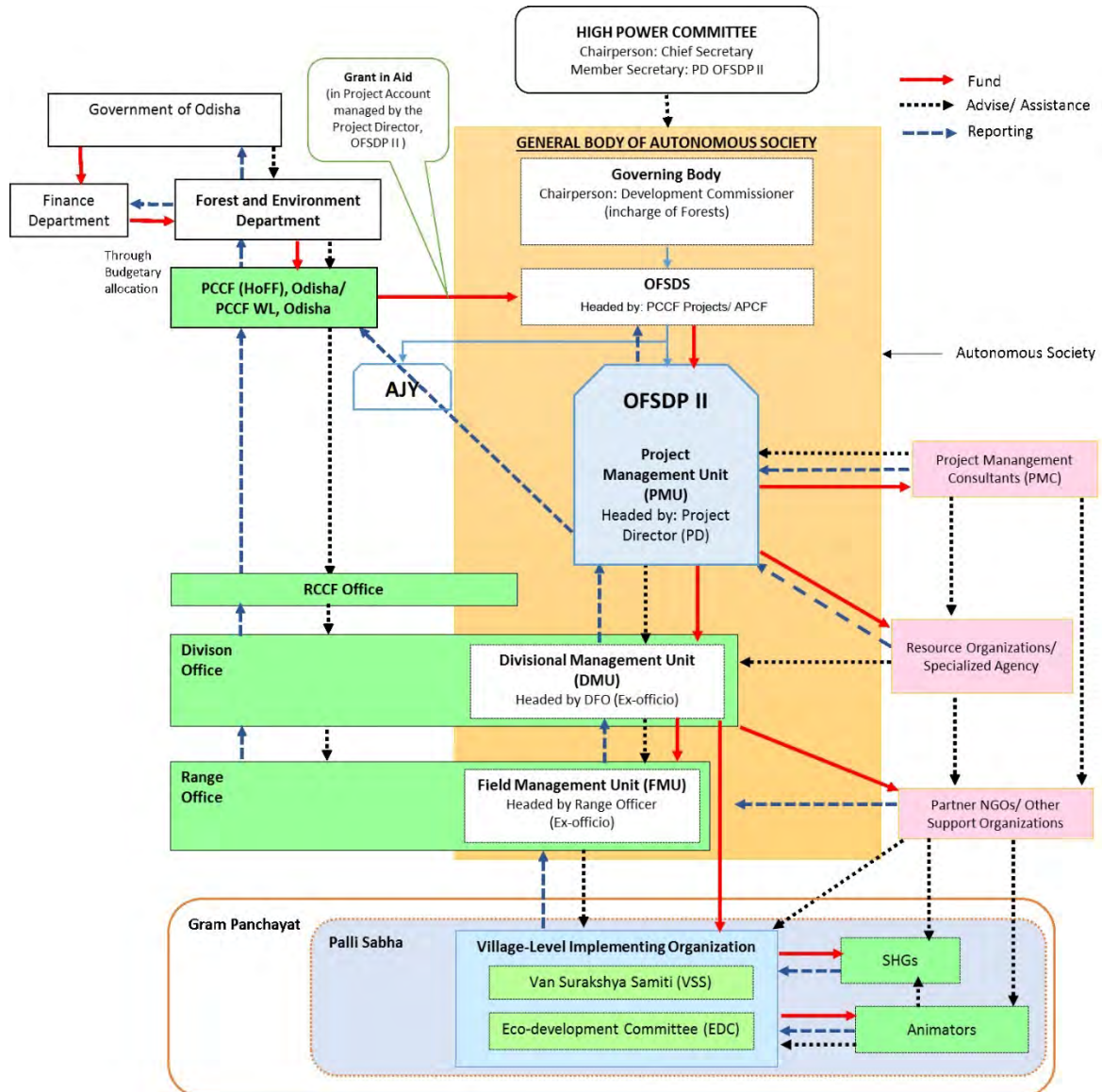
## 10. Proposed Institutional Framework

The existing OFSDS, established for the implementation of OFSDP-I, will become the implementing agency. It is currently implementing two state funded projects: namely Catchment Treatment Plan and Ama Jangala Yojana. Thus, the project management unit (PMU) for OFSDP-II is proposed to be established under OFSDS along with two other project implementation units. It is also proposed to establish a livelihood support unit to provide the business support services and guidance for SHG based activities at the state level. GIS/ MIS would also have a cell at the state level.

Divisional Management Unit (DMU) will be established at each Division and supported by two subject matter specialists (livelihood/ rural finance & marketing, and M&E-GIS/ MIS/REDD+). Field Management Unit (FMU) will be established at a range level and supported by two coordinators who will be in charge of micro planning/ livelihood support and training and process documentation.

As for the micro planning, SHG related activities, cluster level enterprise development activities, Partner NGOs and specialised agencies are proposed to be engaged. Their TOR, procurement method and selection criteria have been drafted by the Survey.

A team of project management consultants (PMC) will be deployed to assist PMU in managing the project and extend required technical guidance. The team composition and TOR of PMC have been drafted during the Survey. The overall institutional framework for OFSDP-II is described in the figure below.



Source: JICA Survey Team (2016)

Figure S-5 Institutional Arrangements for OFSDP-II

### 11. Proposed Implementation Schedule

A summary of the proposed project implementation schedule is presented below. VSS/ SHG based activities will be implemented into four batches.

**Table S-4: Summary of Proposed Project Implementation Schedule**

Items	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Yr 11	Yr 12
	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27		
L/A Period													
Project Period													
Project Implementation Period													
Appraisal													
Pledge													
Signing of L/A													
Pre-Qualification of Consulting Services													
Consulting Services													
<b>Component 1: Preparatory Works</b>													
1.1 Constitution of PMU, DMU, FMU and deployment of Staff													
1.2 Deployment of NGOs for Community Development and SFM													
1.3 Procurement of PMC													
1.4 Orientation for PMU/ DMU/ FMU by PMU													
1.5 Identification of VSSs (By PMU/ DMU/ FMU)													
1.6 Survey and Demarcation													
1.7 Review and Revision of Project Manuals/ Training materials													
1.8 Engagement of VSS/ EDC Animators													
1.9 Micro Planning													
1.10 Revisiting Micro Planning (after 4th year)													
1.11 Annual Planning													
1.12 Social and Environmental Consideration													
<b>Component 2: Sustainable Forest Management</b>													
2.1 JFM-Mode													
2.2 Non JFM Mode													
2.3 Farm Forestry													
<b>Component 3: Sustainable Biodiversity Management</b>													
3.1 Sustainable Biodiversity Management incorporating concept of SATOYAMA model													
3.2 Establishment of Scientific Monitoring System at Bhitarkanika													
<b>Component 4: Livelihood Improvement</b>													
4.1 Community Development Fund													
4.2 Promotion of IGAs													
4.3 NTFP Based Livelihood Interventions													
4.4 Livelihood Resource Centre (LRC)													
4.5 Annual Partner NGOs Review Meeting													
<b>Component 5: Capacity Development</b>													
5.1 Executing Agency													
5.2 Community Institutions													
5.3 Training of Partner NGOs													
5.4 Training of Animators													
5.5 Promotion of Product Cluster at DMU Level													
5.6 Quality enhancement of Kendu Leaf													
5.7 Training & Extension of Farm Forestry													
5.8 Capacity Development - REDD+ Readiness													
<b>Component 6: REDD+ Readiness</b>													
6.1 REDD+ Readiness													
<b>Component 7: Supporting Activities</b>													
7.1 Institutional and Project Management Support													
7.2 Monitoring & Evaluation (M&E)													
7.3 Communication/ Publicity													
<b>Component 8: Phase-Out/ Phase-In</b>													
8.1 Preparation of Phase-Out/ Phase-In													

Source: JICA Survey Team (2016)

## **12. Operation and Maintenance**

During the Survey, the operation and maintenance framework for the Project was drafted for the following items.

- VSS Assigned Area
- Community Development Fund
- SHG Revolving Fund
- LRC Corpus Fund including IGA and Cluster Infrastructure Development Fund
- GIS and GIS Cell
- MIS
- Cluster CFCs
- Infrastructures created using IGA Infrastructure Development Fund
- Infrastructures created using Community Development Fund
- LRC
- Office Buildings and Assets (PMU/ DMU/ FMU)
- OFSDP-II PMU



## **Chapter 1. INTRODUCTION**

The state of Odisha is located in the eastern India with the population of 41,974,000 including scheduled tribes (ST/ 22.8%) and scheduled castes (SC/ 17.1 %). It is endowed with rich natural resources. The forest areas in the state are mostly found in the Eastern Ghats, central plateau, northern hill regions and account for 32.3 % of the total geographical area of the state, where most of the tribal habitation is seen. Forests of the state are under constant threat because of increased biotic pressure, mining and other development activities. Incidences of man-animal conflict are on the rise.

The Odisha Forest and Environment Department (OFD) implemented Odisha Forestry Sector Development Project (OFSDP-I) during 2006 – 2014 using the Japanese Yen Loan for restoration of degraded forests through Joint Forest Management (JFM) for sustainable forest management and poverty alleviation of forest dependent communities by diversifying the means of livelihoods and to reduce the extent of their dependency on the forest resources. Drawing on the lessons learned from OFSDP-I, OFD proposed OFSDP-II to achieve sustainable forest management, biodiversity conservation and improvement of the livelihoods of the community. A Detailed Project Report (DPR) was submitted to request for Japanese Yen Loan assistance and has been listed in the rolling plan of the Government of India in February 2016.

Accordingly, Japan International Cooperation Agency (JICA) dispatched a survey team to undertake “Supplemental Survey for OFSDP-II” to achieve the following objectives.

- 1) To undertake a survey to supplement information on project cost, contents, implementation framework etc. presented in DPR to fulfil the eligibility of a Japanese Yen Loan Project
- 2) To deliberate on the improvements based on issues emerged from the on-going/ completed Loan Projects
- 3) To provide appropriate and timely assistance for the formulation of a Japanese Yen Loan Project

The Survey Team commenced its field survey work on 28 August 2016 and completed it on 17 December 2016. The background of the OFSDP-II, rationale, project design, institutional arrangement and cost are given in this report. The survey work was undertaken in close coordination with Odisha Forestry Sector Development Society (OFSDS).

## Chapter 2. ODISHA

### 2.1 Forests

#### 2.1.1 Forest Cover

The total geographical area of Odisha is 155,707 km<sup>2</sup>. Out of which, forest cover<sup>1</sup> is 32.3% or an area of 50,354 km<sup>2</sup>. In the India State of Forest Report (ISFR) 2015, 42.6% or 21,470 km<sup>2</sup> was categorised as moderately dense and 43.4% or 21,861 km<sup>2</sup> as open forest. The forest cover data of Odisha between 2003 and 2015 as per biennial forest cover mapping by the Forest Survey of India is given in the table below. A significant change in the very dense forest and moderately dense forest categories was reported in ISFR 2009. This is due to the improvement in the technology in satellite imagery analysis, which took place in 2007. The change in the forest cover between 2009 and 2015 shows increase of the open forest cover by 1,654 km<sup>2</sup> and decrease in the dense forest cover, scrub and tree cover. The India State of Forest 2015 reported that the major reasons for net increase of the forest cover of Odisha from 2013 to 2015 are due to improvement in mangrove conservation and plantation activities.

**Table 2.1.1 Density Classification and Changes in Forest Cover in Odisha based on ISFR 2003 – 2015**

Density Class	ISFR 2003		ISFR 2005		ISFR 2009		ISFR 2011		ISFR 2013		ISFR 2015		Change from ISFR 2009
	Area km <sup>2</sup>	%	Area km <sup>2</sup>	%	Area km <sup>2</sup>	%	Area km <sup>2</sup>	%	Area km <sup>2</sup>	%	Area km <sup>2</sup>	%	
Very Dense	288	0.6	487	1.0	7,068	14.5	7,060	14.4	7,042	14.0	7,023	13.9	-45
Moderately Dense	27,882	57.6	27,656	57.3	21,376	43.9	21,366	43.7	21,298	42.3	21,470	42.6	94
Open Forest	20,196	41.8	20,154	41.7	20,207	41.5	20,477	41.9	22,007	43.7	21,861	43.4	1,654
Total	48,366	100.0	48,297	100.0	48,651	100.0	48,903	100.0	50,347	100.0	50,354	100.0	1,703
Scrub	-	-	4,743	-	4,790	-	4,734	-	4,424	-	4,499	-	-291
Tree Cover	-	-	4,589	-	4,435	-	4,301	-	4,013	-	3,986	-	-449

Source : FSI

The recorded forest area is 58,135.47km<sup>2</sup>, which is largely comprised of Reserved Forest (45.3%), Demarcated Protected Forest/ Protected Reserved Forest (20.1%), and Forest under the control of Revenue Department (28.0%).

**Table 2.1.1 Legal Status of the Forest Areas<sup>2</sup> in Odisha**

Legal Class	km <sup>2</sup>	% in the Recorded Forest
Reserved Forest	26,329.12	45.3%
DPF/ PRF (Demarcated Protected Forest/ Protected Reserve Forest)	11,685.68	20.1%
UDPF (Un-demarcated Protected Forest)	3,838.78	6.6%
Other Forest under the control of Revenue Department	16,261.34	28.0%
Un-classed Forest	20.55	0.0%
Total of Above	58,135.47	100.0%
Private Forests	12.29	
Deemed Forest/ DLC Forest <sup>3</sup>	2,838.87	

Source: Highlights of Odisha Forestry Sector 2016, Principal Chief Conservator of Forests, Odisha

<sup>1</sup> Forest Cover: Areas having a tree canopy density of 10% having more than 1 ha and above. (ISFR 2015, p2.1)

Tree Cover: Patches of area under 1ha covered with trees

<sup>2</sup> Forest Area: Legally defined area under forest.

<sup>3</sup> Deemed Forest is forest land that has all legal provisions of a particular category of forest defined under any forest act but the original status is as given. DLC stands for District Level Committee established by the Supreme Court Order (12.12.1996 in the WPC no. 202 of 1996 and identified/ listed all areas which are forests irrespective of the ownership of the land and identified the areas under forest cover, plantation, or degraded forest land. DLC Forest is such type of forests listed by DLC.

The district wise forest areas are given in the table below. In the districts of Jagatsingpur, Jajpur, Kendrapara, Nuapada, and Jharsuguda, almost all the forest areas come under the control of Revenue Department.

**Table 2.1.2 District Wise Forest Areas**

District	Total Geographic Area (unit: km <sup>2</sup> )	Total Forest Area (unit: km <sup>2</sup> )	% of Forest Area	Total area under OFD (unit: km <sup>2</sup> )	% of Forest Area Under OFD to Total Forest Area	% of Forest Area under Revenue Dept. Total Forest Area
Anugul	6,375.00	2,716.82	42.62	1,761.91	64.85	35.15
Baleshwar	6,575.00	1,543.85	23.48	1,105.82	71.63	28.37
Bargarh	3,806.00	332.21	8.73	202.88	61.07	38.93
Bhadrak	5,837.00	1,216.13	20.83	583.65	47.99	54.72
Balangir	2,505.00	97.07	3.88	0.01	0.01	67.04
Baudh	3,098.00	1,277.17	41.23	984.35	77.07	22.93
Cuttack	3,932.00	787.90	20.04	522.84	66.36	33.64
Debagarh	2,940.00	1,560.22	53.07	578.44	37.07	62.93
Dhenkanal	4,452.00	1,737.62	39.03	1,141.06	65.67	34.33
Gajapati	4,325.00	2,468.98	57.09	417.02	16.89	83.11
Ganjam	8,206.00	3,149.90	38.39	1,486.55	47.19	52.81
Jagatsinghpur	1,668.00	132.92	7.97	1.25	0.94	99.06
Jajpur	2,899.00	725.27	25.02	6.36	0.88	99.12
Jharsuguda	2,081.00	202.44	9.73	35.57	17.57	82.43
Kalahandi	7,920.00	2,538.01	32.05	1,449.57	57.11	42.89
Kandhamal	8,021.00	5,709.83	71.19	2,012.06	35.24	64.76
Kendrapara	2,644.00	248.05	9.38	18.99	7.66	92.34
Keonjhar	8,303.00	3,097.18	37.30	1,834.35	59.23	40.77
Khordha	2,813.00	618.67	21.99	299.49	48.41	51.59
Koraput	8,807.00	1,879.53	21.34	479.54	25.51	74.49
Malkangiri	5,791.00	3,355.88	57.95	352.74	10.51	89.49
Mayurbhanj	10,418.00	4,392.13	42.16	3,332.34	75.87	24.13
Nuapada	3,852.00	1,849.69	48.02	0.44	0.02	99.98
Nabarangapur	5,291.00	2,462.73	46.55	535.41	21.74	78.26
Nayagarh	3,890.00	2,080.97	53.50	1,302.24	62.58	37.42
Puri	3,479.00	137.10	3.94	16.17	11.79	88.21
Rayagada	7,073.00	2,812.33	39.76	772.58	27.47	72.53
Sambalpur	6,657.00	3,631.77	54.56	2,152.89	59.28	40.72
Subarnapur	2,337.00	415.78	17.79	309.55	74.45	25.55
Sundargarh	9,712.00	4,957.32	51.04	2,653.60	53.53	46.47
State	155,707.00	58,135.47	37.34	26,349.67	45.32	54.68
<b>Proposed Project Area</b>	<b>83,972.00</b>	<b>2,716.82</b>	<b>42.62%</b>	<b>1,761.91</b>	<b>64.85%</b>	<b>35.15</b>

Source: Odisha Economic Survey, 2015-16. Planning and Convergence Department, Government of Odisha

### 2.1.2 Forest Types

18 forest types are found in Odisha according to Champion and Seth Classification as in the table above and broadly grouped into four groups: namely northern tropical semi-evergreen forests, tropical moist deciduous forest, tropical dry deciduous forests and tidal mangrove forests.

**Table 2.1.4 Forest Types in Odisha (Champion and Seth Classification)**

1) Orissa Semi Evergreen Forest	10) Northern Secondary Moist Mixed Deciduous Forest
2) Secondary Moist Bamboo Brakes	11) Boswellia Forest
3) Southern Moist Mixed Deciduous Forest	12) Dry Bamboo Brakes
4) Southern Secondary Moist Mixed Deciduous Forest	13) Mangrove Forest
5) Peninsular (Coastal) Sal Forest	14) Dry Teak Forest
6) Moist Peninsular High Level Sal Forest	15) Southern Dry Mixed Deciduous Forest
7) Moist Peninsular low level Sal Forest	16) Dry Peninsular Sal Forest
8) Moist Peninsular Valley Sal Forest	17) Northern Dry Mixed Deciduous Forest
9) West Gangetic Moist Mixed Deciduous Forest	18) Dry Deciduous Scrub

Source: [http://odishaforest.in/fio\\_forest\\_types.jsp](http://odishaforest.in/fio_forest_types.jsp)

Teak and sal are some of the main species for timber. Kendu leaves are one of the important non-timber forest products (NTFPs) in Odisha, which accounts for 11-15% of the total production of Kendu leaves in India. The table below describes the forest types and important species in each forest type.

**Table 2.1.5 Important Tree Species in Different Forest Types**

Forest Types by Rainfall/ Vegetation	Area Description	Forest Divisions/ Districts	Important Tree Species in Local Names
Northern Tropical Semi-evergreen Forests	Lower hills and valley above 600m elevation	Mayurbhanj, Dhenkanal, Athgarh, Puri, Nayagarh, Parlakhemidi, Koraput, Kalahandi	Arjun, Mango, Mankar Kendu ( <i>Diospyros embryopteris</i> ), Champak, Rai, Manda, Nageswar
Tropical moist Deciduous Forest (Monsoon Forests)	Lower elevations	Mayurbhanj, Keonjhar Boarder area with Madhya Pradesh and Andhra Pradesh	Sal, Asan, Piasal, Kurum, Kangra, Dhawra and Daba bamboo ( <i>Bamboosa arundinacea</i> )
Tropical Dry Deciduous Forests	Central and western area of Odisha	Balangir, Kalahandi, Sambalpur, Khariar, Deogarh, Gobindpur	Teak, Salia bamboo ( <i>Dendrocalamus strictus</i> )
Tidal Mangrove Forests	Sea coast area	Bhitar Kanika (Balasore), Mahanadi delta	Karika ( <i>Bruquiera</i> ), Sundari ( <i>Heritiera</i> ), Bani ( <i>Avicennia</i> ), Rai ( <i>Rhizophora</i> ), Guan ( <i>Exocaria</i> ), Hental ( <i>Phoenix paludosa</i> )

Source: Odisha Reference Annual 2014, I&PR Dept., Government of Odisha

## 2.2 Biodiversity

### 1) Overview

Odisha is a maritime state and can be divided into four distinct physiographic regions: Northern plateau, Eastern Ghats, Central tableland and Coastal plains. Due to physiographic and climatic differentiations, the state supports three major ecosystems: forests, coastal and marine and inland wetlands. The state ranks fourth amongst in forest area and 6<sup>th</sup> in terms of the length of the coast-line (482 km long) among the coastal States. The inland wetlands (including river and streams) comprises of about 4,591 km<sup>2</sup> area. In addition, intertidal mudflats, sandy beaches, lagoons and mangroves also dot the coast-line of the state.

Due to ecological mosaics the biodiversity of Odisha is concentrated in pockets. The State represents about 20% of country's total flora and one sixth of the country's orchid flora. The State is part of two major plant endemic regions of the country: Deccan Endemic Centre in Southern region and Bihar-Orissa Endemic Centre in northern parts. In a sense, the State is a meeting ground of three phyto-geographical regions: North, North-eastern and Southern. High hills of Deomali (1,673 m), Turia Konda (1,599 m), Singharaj (1,515 m), Mahendragiri (1,500 m), Khairiburu- Meghasini (1,165 m) in Eastern Ghats eco-region have several sub-tropical and temperate taxa of Himalayas and several south Indian hill species.

### 2) Flora

One estimate suggests that Odisha has about 2,750 plant species. Of these, 144 species (i.e. about 5.5%) occur as rare or endangered ones (e.g. *Rauvolfia serpentina*, *Aristolochia indica*, *Gloriosa superba*, *Gymnema sylvestre*, *Urginea indica*, *Curculigo orchiioides* etc.) and 29 species as endemic ones (e.g. *Acacia donaldii*, *Albizia orissensis*, *Atylosia cajanifolia*, *Dimeria mooneyi*, *Hypericum gaitii*, *Lasianthus truncates*, *Lasiococca comberi*, *Maytenus bailadillana* etc). Some of the plant diversity centres among in the state include, Similipal Hills (1076 species), Gandhamardan Hills (920 species), Bhitarkanika (63 species of mangroves and associates), Mahendragiri Hills in Gajapati district, Sunabeda plateau including Deomali Hills (Rayagada district), Chilika lake (711 species), Malyagiri (510 species). State is known for its rich Orchid flora. Out of total 1,200 species of orchids in India, 129 species are reported from Orissa including several rare ones. Similipal forests alone houses 93 orchids. Mangrove forests of State hosts a total of 63 species out of total 65 species found in the country. This is mainly due to estuarine systems of Mahanadi, Brahmani, Baitarani, Budhabalang and Rushikulya rivers

and Chilika lagoon. Due to rich and unique biodiversity, the coastal tract of Odisha support two wetlands of international importance (Ramsar Sites) viz. Chilka lagoon and Bhitarkanika mangroves, especially for migratory birds and world’s largest turtle rookery of Olive Ridley turtles.

### 3) Fauna

Odisha State harbours quite a rich faunal diversity as indicated by the records of 19 species amphibians, 110 species of reptiles, 473 species of birds and 86 species of mammals. The State is classed under the Indian Peninsular sub-region which forms part of the Oriental Zoo-geographical Realm of the World. It is home of true Indian fauna, of which the Spotted deer or Chital (*Axis axis*), the Nilgai (*Boselaphus tragocamelus*), the Blackbuck (*Antelope cervicapra*), the Four Horned Antelope or Chowsingha (*Tetracerus quadricornis*) and the Sloth bear (*Melursus ursinus*) are typical representatives. Besides, the state also supports good population of Tiger (*Panthera tigris*) and Elephant (*Elephas maximus*). 2010 tiger census estimated a tiger population of 32 from the State, while State’s elephant census (2015) estimated a total population of 1954 elephants. Odisha provides home to many other important mammalian species like Leopard (*Panthera pardus*), Bison (*Bos gaurus*), Sambar (*Cervus unicolor*), Barking deer (*Muntiacus muntjak*), wild buffalo (*Bubalus bubalis*) etc. Many threatened taxon of wildlife (Appendix-I) as per IUCN Red Data Book/Schedule-I of Wildlife Act, 1972 are found in the state and they comprise 17 species of reptiles, 16 species of birds, and 23 species of mammals.

### 4) Protected Areas and Sanctuaries

The term ‘Protected Area’ in the Indian Wildlife Protection Act (1972) is defined as “a National Park, a Wildlife Sanctuary, a Conservation Reserve or a Community Reserve notified under sections 18, 35, 36A and 36C of the Act”. While the National Parks and Wildlife Sanctuaries were included since the promulgation of the Act, the other two categories were introduced through an amendment in the said act in 2003. The four types provide different levels of protection, level of participation of local communities in decision making process, benefit sharing systems etc.

In addition to above, under the Biodiversity Act (2002), one more category of area was introduced to safeguard the biodiversity values which are lying outside PAs. These are called as Biodiversity Heritage site. In legal terms, the Biodiversity Heritage Sites are not a PA, however, it gives powers to local Biodiversity Management Committees to manage and conserve these areas. As such there will be no restriction on the prevailing practices and resource usages of the local communities, other than those voluntarily decided by them. The purpose is to enhance the quality of life of the local communities through this conservation measure.

A brief summary of these five legally defined areas of high biodiversity conservation significance, is given below:

**Table 2.2.2 Legal Definitions of Areas of Higher Biodiversity Conservation Significance**

PA Category	Description	Management System	Land use and Resource Use Implications
National Park	State Government can recognize an area by reason of its ecological, floral, faunal, or geomorphological importance and declare as National Park under section 35 or section 38 or sub section (3) of section 66 of Wildlife Protection Act (1972). Purpose is to protect, propagate or develop wildlife therein or its environment.	Government. Managed by Forest Department in accordance with a site specific Management Plan for a period of 10 years	Land use alterations not possible. No extractable resource use rights are allowed. However, tourism can be allowed in some predefined zones.
Sanctuary (also termed as Wildlife Sanctuary)	State Government can recognize any area (including Reserve Forests) by reason of its ecological, floral, faunal, or geomorphological importance and declare as Sanctuary under the provisions of Chapter IV of WLP (1972) or a deemed sanctuary under sub-section (4) of section 66. Purpose is to protect, propagate or develop wildlife therein or its	Government. Managed by Forest Department in accordance with a site specific management Plan for a period of 10 years	Land use alterations not possible. Resource use rights need to be defined and settled for different groups of people (like NTFP collection, Livestock grazing, fishing, agriculture etc.). Tourism can be allowed in some predefined

PA Category	Description	Management System	Land use and Resource Use Implications
	environment.		zones.
Conservation Reserve	The State Government may, after having consultations with the local communities, declare any area owned by the Government, particularly the areas adjacent to National Parks and Sanctuaries and those areas which link one protected area with another, as a conservation reserve to protect flora and fauna and their habitat under Section 36-A of Wildlife Protection (Amendment) Act 2003	Co-management. Decision making powers rest equally with local communities and Forest Department	Land use alterations not possible. Effectively No existing resource use rights gets curtailed. However, management plan can prescribe for sustainable use of some resources. Tourism can be allowed.
Community Reserve	The State Government may declare any private or community land which community or individuals has volunteered to conserve wildlife and their habitat, and traditional or cultural conservation values and practices as a Community Reserve, under Section 36-C of Wildlife Protection (Amendment) Act 2003.	Co-management. Decision making powers rest mainly with local communities and Forest Department play hand-holding role	Land use alterations not possible. Effectively No existing resource use rights gets curtailed. However, management plan can prescribe for sustainable use of some resources. Tourism can be allowed.
Biodiversity Heritage Site (BHS)	The State Government in consultations with local bodies (like village Panchayats/municipalities and BMC) may declare any government, private or community land of having biodiversity importance (both wild and domesticated) and associated cultural values as Biodiversity Heritage Site under Section 37 of Biodiversity Act -2002	Local communities mainly through Biodiversity Management Committees (BMCs) and State Biodiversity Board	Land use alterations are allowed. No legal control on resource extraction but promote sustainable use of resources mainly under ABS framework. Tourism can be allowed.

Source: JICA Survey Team (2016)

In order to protect and conserve biodiversity, the State government has created a good network of Protected Areas- 19 Wildlife Sanctuaries, two National Parks (Bhitarkanika and Simlipal), two tiger reserves (Simlipal and Satkosia) and three Elephant Reserves (Mayurbhanj, Mahanadi and Sambalpur). The total protected area in the state is extended over 8,352.3 km<sup>2</sup> (i.e. 5.4% of total geographical area of State) and 12% of the recorded forest area of the state. These PAs represent two major biomes of the State- the Coastal-Marine (24%) and Forest (76%). A summary of all the PAs in the State is given below.

**Table 2.2.3 Protected Areas in Odisha**

SN	Biome <sup>#</sup>	PA Name	Type <sup>s</sup>	Year	Area (km <sup>2</sup> )	Conservation Value	District(s)
1	CM	Bhitarkanika	NP	1988	145.00	Mangrove, Estuarine Crocodile, Olive Ridely Turtle	Kendrapda
2	CM	Bhitarkanika	WLS	1975	672.00	Mangrove, Estuarine Crocodile, Olive Ridely Turtle	Kendrapda
3	CM	Chilka	WLS	1987	15.53	Water birds	Puri
4	CM	Gahirmatha	WLS	1997	1435.00	Olive Ridley Turtle, Dolphis	Kendrapda
5	F	Simlipal	NP	1986	845.70	Tiger, Elephant, Bison	Mayurbhanj
6	F	Satkosia Gorge	WLS	1976	795.52	Tiger, Elephant, Bison	Nayagarh, Angul, Boud, Cuttak
7	F	Hadgarh	WLS	1978	191.06	Elephant, Tiger	Keonjhar
8	F	Nandankanan	WLS	1979	4.37	Sambhar, Chital	Khurda
9	F	Simlipal	WLS	1979	2306.61	Tiger, Elephant, Bison	Mayurbhanj
10	F	Baisipalli	WLS	1981	168.35	Tiger, Elephant	Nayagarh
11	F	Kotgarh	WLS	1981	399.05	Tiger, Elephant, Bison	Kondhmal
12	F	Chandaka	WLS	1982	193.39	Elephant, sloth bear, mouse deer	Khurda, Cuttak
13	F	Khalasuni	WLS	1982	116.00	Tiger, Elephant, Bison	Sambalpur
14	F	Balukhand-Konark	WLS	1984	71.72	Blackbuck, Chital	Puri

SN	Biome <sup>#</sup>	PA Name	Type <sup>\$</sup>	Year	Area (km <sup>2</sup> )	Conservation Value	District(s)
15	F	Kuldiha	WLS	1984	272.75	Tiger, Elephant, Bison	Baleswar
16	F	Debrigarh	WLS	1985	346.90	Bison, Sambhar, Chital	Sambalpur
17	F	Lakheri Valley	WLS	1985	185.87	Elephant, Blackbuck	Ganjam
18	F	Badrama	WLS	1987	304.03	Elephant, Tiger	Sambalpur
19	F	Sunabeda	WLS	1988	600.00	Tiger, Sambhar, Chital	Nuapada
20	F	Karlapat	WLS	1992	147.66	Tiger, Elephant	Kalahandi
21	F	Kapilesh	WLS	2011	125.50	Sambhar, Chital	Dhenkanal
		<b>TOTAL</b>			<b>9342.01</b>		
#: CM= Coastal-Marine; F= Forest.   \$: NP= National Park, WLS= Wildlife Sanctuary							

Source: JICA Survey Team (2016)

Other than above protected areas, the State had also identified areas of higher conservation value for two major species- the tiger and elephants. These are termed as Tiger Reserves and Elephant Reserves, respectively. These reserves actually cover a larger landscape and encompass areas from PAs as well as non-PAs. The idea is to provide management inputs to those areas also which are used by these species but are not part of PA. In a sense, such reserves form the larger management unit where critical dispersal areas and movement corridors for these two species locate. Generally, a Tiger or Elephant Reserve include (i) one PA (or even more than one PA) having good population of Tiger /Elephant, and (ii) forest areas adjoining these PAs and (iii) non-forest areas e.g. river/streams which are critical for providing habitat during dispersal/migration.

### 5) Human-Elephant Conflict

Odisha is one of the important elephant population states in the country with a total elephant population of about 1,954 animals (2015 census), occupying 38 out of 50 forest /wildlife divisions. Three elephant reserves are notified and 14 elephant corridors are identified in addition to protecting them in a network of 17 terrestrial wildlife protected areas. Though 14 corridors have been identified, so far, none have been demarcated on the ground. The legal status, ownership pattern and administrative pattern of these corridors vary significantly. Besides, recently elephants have moved to new areas, and are using new passages.

It is important to note that population of elephants in the State is more or less stable during last 15 years. However, due to various developmental and anthropogenic pressures, forest are increasingly degraded and fragmented in most parts of the state. Leasing out of forest areas for mining purpose is one of the major contributing factor for such fragmentation of elephant landscapes. Such overall degradation of forests resulted into increasing events of conflicts between human population living in and around forest areas and wildlife, mainly the elephant. According to Forest Department Data, elephants killed a total 546 persons between 2007-08 and 2014-15 and 151 elephants had lost their life between 2009-10 and 2014-15. This is one of the critical conservation-livelihood conflict which State Assembly seriously debate the issues and unanimously seek some solutions. Importantly, such conflicts erode traditional ethos of conservation among local population and creates animosity towards entire wildlife conservation system.

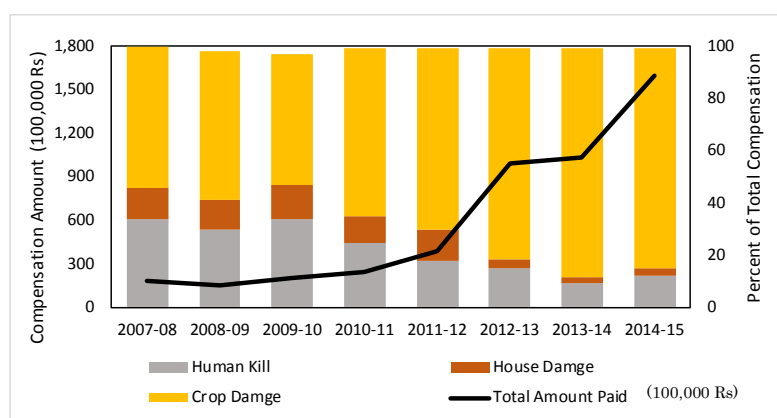
The State Forest Department is attempting to tackle the issue in multiple ways. One of the preventive measures is to establish early response squad namely anti-depredation squad and elephant trackers. Total 60 squads are currently deployed in eight forest circles, maximum in Angul (15) and Baripada and Rourkela (9 in each). However, due to the erratic funding availability, inadequacy of communication devices and means of transportation, lack of insurance and etc have hampered the effective functioning of the squad. OFD also established elephant proof trenches, stone walls and electric fences are also installed in the places where possible.

Despite the efforts made by OFD to address the issues, the amount paid for the compensation of the damages caused by elephants has increased in the recent years. The last 8 years of data suggest that the total amount paid as compensation against elephant related damage has sharply increased from Rs. 18 million in 2007-08 to Rs. 160 million in 2014-15, with major payments made towards crop damage.



More seriously, around 600 human lives have been lost due to elephant conflict between 2007-08 and 2015-16.

Issue of human-elephant conflict needs to address using both long term and short term strategies. Long term solutions need to work on proper siting of developmental projects as well as land use planning including protecting key areas for wildlife, creating buffer zones and investing in alternative land uses in dispersal /production areas. Such strategies mainly aim to provide inviolate forest areas and unbroken corridors between them and largely address issues like railway/road alignment, irrigation projects, canals, power lines, establishment of industries, granting mining lease in eco-sensitive areas, improvisation in customary forest management practices etc. In broader terms, such strategies need to be initiated at the policy level.



Source: Compiled by JICA Survey Team based on the data obtained from OFD

**Figure 2.2.1 Elephant related Compensation**

Short term solutions are mostly associated to enhance coping mechanisms with preventive and adaptive means for human being and providing better and human. *Ex-gratia* compassionate payments to compensate some part of the total loss are one immediate measure, but certainly not a solution to the problem. The most widely used preventive methods are (i) creating barriers ranging from vegetative barriers, to trenches, walls and photo-voltaic fences and (ii) measures to scare animals and drive them back to their forest habitats. These measures, however, have varying efficacy and costs. Adopting alternating cropping and keeping vigil over the crops are also preventive methods people often resort to.

### 2.3 Land Conversion from Forest to Non-Forest Uses

Since the enactment of the Forest Conservation Act 1980 (FCA 1980), 46,707.49 ha of the forest land has been diverted for different development projects and other non-forestry purposes. Largest area was diverted for mining, followed by irrigation, industry, defence and transmission of power/ electricity.

For the diversion of the forest land, the application needs to be submitted to the state forest department. If field scrutiny following the prescribed procedure the State Government agrees proposed diversion recommendation is made to the MoEF&CC for prior approval under FCA 1980. If such approval is given by MOEF&CC the state government orders for diversion for specified non-forestry use with conditions to be complied with.

**Table 2.3.1 Forest Land Diverted for Non-Forestry Purposes (1 October 2015)**

Sector	No of Proposals	Forest Area diverted (ha)	%
Irrigation	83	9,712.71	20.79%
Industry	26	4,273.95	9.15%
Mining	162	21,255.56	45.51%
Energy	6	116.45	0.25%
Road& Bridges	39	314.31	0.67%
Railway	14	2,216.29	4.75%
Defense	4	3,865.25	8.28%
Human Habitation	3	321.94	0.69%
Others	36	1,127.86	2.41%
Transmission	60	3,503.17	7.50%
Total	433	46,707.49	100.00%

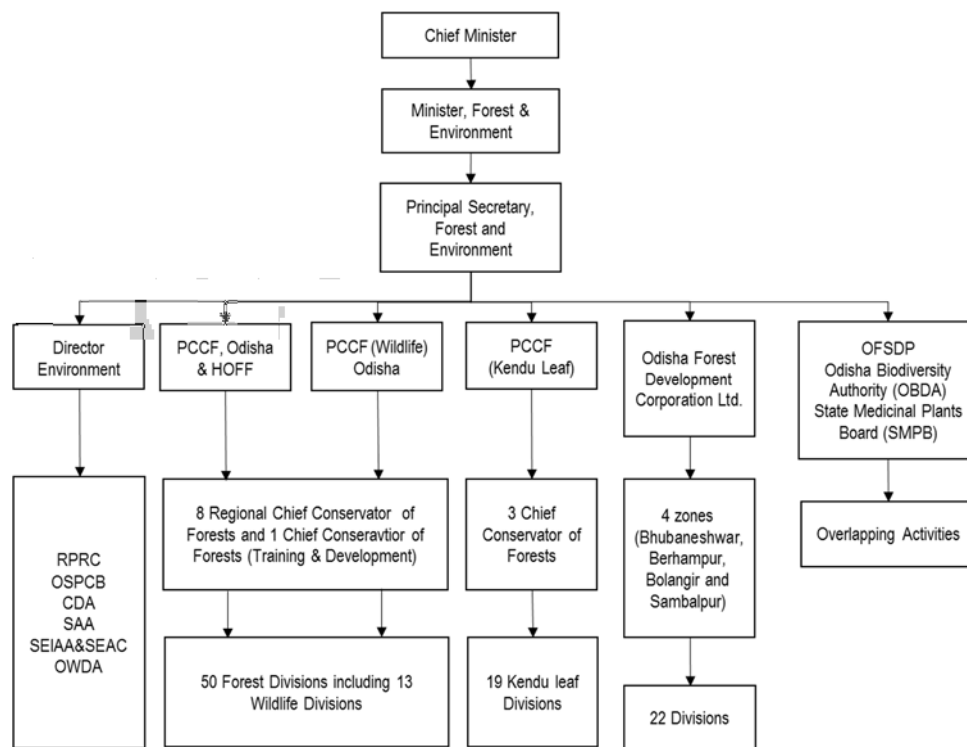
Source: Highlights of Odisha Forestry Sector 2016, Principal Chief Conservator of Forests, Odisha

In addition, forest area diverted for community infrastructures as per the section 3(2) of the Forest Rights Act 2006 was reported to be 161.21 ha. This includes the electric supply facilities, road, schools, community centre and *anganwadi*<sup>4</sup>.

## 2.4 Forest Administration

### 1) Forest and Environment Department of Odisha

The Forest & Environment Department in the State operates through a number of departmental formations and autonomous bodies. The field formations under the Forestry set up comprised of the Forest, Wildlife and Kendu Leaf wings. The Principal Chief Conservator of Forests (PCCF) is the administrative and professional head of OFD. The Odisha Forest Development Corporation (OFDC) Ltd. acts as the commercial wing of the Department and discharges the function of disposing various forest products like Kendu Leaf, salvaged timber, bamboo etc. The organisational structure of OFD is given in the figure below.



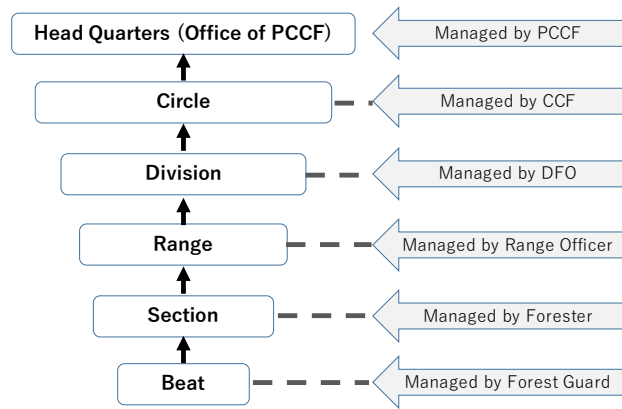
Source: Highlights of Odisha Forestry Sector 2016, Principal Chief Conservator of Forests, Odisha

**Figure 2.4.1 Organisation of Forest and Environment Department, Odisha**

### 2) Forest Administrative Units

Forest administration is comprised of different levels of administrative units namely, beat, section, range, division, circle and the Office of PCCF (Headquarters) of Forest Department. As in **Figure 2.4.2**, each level of unit is managed by different ranks of forest officers. In the case of Odisha, the Office of PCCF and PCCF Wildlife oversee 8 circles which are divided into 37 Territorial divisions and 13 wildlife divisions. Divisions are further broken into ranges and sections. The lowest unit is a beat. The organisational structure of the Odisha Forest and Environment Department is given in **Figure 2.4.2** and the number of forest administration units is given in **Table 2.4.1**.

<sup>4</sup> Established under the Integrated Child Nutrition Programme of Government of India. Functions as community health centre as well as non-formal pre-school education and nutrition centre.



Source: Prepared by JICA Survey Team based on information from Odisha Forest Department

**Figure 2.4.2 Administrative Hierarchy of Forest Administrative Units**

**Table 2.4.1 Forest Administrative Units**

Wing	Circles	Divisions	Ranges	Sections	Beats
Territorial	8	37	223	827	3,082
Wildlife	Overlapping	13	60	190	601

Source: Highlights of Odisha Forestry Sector 2016, Principal Chief Conservator of Forests, Odisha

## 2) Budget Outlay

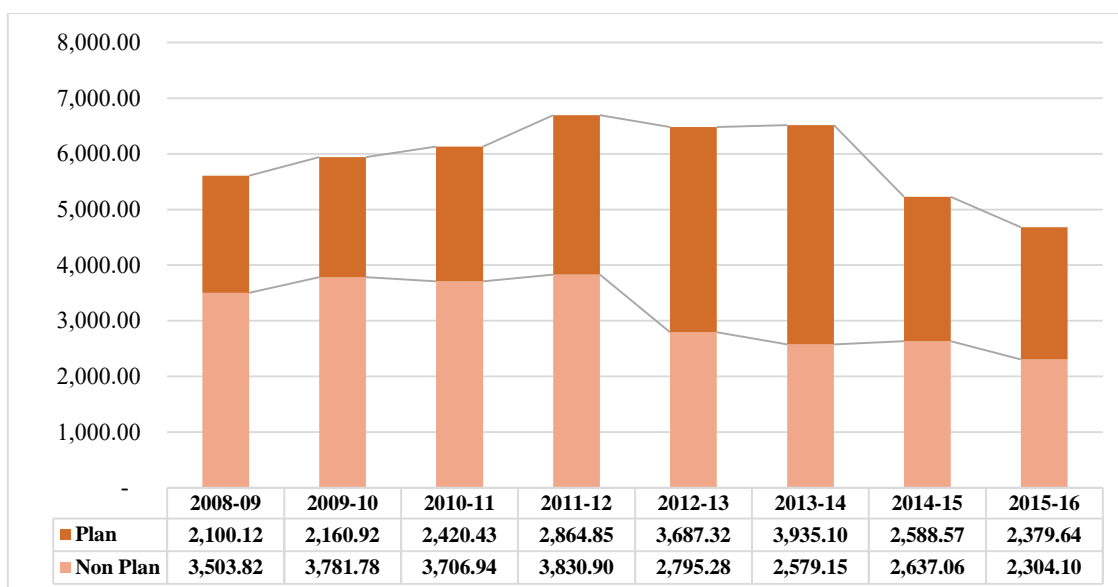
The budget provisions of Forests & Environment Department from year 2008-09 till 2015-16 are given below.

**Table 2.4.2 Forestry Sector Budget**

Year	Non Plan	Plan	Total
2008-09	3,503.82	2,100.12	5,603.95
2009-10	3,781.78	2,160.92	5,942.69
2010-11	3,706.94	2,420.43	6,127.36
2011-12	3,830.90	2,864.85	6,695.75
2012-13	2,795.28	3,687.32	6,482.61
2013-14	2,579.15	3,935.10	6,514.25
2014-15	2,637.06	2,588.57	5,225.64
2015-16	2,304.10	2,379.64	4,683.74
<b>Total</b>	<b>25,139.03</b>	<b>22,136.95</b>	<b>47,275.98</b>
<b>%</b>	<b>53%</b>	<b>47%</b>	<b>100%</b>

Source: Odisha Forest Progress Report 2016; Amount in Rs. million

Under two categories government budgets are available: Plan and Non-plan. Plan expenditure, denotes the more productive use of government resources as investment in various programmes and schemes associated with the respective 5 year plan through forms a small part of the total spending bill. Non-Plan expenditure, on the other hand, is the majority of the government spending and is used for interest payments, subsidies, wages and grants to States.



Source: JICA Supplemental Survey, September 2016; Amount in Rs. million

**Figure 2.4.3 Budgets of Forest & Environment Department, Odisha**

From the above tables higher planned budget (around 60% of total allocation) were accessed during FY 2012-13 and 2013-14, while in other financial years planned budgets were around 50% or less. A review of the budget allocation for various interventions taken under OFD is given in **Attachment 2.4.1**.

### 3) Human Resources of OFD

In all Odisha Forest Department (OFD) is maintaining 135 positions falling in four service groups as in the table below. The Divisional Conservator of Forests (DCF) position in Indian Forest Services (IFS) cadre are in shortage by 61%, however some surplus is available from the state cadre on this position. At the ACF level the shortage is around 46%, whereas Forest Ranger position has a shortage of around 40%.

At the range level positions of Forests Extension Supervisors (FES) are in surplus. FES have also worked earlier during OFSDP I implementation, and thus could also be made available during OFSDP II. However, the project has to ascertain that quality staff is made available by the department having at least 4 or more years in service. There is also shortage in positions of Deputy Ranger (by 48%), Forester (21%), and Forest Guard 23%. The table below provides status of staffing with the OFD as of 1<sup>st</sup> July, 2016.

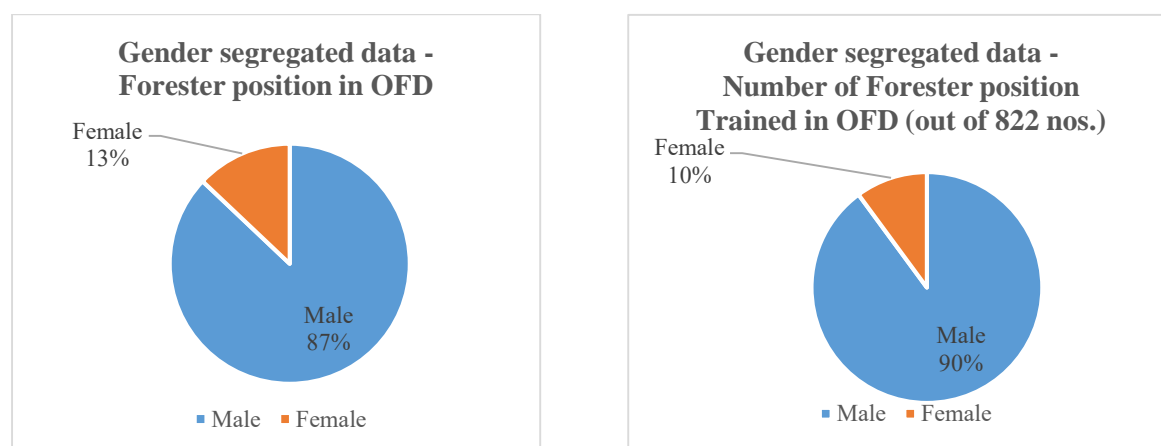
**Table 2.4.3 Sanctioned Strength and Filled Positions – OFD**

Sl. No.	Name of Posts	Sanctioned Strength				Persons in Position				% deficit against sanctioned strength
		Territorial Wing	Kendu Wing	Wildlife Wing	State Cadre	Territorial Wing	Kendu Wing	Wildlife Wing	Total in Position	
<b>GROUP A</b>										
1	PCCF	1	0	1	2	1	1	1	3	-50%
2	APCCF	3	1	0	4	5	1	1	7	-75%
3	CCF	8	4	4	16	10	3	1	14	13%
4	CF	18	0	2	20	9	0	0	9	55%
5	DCF	36	4	4	44	13	0	4	17	61%
6	IFS (Central & State deputation)	55	0	0	55	33	0	0	33	40%
	<b>Total 1: IFS Cadre</b>	<b>121</b>	<b>9</b>	<b>11</b>	<b>141</b>	<b>71</b>	<b>5</b>	<b>7</b>	<b>83</b>	<b>41%</b>
7	Senior Administrative Officer	1	0	0	1	1	0	0	1	0%
8	Chief Accounts Officer	1	1	0	2	1	0	0	1	50%
9	Law Officer	1	0	0	1	0	0	0	0	100%
10	Sociologist	1	0	0	1	1	0	0	1	0%
11	DSP	1	0	0	1	0	0	0	0	100%
12	DCF - OFS	42	16	13	71	49	18	13	80	-13%
13	Senior Research Officer	0	0	3	3	0	0	0	0	100%
14	Senior Veterinary Officer	0	0	1	1	0	0	1	1	0%
15	ACF	170	48	32	250	82	27	25	134	46%
	<b>Total 2: Other Cadre</b>	<b>217</b>	<b>65</b>	<b>49</b>	<b>331</b>	<b>134</b>	<b>45</b>	<b>39</b>	<b>218</b>	<b>34%</b>
	<b>Group A Total (1+2)</b>	<b>338</b>	<b>74</b>	<b>60</b>	<b>472</b>	<b>205</b>	<b>50</b>	<b>46</b>	<b>301</b>	<b>36%</b>
<b>GROUP B</b>										
16	Accounts Officer	6	0	0	6	2	0	0	2	67%
17	Forests Extension Supervisors (FES)	41	0	14	55	41	21	7	69	-25%
18	Forest Ranger	388	173	100	661	255	77	66	398	40%
19	Other 12 positions	41	11	13	65	31	7	7	45	31%
	<b>Group B Total</b>	<b>476</b>	<b>184</b>	<b>127</b>	<b>787</b>	<b>329</b>	<b>105</b>	<b>80</b>	<b>514</b>	<b>35%</b>
<b>GROUP C</b>										
20	Deputy Ranger	244	0	38	282	100	10	38	148	48%
21	Forest Guard	3955	589	807	5351	3048	460	589	4097	23%
22	Forester	1516	663	347	2526	1373	341	271	1985	21%
23	Other 61 positions	1242	548	425	2215	879	343	260	1482	33%
	<b>Group C Total</b>	<b>6957</b>	<b>1800</b>	<b>1617</b>	<b>10374</b>	<b>5400</b>	<b>1154</b>	<b>1158</b>	<b>7712</b>	<b>26%</b>
<b>GROUP D</b>										
24	42 positions	491	236	190	917	370	150	144	664	95%
	<b>Group D Total</b>	<b>491</b>	<b>236</b>	<b>190</b>	<b>917</b>	<b>370</b>	<b>150</b>	<b>144</b>	<b>664</b>	<b>28%</b>
	<b>Grand Total (Group A thru D)</b>	<b>8262</b>	<b>2294</b>	<b>1994</b>	<b>12550</b>	<b>6304</b>	<b>1459</b>	<b>1428</b>	<b>9191</b>	<b>27%</b>

Source: CCF (Administration), OFD; status as of 1<sup>st</sup> July, 2016; created by JICA Survey, September 2016

Fresh recruitment process is continuing in OFD, and training of staff at Range level is currently going on. The OFD could provide newly recruited and trained staff in the project areas. The gender segregated data for forester position is not usually maintained by OFD but an attempt was made by the survey team to generate the data. The detailed table is given in **Attachment 2.4.2**.

As per the available list there are 1,391 Foresters in positions of which around 13% are females. Out of the total staff of 1,391, around 822 (59%) are trained while remaining 41% is still untrained of which around 9% of the staff is in age of 55 years or more and all of these are male staff. Around 296 (21%) of the total strength are falling in age groups between 35~50 years of which 56% are trained. Within this age-group 13% (39 nos.) is female staff.



Source: Compiled by JICA Survey Team (2016) based on the data provided by OFD

**Figure 2.4.4 Gender Segregated Data of OFD**

#### 4) Policies and Laws Relevant to Forestry Sector in Odisha

The forestry sector interventions must be designed to comply with the policies and laws of India as well as those in Odisha. A review of the relevant laws and policies are given in the table below.

**Table 2.4.4 Policies, Laws and Programmes Relevant to the Forestry Sector in Odisha**

Policies/ Laws	Outline
National Forest Policy 1988 (The policy is currently under review)	The policy mandated the “preservation, restoration of the ecological balance” of the forests negatively affected by the human and developmental activities. The policy prescribes for community participation including women in forest management and also to reduce the pressures on the forests. It also gives priorities to meet the fuel-wood/ fodder, minor forest produce and small timber requirements for the forest dependent communities including tribal communities.
Forest Conservation Act 1980 (with subsequent amendments)	This is a regulatory act and not prohibitory. Defines the restriction on, penalty levied and authority to permit the diversion of forest land to other land use. De-reservation of the reserved forest is not under the purview of the state government. As per the act, “non- forest purposes” means any forest cleared for other than afforestation purposes and includes the clearing of forest land for plantation of tea, coffee, spices, rubbers and other cash crops. The same for the forest and wildlife management purposes is permitted. Diversion and de-reservation can be done only with prior approval of GoI – MOEF&CC.
Indian Wildlife (Protection) Act, 1972	The provisions for protection of plants and animal species are stipulated in the act including the offences and penalties. The species not permitted to be cultivated or planted are also given. It also restricts hunting of wildlife.
Biological Diversity Act 2002	This act defines the institutional mechanisms in the country for conservation and usages of the biological resources and knowledge and to promote sustainable and equitable access to them. This act was enacted to comply with the Convention on Biological Diversity. Based on this act, National Biological Diversity Authority, State Biodiversity Boards and Biodiversity Management Committees at community level were established to achieve biodiversity conservation.
The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act 2006	This law provides a framework to record and recognise the rights of the Scheduled Tribes and other traditional forest dwellers over the forest land. The validation process and documents or proof required are defined. Ministry of Tribal Affairs monitors the status of FRA implementation in each state.
The Provisions of the Panchayat (Extension to Scheduled Areas) Act (PESA), 1996.	This act declared the autonomy of the Gram Sabha in the Scheduled Areas defined by the constitution of India (known as 5 <sup>th</sup> scheduled area - Tribal homeland). In such areas, Gram Sabha (all adult residents of a village) is empowered to make their own decision on the matters related to their own society, economy and politics. The act grants the Gram Sabha the rights over the natural resources such as minor forest products. Some part of Odisha comes under 5 <sup>th</sup> Scheduled Area (44% of the total geographical area).
The National Environment Policy 2006	The objectives of the policy include: “conservation of critical environmental resources; intra-generational equity – livelihood security for the poor; integration of environmental concerns in economic and social development; efficiency in environmental resource use; environmental governance; and enhancement of resources for environmental conservation.”
Environment (Protection) Act 1986	This act was formulated to implement the decisions taken at the UN Conference on the Human Environment. This act is a guide to protect and improve environment by issuing the documents or guides to prevent, control and mitigate environmental pollution.
National Agro Forestry Policy, 2014	This policy calls for supportive regulatory framework for felling and transit of trees grown under agroforestry and farm forestry systems.
<b>Joint Forest Management</b>	
JFM Circular June 1990 (MOEF)	Issued to all the states to introduce the joint forest management for the protection and management of the forests and regeneration of the degraded forests.
JFM Guidelines, February 2000 (MOEF)	In this guideline, women’s participation, preparation of micro plans, and legal status of JFMCs. A clarification was given that the JFM overlapping circle was also to be incorporated into the working plans.
JFM Guidelines, December 2002 (MOEF)	By this revised guidelines, MOU was to be exchanged between JFMCs and Forest Department, management of NTFPs, partnership with Panchayats, and capacity building of JFMCs in managing forests and forest products were included.
National Afforestation Programme (NAP)	This is a centrally funded afforestation and reforestation programme implemented through JFMCs established at the village level which are federated at the forest division level as Forest Development Agency (FDA). Under the programme State Forest Development Agency (SFDA) has been established in June 2010 as a federation of FDAs at the state level. NAP is currently being implemented through a three tier structure – SFDA, FDA and VSS/JFMCs.
Green India Mission (GIM)	GIM is a mission under NAPCC for reforestation and afforestation to enhance

Policies/ Laws	Outline
	forest cover and to implement the climate change mitigation and adaptation measures. GIM aims at 1) increasing the forest/ tree cover to 5 million ha and improve quality of forest/ tree cover on another 5 million ha on forest/ non-forest lands; 2) improving/ enhancing ecosystem services like carbon sequestration and storage, hydrological services and biodiversity; along with provisioning services like fuel, fodder and timber and non-timber forest products (NTFPs); and 3) increasing forest based livelihood income of about 3 million households.
Compensatory Afforestation Fund Management and Planning Authority (CAMPA) The Compensatory Afforestation Act , 2016	CAMPA undertakes the afforestation and reforestation to compensate for the forest land that is diverted for non-forest uses and also undertakes wildlife conservation and protection activities. The State CAMPA receives fund for undertaking such compensatory afforestation works.  The fund to CAMPA comes from deposits towards CA and NPV made in lieu of diversion of Forest Land for non-forestry purposes. Also for diversion of PA lands.
Intended Nationally Determined Commitment	This document was submitted to UNFCCC to display India's climate change mitigation measures sector wise. Under the forestry sector, the long term goal of the government of India to achieve the forest cover of 33% of its geographical area. India also estimates that 100 million tonnes CO <sub>2</sub> equivalent can be enhanced on an annual basis. The National Agro-forestry Policy, REDD+ policy, JFM further advances the effort of afforestation. 6 billion USD is to be spent under CAMPA.
National Action Plan on Climate Change (NAPCC)	NAPCC provides a framework for implementing climate change mitigation and adaptation interventions. These interventions are implemented under the eight (8) missions. Those missions include Jawaharlal Nehru National Solar Mission, National Mission for Enhanced Energy Efficiency, National Mission on Sustainable Habitat, National Water Mission, National mission for Sustainable Agriculture, National Mission for Sustaining the Himalayan Ecosystem, National Mission for a Green India, and National mission for Strategic Knowledge. This plan has been translated into state level climate change action plan.
Guidelines for Ecotourism Development around Protected Areas 2011 (2 <sup>nd</sup> Draft)	The guidelines, issued by MoEF&CC, provide a detailed mechanism of adopting and promoting eco-tourism activities with people participation.
<b>Odisha State</b>	
Forest Sector Vision 2020	Forest Sector Vision 2020 is based on five (5) principles i.e. 1) sustainable forest management planning and management; 2) recognising and protecting the environmental services of forests; 3) respecting the community entitlements to forests and forest resources; 4) simple, transparent and effective procedures for forest operations; and 5) keeping the transaction costs low. It recognises the importance of JFM and community participation in forest management and ensuring the benefits to the community while giving emphasis on the proper planning and monitoring of the forests of all categories. It provides basis for further advancing JFM. It also provides principles to be adopted in institutionalising good governance through multi stakeholder participation and consultation.
Resolution for Community Participation in Forest Protection, Aug 1988, October 1988 and December 1990	First resolution by Odisha Government to involve community in protection of Reserve Forests and in lieu of the effort of protection and conservation the certain bona fide needs of the communities would be met from the forest. This led to formation of Village Forest Protection Committees. The resolution of Aug 1988 was further modified to involve community to protect both Reserve Forest and Protected Forest.
JFM Resolution, July 1993	A comprehensive resolution on JFM was passed for regeneration and protection of degraded forest with the help of local communities. The process initiated formation of Van Samrakhyana Samitis (VSSs).
JFM Resolution, October 2008	A comprehensive JFM resolution was passed by the State Government, which included Protected Area (not core areas) and Wetland Mangroves for Joint Forest Management and Eco Development. This resolution superseded the July 1993 JFM Resolution but the VSSs formed under July 1993 Resolution continued to exist. A District Level Committee of DFO, ACF, Range Officers, Foresters etc. constituted to finalise section of areas for JFM and Eco Development. EDCs shall be formed for villages located within or nearer to the Protected Areas and Wetland Mangrove areas.
JFM Resolution, September 2011	JFM Resolution allowed the General Body of VSS to elect their own Member Secretary (till date Foresters used to be the Member Secretary of VSS). JFM Resolution was further revised to formalize the role of Palli Sabha (village/ habitation assembly) to decide on the extent of Reserved forest, Protected forest, Village forest, Revenue forest (not Protected Areas) to be assigned to VSS and



Policies/ Laws	Outline
	the extent of Protected Area (National Park and Sanctuaries) excluding Core Area and the Mangrove Wetland to be assigned to Eco-Development Committees (EDC) in consultation with the Range Officer.
Odisha Eco Tourism Policy	Endowed with rich biodiversity and cultural heritage of the state, the policy promotes “responsible” tourism that contributes to the improvement of the local communities while tourists can enjoy the nature and wildlife in an eco-friendly mode of exploration. The policy mandates 1) awareness creation among the stakeholders on “sustainable and responsible community based tourism”; 2) “quiet enjoyment” as a way of experiencing Odisha’s nature and culture and 3) “infrastructure development” by way of involving local communities and other stakeholders and their capacity enhancement.
Odisha Forest Act, 1972	Prior to enactment of Odisha Forest Act 1972, a part of Odisha’s forest was managed under the Madras Forest Act 1882 and the rest under the Indian Forest Act 1927. The duality in applicable laws in one state has created a difficulties in management and emerged a need to consolidate these two. Thus, the Odisha Forest Act 1972 was formulated. This prescribes the management of reserved and protected forest areas, constitution of village forests, defines forest offences and penalties, control and transit of timber and forest products, etc.
The Odisha Forest Produce (Control of Trade) Act 1981.	The Act provides for notification of forest products to be managed under state control - deals with nationalized forest products including bamboo.
Odisha Wildlife Protection Rules 1974	These rules were framed under Wildlife Protection Act, 1972. The rules provide the institutional framework and defines the acts of offence and punishment in managing the wild animals and plants in Odisha. Hunting, collection of plants, declaration and management of the sanctuaries and national parks and other closed areas, and coastal zones are regulated under this act. Restriction and prohibition on the trade of wild animals, and offences and penalties are also defined in the act.
Odisha Timber and other Forest Produce Transit Rule, 1980	These rules prescribes the procedures for issue of permits for felling and transit of forest products from the private land. This has relevance to Agro Forestry promotion under the Project.
Policy on Procurement and Trade of NTFP, March 2000	This policy places Gram Panchayats as a controlling agency of trading of NTFPs including 69 MFPs and thus, to ensure the fair payment to those who collect such products from forests. Salient features of the policy are: 1) Panchayats can decide the prices for each NTFP when bought from the collectors; 2) all traders who wish to buy products need to register with Gram Panchayats; 3) No transit permits shall be required for transporting NTFPs within the states; and 4) No loyalty for buying NTFPs to be paid to the government.
Orissa Gram Panchayats (Minor Forest Produce Administration) Rules 2002	These rules empowers Gram Panchayats to regulate the procurement and trade of MFPs handed over to them (earlier 68 and now it is 69 MFPs)

Source: Compiled by JICA Survey Team

### 5) Relevant Schemes/ Programmes Implemented by OFD

OFD implements both central and state funded programmes/ schemes. The table below summarises such programmes/ schemes. The survey team will confirm 1) area covered, 2) progress, 3) possibilities for convergence with OFSDP-II and if possible, the operational framework and modality for convergence. Among the listed below, Ama Jangala Yojana (AJY) shall be reviewed in detail to avoid overlapping and possibilities for convergence. Details of the National Afforestation Programme (NAP) which adopt JFM as the key approach is described in **Attachment 2.4.3**.

**Table 2.4.5 Relevant Schemes/ Programmes Implemented by OFD**

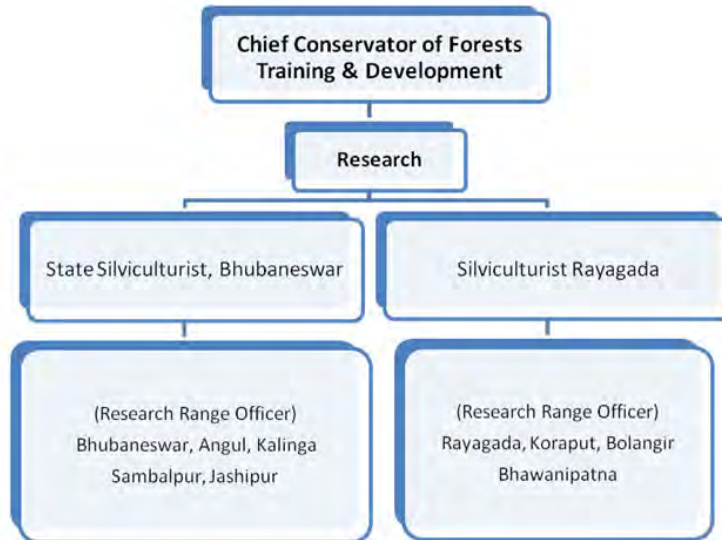
Schemes/ Programmes	Outline
Afforestation Programme under Increasing Green Cover	This programme comprises of Odisha Bamboo Development Programme, Urban Plantation, Avenue Plantation, Economic Plantation, Bald Hill Plantation, Plantation of Medicinal Plant at Patrapada, Maintenance of Permanent Nurseries, Agro forestry, Conservation of sacred Groves, Popularisation of fuel-efficient chullahs. 1.47 billion Rs. has been allocated for FY 2015-16.
Afforestation Programme under 13 <sup>th</sup> Finance Commission Grants	Based on the working plan, silvicultural operation for maintenance and management of forests, plantation, inventory of NTFP species, enhancement of forest protection and research and etc. were carried out. Rs. 735 million was made available for 2014-15 under the 13 <sup>th</sup> Financial Commission Grants.
Compensatory Afforestation	In Odisha, CAMPA was established in 2009. Its objectives includes 1)

Schemes/ Programmes	Outline
Management and Planning Authority (CAMPA)	conservation, protection, regeneration and management of existing natural forest; 2) wildlife and their habitat; and 3) afforestation of the identified sites for compensation. Its progress is regularly monitored and evaluated by FSI and NIC and reported on the web-site "e-green watch". As of June 2015, 20,369.76 ha of forest land and 28,080.93 ha of non-forest lands have been afforested. The CAMPA fund utilisation status is described in <b>Attachment 2.4.4.</b>
Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS)	This is a central government scheme. Workers mobilised under MGNREGS were engaged to carry out the afforestation activities. Afforestation: 131,711 ha; Avenue Plantation: 10,902km; Water body: 342 sites.
National Afforestation Programme (NAP)	This is a central government scheme and aims at forest conservation and community development through devising Joint Forest Management approach. 46 Forest Development Agencies (FDAs) have been established and 3,918 VSSs in the state were supported. Between 2002-03 and 2014-15, the area covered under NAP was 125,729 ha. For FY 2015-16, Government of India sanctioned 160 million Rs. for undertaking 6,455ha for plantation and 14,085ha for maintenance, and 1980 ha of advance work. This is a joint financing scheme between the Government of India and the State with the ratio of 60:40.
National Bamboo Mission	This is a central government scheme. Bamboo plantation was created since 2008-09 covering 8,230 ha till date, of which 3,277ha was covered during 2014-15. FY 2015-16, 125.8 million Rs. of budget was allocated for 931 ha bamboo plantation.
Industrial Belt Plantation	This intervention aims at reducing the hike in the temperature in the industrial areas by increasing the green cover. 710 ha was covered in Jharsuguda and Angul District since 2008-09.
Green India Mission (GIM)	Under GIM, 2,177 ha for forestry related activities and provisions of alternative fuel for 2,500 households are planned. Total outlay is 44.3 million Rs. for FY 2015-16.
Jagannath Bana Prakalpa	To meet the requirement of the construction of Chariot of Lord Jagannath, 2,326.34 ha of plantation was established within the vicinity of River Mahanadi. This scheme started in 2001 and planted species of Phasi, Asan, Dhaura, Gambhar and Mahaneem. In FY 2015-16, 1,015 ha of plantation in Athamallik, Dhenkanal, Khariar, Boudh, Bolangir, Nayagarh, Jharsuguda, and Khordha divisions and 175,000 Rs. worth of seedlings were distributed.
Sabuja Odisha Mission	The objectives of this mission are to increase the green cover of the State by increasing the area under forest & tree cover with increasing the density (canopy coverage) of the existing forest & tree cover. The activities under the mission includes: block plantation (assisted/ artificial re-generation/ AR); assisted natural re-generation (ANR); urban plantation; nursery for public distribution and for schemes. Since its commencement in FY 2009-10 till FY 2014-15, 4564 ha have been covered with the expenditure of 5.7 million Rs.
Ama Jangala Yojana (AJY)	The scheme takes advantage of lessons learnt from the Odisha Forestry Sector Development Project (OFSDP-I) and further extends JFM mode of forest management in the 30 territorial and wildlife divisions and intends to work with 7,000 VSSs and Eco Development Committees. The total outlay of the scheme is 11.7billion Rs which will be mobilised from CAMPA, State Plan, MGNREGS, and NRLM. The project period is for 6 years from 2016-17 to 2021-22. As of May 2016, 2,346 VSSs were identified in 24 Forest and Wildlife divisions. Various guidelines and formats are prepared and circulated. 114 partner NGO Teams are placed to work in 24 forest divisions to provide assistance in community mobilisation, micro planning and livelihood interventions. Capacity development activities are also undertaken with the various levels of officials and project staffs. The total expenditure reported for FY 2014-15 was 9.6 million Rs. Further details of AJY are described in <b>Attachment 2.4.5.</b>

Source: Highlights of Odisha Forestry Sector 2015 and 2016, Principal Chief Conservator of Forests, Odisha  
Source\*: Progress Report, Ama Jangala Yojana, May 2016

## 6) Forest Researches by OFD

The Forest Research Wing is headed by the Chief Conservator of Forests (Training & Development), Cuttack. Its present administrative set up is given below:



Source: OFD Website URL: <http://odishaforest.in/research.jsp>, September 2016

**Figure 2.4.5 Forest Research Wing, OFD**

The Research Wing of the Forest Department comprises of two Silviculture Divisions:, Bhubaneswar and Rayagada. There are 14 Research Gardens and 3 Hi-tech nurseries under Bhubaneswar Silviculture Division, and 9 Research Gardens and one hi-tech nursery falls under Rayagada Silviculture Division.

The forest researches largely focus around – a) tree improvement programme, b) adaptive research, and c) Silviculture studies. The three broad thematic areas are addressing the following aspects:

1) Floristic & Biodiversity Survey in preservation Plot, 2) Growth & yield study in Sample Plot, 3) Genetic improvement of High Value Species, 4) Production of genetically superior seeds, its Study & certification, 5) Creation of Seed production Area- Seed Stand, CSO, CMG (VMG), SSO, 6) Provenance trials of selected species, 7) Adaptive and applied Research, 8) Nursery & planting Technique of High value species & endangered species, 9) Sustainable Forest Management, 10) Forest Resource Accounting, 11) NTFP, 12) Silvicultural & Management technique, 13) Eco-restoration of Degraded Forest & waste land, 14) Management of Eco-fragile area – Mangrove, Coast, Mines Spoil, Bald Hills etc., 15) Process Standardization for Production of Quality Planting Materials (QPM).

In the year 2015-16, Rs.3 million were allocated for forest research, however no evident mechanism is learned as how these research finding & learning have been mainstreamed into the departmental forestry operations.

## 2.5 Farm Forestry

The National Forest Policy, 1988 envisages that 33% of geographical area of the country should be under forest or tree cover. The policy also envisages actions for meeting the growing demands of wood and non-wood products in the country. Several efforts have been made to enhance the tree cover outside the forest. The Ministry of Environment and Forests and Climate Change (MoEF&CC) had issued several guidelines/ circulars over last two decades on promotion farm forestry, agro-forestry, on felling and transit regulations for tree planting on the private land. The Green India Mission (GIM) has a fixed huge target for agro-forestry - 1.50 million ha of degraded agricultural lands and fallows are to be brought under agro-forestry. Despite multifaceted efforts it was realized by the MOEF&CC that the desired results are yet to be achieved. The MOEF&CC constituted a Committee in June 2011 to study the current regulatory regimes on felling and transit rules and norms for trees species grown on non-forest as well as private lands. Based on the recommendations of the Committee a guideline on felling and transit regulations for tree species grown on the non-forest /private land was issued in

November 2014 by MOEF&CC. The National Agroforestry Policy 2014 calls for supportive regulatory framework for felling and transit of trees grown under agroforestry and farm forestry systems.

The November 2014 guideline call for streamlining the process of clearance for felling and issuing of transit permits and also for inter-state movement of timber harvested from the private land for benefitting farmers to get better price. The guidelines have listed different species to be grown under farm forestry and agro-forestry and categorized them as A and B. Felling and transit permits may not be required for exempted species (List A) so that the products can be transported within the state and beyond without any timber transit permits. This will help growers to get the best possible price for their produce.

Some of the key interventions at the state level suggested in the guidelines are:

- Preparation of manuals and brochures on plantation and maintenance of different tree species along with relevant information on procedure for harvesting, transporting and marketing.
- Preparation of volume tables for different species both in irrigated/ non irrigated plantations for different bio-geographic regions.
- Preparation and promotion of different Agroforestry and farm forestry models appropriate to each biogeographic region with cost-benefit analysis along with the carbon sequestration potential.
- Preparation of Manual and package of practices for standardizing the quality of planting materials and also the nursery management.
- Development of mutually beneficial incentive mechanism for promotion of farm and agro-forestry.

There is a need to register the tree growers and a dynamic inventory has to be prepared and updated on a periodical basis. A web enabled database may be maintained on the farm forestry and agro-forestry plantations on the private land including information on the farmers, area, species, no. of trees planted, felled, transit permit etc.

## 2.6 Joint Forest Management and Community Forest Management

### 2.6.1 Comparison between JFM and CFM

In Odisha, prior to the introduction of Joint Forest Management (JFM), forest dependent communities took their own initiative in protecting and managing the forests and forest resources that provide sources of livelihoods for them. Differences and similarities between JFM and CFM are summarised in the table below.

**Table 2.6.1 Comparison between JFM and CFM**

Descriptions	JFM	CFM
Name of the institution/ committee	➤ <i>Vana Samrakshana Samiti</i> (VSS) <sup>5</sup> – name given by the Forest Department as per JFM Resolutions. In case of Protected Areas, Eco Development Committees (EDC) are formed.	➤ Names given by the village communities such as Village Forest Committee, Forest Protection Committee etc.
Legal Basis	➤ JFM Resolutions of 1988, 1989, 1990, 1993, 1996, 2008, 2011, amendment in June 2015. ➤ JFM is through exclusive orders and is yet to be brought under any Act of the Government.	➤ None ➤ By the enactment of the Forest Rights Act 2006, some of the communities are claiming for Community Forest Resource (CFR) rights and community forest rights.
Level of village/ cluster	➤ Committees are formed at the hamlet/ habitation, village and group of village level but ordinarily VSS is	➤ Efforts taken at hamlet/ habitation, village and a group of village level

<sup>5</sup> VSS is a body constituted by all the adult members of a village in a forest fringe area based on the JFM resolution and undertakes JFM in Odisha. In some states of India, such entities same can be named as Joint Forest Management Committee (JFMC) or Forest Protection Committee (FPC).

Descriptions	JFM	CFM
	formed in a single village. There may be more than one VSS in a large village.	
Type and extent of Forest Area	<ul style="list-style-type: none"> <li>➤ All types of forest areas.</li> <li>➤ Extent of area is determined by Palli Sabha (village assembly) and the Range Forest Officer considering the area customarily used, claims of neighbouring villages etc.</li> </ul>	<ul style="list-style-type: none"> <li>➤ All types of forest areas, which are being traditional used and protected by the habitation/ village.</li> <li>➤ There is no geographical limit of the area. The area may be decided based on the geographical limit of the village and/ or traditional/ customary use.</li> </ul>
Members	<ul style="list-style-type: none"> <li>➤ All adults of the village will become member of VSS/ EDC. In some cases, a hamlet or more than one village may constitute one VSS/ EDC.</li> <li>➤ The Palli Sabha shall elect an Executive Committee (EC) Chairperson, Vice-Chairperson and Treasurer, and 11 other members (minimum). The Secretary will be from the Forest Department.</li> <li>➤ A least 50% member in the EC shall be women.</li> <li>➤ There will be adequate representations from ST, SC and exclusive forest dependent communities.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Commonly, all the families/ households living in the village/ habitation become the member.</li> <li>➤ Although the group exists informally, a management committee is formed to organize and coordinate among the villagers to undertake forest protection activities.</li> </ul>
Process of formation	<ul style="list-style-type: none"> <li>➤ Process initiated by the Forest Department and VSS – General Body and Executive Committee are constituted as per the JFM Resolution.</li> <li>➤ The Palli Sabha shall send its resolution for formation of VSS/ EDC to Range Forest Officer for further recommendation to DFO. The DFO will do the registration of VSS/ EDC.</li> <li>➤ A MoU will be signed between the Forest Department and VSS/ EDC.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Voluntary initiative by the villagers living in the forest fringe areas and dependent on the forest and its resources. Most of the CFM efforts are self-initiated by the local communities led by the village leader or a group of village youth etc.</li> <li>➤ The villagers came together and resolved to protect a patch of forest located close to the village, which they have been using.</li> <li>➤ Most of the efforts began to arrest forest degradation and to meet the local requirements of fuelwood, fodder, small timber etc.</li> </ul>
Activities	<ul style="list-style-type: none"> <li>➤ Activities are guided by a micro plan prepared for each VSS/ EDC. Micro plan shall include activities for conservation and sustainable management of forest resources, activities for village development and enhancement of forest based livelihood options.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Protection of forest and wildlife:</li> <li>➤ Voluntary patrolling in the forest and/ or paid watchmen</li> <li>➤ No grazing or regulated grazing in the forest area</li> <li>➤ Regulated collection of fuelwood, small timber, fodder, NTFP etc.</li> <li>➤ Emphasis on natural regeneration</li> <li>➤ Protection against fire and collective efforts for extinguishing fire.</li> </ul>
Finance	<ul style="list-style-type: none"> <li>➤ The Forest Department implements different activities as per the approved micro plan. Funds are sourced from different projects, schemes – NAP, OFSDP, AJY, MGNREGS, CAMPA, NBM etc.</li> <li>➤ Membership fees are also collected by some of the VSSs/ EDCs.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Usually these committees don't receive any financial support from outside. Funds are raised through the following measures:</li> <li>➤ In some cases membership fees are collected from each family/ household</li> <li>➤ Fees for collection of bamboo, small timber</li> <li>➤ Occasional thinning and cleaning and sale of materials to the villagers</li> <li>➤ Sale of bamboo</li> <li>➤ Some CFM groups have their own system of regulating forest protecting including penalizing the erring members.</li> </ul>
Access to	<ul style="list-style-type: none"> <li>➤ Usufructs like fallen leaves, fodder</li> </ul>	<ul style="list-style-type: none"> <li>➤ By the consensus among the villagers,</li> </ul>

Descriptions	JFM	CFM
different resources and benefit sharing	<p>grasses, thatch grass, broom grass, fencing materials, brushwood, fallen lops, tops and twigs to be used as fuel shall be available to the members free of cost. All intermediate yields in the shape of small wood, poles, firewood etc. as may be obtained as a result of silvicultural operations and bamboo harvested in VSS / EDC assigned area shall be made available to the VSS / EDC members in a manner as may be decided by EC. If sold at a price, the funds so obtained shall be deposited in the VSS / EDC account.</p> <ul style="list-style-type: none"> <li>➤ In case of Kendu leaves and specified forest produce other than bamboo, if any, the VSS will have the right to collect the same from the assigned forest but these items will be disposed of as per the prevailing provisions of Government and practices.</li> <li>➤ In case of final harvest/ felling of trees – 50% of the sale proceeds after the harvesting cost shall be deposited in the VSS account.</li> </ul>	<p>each member family/ household has equal rights over NTFP, fodder, fuelwood etc.</p> <ul style="list-style-type: none"> <li>➤ Whenever there is a sale of forest produce such as bamboo by a committee, the sale proceed is kept in the committee's fund, which is used for activities of the committee, which may include forestry and village development activities.</li> </ul>
Women's role/ participation	<ul style="list-style-type: none"> <li>➤ Special provisions have been made in the JFM Resolution of 2008 and September 2011 states the enhanced participation of women in the activities of VSS. 50% or 5 persons of the Executive Committee members of VSS shall be reserved for women. Either Chairperson or Vice-Chairperson of the VSS/ EDC shall be reserved for woman.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Women equally participate in the activities of Forest Protection Committee. They play prominent role in protection of forest and collection of various forest products.</li> </ul>

Source: JICA Survey Team (2016)

## 2.6.2 Joint Forest Management in Odisha

### 1) Current Status of Joint Forest Management

Odisha is a front runner in participatory forest management. Even before the promulgation of historic National Forest Policy 1988, Odisha came out with its first government resolution on 1st August 1988 to involve local communities in protection of natural forest. This resolution of the Government was modified subsequently in October 1988 and December 1990. Following these resolutions more than 6,000 village forest protection committees (VFPCs) were formed. However, these committees were declared null and void in July 1993, when a comprehensive JFM Resolution was passed by the State Government superseding the previous resolutions. July 1993 Resolution has been further amended in 1994, 1996, 2008, 2011 and 2015 based on the need and change in the context.

**Table 2.6.2 Status of VSSs/ EDCs in Odisha**

	No of Organisations	No of Member Households	Forest area assigned to VSSs (Unit: km <sup>2</sup> )			
			Reserved Forest	Protected Forest	Others	Total
VSS	12,562	1,541,481	6,487.05	3,083.63	2,161.61	11,732.29
EDC	507	-	-	-	-	-

Source: Highlights of Odisha Forestry Sector 2016, Principal Chief Conservator of Forests, Odisha

### 2) Evolution of JFM in Odisha

Table 2.6.3 summaries the trajectory of JFM in Odisha.



**Table 2.6.3 Key Events in the Evolution of JFM in Odisha**

Timeline	Key Provisions/ Descriptions
August 1988	First resolution by Odisha Government to involve community in protection of Reserve Forests and in lieu of the effort of protection and conservation the certain bona fide needs of the communities would be met from the forest. This led to formation of Village Forest Protection Committees.
October 1988	The resolution of August 1988 was modified to bring in distinction between the official members and non-official members in the village forest protection committee (VFPC).
December 1990	The resolution of Aug 1988 was further modified to involve community to protect both Reserve Forest and Protected Forest.
July 1993	A comprehensive resolution on JFM was passed for regeneration and protection of degraded forest with the help of local communities. The process initiated formation of Van Samrakhyana Samitis (VSSs).
August 1994	Modification of July 1993 resolution for enhancing the forest area to be allotted to VSS – the restriction on 200 ha forest area to be allotted to each VSS was lifted.
December 1994	The scope of JFM was extended to the social forestry plantations. The village woodlots and block plantations managed by Village Forest Committees formed under Social Forestry Project can be brought under JFM. The VSS will get 100% share over the forest products including the final harvest from the trees planted under the social forestry project. For subsequent plantations/ regeneration in the village forest, the VSS would get 50% over the final harvest.
September 1996	JFM resolution of July 1993 was modified to notify the JFM areas as village forest to give the forest protecting villages exclusive rights over the forest under protection as many forests are right burdened. But the resolution was not implemented.
October 2008	A comprehensive JFM resolution was passed by the State Government, which included Protected Area (not core areas) and Wetland Mangroves for Joint Forest Management and Eco Development. This resolution superseded the July 1993 JFM Resolution but the VSSs formed under July 1993 Resolution continued to exist. A District Level Committee of DFO, ACF, Range Officers, Foresters etc. constituted to finalise section of areas for JFM and Eco Development. EDCs shall be formed for villages located within or nearer to the Protected Areas and Wetland Mangrove areas. Chairman or vice chairman will be woman.
September 2011	JFM Resolution allowed the General Body of VSS to elect their own Member Secretary (till date Foresters used to be the Member Secretary of VSS). JFM Resolution was further revised to formalize the role of Palli Sabha (village/ habitation assembly) to decide on the extent of Reserved forest, Protected forest, Village forest, Revenue forest (not Protected Areas) to be assigned to VSS and the extent of Protected Area (National Park and Sanctuaries) excluding Core Area and the Mangrove Wetland to be assigned to Eco-Development Committees (EDC) in consultation with the Range Officer.
June 2015	Reversal of the decision taken in Sep 2011, which allowed the VSS to have their own member as Member Secretary. The Palli Sabha shall elect the Chairperson, The Vice-Chairperson, The Treasurer and a minimum of other 11 (eleven) members with Local Forest Guard/Local Forester (Ex-officio Member) as Secretary and other Ex-officio Member such as concerned Ward Member(s) to constitute the Executive Committee. At least 50% of the members of the EC shall be women. The number of SC & ST members in the Executive Body shall be in proportion to their membership in VSS/EDC General Body. There should also be representation from the exclusive forest dependent communities.

Source: Compilation from different JFM Resolutions of Odisha

### 3) Constitution of VSSs (JFMCs) in Odisha

Formation of VSSs (JFMCs) organised by the forest fringe areas and EDCs around wildlife protected areas) in the last 3 decades has been presented in the table below. More and more VSSs are being formed every year. OFSDP-I has worked with 2,426 VSSs and the State Government is currently implementing a scheme for forest restoration and sustainable forest management named as Ama Jangala Yojana, which would target 7,000 VSSs in the next 6 years in 30 forest divisions spread over 14 districts of the state.

**Table 2.6.4 Number of VSSs/ EDCs Formed and the Area Protected by VSSs**

Year	No. of VSS	Area Protected by VSSs in km <sup>2</sup>	No. of EDCs
1994 August	395	332	
1996	1,060	939	
1998	1,473	1,423	
1999	6,685	6,346	
2001	5,979	5,846	
2004 September	7,358	8,039	
2008 September	11,105	10,128	328

Year	No. of VSS	Area Protected by VSSs in km <sup>2</sup>	No. of EDCs
2012 September	12,158	11,542	462
2016	12,562	11,732	507

*Source: Forest Department*

#### **4) Issues and challenges in implementation of JFM in Odisha**

OFD has initiated number of activities through VSSs but the interventions for institutional development of VSSs have remained limited. Majority of VSSs are yet to become self-sustaining for forest protection, management, addressing different problems and challenges, and building linkages with different opportunities in the market/ external environment. The decentralised governance of forests and forest resources involving local communities would require more collective and focused interventions.

A part of the weakness of JFM derives from the lack of firm legal basis. It is a scheme governed by an executive government order which can easily be modified or changed. The relevance of JFM is being questioned by the forest protecting communities and civil society organisations after the enactment of Forest Rights Act 2006. Most of the villages where VSSs have been constituted may be entitled to Community Forest Resource (CFR) rights under FRA.

### **2.6.3 Community Forest Management in Odisha**

#### **1) Overview of Community Forest Management (CFM) in Odisha**

A lot has been studied and discussed on the community efforts for forest protection and management in Odisha. Thousands of villages/ habitations have been protecting and managing forests irrespective of its legal category of the forest (Reserve Forest, Protected Forest, or Protected Areas) located in vicinity voluntarily.

Community Forest Management (CFM) is a spontaneous response of a village or a habitation or a group of villages or a group of habitations to arrest deforestation and forest degradation in the areas surrounding the village or habitation. There is a diversity of forest protection and management practices adopted by these villages/ habitations, which were evolved over a period of time. Many of these practices are yet to be formally recorded.

The key motivating factors for initiation of CFM include a) responding to the scarcity of forest products such as fuelwood, small timber, timber, fodder, NTFPs etc.; b) environmental concerns – protection of forest and environment to ensure ecosystem services; c) protection of forest to raise some income for running schools and other village development activities; d) protection of forest by the agrarian communities to check soil erosion, degradation of cultivated land and increase the availability of water for agriculture etc.

There is also a diversity of actors and factors which led to initiation and establishment of CFM. In some cases, the process was initiated by the local youth to protect forest resources and later on the whole village was involved; in some places the local teachers have initiated the environment conservation movement that led to CFM; in some areas the local socio-political leaders became the champions of forest protection movement and persuaded the local communities to protect forest resources etc. There were also instances where the local foresters sensitized the communities to protect forest.

#### **2) Evolution of CFM in Odisha**

Although there is no recorded evidence of scale and magnitude of forest protection by the communities during the British and pre-British period, traditionally tribal communities were protecting forest through customary rules. Sacred groves were/ are being protected by the tribal communities in several places for spiritual and religious purposes. In Odisha, the first recorded instance of CFM was traced in Lapanga village in Sambalpur, where the communities began forest protection from 1936. Forest protection by communities existed in Sambalpur and Nawrangpur areas during 1900-1940. Forest protection by some local communities was found in Koraput, Keonjhar and Mayurbhanj areas during 1941-50.

1960s and 70s saw many villages in western and central Orissa got involved in forest protection without any external help. CFM has a good presence in Nayagarh, Mayurbhanj, Bolangir, Sambalpur, Keonjhar, Dhenkanal, Angul, Deogarh and Phulbani districts of the state. In 1990s, once JFM was introduced many villages across the length and breadth of the state initiated forest protection without even forming VSS.

### 3) Common Rules Evolved for Management of Forests

In most villages or habitations, protection was initiated by a resolution by the villagers which included a) the area to be protected, b) permissible and restricted activities in the forest, c) system of protection and penalty system etc.

In majority of cases, the communities agreed to guard the forest through voluntary patrolling on rotation (as known as *Tenga Palli*). Often the moral in the closely bonded communities ensures to maintain the rotation. A list was drawn up of all the households along with a schedule of protection, and each household has to nominate one person to participate the voluntary patrolling on the designated day. In some villages, the protection was done by paid watchman and the cost towards protection was contributed by the villagers. Many villages have different sources of revenue including penalty, membership fees, fees for collection of fuelwood, fodder, bamboo, small timber for own requirement over a period of protecting the forest for 5-10 years, and later on this fund was used for strengthening the protection system. While the protection was initiated the neighbouring villages were well intimated about the protection of forest and penalty system. After protection of forest for 3-5 years (depending on the area, type of forest, regeneration of forest etc.), the members were allowed to collect fuel wood and other forest products only for own consumption – in some places free of any charges and in other with some nominal charges. Even in some cases neighbouring villages were also allowed to collect fuel wood with some nominal fees. Grazing was restricted for initial 2-3 years and later on selected patches of forest were opened for grazing. Some villages also followed rotation grazing system in the initial years. CFM groups adopted informal system, which got strengthened over a period of time based on the experience and need.

No commercial felling of timber, bamboo and small timber has been allowed by the CFM villages. Members and neighbouring villagers are allowed to collect and sale NTFPs. Some villages in Nayagarh adopted the practice of sustainable harvesting of bamboo and sell them to the members as well as neighbouring villagers with a nominal fee.

Once one village started protecting a patch of forest, neighbouring villages got organised and initiated protection of forest close to their village. Efforts were made to protect the entire forest block in the vicinity. There were disagreements and conflicts on the forest boundaries to be protected by each village. These villages negotiated among themselves through series of discussions and mutually determined the boundaries of forest to be protected by different villages. They also agreed on the punitive measures to be followed for violation of rules and conflict resolution mechanisms.<sup>6</sup>

### 4) Results and Impacts of CFM

A number of studies<sup>7</sup> have been conducted to understand the efforts of the communities and impact of their efforts. The visible change because of the community efforts is the standing regenerated forests and increased flow of forest products. Many places the wildlife has come back to the forest. The forest protecting villages have gained strengths to face both internal and external challenges; ownership over resources has increased; many villages are successfully managing the conflicts.

There are villages, which have generated funds from penalty, membership fees, sale of forest products etc. and carried out village development activities such as establishment of schools, repair of village

---

<sup>6</sup> Documentations on community forest management by Regional Centre for Development Cooperation, Bhubaneswar and Vasundhara, Bhubaneswar.

<sup>7</sup> This section is based on the literatures such as: Pattanaik, Manoj et.al., (1999). Community Forestry and Village Development. RCDC; and Human, Joe and Pttanaik, Manoj. (2000). Community Forest Management.

roads, renovation of ponds, construction of temples, community centres, etc. They also undertake different social, cultural and religious activities periodically in their respective villages.

The villages and habitations involved in forest protection have come together at local, forest block/ cluster, district and state level to form their federations, associations/ fora to collectively address problems faced by them and show their unity and solidarity. They meet occasionally at the cluster and district level to share their experiences and problems. The district level federations/ fora do also interact with the Forest Officials and District Administration to discuss issues relating to policy and implementation of different programmes.

## 5) Issues and Challenges in CFM

The challenges before CFM are many and multifaceted. There is a growing pressure on the limited resources from within as well as from outside. Although the communities are protecting forest there is no legal recognition from the Government. The communities got a sense of relief after FRA 2006 but so far it has not helped them much in securing their rights over forests and forest resources.

Since OFD is promoting JFM under different schemes and Projects, some of these self-initiated forest protection committees have opted to join JFM and got financial support and recognition, which helped them to protect their rights over the forests and forest resources where they have been traditionally used but became increasingly encroached by the neighbouring communities. On the other hand, there are communities that felt that the level of autonomy in decision making in forest protection and management was reduced since the forest management is now to be undertaken in partnership with OFD.

The forest protecting communities undertaking CFM have limited capacity, resources and facilitating environment to meet the challenges in management of NTFPs, enterprise development and market access despite their legal entitlement over 69 Minor Forest Products (MFPs) under PESA. They also have limited capacity to address the complex conflicts emerging out of resource management, mines, development projects, etc.

### 2.7 Status of Forest Rights Act, 2006

#### 1) The Forest Rights Act, 2006

The Scheduled Tribes & Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, which is popularly known as Forest Rights Act is being implemented in Odisha since January 2008. The Act is a response of the State to the long drawn struggles of tribal and other forest dwelling communities in the country for their rights over forestland, where they live and interact with the forest resources for social, economic, cultural and religious purposes. Forest is an integral part of their way of living.

The Act provides a comprehensive and empowering framework for recognition of both individual and community forest rights of the Scheduled Tribes (STs) and other traditional forest dwellers who primarily depend on forest for their livelihood and socio-cultural activities. Individual rights include the right to hold and live on forestland under individual or community occupation for habitation or for self- cultivation for livelihood. The land to be vested shall be on the basis of actual occupation and shall not exceed 4 ha. Individual forest rights also include right of ownership, access to collect, use and dispose of minor forest produce which has been traditionally collected within or outside traditional village boundaries. The individual right holders have right in or over disputed lands under any nomenclature in any state where claims are disputed; rights for

**Table 2.7.1 Linkages of Forest Rights Holders with Other Schemes - Convergence**

(March 2016)

Schemes	No. of HHs
Indira Awas Yojana (Housing scheme)	147,566
Mo Kudia (My house)	3,737
Mo Pokhari (My pond)	3,944
Land development under MGNREGA	53,969
National Horticulture Mission	8,383
National Bamboo Mission	286
her schemes	12,261
<b>Total</b>	<b>230,146</b>

*Source: Annual Activity report 2015-16, SC and ST Development Department, Government of Odisha*

conversion of pattas or lease or grants issued by any local authority or any state government on forestland to titles; and the right to in-situ rehabilitation, where the scheduled tribe or other traditional forest dweller have been illegally evicted or displaced from forestland without receiving their legal entitlement to rehabilitation prior to 13 December 2005.

The Act allows for various community forest rights, such as *nistar* (communal land); uses or entitlements such as fish and other aquatic products, grazing (both settled or transhumant) and traditional seasonal resource access of nomadic or pastoralist communities; community tenure of habitat and habitation for Particularly Vulnerable Tribal Groups (PVTGs) and pre-agricultural communities. The Act also recognizes the rights of the communities to protect, regenerate or conserve or manage any Community Forest Resource (CFR) which has been traditionally protected and conserved for sustainable use. The community has the right of access to biodiversity and right to intellectual property and traditional knowledge related to biodiversity and cultural diversity; and any other traditional right customarily enjoyed by the forest dwelling communities which are not mentioned above, excluding the traditional right of hunting or trapping or extracting a part of the body of any species of wild animal. As duties of the forest rights holders, FRA depicts the Gram Sabha and village level institutions where the FRA rights holders live are empowered to do the following.

- a) Protect the wildlife, forest and biodiversity
- b) Ensure that adjoining catchment areas, water sources and other ecological sensitive areas are adequately protected
- c) Ensure that the habitat of forest dwelling Scheduled Tribes and other traditional forest dwellers is preserved from any form of destructive practices affecting their cultural and natural heritage
- d) Ensure that the decisions taken in the Gram Sabha to regulate access to community forest resources and stop any activity which adversely affects the wild animals, forest and the biodiversity are complied with.

*Source: FRA 2006 (Ch. III, Cl.5)*

## 2) Progress of Implementation of FRA in Odisha

The different types of Rights under FRA is summarised in the table below. For the implementation of FRA, 48,195 Forest Rights Committees in Odisha have been constituted by the Gram Sabhas to receive claims and verify them and recommend them to the Sub Divisional Level Committees. There are 43 Sub Divisional Level Committees and 30 District Level Committees to implement the FRA in the state.

**Table 2.7.2 Types of Rights under FRA**

Types of Rights	Definition
Individual Rights	Those individuals who are STs and lived in the forest area before 13 December 2005 and depend on the forest/ forests land for bona fide livelihood needs. Other Traditional Forest Dwellers who lived in the premises 75 years before 13 December 2005 and depend on the forests or forests land for bona fide livelihood needs. Source: FRA
Community Rights	The rights are granted to villages inside forests for their settlement area, and the area required for establishing the communal facilities i.e. schools, dispensaries, road and etc for their wellbeing. (Source: Implementation of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act 2006 - guidelines regarding. Vide No 23011/32/2010-FRA [Vol.II (Pt.)] GoI, Ministry of Tribal Affairs dated 12 July 2012. )
Community Forest Resource Rights	The rights defined as per FRA Section 3(1) (i) – (l): “Protection, regeneration or conservation or management of any community forest resource, which forest dwellers might have traditionally been protecting and conserving for sustainable use and are recognised in the village” (Source: Implementation of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act 2006 - guidelines regarding. Vide No 23011/32/2010-FRA [Vol.II (Pt.)] GoI, Ministry of Tribal Affairs dated 12 July 2012. )

*Source: Compiled by JICA Survey Team (2016)*

The status of FRA as of 30 June 2016 is given below.

**Table 2.7.3 FRA Status as on 30 June 2016**

Type of Rights	Claims received (No.)	Titles distributed	
		(No.)	Area (acre)/ Area (ha)
Individual	612,864	378,675	580,041/ 234,731
Community Rights	8,117	3,034	187,100/ 75,716
Community Forest Resource	5,116	2,171	148254/ 59,995
<b>Total</b>	<b>626,097</b>	<b>383,880</b>	<b>915,395/ 370,442</b>

Source: Status of Implementation of FRA, SC and ST Development Department, Government of Odisha

17,884 individual claims from PVTGs have been settled and land titles totalling 31,018 acres have been distributed to them.

The ST and SC Development Department with the help of other line Departments has been organising awareness programmes for the forest rights holders on different development schemes, which could be used by them for development of forestland and for enhancing livelihood opportunities. Out of 378,675 forest rights beneficiaries, 230,146 have already been supported under different schemes of the Government. Capacity building programmes are being organised for the beneficiaries on marketing of MFP etc.

### 3) Issues and Challenges in Implementation of FRA in Odisha:

Although Odisha has been a pioneering state in implementation of FRA, a lot more still has to be done. The state is lagging behind in vesting the CFR to forest dwelling and protecting communities. More than 50% of community claims are still pending for years. Even after 8 years of implementation of the Act awareness among the forest dwellers on the community rights and community forest resource rights is poor. The entitlements of other traditional forest dwellers are yet to be properly addressed. As per the estimates of Forest Survey of India (State of Forest Report 1999), Odisha has more than 29,000 forest fringe villages<sup>8</sup>, who can claim for Community Rights and CFR, and so far 13,000 Community Rights and CFR claims have been received.

In some cases VSSs/ JFMCs have been given CFR title, which was not permitted under FRA. This is due to the recognition of the State Level Monitoring committee of FRA, that VSSs have been over the years nurtured by OFD to sustainably manage and protect forest resources, hence should be given CFR to those VSS where there is no conflict with the Gram Sabha in sustainable management of the forest resources.

## 2.8 NTFPs in Odisha

### 1) NTFPs in Odisha and Their Contribution to Livelihoods

Odisha has rich potential of NTFPs, which is underutilized in terms of procurement and enterprise development. Most of the current procurement and trade of NTFPs takes place in informal markets and does not get computed in the State's economy. There are about 120 commonly tradable NTFPs available in Odisha. Kendu leaf, bamboo, sal seed, sal leaf etc. are some of the important NTFPs of the state. Odisha is the third largest producer of Kendu leaf (produces about 4-5 tonnes every year) and the value of Kendu leaf traded in 2013 was Rs. 3.928 billion<sup>9</sup>. 9% of country's bamboo forest areas are in Odisha and the annual production of bamboo is 200,000 metric tons<sup>10</sup>.

NTFPs often play important role in livelihood of forest dwellers including tribal in Odisha. 44% of the State's area is under Fifth Schedule, where the tribal communities mostly depend on forestland and

<sup>8</sup> FSI used the Census of India, 1991 data to identify the villages, which has forest as land use - <100ha, 100-500 ha and >500 ha. Based on this assessment, 29,302 villages were identified in Odisha, which has forest as a land use.

<sup>9</sup> Odisha Forest Development Corporation.

<sup>10</sup> Odisha Bamboo Development Agency

forest resources such as NTFPs for food, medicine, household articles and cash income. Odisha has more than 29,000 forest fringe villages with a population of about 16 million. During November to July, during the agriculture lean period, people collect various NTFPs such as myrabolans, grasses, hill brooms, mahua flower, kendu leaves, mahua seeds, karanj seeds, neem seeds, chironji, leafy vegetables, roots and tubers, firewood, bamboo, small timber etc. The share of NTFPs in the household income varies from 10-70% depending on the type of forest and access to market<sup>11</sup>. The NTFP gatherers are often exploited by the local traders who usually offer low prices to them in comparison to the prevailing market price because of awareness, infrastructure for value addition and storage, poor access to larger markets etc.

## 2) Stakeholders in NTFP Management

In Odisha, institutions like Tribal Development Cooperative Corporation of Odisha Ltd (TDCC - apex cooperative for development of the tribal communities), Odisha Forest Development Corporation (OFDC), Odisha Rural Marketing Society (ORMAS - an autonomous agency under the Department of Panchayat Raj for marketing rural products), Tribal Cooperative Marketing Development Federation (TRIFED – apex national organisation under Ministry of Tribal Affairs, GoI) etc. were involved in procurement and sale of MFP though their contribution to the NTFP based enterprise development has been seen to the limited extent.

## 3) PESA and Changes in NTFP Management

Prior to PESA, most of the NTFPs were managed under strict state control. Three very important NTFPs, i.e. Kendu leaf, Sal seed and Bamboo were nationalised and managed by OFD and State owned corporations such as OFDC and TDCC. Kendu leaf and bamboo still continue to be the nationalized NTFPs in Odisha. Other NTFPs were leased out to different traders/ trading institutions. Some of the lease barred NTFPs were procured and traded under strict supervision of OFD.

PESA brought significant change in the ownership, control and management of NTFPs. The Act prescribed for ownership, control and management of MFPs to Panchayats/Gram Sabhas. In compliances to PESA, the State Government announced a NTFP policy in March, 2000, which vests ownership rights to the Gram Panchayat in the entire State. Orissa Gram Panchayat (MFP Administration) Rules, 2002 was enacted in November, 2002 to empower the Gram Panchayat to own, control and manage MFP. Traders will register themselves with the Gram Panchayat in order to operate in the Gram Panchayat area and have to pay a license fee of Rs. 100 for each MFP for a period of one year (October to September). The Panchayat Samiti (PRI at the intermediate/ block level) was entrusted to fix minimum procurement price for MFP for the Panchayat Samiti area. A total of 69 NTFPs have been transferred to Gram Panchayats for management and control.

GP was given power to regulate procurement and trading of MFP, whether produced in government lands and forest areas within the limits of Grama/ Village or collected from the Reserved Forests and brought into the Grama/ Village. Priority was given to the VSS and its members for collection and trading of MFP. Price fixation would be done by the Panchayat Samiti (PS) in September and would be circulated to different offices of district administration and to all the Gram Panchayats. The Gram Sabha would ratify prices fixed and necessary changes can be made based on the local needs. The trader registered to procure MFP from the Gram Panchayats shall furnish monthly return and also annual return on a prescribed format. The Gram Panchayats shall furnish an annual return on the procurement and sale to the Forest Range Officer.

Despite the well defined legal system for the advantage of the NTFP dependent communities, the Gram Panchayats could not meet their responsibilities or utilize the powers given to them. Thus, not much change has been brought into the NTFP harvesting and trading. There was inadequate facilitating support from the Panchayati Raj Department as well as other Departments to the Gram

---

<sup>11</sup> Guidelines and Operational Manual on the scheme- Mechanism for marketing of MFP through Minimum Support Price and Development of Value Chain for MFP. MoTA, GoI, New Delhi, 25 Jan 2014.



Panchayats to control and manage NTFPs handed over to them. No support for human resources and no budgetary provisions were made for the Gram Panchayats to deal with NTFPs.

#### 4) NTFP Regimes after FRA 2006

FRA 2006 vested right of ownership, access to collect, use and dispose of minor forest produce with the forest dwellers which has been traditionally collected within or outside village boundaries. Communities and Civil Society Organisations are building pressure on the State Government to de-regularise procurement and trade of Kendu leaf and Bamboo, and provide necessary facilitating support to the forest dwellers and Gram Sabhas to control and manage NTFPs.

**Table 2.8.1 Minimum Support Price for NTFP in Odisha**

Sl No.	Commodity	MSP 2014-15 (In Rs. per MT)	MSP 2015-16 (In Rs. per MT)
1	Karanj	21,000.00	21,000.00
2	Mahua seed	22,000.00	22,000.00
3	Sal Seed	10,000.00	10,000.00
4	Sal Leaves	21,000.00	21,000.00
5	Chironji Pod with seed	100,000.00	100,000.00
6	Myrobalan	11,000.00	11,000.00
7	Gum karaya	108,000.00	108,000.00
8	Honey	132,000.00	132,000.00
9	Lac Kusumi	290,000.00	320,000.00
10	Lac Rangeeni	210,000.00	230,000.00
11	Tamarind	22,000.00	22,000.00

Source: [www.trifed.in](http://www.trifed.in) (Trifed, MoTA, GoI, New Delhi)

The Government of India through MoTA has introduced a national scheme during 2013-14 on sustainable management of NTFPs, named as “The Mechanism for Marketing of Minor Forest Produce through Minimum Support Price (MSP) and Development of Value Chain”.

The scheme intends to provide social safety measures for the NTFP gatherers/collectors, who are primarily members of ST communities. The scheme is being implemented in 9 states having Sixth Schedule areas where the tribal population is dominant<sup>12</sup>. The scheme will help achieving the objectives stated in FRA i.e., sustainable use, conservation of biodiversity, maintenance of ecological balance and ensuring livelihood and food security of forest dwellers. The interventions under the scheme include fixation of Minimum Support Price for NTFP and procurement of these NTFPs, if there are no buyers; setting up Trade Information System; establish and improve Supply Chain Infrastructure; Value Addition and Scientific Harvesting of NTFPs etc. The scheme has a noble objective of providing fair price to the primary collectors of NTFPs and ensuring higher income from sale of NTFPs and value added products. 12 NTFPs have been identified for fixation of Minimum Support Price based on the suggestions/ inputs from TRIFED, State TDCCs and other state agencies.

The scheme has been implemented in Odisha since July 2014. TDCC and OFDC have been nominated as State Procurement Agencies (SPA). Procurement of Gum Karaya, Sal Leaves and Lac is yet to be done. The State Level Coordination and

Monitoring Committee under the Chairmanship of Chief Secretary and District level Coordination and Monitoring Committee under Chairmanship of Collector and District Magistrate have been constituted for smooth implementation of the scheme. More than 900 Primary Procuring Agencies<sup>13</sup> to procure the NTFPs providing MSP. TRIFED and TDCC with the support of local civil society organisations have been creating awareness on the Minimum Support Price but the procurement of NTFPs is very poor looking at the current potential and past figures of production of above mentioned NTFPs. Possible reasons may include poor awareness among the primary collectors; limited out-reach of the procurement agencies in remote area; higher price paid by the local traders than the MSP, etc.

**Table 2.8.2 State Procurement Agencies for 12 NTFPs in Odisha under MSP scheme**

Name of the State Procurement Agency	NTFPs to be collected
Odisha Forest Development Corporation Ltd	Mainly – Kendu Leaf and Bamboo Tamarind, Sal Seed, Gum karaya, Honey, Karanj, Lac Kusumi, Lac Rangeeni, Mahua flower and Mahua seed
Tribal Development Cooperative Corporation of Odisha Ltd	Gum Karaya, Chironji pod with seed, Honey, Karanj and Tamarind

Source: Tribal Development Co-operative Corporation of Odisha Ltd.

**Table 2.8.3 Quantity Procured by State Procurement Agencies during 2015-16 in Odisha**

Sl No.	Commodity Name	Quantity MT	Value in Lakh Rs.
1	Chironji Pod with seed	10.53	10.53
2	Karanj	16.07	3.3747
3	Mahuwa seed	44.43	9.7746
4	Myrobalan	23.29	2.5619
5	Sal Seed	23.24	2.324
6	Tamarind	303.00	66.66

Source: www.trifed.in (Trifed, MoTA, GoI, New Delhi)

## 2.9 Administrative Units, Panchayat Raj Institutions and Socio Economic Condition

### 2.9.1 Administrative Units and PRIs

In Odisha, there are 30 district administration units which are further divided into 314 blocks. Thasils are the revenue unit whereas Blocks are created for the rural areas to administer developmental activities.

<sup>12</sup> The area declared under the 5<sup>th</sup> Schedule of Constitution includes a part of Andhra Pradesh, Jharkhand, Chattisgarh, Himachal Pradesh, Madhya Pradesh, Gujarat, Maharashtra, Orissa and Rajasthan.

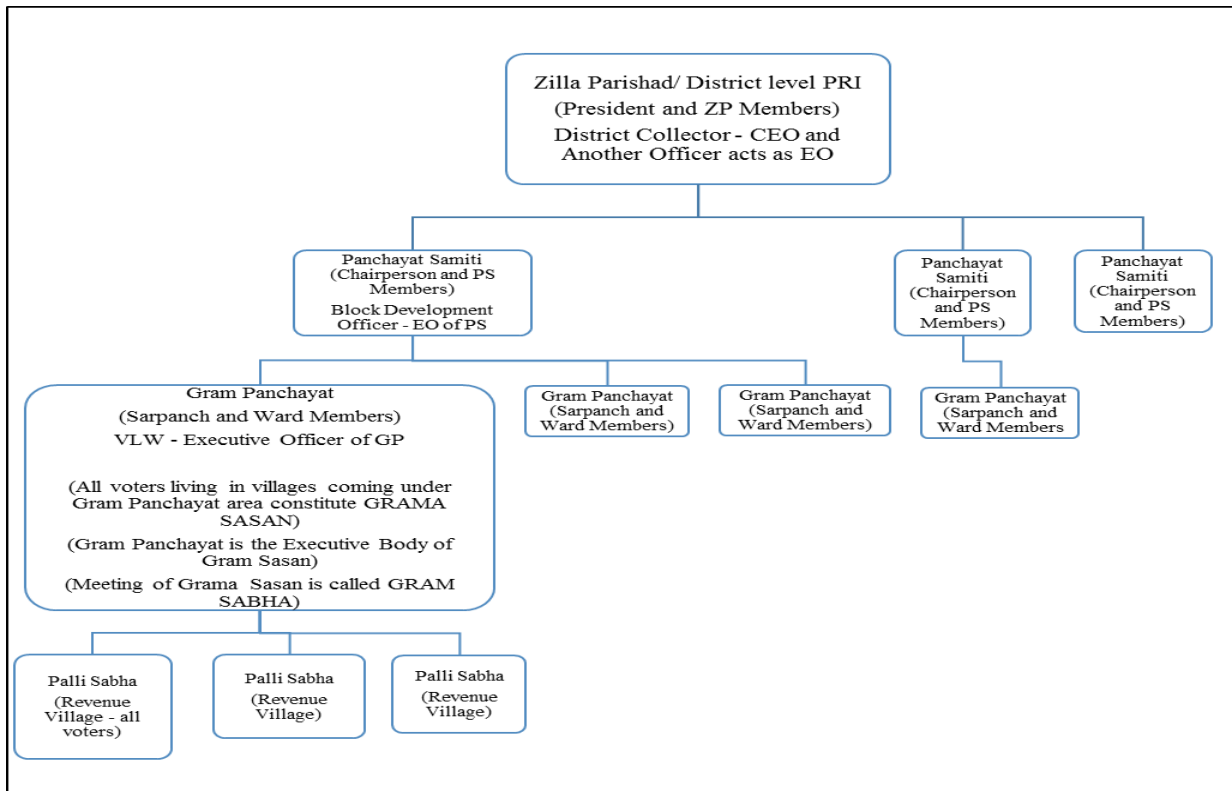
<sup>13</sup> Primary Procuring Agency: Selected out of SHG, VSS, Forest Rights Committee, Cooperative, Tribal Entrepreneurs. Often one agency is selected for one Gram Panchayat selected by it. Primary Procuring Agency will gather products from primary collectors and store. State Procurement Agency will purchase the products and pay for them. The Primary Procuring Agency will deduct 2% of the total sales and the rest will be distributed to the primary collectors.

Along the administrative units, Panchayat Raj Institutions are established at District (*Zilla*) and Block (*Panchayat Samiti*). Below Panchayat Samiti at a Block, Gram Panchayats are organised by the representatives of Village Councils (*Palli Sabha*) established at a revenue village. At each level, plans for various developmental activities are discussed. Since the lowest level of the line department is placed at the block level and thus, the information on the schemes/ programmes is readily available, creating a linkage at these levels would be important for the successful convergence.

**Table 2.9.1 PRIs in Odisha**

District Panchayat ( <i>Zila Parishad</i> )	Block level Committee (Panchayat Samiti including Mahila Panchayat Samiti)	Gram Panchayats	Village Council ( <i>Palli Sabha</i> )
30	607	6,209	51,313

Source: District at a glance (2016). Directorate of Economics & Statistics, Odisha.



Source: JICA Survey Team (2016)

**Figure 2.9.1 PRI in Odisha**

### 2.9.2 Demography

The total population of Odisha is 41,974,218, of which 21,212,136 (50.5%) is male and 20,762,082 (49.5%) is female. 22.8% of the total population is ST and 17.1% is SC (Census 2011). There are 62 ST communities and 93 SC communities in the state. There are 47,677 inhabited villages. The coastal plain areas are densely populated in comparison to tribal hinterland and other parts of the state.

13 ST communities (Bonda, Chuktia, Bhunjia, Didayi, Dongaria Kandha, Juang, Kharia, Kutia Kandha, Lanjia Soura, Lodha, Mankadia, Paudi Bhuyan, and Souras) are notified as Particularly Vulnerable Tribal Groups (PVTG) by the Government of India.

### 2.9.3 SC/ ST Population in Districts

As reviewed in the previous section, ST and SC communities accounts for 39.9% of the total population. Distribution of the ST/SC population varies from district to district. The proportion of ST population was the highest in Mayurbhanj (58.75%) followed by Malkangiri (57.83%). The same for SC population was the highest in Subarnapur (25.60%), Baudh (23.79%) and Jajpur (23.72%).

**Table 2.9.2 District Wise Population and % of ST/SC Population (Unit: %)**

District	Total	Male	Female	% of ST in District	% of SC in District
Anugul	1,273,821	655,718	618,103	14.10	18.81
Baleshwar	2,320,529	1,185,787	1,134,742	11.88	20.62
Bargarh	1,481,255	749,161	732,094	18.98	20.17
Bhadrak	1,506,337	760,260	746,077	2.02	22.23
Balangir	1,648,997	830,097	818,900	21.05	17.88
Baudh	441,162	221,625	219,537	12.55	23.79
Cuttack	2,624,470	1,352,760	1,271,710	3.57	19.00
Debagarh	312,520	158,230	154,290	35.33	16.67
Dhenkanal	1,192,811	612,593	580,218	13.59	19.62
Gajapati	577,817	282,882	294,935	54.29	6.78
Ganjam	3,529,031	1,779,218	1,749,813	3.37	19.50
Jagatsinghpur	1,136,971	577,865	559,106	0.69	21.83
Jajpur	1,827,192	926,034	901,158	8.29	23.72
Jharsuguda	579,505	296,690	282,815	30.50	18.05
Kalahandi	1,576,869	787,101	789,768	28.50	18.17
Kandhamal	733,110	359,945	373,165	53.58	15.76
Kendrapara	1,440,361	717,814	722,547	0.66	21.51
Keonjhar	1,801,733	906,487	895,246	45.45	11.62
Khordha	2,251,673	1,167,137	1,084,536	5.11	13.21
Koraput	1,379,647	678,809	700,838	50.56	14.25
Malkangiri	613,192	303,624	309,568	57.83	22.55
Mayurbhanj	2,519,738	1,256,213	1,263,525	58.72	7.33
Nuapada	610,382	301,962	308,420	33.80	13.46
Nabarangapur	1,220,946	604,812	616,134	55.79	14.53
Nayagarh	962,789	502,636	460,153	6.10	14.17
Puri	1,698,730	865,380	833,350	0.36	19.14
Rayagada	967,911	471,960	495,951	55.99	14.41
Sambalpur	1,041,099	526,877	514,222	34.12	18.43
Subarnapur	610,183	311,312	298,871	9.37	25.60
Sundargarh	2,093,437	1,061,147	1,032,290	50.75	9.16
Total State	41,974,218	21,212,136	20,762,082	22.85	17.13
Total of Proposed Project Area	28,781,372	655,718	618,103	16.15	18.81

Source: Compiled from Census 2011 Data by SC&SC Development, minorities and Backward Classes Welfare Department, Government of Odisha.

#### 2.9.4 Economy

The economy of the state is heavily dependent on agriculture and animal husbandry. However, the agriculture sector is prone to the vagaries of nature and there has been a sharp decline of the population engaged in agriculture as a main occupation between 1991 and 2001<sup>14</sup>.

**Table 2.9.3 2014-15 (Advanced Estimate) GSDP at Current Prices by Sector**

Sector	billion Rs.	% to the Total GSDP
Agriculture & Animal Husbandry	482.8	15.5%
Forestry & Logging	56.1	1.8%
Fishing	45.6	1.5%
Mining & Quarrying	321.5	10.3%
Manufacturing (Registered)	250.5	8.1%
Manufacturing (Un Registered)	48.3	1.6%

<sup>14</sup> Odisha Economic Survey, 2014-15 (2015). Planning and Coordination Department, Government of Odisha

Sector	billion Rs.	% to the Total GSDP
Electricity, Gas & Water Supply	75.6	2.4%
Construction	350.6	11.3%
Trade, Hotel & Restaurant	363.1	11.7%
Railways	22.8	0.7%
Transport by other means	263.8	8.5%
Storage	4.9	0.2%
Communication	23.8	0.8%
Banking & Insurance	122.1	3.9%
Real Estate Ownership of Dwelling	207.9	6.7%
Public Administration	115.4	3.7%
Other Services	353.3	11.4%
Total	3,108.1	100.0%

Source: Odisha Economic Survey, 2014-15. Planning and Coordination Department, Government of Odisha

The Net District Domestic Product (NDDP) and per capita NDDP for 2011-12 at current price is given in the table below. The per capita NDDP is the highest in Keonjhar district followed by Sundargarh and Anugul districts. The average NDDP per capita among the districts proposed under OFSDP-II was 44,418Rs. Keonjhar district has achieved the highest and the lowest was the Nuapada district (24,165 Rs.). This partly reflects the gap in economic development within the districts proposed for OFSDP-II.

**Table 2.9.4 Net District Domestic Product 2011-12 at Current Price**

District	NDDP (Unit: million Rs.)	NDDP Per capita (Unit: Rs.)
Anugul	81,855.3	64,014
Baleshwar	76,193.8	32,656
Bargarh	48,606.0	32,713
Bhadrak	44,989.9	29,681
Balangir	57,257.8	34,369
Baudh	13,201.2	29,762
Cuttack	130,345.6	49,495
Debagarh	12,410.5	39,497
Dhenkanal	49,743.8	41,465
Gajapati	23,009.5	39,746
Ganjam	14,629.6	40,299
Jagatsinghpur	50,063.0	43,886
Jajpur	97,765.3	53,218
Jharsuguda	31,591.8	54,165
Kalahandi	51,802.0	32,661
Kandhamal	34,893.7	47,382
Kendrapara	41,020.7	28,345
Keonjhar	167,544.3	92,270
Khordha	128,321.5	56,613
Koraput	60,692.2	43,739
Malkangiri	16,961.7	27,413
Mayurbhanj	90,337.7	35,714
Nuapada	29,707.4	24,165
Nabarangapur	25,484.4	26,343
Nayagarh	20,007.9	32,769
Puri	54,528.9	31,917
Rayagada	35,941.5	37,089
Sambalpur	58,572.5	55,772
Subarnapur	19,588.5	29,761
Sundargarh	140,147.3	66,925
Total / Average	1,835,215.1	43,463

Source: Odisha Economic Survey, 2015-16. Planning and Coordination Department, Government of Odisha

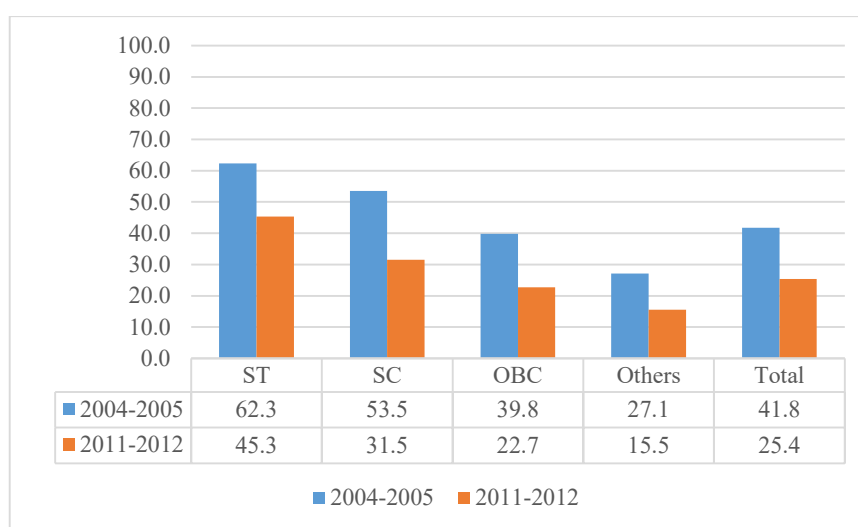
### 2.9.5 Poverty

Odisha made a significant achievement in reducing the poverty ratio. In all social groups and regions, the poverty head count ratio has reduced between 2004-05 and 2011-12. The total poverty head count ratio in 2004-05 in Odisha was 57.2%, on the other hand, the same for India was 37.2%. In 2011-12, India's poverty ratio was nearly halved (21.9%) while Odisha recorded 32.6%<sup>15</sup> despite the remarkable improvement. The poverty gap has also significantly improved between 2004-05 and 2011-12. This is partly due to the efforts of the Government of Odisha to poverty through infrastructure development for economic development and to ensure the entitlement for the underprivileged households through various schemes (**Attachment 2.9.1**). The estimated poverty line for rural Odisha is 695 Rs and 861 Rs. for urban Odisha in 2011-12 whereas the same for India was 816 for rural and 1,000 for urban area.

**Table 2.9.5 Poverty Gap Ratio\***

State	Rural		Urban	
	2004-05	2011-12	2004-05	2011-12
Odisha	17.37	7.01	9.6	3.15
India	9.64	5.05	6.08	2.7

\*Estimated based on monthly per capita consumption expenditure data based on the Mixed Recall Period Method  
Source: Odisha Economic Survey 2015-2016, Planning and Coordination Department, Government of Odisha.



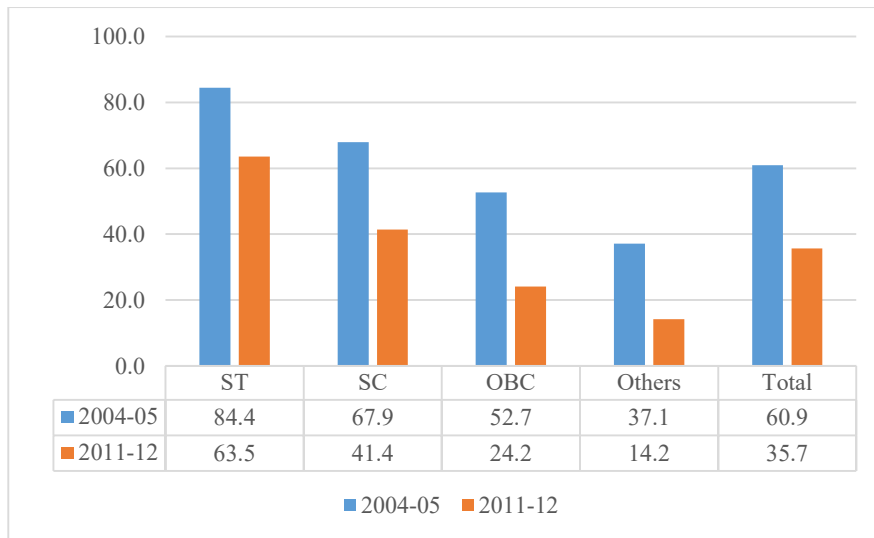
Source: Panagariya, Arvind. (2013). Poverty by Social, Religious & Economic Groups in India and Its Largest States 1993-94 to 2011-12. Columbia University. Institute for Social and Economic Research and Policy. Working Paper NO. 2013-02. Edited by JICA Survey Team.

**Figure 2.9.2 Estimated Incidence of Poverty by Social Group as per Tendulkar Committee Methodology for Rural India**

Poverty situation varies among the different social groups. As seen in the table above, the poverty head count ratio among ST (63.5%) and SC (41.4%) communities has been persistently high<sup>16</sup> in Odisha which are higher than the all India average.

<sup>15</sup> Source: Report of the Expert Group to Review the Methodology for Measurement of Poverty. Government of India Planning Commission. June 2014. The figure based on the Tendulkar method was quoted.

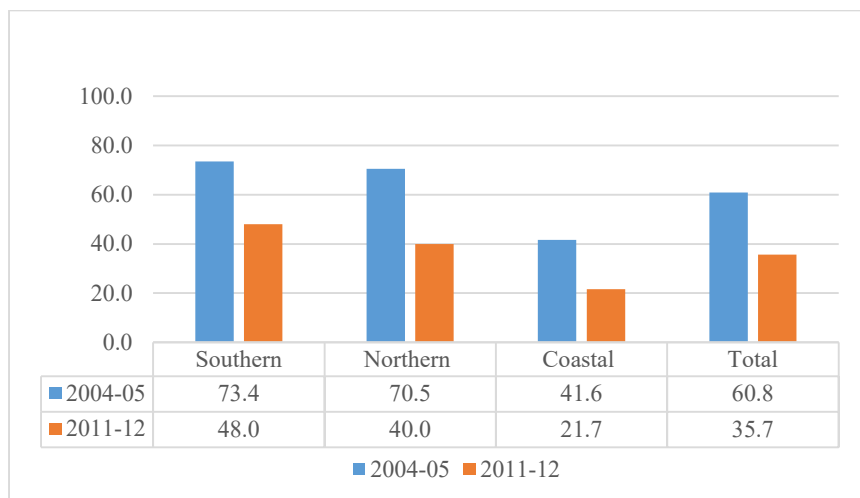
<sup>16</sup> Annual Plan 2015-16, Government of Odisha.



Source: Annual Plan 2015-2016, Government of Odisha

**Figure 2.9.3 Incidence of Poverty by Social Group as per Tendulkar Committee Methodology for Rural Odisha (Unit: %)**

Region wise, southern region (48.0%) and northern region (40.07%) indicated high poverty incidence in 2011-12<sup>17</sup>. Kalahandi, Bolangir, and Koraput (KBK) regions has high incidences of poverty despite its rich forest and other natural resources and the government implements number of development programmes in the region.



Source: Annual Plan 2015-2016, Government of Odisha

**Figure 2.9.4 Incidence of Poverty by NSS Regions as per Tendulkar Committee Methodology for Rural Odisha 2004-05 and 2011-12 (Unit: %)**

### 2.9.6 Food Security

In Odisha, 10.5% of the total number of households or 1,011,693 households are the beneficiaries of Antodaya Anna Yojana (AAY) under the National Food Security Act, which provides food items for the poorest of the poor at the subsidized rate. Mayurbhanj district (81,271 households) and Balasore district (71,664 households) have the highest number of AAY households.

<sup>17</sup> Ditto.



## 2.10 Gender

### 1) Gender Disparities in Odisha<sup>18</sup>

Several social and economic indicators hint at the disparities between men and women in various aspects of life in Odisha. Literacy rate still indicates the gender gap. The child sex ratio Female Infant Mortality was reported highest in India (52 females per 1,000 live births in Odisha/ 42 in India)<sup>19</sup>. The district wise child sex ratio in Odisha indicates low female child-births in Nayagarh (851), Dhenkanal (870), Angul (884) and Ganjam (899) (Odisha Review 2012)<sup>20</sup>, whereas it was reported to be 941 for Odisha and 919 in India (Census 2011). Preference of the boy child over the girl child is partly due to the custom of dowries. Despite the law granting land ownership to women, land properties are mostly passed on to patrilineal lineage. Government of Odisha has, in 1976, enacted the “Dowry Prohibition Act” and the dowry related cases are monitored by the State Human Rights Protection cell.

Women are largely engaged in the works of informal sector. Collection of NTFPs and agriculture labour provide livelihoods for many women. Odisha Government implements a number of central and state sponsored programmes/ schemes for social and economic empowerment of women. Women are organised through SHG mode under different programmes and projects including Odisha Livelihood Mission (OLM) and Mission Shakti.

Men and women in the different social and economic background may face different challenges. The available statistics, for instance literacy rates of different social groups, show the disparities between gender and social groups.

**Table 2.10.1 Literacy Rates by Social Group and Gender in Odisha and India (Unit: %)**

	Male	Female	Total
ST	63.7	41.2	52.24
SC	81.59	64.01	72.87
All Community	79.21	58.76	69.02
India	82.14	65.46	74.04

*Source: ST/SC & Minority Development Department, Odisha/ All India figure from Census of India 2011.*

### 2) Women in Tribal Community

The status of tribal women varies from region to region and among the tribal communities. However, in general, women in the tribal communities enjoy a better status within their own community than women in mainstream Indian society. In the traditional forest based tribal economics, women’s important role as gathers of forest products and subsistence goods made them economically valuable members of their community. Till today tribal women’s income largely depend on the sale and processing of NTFPs that they collect from common lands.

Apart from this fact, deforestation and degradation of the natural environment has been negatively impacted on the lives of tribal women. In Kalahandi and Kandhamal districts of Odisha, male migration and abandonment of women is resulting in the increasing number of female headed households among the tribal people.<sup>21</sup> Besides, there are two crucial areas of inequality of tribal women which are being observed in the present days: property rights and political participation. Particularly, in Odisha land passes through the male lineage and under customary law, women do not have inheritance right to land.

<sup>18</sup> Data and information on this section have been derived from: Hans, Asha. and Patel, Amrita. Women of Odisha: Status and Challenges. Odisha Review. February – March 2012. pp 40 – 46.

<sup>19</sup> Sample Registration System Survey Report 2013.

<sup>20</sup> Hans, Asha. and Patel, Amrita. Women of Odisha: Status and Challenges. Odisha Review. February – March 2012. pp 40 – 46.

<sup>21</sup> From field experience by the Survey Team.

### 3) Women's Role in Forestry Sector in Odisha

Review of secondary literature, discussion with personnel of Forest Department, members of NGO/civil society and researchers working on this subject and prior field experience helped in highlighting the role of women in forestry sector in India as well as in Odisha.

#### i. Gathering Fuel wood and NTFPs

Apart from industrial/commercial timber, most NTFPs, fuel wood and fodder come from forests and provide valuable flows for subsistence and cash income. Gathering of fuelwood, fodder and NTFPs is an important subsistence and economic activity for (poor) women and about 60-70% of gatherers are women<sup>22</sup>. Their relative status within the family is higher in well-forested villages, because their contribution to subsistence and cash income of households is greater in villages close to natural forests<sup>23</sup>. As the women possess meagre "private resources" like agricultural land, cattle, gold, they depend on "common resources" for their livelihood.

*Fuelwood:* Wood tends to be the main domestic fuel in poorer regions. Gathering firewood, or "head loading" as it is often called, for domestic use and as a source of income the most widespread gender-based activity for poor women. It has been estimated that two to three million people are engaged in head loading, with the majority being tribal and other poor women<sup>24</sup>.

The Census of India 2011 has revealed that fuelwood demand still holds significantly. It is shown in **Table 2.10.2**.

**Table 2.10.2 Distribution of Households by type of fuels used for cooking in India and Odisha, 2011 (Unit: %)**

Types of Energy used for Cooking	India	Odisha		
		Total	Rural	Urban
Firewood	49.0	65.2	71.1	34.1
Crop residue	8.9	10.2	11.7	2.2
Cow dung cake	7.9	9.5	10.8	2.6
Coal, lignite, charcoal	1.4	1.6	0.8	5.5
Kerosene	2.9	1.1	0.3	5.5
LPG	28.5	9.9	3.1	45.2
Electricity	0.1	0.4	0.2	1.7
Biogas	0.4	0.2	0.1	0.2
Any other	0.5	2.0	2.3	0.5
No cooking	0.3	0.3	0.2	0.5

Source: Census of India, 2011.

The Census of India (2011) reveals that 49.0% of the total households in India used firewood as a fuel for cooking in their daily life and 65.2% of the total households in Odisha depend on fire wood for the same cause. In rural areas the percentage is higher in comparison to urban areas.

*NTFPs:* NTFPs are obtained from about 3,000 species in the country and form an important source of food and livelihood for communities, particularly tribal and rural poor living adjacent to forests<sup>25</sup>. About 70% of NTFPs are collected from Maharashtra, Madhya Pradesh, Bihar, Orissa and Andhra Pradesh, states that are home to 65% of the country's tribal population<sup>26</sup>. In Orissa: women, especially in tribal areas, depend more than men on forest produce for their employment and income. In some areas, 91% of men and 98% of women were engaged in NTFP collection from forest areas. In these areas, processing (collection, storing, drying) of NTFPs is done primarily by women, with the exception of liquor making from mahua flowers<sup>27</sup>. A study conducted in 301 randomly selected tribal households

<sup>22</sup> Women's Role and Contribution to Forest-Based Livelihoods by Prema Gera Website - <http://hdrc.undp.org.in>

<sup>23</sup> Kumar, N., N.C. Saxena, Y. Alagh and K. Mitra, 2000, Poverty Alleviation through Forestry Development, Country Case Study, Operations Evaluation Department, The World Bank, Washington DC.

<sup>24</sup> Centre for Ecological Sciences, 1995, Community Forestry: An Ecological, Economic and Institutional Assessment of Western Ghats, Report to the Ford Foundation, Mimeo, Indian Institute of Science, Bangalore, Karnataka.

<sup>25</sup> Kumar, N., N.C. Saxena, Y. Alagh and K. Mitra, 2000, Poverty Alleviation through Forestry Development, Country Case Study, Operations Evaluation Department, The World Bank, Washington DC.

<sup>26</sup> Saxena, N.C., Women in Forestry, <http://planningcommission.nic.in/wforest/htm>.

<sup>27</sup> Saigal, S., 1998, Participatory Forestry in India: Analysis and Lessons, M.Sc. thesis, Oxford Forestry Institute,

(Kondhs, Mundas and Saoras) in six districts of Odisha (Boudh, Phulbani, Keonjhar, Mayurbhanj, Sundergarh and Gajapati) shows that on average a tribal family derives about 50% of its annual income from forests and trades about one third of the products gathered. Out of 150,000 collectors of kendu leaves are mostly women.

Several thousand tons of NTFPs are removed annually from Indian forests providing earnings that run into billions of rupees each year<sup>28</sup>. Some studies point out that NTFPs contribute a higher economic return than timber<sup>29</sup>. About 60% of NTFP collection goes unrecorded as it is consumed or bartered by the 15 million people living in and around forests<sup>30</sup>. In Odisha, the government has given the rights to Gram Panchayat to trade 69 MFPs. However, the system has not been functioned and institutionalised in the way it was envisaged and its impact on women has not been understood.

#### **ii. Employment of Women in Forest Related Works**

The Forest Department and other departments (Rural Development, Agriculture, Fishery and Horticulture Departments) generate direct employment under regular forestry activities in forests under their control and through special afforestation programmes. The Forest Department staffs prefer women for forestry operations such as nursery raising work, plantation, transplanting and kendu leaf collection. The work is contracted either on a daily-wage or piece-rate basis, but women often get lower wages than men for similar work<sup>31</sup>. These forestry operations are largely limited in nature owing to the seasonal kind of forestry work.

#### **iii. Women in the Social Forestry Projects (1988 - 1996)**

The social forestry projects were implemented in Odisha between 1988 and 1996 with the assistance from Swedish International Development Agency by OFD. The activities included the afforestation activities in the community forests and degraded forest areas, farm forestry, and nursery development. Village Forest Committees were established at the community level for implementing activities. The Orissa social forestry project reviewed in the year 1985-86 showed that women had only 37% of the total person days of employment generated for the different sub-components (nursery, village woodlots, reforestation, and farm forestry for rural poor, rehabilitation and protection)<sup>32</sup>.

### **4) Management and Protection of Forests**

Prior to 1988, the Forest department's programmes, projects and schemes enlisted women's participation as essentially wage earners. Projects and schemes requiring participatory planning with local communities mostly has involved only men. The 1988 Forest Policy mandated a shift from complete state controlled forest management to decentralised and participatory management and to implement the new policy of the Joint Forest Management Programme (in June 1990) which required state forest departments to work with local communities to regenerate degraded lands. Currently 25 states have issued orders and about 1.16 million ha of degraded forests (15% of India's total forestland) are being regenerated under community management by more than 45,000 joint forest management (JFM) committees and by promising local communities access to forest resources<sup>33</sup>.

According to the Joint Forest Management guidelines (revised in February 2000), the Joint Forest Management General Body should have 50% female representation and the Management Committee a minimum of 33%. Although this represents a significant improvement on the initial guidelines of June

---

Oxford.

<sup>28</sup> Ibid

<sup>29</sup> Campbell, J.Y., 1995, "Evolving Forest Management Systems to People's Needs" in S.B. Roy (ed.) Enabling for Joint Forest Management, Inter India Publications, New Delhi; Malhotra, K.C., D. Deb, M. Dutta, T.S. Vasalu, G. Yadav and M. Adikari, 1991, Role of Non-timber Forest Produce in the Village Economy, IBRAD, Calcutta.

<sup>30</sup> Ibid

<sup>31</sup> Bajaj, M., 2001, The Impact of Globalisation on the Forestry Sector in India with Special Reference to Women's Employment, Paper for National Commission on Labour: Group on Women and Child Labour. New Delhi.

<sup>32</sup> Olsson, G., 1988, Employment and Income Generation in Social Forestry: Case Study from Orissa, International Labour Organisation, Geneva.

<sup>33</sup> Figures by the Ministry of Environment & Forests, New Delhi, quoted in Information E-bulletin on Participatory Forest Management, Volume 1, No. 2, July 2001. Published by Resource Unit for Participatory Forestry, Winrock International India ([www.winrockindia.org](http://www.winrockindia.org)). New Delhi.

1990, even 50% representation does not ensure membership access to the poorest and neediest women and men users and women participation in decision making in the process of Joint Forest Management in Odisha is seen to the limited extent.

The process by which the Management Committee is constituted determines the extent of representation of diverse interest groups within a community and consequently its gender and equity concerns<sup>34</sup>. None of the resolutions require that forest-dependent women within a community should select women representatives so that they can represent the priorities of women forest users, which has implications on the participation and access of primary users to forest use as well as its produce. The representation norm also fails to reach out to disadvantaged women within a household such as widowed, divorced, separated and unofficially abandoned women and women-dependent households (as a result of male migration, unemployment, disability and women remaining single)<sup>35</sup>.

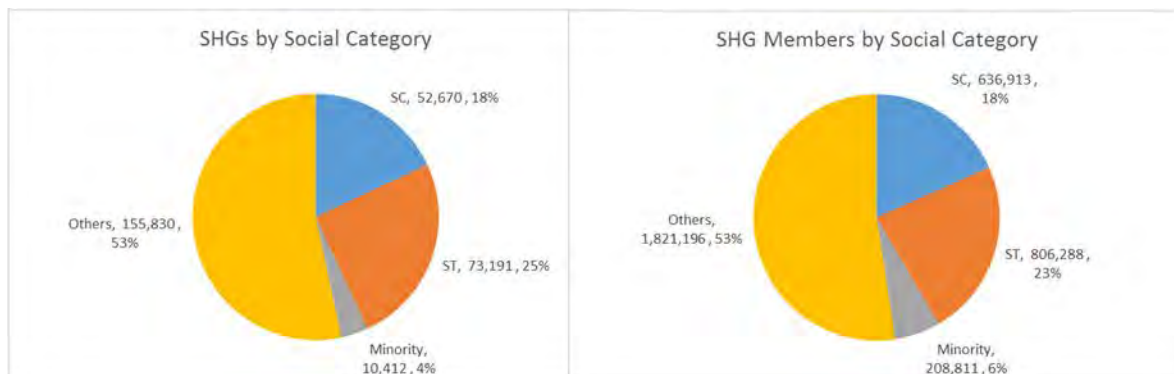
## 2.11 Community Level Institutions for Livelihood Improvements

As seen in other states in India, different types of community level organisations are formed under different initiatives for livelihood improvement. Each type of group has its strengths and limitations.

### 1) SHGs

SHGs are mostly formed by women sharing a common socio economic background in the neighbourhood. The average number of the members is 10. The primary objective of SHGs are to provide social safety net for the rural women who often have limited options for the livelihood coping strategies. Initial stage of the group formation, the group members will start to save small sum of money on a regular basis and then to begin internal lending among the members. During this process, members will also learn to keep records and hold regular meetings. Some groups may also start discussing other issues in the village that need to be resolved. Once the group reaches a certain level of maturity, it may start income generation activities of the members' choices be it individual based or group based. The groups may also have access to bank loans which can be used for working capital.

As of 10<sup>th</sup> October 2016, 292,103 SHGs are formed with 3,473,208 members in Odisha<sup>36</sup>. Half of the SHGs and members are from the other social categories, followed by ST, SC and minority groups.



Source: <http://nrlm.gov.in/shgReport.do?methodName=showDistrictWiseMajority&encd=24&stateName=ODISHA&reqtrack=BoFsisGrZI9XRlgjwGAgmeZI7> (Accessed on 10/10/2016)

Figure 2.11.1 SHGs in Odisha

<sup>34</sup> Sarin, M., M. S. Raju, M. Chatterjee, N. K. Banerjee and S. Hiremath, 1998, Who is Gaining? Who is Losing? Gender and Equity Concerns in Joint Forest Management, Mimeograph, SPWD, New Delhi.

<sup>35</sup> Ibid.

<sup>36</sup>

<http://nrlm.gov.in/shgReport.do?methodName=showDistrictWiseMajority&encd=24&stateName=ODISHA&reqtrack=BoFsisGrZI9XRlgjwGAgmeZI7> (Accessed on 10/10/2016)

## 2) Other types of Institutions

Similar to SHGs, Joint Liability Group (JLG) was introduced by NABARD, which comprised of 4-10 members in the same village. JLGs are formed for accessing the loan without collateral. Farmer Producer Organisation (FPO) is a registered body under section 25 of the Indian Company's Act 1956 and mainly to improve the market accessibility through aggregating the products mobilized through Farmer Interest Groups (FIGs) comprised of 15-20 members at village level<sup>37</sup>. Cooperatives are the organisations registered under the Cooperative Societies Act. Unlike Producer companies, the overall supervision is provided by the government.

### 2.12 Programmes/ Schemes for Livelihood Improvement

The Government of Odisha has adopted the following strategies to address poverty and ensure overall community development in the state.

- Emphasis on building rural and urban productive infrastructure.
- Strengthen the momentum already gained in mobilizing rural poor with emphasis on women and vulnerable groups.
- Strengthening social security system to reduce Infant mortality rate, maternal mortality rate, provide food security, and increase female literacy etc.
- Focused efforts for reducing poverty and achieving Millennium Development Goals (MDG).
- Improving governance and service delivery mechanisms.
- Promoting broad-based growth, encouraging private investment, public private partnership (PPP), and public private community partnership (PPCP).
- Emphasis on creation of adequate self-employment / employment opportunities.
- Enhancing and promoting Convergence at District level across large number of Government programmes through strengthening Integrated District Planning to achieve the Millennium Development Goals (MDGs).
- Focus on household based Micro-Planning to provide support for livelihoods of most vulnerable groups in different parts of the State with special emphasis to KBK region.
- Improved monitoring of outcomes of key human development indicators.

The programmes and schemes for livelihood improvement and relevant to OFSDP-II are summarised in the table below.

**Table 2.12.1 Programmes and Schemes for Livelihood Improvement**

Programmes/ Schemes	Outline
National Rural Livelihood Mission (NRLM)	<b>National Rural Livelihoods Mission (NRLM)</b> is funded by Ministry of Rural Development (MoRD), Government of India (GoI). World Bank assisted National Rural livelihoods Project (NRLP) is also implemented by MoRD. In Odisha, NRLM and NRLP are implemented by Odisha Livelihoods Mission (OLM). The scheme covers formation and strengthening of women SHGs, financial inclusion and livelihood promotion (farm, off farm and non-farm livelihoods). <b>MKSP</b> is a sub component of NRLM, which aims to improve capacity of women in agriculture to access resources of other institutions and schemes within a convergence framework.
Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)	<b>Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)</b> is implemented by MoRD, GoI. In Odisha, it is implemented by Panchayat Raj (PR) Department. MG NREGA provide at least 100 days of guaranteed employment in a year to every rural household whose adult members volunteer to do unskilled manual work.

<sup>37</sup> Ministry of Agriculture. Department of Agriculture and Cooperation. (2014). Policy & Process Guidelines for Farmer Producer Organisations.

Programmes/ Schemes	Outline
National Food Security Act (NFSA) 2013	<b>National Food Security Act (NFSA) 2013</b> is implemented by Ministry of Consumer Affairs, Food and Public Distribution, GoI. In Odisha, it is implemented by Department of Food Supplies and Consumer Welfare. Targeted Public Distribution System (TPDS) under NFSA covers 67% of the population of the country (75% rural and 50% urban population) with a uniform entitlement of 5 kg of food grains per person per month @ Rs. 3/-, Rs. 2/-, Re. 1/- per kg for rice, wheat and coarse grain respectively (Priority Households). Entitlement to Antodaya Anna Yojana (AAY) household is 35 kg of food grain per household per month.
National Mission on Sustainable Agriculture	<b>National Mission on Sustainable Agriculture (NMSA)</b> is supported by Ministry of Agriculture and Cooperation, GoI. The focus of NMSA is to ensure formulation of strategy at agro climatic zone level and take up customized interventions to enhance productivity, easy access to information, linking laboratory to land and dry land farming. In Odisha, it is implemented by Department of Agriculture and Farmers' Empowerment.
National Agriculture Development Programme (NADP/ Rastriya Krishi Vikash Yojana/ RKVY)	<b>National Agriculture Development Programme (NADP)/ Rastriya Krishi Vikash Yojana (RKVY)</b> is funded by Ministry of Agriculture and Cooperation, GoI. In Odisha, it is implemented by Department of Agriculture and Farmers' Empowerment, GoO. Under RKVY, there is thrust on promoting public investment in agriculture, reduction of yield gap and maximization of return to farmers in agriculture and allied sector
National Food Security Mission (NFSM)	<b>National Food Security Mission (NFSM)</b> is funded by Ministry of Agriculture, GoI and is implemented by Directorate of Agriculture and Food Production, Department of Agriculture and Farmers' Empowerment, Odisha. The objective NFSM is to increase production of rice and pulses through area expansion and productivity enhancement.
Mission for Integrated Development of Horticulture (MIDH)	<b>Mission for Integrated Development of Horticulture (MIDH)</b> is funded by Horticulture Division, Department of Agriculture, Ministry of Agriculture and Cooperation, GoI. In Odisha, it is implemented by Directorate Horticulture, Department of Agriculture and Farmers' Empowerment, GoO. The objective of the mission is to promote holistic growth of horticulture including bamboo and coconut through area based regionally differentiated strategies, encourage aggregation of farmers into farmer groups like FIGs/FPOs and FPCs, enhance horticulture production and support skill development; and create employment generation opportunities for rural youth.
Integrated Watershed Management Programme (IWMP)	<b>Integrated Watershed Management Program (IWMP)</b> is funded by Department of Land Resources, MoRD, and GoI. In Odisha, it is implemented by Odisha Watershed Development Mission (OWDM). The objective of the IWMP is to restore the ecological balance by harnessing, conserving and developing degraded natural resources such as soil, vegetative cover and water. The common guidelines for IWMP emphasizes on livelihood orientation and cluster planning.
Prime Minister's Employment Generation Programme	<b>Prime Minister's Employment Generation Programme (PMEGP)</b> is funded by Ministry of Micro Small Medium Enterprises, GoI. KVIC is the Nodal Agency at National Level. In Odisha, it is implemented by Department of Industries through District Industries Centres (DICs). It is credit linked subsidy scheme to promote micro enterprises in rural and urban areas.
Backward Regions Grant Fund (BRGF)	Central Government Scheme aims at addressing the gaps in infrastructure development. The interventions are planned at the Panchayat level and implemented in 20 districts: Bolangir, Bargarh, Boudh, Deogarh, Dhenkanal, Gajapati, Ganjam, Jharsuguda, Kalahandi, Kandhamal, Keonjhar, Koraput, Malkangiri, Mayurbhanj, Nabarangpur, Nuapada, Rayagada, Sambalpur, and Sundargarh.

Source: Compiled by the JICA Survey Team from various sources (2016)

### 2.13 Externally Aided Projects

There are 14 externally aided projects to be implemented during FY 2015-16 with a total outlay of 18.05 billion Rs. Three (3) projects are in pipeline. Four (4) projects are on the Irrigation and flood control and 6 projects in the social services sector. No project was planned for the forestry sector. A list

of externally aided projects given in Annual Plan 2016-17 (Planning & Convergence Department, Odisha) is given in the **Attachment 2.13.1**.

**Table 2.13.1 List of Externally Aided Projects Relevant to OFSDP-II**

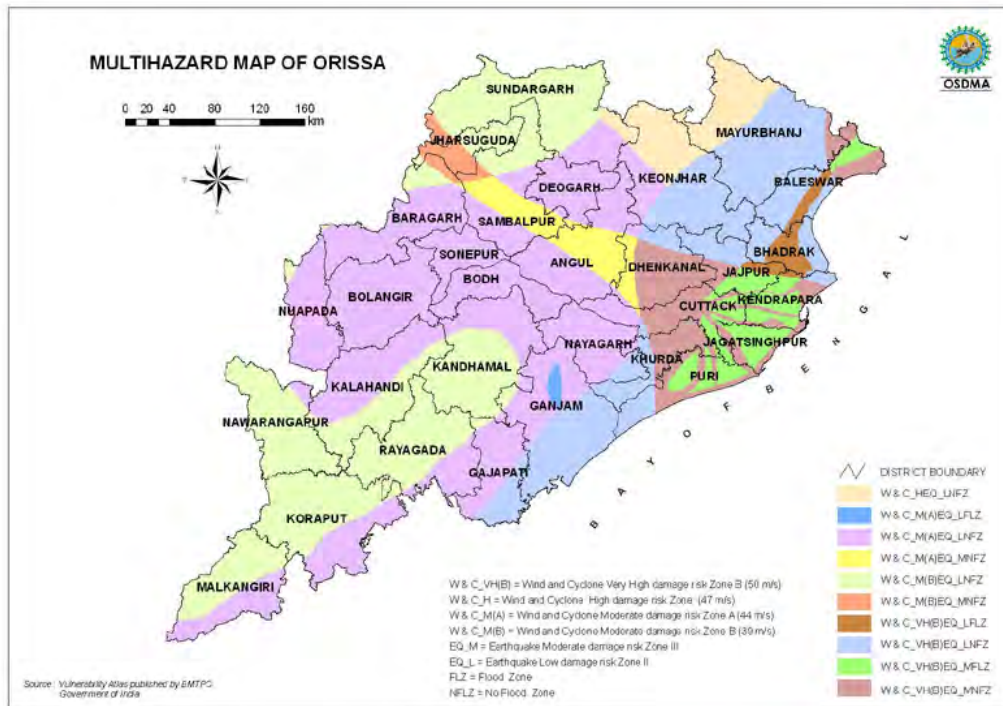
Project/ Status	External Agency	Description	Project Area
Integrated Coastal Zone Management Project / On-going	World Bank	Integrated Coastal Zone Management Project has been implemented since 2010 and will be completed in 2017 (extended for 2 years) with the total budget of 2.27 billion Rs. 90% of the project budget was borne by the MoEF&CC with the remaining 10% contributed by the state budget. The implementing agency is the Integrated Coastal Zone Management Society of Odisha. The project aims at sustainable coastal management through promotion of wise use of coastal resources, biodiversity and critical habitat conservation, livelihood improvement for the fisheries dependent villages etc.	235 coastal villages of Kendrapara, Jagatsinghpur, Puri, Khurda and Ganjam.
Odisha Particularly Vulnerable Tribal Groups Empowerment and Livelihoods Improvement Programme (OPELIP)/ 2015-2023	IFAD	The project aims at improving livelihoods and food and nutrition security among 62,000+ households in the Eastern Ghats and Northern Plateau regions of Odisha. The project area is known for dense coverage of forest and the inhabitants are largely tribal and depend on shifting cultivation, NTFP harvesting and rain fed agriculture. Such communities do not have secure land title. The project components include introduction of improved agriculture practices, securing rights over land and forests, IGAs, improving access to education and health and community infrastructure. The total project cost is 130.4 million USD, of which IFAD provides 51.2million USD as a loan.	Eastern Ghats and Northern Plateau regions
Odisha Tribal Empowerment and Livelihoods Programme (OTELP) - Completed in 2016	IFAD, WFP and DFID	ST & SC Development Department of Government of Odisha was the implementing Agency. OTELP supported capacity building including strengthening of CBOs; livelihood enhancement through land and water management, forest & NTFP enterprises and increase in agriculture productivity. It also supported policy initiatives and provided flexible fund for good ideas.	30 most backwards blocks in the districts of Gajapati, Kalahandi, Koraput, Kandhamal, Rayagada, Malkangiri, Nawarangpur

*Source: Compiled by the JICA Survey Team from various sources (2016)*

## 2.14 Disasters

### 1) Overview

Odisha is a disaster prone state. The coastal zone of Odisha is often hit by cyclones, storms and tsunamis. Floods also frequently affects the coastal plain areas, where population density is high, due to the heavy siltation in the river system. The risks of earthquake are relatively low except the Brahmani Mahanadi graben and the surrounding delta areas which are categorised as moderate damage risk zone. Drought is also a regular phenomenon. Other potential hazards include vector borne diseases and industrial/ chemical disasters. The figure below indicates the areas prone to various types of disasters in Odisha.



Source: <http://www.osdma.org/GISImage.aspx?vchlinkid=GL024&vchplinkid=PL065> (Accessed on 13<sup>th</sup> August 2016)

**Figure 2.14.1 Multi-hazard Map of Odisha**

As shown in the table below, the cyclones and floods have been the major disasters affecting Odisha.

**Table 2.14.1 List of Major Disasters affected Odisha**

Year	Disaster	State/ Area/ Fatalities
1999	Orissa Super Cyclone	Over 10,000 deaths
2011	Odisha Floods	19 districts in Odisha, 45 deaths
2013	Cyclone Phailin	Odisha/ Andhra Pradesh, 23 deaths
2013	Odisha Floods	21 deaths
2014	Cyclone Hud	Andhra Pradesh& Odisha/ No fatalities recorded.

Source: <http://www.ndma.gov.in/en/disaster-data-statistics.html>

The World Bank has been a major contributor in disaster management and relief interventions in Odisha. Out of seven (7) on-going disaster related projects, 6 projects are assisted by World Bank. The list of the World Bank assisted on-going projects is given below.

**Table 2.14.2 Donor Assisted Disaster Related Projects**

Donor Agency	Name of the project	Key intervention	Status
World Bank	National Cyclone Risk Mitigation Project	Cyclone shelter Saline embankment Road	On-going
	Odisha Disaster Recovery Project	Resilient Housing	On-going
	Orissa Cyclone Reconstruction Project	Road, embankment, multipurpose cyclone shelters and etc.	2000-2004
Government of India – UNDP	Disaster Risk Reduction	Enhanced disaster preparedness through planning, capacity development – human resource and building disaster response system	2009-2012

Source: Compiled by JICA Survey Team based on the information published at <http://www.osdma.org/MenuDemo.aspx> (Accessed on 13<sup>th</sup> August 2016)

Odisha’s disaster management is structured based on the Odisha State Disaster Management Act 2005 and administered under the Odisha State Disaster Management Authority (OSDMA) established at the state level. Below the state level OSDMA, district level authorities are established to prepare a disaster



management plan for the respective district in consistency with the national and state disaster management plan. The act also requires the line departments at the state level to prepare a disaster management plan which should be submitted to the state executive committee for disaster management of OSDMA. The plan for the forestry sector shall be collected during the field survey.

Odisha with a coastline of 480 km and its sub-tropical littoral location is prone to tropical cyclones, storm surges and tsunamis. On an average, 5-6 tropical cyclones form in the Bay of Bengal every year including 2-3 severe cyclones. The coastal areas of the state are the worst hit. Over 100 cyclones including severe cyclones had crossed Odisha coast during 1891 – 2014. The State had experienced major cyclones in 1971, 1999 and 2013. The Cyclone in 1971 with storm surge had caused large scale death and destruction. In October 1999, two cyclones (super cyclone) hit the coast of Odisha and caused unprecedented damage to lives, properties, environmental resources. There are 11 major river systems in the state. The coastal plains are densely populated and the rivers in these areas with heavy load of silt cause frequent floods. Agriculture is largely rain-fed and occurrence of drought is common in the state. The Brahmani-Mahanadi graven and their deltaic areas come under Earthquake Risk Zone-III i.e. Moderate Damage Risk Zone covering 44 urban local bodies.

## **2) Loss to the forest resources because of disasters:**

Forests of the state are vulnerable to natural disasters such as fires, drought, floods, cyclones, etc. In the last two decades there was severe loss to the forests and forestry infrastructure of the state because of three major cyclones. Because of the Super Cyclone in October 1999, about 90 million trees from the shelterbelts, Reserve Forests, Protected Areas, Zoos, Research Gardens, Village Forests, common land, avenue and other plantations etc. were uprooted or damaged. About 95,750 ha of forest areas comprising of sal, teak, bamboo forests, mangroves, coastal shelterbelt plantations were affected by the super cyclone. This does not include the loss of trees in cities, rural areas and roadside plantations. There was a great loss to the departmental buildings (621 nos.), VHF installations (31 nos.), forest roads (576 km), bridges on the forest roads (47 nos.), motor boats, lunches, silvicultural research stations etc. After the super cyclone the Government undertook massive afforestation and restoration activities. The state Government planned to re-establish coastal shelterbelt plantation over 18,000 ha and restoration of mangrove areas over 25,000 ha. The estimated cost of restoration of cyclone affected areas was Rs. 2,837 million.

The Phailin, a very severe tropical cyclone occurred on October 12, 2013 and ensuing floods affected more than 13.2 million people with an estimated damage to houses, crops and public properties of Rs. 143734.7 million. Millions of trees of Ganjam, Khordha and Puri districts were up-rooted and damaged. The rapid assessment in two districts, i.e. Ganjam and Khordha, estimated that 21.1 sq. km of Reserve Forest and 7.8 sq. km of plantations were affected by the cyclone. 15,400 avenue plantation trees were damaged in two districts. The estimated damage of forest resources is of 8-10% due to tree falls and loss of vegetation, mainly in the areas covered with forest plantations. The main concern was the crown damages which would take a long time for recovery. The fallen trees are salvaged by the OFDC for recovering the timber but the biomass debris from the crown damages would be difficult to clear. 10 out of the 12 Central Nurseries in three districts were fully or partially damaged and the estimated cost of restoration of these nurseries would be around Rs. 40 million. There was considerable damage to forestry infrastructure such as buildings, forest roads, causeway, culverts, fences, communication systems, VHF networks and approximate cost of restoration would be Rs. 70 million. In 2014 another cyclone named as Hudhud hit the coasts of Andhra Pradesh and Odisha, which caused a loss to the trees, sericulture, and other forest resources in some areas in 15 districts.

### 3) Forest Fires in Odisha:

Forest fires pose a major threat to forest wealth including the entire regime of fauna and flora. As the forests are predominantly of Dry Deciduous type, in summer the forest floor becomes littered with dry senescent leaves and twigs causing higher possibility of fire ignited by the slightest sparks. Forests in the districts of Kandhamal, Boudh, Rayagada, Kalahandi, Malkangiri, Koraput, Gajapati, etc. are prone to forest fire. The forests of Western and Southern Odisha are prone to fire as these areas experience a long dry spell with scanty rainfall. The frequency and intensity of forest fires has increased since 1990. Forest fires can be natural, accidental or controlled. About 5,000 ha of forest areas are affected by forest fire every year in the state. Fire is a major cause of degradation of Indian forests as reflected in a study done by the FSI in 2012 and further it mentions that the country has weak data on forest fires and management. The study says that 90% of forest fires are created by humans, affecting around 6.77 lakh ha forest land every decade.

There is a satellite-based forest fire alert system anchored at the Vikram Sarabhai Space Centre called as INFFRAS- Indian Forest Fire Response and Assessment system. The national remote sensing agency sends reports based on the MODIS data daily to the states on the incidences of fire and these reports provide the topo sheet number, latitude, longitude, district, date of occurrence to facilitate field verification and immediate response. The incidences of forest fire in the State as per the MODIS satellite data for 2014 and 2015 are given in the box.

**Table 2.14.3 Fire Incidences in Odisha in last 5 years**

Year	No. of Fire Instances
2011	771
2012	2,606
2013	1,832
2014	1,891
2015	1,292

*Source: Disaster Management Plan of OFD 2015-16*

**Table 2.14.4 Fire instances in last two years in fire season as per MODIS data**

Year	No. of incidences	Incidences verified	Approximate area affected in ha
2014	1,891	574	881.884
2015	1,292	517	849.442

*Remarks: MODIS – Moderate Resolution Imaging Spectroradiometer developed by NASA*

*Source: Disaster Management Plan of OFD, 2015-16*

### 4) Efforts of OFD for prevention and mitigation of fire:

Section 23 of the Disaster Management (DM) Act 2005 prescribes for preparation of state disaster management plan on an annual basis. The first disaster management plan of Odisha was prepared in 2013, which was further updated in August 2014. As part of this effort the Forest Department has also prepared its Disaster Management Plan. The emphasis of disaster management plan of the Forest Department is on prevention and mitigation of fire and it does not include preparedness of the Department for other disasters such as cyclone, flood, drought etc. The disaster management plan for 2015-16 prescribes various efforts of the Department to address the issues of forest fire.

The modes of early detection of fire incidences have been clarified in the disaster management plan, which include voluntary reporting by the VSS members and other villagers, reporting by the patrolling team, fire watch towers, aerial detection and remote sensing. Incident Response Teams (IRTs) have been constituted at the Forest Division and Range levels to verify, respond and report to Forest Department. The Department has proven methods for extinguishing fire and necessary training and equipments have been provided to the field personnel.

The funds available under Intensification of Forest Management, 13th Finance Commission, and CAMPA were used to carry out different activities for fire prevention and mitigation. The activities mostly include tracing of fire lines, their maintenance, creation of new fire lines, improvement in communication facilities such as providing mobile phones to the field personnel, engagement of fire-fighting squads, hiring of vehicles for mobility, distribution of incentives to the local community/ VSSs, training of squads on fire fighting and use of different fire-fighting equipments, supply of fire-fighting equipments such as Fire Jacket, Lathis/ sticks, Fire extinguisher, Helmet, Boots, Fire Brooms etc., publicity and motivating people to prevent fire, controlled burning and controlled grazing

etc. During 2015-16, 216 fire protection squads constituted by 2160 youth were deployed for fire-fighting in 37 territorial divisions; 18,500 km of fire lines were maintained and 104 units of fire-fighting equipment were procured and supplied to the divisions.

In the proposed project area of OFSDP-II, fire incidences are common and frequent forest fires happen in the districts of Boudh, Kalahandi and Bolangir. The proposed project will also include activities as mentioned in the disaster management plan of the Forest Department. OFSDP-II may include activities to strengthen the capacity of VSSs and EDCs to prevent and mitigate forest fire through orientation, training, provision equipments and incentives. Efforts may also include capacitating VSSs and EDCs to have preparedness for forest and plantation management in case of drought.

## 2.15 REDD+

The survey team assessed the current status of OFSDS in REDD+ preparedness<sup>38</sup> and identified the gaps. The gaps and mitigation actions are given in the table below.

### 1) Reference Level

**Table 2.15.1 Gaps and Mitigation Actions: RL**

Sub-activity	Present condition	Gaps and mitigation actions
<b>Forest Type and Density Mapping (Current and Historical)</b>	OFSDP has LISS III images for all divisions which were part of the OFSDP-I from 2005 onwards. Images shall also be procured for new divisions to be included under OFSDP-II.	Images will have to be procured for latest years for the project area and reference region. Additionally, for at least two historical time-points to analyze historical land use change (LULUCF). Images for historical periods for which analysis has to be done will have to be procured for non-OFSDP-I areas. In VSS REDD+ option (option 1), if the treatment areas are spread over a large region, then the images will have to be procured for the whole of the reference region. In option 2, historical images covering the whole of the division is to be procured. In option 3, historical images for the whole state has to be procured. Proposed images- LISS III, LISS IV, cartosat, etc.
	OFSDP GIS cell has 3 RS/GIS technicians.	RS/GIS experts will have to be hired or work should be outsourced if a detailed processing for the division/state is required. If only a few VSS are selected, may be the current staff can do the task.
	Forest type classification has not been done; even though information was generated for treatment areas of OFSDP-I. It is expected that the same will continue in OFSDP-II as well. Forest type classification from FSI and LULC from NRSC is also available.	Apart from FSI Type map there is no detailed forest type classification /strata at VSS, division or state level available to be used for the REDD+ activity. This will have to be done afresh. Will need manpower. Option 1: No manpower required. Option 2 and 3: Additional manpower required.
<b>Ground Validation of the Mapping Activity</b>	Field validation was carried out during the mapping activity under OFSDP-I but only limiting to the proposed treatment areas by the mapping agencies.	Field staff will have to be trained for this activity or work is to be outsourced. This activity will include both GIS staff and staff from the territorial wing visiting various stratified random points to validate the mapping activity.
<b>Field Inventory of Biomass Content in Forests</b>	Forest managers are being trained on Working Plan Code 2014. But systematic mechanism is absent.	Sampling design will have to be aligned with peer reviewed guidelines on developing REDD+ projects. The sampling strategy should be synchronized with Working Plan Code 2014 as much as possible. Existing resources with additional inputs from experts can be availed. Should be institutionalized as part of capacity building modules. Measurement methods (for biomass, biodiversity, in addition to others) have to be finalized consistent with FSI guidelines as the national nodal organization.

<sup>38</sup> REDD+ Readiness at a project level was assessed by the following criteria: 1) Establishment of REL/ FREL, 2) Establishment and Operationalisation of MRV, and 3) Safeguards Information System.

Sub-activity	Present condition	Gaps and mitigation actions
	No modern forest mensuration kits are known to be used for forest inventory. This includes clinometer, densiometer, diameter tapes, altimeters, GPS devices, weighing scale etc.	Forest mensuration instruments (clinometer, densiometer, diameter tapes, altimeters, GPS devices, weighing scale etc.) can be provided at every range office. Personnel to be trained on measuring and recording data using these equipments. Should be institutionalized as part of capacity building modules. Cost of one mensuration kit will be approximately Rs. 30,000.00.
	OFD staff has been collecting data for working plan. However preparation of forest inventory using modern forest mensuration equipment might not be a common practice. All the carbon pools have to be selected for the REDD+ project.	Intensive and focused data collection on forests shall be required. Work may be taken up by a selected pool of forest personnel in each division, supported by experts. Field data collection depends on stratification; number of samples may vary based on the strata to be assessed for the baseline. So it is difficult to comment on the sample size for each of the options.
	Under OFSDP-I there was a provision of Animator for data and record management at VSS level. However this can be taken up by team collecting field inventory also.	Initial training is required for Biomass assessment both within OFD and at community level. Supervision on data collection need to be performed at PMU level to ensure standardization of the data collected and as a quality control (QC)/ quality assurance (QA) measure. This is applicable for all the three options.
	Forest managers are trained on data analysis. Further capacity building might be required.	Carbon estimation may be taken up by experts; who can also train the forest managers in the process by handholding and walking them through the process.
<b>Driver Analysis</b>	During micro plan preparation detailed primary surveys are being conducted at VSS level. It is recommended that the questionnaire/format of micro plan shall have the provision to capture information required for REDD+	Driver analysis is a systemic approach; and hence a broad understanding of the subject is a prerequisite and this has to be taken up at VSS cluster level for working out activities to address them, along with ways to check leakages i.e. demand (of forest produce) shift. OFD May consider outsourcing only if information to be collected under this exercise is deemed too cumbersome to be added onto existing surveys for VSS and micro plans. REDD+ specialist/expert can assist in fortifying the questionnaires.
<b>Project Boundary</b>	Under OFSDP-I, VSS treatment areas and VSS boundaries were surveyed using GPS and to be adopted in OFSDP-II as well. Forest Ranges and Division boundaries are being digitized and harmonized by ORSAC.	Existing digitized range and division boundaries can be used. This is required only for option-2 and option 3.
<b>LULC Change Matrix</b>	Under OFSDP-I basic change detection analysis was performed. However may require training/handholding to do detailed LULC transition matrices for across at least three historical time-points.	Work may be outsourced; where the RS/GIS expert can handhold the GIS staff in developing LULC matrices. This shall be required for all the three options.
<b>Emission Factors</b>	No trained personnel to take up this calculation part.	Qualified experts need to be engaged to train the officials/staffs concerned with OFSDP-II.

Source: JICA Survey Team (2016)

## 2) MRV

**Table 2.15.2 Gaps and Mitigation Actions: MRV**

Sub-activity	Present condition	Gaps and mitigation actions
<b>Development of Monitoring Plan</b>	OFSDP-I was having its M&E mechanism in place. Similar monitoring plan can eventually fit into this M&E system of the project.	Appropriate monitoring plan to be developed in consultation with experts, keeping in mind the aspects/parameters specific to REDD+ methodologies and requirement. However, as far as possible, these monitoring activities should be synchronized with existing systems in place.
<b>Change Detection During the Period</b>	Under OFSDP-I satellite Images were procured for planning as well as monitoring purposes	Required satellite images such as LISS-III, LISS-IV or cartosat to be procured by OFSDP-II and later by OFD.

Sub-activity	Present condition	Gaps and mitigation actions
	Under OFSDP-I existing GIS/RS staff were looking after the preliminary change detection analysis work.	The staff needs to be trained/ require handholding to apply high end scientific RS/GIS techniques.
<b>Backend Server</b>	There are 11 servers with the OFD and 5 with GIS cell of OFSDP. The same can be used as server.	None identified.
<b>Operating the Server</b>	1 IT technician is working under OFSDP-I. The same person can continue with managing server for REDD+ also.	None identified.
<b>Programming PDA Applications for Ease in Monitoring</b>	600 PDAs have been procured by OFD	Procurement of PDAs under the project only if required.
	Mobile phone application programmer has already been hired under OFSDP-I.	None identified.
<b>Establishment of a Database Management System DMS with Appropriate Interfaces</b>	Programmers have already been hired under OFSDP-I for development of similar web based interfaces.	None identified.
<b>MIS</b>	Under OFSDP-I WebMIS system was developed covering various modules specific to project components.	A separate module for field data collection with respect to sample plot level biomass stock assessment need to be developed as a part of project WebMIS under OFSDP-II.
<b>Image Processing</b>	Licensed versions of ArcGIS (4 nos.) and ERDAS (1 no.).	More may be procured if required, such as state level baseline development under option -3.

Source: JICA Survey Team (2016)

### 3) Benefit Sharing/ Safeguards Information System

**Table 2.15.3 Gaps and Mitigation Actions: Benefit Sharing/ Safeguards Information System**

Sub-activity	Present condition	Gaps and mitigation actions
<b>Benefit Sharing Mechanism</b>	Incentive sharing mechanisms under VSS can form the basis for the REDD+ Benefit Sharing Mechanism.	Benefit sharing mechanism can be developed in line with existing systems for VSS. Details of how international finance can be routed etc. can evolve after deliberations at a higher level.
<b>Biodiversity Safeguards</b>	No safeguards have been institutionalized for REDD. However safeguards system being deployed for the VSS/ EDC can form a good foundation.	<ul style="list-style-type: none"> <li>-Preparation of People's Biodiversity Register (PBR) in consultation of local communities needs to be facilitated.</li> <li>-Local indigenous species need to be given priority and planted under the project (threatened flora, such as medicinal plants etc, which would provide sustainable income to the community, can be planted in the region).</li> <li>-Valuation of Ecosystem service to assess direct and indirect contributions of ecosystems to the community, society and environment need to be taken up.</li> </ul>
<b>Community Safeguards</b>	No safeguards have been institutionalized for REDD. However safeguards system being deployed for the VSS/ EDC can form a good foundation.	The team developing the monitoring plan can be also work on the safeguards monitoring and information system.

Source: JICA Survey Team (2016)

#### 4) Capacity Building

**Table 2.15.4 Gaps and Mitigation Actions: Capacity Building**

Sub-activity	Present condition	Gaps and mitigation actions
<b>Forest Type and Density Mapping (Current and Historical)</b>	OFSDP GIS cell has 3 RS/GIS experts.	For the current staff specialized training/handholding might be required in cutting edge analytical tools.
<b>Field Inventory of Biomass Content in Forests</b>	The staff is trained on basic field data collection techniques, especially for the working plans.	Focused training on carbon inventory is absent. Training for collection of data based on QPC-2014 is being planned. Both can be linked.
<b>Driver Analysis</b>	Training is provided to collect data through PRA and FGDs during Micro Planning in VSS/ EDCs.	The training will be given as part of the capacity building under OFSDP-II.
<b>Training and Capacity Building</b>	Training infrastructure is available. Trainers, curriculum, institutionalizing the curriculum etc. will be required.	Training should be outsourced to experts who can develop specialized curriculum to train multiple stakeholders. Where possible, institutionalization should be a part of Capacity Building exercise, such as inclusion of REDD+ component within the Forest Ranger and Guard Training Institutes.
<b>Capacity Building: PDA Apps</b>	The same framework used for training personnel on existing mobile phone apps can be used/extended	A separate component of training for community to encourage community based monitoring will be required. Can be housed under the current training team under OFSDP-II. Experts may be called in for 1 or 2 'training of trainer' workshops.

Source: JICA Survey Team (2016)

## Chapter 3. LESSONS LEARNED FROM OFSDP-I AND ISSUES/ GAPS

### 3.1 Odisha Forestry Sector Development Project (OFSDP-I)

#### 3.1.1 An Overview of OFSDP-I

OFSDP-I was implemented between FY 2006-07 and FY 2012-13 and extended up to FY2014-15 with the total project cost of 80.2 billion Rs. (revised cost in FY 2011-12) and with the objectives to restore degraded forests and improve income level of villagers by promoting sustainable forest management with larger goals of improving environment and alleviating poverty. Promotion of community participation in forest management and scientific forest management, raising coastal shelter belt plantations and convergence were among the implementation approaches adopted by OFSDP-I. The project was implemented in 11 forest divisions (Angul, Balliguda, Bonai, Deogarh, Paralakhemundi, Jeypore, Phulbani, Keonjhar, Koraput, Rayagada, Rourkela) and 3 wildlife divisions (Balasore, Bhadrak, Satkosia) across 10 districts (Angul, Balasore, Bhadrak, Deogarh, Gajapati, Kandhamal, Keonjhar, Koraput, Rayagada, and Sundargarh). These divisions have been selected by the following criteria: level of forest degradation, poverty level and concentration of ST/SC population.

The project was implemented by an autonomous body, Odisha Forestry Sector Development Society (OFSDS), registered under the Indian Societies Registration Act 1860, constituted for the purpose of implementation of OFSDP-I. The field implementation structure was primarily the existing forest administration at the division and range level, and the Van Samrakshan Samiti (VSS) at the village level along with SHGs for income generating activities. The implementation process was supported by the Partner NGOs and project management consultants, and other resource organisations.

**Table 3.1.1 Targets and Achievements of OFSDP-I**

Components	Project Targets		Achievements	
VSS/ EDC Coverage	2,275	VSS/ EDCs	2,426	VSS/ EDCs
Restoration of Degraded Forests	196,650	ha	210,405	ha
a) ANR (JFM)	138,000	ha	155,045	ha
b) Block Plantation (JFM)	39,650	ha	40,943	ha
c) Artificial Regeneration (Teak)	19,000	ha	14,417	ha
Coastal Plantation	2,810	ha	2,920	ha
a) Mangrove	2,160	ha	2,769	ha
b) Casuarina	650	ha	151	ha
Components under Saving Plan (Implemented during Project Extension Phase)				
a) Farm Forestry	-		9,497	ha
b) NTFP under planting in ANR areas	-		22,177	ha
Biodiversity Management				
a) Ecotourism Destination Development	5	sites	7	sites
b) Establishment of Community Reserves/ Heritage Sites	5	sites	2 sites/ 13 sacred groves	
Community/ Tribal Development				
a) Entry Point Activities	2,275	VSS/ EDCs	2,426	VSS/ EDCs
b) Income Generating Activities (SHGs)	4,850	SHGs	7,358	SHGs

Source: OFSDP An Overview, OFSDS

Odisha is a coastal state and prone to cyclone damage. Its OFSDP received technical inputs from Akita Prefecture on coastal disaster prevention through forestry development.

### 3.1.2 Overall Lessons Learned: Review of the Recommendations of General Consultants of OFSDP-I and the Impact Assessment Survey

Some of the lessons can be drawn from the reports prepared by the general consulting services prepared in 2012 and also impact assessment report prepared by JICA. The important points drawn from these reports are given below.

The recommendations from the general consultants mostly concentrating on the JFM/ Eco development and community development/ livelihood improvement.

**Table 3.1.2 Recommendations from the General Consultants of OFSDP-I**

	JFM/ Eco Development	Community Development/ Livelihood Improvement
Technical	<ul style="list-style-type: none"> <li>➤ Shift from conservation to management (including thrashing, small scale clear felling)</li> <li>➤ Afforestation of NTFP forests</li> <li>➤ Reflection of Indigenous Technical Knowledge (ITK) to forest management and extension</li> </ul>	<ul style="list-style-type: none"> <li>➤ Introduction of dairy and goat rearing</li> <li>➤ Preparation of business plan</li> <li>➤ Assessment of the possibility of including economic activities that could lead to livelihood improvement under Entry Point Activity (EPA)</li> </ul>
Organisation/ Management	<ul style="list-style-type: none"> <li>➤ Continue support for VSS and strengthening training including forestry technique</li> <li>➤ Simplify the VSS records and re-visit the role of member secretary</li> <li>➤ Publicise the details of the plantation areas by installing a transparency board</li> <li>➤ Develop and implement participatory biodiversity monitoring</li> </ul>	<ul style="list-style-type: none"> <li>➤ Continue support for SHGs</li> <li>➤ Review the budget allocation for EPA (The budget was allocated as per the size of the JFM area of project villages and resulted in the variations in the amount of budget allocation. Such difference has caused the conflicts among the villages. )</li> <li>➤ Enhance collaboration with panchayats and other government programmes/ scheme to enable the preparation of comprehensive community development plan</li> </ul>

Source: General Consultancy Services Report December 2007 – March 2012.

The following points are drawn from the draft report of the “Impact Assessment Survey of the JICA assisted Forestry Projects (2016)”. The Survey Team discussed with OFSDS the lessons learned during OFSP-I. The points emerged are given in **Table 3.1.3** and further points on lessons learned from OFSDP-I and issues/gaps in Odisha’s forestry sector are also depicted in the subsequent sections.

**Table 3.1.3 Lessons Drawn from OFSDP-I**

Area	Lessons
Forestry Works/ Biodiversity	<ul style="list-style-type: none"> <li>➤ Plantation models need to be made flexible so as to accommodate the requirement of the community.</li> <li>➤ Casurina could not be planted as planned since the area suitable was not available. The planning needs to be based on the field requirement.</li> <li>➤ Eco tourism was one of the key intervention in OFSDP-I, however, the selection of the site needs to be carefully done.</li> <li>➤ Holistic approach to forest and biodiversity management should be adopted so that the project objectives can be effectively achieved in terms of resource allocation and synergy effects generated by the interventions.</li> <li>➤ Emphasis can be given more on the science based management in the biodiversity conservation component.</li> </ul>
Micro Planning	<ul style="list-style-type: none"> <li>➤ Micro planning process was not fully participatory.</li> <li>➤ The micro plan needs to be a comprehensive community development plan of which forestry interventions are a part rather than being forestry centric. The planning process can be simplified so that the villagers can own the planning process easily for future planning.</li> <li>➤ The data in the micro plan should help the community identify issues and come up with the necessary interventions.</li> <li>➤ Presence of the local PRI members and representatives from other line departments are critical in order to fully benefit from convergence.</li> <li>➤ The micro plans and subsequent annual plans should be prepared prior to the preparation of the Panchayat Annual Plan so that the requirements by the villages can be reflected accordingly.</li> </ul>
Convergence	<ul style="list-style-type: none"> <li>➤ The micro plan needs to be holistic by including the community development, livelihood and forestry activities.</li> <li>➤ The planning unit shall be a revenue village or Palli Sabha level, where possible and</li> </ul>



Area	Lessons
	<p>appropriate, so that the plan can be easily integrated into the overall Gram Panchayat Development Plan, though it might not have been the case in OFSDP-I. (In some cases, a palli sabha may be comprised of more than one village, of which a part of such village(s) take part in JFM.)</p> <ul style="list-style-type: none"> <li>➤ Internalisation of convergence needs to be considered by including it as part of the project design or MOD.</li> <li>➤ CSR and convergence with private sectors can be facilitated by the project by providing an interface (i.e. web-site, workshops and etc.)</li> </ul>
VSS/ EDC	<ul style="list-style-type: none"> <li>➤ A need for continued support for VSS/SHG (weak organisational management, financial management, group based livelihood and etc.) – OFSDP-II needs to have an enhanced capacity development activities to enable VSS/ EDC/ SHGs to become sustainable in the post project period.</li> <li>➤ Nurturing the community leaders is one of the key areas to be worked upon during OFSDP-II.</li> <li>➤ The role of VSS/ EDC needs to be enabled to assume the role of facilitator of community development in the locality.</li> <li>➤ Appropriate institutional framework for the continuity of the OFSDP-I and II areas need to be worked out as a part of Phase-out/ Phase-in stage.</li> </ul>
Livelihood Improvement	<ul style="list-style-type: none"> <li>➤ Formation of the clusters and business transactions were initiated during OFSDP-I and the process needs to be systematized. Business promotion requires substantial duration of time and thus, the project needs to plan for it from the early stage of implementation.</li> <li>➤ Market studies/ value chain analysis needs to be undertaken at the early stage of the project and overall business development strategy to be prepared at the early stage so that the planned IGA/ SHG/ Cluster nurturing can take place.</li> <li>➤ Assistance towards planned repayment of revolving fund and adjustment of the lending amount is required.</li> <li>➤ Strengthening linkage with the organisations in livelihoods improvement in order to livelihoods improvement activities is required.</li> <li>➤ Role of NGO needs to be revisited and phase out to be planned step-wise.</li> </ul>
PMU	<ul style="list-style-type: none"> <li>➤ Procedures for taxation, document preparation, management and assets transfer need to be further defined. Regular audit should also be conducted.</li> </ul>
Monitoring	<ul style="list-style-type: none"> <li>➤ MIS/ GIS should be operational by the time project activities commence.</li> <li>➤ Define monitoring indicators for water balance, livelihood improvement and etc. need to be defined upon commencement of the project.</li> <li>➤ Introduction of standards for organisational assessment of VSS • SHG is essential in monitoring their performance and plan for required support. (i.e. grading of VSS/ EDC/ SHGs/ Clusters)</li> <li>➤ Analysis of the data collected via mobile application and provision of appropriate guidance based on the results are required for effective and efficient planning.</li> </ul>
Disaster Component	<ul style="list-style-type: none"> <li>➤ Representatives of Akita prefecture visited Odisha during SAPROF for OFSDP-I and subsequent site visits were conducted with the OFD officials. However, the contents on coastal protection undertaken in Japan was seen to be difficult to be put into practice in Odisha.</li> <li>➤ The disaster management interventions are to be carefully reviewed whether to respond to the requirement of the OFD Disaster Management Plan or in the project areas.</li> </ul>

*Source: JICA Survey Team (2016) based on the discussion with PMU and Impact Survey of the JICA assisted Forestry Sector Projects (2016).*

## 3.2 Implementation Framework

### 3.2.1 Executing Agency

A Project Management Unit (PMU) was established within the State Forest Department during implementation of the OFSDP-I as the Odisha Forestry Sector Development Society (OFSDS). The Society is registered under the Society Registration Act, 1860 in 2006 having registration No.2321/49 of 2006-07. The PMU of OFSDP-I implemented the project till March 2015. The same Society would continue to function and manage OFSDP-II; however, if required, appropriate amendments could be introduced by referring to Clause 19 of the Memorandum of Association (MOA) and the rules & regulations of the Society.

As a Society, the PMU could receive funds by or through state/ central government. Presently, the PMU (OFSDS) is managing the Ama Jangal Yojna (AJY) and the Catchment Area Treatment Plan (CATP) scheme. The OFSDS has also generated funds earned from interest out of the grant-in-Aid provided by

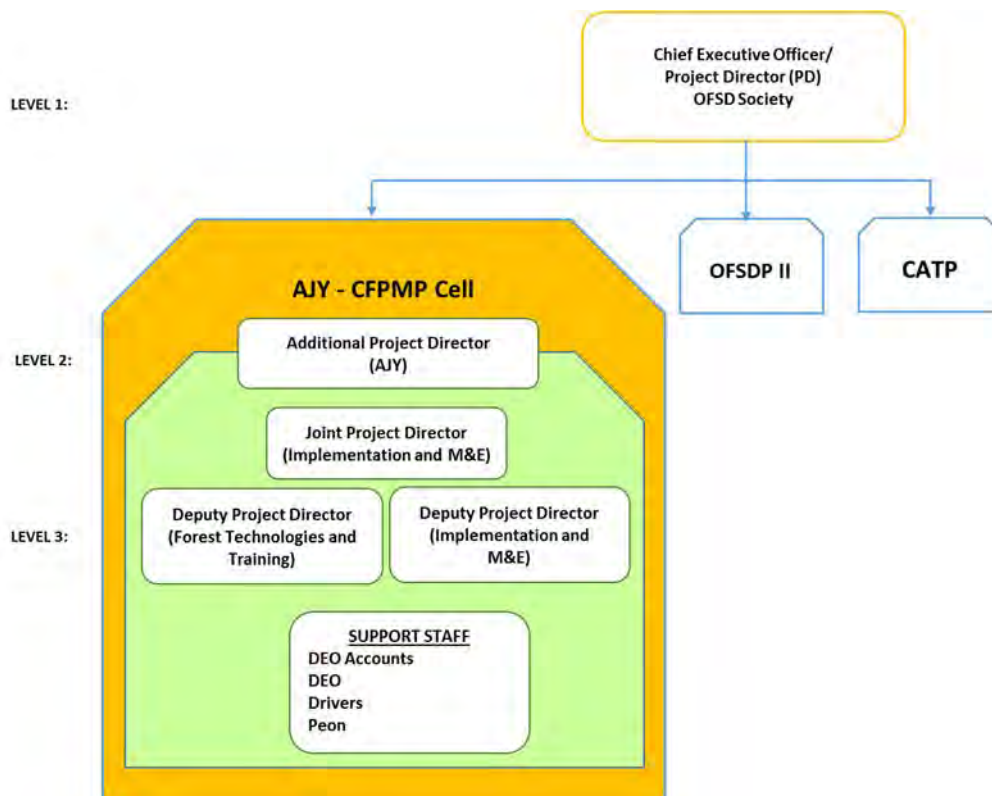
the state government during OFSDP-I, and continuing to maintain some of the key and support staff hired during project implementation.

Project Director, OFSDP I, who is also designated as ex-officio Chief Executive Officer (CEO) as per the Memorandum of Association (MoA) of the Society, continues to head it. The post of the Project Director was upgraded from APCCF rank to Principal Chief Conservator of Forests (PCCF (Projects)) rank as temporary and Ex-Cadre post vide General Administration Department Notification no.AIS-III-7/2009-8201/AIS dated April 13, 2009. The Project Director not only looks after AJY and CATP, but is also looking after one project outside the Society – a World Bank financed the Integrated Coastal Zone Management Project (ICZMP) being implemented in Odisha since September 2010. Brief description about AJY and CATP and their institutional arrangements is being discussed in subsequent paragraphs.

### 1) Ama Jangal Yojna (AJY)

Nearing completion of OFSDP-I, the OFSDS opted to capitalize on the experience and learning from the JICA assisted project, and Ama Jangala Yojana (AJY) or the Community Forest Protection and Management Program (CFPMP) was launched in 2015-16 to strengthen the VSSs of the state, seeking financial assistance from the state government. The scheme will be implemented in 30 forest divisions of the state over a period of 7 years. up to 2021-22.

The CEO, OFSDS (Project Director of OFSDP) heads the Community Forest Protection and Management Program (CFPMP) Cell established within the PMU. The CEO/ PD is presently assisted by one Additional Project Director and one Joint Project Director in the rank of a Chief Conservator of Forests and Conservator of Forests respectively, who are further supported by two Deputy Project Directors in rank of Divisional Conservator of Forests (DCF) and support staff (see Figure below).



Source: PMU, OFSDP; created by JICA Supplemental Survey, September 2016

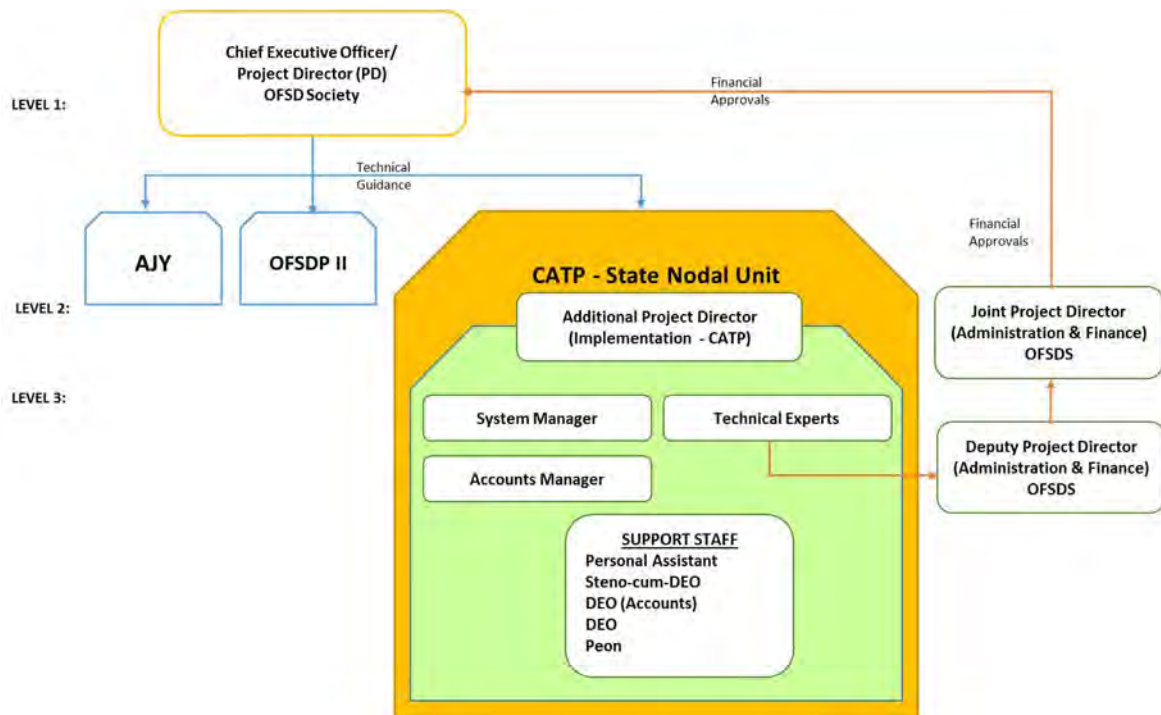
Figure 3.2.1 Institutional Arrangement of AJY

## 2) Catchment Area Treatment Plan (CATP)

CATP has been implemented by the OFSDS since 2013 by establishing a State Nodal Unit within the PMU. The state unit is working in Upper Kolab and Upper Indravati catchment areas seeking funds under Integrated Watershed Management Programme (IWMP) through Odisha Watershed development Mission (OWDM), supporting the program cost, and Odisha Hydro Power Corporation (OHPC) Ltd. supporting towards institutional cost (staffing and administrative costs). The CEO is Project Director for this project as well.

CATP has not received funds in 2016-17, but continue to function with the leftover funds from previous financial year (2015-16) maintaining minimum staff strength of 7 persons out of which three are female staff (refer Figure below). Now, under changed arrangements, IWMP has been made a component under Pradhan Mantri Rashtriya Krishi Sinchai Yojna, and thus no further funds would be available. Now, either CATP has to be closed or has to strive for funds from other sources like MGNREGS and/or state CAMPA to carry out activities further.

The description of CATP is summarised in **Attachment 3.2.1**.



Source: PMU, OFSDP; created by JICA Supplemental Survey, September 2016

**Figure 3.2.2 Institutional Arrangement of CATP**

## 3) Issues and Recommendations

### i. Institutional Framework

The responsibilities on the Project Director has increased many fold due to his engagement in other programmes like AJY, CATP and ICZMP being CEO and PCCF (Projects). Thus, presently, it appears that with given responsibilities, OFSDP-II may not get full-time focus.

AJY is being implemented in 31 forest divisions out of which 14 forest divisions are of OFSDP-I.

All the 14 OFSDP-I divisions are now covered under AJY. The support would be extended under OFSDP II for further strengthening the IGA initiatives (some 7,000 SHGs).

Given the above context, there would be overlap in communications and authorities for project implementations, which would increase the workload of the field level implementation unit. From the institutional point of view, the overlapping of divisions between these two schemes may be avoided. Furthermore, under the usual circumstances, divisions and ranges are handling multiple numbers of

schemes/ programmes and thus, implementation of OFSDP-II would also increase their workload. Thus, full-time staff at PMU, divisional and range level would be required. To further strengthen the existing delivery mechanism and ensure the implementation of planned interventions, DMUs and FMUs need to be provided with contractual staff as well.

PMU has created Geomatics Cell, and all staff is directly hired from open market. No forest department staff is involved at present. Thus, commitment of the state government (OFD) for budgets, and upfront availability of trained man-power from the department to support in-house capacities in the areas of GIS/ MIS is required to create an integrity with the existing GIS/ MIS functions of State Forest Department.

The finance in the project (OFSDP-I) is looked after by a person with the rank of Deputy Conservator of Forest (DCF) from the Forest Department, unlike other JICA projects (e.g. Uttar Pradesh, Uttarakhand) where finance (grants from state government) are looked after by a person from Financial Services being posted in PMU.

Given the current situations and to adequately address requirements of the proposed OFSDP-II, composition of members in HPC, GB and DAC need to be reviewed and modified.

Only statutory audits (annual CA audits) are being conducted in the project. A system of having 'Concurrent/ Internal Audits' could be introduced for efficient management of funds, and for minimizing errors while preparing statement of expenditures (SOEs) for claims of eligible portion, which happens during initial years of the project. Separate qualified agencies/ chartered accountant firms are to be engaged.

Operation manual in OFSDP-I was prepared during the first year of project operation, and followed throughout the project life. At times the Manual required revisions and adjustments to address the emerging project requirements.

Cost norms adopted by the Forest Department are approved by the PCCF office/ the state government, and are applicable for forestry operation. Suitability of these norms could be examined for the proposed interventions under the OFSDP-II.

The role of Regional Chief Conservator of Forests (RCCF) was not well defined in OFSDP-I. RCCF oversees and controls Divisional Offices, who in turn was reviewed by PCCF (HOFF). For OFSDP-II, the role for continued supervision and review by RCCF to be clarified with a vision of owning the project assets and works beyond the project period. Through the project, provision of small fund for (a) M&E activities & Reviews and (b) POL, stationeries, etc. could be made.

Under the current MOA amongst office bearer of the Society, Chief Secretary of the state is made as the President of the Society. By virtue of his position in Society, General Body of the OFSDS should also be presided by the President (Chief Secretary). During the implementation of the OFSDP-I, only few meetings (not inviting all designated members) could be organized at the time of HPC meetings, which otherwise is mandatory for a Society to conduct annual General Body meeting (AGM) every year. Considering the functionality of OFSDS, existing statutes for such arrangement (i.e. High Power Committee (HPC) being part of the Society functions and the Chief Secretary being the president of the Society) have not worked well.

In other JICA loan supported states, HPC is not the part of the Society (PMU) and perceived as the highest decision making body for the project in the state, while the Governing Body (GB) is the apex decision making body for a Society registered under Societies Registration Act, 1860. The GB could be headed by any other higher ranking officer in the government looking after forestry sector. HPC is normally constituted separately outside the Society framework representing the Government on decision making in project.

## **ii. Institutional Capacity**

Institutional capacities of the forest department have to be sufficiently enhanced for the project areas and project divisions, particularly with the introduction of changed roles and forest management approach. Though JFM had come into focus in India way back in 1998 with the announcement of

National Forest Policy, the Odisha Forest Department (OFD) has been working more intensely with the communities and community institutions, mainly past 10 years through JICA assisted OFSDP I to mainstream JFM approach. This effort has been further expanded by the OFD by launching and implementation of AJY in the state.

Whereas forest officials and field staff are regularly being oriented on forestry operations, management and protection, only few of the officials/ staff have opportunities to regularly get trained, oriented and exposed to emerging areas in forest management viz., participatory community forest management, climate change mitigation, carbon sequestration, REDD+.

Further, the analysis reflects that not all field staff are getting equal opportunities to get trained on various aspects of their works. It came out of the observations during field visits that field staff particularly at range level and below are not adequately oriented and exposed to new Acts and its provisions e.g. Environment Protection Act, 1986; Panchayats Extension of the Scheduled Areas Act (PESA), 1996; Biological Diversity Act, 2002; Forests Right Act, 2006.

Though, by way of various training programme the field staff is trained and oriented for effectively playing regulatory and protection roles, but they are not very conversant with new or upcoming tools, techniques & approaches like participatory tools, community mobilization and social intermediation, micro-planning, monitoring & evaluation, MIS & GIS techniques, managerial functions, communication, documentation, financial records and audits etc.

For recruitment in Odisha Forest Department (OFD), the desired qualification for a forester position is intermediate in science, whereas for position of forest guard one should possess high school certificate. This is the knowledge level from where the forest staff is groomed on complex forestry and other technical aspects through an intensive two-year induction programme.

The induction programme follows classroom approach for training the staff at State Training Institutes, and little time is devoted to learn through demonstrations and hands-on practices. Also, there are no opportunities where senior officials of the forest department can share their work and field experiences with the trainees. Thus, internalization of lessons depends mainly on the quality of lectures/ reading material and his/ her own absorption capacities, and this pedagogy must be very challenging both for the trainers as well as trainees. Since, the range level field staff serves as the backbone of the department, adequate attention is to be given to prepare the field staff well to take-up emerging challenges in the forestry sector, as well in the project, in an efficient and effective manner.

### **3.3 Biodiversity Management**

Issues related to Biodiversity Management component are as below.

- While there is sincere effort in mainstreaming the Human-Wildlife conflict issues in territorial divisions, selection of Divisions seemed to have been done without any issue based prioritization. The project site needs to be strategically selected since the elephant corridor stretches over a long distance.
- Need some clarity on how to fund the recurring expenses on increasing manpower deployment in anti-depredation squads, which is already facing a funding crunch.
- Bitharkanika, the issues in management need to be clarified so that it contributes to the Project Objectives.
- The conceptual framework of SATOYAMA could be used for a designing of a holistic package of interventions for WL as well as territorial divisions.

Furthermore, the issues emerged out of the site visits to the proposed WL divisions in DPR are given below. In consideration of the current status, Mahanadi WL and Keonjhar WL were to be dropped from the priority divisions. A complete assessment of the five wildlife divisions are given in **Attachment 3.3.1**.

**Table 3.3.1 Issues Emerged Out of the Site Visits**

WL Division	Protected Area	Conservation - People Interface	Remarks/ Reviews
Hirakud	Debrigarh	Resource related pressure from more than 100 villages in south-western border, especially for bamboo; elephants living in sanctuary cause conflicts with people in neighbouring Bargadh Territorial Division Settlement of four forest villages- two in the core area. One of the villages in core area is almost ready to relocate. Under FRA 72 no. of individual claims were settled. Only one EDC is functioning; earlier engaged in eco-tourism activities; good opportunity for eco-tourism promotion	Although have very good BD conservation value, threats are limited; potential for enhancing ecotourism and nature interpretation values are high. <u>Review:</u> Can be considered under the Project only for enhancing ecotourism and nature interpretation values
Bamra	Badrama WLS and Khalasuni WLS	Settlement of 30 villages inside the sanctuary and around 140 villages on the fringe areas; Severe human-elephant conflict in villages inside and outside sanctuaries. A total 27 EDCs are created (24 in BWLS and 3 in KWLS); members are part of different protection squads.	Conservation significance is very high but challenges are linked with Human Elephant conflict in both within and adjoining villages. <u>Review:</u> Can be considered under Project.
Mahanadi	Baisapalli WLS and Satkosia Gorge	Settlement of 60 villages in and around sanctuary; Poaching of animals and timber; HW conflicts are frequent; 15 EDCs are currently functioning; engagement in Eco-tourism activities; village youths are part of different protection squads; Left Wing Extremism (LWE) activities are reported;	Conservation significance is very high as part of Satkosia TR. But area have security concerns and challenges are more directly linked with poverty management of local population. Enough support for ecotourism and habitat improvement work. <u>Review:</u> Can be dropped from the Project
Keonjhar		Total ten villages inside the Sanctuary- two are in core area; Practice of hunting and poaching are reported commonly; timber poaching is also common; regular events of fire; mining activities in the surrounding areas; Livestock grazing is common occurrence; Under FRA, <i>pattas</i> are given to villagers in few villages In the Sanctuary no EDCs are constituted so far. Village youths are part of different protection squads.	Conservation values are very high and soon going to be included in Simlipal TR; <u>Review:</u> Can be dropped from the Project.

Source: JICA Survey Team (2016)

### 3.4 Forest Management

#### 3.4.1 JFM Mode

Major forest management activities under JFM made during OFSDP-I were as follows:

- Assisted Natural Regeneration (ANR): silvicultural operations intended to improve the structure of forest stands and promote natural regeneration
- Block plantations: subdivided into plantation of economic species, fuel & fodder species, bamboo species and NTFP species.
- Coastal Mangrove Plantation: plantation of mangrove species in coastal area including construction of Fish Bone Channel to facilitate flow of sea water in plantation areas.
- Coastal non-mangrove plantations: plantation of Casuarina species to raise as coastal shelterbelt.

- Soil and Moisture Conservation Measures
- Establishment of Decentralised Nursery
- Fire Protection

As indicated in **Table 3.1.1**, major achievements of JFM in terms of the forest management during OFSDP-I was as follows:

- ANR: 155,045 ha (targeted for 138,000 ha)
- Block Plantation: 40,943 ha (targeted for 39,650 ha)
- Coastal Plantation: 2,920 ha (targeted for 2,810 ha)
  - o Mangrove: 2,769 ha (targeted for 2,160 ha)
  - o Non-Mangrove: 151ha (targeted for 650 ha)

Generally, this component and activities are regarded as a success of OFSDP-I. In the table below, key finding and lessons learnt of JFM mode are summarised based on information obtained through literatures, interviews and field visits.

**Table 3.4.1 Findings and Lessons Learnt: JFM Mode**

Findings	Lessons Learnt
<p><b><u>ANR &amp; Block Plantation</u></b></p> <ul style="list-style-type: none"> <li>➤ There were often cases of lacking available sites for block plantation in majority of targeted forest divisions.</li> <li>➤ Though species as well as treatment model selections were done in consultation with VSS members, there were tendencies to plunge in available species and models for implementation rather than considering site/VSS specific requirements and objectives.</li> <li>➤ Monitoring and recording of activities were not always properly implemented.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Necessity to further confirm availability of areas for each proposed treatment areas</li> <li>➤ Possible procedures/ flows to be incorporated for realistic and flexible species/site selection for forest management modes.</li> <li>➤ Better planning/ monitoring mechanism for plantation/ANR activities</li> <li>➤ Restructuring of components and activities to match with project objectives/ outputs.</li> </ul>
<p><b><u>Decentralised Nurseries</u></b></p> <ul style="list-style-type: none"> <li>➤ Though certain numbers of VSS nurseries (465 for the 1<sup>st</sup> batch VSS and more than 200 for 2<sup>nd</sup> Batch VSS) were established, most of the VSS nurseries became less functional after the direct intervention by the Project.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Decentralised nurseries more likely served as the temporary nursery to provide seedlings for plantation and gap plantings of the project activities, rather than nurseries to be continuously managed and operated.</li> <li>➤ Establishment of decentralised nurseries shall be considered as an option of village/ community development, in case concerned VSS/community has such desires and there are certain demands for seedlings in/around the nursery.</li> </ul>
<p><b><u>Coastal Mangrove Plantation</u></b></p> <ul style="list-style-type: none"> <li>➤ Majority of mangrove species require regular tidal in and out flow for survival and growth.</li> <li>➤ Fish bone channel method improved and secured tidal inundation by civil works and provided certain success for establishment of mangrove species</li> <li>➤ Fish bone channel method, in general, required high investment cost.</li> <li>➤ Some of channels were destroyed and therefore regular tidal inundation was hindered, which resulted in lower survival of planted species behind the channel.</li> <li>➤ Goals and objectives (protection, production etc.) of introducing the fish bone channel method and mangrove plantation were not always clear.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Clarify goals and objectives of the coastal mangrove plantation. If these can be justified and such intervention is in high necessity, introducing high investment such as the fish bone channel method can be applicable.</li> <li>➤ Maintenance: Cost and activities for maintenance of fish bone channels shall be included in further similar interventions.</li> </ul> <p>Plantation Location:</p> <ul style="list-style-type: none"> <li>➤ Locations which require high investment of fish bone channels shall be avoided for mangrove plantations, unless establishing mangrove plantation in such areas has high priorities and necessities.</li> <li>➤ Mangrove plantation shall be established at locations not too far from existing water bodies where tidal in and out flows are available (in such location, if establishment of forest cover through plantation is required, introduction of non-mangrove species shall be also considered).</li> <li>➤ Ideally, degraded mangrove area which require less inputs of earth works shall be prioritized for mangrove plantation.</li> </ul>

Source: JICA Survey Team (2016)

### 3.4.2 Non JFM Mode

Major forest management activities under Non JFM mode during OFSDP-I were as follows:

- Consolidation and Demarcation of Forest Boundaries
- Construction and Improvement of Permanent Nursery
- Artificial Regeneration
- Forest Improvement
- Forest Road/ Link Road Construction and Rehabilitation

As indicated in **Table 3.1.1**, major achievements of non JFM mode during OFSDP-I was as follows:

- Block Plantation: 14,417 ha (targeted for 19,000 ha)

Key finding and lessons learnt of Non JFM mode are summarised in the table below based on information obtained through literatures, interviews and field visits.

**Table 3.4.2 Findings and Lessons Learnt: Non JFM Mode Forest Management**

Findings	Lessons Learnt
<p><b><u>Block Plantation</u></b></p> <ul style="list-style-type: none"> <li>➤ Basically, teak was the species introduced for block plantation in majority of targeted forest divisions.</li> <li>➤ During the planning process, there were cases that plantation models which were originally intend to provide indicative cost estimate and design were applied without much considerations of the actual site conditions.</li> <li>➤ Similar to JFM mode, monitoring and recording of activities were not always properly implemented.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Though teak is well experienced species by FD, species selection shall be re-examined based on goals and objectives in consideration of specific site/regional requirements</li> <li>➤ Better planning mechanism to be reexamined such as how types and modes of forest interventions differentiate in accordance with forest conditions, slope categories, and location forests.</li> <li>➤ Introduction of better monitoring mechanism to record both quantitative and qualitative status of interventions.</li> </ul>
<p><b><u>Linkages and Distinctions with JFM Mode Activities</u></b></p> <ul style="list-style-type: none"> <li>➤ There were often cases how activities/interventions as well as the intervention areas under the non JFM-mode related to that of JFM-mode were not always clear. Especially, linkage and distinction between artificial regeneration/ forest improvement activities under the non JFM-mode and that of JFM activities were not able to confirm fully.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Restructuring of component and activities to match with project objective/ outputs.</li> <li>➤ During the restructuring of the component/ activities, emphasis on aspect to support and strengthen JFM mode shall be taken in to account.</li> </ul>

Source: JICA Survey Team (2016)

### 3.4.3 Forest Related Infrastructures

Major forest related infrastructure during OFSDP-I were as follows:

- Biodiversity conservation related infrastructure under the “Biodiversity Conservation” component
- Drainage Line Treatment / SMC works under “Forest Management” components
- Construction and Improvement of Permanent Nursery, under “Forest Management” components
- Other civil work / land preparation related work under “Forest Management” components
- Nursery renovation/ construction and forest protection work related infrastructure under “Forest Management” components

Key finding and lessons learnt of forest related infrastructure are summarised in the table below based on information obtained through literatures, interviews and field visits.



**Table 3.4.3 Findings and Lessons Learnt: Forest Management Infrastructure**

Findings	Lessons Learnt
<p><b>SMC and Drainage Line Treatment:</b></p> <ul style="list-style-type: none"> <li>➤ Although extensive field level planning works were done, much clarity in how and on what basis SMC structures were planned and implemented was needed.</li> <li>➤ SMC for plantation activities and water harvesting structure (WHS) for groundwater recharge /agriculture/ daily uses/wild animal drinking were both handled under forest management component.</li> <li>➤ The structures were created in a scattered manner due to the resource constraints, which otherwise would have been much more effective if constructed in a sequential manner.</li> <li>➤ Earthen dams were washed out due to heavy runoff flow during rains.</li> <li>➤ Cost allocation was not sufficient in comparison to the area of implementation.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Objectives/ goals of the interventions need to be clarified.</li> <li>➤ Site specific planning during micro planning as well as need based allocation/ planning in line with objectives/ goals of the interventions is required.</li> <li>➤ Separate WHS for non-forestry uses from forest management components and reorganize in either VSS capacity development (EPA) or rural infrastructure development.</li> <li>➤ Revision on cost estimates, design, site selection criteria, implementation schedule, objectives of SMC/water harvesting structures based on the latest cost and work norms is required.</li> <li>➤ Maintenance provision in terms of activities and cost to be re-examined if objectives/ goals of the interventions requires such maintenance for more effective impacts.</li> </ul>
<p><b>Nursery renovation/ construction</b></p> <ul style="list-style-type: none"> <li>➤ Permanent nurseries were either renovated or constructed during OFSDP-I but its utilization efficiency are not always clear.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Planning of production capacity and required facilities based on realistic demand forecast for seedling production</li> </ul>

Source: JICA Survey Team (2016)

As a case study, field observations and findings of forest management infrastructures and community related infrastructures are described in **Attachment 3.4.1**. Findings of other major general infrastructures of OFSDP-I interventions are described in **Attachment 3.4.2**.

### 3.5 Farm Forestry

OFD introduced agro-forestry scheme during 2013-14 to increase the tree cover on the agriculture land of people. Farmers having at least 0.20 ha (0.5 acre) of land are provided with free of cost saplings of fuel and fodder species. During 2015-16, 25 million seedlings were provided to the farmers and a budgetary provision was made for Rs. 274.54 million. From this year onwards OFD decided to supply the seedlings to the farmers at the cost of Rs. 2 per seedling. The survey team also reviewed the modality of the Farm Forestry in other JICA assisted forestry sector projects shown in **Attachment 3.5.1**.

#### 1) Farm Forestry in OFSDP-I

Under OFSDP-I, farm forestry was introduced during 2013. An elaborate guideline was prepared and circulated to all the stakeholders. During 2013-14 and 2014-15, 9,487 ha of farm forestry plantations were taken up in 801 VSSs belonging to 12 DMUs/ Forest Divisions involving 14,031 farmers. Large number of farmers from Koraput, Jeypore and Keonjhar divisions participated in farm forestry activities i.e. 76 % of total beneficiaries and 80 % of the area under farm forestry are from these three divisions. OFSDP-I could successfully rope in JK Paper, Rayagada to establish Eucalyptus clonal plantations for paper chips/ pulpson farmers' land in Jeypore, Koraput and Rayagada. Tripartite agreements were signed among Forest Department, Farmer and JK Paper to ensure supply of inputs, technical support and market access.

**Table 3.5.1 Progress of Farm Forestry in OFSDP-I**

No.	Divisions	Total no. of Farmers	Total area planted (ha)
1	Angul	292	188.18
2	Balliguda	321	155.41
3	Bonai	476	208.17
4	Balasore (WL)	19	5.65
5	Bhadrak (WL)	74	36.55
6	Jeypore	2,919	2,312.25
7	Keonjhar	1,737	511.63
8	Koraput	6,001	4,748.79
9	Phulbani	424	204.70
10	Rayagada	625	491.44
11	Rourkela	552	298.85
12	Paralakhemundi	591	325.50
<b>Total</b>		<b>14,031</b>	<b>9,487.11</b>

Source: OFSDP Report.

Three models of farm forestry were promoted as given below.

- Farm forestry – pulpwood model with industries to be implemented in Rayagada, Koraput, Jeypore and Paralakhemundi Forest Divisions.
- Farm forestry – short and long rotation – Timber/ Tree Borne Oilseed (TBO)/ NTFP model to be implemented in all DMUs/Forest Divisions.
- Hedgerow planting model – planting on the hedges to be implemented in VSSs, where more than 20 ha farm forestry of other two models have been undertaken. This is an incentive for the VSS as it has promoted more than 20 ha area under farm forestry. The Project will support 10 RKM (running kilometre) for the first 20 ha and an addition 0.5 RKM for every subsequent one ha coverage area.

## 2) Issues in Farm Forestry

Farm forestry was initiated by OFSDP-I in 2013 during the extension phase. It has been considered as a successful initiative and good mechanisms were set to work with pulp and paper industries. The Industry supplied clonal saplings at a subsidized rate and bore partial cost of capacity building of the farmers. The issue of sale of timber, poles etc. has not come yet as the plantations are 2-3 years old.

Partnership with industries is limited to specific geography. It would be a challenge to mobilize industries to work in other areas. Another challenge is to mobilize farmers to form a cluster and identify contiguous areas for plantation. Wherever planting material is sourced from an industry the quality can be ensured but in case of Timber/TBO/ NTFP model of farm forestry accessing quality planting materials at a lower cost would be a challenge.

If the farmers intend to raise tree species, which require transit permit then the farmers may find it difficult to get the transit permit because of its procedures. No Transit permit is required in Odisha for the following species raised under farm forestry.

**Table 3.5.2 Tree Species Requires No Transit Permit in Odisha**

Trees and Bamboo	
Jackfruit - <i>Artocarpus heterophyllus</i>	Eucalyptus - <i>Eucalyptus hybrid</i>
Kasi - <i>Bridelia retusa</i>	Acacia/ Sunajhari - <i>Acacia auriculiformis</i>
Sissoo - <i>Dalbergia sissoo</i>	Jhaun - <i>Casuarina equisetifolia</i>
Gambhari - <i>Gmelina arborea</i>	Bada Chakunda - <i>Cassia siamea</i>
Mango – <i>Mangifera indica</i>	Sana Chakunda - <i>Samania saman</i>
Champa - <i>Michelea Champaca</i>	Silver Oak
Piasal - <i>Pterocarpus marsupium</i>	Bamboo species
Sal - <i>Shorea robusta</i>	Sundarkani - <i>Bambusa nutan</i>
Teak - <i>Tectona grandis</i>	Badi baunsa - <i>Bambusa vulgaris</i>
Asan – <i>Terminalia alata</i>	Bolangi Baunsa - <i>Bambusa tulda</i>

Source: The Orissa Timber & Other Forest Produce Transit Rules 1980. Schedule III.

In the above context, Farm Forestry component needs to be revisited in terms of its relevance to the project objective of the revised log frame. Further, monitoring system as depicted in the OFSDP-I guidelines needs to be practiced and reported so that the data can be incorporated into the MIS system for efficient monitoring.

### 3.6 NTFPs

NTFPs have been one of the income sources for many forest dwelling households. Because of the dwindling resource base, availability of alternative livelihood opportunities and lack of adequate support mechanisms in place, the dependency of people on NTFP for raising cash incomes has declined.

The major challenge in strengthening the NTFP sector as a sustainable source of livelihood is to bring together different stakeholders and develop a comprehensive strategy and roll out the strategy for the development of the sector. There are different agencies operating in the state for procurement and trade of NTFPs but there is no coordination among them.

There is inadequacy of data available on the potential, production, value addition, prices in market of different NTFP etc. There is no NTFP resource inventory scientifically made in the recent past. There are no scientific studies undertaken to understand the trends in production and anthropogenic and non-anthropogenic factors responsible for declining in production of different NTFPs. Only limited attempts of R&D on NTFPs were made to enhance production, value addition and product development.

Unsustainable harvesting of NTFPs is another challenge, which requires priority attention. It has significantly contributed to decline in production of various NTFPs including Amla, Char, Siali leaf, Sal leaf etc. Sustainable harvesting protocols are available for many important NTFPs, which are yet to be popularized, implemented and monitored. Currently Dabur assists some of the OFSDP-I clusters to introduce sustainable harvesting of NTFPs and quality control under its CSR scheme. However, this is also limited to certain NTFPs.

Most of the trading of NTFPs other than Kendu Leaf and Bamboo happens through informal channels. There is no price guarantee as well as security of market. There is a price fixation mechanism at the Panchayat Samiti level for 69 NTFPs dealt by the Gram Panchayats but not executed in a proper manner. Minimum Support Price has been introduced for 12 NTFPs through a GOI scheme but it is very poorly implemented in the state. 900 Primary Procuring Agencies have been constituted but the volume of procurement is very low. People in forest fringe villages have limited awareness on the scheme of the Government.

The Gram Panchayats could not shoulder the responsibility (utilize the powers) given to them under PESA to control and manage 69 NTFPs. The Forest Department (FD) did also not do much as NTFP trade was deregulated and it went out of the domain of FD. Wherever the communities were organised and supported by some civil society organisations, they collectivised procurement and sale of selected NTFPs and got benefited. The situation did not improve significantly to benefit the poor NTFP collectors/ gatherers. In general, the trade remained under the control of private traders and the exploitation continued.

Product specific issues so far identified are given in **Table 3.6.1**.

**Table 3.6.1 NTFP Specific Issues to be Addressed**

Sl.	NTFP	Divisions	Key Issues to be Addressed
1	Covered under MSP - Tamarind, Sal Seed, Gum karaya, Honey, Karanj, Lac, Mahua flower and Mahua seed, Chironjee, Myrobalans	All Project divisions, where these NTFPs are available	Lack of adequate primary procuring agencies Poor awareness among the primary collectors Poor procurement
2	Kendu Leaf	Bolangir	Declining quality of leaves Declining production in VSS areas

Sl.	NTFP	Divisions	Key Issues to be Addressed
3	Lac	Mayurbhanj (2 divisions) and Sundergarh	Declining production Transit restriction even from the private land Lack of availability of brood lac
4	Bamboo	Ghumsar North and South, Bolangir, Sundergarh	Declining production Poor management of bamboo areas
5	Gum Karaya (Genduli Gum)	Phase I areas – Gajapati, Rayagada	Restriction of harvesting and transit
6	Siali leaf	Phase I area – Rayagada and Gajapati Phase II – Nayagarh	Lack of organised production Declining quality of leaf and availability of raw materials
7	Hill broom	Phase I area – Rayagada, Gajapati Phase II – Kalahandi	Lack of access to better markets Poor quality of brooms

*Source: JICA Survey Team*

### 3.7 Livelihood Improvement

#### 3.7.1 Community Level Institutions (VSS/ EDC/ SHGs)

##### 1) VSS

OFSDP-I has supported 2,426 VSSs during the project period. OFSDS played the role of facilitator. Impact assessment of OFSDP reveals awareness of VSS members about rules and regulations and functioning of VSS, including participation in micro planning process. The interaction with VSS in the OFSDP-I areas and OFSDP-II areas reveals a need for strengthening governance of VSS. Its linkage with PRI institutions is not well established. At present there is inadequate participation of women in activities of VSS. Most of the VSSs lack funds to be able to protect and manage forest. It is important to ensure transparency and accountability in functioning of VSS. Discussion with forest officials in proposed project area reveals inadequate effort for capacity building and institutional development, the key reason being unavailability of funds. Most of the VSSs relate to specific villages. There is limited sharing of experience among VSSs from different villages. At present, VSSs have limited understanding and capacity to promote IGAs. The VSSs in proposed project areas have inadequate capacity to manage revolving fund.

After the project completion, services of the animator (village level extension workers) were expected to continue, but got discontinued or stopped due to the lack of funds of VSSs/ EDCs. Services of the animators should be institutionalized with VSSs/ EDCs, and must continue during the project and beyond; VSSs/ EDCs need to mobilize funds to support the services.

##### **i. Capacity building of VSS during OFSDP-I**

A lot of efforts were made during OFSDP-I to build capacity of VSSs. Some of the interventions have been presented below.

- Sensitization workshops were organised for field personnel organised at Circle and DMU levels at the beginning of the Project to discuss the project strategies, structure and functions of different project implementing agencies, project components, activities, etc.
- After the launching of the Project, a training need analysis was organised by Xavier Institute of Management, Bhubaneswar (XIMB) through review of various documents, organisation of multi-stakeholders workshops. etc.
- TOTs for Range Officers and Forest Extension Officers were organised by XIMB to make them Master Trainers.
- VSS Management Manual/ guidelines were developed and customized for each VSS to help smooth functioning of VSS and proper implementation of the Project.

- Training modules were developed for different stakeholders such as community, animator, NGO, DMU (Forest Officers – DFO, ACF, Range Officer, Forest Extension Officer, Village Forest Worker, Forester, Forest Guard) and PMU by XIMB and further refined by the General Consultants.
- 11 Partner NGOs were engaged during the project tenure to work with the Project for training, coaching and information dissemination to VSSs. These Partner NGOs assisted VSSs in community organisation, micro-planning, annual planning, building linkages with PRIs and Line Departments.
- Training modules and materials were developed by capacity building support agencies (CBSA – 12 agencies were engaged) engaged in the Project during 2012-15. CBSAs organised large number of training programmes for VSSs, Animators and Project Staff at the field level.
- Training modules and materials for SHGs on IGA/ livelihoods were developed by 7 IGA support agencies (IGASAs) and training programmes for SHGs were conducted by them.
- During 2010-14, 549 exposure visits were organised for 16,820 VSSs and SHGs members within their respective forest divisions.
- During 2010-2014, 4,044 training programmes were organised by seven IGASAs in 14 DMUs participated by 141,191 Project staffs, VSSs and SHGs.
- During 2012-15, Capacity Building Support Agencies organised 3,032 training programmes in 14 DMUs participated by 59,822 persons from VSSs, FMUs and DMUs.
- 39 percent of the total training programmes organised for the VSS members were on record keeping and 33 percent of the same were on Silviculture operations. Most of these training programmes were of short duration of 1-2 days.
- Support was provided to each VSS to have a VSS Building to keep records, conduct meetings and use it as a multi-purpose centre such as information centre, place for organisation of health check-up camps, awareness camps etc.
- Entry point activities were undertaken to support VSSs for village infrastructure development and addressing some of the basic human needs.

## **ii. Issues in Capacity Building and Functioning of VSS**

The overall objectives of improving livelihoods of the forest dependent communities are to reduce pressure on the forest resources by providing alternative livelihoods and by way of supporting them in NTFP based IGAs (sustainable harvesting, replenishment of the NTFP resource base, value addition, marketing and etc.). As in OFSDP-I, OFSDP-II would also envisage to take SHG as a vehicle for such interventions.

Although the number of SHGs are many, the literature reviews and field visit suggest that the possible exclusion of the poorest households in the villages from the SHG membership. Furthermore, the existing SHGs are at different level of capacity (irregularity in meetings, in mobilization of savings, repayment of internal lending and book keeping). Many a times, this happens due to inadequate or absence of hand holding and capacity building support to SHGs. It is also observed that some of the SHGs credit linked to Banks is defaulting on repayment of their loans. This has happened as group members and/or group could not identify viable IGAs. Nevertheless, there is potential to strengthen SHGs, and support them to take up small IGAs. Most of the SHGs are functioning as standalone community institution.

In OFSDP-II, it would be important to work with SHGs having members from poor households, SC/ST families, women and households more dependent on forest products and give priority to those that have no access to loan and other support. In case some of the needy poorest households are not members of SHGs, project can motivate women belonging to those households to form SHGs or join existing SHGs.

### 3.7.2 Livelihood Interventions under OFSDP-I Areas

Under the OFSDP-I, 7,358 SHGs were created. A part of which has been federated in the form of cluster organisations. During OFSDP-I, product based clusters were organised and 70 clusters are operational now. Out of these clusters, 17 clusters are supported by the CSR programme of Baitarani - Dabur in sustainable harvesting and improved processing in medicinal plants, which harvest would be purchased by Dabur, a leading ayurvedic products company in India. 19 clusters have been supported by NABARD scheme, which initiative started in 2015 and currently on-going. The agreement is renewed on an annual basis. The assessment of clusters are given in the **Attachment 3.7.1**. To draw lessons from the experiences of OFSDP-I, process of IGA promotion through SHGs and cluster based organisations are reviewed in this section.

#### 1) Promotion of Small IGAs through SHGs

In 2008, an initial one time revolving fund of Rs. 100,000 was released to VSSs to promote IGAs. The idea was to promote small IGAs through existing SHGs. The project thought of using existing platform of social mobilization through SHGs, than promoting new institution. It was expected that IGAs would be better managed by women SHGs. As access to capital was critical support required, the project had provision of revolving fund support. The VSSs were indicated to utilize revolving fund for lending to two SHGs, amounting to about Rs. 20,000 per SHG. Meanwhile, data relating to profile of existing SHGs was collected with support of partner NGOs. It was found that in about 10% villages, SHGs did not exist. Hence there was need to promote SHGs in those villages.

#### 2) Profile of SHGs Supported in OFSDP -I

In OFSDP-I, the project provided revolving fund to VSSs, for on lending to SHGs to be able to take up small IGAs. The following table details SHGs covered by different divisions under OFSDP-I, loans disbursed by VSS to SHGs (both numbers and amount), repayment of loan and interest earned on loan repayment by VSSs:

**Table 3.7.1 Status of SHGs in OFSDP-I at the End of the Project**

DMUs	No of SHGs	No. of Loans Disbursed from VSSs	No of Loans per SHG	Amount of Loan Disbursed from VSS - in Rs. 1,000	Total Amount of Loan Disbursed per SHGs in Rs. 1,000	Amount of Loan Disbursed per Loan - Rs. in Rs. 1,000	Repayment of Principal by SHGs to VSSs in Rs. 1,000	Amount of Interest paid by SHGs to VSSs in Rs. 1,000
Angul	972	2,877	3	97,291	100	34	64,145	2,386
Balasore (WL)	34	104	3	6,281	185	60	3,408	142
Balliguda	446	1,823	4	52,797	118	29	32,331	338
Bhadrak (WL)	96	223	2	11,209	117	50	5,965	211
Bonai	268	932	3	26,824	100	29	18,400	464
Deogarh	926	2,449	3	66,863	72	27	28,621	1,187
Jeypore	683	2,418	4	89,246	131	37	39,031	1,539
Keonjhar	913	2,987	3	77,753	85	26	32,284	991
Koraput	845	2,258	3	61,133	72	27	27,532	661
Parlakhemundi	393	1,398	4	38,664	98	28	28,577	1,023
Phulbani	656	2,567	4	70,536	108	27	40,211	3,490
Rayagada	505	2,043	4	58,704	116	29	40,389	737
Rourkela	537	1,604	3	36,169	67	23	19,036	656
Satkosia (WL)	84	359	4	12,224	146	34	8,670	298
Total	7,358	24,042	3	705,693	96	29	388,597	14,123

Note: Some of the figures are rounded  
Source: PMU, OFSDS

During OFSDP-I, 7358 SHGs were supported by the project. On average, SHGs took 3 loans from the VSS at village level, the average loan amount being Rs.29, 353/-. Considering average 3 loans per SHGs, the total loan disbursement per SHGs is Rs.95, 908/- at project level. During the project period, VSS have been able to earn interest income from lending to SHGs. The amount of interest paid per SHG to VSSs is Rs.587, total amount at project level being Rs. 14.12 million.

During March 2008, a simple framework of promotion of IGAs was developed. Autonomy was given to DMUs and associated partner NGOs to get into promotion of IGAs through SHGs. At PMU level, the DFOs of DMUs were oriented on how to go about promoting small IGAs involving SHGs. The executive committees of VSSs were authorized to sanction loan to SHGs. There were two simple forms (i.e. loan application form of SHG to VSS and loan sanction form of VSS) developed by PMU to support VSS for administering loan to SHGs. The loan application form covered broad business details of IGA proposed to be taken up by the SHGs. This covered name of the business activity, volume of business and funding requirement.

### **3) Promotion of Product Clusters**

As promotion of clusters is a relatively new approach to support livelihoods, there would be need for proper risk assessment at every stage of cluster promotion process. This includes identifying key business opportunity, planning an appropriate scale of cluster with regard to area and members, appropriate institution (group, producer company, cooperative, etc), ability of leaders/members to deal with legal compliance, potential for market linkage (likely unforeseen risks), technology related risks (like alternate product being available in market), likeliness of accessing Bank finance, sharing of surplus or managing unforeseen loss in business.

During OFSPD-I, the SHG product clusters were identified based on findings of the livelihood opportunity analysis study conducted by MART in 2009, meeting of SHGs at community level and understanding of DMU functionaries. There was thrust on identifying single product that would be of business interest and/or relate to experience of SHGs in dealing as IGAs. Nevertheless, the SHGs can continue to deal with other products and small IGAs in respective SHGs. There were 2- 3 meetings conducted involving SHGs in an area to identify the product, potential quantity for business, and SHGs that could be associated. The cluster identification and validation process continued during 2010-12, the initial years of engagement of IGA Support Agencies. In 2010, MART, BISWA and APITCO were engaged as IGA Support Agencies covering specific divisions. There was thrust on capacity building of SHGs, identification and validation of clusters. The capacity building efforts covered foundation training on SHG management, Micro Enterprise Management (MEM), training on cluster development and exposure visit. After 2 years, MART withdrew as IGA Support Agency. In place of MART, other resource agencies like ALC, ADS and IGS were entrusted role of IGA Support Agency linking to different forest divisions. The IGA promotion process was affected during transition of role of IGASA from MART to other organizations.

### **4) Functioning of Clusters**

In each cluster, there was formation of cluster committee, involving representatives/leaders of member SHGs. The committee further elected its office bearers. In the formative stage of SHG cluster promotion, there was thrust on aggregation of product and collective marketing. The cluster leaders with support of facilitating agencies negotiate with distant trader on price, quality and quantity of product to be delivered. Accordingly, cluster business plan for the business cycle got developed. The member SHGs took responsibility to collect assigned quantity of product from members. The product could be pooled by member SHGs from their members, and kept at different villages linked to SHGs. The trader collects the product from different village points. As there was no cluster account, traders make payment to SHGs on behalf of the cluster.

In later stage, there was trend on pooling part or all products to common lifting point. In some clusters, bank account was opened for the cluster committee. However, as cluster was not a legal business entity it was difficult for companies like Agrovot, buying maize to deal with clusters or SHGs. They transacted business involving a commission agent who dealt with cluster and SHGs.

The clusters were transacting business by pooling funds from SHGs. In fact, SHGs were paying to their members from their loan fund accessed from VSS, and selling on credit to clusters. The trader finally paid to SHGs directly or indirectly through cluster. VSS being a village level institution, it was difficult for VSS to lend to clusters, covering more number of villages. The current status of the cluster level organisations and challenges faced by cluster level organisations are given in **Table 3.7.2**.

**Table 3.7.2 Challenges Faced by Clusters Promoted under OFSDP-I**

<b>Current Status</b>	<b>Challenges</b>
NABARD supporting 19 SHG clusters to emerge as producer companies	According to Producer Organizations Promoting Institutions (POPIs), support of NABARD is not adequate; Inadequate funds for facilitation support Not enough business development assistance since the scheme is intended for creating farmer producer organisations and register it as a legal entity under the Company's act.
NABARD thrust is for producer companies to get involved in farm sector, mainly focuses on vegetable cultivation	This left the NTFP based clusters without sufficient facilitation in the management and further development of cluster level activities.
Absence of facilitation support in other clusters promoted under OFSDP-I	Such clusters are gradually becoming defunct.
In NABARD supported clusters, legal registration as producer company completed or in processing stage	Business transaction yet to happen under umbrella of producer company
As part of registration process, directors elected and CEO appointed; however they are not aware of their roles and responsibilities	To run an entity for profit, CEO also needs to have the mind oriented towards business. However, the availability of such human resources is limited at the village level.
Business plan developed in some clusters/producer companies	Limited involvement of members in preparation of business plan; Inadequate clarity of field staff/CEOs on implementation of business plan
Unavailability of funds with Cluster SHGs and producer companies	There is a loan facilities that can be accessed by the clusters for productive activities. Despite that the fund is not available. The financial management of the cluster needs to be looked into and further, creating its own capital should also be explored.
Business plan relates to involvement in multiple commodities to be able to take up year round business	Lack of experience and capacity of producer companies to take up new/multiple business
Creation of cluster buildings for storage and other business activities; Facilities were used by higher level traders and/or SHGs for storage	Cluster buildings has not been optimally utilized by SHG clusters/producer companies. Where to establish such facilities need to be strategically planned.
In some clusters, availability of equipments for value addition, like in Sal Leaf clusters machines to take up press leaf plate production have been provided; Machines are yet be used	Cluster SHGs members do not have sufficient skills and equipments to enhance the capacity of production, quality and value of the products.
Unavailability of day to day facilitation support	SHG cluster leaders and members do not have adequate capacity to manage business activities on their own and thus, expect facilitation support to strengthen their institution and take up business activities
Clusters are perceived as initiative of OFSDP-I/Forest Department	Inadequate convergence with other Government departments
Expectation of stakeholders that clusters could get into value addition, developing products and branding	Inadequate clarity on operational plan to pursue value addition and branding

*Source: JICA Survey Team (2016)*

### **5) Business Plan for Clusters**

PMU advised IGA Support Agencies to develop 5-year business plan for the cluster. Based on validation of clusters and initial experience of collective business, business plans were framed. In the business planning process, there was active participation of SHG members, and consultation with business players and relevant stakeholders. Based on business plan, activities were planned and implemented at cluster level.

The survey team has reviewed the cluster level business plan taking six main product based clusters. The summary of the financial projection in the 5th year for different types of product clusters is given in **Table 3.7.3**.



**Table 3.7.3 Profiles of Selected Clusters Formed under OFSDP-I**

Particulars	Unit	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5	Cluster 6
Name of Cluster		Patna	Gangpur	Similiguda	Khajurisahi	Durgapur	Chandragiri
Product		Sal Leaf	Mohua	Tamarind	Turmeric	Onion	Maize
Business Proposition		Trading	Storage	Trading Deseeded and cake	Polishing	Storage	Trading
Facilitating Agency		ALC	NABCONS	APITCO	ADS	BISWA	IGS
Villages	Nos	6	6	5	7	7	8
SHGs	Nos	6	17	9	22	16	13
Households	HHs	150	288	100	350	177	145
Procurement	Quintals	1,338	936	61,750	1,992	8	1,140
Sales	Rs.	3,688,425	1,684,800	2,138,500	15,937,200	1,314,250	2,361,553
Expenses	Rs.	3,039,652	1,174,231	1,717,990	12,347,104	687,493	1,800,000
<b>Surplus</b>	<b>Rs.</b>	<b>648,773</b>	<b>510,569</b>	<b>420,510</b>	<b>3,590,096</b>	<b>626,757</b>	<b>561,553</b>
Gross Surplus %age		21	43	24	29	91	31

Source: Five year cluster business plans submitted by facilitating agencies during OFSDP-I project

The clusters reviewed in the table above are dealing with maize, horticulture products like onion and turmeric; and NTFPs like Mohua, Sal leaf and Tamarind. Most of the SHG product clusters covers about 5-10 villages covering 10-20 SHGs. The membership in cluster varies from 100-350 members. The business proposition varies with the product. In case of mohua and onion, the key interventions proposed in the business plan were storage and trading; and in case of sal leaf plates and maize it was trading. In case of tamarind and turmeric, there is scope for value addition through processing like polishing, deseeding and cake making in case of tamarind. However, the processing is proposed to be taken up at member level and cluster buying the processed products from members in case of tamarind. Different products require different tasks to be divided among the members and the role of cluster or SHG to play. Such should be kept in view while identifying the activities. Each product also requires management and supervision to manage the value chain to maximise the profit, which may require the engagement of specialised agencies.

Except for Khajurisahi turmeric cluster, the projected business turn over in 5<sup>th</sup> year across clusters vary in range of Rs.1 million to Rs.4 million. In case of turmeric, the projected sales turnover of cluster is more than Rs.1 Crore. This implies that potential of products for collective marketing varies with type of product and area, thus need for cluster specific business plan. The projected gross margin percentage is in the range of 20 to 30%, highest being 91% in case of Onion. The gross margin only indicates business potential which would vary during actual implementation of business plan. This analysis of business plans indicates scope for promoting collective business activities across different category of products. Thus, the business planning needs to be undertaken.

## 6) Institutionalization of Clusters

Based on initial experience of functioning of clusters, there was need for legally institutionalizing the clusters. The need for legal entity was felt to be able to formally transact business at cluster level. In case cluster is a legal entity, different Government departments and organizations would be able to support the cluster that may lead to long term sustainability of cluster. The idea of registering the clusters under Odisha Self Help Cooperative Act (OSHCA) was considered by stakeholders associated with promotion of clusters. Many clusters elected their governing body, framed byelaws and opened bank account.

Unfortunately, during that time OSHCA was repealed by Government of Odisha, and cooperatives already formed under the act were considered to be governed under old Cooperative Societies Act. As it may be difficult to operate as 'collective business entity' under old Cooperative Societies Act, the idea

of registering clusters as cooperatives was not considered by the community and promoting stakeholders.

### **7) Cluster Level Infrastructures**

The business plan for different clusters indicated the need for a common facility centre, storage space, drying yard and equipments to take up value addition and processing activities. Accordingly, the project provided support for common facility centre and other equipments to potential clusters. As it was provided towards the end of project (2013-14), in absence of hand holding and facilitation, such infrastructure and equipments are not utilized at optimum level.

### **8) Value Addition and Processing**

The scope for value addition and processing depend on commodity dealt by the cluster. There is scope for value addition in products like sal/siali leaf, turmeric, hill grass and tamarind. This has been reflected in business plan developed by IGA Support Agencies. In most cases, value addition and processing covers post-harvest and primary processing activities. There was some attempt to go for product development and branding. However, there was inadequate effort to work on niche product development. Overall, in some of the clusters, the project could facilitate value addition and processing.

### **9) Post Project Scenario of Promotion of IGAs**

VSS continues to provide loan from revolving fund to women SHGs to take up small IGA activities. However, in absence of facilitation support, the revolving fund available with VSS is not utilized at optimum level. There could be issue of non-repayment of loan by SHGs. As project ended, in absence of resources to hire facilitating agencies, the OFSDS could not continue the cluster promotion process. At field level, the cluster promotion process lost its momentum, when it was about to takeoff.

At this juncture, OFSDS facilitated linkage with NABARD to support facilitating agencies to continue to promote clusters. Based on assessment of clusters by NABARD, it is supporting some of the organizations as Producer Organization Promoting Institutions (POPIs) to promote producer companies. Interaction with NABARD and POPIs reveal that fund available for promotion of producer companies is inadequate. The business plans of producer companies include the farm sector activities like vegetables trading, involving more number of members and move towards dealing with multi commodity business.

### **10) Implication for the OFSDP-II Project Design**

- Considering the variations in the capacity and business potential of SHGs and from the diversification of the means of livelihoods to absorb livelihood shocks, it would be relevant to facilitate and promote product clusters since the beginning of the project, alongside promotion of small IGAs through SHGs.
- It would also be necessary to have a team of resource persons at PMU level to prepare a strategy of livelihood promotion under OFSDP-II and lead the process of livelihood promotion, which unit may also become a self-sustaining entity.
- When selecting / forming SHGs, constitution of clusters based on the value chain analysis needs to be kept in mind so that these SHGs can be effectively integrated into the cluster level activities.
- Need for long term effort is necessary for the business promotion of clusters.
- Specialised agencies will be necessary for facilitation of the cluster based business.
- Sustainable harvesting and regeneration of natural resources need to be ensured.
- Cluster promotion needs to relate to the market/demand side; while simultaneously focusing on supply/produce side.

As a case study, field observations and findings of SHGs and SHG Clusters in the Keonjhar Division are described in **Attachment 3.7.2**.

### 3.7.3 Capacity Building and Training for Promotion of IGAs in OFSDP-I

In OFSDP-I, capacity building of SHGs, VSS members and staff was conducted by IGA Support Agencies. Training of SHGs members covered enhancing their capacity to plan and implement small IGAs at group and cluster levels whereas the VSS members and project staffs were trained on facilitation and monitoring of small IGA activities. The trainings were imparted to 3 members of SHGs and 2 members of VSS (includes Animator and office bearer). The batch size for training to SHG members was 40, while it was 30 for training to VSS members (including Project staffs such as FEOs and Member Secretaries of VSS). The details of training imparted are given below:

Besides this, the project had provision for additional training on social mobilization and other skill training for village animators to be developed as marketing and business development service (BDS) providers.

The resource persons and institutions were identified by IGA Support Agencies. The training modules were also developed by them. On completion of trainings, the IGA Support Agency prepared training report and submitted to DMU/PMU.

The thrust on skill training varied with product. It relates to value chain analysis, scope for value addition and processing, and business plan of SHGs and SHGs Cluster. The skill training covered lecture, group discussion, demonstration and practice of making products. **Table 3.7.4** details key aspects for skill development linked to specific products:

**Table 3.7.4 Outline of the Training Programmes for VSS/EDC/SHGs/Clusters under OFSDP-I**

Theme	Duration	Participants	Topics Covered
Foundation Training	1 Day	Existing & New SHGs	SHG Management and Micro finance
		Cluster SHGs	Cluster Development
		VSS Members & Animators	VSS level facilitation and training
		Project Staff	Project level facilitation and training
Micro Enterprise Management (MEM)	3 Days	Existing & New SHGs	Management of Small IGAs
		Cluster SHGs	Cluster level Micro Enterprise Management
		VSS Members & Animators	Cluster level facilitation and monitoring
		Project Staff	Project level facilitation & monitoring
Skill Based Training	3 Days	New SHGs	Exposure
		Existing SHGs	Orientation, exposure and brief training
		Cluster SHGs	Comprehensive skill development

Source: ToR for IGASA in OFSDP-I

**Table 3.7.5 Outline of the Skills Training for Different Products**

Product	Content of Skill Training
Tamarind – Deseeding	Sorting, deseeding, flowering drying and packaging
Tamarind – Cake Making	Procurement quality deseeded tamarind, use of press machine and storage
Turmeric	Harvesting, boiling process, polishing and storage
Hill Broom	Collection, drying, sorting, edge cutting, use of plastic handle and storage
Incense Stick Making	Selection of Bamboo stick, making ingredient, rolling, drying, packing and storage

Source: ToR for IGASA in OFSDP-I

### 3.7.4 Hand Holding Support

Besides training, capacity building for promotion of small IGAs covered:

- Facilitating preparation of business plan by SHGs
- Facilitating verification of business plan by VSS and release of loan

- Support to SHGs by facilitating linkages with different departments
- Support for initiation of business by SHGs
- Maintenance of accounts and records by VSS and SHGs
- Support for market linkage of small IGAs including assessment of profit/ loss in IGAs.

As per ToR for IGA Support Agencies, the capacity building for cluster development was expected to cover organizing cluster meetings, hand holding to support infrastructure, developing business plan for cluster, facilitate bank linkage and registration of cluster.

Although the IGA model evolved in OFSDP-I is quite encouraging, challenges are faced as the process was rather supply side driven and the capacity to take up IGAs, cluster based activities, and collective marketing varied among the SHGs. In most cases, they require support for linkage with different stakeholders like traders and Government departments, to be able to achieve their full potential. The SHGs supported in OFSDP-I could be mainstreamed with implementation of flagship NRLM schemes. During field visit to Kandhamal division, it was observed that SHGs supported in OFSDP-I are currently linked with the Gram Panchayat and District Level Federation of SHGs under NRLM and have access to support available through NRLM. As mentioned earlier, there is a need for systematic effort for promotion of clusters, with proper assessment of clusters, clarity in approach, supports required; and risk assessment of different activities and for the post project sustainability of SHGs of OFSDP-I and II, linkage with NRLM may also be considered.

### **3.8 Convergence**

During the OFSDP-I, substantial amount of the resources was mobilised through convergence. The decision to support convergence taken at the High Power Committee of OFSDP-I was a key driver in this process. As micro plan was more focused on forest management, community development aspect was less emphasised during the planning process. And the mobilisation of the resources was also mostly done by the unsystematic ways.

Through the field visits, the survey team came to understand that the issue of challenges faced by the Block level officers, who are representing the line departments at the closest level to the community, in delivering the services due to the shortage of manpower.

In OFSDP-II, the micro planning/ annual planning process needs to be made holistic. It would also facilitate the process of convergence if the micro plan/ annual plan of VSS is prepared in consideration with the Panchayat Planning process. Furthermore, guidance on how to approach different levels of offices/ resources need to be worked out. The roles of responsibilities of the stakeholders need to be defined and awareness is needs to be created. Lastly, in some villages, a multiple number of micro plans may be prepared under different schemes. While micro plans/ annual plans are prepared by OFSDP-II, it needs to be reviewed and work out how best we can utilise the opportunities.

### **3.9 Gender**

In DPR, it was not clear how “gender” related issues are to be addressed though the proposed interventions do reflect the recognition of the critical roles that women play in forest management and livelihood improvement. As below, women participation has been achieved to certain extent. However, in OFSDP-II, women need to be more visible in the decision making process in the domain of community level institutions such as VSSs/ EDCs and gain capacity to enable them to proactively choose the livelihood options.

#### **1) A Need for Strategic Planning for Gender Mainstreaming**

In OFSDP-I, no gender mainstreaming plan was prepared although the women responsive interventions were already a part and parcel of the project interventions as seen in the livelihood

interventions through women SHGs and having women executive members as per the JFM resolution 2011. However, no strategic plan was prepared and the strategy to empower women beyond economic means was not very well visualised. A project like OFSDP-II could provide an opportunity for women not only the economic empowerment but also to socially empower them and safeguard their entitlement. Therefore, the project shall be recommended to prepare the gender mainstreaming strategy during its preparatory phase.

## **2) Women Participation in the Community Level Institutions:**

As reviewed in the preceding chapters, National Forest Policy encouraged women's participation in the forest management and the JFM Resolution of Odisha clearly stipulated the provisions for women's participation. Furthermore, given the fact that the economic empowerment of women benefit the well-being of a family, a range of women centric groups as known as SHGs are organised and encouraged to take up income generation activities.

OFSDP-I has implemented its project activities based on the JFM Resolution supported women SHGs. However, though limited, the exposure in the field revealed that the legal obligations and project guidelines were met in terms of women participation. On the other hand, women's attendance to the meetings were sometimes for the sake of being seen. In some places, women's participation in the public meetings are a very sensitive issue. Their involvement in the micro planning process, which still needs field validation, seemed to have been limited in terms of expressing their views and needs. The survey team also came to understand that the gender situation varies from locality to locality and community to community.

## **3) Monitoring:**

Project MIS of OFSDP-I has not been able to provide the gender segregated data on the chairpersons of VSSs/ EDCs. This is due to the design of the indicators (i.e. the number of women chair persons/ vice chair persons in the VSSs/ EDCs). It would help in a great deal for the project to advance gender mainstreaming by monitoring the gender segregated data. The project may also consider deploying one female and one male animators for each VSS/ EDC.

## **4) Women Project Staff and Animators**

When constituting field level project implementation, where possible, women field workers or field level staff shall be engaged to facilitate VSS/ EDC/ SHG activities. This would create an environment for women to voice their views and take part in the process especially at the early stage of the project implementation. Such women workers could also advise VSS/ EDCs to make necessary adjustment to ensure women participation in the decision making process.

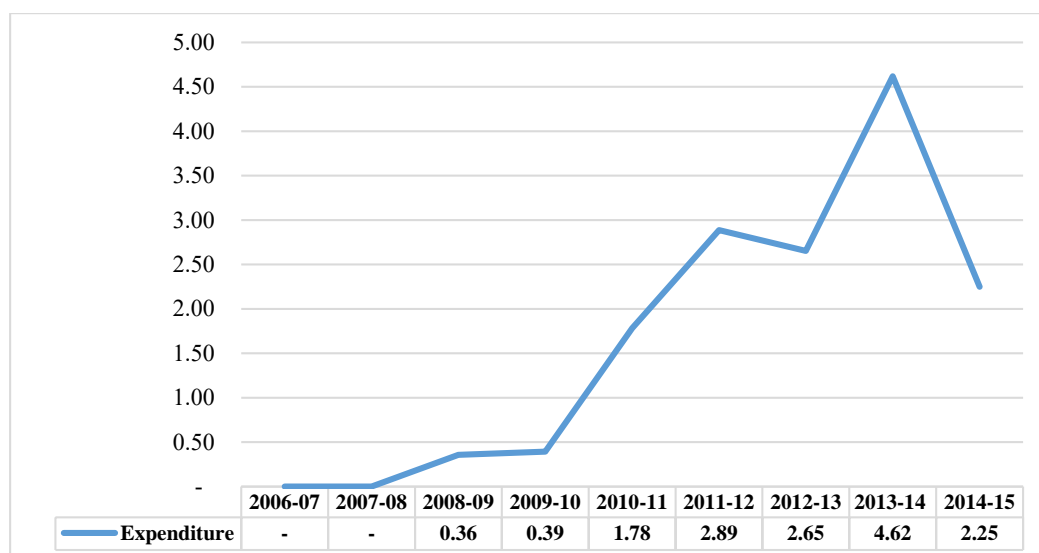
## **5) Awareness Creation**

This demands for awareness creation within the community and also capacity building of the project officers/ staffs of all levels/ NGOs. Appropriate guidelines need to be developed for gender mainstreaming and starting from the project staffs, officials and NGOs of all levels need to be trained in gender issues and facilitation skills.

### **3.10 Forest Researches**

#### **3.10.1 Forest Research in OFSDP-I**

Under OFSDP I, originally Rs.16.5 million was allocated, and was revised to Rs.17 million during extension phase. Out of which, Rs.14.94 million (88%) was spent (refer figure below) on 13 research studies. Only 48% could be spent till end 2012-13 (original timeline of the project) whereas around 40% was spent during extended project period during 2013-15.



Source: PMU, OFSDP; created by JICA Supplemental Survey, September 2016

**Figure 3.10.1 Research Studies under OFSDP I - Financial year-wise Expenditure**

The research studies supported under OFSDP-I are given in **Table 3.10.1**.

**Table 3.10.1 Research Studies under OFSDP-I**

No.	Title of Study	Name of Agency	Remarks
1	Study on Impact of ANR practices on Biodiversity	CTTRAN Consulting Pvt. Ltd.	Completed August 2011
2	Study of JFM implementation models in Odisha	Amity University, New Delhi	Completed March 2011
3	Silvicultural Studies on Phasi	Institute of Forest Productivity, Ranchi	Completed March 2014
4	Crab rearing and fattening, and Fish rearing in the mangroves area in Bhadrak (WL) division	College of Fishery, OUAT, Berhampur	Completed March 2012
5	Evaluation of SMC measures taken-up in JICA funded OFSDP in Koraput, Jeypore and Rayagada Forest divisions	Central Soil and Water Conservation Research and Training Institute, Government of India, Sunabeda, Koraput	Completed April 2014
6	Research Proposal – Phyto diversity and Structural analysis of some regenerating forests stand in Gajapati district	Berhampur University	Completed March 2013
7	Research on Paudi Bhuyan in Odisha	DFO-cum-DMU Chief, Bonai division	Paudi Bhuyan is primitive tribe in Odisha, and factual data on the tribe has been collected under this study; Completed March 2013
8	Protection and Conservation of Sacred Groves in Sundargarh district	Centre for Biodiversity Conservation, Bhubaneswar through DFO-cum-DMU Chief, Bonai division	Completed March 2013
9	Status Paper on use of Fly Ash in forest nursery & plantation	Centre for Fly-ash Research & Management (C-FARM)	Completed December 2013
10	Mandargiri Biodiversity Study	NEWS	Completed May 2011

No.	Title of Study	Name of Agency	Remarks
11	Study on growth behavior & biomass production of Casuarina equisetifolia and Casuarina	DFO-cum-DMU Chief, Balasore (WL) division	This is 10 years project, and will get completed by year 2020-21. The study is still continuing. After project closure in March 2015, the state government has committed to provide funds directly to Silviculture Division, Bhubaneswar
12	Assessment of Impact of Cattle stall feeding natural regeneration of tree saplings in Bonai	DFO-cum-DMU Chief, Bonai division	The recommendations have not been submitted; study completed in March 2014
13	Establishment of Nakshatra Vana	Rayagada, Jeypore and Phulbani	This was demonstration plots for awareness generation of people on plant species linked to 27 nakshatra. No report is available with PMU.

Source: OFD, compiled by JICA Survey Team (2016)

The Special Assistance for Project Formation (SAPROF) of OFSDP-I highlights that the research topics should be selected in a way that research results could be directly utilized by the project, and could be undertaken engaging universities, NGOs and research organizations. Research topics that are not directly related to project implementation should be excluded, and the results of researches would be disseminated through the annual review meeting among EB members, publications and other means. The purpose for which the component was supported under the project was to: (a) enhance environmental awareness of the public within the Project areas, (b) advertise OFSDP-I and promote the success to other areas.

PMU has identified these topics either getting feedback during project workshops or considering the state priorities. However, some research topics such as study on Phasi (*anogeissus acuminata*), which is a timber species used to prepare Chariot of Lord Jagannath every year). This species grows mostly along the river banks. To address the state requirements plantation, it has been raised in 9 forest divisions.

There is a lack of knowledge management within PMU, as a new set of officers are not much aware on the all of the studies and its usages, or how these findings were mainstreamed into the project implementation or disseminated to the stakeholders. On the other hand, the findings from the study of Sacred Groves were disseminated. The study was conducted in Bonai division and created inventories of the available biodiversity of Sacred Groves. Based on the study, the detailed guidelines were prepared and shared with the project divisions. Documentation on Biodiversity was conducted for around 130 Sacred Groves across 4-5 project divisions.

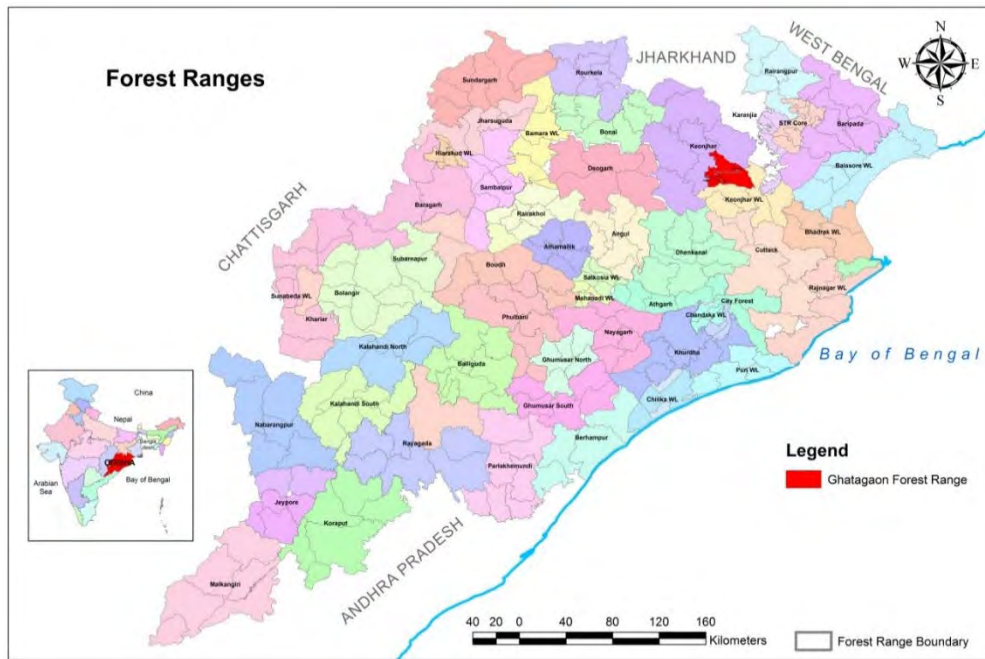
### 3.10.2 Carbon Assessment in OFSDP-I Areas: Ghatagaon Range

The survey team made an attempt to assess the carbon stock in one range in OFSDP-I area. Depending on the data availability, the same exercise may be carried out in the remaining project period. For quantitative assessment of the impact of project interventions in the carbon stock within the treatment areas a sample based study was conducted by taking up 6 VSS of Ghatagaon Range, Keonjhar on random basis.

#### 1) Study Area:

The study area for the carbon stock assessment and changes over a period of time includes the following 6 VSSs of Ghatagaon Forest Range in Keonjhar Division:

- |                    |                    |
|--------------------|--------------------|
| (1) Rangamatia VSS | (4) Baiganpal VSS  |
| (2) Manpur VSS     | (5) Dubulabeda VSS |
| (3) Binda VSS      | (6) Dudhianali VSS |



Source: JICA Survey Team (2016)

**Figure 3.10.2 Location Map of the Ghatagaon Range**

**2) Methodology:**

**iii. Satellite Image classification:**

The two date satellite images of pre and post intervention, i.e. 2006-07 and 2015-16 respectively were analysed using NDVI analysis within the treatment areas. The class wise area derived is presented in **Table 3.10.2**.

**Table 3.10.2 NDVI Based Classification of Forest Area for Year 2006-07 and 2015-16**

VSS	Year	Water	Soil	Scrub	Open Forest	Mod. Dense Forest	Dense Forest	Open F.+ Mod. D. F.+ Dense F.	Total
Rangamatia	5-Mar-07	0	0.01	1.77	69.73	31.68	1.67	103.08	104.9
	24-Jan-16	0	0	0.39	13.18	81.59	9.71	104.48	104.9
Manpur	5-Mar-07	0	1.45	25.4	126.57	80.53	0.71	207.81	234.7
	24-Jan-16	0	0.05	4.56	59.91	166.55	3.59	230.05	234.7
Binda	5-Mar-07	0.01	3.76	29.92	85.52	13.21	0.05	98.78	132.5
	24-Jan-16	0	0.41	27	44.97	59.61	0.48	105.06	132.5
Baiganpal	18-Apr-06	0.07	0.11	13.5	110.7	82.03	0.14	192.87	206.6
	3-Feb-15	0.13	0.12	2.92	27.85	169.69	5.85	203.39	206.6
Dubulabeda	18-Apr-06	1.43	2.29	7.81	72.88	30.24	0.12	103.24	114.8
	3-Feb-15	0.99	1.43	8.06	37.86	65.91	0.51	104.28	114.8
Dudhianali	18-Apr-06	0.02	1.70	24.72	81.74	19.19	0.11	101.04	127.5
	3-Feb-15	0	0.41	7.98	41.74	74.58	2.76	119.08	127.5

Source: JICA Survey Team (2016)

**iv. Carbon Assessment:**

In absence of field based biomass stock assessment and algometric equations, the average calculated values of CO<sub>2</sub>/ha. for Odisha state condition has been used for dominant forest type and density class (Refer: *Carbon Stock in India's Forests*). The constants (CO<sub>2</sub>/ha.) derived from all 5 carbon pools for respective forest type and density class were applied to area statistics of forest density classes of both the years to estimate the Carbon stock in tonnes (Refer **Table 3.10.3**).

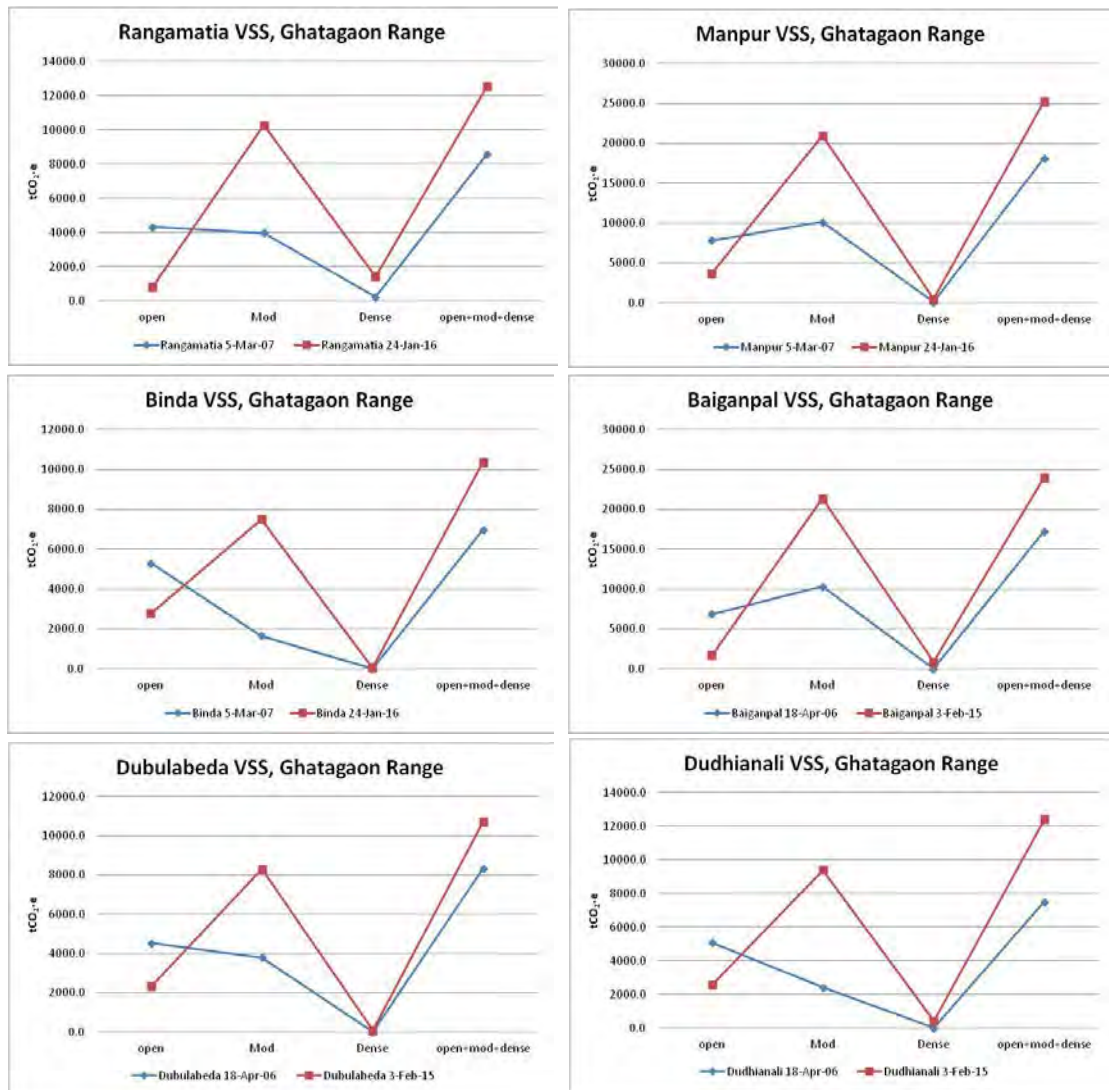


**Table 3.10.3 Change in Carbon Stock in Different Density Classes Unit: tCO<sub>2</sub>-e**

S. No.	VSS	Year	Open Forest	Mod. Dense Forest	Dense Forest	Open F.+ Mod. Dense F. + Dense F.	Gain/Loss
1	Rangamatia	5-Mar-07	4,335.81	3,991.68	247.2	8,574.65	(+) 3,962.3
		24-Jan-16	819.53	10,280.34	1437	12,536.95	
2	Manpur	5-Mar-07	7,870.12	10,146.78	105.1	18,121.98	(+) 7,119.8
		24-Jan-16	3,725.20	20,985.30	531.3	25,241.82	
3	Binda	5-Mar-07	5,317.63	1,664.46	7.4	6,989.49	(+) 3,388.6
		24-Jan-16	2,796.23	7,510.86	71.04	10,378.13	
4	Baiganpal	18-Apr-06	6,883.33	10,335.78	20.72	17,239.83	(+) 6,738.6
		3-Feb-15	1,731.71	21,380.94	865.8	23,978.45	
5	Dubulabeda	18-Apr-06	4,531.68	3,810.24	17.76	8,359.68	(+) 2,374.6
		3-Feb-15	2,354.13	8,304.66	75.48	10,734.27	
6	Dudhianali	18-Apr-06	5,082.59	2,417.94	16.28	7,516.81	(+) 4,884.1
		3-Feb-15	2,595.39	9,397.08	408.5	12,400.95	

Source: JICA Survey Team (2016)

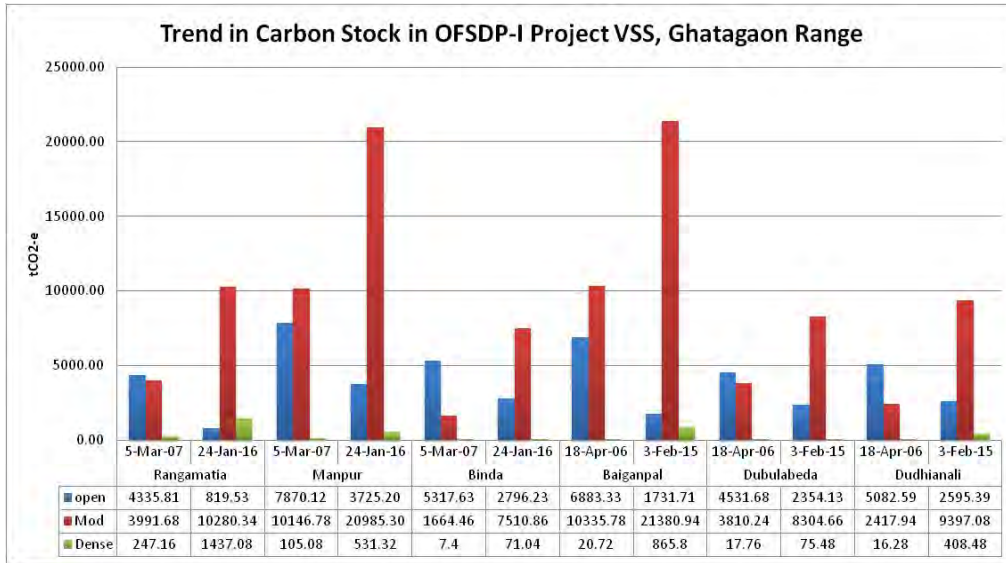
The change in carbon stock from 2005-06 to 2015-16 is depicted in the below separately for each VSS.



Source: JICA Survey Team (2016)

**Figure 3.10.3 Changes in the Carbon Stock – A Comparison between 2006 and 2015**

The trend shows decrease in the open forest and substantial increase in the moderately dense and dense forest categories. It reflects a conversion of open forest area into higher density classes. Also, there is significant increase in the forest cover (refer **Table 3.10.3**).



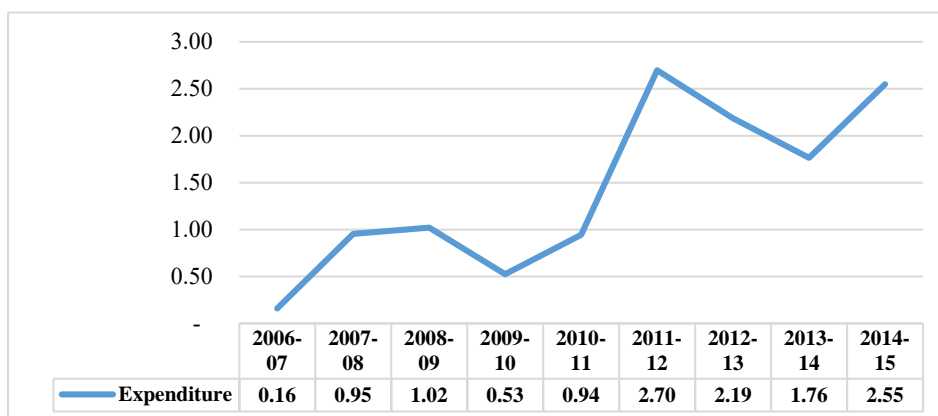
Source: JICA Survey Team (2016)

**Figure 3.10.4 Trend in Carbon stock in A Comparison between 2006 and 2015**

The change signifies that not only there is an improvement in the forest density but forest cover has also increased. The change analysis clearly shows an increasing trend in the CO<sub>2</sub> stock within the project VSS, depicting a positive impact of the project interventions and protection measures undertaken. The derived assessment results can be used as a prospective Reference Levels for the OFSDP-II in the region.

### 3.11 Publicity and Communication

During OSFDP-I the publicity and communication component as against the original allocation of Rs.6.62 million (revised to Rs.10 million) expenditure has been made as Rs.12.8 million (around 128% by end March 2015). By the end of March 2013, around Rs.8.5 million of the earlier budgets were already consumed (original timeline of the project) whereas around Rs.4.3 million (43% of revised allocation) was spent during extended project period during 2013-15.



Source: PMU, OFSDP; created by JICA Supplemental Survey, September 2016

**Figure 3.11.1 Publicity and Communication - Financial year-wise Expenditure**

The sub-components include: a) Information dissemination by utilizing Publicity Van and field-level publicity units, b) Public Awareness, c) Publication, and d) Website development.

Publicity Van was utilized for sharing information and showing short video films at VSS level. However, access to some VSS had been difficult due to road conditions, and sometimes VSS could not be accessed due to monsoon or low pressure rains that stretch for 4-5 months.

Thus, Publicity Van had limited outreach. The other limitation with the Publicity Van was limited power-back-up that lasted only for 2 hours, thus many a times required displays and shows were not fully performed. Folk media was perceived as good and effective alternative to the conventional mode of publicity but it could not be tried as the fund was not allocated.

As per the revised Project cost of OFSDP-I, out of total Rs.8.023 billion the allocation for Publicity and Communication was only 0.12% (Rs.10 million). Thus, the allocations are perceived to be not adequate, particularly to develop a good documentary films. The unit cost provided in the project was not sufficient, and thus several units were clubbed to develop a documentary film (around 22 min). The film show on eco-Tourism at Satkosia made by OFSDP-I was well received and appreciated.

Print, electronic and radio/ TV media were perceived for creation of public awareness. No budget was available for using platform of print media or radio/ TV in the project. Even advertisement support was not available for print media. This approach is usually adopted to establish rapport with print media and seek regular support for covering project events and publishing articles to highlight project achievements and secure visibility to the project.

Sufficient focus was given of bringing out posters, brochures, leaflets, flip charts, booklets, books etc.. Thematic posters were created and were provided to VSSs. These were pasted on walls of the VSS buildings. Quarterly Newsletter were published both in Odia and English languages. The Odia version was provided till VSS level, whereas the English version was being shared with all states where JICA assisted forestry projects were being implemented, JICA India office, national level forestry institutions like IGNFA Dehradun, IIFM Bhopal, MOEF&CC, Forest officials in Odisha forest department, all forest divisions in Odisha state, GB and HPC members, etc.

Annual Reports (Samiksha) were brought out for each financial year, and circulated to all JICA assisted forestry sector projects, JICA India Office, state forest officers, DMUs, FMUs and GB members. Annual plans were are published and shared with RCCFs, DMUs and FMUs.

Though the project had visualized field level publicity units, but practically were not functional. The publications were dispatched from PMU, but for long were lying at divisional or range level. DMU/ FMU staff, Partner NGOs or Animators were also not efficiently involved for distribution and dissemination of publications (e.g. quarterly newsletters) at VSS/ EDC level.

Similarly, there was no system in place to collect article, cases, success stories, photographs, small videos for Newsletters and publications on a regular basis.

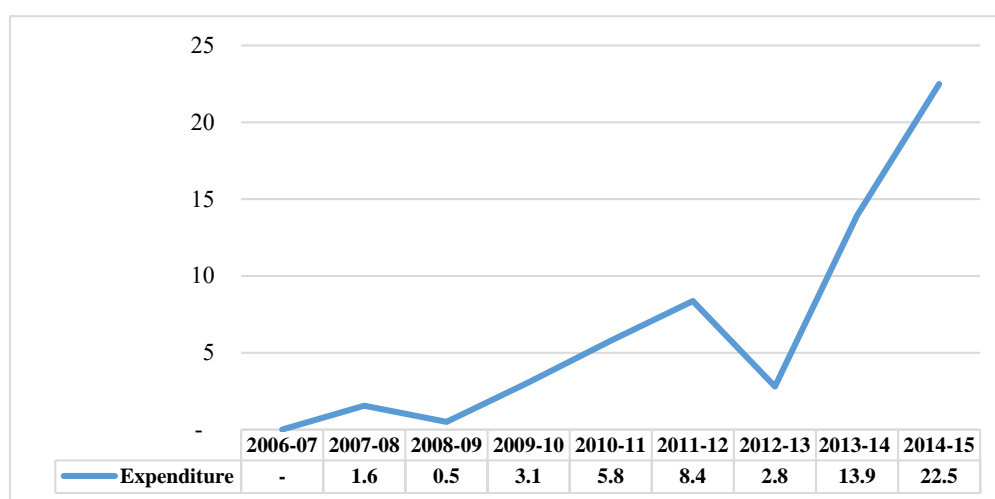
The project website could not be regularly updated because of lack of dedicated human resources, thus the website contents were not updated systematically.

No assessment has been carried out in the project on capturing the impact of the IEC material developed and disseminated under the project, however feedback on impact of publications/ IEC material is reported in the "Evaluation of Capacity Building Interventions" by Xavier Institute of Management, Bhubaneswar (XIMB).

### **3.12 Monitoring and Evaluation (M&E)**

During OFSDP-I, following sub-components were visualized viz., establishment of database for PME, development of MIS, progress M&E (regular and periodic), project completion evaluation, project impact assessment (physical and socio-economic). The original allocation to support M&E activities was Rs.107.03 million which was further enhanced to Rs.192 million during extension phase, but only Rs.58.51 million (around 31%) could be spent. Till end 2012-13 (original timeline of the project) only

11% could be spent, whereas around 19% was spent during extended project period. This gives a broad idea that not sufficient resources were utilized, and thus M&E systems were not strengthened enough.



Source: PMU, OFSDP; created by JICA Survey, September 2016

**Figure 3.12. 1 Financial Year-wise Expenditure under M&E**

The M&E studies supported under OFSDP-I are given in the following table:

**Table 3.12.1 M&E Studies under OFSDP-I**

Sl. No.	Title of Study	Name of Agency	Remarks
1	A Report on independent Third Party verification of OFSDP in Koraput Circle	i-Concept	Conducted in year 2009
2	A Report on Third Party verification of OFSDP	SORFO	Conducted in year 2009
3	A Report on second independent Third Party verification of OFSDP in Koraput & Berhampur Circle	i-Concept	Conducted in year 2011
4	A Report on second Third Party verification of OFSDP	SORFO	Conducted in year 2011
5	Mid-Term Evaluation of OFSDP	SAMBODHI	Conducted in year 2013
6	Livelihood Opportunity Analysis in 14 Forest Divisions under OFSDP	MART	Conducted in year 2010
7	Mid-Term Impact Assessment study on Livelihood under OFSDP	BAIF	Conducted in year 2013
8	Evaluation of Capacity Building Intervention	XIMB	Conducted in year 2015
9	Evaluation of Forestry Interventions in OFSDP	TERI, New Delhi	Conducted in year 2015
10	Best Practices in OFSDP	KIIT school of Rural Management	Conducted in year 2015

Source: OFSDS

Routine reviews were undertaken at PMU, DMU and RCCF levels. PMU conducted quarterly reviews, whereas DMU conducted monthly reviews in which FMU Chiefs, Partner NGOs and village forest workers (VFWs/ Member-Secretary) participated. However, project reviews at RCCF were combined with the quarterly reviews organized at the Circle level.

Quarterly progress report (QPR) were generated on format that included reporting on two main sections: JFM and Non-JFM activities. The JFM mode activities included information on VSS formation, VSS building, year-wise treatment areas, plantation and maintenance, nursery works, SMC works, entry point activity (EPA) and income generation. And, under non-JFM activities like link roads, SMC works, etc. were included.

Though quarterly reports provide details of progress, but the format is difficult to comprehend, and would require lot of time to comply with. At the same time no analysis or tracking of progress and shortfalls or areas requiring immediate attention could be achieved for these reporting.

Social Audits were not planned, while financial audits were conducted by Chartered Accountant (CA) firm. Now, all governmental schemes have introduced Social Audits in implementation process as it serves as a very effective tool for bringing in transparency and accountability to project funds.

Field visit by PMU officials were undertaken, but there was no specified frequency or plan. Tour Note was submitted to the Project Director soon after the field visits, and also shared with the DMU Chief.

Annual Workshops were conducted both at state and divisional level during the month of February/ March each year. In one financial year these workshops could not be conducted due to elections.

MIS development was a late starter in the project. The software was put to use only in year 2010-11. Backlog data entry was a challenge that consumed sufficient time. Reports could be generated both at PMU and DMU level; however query based analytical/ customized reports could be generated only at PMU level.

No agency was engaged for undertaking concurrent monitoring of the activities; however, independent agencies were hired for undertaking Third Party verifications of project interventions. The General Consultants (GC) were also providing the feedback from the field on a regular basis.

District Level Advisory Committee (DLAC) constituted at district level for facilitating inter-sectoral convergence in project areas. DLAC is chaired by District Magistrate. As per the notification these meeting should be organized every two months, but in practice meetings were not regular as per the notification. These were conducted once or twice in a year.

Financial Audit was conducted centrally at PMU level, and accounts were audited till FMU level. For the financial audits at VSS level, DMU Chief was assisting in identification of CA firms, and the firms were being paid @Rs.1,000 per VSS.

Grievance Redress was carried out following a roaster announce through a government order. Every Saturday DFO conducted hearings based on the applications submitted. Such redress was also organized at RCCF level.

Mid-Term evaluations were conducted but no mechanism i.e. strategy for internalizing the recommendations, dissemination of action points out of recommendations, and follow-up was in place for operationalizing the recommendations.

No monitoring mechanisms was in place for maintaining time series data on key performance indicators.

The end-term evaluations for physical and socio-economic aspects were not conducted, however recently JICA has conducted independent impact assessment in the OFSDP-I areas.

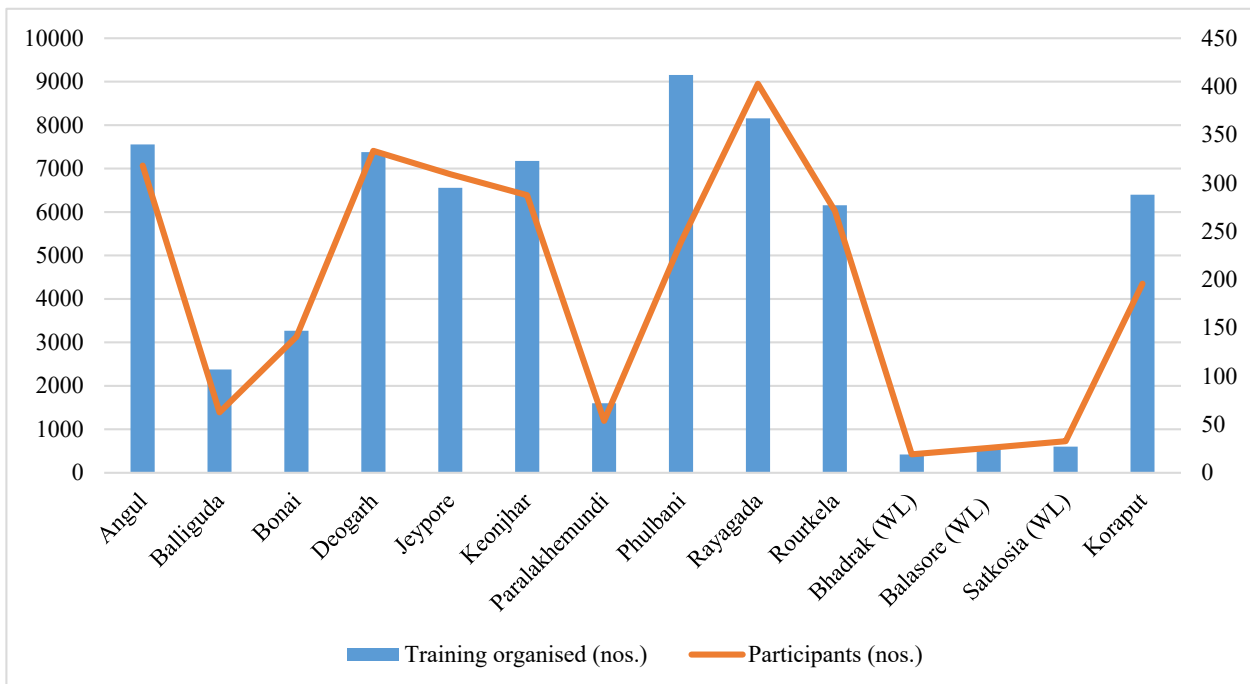
### **3.13 Phase-Out and Phase-In Activities**

Comprehensive Phase Out plan was developed during OFSDP-I, particularly to sustain the village level institutions viz., VSSs, EDCs and SHGs. The framework of the Phase Out includes: a) developing a long-term plan (10 years) involving VSSs/ EDCs by revisiting the Micro plans, b) utilizing learning from the impact assessment exercises for addressing gaps during post project period, c) strengthening by bringing in EDCs within the legal framework of JFM Resolution, 2011 to play continued role in protected area (PA) management, d) empowering community institutions (VSS/ EDC) by replacing member secretary from a Forester rank officer of the Forest Department with an elected member from the community as per the JFM Resolution, 2011, e) developing post project Guidelines and Handbook for VSSs/EDCs, and f) issuing project completion certificate based on joint field verification.

Except for few interventions, Phase Out framework could not be fully achieved, and consequently the results could not get consolidated and compiled as a document.

Within the framework of Phase Out, the PMU perceived interventions such as: a) Capacity Building and Organizational Development of VSS, b) VSS Management Manual, c) Village Forest Development Fund (VFDF), d) VSS Sustainability Matrix that details processes for achieving sustainability, as elements of the sustainability plan.

Main focus on capacity building of the VSS came along with the JFM Resolution, 2011 when an elected member from the community institutions was given authority to take-up responsibilities as member secretary of Executive Committee of a VSS. The PMU then engaged Capacity Building Support Agency (CBSA) to organize and orient VSSs/EDCs various aspects of organizational development including on the functions and responsibilities, and maintaining records without regular guidance and support. These trainings were conducted during year 2012-13 till year 2014-15 on various topics to enable and empower community institutions. In all 59,822 VSS/EDC members were trained through 3032 training conducted in 14 OFSDP-I project divisions across three financial years (i.e. 2012-13 ~ 2014-15) through CBSA.



Source: PMU, OFSDP; created by JICA Supplemental Survey, September 2016

Figure 3.13.1 VSS level Trainings by Project Divisions

Through an amendment in 2015, again the decision was restored from 2011 JFM Resolutions, and local Forest Guard / Local Forester became the Member-Secretary of VSS/EDC. This is a real set-back to the community empowerment process. It also needs to be explored if the records/ cash book have been taken back by the Forest Guard/ Forester as Member-Secretary.

VSS Manual was created in Odia language as well, and distributed till VSS level under OFSDP-I. This manual elaborated on the provisions of JFM Resolutions 2011, to bring in more clarity and understanding on the Resolution provisions, and to ensure efficient implementation at field level and after the project closure. The manual also elaborated on the Usufructs sharing with VSS/ EDC from the assigned forests as well. No data or compiled information is available with PMU to know how the sharing of benefits were realized during the project implementation period.

Since, usufruct provisions were executed through a project manual adopted during implementation, thus, it needs to be examined if these provisions still hold valid during the post project period. And, if not then the benefit sharing mechanism need to be institutionalized and well spelt-out by way of

appropriate GO with initiative by OFD that would be applicable to all schemes and projects being implemented by the forests department including OFSDP-II.

Similarly, accounting procedures were elaborated and documented in the VSS manual, and adopted by VSS during project implementation. No information is available at PMU presently, as how the VSSs are maintaining records or conducting meetings and writing proceedings. What kind of records are being maintained, and if support of Animators is available to VSS. Understanding on some of these issues would be developed by visiting field during mid-October 2016.

Village Forest Development Fund (VFDF) is established with VSS through VSS Manual provisions. This fund was created from membership fees, user fee, sale of forest produce, interest earned on corpus fund etc. No data is available with PMU from what sources VFDF fund was created, presently how much fund is available with VSSs, and how it's being utilized, and for what purposes. The project MIS also does not provide such information. The VFDF fund is also not very well backed-up (legally) as there is no specific mention about such fund creation and utilizations in existing the JFM Resolutions 2011.

Sustainability exercises were planned for 2,370 VSSs and 56 EDCs in three batches, but it was done in 5 batches. The results were not documented. During financial year 2014-15 allocation of Rs.1 million was made for undertaking the Sustainability Exercise, but this amount could not be spent. One of the reason was that a lot of emphasis was given on spending and completing works that were lagging during the extended period of the project and little time was devoted for Phase Out.

During Phase Out, PMU has generated sufficient funds earned out of the Grant-in-Aid provided by the state government during OFSDP-I. PMU deployed 42 contractual staff through Society fund that includes salary for key positions on deputation to the OFSDS.

For the financial year 2015-16, the PMU also supported the maintenance of plantations and salary of contractual staff placed at DMUs, while repairs and new procurements were supported under AJY. From financial year 2016-17, only PMU staff has been supported. Some staff in PMU is also supported from AJY. PMU has secured the project fund out of the interest earnings, and is currently working on plan to support SHGs in OFSDP-I areas supported through an allocation of Rs.40 million involving an IGA Support Agencies.

As faced by OFSDS now, the challenge is to build capacity of VSS/ EDC/ SHGs and cluster level organisations to sustain themselves after the project completion. For this, the institutional capacity building of these community level institutions need to start as early stage as possible since it takes time for these institutions to acquire strengths. Furthermore, appropriate institutional arrangement to provide support in the post project period needs to be worked out. Especially for the cluster level organisations. Although CSRs and other private organisations may be called in as partners during the project period under the facilitation of the OFSDP-II the duration of their engagement too is time bound. Thus, the institutional arrangement for sustained support system needs to be worked out.



## Chapter 4. REVIEW OF DETAILED PROJECT REPORT (DPR)

### 4.1 Overview of the Proposed Project in DPR

The proposed project areas under OFSDP-II comprise 27 Forest/ Wildlife divisions which were not included in the Phase I, and 14 Forest/ Wildlife divisions covered in Phase I for which livelihood interventions are to be followed up during OFSDP-II.

The proposed project in DPR for OFSDP-II is summarised in the table below.

**Table 4.1.1 Proposed Outline of OFSDP-II in DPR**

Particulare	Outline
Implementation Period	8 years
Implementing Agency	Forest and Environment Department, Government of Odisha
Target Population	Direct Beneficiaries: Approximately 1,500,000 persons in 18 districts
Project Cost	1) Total: Rs. 17.395 billion (Yen Loan Portion: Rs. 15.095 billion) 2) Main cost component: Joint Forest Management (Rs. 5.92 billion); Community/ Tribal Development and VSS capacity building (Rs. 3.122 billion), Farm Forestry (Rs. 1.625 billion)
Project Areas	<u>27 Newly proposed areas for Phase II:</u> 1) 15 Forest Divisions (Implementation of all project components) 2) 5 Wildlife Divisions (For Biodiversity conservation ) 3) 6 Forest Divisions and 1 Wildlife Division (For Farm Forestry) <u>14 Areas covered under Phase I:</u> 1) 11 Forest Divisions and 3 Wildlife Divisions (Continued support for Livelihood Improvement Activities is proposed)
Project Purpose	To improve the forest ecosystem by promoting sustainable forest management and biodiversity conservation through Joint Forest Management approach including institutional capacity development, thereby contributing to environmental conservation and harmonized socio-economic development of Odisha.
Project Objectives	1) Restore degraded forest and augment forest resources 2) Secure sustainable forest management by improving forest administration, community organisations and other stakeholders 3) Conserve and better manage the biodiversity 4) Promote inter-sectoral convergence 5) Improve incomes of target forest dependents and their livelihood options
Components Proposed	1) Preparatory Works; 2) Restoration of Degraded Forests; 3) Coastal Plantation; 4) Biodiversity Management; 5) Farm Forestry; 6) Community and Tribal Development; 7) Capacity Development; 8) Monitoring and Evaluation; 9) Consulting services

*Source: Compiled by the JICA Survey Team based on OFSDP-II DPR*

### 4.2 Project Needs and Rationale

The description of the project was briefly provided in DPR. OFSDP-II will take advantage of the lessons learned from OFSDP-I that are in line with the state forestry vision. There is a need for enhanced sustainable forest management and biodiversity conservation while improving livelihoods of the forest dependent communities, the state of which has a significant impact on the condition of forest and forest resources.

### 4.3 Project Objectives and Approaches

Project approaches and objectives are given in the table below.



**Table 4.3.1 Goals, Objectives and Approaches**

Goal	Approaches
To improve the forest ecosystem by promoting sustainable forest management and biodiversity conservation through Joint Forest Management approach including institutional capacity development, thereby contributing to environmental conservation and harmonised socio-economic development of Odisha	Contiguous JFM areas a) Holistic Approach with Integrated Project Components b) Poverty Alleviation c) Needs-Based Interventions to Forests and Forest lands d) Emphasis on Capacity Building for People-Led Forest Management e) Effective Project Implementation and Management
Objectives	
a) Restore degraded forest and augment forest resources b) Secure sustainable forest management by improving forest administration, community organisations and other stakeholders c) Conserve and better manage the biodiversity d) Promote inter-sectoral convergence e) Improve incomes of target forest dependents and their livelihood options	

Source: Compiled by JICA Survey Team (2016) based on DPR

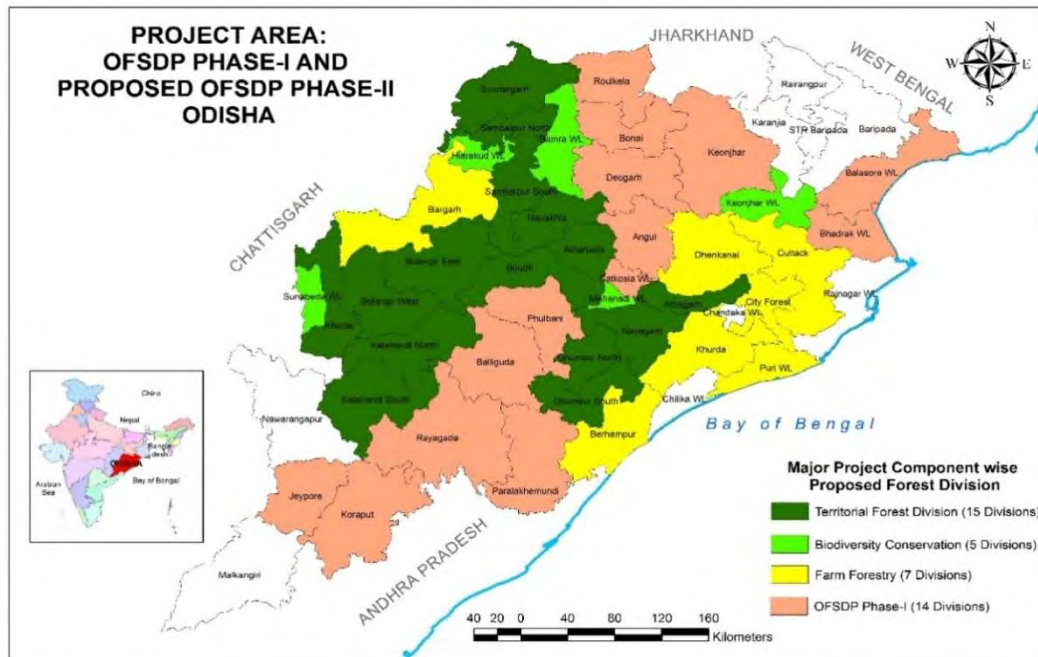
During the initial stage of the survey, the log framework was reviewed by the OFSDS. Under the revised framework, project goals and objectives are simplified and components are streamlined as the log frame narrative summary in **Attachment 6.12.2**.

#### 4.4 Target Areas and Beneficiaries

##### 4.4.1 Initial Prioritisation

##### 1) Security Levels of Proposed Project Area in DPR

DPR proposes under OFSDP-II, 41 forest/ wildlife divisions to be covered, which consist of 14 forest/ wildlife divisions covered under OFSDP-I and 27 newly proposed forest/ wildlife divisions. As shown in the figure below, the proposed areas cover almost the entire state. DPR also explains that the proposed project areas have been identified on the basis of watershed and by keeping the formation of VSS clusters in view.



Source: JICA survey team based on DPR for OFSDP-II

**Figure 4.4.1 Proposed Project Areas under OFSDP-II**

As per the guidance given by JICA, the survey team has reviewed the security report of the Home Department of Odisha. Where more than 50% of the areas fall under “High” areas, were categorised as high alert area.

**Table 4.4.1 List of Divisions Proposed in DPR**

Phases	Proposed Component	Forest Division	District	Overlapping Divisions with AJY
Phase II	All components + Farm Forestry	Ghumsur South	Ganjam	
		Ghumsur North	Ganjam	
		Boudh	Boudh	
		Bolangir	Bolangir	x
		Subarnapur	Subarnapur	
		Khariar	Nuapada	x
		Kalahandi (South)	Kalahandi	x
		Kalahandi (North)	Kalahandi	x
		Sambalpur (South)	Sambalpur	x
		Rairakhol	Sambalpur	x
		Sambalpur (North)	Jharsuguda	
		Sundergarh	Sundergarh	
		Athamalik	Angul	
		Athagarh	Cuttack	
	Nayagarh	Nayagarh		
	Biodiversity Conservation	Mahanadi (WL)	Nayagarh/ Boudh	
		Sunabeda (WL)	Nuapada	
		Bamra (WL)	Sambalpur	x
		Hirakud (WL)	Bargarh	
		Keonjhar (WL)	Keonjhar	x
	Farm Forestry	Berhampur	Ganjam	
		Bargarh	Bargarh	x
		Khurda	Khurda	
		Cuttack	Cuttack, Jajpur, Jagatsinghpur, Kendrapada	
		Dhenkanal	Dhenkanal	
		City Forest	Khurda	
Phase I	Livelihood	Puri (WL)	Puri	
		Angul	Angul	x
		Balasore WL	Balasore	x
		Baliguda	Kandhamal	x
		Bhadrak WL	Bhadrak	x
		Bonai	Sundargarh	x
		Deogarh	Deogarh, Anugul	x
		Jeypore	Koraput	x
		Keonjhar	Keonjhar	x
		Koraput	Koraput	x
		Parlakhemundi	Gajapati	x
		Phulbani	Kandhamal	x
		Rayagada	Rayagada	x
Rourkela	Sundargarh	x		
Satkosia WL	Angul	x		

Source: Compiled by Survey Team (2016) based on DPR of OFSDP-II, AJY VSS/ EDC List, Home Department Report.

## 2) Initial Priority Divisions for OFSDP-II

It was necessary to revisit the project areas with reference to the revised project framework.

After the project log framework was redefined, the initial prioritisation of the proposed project sites was undertaken by adopting the criteria indicated in **Table 4.4.2**.

**Table 4.4.2 Initial Prioritisation Criteria for Divisions**

Division
<b>【Exclusion Criteria】</b>
1) 50% or more areas are under “High” Security Concern
<b>【Prioritisation Criteria】</b>
1) % of Degraded Forest in the Division
2) Changes in the Density of the Forest
3) Status of Soil Erosion
4) Number of VSS
5) Number of Similar Interventions in the Division/ District
6) Concentration of SC/ST Population

Source: JICA Survey Team (2016)

During this initial prioritisation process, the areas with high security concern and the standalone farm forestry divisions were eliminated. Dhenkanal and Bargarh divisions, earlier proposed under farm forestry component, were included in the all component divisions. Baripada, Rairangpur, and Karanjia divisions are also added due to the higher concentration of the tribal communities and high incidence of poverty.

Regarding wildlife divisions proposed for biodiversity component, Keonjhar wildlife division was removed since it will soon become a part of Tiger Reserve. The OFSDS proposed to include Bitharkanika (Rajnagar wildlife division), which is a Ramsar site and soon to be registered as a World Heritage Site for its conservation value.

Based on the above criteria, the initial priority divisions shown in **Table 4.4.3** were pre-selected. The criteria weighted scores are given in **Attachment 4.4.1**. Three divisions under the Livelihood Improvement component were eliminated from the list due to the security concerns. However, under the livelihood improvement component most of the interventions would involve capacity building and thus, the modalities to build the capacities of the clusters and SHGs in those areas would be worked out.

**Table 4.4.3 Proposed Initial Priority Divisions for OFSDP-II**

Components	Proposed in DPR	Proposed Priority Divisions for OFSDP-II
All Components	<ol style="list-style-type: none"> <li>1) Ghumsur South</li> <li>2) Ghumsur North</li> <li>3) Boudh</li> <li>4) Bolangir</li> <li>5) Subarnapur</li> <li>6) Khariar</li> <li>7) Kalahandi (South)</li> <li>8) Kalahandi (North)</li> <li>9) Sambalpur (South)</li> <li>10) Rairakhol</li> <li>11) Sambalpur (North)/ Jharsugda</li> <li>12) Sundergarh</li> <li>13) Athamalik</li> <li>14) Athagarh</li> <li>15) Nayagarh</li> </ol>	<ol style="list-style-type: none"> <li>1) Ghumsur South</li> <li>2) Ghumsur North</li> <li>3) Boudh</li> <li>4) Bolangir</li> <li>5) Subarnapur</li> <li>6) Kalahandi (North)</li> <li>7) Sambalpur (South)</li> <li>8) Rairakhol</li> <li>9) Jharsuguda</li> <li>10) Sundergarh</li> <li>11) Athamalik</li> <li>12) Athagarh</li> <li>13) Nayagarh</li> <li>14) Bargarh</li> <li>15) Dhenkanal</li> <li>16) Baripada</li> <li>17) Rairangpur</li> <li>18) Karanjia</li> </ol>
Biodiversity Conservation	<ol style="list-style-type: none"> <li>1) Mahanadi WL</li> <li>2) Sunabeda WL</li> <li>3) Bamra WL</li> <li>4) Hirakud WL</li> <li>5) Keonjhar WL</li> </ol>	<ol style="list-style-type: none"> <li>1) Bamra WL</li> <li>2) Hirakud WL</li> <li>3) Rajnagar WL/ Bitharkanika</li> </ol>

Components	Proposed in DPR	Proposed Priority Divisions for OFSDP-II
Farm Forestry	1) Berhampur 2) Bargarh 3) Khurda 4) Cuttack 5) Dhenkanal 6) City Forest 7) Puri (WL)	To be moved to all component divisions: 1) Bargarh 2) Dhenkanal
Livelihood Improvement (OFSDP-I)	1) Deogarh 2) Keonjhar 3) Angul 4) Parlakhemundi 5) Rourkela 6) Balasore WL 7) Bhadrak WL 8) Rayagada 9) Jaypore 10) Phulbani 11) Bonai 12) Balliguda 13) Koraput 14) Satkosia WL	1) Deogarh 2) Keonjhar 3) Angul 4) Parlakhemundi 5) Rourkela 6) Balasore WL 7) Bhadrak WL 8) Rayagada 9) Jaypore 10) Phulbani 11) Bonai
Total No of Divisions	<b>36</b>	<b>32</b>

Source: JICA Survey Team (2016)

### 3) Other Information Collected for Consideration of Project Area Prioritisation

In addition to the security report from the home department, other information relevant to reviewing the project areas was also collected as shown below.

**Table 4.4.4 Observations and Clarification on DPR and Findings**

Observations and Remarks on DPR	Findings
➤ Integrated Coastal Zone Management Project (ICZMP) is implemented in the districts of Kendrapara, Jagatsinghpur, Puri, Khurda and Ganjam	➤ The interventions are undertaken in the coastal areas. ➤ Overlapping in the 6 divisions proposed for Farm Forestry under OFSDP-II was identified. .
➤ Site selection criteria as per DPR - Geographical contiguity - Micro Watershed - Cluster formation	➤ Division, Range, District, Block boundaries are overlaid on the map. Watershed boundaries, village location and VSS location data are also obtained. ➤ When it comes to the livelihood activities, the proximity to the market needs to be taken into consideration. This is to be considered while proposing potential products for cluster based enterprises.

Source: JICA Survey Team

#### 4.4.2 Overlapping Areas with Other Similar Interventions

##### 1) Ama Jangal Yojna (AJY)

AJY is currently implementing its activities in 31 divisions in the state. Of these, 7 divisions among the initial priority divisions indicated in **Table 4.4.3** and all 11 initial priority divisions proposed for livelihood improvement component for OFSDP-II are overlapping. As OFSDS proposed that OFSDP-II would converge with AJY. The number of divisions and VSSs covered under AJY as of October 2016 is given in **Table 4.4.5**. So far, all the field level OFD officers and front line staffs are trained on the community mobilisation and micro planning to undertake AJY activities. To avoid duplication of the efforts towards sustainable forest management and confusions in the field level, OFSDP-II areas should not overlap with AJY.

**Table 4.4.5 AJY Overlapping Divisions and the Number of Ranges and VSSs Covered**

W/T	Division	No of Ranges	No of Ranges under AJY	Total No of VSS in the Division	No of VSSs covered under AJY
T-1	Athagarh	5	0	151	0
T-2	Athamalik	5	0	168	0
T-3	Bargarh	6	2	248	80
T-4	Baripada	8	5	349	100
T-5	Bolangir	11	11	524	140
T-6	Boudh	5	0	130	0
T-7	Dhenkanal	8	0	320	0
T-8	Ghumsur North	5	0	223	0
T-9	Ghumsur South	5	0	177	0
T-10	Jharsuguda	5	0	137	0
T-11	Kalahandi North	5	5	517	160
T-12	Karanjia	6	0	193	0
T-13	Nayagarh	7	0	323	0
T-14	Rairakhol	6	0	154	0
T-15	Rairangpur	5	5	267	100
T-16	Sambalpur	5	3	216	60
T-17	Subarnapur	3	0	183	0
T-18	Sundargarh	6	0	331	0
<b>Total of Territorial Divisions</b>		<b>106</b>	<b>31</b>	<b>4611</b>	<b>640</b>
W-1	Bamra*	3	3	106	71
W-2	Hirakud*	2	0	14	0
W-3	Rajnagar	0	0	0	0
<b>Grand Total</b>		<b>111</b>	<b>34</b>	<b>4,731</b>	<b>711</b>

\* Remarks: OFSDP-II DPR proposes to work with EDCs in the Wildlife Divisions. Bamra WL(25 EDCs), Hirakud WL(23 EDCs), and Rajnagar (48 EDCs)

Source: OFSDS (2016)

## 2) Green India Mission (GIM)

Green India Mission is a central government scheme established under the National Climate Change Action Plan. In Odisha, 50 VSSs in 4 landscapes are selected from Ganjam, Kalahandi, Ganjam and Dhenkanal districts for interventions. A perspective plan for 10 years was developed in 2013-14. The planned interventions include conservation and afforestation of forests, promotion of energy efficient devices, conservation of riparian ecosystem, alternative livelihoods etc. The cost estimated for the period was Rs. 4.8 billion. The list of forest divisions and number of ranges and VSSs are given in the table below.

**Table 4.4.6 Divisions and Ranges under GIM**

Division	Range	No of VSS
Ghumsur South	Badgad	5
	Aska	5
Kalahandi North	Bhawanipatna	6
	Kegaon	10
Kalahandi South	Biswanathpur	4
Berhampur	Berhampur	10
Dhenkanal	Dhenkanal	10

Source: OFD (2016)

## 4.5 Strengthening Executing Body

The points confirmed in DPR are given in the table below.

### 1) Institutional Arrangement

**Table 4.5.1 Observations/Remarks on DPR and Further Considerations: Institutional Arrangement**

Observations and Remarks on DPR	Further Considerations
<p><b>Duration of Preparatory Phase</b></p> <ul style="list-style-type: none"> <li>➤ As same as the OFSDP-I, one year is allocated for the preparatory phase. The preparatory phase is schedule to implement foundation works mainly for the following three components "preparatory work", "strengthening of EB", and "capacity building of VSSs".</li> <li>➤ In some cases, initial capacity building of VSSs, EDCs, and SHGs may require more than one year for preparation before the actual implementation. Also, preparation for project planning and monitoring shall be initiated and more likely to be completed before the implementation phase.</li> <li>➤ For OFSDP-II, the duration of the preparatory phase and components/activities to be covered during this phase shall be re-examined based on achievements as well as lessons/ findings obtained during the OFSDP-I.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Since the OFSDS is already established, not much time will be required for operationalizing PMU. Some modifications/ amendments may be required for streamlining PMU functioning responding to the OFSDP-II requirements. Some time may be required for recruitment of the personnel from open market and training. Modifications in the Operation Manual need to be made accordingly.</li> <li>➤ As in the OFSDP-II areas, DMUs/ FMUs will be established. Accordingly, it is important to provide sufficient capacity building interventions for the staffs deployed to facilitate the efficient and effective project implementation.</li> <li>➤ One of the most time consuming activities is the capacity building of the VSS/ EDCs and SHGs and the key project staff particularly deployed at Range and Division levels. This should be continuous process throughout the project period.</li> <li>➤ Training of the project staff and the Partner NGOs engaged for the project implementation would also require good amount of time during the preparatory stage.</li> <li>➤ Developing training materials may not take time since similar materials and experiences are already available with OFSDS. Training need assessment would however be a pre-requisite for developing training strategy and modules.</li> </ul>
<p><b>Organisational Structure of Executing Agency</b></p> <ul style="list-style-type: none"> <li>➤ One of the key requirements for a JICA forestry project is to set-up an autonomous institution as a society within state Forest Department to implement and report on project.</li> <li>➤ For implementation of OFSDP-I, Odisha Forestry Sector Development Society (OFSDS) was constituted in year 2006/07. This society was registered under Societies Registration Act, 1860 having registration no 022321/49/2006-07. And the same OFSDS is planned to serve as the executing agency.</li> <li>➤ Basically the same organisational structure of OFSDP-I is proposed for OFSDP-II</li> <li>➤ OFSDS consists of High Power Committee (HPC), Governing Body (GB), PMU, 40 DMUs and 216 FMUs.</li> <li>➤ In addition, involvement of NGOs is proposed for effective implementation, community organization and strengthening of JFMCs/ EDC institutions.</li> <li>➤ Role of Consulting Services during project implementation has not be detailed/ explained.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Memorandum of Association (MOA) of OFSDS need to be studied and discussions with the OFD would be done to develop understanding further on the following: <ul style="list-style-type: none"> <li>➤ Validity of Society and its functionality during OFSDP-II</li> <li>➤ Validity of Aims and Objectives of the Society to implement OFSDP-II</li> <li>➤ Composition of committees, relevance in current context, and requirements for any modifications</li> <li>➤ If Executive Committee of OFSDS exists, and in operation</li> <li>➤ Current institutional arrangement structure (figure) and requirements of modifications/ incorporation of any additional institution required in context of OFSDP-II</li> <li>➤ Assessment of human resources, particularly at DMUs and FMUs, and, requirements for their strengthening</li> <li>➤ Operation and Maintenance of assets created under OFSDP-I, existing ownership of assets (with OFD or PMU) and authority for utilizing these assets during OFSDP-II; Rationale of plan for additional strengthening</li> <li>➤ Operation of funds and accounts of the Society</li> <li>➤ Audit of Society's Accounts</li> <li>➤ Learning adoption of Operation Manual during OFSDP-I at various levels of operation, and its utilization and utility during project operations to serve as reference guide book for implementation &amp; decision making, and requirements for any modifications</li> <li>➤ Existing rules and regulations/ protocols, guidelines, and relevance for smooth implementation of OFSDP-II, and requirements for any modifications</li> <li>➤ Annual General Meetings (AGM) of OFSDS, record of proceedings and follow-up actions</li> <li>➤ Institutional positioning of OFSDS within Odisha Forest Department and State Government for harmonized implementation of OFSDP-II</li> </ul> </li> </ul>

Source: JICA Survey Team (2016)

## 2) Infrastructure Development

**Table 4.5.2 Observations and Remarks on DPR and Further Considerations: Infrastructure Development**

Observations and Remarks on DPR	Further Considerations
<ul style="list-style-type: none"> <li>➤ Not limited to below, but following infrastructure related developments planned in OFSDP-II                             <ul style="list-style-type: none"> <li>- Executing Body (EB) related infrastructure development (PMU, DMU, FMU offices) under “Strengthening of EB” component</li> <li>- VSS facilities development under “Capacity Building of VSS” component</li> <li>- Entry point activities and IGA related infrastructure development under “Community Development” component</li> <li>- Biodiversity conservation related infrastructure under the “Biodiversity Conservation” component</li> <li>- Drainage Line Treatment / SMC works under “Forest Management” components</li> <li>- Other civil work / land preparation related work under “Forest Management” components</li> <li>- Nursery renovation/ construction and forest protection work related infrastructure under “Forest Management” components</li> <li>- Access Roads development under “Infrastructure Development” Facilities and infrastructure development under “Forest Research”.</li> </ul> </li> <li>➤ Though budget estimates are provided in most of infrastructure related development, details of development are not clearly indicated in DPR</li> </ul>	<ul style="list-style-type: none"> <li>➤ Basically, unit costs are based on the relevant schedule of rates prepared by the Public Work Department, FD and other relevant departments</li> <li>➤ Details in terms of justifications for quantities and specifications for infrastructure related development proposed in DPR are still to be confirmed.</li> <li>➤ The following items will be further considered/ examined mainly from aspects of “impacts”, “sustainability”, “effectiveness”, and “efficiency”.                             <ul style="list-style-type: none"> <li>- Confirmation and review of existing infrastructures in OFSDP-I and OFD.</li> <li>- Review of DPR and relevant components/activities planned in OFSDP-II</li> <li>- Restructuring of activities and components related to infrastructure development</li> <li>- Prepare bill of quantities, revised cost estimates, and draft designs/ layouts for infrastructure development components/ activities under the scrutinized OFSDP-II</li> </ul> </li> </ul>
<p>PMU extension/ renovation</p> <ul style="list-style-type: none"> <li>➤ There is no infrastructure description available but budget provision is there in DPR</li> <li>➤ Budget Rs. 13 million estimated for renovation and extension of PMU and SFTRI building</li> </ul>	<ul style="list-style-type: none"> <li>➤ Renovation and extension are different for the building construction. This needs further clarification.</li> <li>➤ The exact extension and renovation specifications required to prepare the plan, layout and cost estimate.</li> </ul>
<p>DMU and FMU extension/ renovation</p> <ul style="list-style-type: none"> <li>➤ The extension and renovation cost of DMU and FMU are lump sum costs (of Rs.600,000 and Rs.500,000 respectively) and details in terms of justification for quantities and specifications proposed were not able to confirm.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Further confirmation required to align requisitions of DMU and FMU in line with the demands and necessities from the project requirements.</li> <li>➤ Further confirmation required on overlapping of infrastructure development with other ongoing schemes /programmes.</li> </ul>
<p>Infrastructure Development Component</p> <ul style="list-style-type: none"> <li>➤ In DPR, there is information about the “Infrastructure Development” component to improve the access to the degraded forest areas, and to enhance the market access of target villages.</li> <li>➤ However, there is no descriptions about the activities under this component nor budget estimate/ allocation as the project component</li> <li>➤ The cost for activities proposed under the infrastructure development may be lurked in other components but not clearly identifiable with the provided cost breakdown</li> </ul>	<ul style="list-style-type: none"> <li>➤ Details for “Infrastructure Development” proposed in DPR are still to be confirmed.</li> <li>➤ The following items will be further considered/ examined.                             <ul style="list-style-type: none"> <li>- Necessity of “Infrastructure Development” component</li> <li>- Activities and cost of such component</li> <li>- Restructuring of activities to other relevant components</li> </ul> </li> </ul>

Source: JICA Survey Team (2016)

## **4.6 Community/ Tribal Development**

### **4.6.1 Relevance of the Proposed Interventions**

In designing a livelihood improvement component, understanding of the local livelihood is required. The socio-economic data of the proposed project areas have not been sufficiently provided in DPR. The survey team has engaged an NGO to undertake socio economic survey in the potential project areas. The findings are given in **Chapter 5**. The component is also suggested to be renamed as “Community Development” component.

### **4.6.2 Entry Point Activities**

The budget provision for EPA funds has been made on the basis of the assigned forest areas to VSS during OFSDP-I. There has been an issue in allocation of the EPA fund based on the VSS forest area. Some villages may have higher population, thereby more demand for EPA activities. Based on experience of OFSDP-I, budgetary provision for EPA could be revisited in order to accommodate the community needs identified during the micro planning process.

### **4.6.3 Support for Income Generating Activities**

#### **1) Promoting IGAs**

Traditionally, livelihoods in rural context relate to access of community and households to natural resources like land, water and forest as reviewed in the Impact Survey Report and majority of the households derive their income from 3-5 different sources. Thus, the project should be able to provide livelihood options for the households depending on the proximity to the market, production, risk taking capacity etc.

The project IGA activities can be broadly proposed under farm based and non-farm based including NTFPs. The process of promotion of natural resource based livelihood could be generic as well as location specific. It is desirable to have a broad based approach such as promoting institutions, extension services and market linkage while promoting natural resource based livelihoods and non natural resource based livelihood activities. In DPR, diversification in means of livelihood to mitigate livelihood shocks has not been fully elaborated.

#### **2) Support for Business Planning**

Usually, business planning relates to key business proposition for an entity. At times, there could be a broad business plan to promote a business cluster that may cover combined business potential of entities in the cluster. As SHG would be the key entity for promotion of IGA, developing feasible business plans for SHGs could be important. Furthermore, there could be other forms of business entities like producer groups and producer companies that may emerge during implementation of project. The details of business planning like for whom and how to go about developing business plan is not mentioned in the DPR.

When the cluster based IGAs are planned under OFSDP-I, it was rather emphasized on the supply side. Though the specialized agency was engaged to study the value chain, in many places business has not taken off as envisaged. The lessons learned was that while promoting SHGs, the potential for cluster based business needs to be kept in mind. The project activities need to be scheduled accordingly.

#### **3) Training of SHGs**

Continuous capacity building is an integral part of livelihood promotion efforts. Capacity building may include strengthening SHG as an institution, skill training to SHG members and provision of hand holding support. In the project, there is budgetary provision for training to SHGs. This may relate to strengthening SHG as an institution. However, there is a need for clarity on budget provision for skill training and hand holding support.

Depending on the need and availability of trainers, the skills training could be taken up at village, range, division and state levels and train the key members of SHGs in different villages. Skills training and



other mode of capacity building like exposure visit and specialized training of longer duration to develop master trainers could be organized at division and state levels, by involving appropriate resource persons and organizations.

#### **4) Market Linkage Support and Promotion of IGA through Market Research at Local Level**

The project has made lump sum budget provision for supporting market linkage. The details of budget and process of implementation has not been provided in DPR. In the activities, it is mentioned to take up a market research at local level. There is a need for clarity on approaches to market research. Identification of potential product clusters and taking up product specific value chain analysis could be the approaches for market research. The survey team will attempt to undertake preliminary value chain assessment through field visits and literature reviews. The indicative process of cluster based business promotion will also be suggested in DFR.

It is important to focus on linking market players to community (backward linkage), while also pursuing linking community to market (forward linkage). The Survey Team further assessed viability of different group based IGAs to be able systematically take up further promotion efforts in OFSDP-II and to be integrated into market/ value chains and be sustainable after completion of the project. The review of OFSDP-I clusters and SHGs have been undertaken, which results are given in **Chapter 5**.

#### **5) Developing IGA Infrastructure**

In DPR, a broad provision has been made for developing IGA infrastructure for cluster SHGs. The detail break up of infrastructure is not mentioned. It could be in line with common facility centres, and equipment's like weighing machines provided to cluster SHGs in OFSDP-I area. However, it would be good to link it to business plan of the institution that would be managing such infrastructure. The assessment of current use of such infrastructure provided in OFSDP-I is not mentioned in the DPR. The provision of infrastructure could be at village and/or cluster level and relate to value chain analysis, micro planning process and IGA activities taken up by the SHGs. The village level micro plan would indicate profile of IGA activities planned to be taken up by SHGs, and the need for infrastructure at village level like drying yard and storage space.

### **4.6.4 Livelihood Improvement**

#### **1) Support for livelihood security enhancement/Need based livelihood improvement as per micro planning**

The DPR mentions support for livelihood security enhancement as a key activity. There is a budgetary provision for need-based livelihood improvement as per micro planning, which may relate to supporting/enhancing livelihoods security. The livelihood security enhancement may relate to access to "3 Es" – entitlement, employment and enterprise. It may also relate to different sectors like natural resource based and non natural resource based. It is desirable to promote different livelihood activities based on micro plan. It may be worthwhile to develop perspective and approach for promotion of livelihoods in general and specific sub sectors at the beginning of the project implementation.

#### **2) Assist VSS members to develop IGAs and Micro Enterprises**

In DPR, there is a provision of revolving fund for VSS to lend SHGs. Similar provision was made under OFSDP-I and promoted small IGAs through women SHGs. However, some SHGs were not able to access such revolving fund, and faced difficulties in repayment. DPR does not mention modality of utilization of revolving fund. The promotion of IGAs and micro enterprises require both access to financial capital and non financial services like skill training, market linkage and support for business planning. DPR does not explain on how to go about in providing such non financial services.

#### **3) Promotion of Fuel Wood Saving Devices**

There is a budgetary provision for promoting fuel wood saving devices, which seems to be relevant idea in villages, where the current level of fuel wood consumption is high. However, budgetary provision has been made to cover all VSSs in the project. There is a further need for clarity on assessment process

and on beneficiary selection process. Involvement of community especially women would be critical for selection of specific fuel wood saving devices. Further, other alternative energy saving devices (i.e. solar cooker) and alternative fuel (i.e. biogas, biomass bricks, etc) can also be considered as options.

#### **4) Institutional linkages and convergence**

It is important to facilitate institutional linkages and convergence, to be able to dovetail resources and expertise available from different sources. This aspect has been emphasized in the DPR. Experience shows that it is difficult to facilitate convergence in actual implementation process. The need for ‘approach to convergence’ has been highlighted in impact assessment study of OFSDP-I. This aspect has not been chalked out in DPR.

#### **5) Formation and strengthening of SHG Consortium; and continuing IGA support and monitoring for 14 DMUs of OFSDP 1 Area**

There is lump sum budget provision for continuing IGA support and monitoring of 14 DMUs of OFSDP-I area. However, the breakup of the budget and details of activities is not mentioned in DPR. In the activities it is mentioned that project would take up formation of strengthening of SHG consortiums. The detail of scope for business, institutional aspect, legal form and type of supports required has not been explained in the DPR.

### **4.7 Gender**

Based on the DPR, it was not possible for the survey team to grasp the overall gender situation in the project areas and identify necessary gender considerations to be incorporated into the project. Indeed, OFSDP-I has implemented the SHG based IGAs, which lead to women’s economic empowerment and thus the improved wellbeing of the community. Based on the survey findings, the survey team recommended appropriate gender considerations, in addition to what has been practiced, to be incorporated into the project components and implementation methods and framework. Data collected is reported in **Chapter 5** and proposed interventions are given in **Chapter 6**.

### **4.8 Biodiversity Conservation**

The points in relation to the biodiversity conservation confirmed in DPR are given in the table below.

**Table 4.8.1 Observations and Remarks on DPR and Further Considerations s: Biodiversity Conservation**

<b>Observations and Remarks on DPR</b>	<b>Further Considerations</b>
<ul style="list-style-type: none"> <li>➤ The objective of OFSDP-II clearly focused on biodiversity conservation: ‘conserve and better manage the biodiversity’ through improved administration, empowered communities and sectoral convergence.</li> <li>➤ Biodiversity conservation work is proposed in eight wildlife divisions (including three of OFSDP-I).</li> <li>➤ Three major activities have been proposed under project:                             <ul style="list-style-type: none"> <li>- ecotourism development at five sites with major focus on nature education and interpretation</li> <li>- mitigation of human-wildlife conflicts</li> <li>- enhanced conservation values outside PAs through development of community conserved areas (like conservation/community reserves and heritage sites).</li> </ul> </li> <li>➤ Many endemic species are under threatened</li> </ul>	<ul style="list-style-type: none"> <li>➤ Instead of proposing mitigation of human-wildlife conflicts as one major activity, the project is to be developed as ‘landscape level biodiversity conservation program’ as major objective of Biodiversity Conservation Component, where mitigation of human wildlife conflict is one major activity.</li> <li>➤ The elephant census data reveals that in last 15 years’ elephants occupy 16 new forests divisions, spreading the conflicts to newer territories. These divisions possess almost one third of total elephant population.</li> <li>➤ Although division compensation data were not available, the state level data suggest that in last 8 years the total amount paid as compensation against elephant related damage has sharply increased from Rs. 18 million in 2007-08 to Rs. 160 million in 2014-15, with major payments</li> </ul>

Observations and Remarks on DPR	Further Considerations
<p>categories, it needs to prioritize some of these species and undertake special conservation measures.</p> <ul style="list-style-type: none"> <li>➤ Forest Vision 2020 suggests undertaking biodiversity conservation work in protected area as well as outside protected areas with a landscape approach. The OFSDP-II can explore possibilities of initiating activities keeping landscape approach of biodiversity conservation.</li> <li>➤ Project proposes creation of 3,000 VSS in territorial divisions and their capacity building. However, in case of biodiversity conservation, although it says activities will be conducted through village level EDCs, but there are no details given on number of EDCs to be created and thus no budgetary allocations for their capacity building and other livelihood support programs including the works related with EPA and IGA.</li> <li>➤ Value chain analysis of many bio-resources need to be undertaken. Also, mechanisms like Access-Benefit Sharing (ABS) mechanism can be targeted for some product. Thus project need to dovetailed its activities with Biodiversity Management Committees and its PBRs, as mandated under Biodiversity Act.</li> <li>➤ Activities proposed in DPR for wildlife divisions are currently limited to the selected interventions but may be revisited as the effective conservation of wildlife and biodiversity can be realised through a holistic approach as planned in the territorial divisions. In addition to these, due to high conservation values of WL divisions, additional wildlife /biodiversity management related to components like creation of watch towers, water holes, recovery of rare-endangered-endemic species, development of Access-Benefit Sharing (ABS) mechanisms etc. are also important.</li> <li>➤ In the long run, in order to provide some institutional support for developing sustainable use of bio-resources, it will be useful to support preparation of People's Biodiversity Registers (PBR) in all the five new and 3 old Wildlife divisions, as mandated under Biodiversity Act. This will help initiating the development of innovative ABS mechanisms.</li> <li>➤ Some more and direct funding may require for biodiversity research work.</li> </ul>	<p>made towards crop damage. The magnitude of problem is increasing.</p> <ul style="list-style-type: none"> <li>➤ There are about 9500 eco-club schools in the State imparting nature education to school students. However, the eco-club program face serious challenges due to poor funding support and ad-hoc approaches. There is hardly any nature camping facilities in the state and also there is no year-round calendar of nature education activities.</li> <li>➤ Among the proposed wildlife (WL) divisions, ecotourism activities are in operation in two sanctuaries- Debrigarh (Hirakud WL Division) and Satkosia Gorge (Mahanadi WL Division). In Debrigarh WLS, eco-tourism is rapidly growing. Currently one eco-complex is developed with 5 cottages of total capacity of 15-20 persons. The revenue generation from these facilities was increased from Rs.6.3 lakhs in 2009-10 to 19.3 lakhs in 2015-16. No engagement of EDC. In Satkosia Gorge WLS, eco-tourism activities are just initiated with good initial response.</li> <li>➤ A few sites may be suggested for creating community conservation areas (outside PAs). Govindpur Bird congregation site has good potential for a community based conservation program. Between 30-50,000 birds of about 60 species congregate in the tail-end of submergence area of Hirakud reservoir, close to north-western tip of the Sanctuary. <i>The area is surveyed by BNHS and identified as one of the Important Bird Areas of the State.</i></li> <li>➤ The State Biodiversity Board had constituted Biodiversity Management Committees (CBMCs) in 950 Village Panchayats and prepared 50 People's Biodiversity Registers (PBRs). Currently their focus is on those Panchayats which have at least 10 sq km of forest covers. Project should support creating BMCs and preparation of PBRs in all village panchayats that falls under project. PBR is one important step in developing effective ABS system for some important bio-resources and thus critical in promoting NTFP based livelihood.</li> <li>➤ No systematic inventory of different biodiversity elements (floral and faunal) exist for wildlife sanctuaries. Thus there is no knowledge about the status of rare and threatened species within sanctuaries</li> </ul>

Source: JICA Survey Team (2016)

A sub-component review on the biodiversity component proposed in DPR is given in **Attachment 4.8.1**.

## 4.9 Forest Management

### 4.9.1 Selection of Areas and Interventions in the Forest Area

The points in relation to forest area selection and interventions for forest management confirmed in DPR are given in the table below.

**Table 4.9.1 Observations and Remarks on DPR and Further Considerations: Forest Area and Intervention Selection**

Observations and Remarks on DPR	Further Considerations
<p><b><u>Project Area Selection for Forest Land Areas:</u></b></p> <ul style="list-style-type: none"> <li>➤ According to DRP, for project area selection particularly for JFM/non-JFM areas are conducted by the “watershed approach” and divisional level and by the “cluster approach” at the VSS level.</li> <li>➤ However, details in terms of criteria and procedures for the both “watershed approach” and the “cluster approach” are not described in DPR.</li> <li>➤ For selection of proposed forest/ wildlife divisions, watershed related information are not provided in DPR. Furthermore, information such as forest land area, forest degradation, poverty, forest dependent community/tribal which also serve as key factors in addition to the watershed are not provided in the line with the forest/ wildlife division selection.</li> <li>➤ Though forest division proposed numbers of VSSs are provided in DRP, it is not clear about concentration/clustering of these VSSs (and their potential JFM areas) within each target forest division. Moreover, concentration/ clustering of VSSs (and their potential JFM areas) among divisions (say district level, or circle level) are not clear.</li> <li>➤ Compared to OFSDP-I, proposed target forest divisions have been increased to 15 from previous 11, and also proposed target wildlife divisions have increased to 5 from previous 3. Further justification and feasibility confirmation are required for expansion of project target divisions in comparison to the Phase I</li> <li>➤ Need reconfirmation about justification of the project area selection, including conformation from aspects of “impacts”, “sustainability”, “effectiveness”, “efficiency” and “relevance”.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Details for “watershed approach” and divisional level and “cluster approach” to be further examined.</li> <li>➤ The following items will be further considered/ re-examined. <ul style="list-style-type: none"> <li>- For forest divisions, reconfirm and review proposed target forest divisions from aspects such as watershed classification, forest land area/ concentration, forest degradation, potential and needs for forest protection/ production, socio-economic status (poverty, forest dependency, tribal concentration, etc.) of surrounding communities.</li> <li>- For wildlife divisions, in addition to aspects described for the forest division in the above, re-examine priorities and necessities in terms of biodiversity management/conservation.</li> <li>- For proposed VSSs, re-examine village locations and possible JFM area locations.</li> <li>- Based on the above information, re-organise target divisions as well as VSSs, taking into account for “impacts”, “sustainability”, “effectiveness”, “efficiency” and “relevance” with the Project Goal, Objectives and Approaches for selecting such divisions/VSSs.</li> </ul> </li> </ul>
<p><b><u>Clarifications of Needs-based Intervention to forests and forestland:</u></b></p> <ul style="list-style-type: none"> <li>➤ According to DRP, type and mode of forest interventions will be determined based on area specific needs. It is described that appropriate type of forest intervention will be chosen in accordance with forest conditions (dense, open, or scrub) and purposes of interventions (soil water conservation- oriented, production oriented, etc), also taking in to account of slope categories (steep/ hilly or undulating/flat) and location of the forest (crucial watershed or not).</li> <li>➤ However, it is not so clear from DPR, how types and modes of forest interventions differentiate in accordance with forest conditions, slope categories, and location forests. Moreover, criteria or guidelines</li> </ul>	<ul style="list-style-type: none"> <li>➤ Re-confirm details for “needs-based interventions.</li> <li>➤ The following items will be further considered/ re-examined. <ul style="list-style-type: none"> <li>- Reconfirm and review proposed types and modes of forest interventions for OFSDP-II. Especially need to clarify how types and modes of forest interventions differentiate in accordance with forest conditions, slope categories, and location forests. If necessary, support elaborating types and modes to be considered for the OFSDP-II.</li> <li>- Confirm existence of criteria or guidelines for selection/consideration and application of appropriate types and mode of forest interventions. If such is not existing,</li> </ul> </li> </ul>

Observations and Remarks on DPR	Further Considerations
<p>for selection/consideration of appropriate types and mode of forest interventions are not clear.</p> <ul style="list-style-type: none"> <li>➤ Based on the experience from OFSDP-I, various plantations and forest treatment types/models have been proposed for OFSDP-II. Need further clarifications as follows for actual implementation in consideration of the site conditions and needs/ requirements for such forest interventions: <ul style="list-style-type: none"> <li>i) how these types/models will be selected,</li> <li>ii) who will decide types/models and actual operations,</li> <li>iii) how much flexibility for model selections and species selection are there.</li> </ul> </li> <li>➤ Among the cost/work breakdowns provided, mangrove and coastal plantation types/models seem to have more variations in comparison to upland treatment. Details and difference among mangrove and coastal plantation types/models needed to be confirmed.</li> </ul>	<p>support drafting framework for such criteria/ guidelines and also to reflect such to project components/activities and cost estimates.</p>

Source: JICA Survey Team (2016)

#### 4.9.2 JFM Mode

The points in relation to JFM mode for forest management confirmed in DPR are given in the table below.

**Table 4.9.2 Observations and Remarks on DPR and Further Considerations: JFM Mode**

Observations and Remarks on DPR	Further Considerations
<p><b><u>Forest Management: Coastal Plantation</u></b></p> <ul style="list-style-type: none"> <li>➤ In DPR, 500 ha of mangrove species plantation and 500 ha of non-mangrove species plantation are proposed under the “Coastal Plantation Establishment”. However, forest divisions which enable the coastal plantation establishment are not proposed in DPR (coastal divisions proposed are targeted only for farm forestry component)</li> </ul>	<ul style="list-style-type: none"> <li>➤ Reconfirm justification of why the coastal plantation establishment was proposed in DPR and where such interventions were originally considered were not clear and convincing.</li> </ul>
<p><b><u>Forest Management: Proposed Activities and Budget Provision</u></b></p> <ul style="list-style-type: none"> <li>➤ Consolidation of JFM Areas <ul style="list-style-type: none"> <li>- Cost and activity are allocated under the preparatory work component.</li> </ul> </li> <li>➤ Nursery Establishment <ul style="list-style-type: none"> <li>- Short description of this activity is there in DPR but there is no cost provision as well as target quantity for decentralized nurseries in DPR.</li> </ul> </li> <li>➤ Soil and moisture conservation (SMC) work for “Rehabilitation of Degraded Forest” <ul style="list-style-type: none"> <li>- Total target quantity for ANR and block plantations is 240,000 ha (ANR 180,000 ha, Plantation 60,000 ha), whereas total target quantity for SMC is only 144,000 ha. Not clear about selection criteria for SMC intervention areas.</li> <li>- In-situ SMC work at plantation/ treatment sites are regarded as independent activities in DPR. Whereas, OFD’s plantation work norms normally include such as sub-activities under block plantation or ANR treatment</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>➤ Reconfirm discrepancies among activity descriptions, target quantities and budget provisions for some proposed activities.</li> <li>➤ Reconfirm reasons of the above discrepancies as well as justifications of proposed activities/ quantities/costs in DPR</li> <li>➤ Re-examine/clarify feasible activities, quantities and costs which to be determined based on the needs.</li> </ul>

Observations and Remarks on DPR	Further Considerations
<p><b>VSSs</b></p> <ul style="list-style-type: none"> <li>➤ The proposed numbers of JFMCs are 7,000.</li> <li>➤ Micro planning guidelines of OFSDP-I are proposed to be adopted.</li> <li>➤ Sustainability of OFSDP-I JFMCs after project interventions are not fully analysed and seems to be the challenge.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Verify the AJY area and OFSDP-II project area to avoid overlapping. AJY has been implemented since 2015 which is after preparation of DPR</li> <li>➤ Review micro planning guidelines for its process and outcomes. Conduct interviews with animators, VSSs, support organisations and DFOs for confirming the applicability/ usability of the micro planning guidelines.</li> <li>➤ Review issues of the existing micro planning process and reflect lessons learnt from existing practices into OFSDP-II.</li> <li>➤ Review micro planning process through interviews with the stakeholders. Also review issues related to the gender equity and convergence for community development activities.</li> <li>➤ Study status of JFMCs and their challenges in the post OFSDP-I period through site visits and key informant interviews.</li> <li>➤ Review women's involvement and their roles in JFM process.</li> <li>➤ Revisit monitoring indicators of JFMCs performance.</li> </ul>

Source: JICA Survey Team (2016)

### 4.9.3 Non JFM Mode

The points in relation to non JFM mode for forest management confirmed in DPR are given in the table below.

#### 1) Forest Management

**Table 4.9.3 Observations and Remarks on DPR and Further Considerations: Non JFM Mode Forest Management**

Observations and Remarks on DPR	Further Considerations
<p><b>Component Objectives:</b></p> <ul style="list-style-type: none"> <li>➤ Objectives of non-JFM mode in DPR is as follows (same as that of OFSDP-I): <ul style="list-style-type: none"> <li>- To generate revenue for OFD/ Government of Orissa</li> <li>- To protect existing forest and regenerate forest within degraded forest and use the timber species in a sustainable manner</li> </ul> </li> <li>➤ “Generating revenue” is more like a kind of overall goals of this component and which achievements can be foreseen more after the project period</li> </ul>	<ul style="list-style-type: none"> <li>➤ Re-examine component objectives in the line with entire project goal/objective.</li> <li>➤ Re-examine activities under this component to have consistencies with the entire project goal/objective as well as component objective.</li> </ul>
<p><b>Component Approaches and Target Areas:</b></p> <ul style="list-style-type: none"> <li>➤ As one of the project approaches, contiguous JFM areas are the key and if sites are beyond an accessible distance from villages concerned, the forest intervention and management will be conducted by departmental mode (non JFM mode).</li> <li>➤ 15,000 ha of artificial regeneration is targeted under this component. However, how these areas are derived and whether such areas are in locations in accordance with the above project approach or not is fully clear.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Re-examine effectiveness and practicability of this approach and its applications in the line with entire project goal/objective.</li> </ul>
<p><b>Proposed Activities and Budget Provision:</b></p> <ul style="list-style-type: none"> <li>➤ Drainage Line Treatment <ul style="list-style-type: none"> <li>- “In-situ SMC work” and “Ex-situ SMC work” are described but there is no budget provision budget provision as well as target quantities for the drainage</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>➤ Reconfirm discrepancies among activity descriptions, target quantities and budget provisions in some proposed activities.</li> <li>➤ Reconfirm reasons of the above discrepancies as well as justifications of</li> </ul>

Observations and Remarks on DPR	Further Considerations
<p>line treatment activities</p> <ul style="list-style-type: none"> <li>➤ Construction/Improvement of Permanent Nursery                             <ul style="list-style-type: none"> <li>- Budget provision as well as target quantity are described but there is no other description about this activity.</li> </ul> </li> <li>➤ Fire protection                             <ul style="list-style-type: none"> <li>- Not only fire line construction/ maintenance but activities such as fire patrol, fire fighting equipment, advanced fire system are described. However, there is budget provision as well as target quantity only for fire line construction/ maintenance.</li> </ul> </li> <li>➤ Forest Type Improvement and Development                             <ul style="list-style-type: none"> <li>- Though short description is provided, there is no budget provision as well as target quantities in DPR.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>➤ proposed activities/ quantities/costs in DPR. Re-examine/ clarify feasible activities, quantities and costs which to be determined based on the needs.</li> </ul>

Source: JICA Survey Team (2016)

## 2) Forest Management Infrastructure

Observations/ remarks and findings described in “Table 4.5.2 Observations and Remarks on DPR and Findings: Infrastructure Development” are also applicable for the forest management infrastructure development. Additional observations/ remarks and further considerations are provided at the table below.

**Table 4.9.4 Observations and Remarks on DPR and Further Considerations: Forest Management Infrastructure**

Observations and Remarks on DPR	Further Considerations
<p><b>SMC and Drainage Line Treatment:</b></p> <ul style="list-style-type: none"> <li>➤ In DPR, SMC is proposed for 144,000 ha under JFM mode and 25,000 ha under biodiversity conservation components, but details are not described. For non JFM mode, as an activity “drainage line treatment” is indicated but extent and cost are not specified.</li> <li>➤ Certain achievements and impacts were obtained from SMC and drainage line treatment activities under OFSDP-I</li> <li>➤ Cost allocation was very less comparing to area of implementation where funds exhausted in few structures</li> <li>➤ However, the following issues were observed according to the impact assessment study.                             <ul style="list-style-type: none"> <li>- Most structures were isolated and scattered.</li> <li>- Earthen dams were washed away due to their small sizes</li> <li>- Scientific planning, and structure layout design were lacking.</li> <li>- Without any maintenance provisions/ mechanism to revise the structures</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>➤ Re-examine components and activities since SMC for plantation activities and water harvesting structure (WHS) for groundwater recharge /agriculture/ daily uses/wild animal drinking are both handled under forest management component. .</li> <li>➤ Reconfirm necessary cost for SMC works</li> <li>➤ Re-examine and reconfirm the following:                             <ul style="list-style-type: none"> <li>- Reconfirm objectives and types of SMC/ drainage line treatment interventions for OFSDP-II.</li> <li>- Re-examine details of cost norms, work norms, design, site selection criteria, objectives of SMC/water harvesting structures</li> <li>- Site specific planning during micro planning</li> <li>- Re-examine necessity of maintenance provision.</li> </ul> </li> </ul>

Source: JICA Survey Team (2016)

### 4.10 Farm Forestry

The points in relation to the farm forestry for forest management confirmed in DPR are given in the table below.

**Table 4.10.1 Observations and Remarks on DPR and Further Considerations: Farm Forestry**

Observations and Remarks on DPR	Further Considerations
<p>Farm Forestry</p> <ul style="list-style-type: none"> <li>➤ According to DRP, the farm forestry development component has the following two main purposes; i) To provide additional income to target VSSs and its members, and ii) To promote re-greening on private land within the project areas.</li> <li>➤ In consideration of the purposes, this component seems to be effective and provide more impacts to forest divisions which VSSs will be established and having JFM interventions.</li> <li>➤ However, currently, the farm forestry development is proposed for 7 forest divisions which VSS establishment nor JFM interventions are planned under OFSDP-II.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Reconfirm the objective of the farm forestry component. During OFSDP-I, paper mill was envisaged as a buyer of the timber. The outcome is yet to be seen since the component was introduced during the extension phase.</li> <li>➤ Discussed and agreed that implementing the farm forestry in standalone divisions will not be effective in achieving the project objectives but would be more viable if it is implemented in divisions having other project components/ activities as a package of interventions.</li> <li>➤ Reconfirm the justification for setting the target since the statistics was not examined for a way to utilize the fallow land and increase tree cover.</li> <li>➤ Reconfirm monitoring aspects of this component (The names of the farmers, number of seedlings, and area planted were recorded in MIS during the Phase I. However, no survival rate was monitored.)</li> <li>➤ Examine necessity for preparation of a long term plan with the farm forestry beneficiaries in consideration of the rotation of felling.</li> <li>➤ Review Farm Forestry Guideline prepared during OFSDP-I along with the guidelines of other JICA assisted forestry projects.</li> </ul>

Source: JICA Survey Team (2016)

## 4.11 Forest Research

### 4.11.1 Proposed Activities and Relevance

Under the forest research component, the following activities are proposed. Since outline of each research activity and relevance to the project objectives were not clearly stated in DPR, further discussion with the forest department is required.

**Table 4.11.1 Proposed Research Activities in DPR (Extracted from the Cost Estimate Table)**

Activities Proposed	Unit	Cost Estimate in Rs. million
Upgrading and Institutional Strengthening of Silviculture Wing	L.s.	200
Bald Hill plantations	1,500 ha	300
Biodiversity/ Wildlife Studies/ Surveys	L.s.	2.5
Tree Improvement Studies	L.s.	3
Socio Economic Researches	L.s.	2.5
Climate Change impacts and adaptation studies	L.s.	5
REDD+ pilot projects	L.s.	2.5
Production of quality planting stock - seed money	L.s.	20
Total		535.5

Source: Compiled by JICA Survey Team (2016) based on DPR

### 4.11.2 REDD+ Pilot Project

REDD+ is an instrument aimed at reducing emissions from deforestation and forest degradation along with enhanced carbon storage in forests through ANR and sustainable management of forests. REDD+ can help in livelihood enhancement, better community & biodiversity safeguards, capacity building, enhancement of ecosystem services while reinforcing the sustainable forest management.



Implementation of REDD+ requires monitoring/ reporting/ verification (MRV) system, environment and social safeguards system while focusing on measures to address the drivers of forest degradation. Although REDD+ is a relevant intervention for OFSDP-II, it will not be discussed in detail.

Currently available infrastructures and system relevant to REDD+ has been assessed by the JICA Survey Team on REDD+ in India in 2016. The findings from the survey is given in the table below. As shown in the table below, the assets created during OFSDP-I provides basis for REDD+ readiness. The areas further need to be strengthened include FREL/ REL, safeguards information system and MRV.

**Table 4.11.2 REDD+ Readiness in Odisha and OFSDP-I**

REDD+ Requirements	Odisha State	OFSDP-I
State Action Plan	SAPCC is prepared, in which forestry sector is covered. Partly fulfilled.	-
(Donor Intervention)	None	None
FREL/FRL	Not set.	Not. Set
(Donor Intervention)	None	None
State/ Project Forest Monitoring System	Yes	Yes (Satellite based monitoring: preliminary)
(Donor Intervention)	None	None
Safeguard Information System	Existing laws and policies are followed. No safeguards information system is in place.	Existing laws and policies are followed. Safeguards system was as part of the project process. No safeguards information system is in place.
(Donor Intervention)	None	Yes
MRV	Partly established as part of the preparation of working plan and data collection for the same.	Project M&E system was established and still operational.
(Donor Intervention)	None	None

Source: JICA Survey on REDD+ in India (2016). Attachment 5-2. P7.

The proposed activities are given in the table below along with the observation by the survey team. REDD+ readiness and pilot projects in OFSDP-II as proposed are very much in-line with the policy of OFD and the context is enabling. The emphasis should be given to the establishment and operationalisation of MRV and planning for the effective implementation measures. The component also needs to be designed so that it can be scaled up and maintain the consistency with the state level REDD+ framework which is likely to be developed under JICA REDD+ Technical Cooperation (application in process).

**Table 4.11.3 Activities Proposed under REDD+ and Further Considerations**

Activities Proposed in DPR	Further Considerations
1. Estimation of carbon status in different carbon pools in the selected JFM areas of the State	<ul style="list-style-type: none"> <li>➤ As per the Working Plan Code 2014, the biomass/carbon stock assessment and monitoring are to be made part of the planning exercise of the forest department.</li> <li>➤ Since the project sites are spread across the state, establishing the MRV system and its operationalisation in sync with National Forest Monitoring System would contribute to the State level forest monitoring system.</li> <li>➤ OFSDP-II, will have a micro planning process similar to OFSDP-I including community mobilisation which provides the opportunity for the community to make informed decision whether to take part in the project or not. This process complies with one of the principles of REDD+ safeguards. Further, through the micro planning process, the causes of degradation can be identified and the community level mitigation measures can be planned accordingly as envisaged in the REDD+ framework.</li> <li>➤ As the REDD+ technical cooperation application has been submitted to JICA by the Odisha Forest Department, synergy between the two projects can be expected.</li> </ul>
2. Estimation of enhancement in forest carbon stocks as a result of conservation efforts in forest	
3. Empowering forest dependent communities for forest carbon conservation and developing and MRV system for REDD+ actions	

Activities Proposed in DPR	Further Considerations
4. Capacity building of participating communities for developing a robust, comprehensive, and transparent MRV system at small project level	➤ Community level monitoring system would help VSSs to assess the results of their own micro plans and also to monitor the leakages.
5. Feasibility study for getting the project registered for carbon credits and developing a system of payment for environmental services (PES) to the participating communities	➤ The current carbon trading system is still under development and thus, the OFSDP-II would benefit more from the reinforced sustainable forest management through REDD+.

Source: JICA Survey Team/ IORA (2016)

## 4.12 Support Activities

### 4.12.1 Monitoring & Evaluation (M&E)

The points in relation to Project's M&E aspect confirmed in DPR are given in the table below.

**Table 4.12.1 Observations and Clarifications: M&E**

Observations and Remarks	Further Considerations
<ul style="list-style-type: none"> <li>➤ Given the objectives of OFSDP-II, the expected outputs listed in section 19 of Appendix-2 are: a) enhanced ability of Odisha Forest Department, b) enhanced capacity of communities/ VSS/ SHGs, c) conserved biodiversity, d) increased flow of various forest products, e) enhanced ANR and plantation areas, and f) increased household incomes.</li> <li>➤ It is expected that project is going to benefit around 1,500,000 population in 18 districts of the state.</li> <li>➤ Project Log frame has been attempted, and is given at Appendix-5 of the DPR.</li> <li>➤ The log frame only provides few output indicators and activities besides Goal and Objectives.</li> <li>➤ Indicators related to all project components are not addressed in the log frame. Assumptions and likely risks are also not included.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Clarify the following elements of M&amp;E, since no details have been given in the DPR although M&amp;E has been given as a separate project component:                             <ul style="list-style-type: none"> <li>a) Performance Reviews at Divisional, Circle, PMU and GB/ HPC level;</li> <li>b) System of undertaking concurrent monitoring, supervision and reporting;</li> <li>c) Annual Performance Assessment exercise against the approved annual plans;</li> <li>d) Social Audits and Self-monitoring system by Community Institutions – JFMCs/ EDCs and SHGs;</li> <li>e) Statutory Financial Audits at JFMC/ EDC and FMU level;</li> <li>f) DLAC meetings, and record of proceedings and follow-up actions;</li> <li>g) Grievance Redressal system and RTI cell for enhancing transparency and accountability;</li> <li>h) Annual Planning and Review Workshops with stakeholders;</li> <li>i) Socio-economic and Physical Impact Surveys;</li> <li>j) Computerized Financial Accounting System (double-entry Tally based) at FMU level;</li> <li>k) Logical Framework, Operation and Effect Indicators;</li> <li>l) Budget for M&amp;E, as allocated budget is only 0.2% of the total project cost which seem to be less.</li> </ul> </li> </ul>
<p>Based on the Independent Impact Assessment, the following points were understood.</p> <ul style="list-style-type: none"> <li>➤ OFSDP-I was originally designed for 6 years, and later got extended for 2 more years i.e. till 2014-15. The key objectives of the project were - restoration of degraded forest and livelihoods improvement for forest dependent community. The project covered 2370 JFMCs, 56 EDCs and supported around 7000 SHGs.</li> <li>➤ A performance review of the OFSDP-I was undertaken by an Independent Evaluators in April 2016. The review focused on a) protection/ conservation of forests, b) alternative livelihood generation, and c) project design and management.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Review and re-examine the following items:                             <ul style="list-style-type: none"> <li>a) OFSDP-I project log frame including operation and effect indicators;</li> <li>b) Tracking of progress on indicators, and about method of data collection, means of verification;</li> <li>c) Utilization of MIS and GIS based information for supporting impact assessment findings.</li> </ul> </li> </ul>

Observations and Remarks	Further Considerations
<ul style="list-style-type: none"> <li>➤ Evaluators have concluded in the review report that project interventions are relevant and best fit for all components.</li> <li>➤ In addition, the report also documents usage of Web and Mobile based GIS applications both at DMU and FMU level; access to view project data and update progress is available through MIS portal at DMU level.</li> </ul>	
<ul style="list-style-type: none"> <li>➤ Prior to the field survey, 12 formats were shared by OFD were reviewed. The titles of the information collection forms are:                             <ul style="list-style-type: none"> <li>1) Establishment of Decentralized Nursery,</li> <li>2) SMC – Establishment and Maintenance,</li> <li>3) VSS/ EDC Meeting Hall and Furniture, 4) Fire line Construction and Maintenance, 5) Restoration of Degraded Forests – ANR and Block Plantation, 6) Coastal Plantation – Mangroves, 7) VSS/ EDC – Capacity Building, 8) Biodiversity Conservation, 9) EPA, 10) IGA, 11) Livelihood Improvement, and 12) Convergence</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>➤ Reconfirm utility of the existing formats and MIS systems.</li> <li>➤ Assess requirement of refining, modifying or creating new formats for progress reporting.</li> </ul>

Source: JICA Survey Team

#### 4.12.2 MIS/ GIS

The points emerged from the preliminary review of DPR undertaken by the survey team concerning MIS/ GIS is summarised in the table below. Further discussion and clarification were sought during the field survey.

**Table 4.12.2 Observations and Remarks on DPR and Further Considerations: MIS/ GIS**

	Observations and Remarks	Further Considerations
MIS	<ul style="list-style-type: none"> <li>➤ The MIS that was developed under OFSDP-I was covering all Phase-I project components. The components proposed under Phase-II project are almost similar to those of the proposed Phase-II Project. The DPR does not explain about how to utilize the existing MIS system that was fully operationalised during the Phase-I Project.</li> <li>➤ Similarly, for SHG level monitoring, a web enabled SHG monitoring system was developed and operationalised during the Phase-I project. The DPR does not explain about how to utilize the existing system for monitoring of 7,000 Phase-I SHGs and 9,000 new SHGs of Phase-II.</li> <li>➤ Expansion of MIS from DMUs to FMUs under Phase-II project is also not clearly elaborated in the DPR.</li> <li>➤ Manpower requirement at FMU level for operationalising MIS need to be analysed with respect to the available capacity.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Review of overall MIS for OFSDP-II with the following aspects:                             <ul style="list-style-type: none"> <li>- MIS developed under OFSDP-I covered all project components and was very detailed.</li> <li>- The developed system was operational and all data is in the system in structured manner and reports can be generated from the application which is web based.</li> <li>- In the developed MIS, there was no direct linkage with GIS and thus the reported area figures were not exactly in sync with the GPS surveyed area figures.</li> <li>- Under OFSDP-I, MIS software development work was outsourced and developed on net and SQL server technologies is commercial licensed software.</li> <li>- Some of the additional components under OFSDP-II need to be plugged into the system additionally</li> <li>- MRV features currently not linked with MIS system</li> </ul> </li> </ul>
GIS	<ul style="list-style-type: none"> <li>➤ During the Phase-I project GPS mapping work done by outsourcing the work to specialized agencies and in-house capacity was also developed. DPR does not talk about the capacity of the local staff in carrying out similar survey and demarcation work.</li> <li>➤ It is not clear whether the survey and demarcation work would be carried out in-house or would be outsourced.</li> <li>➤ The availability of type of various GIS data sets/layers available with PMU/OFD</li> </ul>	<ul style="list-style-type: none"> <li>➤ Review of WebGIS for OFSDP-II with the following aspects:                             <ul style="list-style-type: none"> <li>- The web application is being used to access the GIS data from the Server from any remote location.</li> <li>- All project data layers as well as data layers of AJY project are integrated in the system</li> <li>- For monitoring the change detection data can be accessed from the WebGIS app.</li> <li>- The app is developed in-house using open source technology</li> </ul> </li> </ul>

	Observations and Remarks	Further Considerations
	<p>is not clearly mentioned.</p> <ul style="list-style-type: none"> <li>➤ The existing WebGIS system developed under Phase-I project need to be reviewed in detail to utilize the developed system for Phase-II as well.</li> <li>➤ The details of the available IT infrastructure at various levels (viz, Division/DMU, Range/FMU) need to be analysed to assess the gaps.</li> <li>➤ Activities and Plan for ‘Strengthening Geomatic Centre at PMU and DMU level’, as mentioned in the cost sheet of the DPR, is not elaborated in the DPR.</li> <li>➤ Activities and Plan for ‘Development of MIS/GIS database’, as mentioned in the Cost Sheet of the DPR, is not elaborated in the DPR.</li> <li>➤ Procurement of survey equipment for DMU and PMU level, as mentioned in the Cost Sheet of the DPR, need to be substantiated by need analysis and available capacity and planned activities.</li> </ul>	<ul style="list-style-type: none"> <li>- The MIS data can be pulled into the WebGIS app (the two datasets MIS and WebGIS are separately maintained and there is redundancy and duplication of data in two datasets, which sometimes have some variations, particularly in geographical entities like area and measurements)</li> <li>- Field survey data is verified by range officers for each surveyed data submitted on the server and then only integrated into the final data layers on WebGIS</li> </ul>

Source: JICA Survey Team (2016)

### 4.13 Phase-Out and Phase-In Activities

DPR thinks that the Phase-Out/ Phase-In activities are integral part of the project implementation and visualises the empowering of VSSs to become “financially self sustaining and enable people-led Forest management” and SHGs to become capable of undertaking business activities without the support of the project. The strategies and activities are given in DPR. Implementation process and scheduling need to be further detailed out during the survey.

**Table 4.13.1 Phase-Out and Phase-In Activities Proposed in DPR**

Community Level Institutions	Strategies	Activities
VSS	Capacity Building and Organisational Development VSS	Develop skills in planning and management Develop capacity to implement the activities and undertake management of JFM areas
	VSS Management Manual	Develop the manual to guide VSSs to undertake the planning, management, networking etc.
	Village Forest Development Fund (Rs. 100,000)	Given to each VSS as a corpus fund. To be utilised for forest resource management, maintenance of community assets, and VSS management expenses. Operational guideline to be prepared by the project
SHG	Develop SHGs into self-sustaining micro enterprise	Market research, institutional strengthening, revolving funds, micro enterprise development, business planning, market linkage, cluster formations, etc will be supported during the project.

Source: Compiled by JICA Survey Team (2016) based on DPR

### 4.14 Consulting Services

In DPR, Rs. 250 million or 1.5% of the total Project cost is allocated for the services. The consulting services are envisaged to provide managerial and technical assistance for the Project implementation. Further details of the required services need to be re-examined once the Project components and activities are finalised.

#### 4.15 Project Cost

The Project has proposed the total project cost of Rs. 17.395 billion, of which Rs. 15.095 billion is to be financed by the JICA ODA loan. The cost is to cover: 1) Preparatory Works, 2) Restoration of Degraded Forest, 3) Supporting Activities, 4) Monitoring & Evaluation, and 5) Consulting Services. The distribution of the project cost for each components and the targets are given in the table below.

**Table 4.15.1 Cost Components and Distribution of Costs proposed in DPR**

Components	Proposed Cost in Rs. million	% in the Loan Portion	% in Total Project Cost
Preparatory Work	316.20	2.09%	1.8%
Strengthening of Executing Body	437.80	2.90%	2.5%
Capacity Building of VSSs	1,122.40	7.44%	6.5%
Community/ Tribal Development & Capacity Building of VSSs	3,121.50	20.68%	17.9%
Biodiversity Management	837.10	5.55%	4.8%
Forest Management JFM Mode	5,920.40	39.22%	34.0%
Forest Management Non-JFM Mode	874.60	5.79%	5.0%
Farm Forestry Development	1,625.00	10.77%	9.3%
Forest Researches	535.50	3.55%	3.1%
Publicity and Communication	15.00	0.10%	0.1%
Monitoring and Evaluation	38.50	0.26%	0.2%
Phase-out and Phase-in Activities	1.00	0.01%	0.0%
Consulting Services	250.00	1.66%	1.4%
Sub-Total (Loan Portion)	15,095.00	100.00%	86.8%
Government Share	2,000.00	-	11.5%
Interest during construction	300.00	-	1.7%
Sub-Total (State Share)	2,300.00	-	13.2%
Grand Total	17,395.00	-	100.0%

*Source: Compiled by JICA Survey Team (2016) based on DPR*

The points in relation to the Project cost confirmed in DPR are given in the table below. The total project costs need to be adjusted by adopting the pre-conditions specified by JICA.

**Table 4.15.2 Observations and Clarifications: Project Cost**

Observations and Remarks	Issues for Clarification
➤ The schedule of rates used for the project cost estimation was that of 2013. A significant implication in the labour component is anticipated.	➤ Review the latest schedule of rates and cost norms applicable for OFSDP-II
➤ Financial and Economic benefits of the OFSDP-II consist of the direct accrued from 1) forest development activities, including timber and fuel wood production, 2) non timber forest products, agro forestry production, and income generation activities	➤ Reconfirm the basis for the EIRR presented in the DPR.
➤ Other tangible benefits – incremental gain in water storage due to forest restoration activities, rise in water table, increase in agriculture production in downstream areas	
➤ Other intangible benefits – CO <sub>2</sub> sequestration, disaster prevention and mitigation	

*Source: JICA Survey Team (2016)*

#### 4.16 Environmental and Social Considerations

The points in relation to the Project’s environmental and social consideration aspect confirmed in DPR are given in the table below.

**Table 4.16.1 Observations and Remarks on DPR and Further Considerations: Environmental and Social Consideration**

Observations and Remarks	Further Considerations
<ul style="list-style-type: none"> <li>➤ DPR does not specifically indicate plans and activities related to environmental and social safeguards of the Project. (DPR indicates about some aspects of i) possible environmental and social impacts, ii) environmental and forest clearance</li> <li>➤ In general, OFSDP-II’s activities are regarded to have positive impacts on the environment and also since environmental and social consideration related issues were not fully highlighted during OFSDP-I, environmental and social management system for OFSDP-II was not considered at full scale upon the during the preparation process of DPR.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Prepare Frameworks for OFSDP-II’s environmental and social considerations in the line with the JICA Environmental and Social Consideration Guideline (2014). Frameworks to be further drafted are as follows:                             <ol style="list-style-type: none"> <li>1) Environmental and Social Management System Framework (ESMSF)</li> <li>2) Scheduled Tribes and Forest Dependants Plan Framework (STFDPF)</li> </ol> </li> </ul>
<ul style="list-style-type: none"> <li>➤ DPR of OFSDP-II indicates no land acquisition or resettlement issues.</li> <li>➤ Proposed OFSDP-II’s components and activities do not assume any land acquisition or resettlement.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Reconfirm possibilities of land acquisition and/or resettlement in OFSDP-II. The following items are to be considered.                             <ul style="list-style-type: none"> <li>- Some of protected areas within proposed forest/wildlife divisions for OFSDP-II have communities and settlements inside the protected areas.</li> <li>- Areas and activities which require involuntary resettlement should be avoided as much as possible by following the ESMSF in further project area/component selection processes. In the area/component selection processes, involuntary resettlement and other environmental/social risk aspects to be included as limiting/exclusion factors.</li> </ul> </li> </ul>

Source: JICA Survey Team (2016)

## Chapter 5. SITUATIONAL ANALYSIS OF THE PROJECT AREA

### 5.1 Project Areas

#### 5.1.1 Prioritisation of the Project Areas

As a result of the discussion held during the Fact Finding Mission in November 2016 and prioritisation exercises, the following criteria was adopted to select priority territorial divisions for OFSDP-II.

**Table 5.1.1 Prioritisation Criteria for Territorial Divisions**

Division
<b>【Exclusion Criteria】</b>
1) Divisions for OFSDP-I to be excluded
2) Divisions with "High" and "Medium" security levels* to be excluded (only the Divisions with low and no security Range>50% will be included)
3) Concerns during implementation (physical contiguity and conflict) to be excluded
<b>【Prioritisation Criteria】</b>
1) % of Degraded Forest in the Division
2) Changes in the Density of the Forest
3) Status of Soil Erosion
4) Number of VSS
5) Concentration of SC/ST Population

*Source: JICA Survey Team (2016)*

Based on the above criteria, the divisions proposed for livelihood components and farm forestry components have been excluded from the project areas for OFSDP-II.

#### 5.1.2 Prioritised Divisions

Based on the above criteria, the priority divisions for OFSDP-II are shown in **Table 5.1.2**. 12 territorial divisions were selected based on a ranking and two wildlife divisions were selected in consideration of needs for interventions by OFSDP-II. **Table 5.1.2** also indicates the selection result of initial priority divisions. Scoring and ranking of territorial divisions are described in **Attachment 5.1.1**.

**Table 5.1.2 List of Priority Divisions**

Components	Forest Division	District	Remarks
All components	1. Baripada	Mayurbanj	In need of OFSDP-II interventions.
	2. Rairangpur	Mayurbanj	
	3. Karanjia	Mayurbanj	
	4. Sambalpur	Sambalpur/ Sonapur	As proposed in DPR
	5. Dhenkanal	Dhenkanal	
	6. Sundargarh	Sundargarh	
	7. Subarnapur	Sonepur/ Bolangir	
	8. Boudh	Boudh	
	9. Ghumsur North	Ganjam	
	10. Jharsuguda	Jharsuguda	
	11. Athamalik	Angul	
	12. Ghumsur South	Ganjam	
	13. Nayagarh	Nayagarh	Not Considered for OFSDP-II
	14. Kalahandi (North)	Kalahandi	
	15. Bolangir	Bolangir	
	16. Rairakhol	Sambalpur/ Sonapur	
	17. Bargarh	Bargarh	
	18. Athagarh	Cuttack	
Biodiversity Management	1. Rajnagar WL	Kendrapada/ Jagatsinghpur	In need of OFSDP-II interventions
	2. Bamra WL	Sambalpur	As proposed in DP, but the component to be revisited.

Components	Forest Division	District	Remarks
Livelihood Improvement	3. Hirakud WL	Bargarh	Not considered for OFSDP-II
	1) Deogarh	Deogarh/ Angul	
	2) Keonjhar	Keonjhar	
	3) Angul	Angul	
	4) Parlakhemundi	Gajapati	
	5) Rourkela	Sundargarh	
	6) Balasore WL	Balasore	
	7) Bhadrak WL	Bhadrak	
	8) Rayagada	Rayagada	
	9) Jeypore	Koraput	
	10) Phulbani	Kandhamal	
11) Bonai	Sundargarh		

Source: JICA Survey Team (2016)

## 5.2 Forests in the OFSDP-II Priority Divisions

### 5.2.1 Forest Areas

The total forest areas of the proposed priority divisions for OFSDP-II is reported to be 12,817 km<sup>2</sup>. Of which, 38.8% is open, 44.8% is moderately dense, and 16.4% of very dense forest. The division forest areas by density classification are given in the table below.

**Table 5.2.1 Forest Areas in OFSDP-II Priority Divisions**

sl.	Divisions	Open		Moderately Dense		Very Dense		Total	
		(10-40%)		(40-70%)		(>70%)		km <sup>2</sup>	%
		km <sup>2</sup>	%	km <sup>2</sup>	%	km <sup>2</sup>	%		
1	Bariapada	579	40.6	613.2	43.0	235.1	16.5	1,427.3	100.0
2	Rairangpur	195.7	22.8	374.3	43.7	287	33.5	857.0	100.0
3	Dhenkanal	817.6	58.1	417	29.6	173.7	12.3	1,408.2	100.0
4	Karanjia	209.2	24.0	408.1	46.9	253.7	29.1	871.0	100.0
5	Sundargarh	535.2	39.9	535	39.9	271.9	20.3	1,342.1	100.0
6	Jharsuda	172.5	54.9	138.8	44.2	3.1	1.0	314.4	100.0
7	Sambalpur	345.1	35.4	592.9	60.7	38.1	3.9	976.1	100.0
8	Subarnapur	253.1	68.4	101.2	27.3	15.7	4.3	369.9	100.0
9	Boudh	445.6	36.3	527.6	43.0	253.8	20.7	1,226.9	100.0
10	Ghumsur North	243.4	29.3	458.5	55.1	129.7	15.6	831.6	100.0
11	Athamalik	245.7	29.7	486.8	58.8	95.1	11.5	827.5	100.0
12	Ghumsur South	358.1	41.2	488.1	56.2	23	2.6	869.2	100.0
W-1	Rajnagar	79.5	32.4	86.4	35.2	79.2	32.3	245.1	100.0
W-2	Bamra	379.3	30.3	539.8	43.2	331.4	26.5	1,250.4	100.0
Total		4859	38.8	5767.7	44.8	2190.5	16.4	12,817.2	100.0

Source: ISFR 2015

The change analysis attempted by the survey team by comparing the FSI data for year 2011 and 2013 (as reported in ISFR 2013 and 2015 respectively) in the priority divisions for OFSDP-II, indicates that the quality of the forest areas have deteriorated. Division wise calculation is attached in **Attachment 5.2.1**.

### 5.2.2 Human-Wildlife Conflict in the OFSDP-II Priority Divisions

Human-Wildlife Conflict is not only the issue around the WL areas but also in the territorial divisions. As shown in the table below, elephant followed by wild boar, sloth bear, and monkey are affecting human habitat. In Athagarh, Dhenkanal, Karanjia, Rairangpur, Subarnapur and Sundargarh divisions are the incidences of elephant and human conflicts are rampant.



**Table 5.2.2 Preliminary Analysis of the Human and Wildlife Conflict in OFSDP-II Priority Divisions by the Level of Impact (Unit: %)**

Division	Elephant	Wild bore	Sloth Bear	Monkey	Leopard	Others
Rairangpur	92.8	3.2	2.6	1.4		
Dhenkanal	78.8	8.1	7.5	5.0	0.6	
Karanja	69.1		16.5		14.4	
Sundargarh	10					
Sambalpur	33.3	66.7				
Subarnapur	9	1				
Boudh	5		5			
Ghumsur North	33.0	52.0		12.0		Black Buck
Bamra WL	6	3		1		
Average	67.4	18.9	8.5	3.2	1.7	

Source: JICA Survey Team (2016)

When the damages are caused by the wildlife to human habitat, compensations are given to the claimants by OFD. The cumulative amount of compensation paid in the 9 divisions of OFSDP-II divisions during the past year (FY 2015-16) was Rs. 48,167,389. The compensation paid in Dhenkanal division outnumbers other divisions and more than 50% of the compensation was paid for the crop damage followed by human death.

**Table 5.2.3 Compensation Paid for Various Damages Caused by Wild Animals in the OFSDP-II Priority Divisions (Unit: Rs.)**

Division	Crop Damage	Human Death	Human Injury (Permanent)	House Damage	Human Injury (Temporary)	Cattle Kill	Total
Rairangpur	3,396,620	660,000	200,000	0	30,000	5,000	4,291,620
Dhenkanal	17,683,797	4,500,000	575,000	470,000	10,000	5,000	23,243,797
Karanja	2,155,457	1,000,000	500,000	172,000	75,000	70,000	3,972,457
Sundargarh	6,494,900	1,600,000		2,414,000	5,000	2,500	10,516,400
Sambalpur	-	-	-	-	-	-	-
Subarnapur	576,105	-	200,000	-	-	-	776,105
Boudh	-	-	200,000	-	10,000		210,000
Ghumsur North	3,823,130	-	-	-	-	-	3,823,130
Bamra WL	1,333,880	-	-	-	-	-	1,333,880
Total	35,463,889	7,760,000	1,675,000	3,056,000	130,000	82,500	48,167,389

Source: JICA Survey Team (2016)

### 5.2.3 Preliminary Analysis of the Drivers of Forest Degradation in the OFSDP-II Priority Divisions

An attempt was made to collect data on drivers of forest degradation in OFSDP-II divisions using questionnaire prepared by the survey team. Each division has provided the perceived level of impacts of various drivers of forest degradation in %. The analysis indicates that forest fire, illicit felling, fuelwood/ small timber extraction by the villagers, and grazing were the main drivers of degradation in the majority of the OFSDP-II divisions. Especially, illicit felling is the most significant driver of forest degradation in Karanja and likewise fuelwood/ small timber extraction by the villagers in Subarnapur. Other division specific drivers included Cyclone Phailin in Ghumsur North and other development projects (irrigation/ road/ industry), mining and agriculture in Sundargarh.

**Table 5.2.4 Results of the Preliminary Analysis of the Drivers of Degradation in OFSDP-II  
Priority Divisions**

Division	Forest Fire	Illicit Felling	Fuelwood/ Small timber extraction by villagers	Grazing	Exotic Weed	Poaching	Habitatio n	Agricultu re	Mining	Other Projects (Irrigation/ Road/ Industry)	Phailin	Total
Rairangpur	26.0	9.8	23.6	14.4	14.8	4.0	1.4	2.0	4.0	0.0	0.0	100.0
Dhenkanal	16.0	13.0	17.8	9.1	9.3	10.1	8.0	8.1	2.0	6.6	0.0	100.0
Karanja	4.4	91.2	4.1	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	100.0
Sundargarh	8.3	12.0	11.7	0.0	5.8	1.8	11.7	10.0	14.2	24.5	0.0	100.0
Sambalpur	26.3	26.3	26.3	5.3	10.5	5.3	0.0	0.0	0.0	0.0	0.0	100.0
Subarnapur	1.0	7.0	80.3	1.0	10.3	0.0	0.1	0.2	0.0	0.3	0.0	100.0
Boudh	20.0	20.0	20.0	20.0	0.0	20.0	0.0	0.0	0.0	0.0	0.0	100.0
Ghumsur North	25.0	3.8	15.4	16.6	9.8	3.3	0.2	0.3	0.0	0.3	25.3	100.0
Bamra WL	21.0	5.2	33.6	20.0	12.6	0.0	2.4	3.4	0.0	1.8	0.0	100.0

Source: JICA Survey Team (2016)

### 5.3 Forest Management and Practices

#### 5.3.1 Working Plans

The working plan is the basis for the scientific forest management of forest areas in India and traditionally covered the prescriptions for silvicultural operations in the forest compartment. The National Working Plan Code 2014, prepared by MoEF&CC is the latest working plan code and applied for the preparation of the working plan. The 2014 Code highlights more on sustainable management of forests and biodiversity.

In Odisha, 45 forest divisions (out of 50) including a part of 7 wildlife divisions are covered under 35 working plans, and 28 working plans covering 33 forest divisions have been approved and valid as of September 2016. Among the Project priority divisions for OFSDP-II, 5 working plans will expire March 2017 and 5 are under revision as of September 2016 (**Table 5.3.1**).

Normally, working plans describe required silvicultural prescriptions of the targeted reserved forest (including protected reserved forest) areas. For implementation of activities/ treatments prescribed in the approved working plans, in principle, annual budget estimates as per the working plan will be prepared in advance and submitted to the Finance Department of the State Government for further sanctions and budget allocations. Likewise, a management plan is prepared for the wildlife divisions. According to OFD officers, there are often cases that prescriptions in the working plans/ management plans are not fully reflected upon annual budget estimate process. Such deviations occur due to changes in demands/ necessities of prescribed treatments in working plans as well as changes in ground conditions of the concerned forest areas.

**Table 5.3.1 Working Plan Status of Project Priority Divisions**

No	Name of the Working Plan	Divisions Included in the Working Plan	Working Plan Period	Present Status of Working Plan (Approved or under revision)
1	Karanja & Baripada	Baripada	1996-97 to 2015-16	Under revision
		Rairangpur		Under revision
2	Dhenkanal	Dhenkanal	2016-17 to 2025-26	Approved
3	Karanja & Baripada	Karanja	1996-97 to 2015-17	Under revision
4	Sundargarh	Sundargarh	2014-15 to 2023-24	Approved
5	Sambalpur (North)	Jharsuguda	2007-08 to 2016-17	Approved (expires 2016-17)
6	Sambalpur (South)	Sambalpur	2007-08 to 2016-17	Approved (expires 2016-17)
7	Balangir East	Subarnapur	2007-08 to 2016-17	Approved (expires 2016-17)
8	Boudh	Boudh	2013-14 to 2022-23	Approved
9	Ghumsur (North)	Ghumsur (North)	1995-96 to 2014-15	Under revision
10	Athamallik	Athamallik	2006-07 to 2015-16	Under revision
11	Ghumsur (South)	Ghumsur (South)	2014-15 to 2023-24	Approved

No	Name of the Working Plan	Divisions Included in the Working Plan	Working Plan Period	Present Status of Working Plan (Approved or under revision)
12	Cuttack & Rajnagar (Wildlife)	Rajnagar (Wildlife)	2007-08 to 2016-18	Approved (expires 2016-17)
13	Bamra (Wildlife) Part	Bamra	2007-08 to 2016-17	Approved (expires 2016-17)
14	Bamra & Deogarh	Bamra (Wildlife)	1995-96 to 2014-15	Under revision

Source: Compiled from the list provided by OFD

### 5.3.2 JFM in the Project Areas

#### 1) Status of VSSs and EDCs in OFSDP-II Priority Divisions

The number of VSSs in the OFSDP-II priority divisions is 2,680 and 73 EDCs. The Division wise number of VSSs and EDCs is presented in the table below. Many of these VSSs are formed by OFD under National Afforestation Programme during 1990s. A part of VSSs in Baripada, Jharsuguda, Bargarh, Subarnapur and Bamra WL have been initiated with the AJY during the year 2016-17. In Ghumsur South, 10 VSSs in two ranges are covered under Green India Mission (GIM).

**Table 5.3.2 VSSs and EDCs in the Project Area – OFSDP Phase II**

sl.	Forest Division	District	No of Ranges	Total No of VSSs	No of VFPC	No of EDC
1	Baripada	Mayurbanj	8	350	63	43
2	Rairangpur	Mayurbanj	5	201	53	66
3	Dhenkanal	Dhenkanal	8	326	-	-
4	Karanjia	Mayurbanj	6	193	-	-
5	Sundargarh	Sundargarh	6	331	-	-
6	Jharsuguda	Jharsuguda	5	137	-	-
7	Sambalpur	Sambalpur	5	216	-	-
8	Subarnapur	Sundargarh	3	227	-	-
9	Boudh	Boudh	5	130	-	-
10	Ghumsur North	Ganjam	5	223	-	-
11	Athamalik	Angul	5	169	-	-
12	Ghumsur South	Ganjam	5	177	-	-
Total (Forest Divisions)			66	2,680	116	109
W-1	Rajnagar WL	Sambalpur	3	23	-	48
W-2	Bamra WL	Kendrapada	5	210	-	25
Total (Wildlife Divisions)			8	233	0	73
Grand Total			74	2,913	116	182

\*VFPC: Village Forest Protection Committees

Source: Compiled from the list of VSS provided by OFSDS.

From the interactions with the 5 VSSs in Ghumsur South, and Ghumsur North Divisions, the survey team has come to understand the following challenges faced by the VSSs which might be common in many of the VSSs/ EDCs. Two of the VSSs were organised between the early 1990s and the early 2000. Some are facing problems of human-elephant conflict and others are facing illicit felling and smuggling of the forest products. Some of the activities can be managed by the VSSs themselves but others cannot. Micro plans are not revised after the completion of the plan for 5 years. VSS leaders in Ghumsur North indicated that the planning can be done for 10 years and the involvement of the representatives from the line departments would be essential to facilitate convergence. The field notes from the site visits conducted during the survey are given in **Attachment 5.3.1**.

### 5.3.3 Community Forest Management (CFM)

CFM has been practiced in some parts of the proposed project divisions. Forest protection by communities existed in Sambalpur and Nawrangpur areas during 1900-1940. Forest protection by some local communities was found in Koraput, Keonjhar and Mayurbhanj areas during 1941-50. 1960s and

70s saw many villages in western and central Orissa got involved in forest protection. CFM is still practiced in Nayagarh, Mayurbhanj, Bolangir, Sambalpur, Keonjhar, Dhenkanal, Angul, Debgarh and Phulbani districts of the state.

## 5.4 Forest Product and Marketing

### 5.4.1 Timber and Other Major Forest Products

The productivity and economic benefit of forest generally relates to production of timber. The production and marketing of timber is quite visible. As high economic value is attached to timber, its marketing is quite organized. In India, the production and harvesting of timber relates to working plan of the forest division. In Odisha, Forest Department and Odisha Forest Development Corporation (OFDC) is associated with management of timber. OFDC trades timber both in round and sawn forms.

Under JFM mode for forest management, VSS has access up to 50% of timber harvest in forest areas assigned to the VSS. The provisions under JFM Resolution 2011 prescribe that the VSS shall receive 50% of the sale price of timber from major or final harvest after deduction of proportionate harvesting cost. The VSS may opt for receiving 50% of the product harvested if they intend to use it for their *bona fide* requirements. In such case the VSS has to pay for proportionate harvesting cost. Bamboo will be harvested as per the prescriptions of working plan and micro plan and the product will be used and/or sold by the VSS as per the decision of EC. If it is sold then the funds will be deposited in the VSS account. Usually the OFDC carries out the bamboo harvesting operations and sale. The sale proceeds after deduction of operation costs are deposited in the VSS account. The marketing of timber is governed under Timber and Other Forest Produce Transit Rules 1980, amended in 2001 and 2006. Under the transit rule, there is relaxation with regard to movement and marketing of species grown under farm forestry like bamboo, eucalyptus and acacia.

In addition to timber, bamboo and kendu leaf are considered as major forest products and the Government has well established legal and operative framework for their conservation, management and trade. OFDC is responsible for marketing of bamboo and kendu leaf. The following table provides ownership, control and management of forest products from different types of forest.

**Table 5.4.2 Control and Management of Different Forest Products in Odisha**

Forest product	Forestland	Revenue land	Private land
Timber species in general	Exclusive control by OFD and harvesting and sale is done by Orissa Forest Development Corporation.	Control by OFD. For harvesting timber from the village woodlots permission is required and for transportation Transit Permit is required.	Transit permit is required from the Forest Department.
Timber species – mentioned in Schedule III of Orissa Timber and Other Forest Produce Transit Rules, 1980	Exclusive control by OFD	Village wood lots – control by the Village Forest Committee or VSS. Protected forests (revenue land) – control by OFD.	No transit permit is required. No restriction on harvesting and sale.
Bamboo (nationalized forest product)	Exclusive control by OFD. Harvesting and sale by OFDC. Procurement price, royalty and operating cost is fixed by a High Power Committee at the state level. VSS area – usufruct rights are with the VSS.	Village wood lots – control by the Village Forest Committee or VSS. Protected forests (revenue land) – control by OFD.	No control by OFD. No transit permit is required for <i>Bambusa nutans</i> , <i>Bambusa tulda</i> and <i>Bambusa vulgaris</i> on the homestead land. For other species transit permit is required.

**Table 5.4.1 Growing Stock of Timber in Odisha**

Sl.	Area	Stock in Million Cum
1	Recorded Forest area	237.77
2	Trees Outside Forest	74.49
3	Agro-forestry areas	65.19
4	Urban areas	3.61

Source: Highlights of Odisha Forestry Sector, 2016, PCCF, Odisha

<b>Forest product</b>	<b>Forestland</b>	<b>Revenue land</b>	<b>Private land</b>
Fuelwood	Control by OFD. Harvesting and sale by OFDC.	Village Wood Lot – control by VFC/VSS. Sale of products requires TP (for species not listed in Schedule III).	Own use – no problem. For sale transit permit is required for species not listed in Schedule III of Timber and Other Forest Produce Transit Rules, 1980.
Kendu Leaf (nationalized forest product)	Collection and primary processing, which is essential for ensuring shelf life, is done kendu leaf Organisation under OFD. Marketing is done by OFDC. Procurement price is fixed by Kendu Leaf Development Board under the Chairmanship of the Chief Minister. Fund requirement is decided by KL Coordination Committee under the chairmanship of Chief Secretary.	Exclusive control by OFD	Control by OFD.
Minor Forest Produce – 69 – handed over to the Gram Panchayat	Trade permit by GP. GP collects registration fee from the buyers/traders – no royalty is being collected or charged. With the trade permit the product can be transported to any place within the state. Price is fixed at the Panchayat Samiti level. For 12 products coming under Minimum Support Price Scheme, the price is centrally fixed. Also minimum support price in some MFPs.	Trade permit by GP. GP collects registration fee from the buyers/traders – no royalty is being collected or charged.  With the trade permit the product can be transported to any place within the state.	Exclusive control by land owner.
MAP and other NTFP - other than those given to GP	Control by the Forest Department – some species may be harvested on lease basis. The government would decide the royalty.	Control by the OFD on harvesting and trade.	Exclusive control by land owner but for transportation Transit permit is required.

Source: JICA Survey Team (2016)

Kendu leaf has remained as a major source of revenue for the Forest Department. About Rs. 4,000 million is earned as revenue from kendu leaf operation in the state. The production of KL over last 2 decades has remained around 0.4 million quintals, which is about 11% of total production of the country. It provides livelihood support to nearly one million people in terms of procurement price for kendu leaf, wages, social welfare activities etc. Kendu leaf operations are carried out in an area of 0.6 million hectares spread over 23 districts. The major kendu leaf producing districts within OFSDP-II areas are Sambalpur, Sundergarh, Anugul and Mayurbhanj. There are 7,482 collection centres and 1,046 central godowns established for collection and storage of kendu leaf. There are 800,000 pluckers and 18,256 skilled seasonal workers in the state, who get benefits from collection and sale of kendu leaf. The kendu leaf operation in the state generates about 15 million person-days of employment annually. The kendu leaf produced in Bolangir is being considered as the best quality product in the country. Odisha is the only state which sales kendu leaf in processed form. The leaves are graded into four categories based on the colour, texture, size and body condition.

Timber is the second important source of revenue for the Forest Department. The following tables present the revenue receipts of State Government from important forest products as well as the production of important forest products.

**Table 5.4.3 Revenue Receipts from Forest Products by State Government (Rs. million)**

Item	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Timber	406.8	499.7	422.5	522.7	536.5	736.7
Firewood	44.5	58.8	145.2	68.7	77.1	89.3
Bamboo	126.8	136.3	81.2	160.6	96.9	54.5
Kendu leaf	3,268.0	3,642.4	4,159.6	4,220.4	3,973.0	3,907.3

Source: Compiled from Economic Surveys, Government of Orissa

**Table 5.4.4 Production of Important Forest Products in Last 5 years**

Item	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Timber (cum)	20,434	37,634	31,912	28,435	38,155	48,170
Firewood (MT)	19,221	26,001	24,305	19,899	33,057	32,367
Bamboo (SU)	660,099	92,647	98,413	29,780	46,156	3,964.53
Kendu leaf (Lakh Qntls.)	4.41	4.43	3.82	4.26	4.47	3.96

Source: Compiled from Economic Surveys, Government of Orissa

**Table 5.4.5 Production of Kendu Leaf in Odisha**

Sl.	Quantity in lakh quintal	Sale value in million Rs.
2005	3.769	1,420.5
2006	3.895	2,485.5
2007	4.454	2,593.2
2008	4.192	3,019.6
2009	4.406	3,266.4
2010	4.460	3,642.0
2011	3.760	4,132.7
2012	4.250	4,221.8
2013	3.765	3,928.7
2014	3.96	3,907.3

Source: Compiled from Economic Surveys of Odisha

#### 5.4.2 NTFPs

General status of NTFPs in Odisha is described in **Section 2.8** and findings/ issues during OFSDP-I is described in **Section 3.6**. This section tries to illustrate the situation of NTFPs in the priority project divisions (districts).

The district-wise potentiality of NTFPs in Odisha is presented in the table below.

**Table 5.4.6 District-wise Potentiality of NTFPs in Odisha (In MT)**

Sl. No	District	Harida	Amla	Bahada	Tamarind	Chironj ee Seed	Sal Seed	Karanj Seed	Mohua Seed	Honey	Lac	Gum karaya
1	Koraput	50	100	100	5,000	200	2,000	100	200	10	0	10
2	Keonjhar	100	0	100	1,000	200	4,000	50	1,500	10	0	0
3	Nabrangpur	100	0	0	1,500	0	6,000	0	500	10	30	0
4	Gajapati		0	0	5,000	0	500	0	0	10	10	20
5	Mayurbhanj	300	100	200	1,000	200	9,000	50	2,000	20	40	0
6	Sambalpur	Reported to be potential districts but relevant information not available										
7	Balangir	Reported to be potential districts but relevant information not available										
8	Deogarh	Reported to be potential districts but relevant information not available										
9	Sundargarh	200	100	200	500	500	9000	50	2,500	10	60	0
10	Rayagada	0	300	200	5000		500		100	0	0	20
11	Nayagarh	Reported to be potential districts but relevant information not available										
12	Kalahandi	500	100		100	300	3,000	0	500	10	0	0
13	Kandhamal	100	100	500	1,000	0	5,000	50	1,500	10	10	0
14	Malkangiri	0	100	400	500	0	1,500		1,000	5	0	20
15	Nuapada	650	100			500	1,000	50	1,000	0	0	70
	<b>Total</b>	<b>2,000</b>	<b>1,000</b>	<b>1,700</b>	<b>20,600</b>	<b>1,900</b>	<b>41,500</b>	<b>350</b>	<b>10,800</b>	<b>95</b>	<b>150</b>	<b>140</b>

Source: TDCC, Odisha

Some of the districts of OFSDP – II areas such as Mayurbhanj and Boudh have huge potentiality for livelihood interventions based on NTFP. The following table presents the division-wise important NTFPs and products, which can be considered for interventions under livelihood improvement.

**Table 5.4.7 Forest Division-wise Important NTFPs**

Sl.	Forest Division	Important NTFP	Potential for product cluster	Potential for Value Addition
1	Baripada	Sal leaf, Sal seed, Mahua flower and seed, Kusum seed, Honey, Nux vomica, Karanja seed, Chironjee/ Char, Tamarind, Harida, Marking nut, Sikakai, Lac	Sal leaf, Sal seed, Siali leaf, Chirojee, Tamarind, Lac, Mahua flower and seed, Bamboo	Lac, Honey and Chironjee, Bamboo
2	Karanja			
3	Rairangpur			
4	Jharsuguda	Kendu leaf, Mahua flower and seed, Sal leaf, Sal seed, Lac, Sabai grass, Honey	Mahua flower, Lac	
5	Sundargarh	Kendu leaf, Mahua flower and seed, Siali leaf, Sal leaf, Sal seed, Chakunda seed, Ban Haldi, Lac, Myrobalans	Siali leaf, Mahua flower and seed, Sal leaf, Sal seed, Myrobalans	Lac, Siali leaf
6	Dhenkanal	Kendu leaf, Bamboo		
7	Athmallik	Kendu leaf, Bamboo, Mahua flower and seed, Sal leaf and Sal seed	Mahua flower and seed, Sal leaf and Sal seed	
8	Boudh	Kendu leaf, Bamboo, Mahua flower and seed, Siali leaf, Sal leaf and Sal seed	Sal seed, Siali leaf, Mahua flower and seed	Siali leaf
9	Sambalpur	Kendu leaf, Mahua flower and seed, Chakunda seed, Chironjee/ Char, Bamboo, Sal leaf and Sal seed	Mahua flower and seed, Sal leaf and Sal seed	
10	Subarnapur	Kendu leaf, Thorn broom grass, Mahua flower and seed		
11	Ghumsur (N)	Kendu leaf, Bamboo, Sal leaf		Bamboo handicraft, Agarbati
12	Ghumsur (S)	Bamboo, Sal leaf, Siali leaf,	Siali leaf	Siali leaf

Source: Compiled from various sources by JICA Survey Team

Most of NTFPs harvested in Odisha are sold by primary collectors in weekly markets (*haats*) and then lifted to the markets and trading centres within the state and then to those located in the outside of the states as given in the table below. The nearest trading centre from Odisha would be Raipur, Dhamtari, Chattisgarh, and Visakhapatnam.

**Table 5.4.8 Market/ Trading Centres Dealing with Some Important NTFPs**

Sl.	NTFP	Markets/ Trading Centres in the State	Markets/ Trading Centres outside the State
1	Tamarind	Rayagada, Paralakhemundi	Salur, Visakhapatnam, Hyderabad, Kakinada,
2	Hill broom grass/ broom	Rayagada, Koraput, Gajapati, Phulbani	Raipur, Jagdalpur, Hyderabad, Bhopal, Nagpur, Visakhapatnam
3	Siali Leaf	Phulbani, G. Udaygiri, Nayagarh, Rayagada, Paralakhemundi, Aska, Bhanjanagar, Berhmapur	Visakhapatnam, Srikakulam, Tadapalligudam, Chennai
4	Sal Leaf	Betanati, Baleswar, Nayagarh, Sambalpur, Dhenkikote	West Bengal
5	Sal seed	Nabarangpur, Sambalpur,	Raipur, other places in MP and AP
6	Mahua flower	Kantabanji, Khariar Road, Khariar, Bagdih, Lahunipada, Rajgangpur, Sundargarh, Nabarangpur	Ranchi and Raipur
7	Chironjee/ Char	Khariar, Khariar Road (processing units too), Kantabanji, Bagdih	Raipur, Dhamtari, Markets in Madhya Pradesh
8	Neem seed	Khariar/ Khariar Road, Kantabanji, Bagdih	Chattisgarh, West Bengal
9	Myrobalans	Kantabanji, Khariar Road, Khariar, Banjipali, Bagdih, Lahunipada, Rajgangpur, Sundargarh, Umerkote	Raipur, Dhamtari

Source: Compiled from different sources by JICA Survey Team.

## 5.5 Socio Economic Characteristics

The survey team has conducted a socio economic survey. The findings are given in **Attachment 5.5.1**.

### 5.5.1 Livelihood

#### 1) Changing Landscape of the Village Livelihood

In villages, households sustain their livelihood by getting involved in multiple activities. This includes activities related to agriculture, horticulture; agriculture allied activities like dairy, goat rearing, poultry and fish farming. The forest based livelihood activities include collection and marketing of fuel wood and NTFPs. Traditionally, some of the households are involved in activities such as handloom and handicraft making. The other traditional skill based self employment activities includes working as mason, carpenter, barber and tailor.

Usually, the poor households take up wage work. Wage earning opportunities are available locally in agriculture sector, through Government schemes like MGNREGA and construction activities. At village level, there could be few households having small business and taking up trading. In the recent years, with growth of urbanization, there is an increasing incidence of migration of youth to cities. This has resulted in remittance as source of income for households in rural areas.

The livelihood patterns of villages largely depend on community and/or household access to natural resources like land, water and forest. Access to land enables households to grow crops like paddy, maize, pulses and oilseeds; vegetable cultivation; and take up plantation like cashew and mango. Access to assured irrigation supports to mitigate impact of drought and further enhance productivity and production. Access to forest supports in taking up NTFP based livelihoods. In recent years, with growth in economy, opportunity in market and availability of skill sets has emerged as key influencing factors in the livelihood pattern in the village.

#### 2) Food Security

As elsewhere in the country, the government provides food at lower cost for the priority families (BPL families) for those categorised as “poorest of the poor” under the Antyodaya Anna Yojana (AAY) Scheme<sup>1</sup> under the National Food Security Act. The district wise share of AAY and priority households is given in the table below. The data shows that the higher concentration of AAY families in Malkangiri, Nawarangpur and Mayurbanj. Where food security is an issue, the project livelihood related interventions may also target to mitigate food scarcity as well as nutrition at the community level.

**Table 5.5.1 % of AAY and Priority Households in Odisha**

District	Total Household	Total Population (2011)	AAY(%)	Priority HH (%)
			Ration card	Ration card
Angul	297,050	1,273,821	9.8%	76.9%
Balasore	533,001	2,320,529	13.5%	72.3%
Baragarh	370,308	1,481,255	10.6%	80.0%
Bhadrak	306,333	1,506,337	11.2%	79.1%
Bolangir	414,749	1,648,997	9.6%	85.1%
Boudh	106,961	441,162	12.7%	80.7%
Cuttack	579,170	2,624,470	6.9%	71.9%
Deogarh	75,452	312,520	16.4%	79.2%
Dhenkanal	279,364	1,192,811	11.5%	81.0%
Gajapati	128,523	577,817	8.9%	87.4%
Ganjam	758,267	3,529,031	6.6%	77.5%
Jagatsinghpur	261,307	1,136,971	9.0%	71.2%

<sup>1</sup> The food subsidy programme started in 2000 and targeted for selected poor households which live under the Below Poverty Line (BPL) of Rs. 250 per month. Selected households are issued Antyodaya cards issued and the Below Poverty Line Card. The AAY card holder is provided 35 Kgs of rice or wheat per month at the rate of Rs. 3/ Kg for rice and Rs. 2/Kg for wheat. (<http://chdfood.gov.in/Antyodaya.aspx>, <http://admis.hp.nic.in/ehimapurti/schemes.htm#anto>)



District	Total Household	Total Population (2011)	AAY(%)	Priority HH (%)
			Ration card	Ration card
Jajpur	407,851	1,827,192	10.3%	77.0%
Jharsuguda	136,061	579,505	3.9%	74.3%
Kalahandi	401,251	1,576,869	13.0%	77.7%
Kandhamal	172,022	733,110	10.1%	84.0%
Kendrapada	321,934	1,440,361	9.0%	74.3%
Keonjhar	405,272	1,801,733	11.3%	83.9%
Khorda	494,212	2,251,673	7.4%	65.5%
Koraput	337,677	1,379,647	13.2%	86.0%
Malkangiri	137,599	613,192	16.3%	91.6%
Mayurbanj	586,253	2,519,738	13.8%	83.9%
Nawarangpur	273,423	1,220,946	15.5%	92.1%
Nayagarh	228,315	962,789	12.1%	74.5%
Nuapada	152,210	610,382	11.1%	79.9%
Puri	367,269	1,698,730	9.4%	73.7%
Rayagada	226,144	967,911	18.8%	85.3%
Sambalpur	249,597	1,041,099	9.7%	75.2%
Sonepur	151,136	610,183	13.6%	76.5%
Sundergarh	479,109	2,093,437	6.2%	79.0%
Total	9,637,820	41,974,218	10.5%	78.4%

Source: Compiled by JICA Survey Team based PDS, Odisha

### 5.5.2 SHG Based Livelihood Activities

At community level, Self Help Groups (SHGs) involving women have emerged as a functional institution. Initially, SHGs were largely formed under Mission Shakti<sup>2</sup> to enhance access to credit services from Banks. Many SHGs are also promoted by different organizations including Government Departments/Organizations, CSOs, Banks and also individuals. Usually, SHGs mobilize savings from their members and start internal lending. In the later stage, SHGs would access to credit from Banks. The credit through bank linkage is used by SHGs for taking up group based and/or individual based IGAs. IGAs could be rearing of small livestock, trading activities and small businesses, which can be done on an individual basis or as a group. SHGs have proven to be successful institution for socio economic empowerment of women.

SHGs are seen as a vehicle for improving the livelihoods of poor and vulnerable families. Internal lending in SHGs can support consumption smoothening at household level. SHGs can access revolving fund support under different schemes of Government like IWMP, that can be used for internal lending or taking up group based IGAs. The members of SHGs can access credit through SHG Bank linkage. Awareness on Government schemes including entitlements can be created in SHG meetings. SHGs seem to be potential institution for aggregation of product and take up collective marketing; and also taking up small IGAs/Enterprises.

### 5.5.3 Gender and Forest Management

Gender situation based on the socio economic survey conducted by the survey team is given in **Attachment 5.5.1**.

#### 1) Management and Protection of Forests

The general observation as well as findings are described in **Section 2.10 (4)**.

The field observations are given in the **Attachment 5.5.2**.

<sup>2</sup> "Mission Shakti" - a campaign for holistic empowerment of women was launched by Government of Odisha in 2001 to organize women SHGs. It is an umbrella organization providing support to different stakeholders working in the field of woman empowerment such as Banks, NGOs, MFIs and other institutions.

## 2) Women in Forest Departments

The Indian Forest Service opened to women in the year 1979\*<sup>3</sup>. Orissa is one of the progressive states in recruiting women at levels equivalent to section forest officers (forester), range officer, and Assistant Conservator of Forest (ACF) levels. The field visits by the survey team have shown that the employment of women as field staff and officers in forest department could potentially help to improve interaction between the village women and project. Especially, they could play a vital role in the process of micro-planning and forest management activities, in which women's participation was limited so far.

### 5.6 Community Development: Relevant Programmes/ Schemes

As reviewed in **Chapter 2**, a number of programmes and schemes in the social development sector are implemented. In this section, the potential programmes and schemes that OFSDP-II might like to consider for convergence are reviewed in detail.

#### 1) MGNREGA

In Odisha, MGNREGS was introduced in three phases i.e. in 19 districts from February 2006, 5 districts from April 2007 and 6 districts from April 2008. Currently there are 6.69 million job card holders in the state and the average days of employment provided during a year is between 35 to 45 days. Overall state average for 100 days' employment could be achieved for 5-10% of HHs. Despite multi-pronged approach and strategies to implement the scheme, the performance has not improved significantly. The state introduced many innovative methods to execute and monitor the scheme. The state was one of the front-runners in establishing eFMS (electronic fund management system) for MGNREGS. It introduced dashboard monitoring system, Panchayat Helpline to record grievances and respond within stipulated time, innovative social audit model to become more transparent and people centric. Two dedicated societies were established to deal with MGNREGS i.e. MGNREGS Society and Odisha Society for Social Audit Accountability and Transparency. In order to address distressed migration in Bolangir and Nuapada districts, special measures were taken to sensitize the job seekers through organisation of Rozgar Diwas (Celebration of employment day) and provide them employment. 150 days of employment were provided in these districts to check distress migration. A lot of efforts have been taken for convergence with different Departments for implementation of the scheme. The Departments/ Directorates such as Forest and Environment, Agriculture, Horticulture, Watershed Development, Women and Child Development, Textile, SC and ST Development, Panchayati Raj, etc. have converged their schemes with MGNREGS to provide wage employment to the job seekers. The programmes/ interventions carried out through convergence were/ are plantations in the forest and outside of the forest, creation of water bodies, water harvesting structures, land development, orchards, sheds for animal husbandry, *anganwadi* centres, rural housing schemes etc. The following table presents the progress of implementation of MGNREGS in Odisha.

**Table 5.6.1 Implementation of MGNREGA in Odisha as of September 2016**

Sl.	Items/ descriptions	2012-13	2013-14	2014-15	2015-16	2016-17 (till Sep 2016)
1	No. of Job card holders in million					6.697
2	No. of Households provided employment in million	1.599	1.71	1.468	1.998	1.565
3	Person-days generated in million	54.601	71.182	53.484	89.453	48.394
4	Person-days generated for women in %	35.95	33.57	33.78	38.02	39.66
5	Person-days generated for SC in %	17.6	16.35	15.82	15.91	16.38
6	Person-days generated for ST in %	37.69	40.82	41.56	41.73	35.28

<sup>3</sup> Report of the Advisory Committee to Promote the Involvement of Women in Forestry, April 1999, National Afforestation and Eco-Development Board, Ministry of Environment and Forests, New Delhi.

Sl.	Items/ descriptions	2012-13	2013-14	2014-15	2015-16	2016-17 (till Sep 2016)
7	Average days of employment provided during the year	34.14	41.62	36.44	44.78	30.92
8	No of households provided with 100 days of employment	75,085	1,56,781	81,959	197,472	6,552
9	Percentage of HH provided with 100 days of employment	4.7	9.17	5.6	9.9	0.77
10	Fund released by the Central Government in million Rs.		7,575.284	10,353.034	14,794.105	11,658.388*
11	Total expenditure by the State in million Rs.		12,868.021	10,689.248	20,520.529	11,514.571*

Source: [http://164.100.129.4/netnrega/homestciti.aspx?state\\_code=24&state\\_name=ODISHA](http://164.100.129.4/netnrega/homestciti.aspx?state_code=24&state_name=ODISHA). Date 5<sup>th</sup> Oct 2016 and documents of PR Dept., Government of Odisha.\* Status as on 31 July 2016.

## 2) National Rural Livelihood Mission (NRLM)/ Odisha Livelihood Mission (OLM)

### i. An Overview

National Rural Livelihood Mission (NRLM) has been implemented in Odisha since 1st April 2012 replacing Swarna Jayanti Gram Swarojgar Yojana (SGSY). Odisha Livelihood Mission (OLM) has been registered as a society to implement NRLM in Odisha. The progress of implementation of NRLM is presented in the tables below. The list of districts and intensive blocks are given in **Attachment 5.6.1**.

**Table 5.6.2 Status of NRLM in Odisha as on 31 July 2016**

Sl.	Items	Status
1	Functional Pre-NRLM/ Revived SHG (Cumulative – nos.)	248,760
2	New SHGs promoted (nos.)	46,382
3	Total Functional SHG (nos.)	295,142
4	RF Released to new SHGs (in Million Rs.)	9,189
5	No. of GPLF Received Start-up & IB Fund (nos.)	1,482
6	No. of GPLF Received Community Investment Fund (nos.)	1,439
7	SHGs credit linked during 2015-16 (nos.)	58,113
8	SHGs credit linked during 2015-16 (Amount in Million Rs.)	6,816.625
9	SHGs credit linked during 2016-17 till July 2016 (nos.)	16,887
10	SHGs credit linked during 2016-17 till July 2016 (Amount in Million Rs.)	2,045.716

Source: Panchayati Raj Dept. Odisha

**Table 5.6.3 Annual Achievements of NRLM in Odisha (Till July 2016)**

Sl.	Items/ Description	2012-13	2013-14	2014-15	2015-16	2016-17
1	Social mobilization of SHGs	21,351	8,184	11,205	6,835	
2	No. of SHGs provided with RF		2,441	4,842	4,824	
3	No. of SHGs provided with CIF		562	400	6,294	
4	Fund allocation by GOI in million Rs.	1,329.4	1,065.5	573.0	285.441	232.513
5	Expenditure by the State-total in million Rs.	947.708	523.982	773.892	1,072.566	
6	RF released to SHGs in million Rs.	40.15	34.81	64.65	0.66	
7	CIF released to SHGs in million Rs.	0	28.09	20.1	59.03	
8	No. of SHG members trained by RSETIs	15,260	18,251	9,932		
9	No. of SHG members settles after trained by RSETIs	9,932	15,260	18,251		

Source: Compiled from reports of Panchayati Raj Dept. Odisha

## ii. Cluster Formation under NRLM

In Odisha, under NRLM, 5-15 SHGs form a Cluster Level Federation (CLF) and 10-15 CLFs together form a Gram Panchayat Level Federation (GPLF). The CLFs and GPLFs are formed in the initial year. A Community Resource Person (CRP) is available at CLF to help preparation of Micro Investment Plan (MIP), bookkeeping etc. 2.7 million households have been mobilized by NRLM/ OLM and more than 1,500 GPLFs have been formed. SHGs, CLFs and GPLFs are being capacitated for strong social and capital formation. Revolving funds are being released to SHGs and Community Investment Funds (CIF) are released to the GPLFs to initiate different livelihood activities at SHG and cluster levels. OLM tries to build a robust institutional network with quality human resources and emphasize convergence of technical expertise, financial resources under different development programmes and schemes of the Government and private sectors to promote sustainable livelihood for the extreme poor and vulnerable communities. OLM is working with other line departments for beneficiary selection with a focus on extremely poor and vulnerable communities, joint verification of production and processing set up/ sites, complementing each other in strength and programmatic space etc. At the district and block levels all the line departments will include programmes of OLM in their strategy. The gaps in funding of any livelihoods activities can be covered by finances through SHG loans and bank loans with interest subvention provision.

**Table 5.6.4 NRLP Progress as on Aug 2016**

Items	Descriptions
Households mobilized (nos.)	325,549
SHGs promoted (nos.)	29,292 nos.
Revolving fund released to SHGs	No. – 10,780 Amount – Rs. 141.756 million
Community Investment Fund released to SHGs	No. – 6,116 Amount – Rs. 299.297 million

Source: NRLM.

## iii. Livelihoods Service Providers (LSPs)

LSPs are best practitioner in a specific livelihoods activity having usable experiences, knowledge to guide other practitioners. LSPs are appointed by GPLF. At GP level, 2 LSPs for agriculture, 1 for

livestock, and 1 for off farm/non farm/NTFPs sectors are appointed. LSPs provide handholding support to individual HHs and producer groups. The honorarium to LSP is paid based on efforts of activities like no of visits to HHs, coverage of HHs/PGs. In case of Producer Group related to NTFP IGAs, there is provision of

1 LSP per PG. LSPs are basically para-professionals having experience in specific livelihood activities. As they have hands on experience, they are expected to provide much needed hand holding support to HHs and community institutions. According to master guideline 2015-16 of OLM, there are 2,370 LSPs (detail in table below), and 830 more LSPs are planned to be promoted.

**Table 5.6.5 Number of Livelihood Service Providers**

Organizations	No of Livelihood Service Providers
OLM	1,870
MKSP	320
Tata Trust	60
PRADAN	120
Total	2,370

Source: Master Guideline 2015-16, OLM

## iv. Producer Group

Producer group is a business organization owned and managed by the marginal producers or small entrepreneur for their mutual benefit to access to common facilities like infrastructure, capacity building, hand-holding, financial support & market linkages on a sustainable basis. The producer groups are expected to be organized only when there is opportunity of collectivization, aggregation, value addition and marketing of farm and non-farm commodities.

The producer groups are promoted by OLM at village or Gram Panchayat level. The producer groups may be registered or unregistered. Such groups can federate and form a farmer producer organization

with primary producers as members. Producer groups are expected to facilitate backward, forward and horizontal integration.

Executive Committee (EC) of a Producers Group consists of two representatives from each of the producer's sub groups. OLM provides institution building/capacity building fund amounting Rs. 72,000 per PG in 1<sup>st</sup> year, Rs.36, 000 from 2<sup>nd</sup> year onwards. This covers a start-up kit for IGA, basic training and skill development training. Besides this there would be provision of Common Investment Fund (CIF) based on business plan. The size of producer groups linked to different sectors is indicated below:

**Table 5.6.6 Scale of Producer Groups Promoted Under OLM and Supports given**

Sectors	Number of SHGs in a Producer Group	Support		
		NRLM	Convergence	Bank
Farm	20-150	Institution/CB, Operation Cost, Marketing	Infrastructure, Technical	Credit
Livestock	20-50			
NTFP	20-150			
Non Farm	20-150			

Source: Master Guideline 2015-16, OLM

With one time grant of Rs.400,000 from CIF, GPLF can promote CFC cum ASC. It would provide information related agriculture, horticulture and livestock, soil testing facility and custom hiring services of equipments.

**v. Intensive Blocks**

NRLM works through an intensive block strategy as the focus is to build social capital especially that of the poor. It intends to focus in selected blocks with the existing professional human and other resources. Then the entire state would be covered in phased manner. In an intensive block, there will be a professional team with necessary facilities and IT equipments to plan and implement activities. NRLM has estimated an investment of Rs. 120 million per intensive block over a period of 5 years.

**Table 5.6.7 Outcome of the Intensive Block over the Period of 5 years**

Sl.	Indicators	Outcomes
1	Poor HHs mobilized into SHGs	15,000 HH (1,200 SHGs)
2	Savings mobilized	Rs. 50 million
3	Corpus of SHGs/Federations (including CIF)	Rs. 100 million
4	Bank credit leveraged	Rs. 300 million
5	Social capital generated	250 community professionals
6	Improved farm productivity	5,000 HHs
7	Improved livestock productivity	3,000 HHs
8	Improved market access	5,000 HHs
9	Employment to rural unemployed youth through skill development	50% of the unemployed gainfully employed

Source: Intensive Block Strategy of NRLM

As of now nearly 50% of the OFSDP-II areas are covered under OLM intensive blocks, which details are given in **Chapter 6**.

**vi. Convergence/ Partnership**

OLM has established partnerships with different projects and agencies. Some of them are ICZMP, Trickle up, TATA Trust, PRADAN, Digital Green, Swabhiman with UNICEF etc. Tata Trusts and the Government of Odisha have agreed to work in specific regions of South Odisha with low human development index to improve the quality of life of poor. Tata Trust supports the South Odisha Initiative to improve the quality of life of 25,000 households in Muniguda and Bissamcuttack blocks of Rayagada district, Thuamul Rampur and Lanjigarh blocks of Kalahandi district, and Kotagarh block of

Kandhamal district for a period of three years. The South Odisha Initiative focuses on community participation, government partnership, and invites technical and financial cooperation from external agencies to achieve the program goal. 14 civil societies have been selected based on their expertise in health, education, livelihoods, water and sanitation to implement the South Odisha Initiative. Key objectives of the South Odisha Initiatives are

- Strengthening community based institutions towards ownership building and quality service delivery.
- Increasing the average annual income of 25,000 families by 2 to 3 times (to an average of Rs. 75,000/) from the current level.
- Facilitating access of safe drinking to 25,000 families within 500 meters from house.
- Facilitating access of proper sanitation facilities to at least 12,500 families.
- Reducing the incidence of malaria and diarrhoea by 30% in target villages, and increasing haemoglobin count of 80% of the women to more than 9 units/grams.
- Ensuring 80% children of total 15,000 children to achieve grade appropriate learning level and less than 5% dropout among children from school before eighth standard.

The Project will adopt a hybrid model for livelihoods intervention. Through small grants efforts will be made to build capabilities and productive assets of selected families and then efforts will be made for intensification and diversification their livelihoods through loan or grants from government departments/ agencies. Loans will be arranged and managed by the registered producer organisations. The livelihoods programme will primarily focus on enhancing the agricultural production and establishing market linkages for effective price realization. Landless families will be supported to strengthen animal husbandry as prime source of livelihoods. Commercial goat rearing, boiler poultry farming, duck and quail rearing will be supported through producer organisations. Government schemes like NRLM, MGNREGA, schemes under agriculture, horticulture, water resource, and ST, SC and minority welfare departments will be mobilized to provide maximum benefit to the target households.

## **5.7 Protected Areas, Wildlife and Biodiversity and Community Level Institutions**

Biodiversity management component is proposed for Bamra wildlife division and Rajnagar wildlife divisions. The current status of each area is given in this section.

### **5.7.1 Bamra Wildlife Division**

#### **1) Khalasuni Wildlife Sanctuary**

The Sanctuary, notified in 1982, is extended over 116 km<sup>2</sup> areas in Sambalpur district. The final notification of the sanctuary is yet to be completed. The area is in contiguity with Badrama wildlife sanctuary, under the administrative jurisdiction of Bamra Wildlife division in Sambalpur Circle. The entire sanctuary is carved out from Khalasuni Reserve Forest. The sanctuary has ecological connectivity with other forest areas and falls within Deogarh, Rairakhol, Sambalpur and Bamra Wildlife Divisions. In 2002, the sanctuary and its surrounding forests were also included and notified as part of Sambalpur Elephant Reserve. Currently, the sanctuary is managed through an approved management plan for the period 2007-08 to 2016-17.

#### **i. Key Natural and Biodiversity Features**

The sanctuary is predominantly a hilly tract with altitudinal variation between 400 and 1000 m asl and interspersed with valleys and two seasonal rivers viz. Malatijhor and Tikira. The total annual rainfall within the sanctuary varied from 698 to 1562 mm. But, during summer month's water scarcity looms in large part of the sanctuary, and thus wildlife generally moves out.

The sanctuary predominantly supports dense forests. Sal and Sal-mixed are the most dominant types. Bamboo occurs in almost all parts of the sanctuary over an extensive area. Although no comprehensive

biodiversity inventory has been made for the sanctuary, it is suggested that the sanctuary harbours a rich floral and faunal diversity. While about 150 plant species were recorded from the sanctuary, among the fauna, the bison, leopard, sloth bear, sambhar, and chital are the major species of the sanctuary. Mouse deer, a highly threatened species is also found in the sanctuary. The sanctuary is, however, known for its elephant population. Around 100 elephants use this and adjoining Badrama sanctuary. On some occasion, tiger are also reported from the area. Presence of endangered birds such as Hill Myna, Forest Spotted Owllet, Hornbills etc. also enhance the conservation significance of this sanctuary.

#### **ii. Socio-economic features**

By and large the core area of the sanctuary is free of human habitations. Three revenue villages are located within the sanctuary. Of these, two are abandoned and one village is inhabited by only three families. Rights of the people of these families have not been settled yet. In the buffer zone of the sanctuary there are 38 villages with total of about 1500 families. Agriculture and labour work are the major sources of livelihood for these families. They are also dependent on forest resources for fuelwood, fodder and grass. NTFP items like sal seeds, mahua flower and seeds, sabai grass, siali leaves, and etc. are important NTFP items people collect from forest areas for subsistence, although they are considered as illegal activities. At present, there is hardly any tourist foot-falls, although there are some potential for its development.

#### **iii. Major management/conservation concerns**

Lacks of comprehensive documentation or inventories of different groups of floral and faunal species and unique ecosystem processes, limits the focus of conservation towards flagship species like elephant. The man-animal conflict are reported in the villages located in buffer zone. The problem is rising mainly due to disturbances in the corridor forests (mainly the Hatidhara and Landakot forest blocks in Rairakhol division) to connect elephant population with Satkosia Tiger reserves or Mahanadi Elephant Reserve. Forest fires and grazing are common phenomena, affecting the forest structures. Availability of water and meadow grassland are critical limiting factors.

### **2) Badrama Wildlife Sanctuary**

The Sanctuary was established in 1987 and covered an area of 304.03 km<sup>2</sup> areas of Sambalpur district. However, the GIS based mapping reported the total area as 348.17 km<sup>2</sup>. The area is in contiguity with Khalasuni wildlife sanctuary and managed by Bamra Wildlife division. The sanctuary is carved out from Badrama, Ushakothi, Binjipali and Kansar Reserved forests. The sanctuary has ecological connectivity with other forest areas and falls within Deogarh, Sambalpur and Bamra Wildlife Divisions. The Sanctuary, in 2002, is also included and notified as part of Sambalpur Elephant Reserves. Currently, the sanctuary is managed through an approved management plan for the period 2005-06 to 2015-16. Preparation of a new management plan is underway.

#### **i. Key Natural and Biodiversity Features**

The sanctuary falls under Deccan peninsular zone of Chhotanagapur province. Predominantly, it is a small-hilly tract with the altitudinal variation from 319 to 762 m asl and interspersed with six major seasonal streams. The total annual rainfall of the sanctuary is about 1,430 mm (record of Jamnakira block). Thus, during summer months water scarcity looms in large part of the sanctuary. This poses one of the major limiting factors for wildlife conservation and management.

Vegetation is predominantly of Sal and Sal-mixed types with pockets of bamboo brakes. There is no systematic inventory available for key floral and faunal taxa. However, it is suggested that the sanctuary harbors a rich floral and faunal diversity. Since the area has eco-physiography similar to adjoining Khalasuni sanctuary, the species composition are also reported similar. Thus, sloth bear, sambhar, cheetal, mouse deer, chowsingha, pangolin, Malayn Giant squirrel, Malabar pied hornbill, forest spotted owllet etc. are reported from this sanctuary too. The elephant is the major species of this sanctuary. Around 100 elephants use this and adjoining Khalasuni sanctuary. The area support many plant species of medicinal values, some of these species are gradually disappearing from the area.

## **ii. Socio-economic Features**

The sanctuary and its surrounding areas are highly interspersed with human habitations. While 27 revenue villages are situated within the outer limits of the Sanctuary, 108 more villages are located in the periphery. Rights of the families living in these villages have not settled yet. Rain fed rice cultivation and casual labour work are the main occupations of these villages. Poverty level is quite high in these villages, thus they are dependent on forest resources for fuelwood, fodder and grass. People collect more than 30 NTFP items in different quantity for their own consumption and also to use them to barter for other food items. Tourism is a small activity and centred around Gud-Guda waterfall.

## **iii. Major Management/Conservation Concerns**

The settlements are spread in large area so that the forests are fragmented in different parts of the sanctuary. Forest fires and grazing are common phenomena. Illicit tree felling is also reported from different parts of the sanctuary. These cumulatively affect the forest structures and as a consequences, the wildlife habitats. Availability of water and meadow grassland are critical limiting factors. Lack of comprehensive documentation / inventories of different groups of floral and faunal species and unique ecosystem processes, limits the focus of conservation only towards flagship species like elephant. The issues of man-animal conflicts are increasing more in Badrama and Jamnakhera ranges. OFD has constituted a 14 member protected area level Advisory Committee of different stakeholders, to prioritize and support management actions for the sanctuary. However, there is no clarity about the effectiveness and functions of this committee.

### **5.7.2 Rajnagar Wildlife Division**

#### **1) Bhitarkanika Wildlife Sanctuary**

Located in Kendrapada District in deltaic region of Brahmani and Baitarani rivers. Area is criss-crossed by perennial rivers and tidal creeks. Ever-changing land forms due to accretion and erosion, formation of islands, sand bars, and mud flats is responsible for creation of variety of micro habitats. Bhitarkanika enjoys a very high degree of legal protection. While Bhitarkanika Sanctuary was notified in 1975 with a total area of 672 km<sup>2</sup>, Bhitarkanika National Park was carved out from the sanctuary in 1998 with total area of 145 km<sup>2</sup>. The coastal water area of 1,435 km<sup>2</sup>, adjoining Bhitarkanika sanctuary, was declared as Gahirmatha (Marine) Wildlife Sanctuary in 1997. In 2002, a total of 650 km<sup>2</sup> of Bhitarkanika sanctuary is also declared as Ramsar site of wetland of international importance. The Bhitarkanika sanctuary and National park areas are currently managed with a management plan for a period between 2008-09 and 2017-18.

#### **i. Key Natural and Biodiversity Features**

The area support third largest contiguous mangrove patches in country (after Sundarban and Andaman). Also, with the record of more than 300 plant species, it is considered as second most diverse mangroves and associated flora in the entire world, after Papua New Guinea. Mangrove are found in three forms – mangrove scrub, mangrove forest and brackish-water mixed forest, which is the most dominant vegetation type. These types provide different habitat values for different wildlife. The area support 28 species of mammals, 280 species of bird and 47 species of herpetofauna. The area provides ideal habitat to the largest number of Salt-water Crocodiles in the Indian sub-continent. With a population of more than 1,400 crocodiles (rise from 95 in 1975), the density is highest anywhere in the world. The Bagagahan heronry, the largest in Asia, providing nesting area for more than 30,000 birds. The mass nesting of Olive Ridley Turtles is the largest congregation in the entire world. The area also support good population of dolphins and herbivores like sambhar and cheetal.

#### **ii. Socio-economic Features**

Sanctuary includes 410 villages with about 200,000 human population and 75,000 livestock heads. In addition to rain fed rice cultivation, fishing is the other major occupation of most of the families. The families are engaged in capture fishery in the coastal water and also associated with aquaculture practices along the coast line just beyond the PA boundary. There are about 8,000 prawn gharries. The fishing in coastal water in Sanctuary and National Park area is banned. In addition, the adjoining area under Gahirmatha Marine Sanctuary also ban fishing. Such bans cause conflicts between PA managers



and local fishing communities. This coastal landscape is one of the most favourite wildlife tourist destination in the State, thus giving employment opportunities to local communities.

### iii. Management Challenges

The fringe villages put chronic pressure for fuelwood, small timber and fodder. Also, harvesting of Phoenix leaves as roof-thatching material and livestock grazing on mangrove leaves also puts some pressure on the resources. Illegal fishing activity within the PA waters is quite frequent. Due to prawn gharries, creeks are either closed or diverted and also waste water of these gharries are released in the creek. Incidences of human-crocodile conflict are frequent. Tourist footfall (arrivals) increased rapidly, however, their impacts on wildlife need to be assessed and minimized. The area is vulnerable to disasters like cyclones. A wildlife related disaster preparedness is essential.

### 5.7.3 Stakeholders in the OFSDP-II Areas for Sustainable Biodiversity Management

The roles and responsibilities of the government departments are given in the table below.

**Table 5.7.1 Key Stakeholders for Sustainable Biodiversity Management**

Department/ Organisations	Role in BD Conservation and Management	Potential Role in Project
Forest Department. (mainly Wildlife Divisions)	Protect and manage forest areas and other biodiversity rich areas including wetlands, coastal stretches etc. creation and management of protected area network.	Serve as a major player for protection and management of forest areas.
Forest and Environment Department	Frame relevant policies; funds research projects relating to studies on various aspects of biodiversity	Shape relevant policies and notifications
Department of Agriculture and Farmer's Empowerment	Conduct extension of green revolution technology promote high external input based agriculture. Often trigger erosion of crop based genetic diversity	Improve productivity of rain-fed farming system. Conserve indigenous crop varieties; promote measures to reduce the effect of crop degradation
State Biodiversity Board	Constitute BMCs at Panchayat levels and prepare PBRs	Conduct inventory of biodiversity in project area through PBR and facilitate ABS mechanisms for some forest based products
Ecotourism Development Cell under OFDC	Plan, develop and facilitate ecotourism projects compatible with the state's ecotourism policy	Develop the linkages with other ecotourism sites for optimize the use value
Fisheries and Animal Resources Development Department	Conduct livestock breed improvement and providing veterinary health care like vaccination. Promote both capture and culture fisheries with many subsidized programs	Improve the quality of grazing lands; facilitate the improvement of local breeds. Enrich fish diversity and abundance in natural water bodies; support for alternative livelihood generations for EDC/ VSS members
Tourism Department	Promote tourism in the State through site and infrastructure development and promotional programs.	Develop and link eco-tourism sites with the larger tourism circuits and programs and packages
State Medicinal Plant Board	Promote conservation and cultivation of important medicinal plants	Develop medicinal plant based enterprises for alternative livelihood generation
Micro, Small and Medium Enterprise Department	Promote small enterprises through adequate financial and infrastructure development, provide vocational training courses.	Conduct vocational training, promote cottage industries to support alternative livelihood generation for EDC/VSS members
Odisha Forest Development Corporation	Conduct scientific collection of forest resources to promote forest based industries	Support alternative livelihood generation for EDC/VSS members

Source: JICA Survey Team (2016)

## 5.8 Existing IT Infrastructure at OFD and OFSDS

### 5.8.1 Forest IT and GIS Wing, PCCF Office, OFD

The IT/GIS lab of the OFD is situated in the office of the PCCF, OFD. The main objective of the IT/GIS Lab is to cater to the need of the OFD by employing IT enabled technology to strengthen the monitoring mechanisms of the forest resource as well as all interventions taken up by OFD and bring in

transparency. Keeping this in mind several initiatives were taken up recently to build the infrastructure of the GIS lab as well as introduce better mechanisms of data collection and reporting from the field through IT based measures (Table 5.8.1).

**Table 5.8.1 List of Infrastructure with IT/GIS Lab, PCCF Office, OFD**

Type	Quantity	Purpose
<b>A. Computer Hardware</b>		
<b>A.1. Work Station</b>		
1. Workstations	4	Data processing work
<b>A.2. Servers</b>		
Server [High end Rack Server]	11	Various purposes for data management Hosting Enterprise GIS Server App Hosting various other applications Hosting Website Hosting of MIS application
<b>B. Software – GIS/MIS</b>		
<b>B.1. Customised Software</b>		
1. Web based Accounts and Forest Works monitoring system		Forest Accounts Monitor cum Analyser with Forest Works Monitor
2. CAMPA Tracker (Web App)		CAMPA Works Monitoring system
3. Forest HRMS (Web App)		Human Resource Management System
<b>B.2. Proprietary software</b>		
1. Arc GIS	4	GIS data processing
2. Erdas Imagine	1	Satellite image processing
<b>B.3. Open Source</b>		
1. Quantum GIS		GIS data processing
<b>C. Equipments</b>		
<b>C.1. Survey Equipments</b>		
1. PDA [Model Sxtreo T51]	600	-Customized GAGAN based PDAs for field based spatial data collection -Apps on the PDAs are updated online
<b>C.2. Networking Equipments</b>		
1. Switches	1	Networking
2. Self contained chilled racks with KVM	1	Networking
<b>C.3. Uninterrupted Power Supply</b>		
1. 20 KVA Online UPS	2	Power Supply backup
2. 2 KVA UPS	4	Power Supply backup for Workstations

Source: JICA Survey Team (2016)

OFD has developed PDA based system for field data collection. The salient features of the device and the developed app is described below.

The PDA device, designed for the harsh forest environs, will be used for geospatial validation of forestry accounts and incident reporting with features of foot patrolling, monitoring of poaching and tree-felling, survey and demarcation of forest land. The devices will geotag locations of the carriers and also automatically upload images with financial details of schemes and programmes which are being implemented<sup>4</sup>. The PDA, SXTreo T-51, uses a satellite-based navigation system known as GPS Aided GEO Augmented Navigation (or GAGAN) which is created by Airport Authority of India (AAI). It utilises ISRO satellites and has an accuracy of three meter. Developed fully on Open Source technologies and integrated with ISRO's Bhuvan, Sxtreo T51 does not incur any proprietary licensing software costs. All the data and apps reside in the data center servers managed and owned by the Odisha Forest Department ensuring complete data security.

<sup>4</sup><http://www.newindianexpress.com/states/odisha/2016/aug/10/Odisha-forest-dept-to-get-a-helping-hand-from-personal-digital-assistants-1507842.html>

### 5.8.2 Geomatic Cell, PMU, OFSDS

The Geomatic cell of PMU, established during OFSDP-I, is a nodal unit caters to the geospatial data and IT based requirements of projects under OFSDS as well as other OFD requirements. The cell is equipped with required infrastructure to support the project requirements. The details of the existing infrastructure are listed in below.

**Table 5.8.2 List of Infrastructure with Geomatic Cell, PMU, OFSDS**

Type	Quantity	Purpose
<b>A. Computer Hardware</b>		
<b>A.1. Work Station</b>		
1. Dell Precision T3610 (Year2014)	6	Data processing work
2. Dell Precision T5610 (Year2014)	2	
3. HP Z200 (Year2012)	1	
4. HP Pavillion (Year2006)	1	
<b>A.2. Servers</b>		
1. CentOS Server [PROLiont ML350p Gen8] 2013	1	System Backup
2. CentOS Server [Systemx3500 M4] 2013	3	Database, Application & Database
3. Windows Server [Systemx3400 M4] 2009	1	Windows Server
<b>A.3. Printer</b>		
1. A4 (B&W) [HP Laserjet P1108] 2013	1	Map, data and report printing
2. A4 & A3 (Color) [HP Laserjet CP5525] 2014	1	
3. A0 HP Plotter [HP Designjet T790] 2013	1	
<b>A.4. Scanner</b>		
1. A4/A3 Auto feeder [HP Scanjet N9120] 2013	1	Map and document scanning
2. A0 Scanner [Contex SD 3600] 2013	1	
<b>B. Software – GIS/MIS</b>		
<b>B.1. Customised Software</b>		
1. OFSDP Web-GIS		WebGIS app- upload, verify, view and print
2. OFSDP Mobile GIS		App for survey, photo capturing, data uploading
3. IGA MIS		IGA loan and business monitoring of SHGs
4. OFSDP MIS		Physical/financial monitoring of project activities
5. HRMIS		Human Resource MIS
<b>B.2. Proprietary software</b>		
1. Arc GIS 10.1	1	GIS data processing
2. Erdas Imagine	1	Satellite image processing
<b>B.3. Open Source</b>		
1. Quantum GIS		GIS data processing
2. Libre Office		Office automation
3. MapSource		GPS data downloading
4. Geo Server		Server for sharing geospatial data
5. Map Server		For publishing spatial data & mapping app to web
6. PostgreSQL with PostGIS spatial extensions		Object-relational database management system
<b>C. Equipment</b>		
<b>C.1. Survey Equipments</b>		
1. Total Station [Trimble M3] 2014	1	Survey and demarcation
2. DGPS [Trimble R6] 2014	2	Survey and demarcation
3. GPS [Garmin GPS Map 78] 2014	4	Survey and demarcation
4. GPS [Garmin 72H] 2010	1	Survey and demarcation
5. Mobile Devices [Samsung Note 2]	2	Mobile app for survey & photo recording
6. Mobile Devices [Samsung Grand 2]	5	Mobile app for survey & photo recording

Type	Quantity	Purpose
<b>C.2. Networking Equipments</b>		
1. D Link Wireless Router [DWL-3200AP]	1	Networking
2. DIGISOL Switch [DG-GS1026]	2	Networking
3. HP Router [HP-MSR2003]	1	Networking
2. D Link Router [DI-1705B]	1	Networking
<b>C.3. Uninterrupted Power Supply</b>		
1. 10 KV Online UPS	1	Power Supply backup
<b>C.4. Display Devices</b>		
1. Video Wall (HD) 1920	9	Video display of GIS data; training purpose

Source: JICA Survey Team (2016)

### 5.8.3 IT Infrastructure with Forest Divisions

All forest territorial divisions as well as wildlife divisions have varied type and number of IT infrastructure. Almost all divisions have computers, printers, GPS, Office automation software and Internet connection (**Attachment 5.8.1**). Some of the key findings based on the detailed inventory of the IT infrastructure is given below:

**Table 5.8.3 IT Infrastructure Available at Forest Divisions**

<p><b>Out of 32 Forest Territorial/Wild life Divisions for which data was made available till the time of writing of this report:</b></p> <ul style="list-style-type: none"> <li>➤ 31 Divisions out of 32 Divisions have computers in working condition, out of which 29 Divisions have more than 5 computers in working condition and 2 Divisions (Angul and Baliguda) have only 1 computer each in working condition; Phulbani Division does not have even a single computer in working condition.</li> <li>➤ 30 Divisions have 2 or more printers in working conditions. Anugul is having only 1 printer in working condition whereas Balliguda Division does not have even a single printer in working condition.</li> <li>➤ 24 Divisions have 2 or more GPS instruments in working condition. Bonai, Paralakhemundi and Mahanadi WLD is having only 1 GPS instrument in working condition, whereas Bargarh, Jeypore, Rayagada, Kalahandi North, Nayagarh and Rajnagar WL Division does not have even a single GPS. On the other hand Anugul, Baliguda, Bamra WL, Bolangir, Jharsuguda, Karanjia, Dhenkanal, and Raikhol Divisions are having 12, 16, 25, 51, 15, 25, 25, 26 number of GPS instruments respectively, and shows unequal distribution of the GPS instruments.</li> <li>➤ All 32 Forest Divisions are having broadband connections.</li> </ul>
---

Source: JICA Survey Team (2016)

### 5.8.4 IT Infrastructure with Forest Ranges

All forest territorial and wildlife ranges have varied type and number of IT infrastructure (**Attachment 5.8.2**). Some of the key findings based on the detailed inventory of the IT infrastructure of 180 ranges is given below:

- Around 20 out of 181 ranges (roughly 10%) do not have computers in working condition. This covers Baliguda (7 ranges), Jeypore (2 ranges), Phulbani (7 ranges), Anugul (1 range) and Keonjhar (2 ranges)
- Around 125 forest ranges have only 1 computer and 36 ranges are having 2-3 computers in working condition
- In total, 33 out of 181 ranges, i.e. 18%, do not have printer in working condition. This covers Baliguda (7 ranges), Deogarh (5 ranges), Jeypore (3 ranges), Phulbani (7 ranges), Bonai (3 ranges), Anugul (2 range), Keonjhar (1 ranges) and Atagarh (5 ranges)
- Total 14 ranges do not have a single GPS in working condition. This includes Phulbani (7 ranges), Bonai (6 ranges), and Keonjhar (1 range). Out of the remaining ranges nearly 118 are having 1-5 GPS, 25 ranges having 6-10 GPS, 36 ranges have between 11-25 no. of GPS instrument in working conditions.
- Around 137 ranges, i.e. 76% ranges, are having broadband connection and 42 do not have a broadband connection.

## Chapter 6. PROPOSED INTERVENTIONS

### 6.1 Overview of the Proposed Project

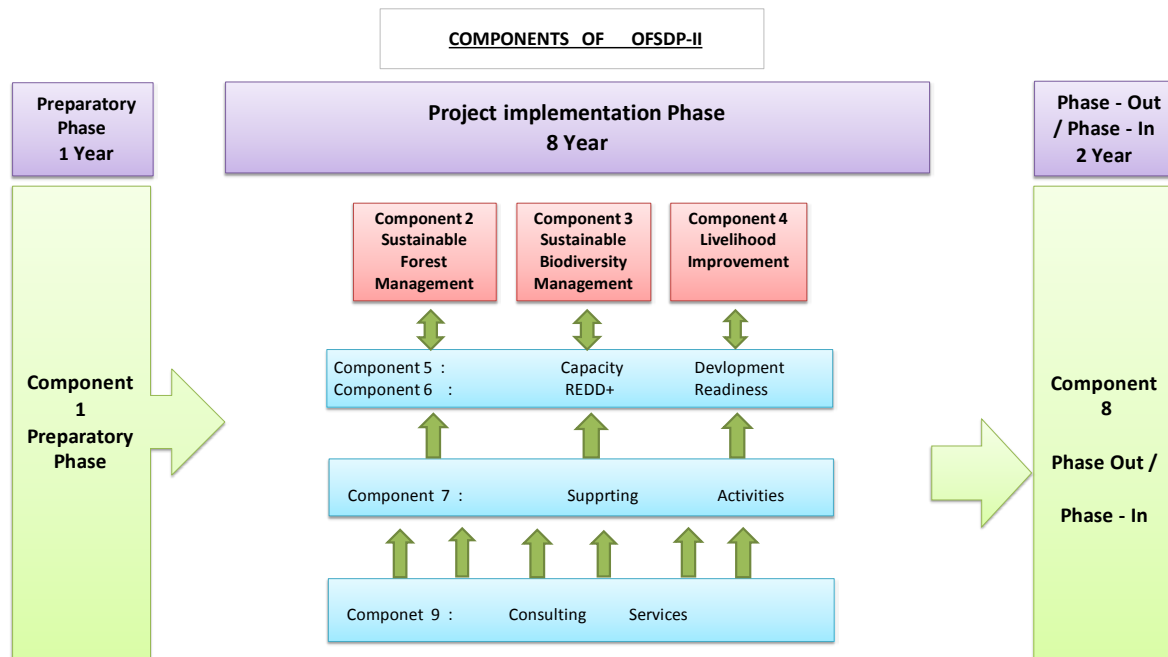
The overview of the project components is as given below.

**Table 6.1.1 Outline of OFSDP-II**

<b>Outline</b>	
Project Goal: The forest ecosystem in Odisha is improved.	
Project Objective: To enhance sustainable forest and biodiversity management practices and livelihood improvement in the project areas.	
Project Outputs	
<ul style="list-style-type: none"> <li>- To improve the forest in degraded forest areas</li> <li>- To enhance livelihoods to the forest fringe dwellers</li> <li>- To improve governance in sustainable forest management</li> <li>- To enhance the capacity of other stakeholders</li> <li>- To enhance biodiversity in the project areas</li> </ul>	
Duration of the Project: 10 Years (2017 – 2027)	
Total No of Divisions: 14 (including 2 Wildlife Divisions) Total No of Ranges: 50 No of VSSs to be covered: 1,200/ EDC: 25 JFM Mode Treatment Area: 60,000 ha Farm Forestry: 10,000 ha No of SHGs to be covered: 3,600 SHGs 3 REDD+ pilot divisions	
<b>Component/ Sub-Component</b>	
<b>1. Preparatory Works</b>	
1.1 Constitution of PMU, DMU, FMU and deployment of Staff 1.2 Deployment of NGOs for Community Development and SFM 1.3 Procurement of PMC (Component 9) 1.4 Orientation for PMU/ DMU/ FMU 1.5 Identification of VSSs 1.6 Survey and Demarcation	1.7 Review and Revision of Project Manuals/ Training materials 1.8 Engagement of VSS Animators 1.9 Micro Planning 1.10 Revisiting Micro Plan (4 <sup>th</sup> year) 1.11 Annual Planning 1.12 Social and Environmental Consideration
<b>2. Sustainable Forest Management</b>	
2.1 JFM Mode 2.1.1 Site Specific Plan (SSP) & Monitoring 2.1.2 Drainage Line Treatment (Ex-situ SMC Work) 2.1.3 ANR 2.1.4 Block Plantation 2.1.5 Fire Protection 2.2 Non JFM Mode 2.2.1 Consolidation and Demarcation of Forest Boundaries	2.2.2 Construction/ Improvement of Permanent Nurseries 2.2.3 Non-JFM Drainage Line Treatment (DLT) (Ex-situ SMC Work) 2.3 Farm Forestry 2.3.1 Promotion of Mixed Model 2.3.2 Scientific Management of Bamboo involving VSSs
<b>3. Sustainable Biodiversity Management</b>	
3.1 Sustainable Biodiversity Management Incorporating Concept of SATOYAMA Model	
3.2 Establishment of Scientific Monitoring System at Bhitarkanika	
<b>4. Livelihood Improvement</b>	
4.1 Community Development Fund 4.2 Promotion of IGAs 4.3 NTFP Based Livelihood Interventions	4.4 Livelihood Resource Centre 4.5 Annual Partner NGOs Review Meeting
<b>5. Capacity Development</b>	
5.1 Executing Agency 5.2 Community Institutions	5.5 Promotion of Product Cluster at DMU Level 5.6 Quality Enhancement of Kendu Leaf

5.3 Training of Partner NGOs 5.4 Training of Animators	5.7 Training & Extension of Farm Forestry 5.8 Capacity Development – REDD+ Readiness
<b>6. Research: REDD+ Readiness</b>	
<b>7. Supporting Activities</b>	
7.1 Institutional and Project Management Support 7.2 Monitoring & Evaluation 7.3 Communication/ Publicity	
<b>8. Phase-Out/ Phase-In</b>	
<b>9. Consulting Services</b>	

Source: JICA Survey Team (2016)



Source: JICA Survey Team (2016)

**Figure 6.1.1. Organisations of Project Components and Flow of the Phases**

## 6.2 Project Needs and Rationale

### 6.2.1 Project Needs

#### 1) Relevance and Linkages with Government Policies and Priorities

The proposed OFSDP-II is in conformity with Odisha Forestry Vision 2020, which determines the state level policies and visions for the forestry sector. Key features of the Odisha Forestry Vision 2020 are as follows:

- Improved forest extent and condition by increasing forest cover on forest lands and tree cover outside forests mainly on private lands as well as non-forest public lands
- Sustainable forest management through management plans, working plans and micro plans.
- Increased flow of NTFPs / timbers and access of the forest fringe dwellers to forest products for sustainable livelihoods.
- Biodiversity conservation strategies with protected areas and outside protected areas on a landscape level.
- Promotion of JFM strategies.
- Higher allocations, investment, insurance and incentives for better forest management.

## 2) Need to Enhance Forest Quality

Odisha State is located in the Eastern India with population of 41,974,000 and is endowed with rich natural resources. Odisha has good forest cover, most of which are found in the Eastern Ghats, central plateau and northern hill regions. Forest cover of the state has been improved from 48,855 km<sup>2</sup> in 2009 to 50,354 km<sup>2</sup> in 2015, which accounts for 32.3% of the total geographical area of the state.

Forests in the state are under constant threat because of increased biotic pressure, mining and other development activities. Incidences of man-animal conflict are on the rise due to the disruption in the habitat of the wildlife caused by the developmental activities and other human interferences. Unsustainable usage of forest resource by the forest dependent communities is also seen as one of the main drivers of forest degradation in Odisha.

The forest statistics indicate the increasing trend in the open forest areas (less than 10% canopy density) which accounts for 43.4% of the total forest areas of 50,354 sq. km. This could be interpreted as an indication of the degradation as well as the improvement of the forest quality. The key to the improvement of the forests in Odisha is how we improve the quality of open forest areas and bring them under the moderately dense and dense forest. Also from the carbon sequestration point of view, this would contribute to achieving the INDC submitted to UNFCCC which indicated that the 2.5 to 3 billion tons of carbon sinks to be created through enhancing the forest and tree cover.

## 3) High Dependency on the Forest Resources

In Odisha, fuel wood still remains a major source of household energy source in the rural area. 71.1% of the rural households use fuelwood and only 3.1% of the households have access to LPG (Census of India 2011). This has been seen one of the drivers of forest degradation in Odisha. Many of the forest fringe villages also derive income from NTFPs. For instance, in districts like Mayurbanj, Sundergarh, Keonjhar, Boudh, Phulbani, and Gajapati in Odisha, a tribal family could earn 50% of its annual income from forests by collecting NTFPs between April and September<sup>1</sup>. Kendu leaves, one of the main NTFPs in Odisha, are mostly collected by women and provides substantial income for them<sup>2</sup>.

These households dependent on the forest resources are largely Scheduled Tribes (ST) and Scheduled Castes (SC) communities. Odisha has a higher percentage of ST and SC population e.g. ST (22.8%) and SC (17.1 %) out of its total population. Wide



Source: JICA Survey Team (2016)

Figure 6.2.1. Livelihood-Forest Degradation Nexus

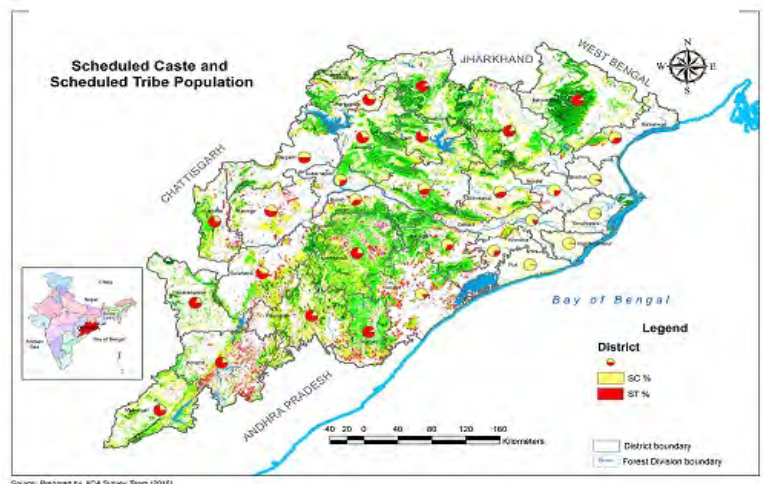


Figure 6.2.2. Distribution of SC/ ST Population

<sup>1</sup> Saxena, N.C. (2002). Livelihood Diversification and Non-Timber Forest Products in Orissa: Wider Lessons on the scope for policy Change. ODI working Paper 223.

<sup>2</sup> ibid

gaps are seen in socio economic indicators between the ST/ SC communities and other communities. Although significant improvements of poverty situation is reported during the period 2004-05 to 2011-12, at state level the poverty level among the ST/ SC communities persists. The incidences of poverty are the highest among the ST communities (63.53%) followed by SC communities (41.4%) in 2011-12<sup>3</sup>. These figures are significantly higher than those of India indicating 45.3% for ST communities and 31.5% for SC communities<sup>4</sup>.

In the OFSDP-II project areas, high concentration of ST population is seen in the northern part of the project areas and the same for SC population constitutes a central corridor across western and eastern Odisha where the forest cover is high. Thus, most of the OFSDP-II beneficiaries are likely to belong to ST/SC communities, whose economic status is poor. This is partly due to the limited livelihood options and increases their dependency on the forest resources which are common property resources and mostly available free of cost and available nearby their homesteads. This leads to the vicious cycle of overharvesting and degradation of the forest resources. As a consequence, vulnerability of the forest dependent households aggravated.

Under these circumstances, it is crucial to enhance and strengthen livelihood of the forest fringe communities who are highly dependent on forest ecosystem, especially of ST/SC communities, in order to address the problem of forest degradation and ultimately to conserve forest ecosystem. The livelihood interventions envisaged in OFSDP-II are highly relevant, which provide opportunities for such forest dependent communities to gain access to alternative livelihood options and help them manage the forest resources in a sustainable manner.

#### **4) Relevance of OFSDP-II to Japanese Policies toward Official Development Assistance and Opportunities for Collaboration with Local Government/ Community in Japan**

Japanese ODA policies also provides a rationale for OFSDP-II. As the project aims at sustainable forest management while promoting women empowerment and ultimately to climate change mitigation and adaptation, they are very much in consistent with the Japanese ODA policies.

##### ➤ Japanese Priorities in Official Development Assistance (ODA) (FY 2016-17)

The underlying principles of the Japanese Official Development Assistance (ODA) are to contribute to the peace, stability and sustainable development of the global society. In its ODA strategy, “disaster relief and capacity development towards disaster preparedness”, “gender” and “climate change” are the important areas. Partnership with international and regional institutions, private sector and NGOs is encouraged in implementing ODA.

##### ➤ MOU between the Ministry of Agriculture, Forestry and Fisheries of Japan and MoEF&CC, India (December 2015)

In December 2015, the Forest Agency of Japan and the Director of Forest Department of MoEF&CC exchanged an MOU towards enhanced collaboration between India and Japan in forestry sector for the duration of 5 years. In this MOU, both countries agreed to strengthen the collaboration in the following areas in the forestry and related sectors.

- 1) Human resource development and collaboration between the training institutions
- 2) Sustainable forest management
- 3) Forest conservation and disaster prevention in the hilly areas
- 4) Effective utilisation of forest resources
- 5) Sharing of knowledge and technology concerning forestry and forest policy
- 6) Research and Development in forestry sector.

<sup>3</sup> Annual Plan 2015-16, Government of Odisha.

<sup>4</sup> Panagariya, Arvind. (2013). Poverty by Social, Religious & Economic Groups in India and Its Largest States 1993-94 to 2011-12. Columbia University. Institute for Social and Economic Research and Policy. Working Paper No. 2013-02.



In the MOU, both countries agreed to establish a working group to prepare a roadmap to concretise the interventions related to above listed areas.

➤ Other relevant areas for potential collaboration between OFSDP-II and Japan

Furthermore, two approaches to sustainable forest management and livelihood improvement originate in Japan would provide a useful lessons for the project design and implementation. One is SATOYAMA Initiative and another is Rural Livelihood Improvement as known as “Seikatsu Kaizen”. In these aspects, OFSDP-II would benefit through collaboration with Japanese Local Government/ Civil Society Organisations and Research Institute, which can be effectively facilitated through JICA.

### 6.3. Project Objectives and Approaches

#### 6.3.1 Project Objective

The objective of the OFSDP-II is “to enhance sustainable forestry management, biodiversity conservation, and livelihood improvement of local people in the project area”. Ultimately, OFSDP-II aims at contributing to the improvement of forest ecosystem in Odisha.

#### 6.3.2 Approaches

Based on the lessons learned from OFSDP-I and for the enhanced sustainability of the project impacts, the following core approaches are adopted in OFSDP-II.

##### 1) Micro Plan as a Community Development Plan

One of the lessons learnt from OFSDP-I was that, in order to achieve sustainable forest management in JFM mode, it is important that the Micro Plan is holistic and addresses wider needs of the forest dependent communities. Therefore, OFSDP-II will adopt an approach to develop the Micro Plan at the VSS level as a platform for optimizing community development activities in addition to the sustainable management of forest. Furthermore, in order to make the Micro Plan a need-based community development plan and ensure optimum convergence with other government schemes and programs, coordination mechanism would be streamlined from State, District, Block, Gram Panchayat to the village level.

##### 2) Enhanced Support for Cluster Business Development and Developing Partnership Ecosystem

OFSDP-I succeeded in the livelihood improvement among the Women SHGs (WSHG) and managed to promote cluster based business activities. However, the lessons were learnt including: 1) necessity to aggregate the small scale livelihood activities at a cluster level to improve access to market through aggregation of products; 2) necessity of long term hand holding; 3) further improvement in quality of products and accommodate the market demands; and 4) limited access to financial institutions for working capital. In the post project period, OFSDS has been attempting to



Source: JICA Survey Team (2016)

**Figure 6.3.1. Challenges faced by the Cluster Level Organisations – Lessons Learnt from OFSDP-I and Other Similar Projects**

develop an ecosystem that can lead to private-community partnership in cluster business development that is market driven and sustainable.

In OFSDP-II, cluster based business promotion will also be planned and promoted from the early stage of the project and establishes an exclusive unit, Livelihood Resource Centre (LRC) will be established under PMU to provide specialised business promotion support for business planning, marketing, product development and facilitating linkages with financial institutions and other resource organisations. The partnership ecosystem will further be nurtured by LRC in the OFSDP-II areas to create an enabling environment for the cluster organisations in OFSDP-II to sustain themselves.

### **3) Creating Models for Community-Based Measurement, Reporting, Verification (CMRV) System for Sustainable Forest Management for Odisha and Beyond**

OFSDP-II will also adopt REDD+ framework for enhanced monitoring of the project outcomes. The MRV system will enable the project to monitor the changes in the carbon stock in the assigned areas of VSSs and also EDC areas where the biodiversity management interventions are planned. Such an attempt has not been made in many sites under the JICA assisted forestry sector projects so far. The attempts made by OFSDP-II will contribute to create a model for enhanced monitoring mechanism to assess the effectiveness of JFM interventions that can be adopted in other JICA assisted forestry sector projects and beyond.

Initially, OFSDP-II will select three pilot sites to establish the methodology for community based MRV and consolidate the data at PMU level, based on which the MRV system will gradually be rolled out to the rest of the project area. OFSDP-II can also function as a knowledge hub of REDD+ for the JICA assisted forestry sector project. Once OFD establishes a state level carbon monitoring system, the data collection system and data will be integrated.

### **4) Gender Mainstreaming**

The National Forest Policy 1988 has brought a paradigm shift to the forest management in India by mandating Joint Forest Management and recognizing the role of women's participation for sustainable forest management. The large number of the collectors of fuelwoods, fodder, and NTFPs are women and it continues to be so. As the forest resources get degraded, they spend more time to look for what they require for their family. In these days, they also need to take part in the economic activities to meet the household expenses while their domestic chore remains the same. Many households in Odisha still depend on fuelwoods and thus, the availability of the fuelwood especially affects their work load.

OFSDP-II, therefore, develops a gender mainstreaming strategy and action plan at the beginning of the project implementation and monitor the progress on a regular basis which enable the project not only to empower women in the project areas but also to safeguard their entitlement to their own well-being. Further, the project also ensures an opportunity for the communities to understand the role of women in forest management in the context of every-day-life and help them come up with the solution through micro planning process while offering livelihood options and improving forest resource base through forestry interventions. One way is to organize women's working group during the micro planning to ensure the opportunity for them to discuss and plan interventions reflecting their own needs. This will be reflected as a gender action plan of each VSS/ EDC and budget will also be prepared separately.

OFSDP-II also integrates the gender training as part of the training programmes for the project staff of all levels, partner NGO staff and VSS/ EDC/ SHG members. The project also places a nodal officer of gender mainstreaming at PMU and DMU levels and adopts monitoring indicators that capture gender dimensions. An indicative Gender Mainstreaming Strategy and Action plan is given in **Attachment 6.3.1**. The status of the gender monitoring indicators will be assessed by the gender nodal officer at PMU on a quarterly basis.

## 6.4 Prioritisation of the Project Sites

### 6.4.1 Prioritisation Criteria

The prioritisation of the Project sites was undertaken for divisions and ranges. The prioritisation criteria for divisions are described in **Table 5.1.1**. For the range level prioritisation, the following criteria were adopted. The scores for Range criteria are given in **Attachment 6.4.1**.

**Table 6.4.1 Prioritisation Criteria for Ranges**

Range
<b>【Exclusion Criteria】</b> 1. Ranges coming under the High or Medium Security Risks 2. Geographical Contiguity – only one range available for interventions has been excluded.
<b>【Prioritisation Criteria】</b> 1. % of Degraded Forest in the Range 2. Number of VSS 3. Concentration of SC/ST Population 4. % of female population who is literate (Higher the literacy/ lower the score)

Source: JICA Survey Team (2016)

### 6.4.2 Priority Divisions for OFSDP-II

As stated in **Section 5.1.2**, after the prioritisation exercise, 12 territorial divisions and 2 wildlife divisions have been identified for the project interventions. Further, range level prioritisation was done adopting the above range prioritisation criteria.

As has been discussed with OFSDS and OFD, the AJY overlapping is to be avoided in the OFSDP-II divisions. Therefore, VSSs originally targeted under AJY in the overlapping divisions will be transferred and managed by the OFSDP-II. In this connection, no AJY intervention will be implemented in the OFSDP-II prioritised divisions. There are 10 VSSs covered in Badgad range and Aska range in Ghumsur South division and 10 VSSs in Dhenkanal range, Dhenkanal divisions covered under Green India Mission (GIM) interventions. These VSSs will be excluded from the OFSDP-II interventions.

**Table 6.4.2 Priority Divisions and Number of Ranges for OFSDP-II**

No.	Division	No of Ranges	No of Potential OFSDP-II Ranges	Total No of VSSs in the potential OFSDP-II Ranges
T-1	Athamalik	5	3	99
T-2	Baripada	8	8	349
T-3	Boudh	5	3	103
T-4	Dhenkanal	8	8	320
T-5	Ghumsur North	5	4	179
T-6	Ghumsur South	5	3	102
T-7	Jharsuguda	5	5	137
T-8	Karanjia	6	6	193
T-9	Rairangpur	5	5	154
T-10	Sambalpur	5	5	216
T-11	Subarnapur	3	3	183
T-12	Sundargarh	6	6	331
W-1	Bamwar WL	-	1	26 (EDCs)
W-2	Rajnagar WL	-	-	
<b>Total of Territorial Divisions</b>		66	60	2,366+26

Source: JICA Survey Team (2016)

## 6.5. Project Components

Nine components proposed for OFSDP-II are described at **Sections 6.6 - 6.13** hereunder. Component-wise major work quantities are summarised in **Table 6.5.1**. Detail work quantities are described in **Attachment 6.5.1**.

**Table 6.5.1 Major Work Quantities of OFSDP-II**

Component	Main Activity	Unit	Quantity
<b>Component 1: Preparatory Works</b>			
1.1	Constitution of PMU, DMU, FMU and deployment of Staff	PMU/DMU /FMU	1/12/50
1.2	Deployment of NGOs for Community Development and SFM (7 years)	FMU	50
1.3	Procurement of PMC (Component 9)		
1.4	Identification of VSSs (By PMU/ DMU/ FMU)	VSS	1,200
1.5	Survey and Demarcation	VSS	1,200
1.6	Review and Revision of Project Manuals/ Training materials	LS	10
1.7	Engagement of VSS/ EDC Animators: Core Period (3 years) , Follow-up/ Phase-out Period (1 year)	VSS	1,200
1.8	Micro Planning	VSS	1,200
1.9	Revisiting Micro Planning (after 4th year)	VSS	1,200
1.10	Annual Planning	VSS	1,200
1.11	Social and Environmental Consideration (Expert)	man-days	180
<b>Component 2: Sustainable Forest Management</b>			
2.1	JFM-Mode		
2.1.1	Site Specific Plan (SSP) & Monitoring	VSS or 100ha	1,200
2.1.2	JFM Mode Drainage Line Treatment (Ex-situ SMC Work)	ha	1,500
2.1.3	ANR	ha	51,000
2.1.4	Block Plantation	ha	9,000
2.1.5	Fire Protection	km	1,710
2.2	Non JFM Mode		
2.2.1	Consolidation and Demarcation of Forest Boundaries	km	1,898
2.2.2	Construction /Improvement of Permanent Nurseries	nursery	6
2.2.3	Non-JFM Drainage Line Treatment (DLT) (Ex-situ SMC Work)	ha	750
2.3	Farm Forestry	ha	10,000
<b>Component 3: Sustainable Biodiversity Management</b>			
3.1	Sustainable Biodiversity Management incorporating concept of SATOYAMA model	Site	1
3.2	Establishment of Scientific Monitoring System at Bhitarkanika	year	5
<b>Component 4: Livelihood Improvement</b>			
4.1	Community Development Fund	VSS	1,200
4.2	Promotion of IGAs	VSS	1,200
4.3	Livelihood Resource Centre (LRC)	no	1
4.4	NTFP Based Livelihood Interventions	DMU	6
4.5	Annual Partner NGOs Review Meeting	years	8
<b>Component 5: Capacity Development</b>			
5.1	Executing Agency		
5.1.1	Training Plan Development	LS	1
5.1.2	Regular Trainings: PMU/DMU and FMU	batches	5-7

Component	Main Activity	Unit	Quantity
5.1.3	Refresher Trainings: PMU/DMU and FMU	batches	4-8
5.1.4	Exposures	batches	3-80
5.1.5	National Workshop	stage	1
5.1.6	Institutional Capacity Impact Assessment	stage	3
5.2	Community Institutions		
5.2.1	Training of SHGs	VSS	1,200
5.2.2	Skill Training to promote IGAs	FMU/VSS	50/ 1,200
5.2.3	Training of VSS/ EDC	VSS	1,200
5.2.4	Exposure visits (within the DMU) - by DMU	batches	240
5.2.5	Exposure visits (within the State) - by PMU	batches	120
5.2.6	Exposure visits (Outside of the State)	DMU	12
5.2.7	Gender Training	VSS/ SHG	1,200/ 3,600
5.3	Training of Partner NGOs	batches	12
5.4	Training of Animators	FMU	50
5.5	Promotion of Product Cluster at DMU Level		
5.5.1	Institution Development	DMU	12
5.5.2	Skill Training	DMU	12
5.6	Training & Extension of Farm Forestry	ha	10,000
5.7	Capacity Development - REDD+ Readiness	batches	2-48
<b>Component 6: Research</b>			
6.1	REDD+ Readiness	l.s.	1
<b>Component 7: Supporting Activities</b>			
7.1	Institutional and Project Management Support		
7.1.1	Strengthening of PMU Office	nos.	1
7.1.2	Strengthening of DMU Office	DMU	12
7.1.3	Strengthening of FMU Office	FMU	50
7.1.4	Strengthening of Circle Office	Circles	6
7.2	Monitoring & Evaluation (M&E)		
7.2.1	Monitoring	LS	1
7.2.2	Impact Assessment	LS	1
7.2.3	Audits	LS	1
7.3	Communication/ Publicity		
7.3.1	Knowledge Management Support	year	8
7.3.2	Internal Communication Support	year	9
7.3.3	External Communication Support	VSS/ years	1,200/ ~9
<b>Component 8: Phase-Out/ Phase-In</b>			
8.1	Preparation of Phase-Out/ Phase-In	LS	1

Source: JICA Survey Team (2016)

## 6.6 “Component 1: Preparatory Works”

### 6.6.1 “1.1 Constitution of PMU, DMU, FMU and Deployment of Staff”

As soon as the project implementation begins, PMU, DMU and FMU will be constituted and the staff to be deployed for the positions as stipulated in the institutional arrangement in **Chapter 8**.

### 6.6.2 “1.2 Deployment of NGOs for Community Development and SFM”

OFSDP-II will engage 12 partner NGOs (PNGOs) for implementing the field level activities. Each PNGO will provide a team of 3 personnel comprised of Team Leader, Development Officer in charge of Community Development and Livelihoods and another officer in charge of NRM, Farm Forestry and Institutional Linkages at each FMU. The Team will work under the directions of DMU Chief and under guidance of FMU Chief. The Team will report to FMU Chief. PNGOs will be procured centrally by PMU. The indicative TOR is given in **Attachment 6.6.1**.

The key objectives of engagement of Partner NGOs are: a) to ensure institutional strengthening and sustainability of VSSs, EDCs and SHGs, so that they would be managing the assets created or developed by the Project in an equitable and sustainable manner, b) to enhance the participation of VSSs, EDCs and SHGs in project planning and implementation of project activities, and c) to ensure rigorous engagement of SHGs in different livelihood activities round the year to enhance their income and to reduce the risks of livelihood insecurities.

**Table 6.6.1 Indicative PNGO Deployment Schedule**

Team to be deployed	Yr. 1 (2nd Quarter)	Yr. 2	Yr. 3	Yr. 4	Yr. 5	Yr. 6	Yr. c7	Yr. 8
Team Leader (Nos.)	Selection process	50	50	50	50	50	50	50
Development Officer (Community Development and Livelihoods) (Nos.)	Selection process	50	50	50	50	50	50	50
Development Officer (NRM, Farm Forestry and Institutional Linkages) (Nos.)	Selection process	50	50	50	50	59	50	50

Source: JICA Survey Team (2016)

### 6.6.3 “1.3 Procurement of Project Management Consultants (PMC)”

The objective of the consulting services is to provide the technical and managerial assistance to the Project Management Unit of OFSDP-II. A team of international and national specialists are proposed to bring in the global perspectives and to provide technical and managerial back stopping. The duration of the consulting services is planned for 4 years.

**Table 6.6.2 Indicative Team Composition of the Project Management Consultants (PMC)**

International	National
1. Biodiversity 2. REDD+	1. Team Leader/ Community Development/ Gender 2. Community Forest Management/ Micro Planning 3. Livelihood Support 4. Institutional Capacity Building/ Training 5. M&E/ MIS 6. GIS/ Remote Sensing 7. REDD+

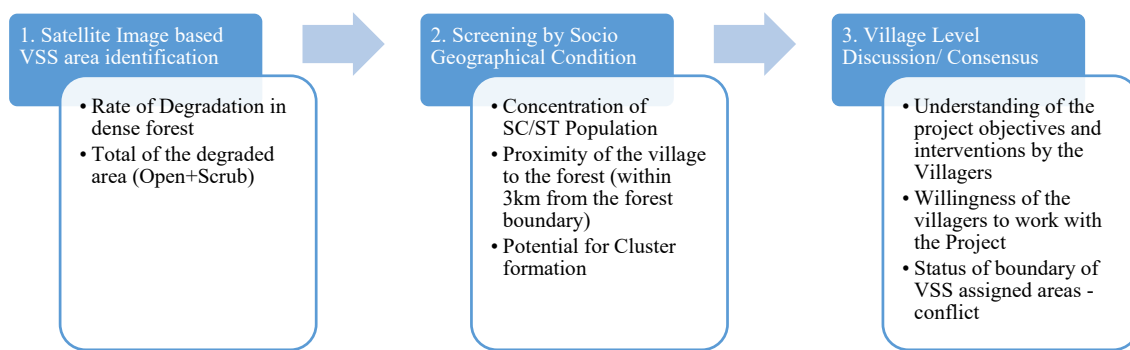
Source: JICA Survey Team (2016)

### 6.6.4 “1.4 Orientation for PMU/ DMU/ FMU by PMU”

The orientation for the PMU, DMU, and FMU staffs will be conducted in order to establish a shared understanding of the project objectives and approaches of OFSDP-II. An overview of the implementation, monitoring and reporting modalities, and financial flow will also be given during the orientation. The orientation will be organised and conducted by the key personnel of PMU once the project staff are deployed.

### 6.6.5 “1.5 Identification of VSSs (by PMU/ DMU/ FMU)”

VSS identification and selection will be carried out within each FMU following the three stages indicated below.



Source: JICA Survey Team (2016)

**Figure 6.6.1. Suggested Steps in Identifying VSSs to be Covered under OFSDP-II**

A set of criteria will be adopted at each stage of screening of VSSs. The scores to be allocated will be defined by PMU at the beginning of the VSS identification process. During the third stage, the project will make an entry to the VSSs and explain the project objectives, approaches and possible interventions to the VSSs. Once the villagers agree, a resolution can be recorded in the minutes book of the Palli Sabha/ Gram Sabha as well as that of the VSS/EDC's. As for Dhenkanal and Ghumsur South, the VSSs covered under GIM will be excluded from the selection process.

**Table 6.6.3 Indicative VSS Selection Process and Criteria**

Stage	Criteria	Description of Scores
1. Satellite image based VSS area identification	1-1. Rate of Degradation in dense forests (High and Medium Density forest areas)	Higher score for the higher rate of degradation
	1-2. Total degraded area (Open+ Scrubs)	Higher score to be given to the areas having larger degraded areas
2. Screening by Socio-geographical condition	As in <b>Attachment 6.6.2</b>	
3. Village Level Discussion/ Consensus	3-1. Status of boundary of VSS assigned area – clear of boundary disputes/ conflict	The presence of conflict/ disputes will lead to exclusion of the VSS from the project.
	3-2. Willingness of the villagers to work with the project	2/3 or more number of villagers will indicate the willingness to work with the project.

Source: JICA Survey Team (2016)

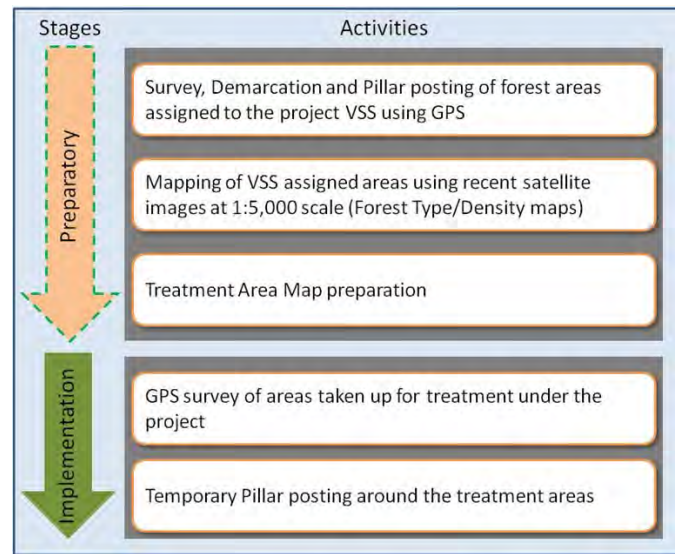
### 6.6.6 “1.6 Survey and Demarcation”

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

The mapping of the forest resources is required for site specific treatment required for forestry and soil and moisture conservation (SMC). Present Land use/ Forest resource mapping must be done at an appropriate scale, preferably at 1: 5,000 scale and must be used for preparation of treatment maps. The work has significance as it is required to be completed so as to utilise the set of maps during micro planning.

For areas under non-JFM mode as well, it is recommended that all the treatment areas/sites under the project must also be surveyed using GPS as part of monitoring mechanism.

The broad activities under the survey, demarcation and mapping work are illustrated in **Figure 6.6.2**.

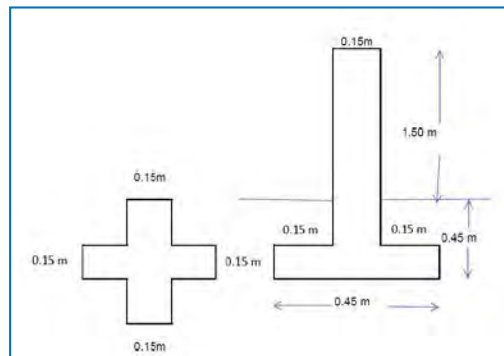


Source: JICA Survey Team (2016)

**Figure 6.6.2 Flow of Survey and Demarcation Activities**

### 1) Survey and Demarcation and Pillar Posting of VSS Assigned Areas

It is necessary and highly recommended to involve the community in the survey, demarcation and pillar posting work. This would also help in conflict resolution between neighbouring villages/VSS. The activity of survey and demarcation work need to start after a resolution in the GB meeting and the date must be informed well in advance. Also, it is advisable to inform the neighbouring villages/VSS so that their representative is also available during the survey and demarcation/pillar posting work.



Source: JICA Survey Team (2016)

**Figure 6.6.3 Proposed Size and Design of Pillar for Boundary of VSS Assigned Areas**

Each pillar with a dimension of 15cm x 15cm x 195cm, roughly totalling to around 40 boundary pillars per 100 ha area, need to be posted along the boundary of the VSS assigned areas. After completion of posting of pillars, GPS coordinates of each boundary pillar need to be recorded appropriately with required positional accuracy of +/- 3 meters. Respective DMU Staff should do the GPS based boundary survey of the VSS assigned areas under the supervision/guidance of the Geomatics cell of PMU.



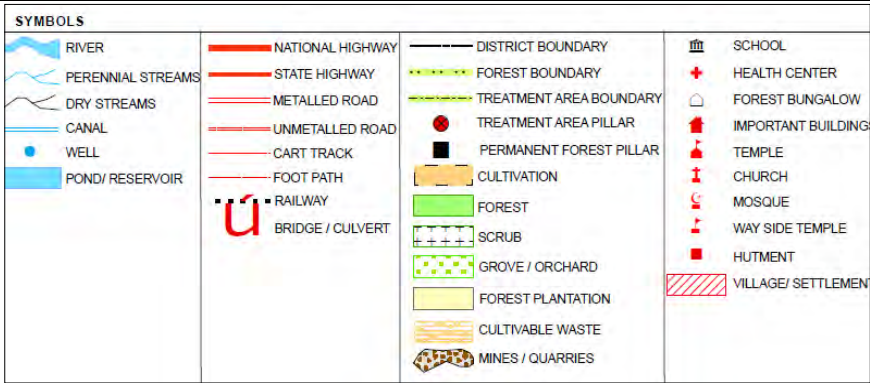
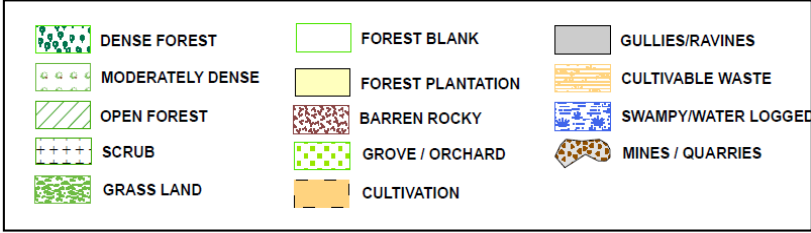
## 2) Satellite Based Mapping at 1:5,000 Scale

During OFSDP-I the survey and mapping work that included differential GPS survey of VSS assigned areas/boundaries and satellite based maps (base map, land use/cover and forest map) for each VSS, was outsourced to specialised survey and mapping agencies during the micro planning stage.

Under OFSDP-II, in addition to the above mentioned three types of maps, additionally ‘potential treatment map’ will be prepared as part of 1: 5,000 scale mapping. The ‘Potential Treatment map’ will be very useful during micro planning and assist in deciding the treatment activities to be taken up under OFSDP-II in each VSS areas based on the land potentiality depicted on the map.

The three types of maps prepared during OFSDP-I and the proposed types of maps to be prepared under OFSDP-II are described in the following table.

**Table 6.6.4 Descriptions of Maps Prepared during OFSDP-I and Proposed for OFSDP-II**

Type of Map	Features Depicted on the Map
1. Base map OFSDP-I	 <p><b>SYMBOLS</b></p> <ul style="list-style-type: none"> <li>RIVER</li> <li>PERENNIAL STREAMS</li> <li>DRY STREAMS</li> <li>CANAL</li> <li>WELL</li> <li>POND/ RESERVOIR</li> <li>NATIONAL HIGHWAY</li> <li>STATE HIGHWAY</li> <li>METALLED ROAD</li> <li>UNMETALLED ROAD</li> <li>CART TRACK</li> <li>FOOT PATH</li> <li>RAILWAY</li> <li>BRIDGE / CULVERT</li> <li>DISTRICT BOUNDARY</li> <li>FOREST BOUNDARY</li> <li>TREATMENT AREA BOUNDARY</li> <li>TREATMENT AREA PILLAR</li> <li>PERMANENT FOREST PILLAR</li> <li>CULTIVATION</li> <li>FOREST</li> <li>SCRUB</li> <li>GROVE / ORCHARD</li> <li>FOREST PLANTATION</li> <li>CULTIVABLE WASTE</li> <li>MINES / QUARRIES</li> <li>SCHOOL</li> <li>HEALTH CENTER</li> <li>FOREST BUNGALOW</li> <li>IMPORTANT BUILDING</li> <li>TEMPLE</li> <li>CHURCH</li> <li>MOSQUE</li> <li>WAY SIDE TEMPLE</li> <li>HUTMENT</li> <li>VILLAGE/ SETTLEMENT</li> </ul>
OFSDP-II	All base layers like settlements, water bodies, various road types, health care centre, school, post office, bank, market place, broad land use/cover, different admin boundaries, various admin and forest boundaries.
2. Land use/ Land cover map OFSDP-I	 <ul style="list-style-type: none"> <li>DENSE FOREST</li> <li>MODERATELY DENSE</li> <li>OPEN FOREST</li> <li>SCRUB</li> <li>GRASS LAND</li> <li>FOREST BLANK</li> <li>FOREST PLANTATION</li> <li>BARREN ROCKY</li> <li>GROVE / ORCHARD</li> <li>CULTIVATION</li> <li>GULLIES/RAVINES</li> <li>CULTIVABLE WASTE</li> <li>SWAMPY/WATER LOGGED</li> <li>MINES / QUARRIES</li> </ul>
OFSDP-II	Detailed land use, land cover categories etc.

Type of Map	Features Depicted on the Map																																																																				
3. Forest map OFSDP-I	<table border="1"> <thead> <tr> <th colspan="5">FOREST</th> </tr> <tr> <th>MAP UNITS</th> <th>FOREST CLASS</th> <th>FOREST TYPE</th> <th>REGENERATION STATUS</th> <th>SOIL TYPE &amp; CONDITION</th> </tr> </thead> <tbody> <tr> <td></td> <td>DENSE (&gt; 70 %)</td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>MODERATELY DENSE (40% - 70%)</td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>OPEN FOREST (10% - 40%)</td> <td>Tropical Dry Deciduous</td> <td>Good</td> <td>Sandy Loam with Boulders</td> </tr> <tr> <td></td> <td>SCRUB (&lt; 10 %)</td> <td>Tropical Dry Deciduous</td> <td>Poor</td> <td>Sandy Loam with Boulders</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th colspan="2">FOREST CONDITION</th> </tr> </thead> <tbody> <tr> <td></td> <td>SAL FOREST (POLE CROP &amp; ABOVE)</td> </tr> <tr> <td></td> <td>SAL FOREST (SAPLING)</td> </tr> <tr> <td></td> <td>SAL ROOTED WASTES</td> </tr> <tr> <td></td> <td>MISCELLANEOUS FOREST (POLE CROP &amp; ABOVE)</td> </tr> <tr> <td></td> <td>MISCELLANEOUS FOREST (SAPLING)</td> </tr> <tr> <td></td> <td>MISCELLANEOUS SCRUB FOREST</td> </tr> <tr> <td></td> <td>BAMBOO AREA</td> </tr> <tr> <td></td> <td>FOREST BLANK</td> </tr> <tr> <td></td> <td>UNPRODUCTIVE AND BARREN AREA</td> </tr> <tr> <td></td> <td>FOREST PLANTATION (TEAK)</td> </tr> <tr> <td></td> <td>FOREST PLANTATION (EUCALYPTUS)</td> </tr> <tr> <td></td> <td>FOREST PLANTATION (ACACIA)</td> </tr> <tr> <td></td> <td>FOREST PLANTATION (CASHEW)</td> </tr> <tr> <td></td> <td>FOREST PLANTATION (CASURINA)</td> </tr> <tr> <td></td> <td>FOREST PLANTATION (CHAKUNDA)</td> </tr> <tr> <td></td> <td>FOREST PLANTATION (SIMAROUBA)</td> </tr> <tr> <td></td> <td>FOREST PLANTATION (MISCELLANEOUS)</td> </tr> <tr> <td></td> <td>ELEVATION LINE (20 meters interval)</td> </tr> </tbody> </table>	FOREST					MAP UNITS	FOREST CLASS	FOREST TYPE	REGENERATION STATUS	SOIL TYPE & CONDITION		DENSE (> 70 %)					MODERATELY DENSE (40% - 70%)					OPEN FOREST (10% - 40%)	Tropical Dry Deciduous	Good	Sandy Loam with Boulders		SCRUB (< 10 %)	Tropical Dry Deciduous	Poor	Sandy Loam with Boulders	FOREST CONDITION			SAL FOREST (POLE CROP & ABOVE)		SAL FOREST (SAPLING)		SAL ROOTED WASTES		MISCELLANEOUS FOREST (POLE CROP & ABOVE)		MISCELLANEOUS FOREST (SAPLING)		MISCELLANEOUS SCRUB FOREST		BAMBOO AREA		FOREST BLANK		UNPRODUCTIVE AND BARREN AREA		FOREST PLANTATION (TEAK)		FOREST PLANTATION (EUCALYPTUS)		FOREST PLANTATION (ACACIA)		FOREST PLANTATION (CASHEW)		FOREST PLANTATION (CASURINA)		FOREST PLANTATION (CHAKUNDA)		FOREST PLANTATION (SIMAROUBA)		FOREST PLANTATION (MISCELLANEOUS)		ELEVATION LINE (20 meters interval)
FOREST																																																																					
MAP UNITS	FOREST CLASS	FOREST TYPE	REGENERATION STATUS	SOIL TYPE & CONDITION																																																																	
	DENSE (> 70 %)																																																																				
	MODERATELY DENSE (40% - 70%)																																																																				
	OPEN FOREST (10% - 40%)	Tropical Dry Deciduous	Good	Sandy Loam with Boulders																																																																	
	SCRUB (< 10 %)	Tropical Dry Deciduous	Poor	Sandy Loam with Boulders																																																																	
FOREST CONDITION																																																																					
	SAL FOREST (POLE CROP & ABOVE)																																																																				
	SAL FOREST (SAPLING)																																																																				
	SAL ROOTED WASTES																																																																				
	MISCELLANEOUS FOREST (POLE CROP & ABOVE)																																																																				
	MISCELLANEOUS FOREST (SAPLING)																																																																				
	MISCELLANEOUS SCRUB FOREST																																																																				
	BAMBOO AREA																																																																				
	FOREST BLANK																																																																				
	UNPRODUCTIVE AND BARREN AREA																																																																				
	FOREST PLANTATION (TEAK)																																																																				
	FOREST PLANTATION (EUCALYPTUS)																																																																				
	FOREST PLANTATION (ACACIA)																																																																				
	FOREST PLANTATION (CASHEW)																																																																				
	FOREST PLANTATION (CASURINA)																																																																				
	FOREST PLANTATION (CHAKUNDA)																																																																				
	FOREST PLANTATION (SIMAROUBA)																																																																				
	FOREST PLANTATION (MISCELLANEOUS)																																																																				
	ELEVATION LINE (20 meters interval)																																																																				
OFSDP-II	Forest density, type, regeneration status, forest condition, soil type, elevation etc.																																																																				
4. Potential treatment map OFSDP-I	Not Prepared																																																																				
OFSDP-II	Site specific potential treatment based on site conditions – using all above mentioned data layers as input and in line to the Working Plan.																																																																				

Source: JICA Survey Team (2016)

Considering the sheer number of VSS under the project and their spread, quantum of the overall work and the total turnaround time required to complete the survey, demarcation and 1:5,000 scale mapping work, it is recommended that the survey and demarcation work to be done in-house by the respective DMUs. PMU will outsource 1:5,000 scale mapping work to the specialised mapping agency(s), which are procured at once prior to the mapping exercises. The contracts with the specialised mapping agency(s) will be renewed at the every batch after reviewing the quality of outputs. It is highly recommended to involve and consult the community and the local forest staff during the field survey and ground truthing for 1:5,000 scale mapping as well.

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

### 3) Situational Analysis for Survey, demarcation and mapping activity:

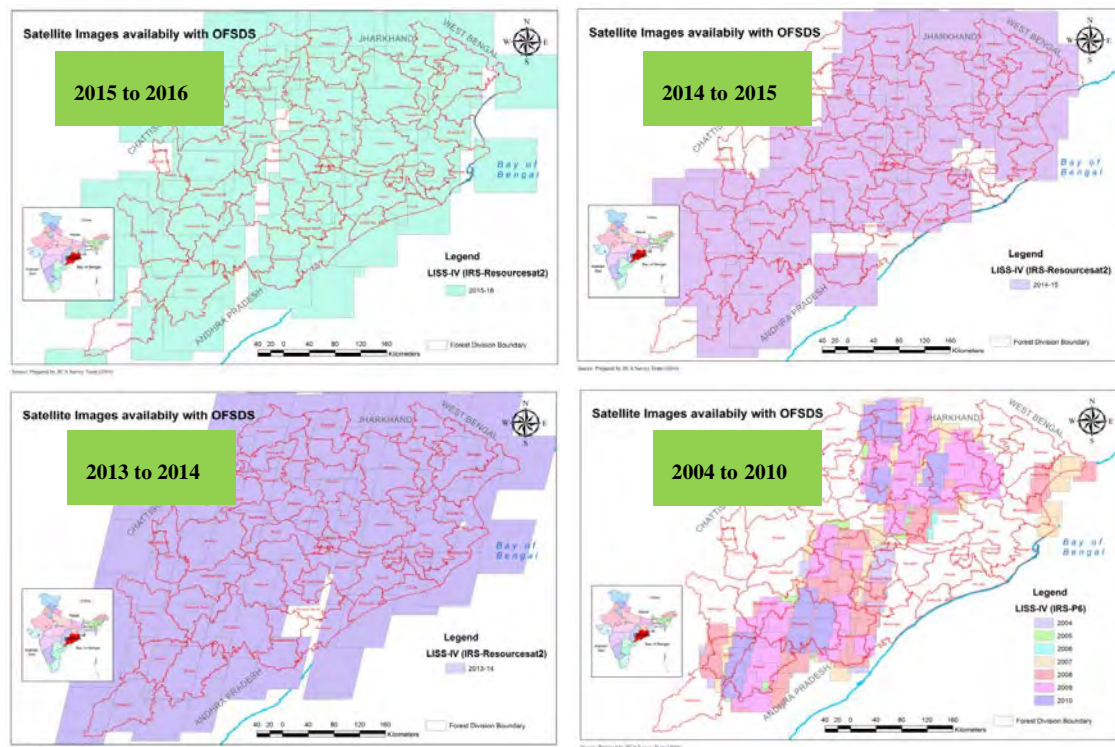
The situational analysis for survey and demarcation and 1:5,000 scale mapping of present land use and forest map under OFSDP-II along with key action points are depicted in **Table 6.6.5** below.

**Table 6.6.5 Survey, Demarcation and Mapping Activities with Key Action Items**

Items	Existing Resources	Action Items
Technical Staff	<ul style="list-style-type: none"> <li>-Existing capacity with GIS cell is technically equipped in GPS survey and satellite based preparation of maps at 1:5,000 scale for planning purpose</li> <li>-Within GIS cell all the staff members are from technical IT/GIS/RS fields and are having limited understanding of forestry.</li> </ul>	<ul style="list-style-type: none"> <li>-Under OFSDP-II it is recommended that a DCF ranked officer with expertise in forestry and understanding of GIS may be deputed as DPD, in-charge of the GIS cell. He can assist in the process of 1:5,000 scale forest mapping as well.</li> <li>-At DMUs one NRM expert (proposed) would assist in field data collection and verification and</li> </ul>

Items	Existing Resources	Action Items
		data checking.
Hardware and Software	-Relevant IT infrastructure required for performing the required mapping activities and preparation of good quality maps is already in place with GIS cell of PMU.	-For additional staff (proposed for GIS cell) required IT hardware will be procured. Required handheld PDA GPS device with survey app would be procured. (Details of identified IT infrastructure requirement of the PMU, that includes GIS cell as well, is presented in <b>Section 6.12.1</b> ).
Satellite images	-IRS LISS-IV Mx (Resourcesat-1) is available from 2004 to 2010 (covering OFSDP-1 areas) -IRS LISS-IV Mx (Resourcesat-2) is available for 3 time periods: 2013-14, 2014-15 and 2015-16 (almost entire State level coverage is available). For details refer <b>Figure 6.6.4</b> below. -Cartosat images available for OFSDP-I project sites.	-LISS-IV Mx images of IRS Resourcesat-2 satellite or equivalent (multispectral images with 5 meters spatial resolution) will be procured for the entire state. Images to be procured each year due to staggered implementation in various batches.
Forest admin boundary data	-ORSAC is working on rationalisation of forest administrative boundaries	-Available forest admin boundaries may be utilised

Source: JICA Survey Team (2016)



Source: JICA Survey Team (2016)

**Figure 6.6.4 Existing LISS-IV Satellite Images Along with Area Coverage Available with OFSDP**

The details of the existing Cartosat-1 and LISS-IV Mx satellite images available with OFSDS, procured under OFSDP-1 project, are provided in **Table 6.6.6**.

**Table 6.6.6 Details of Existing Satellite Images with OFSDS**

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

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

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

Source: JICA Survey Team (2016)

#### 4) Proposed Plan of Survey, Demarcation and Mapping

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

**Table 6.6.7 Proposed Plan of Survey, Demarcation and Mapping**

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


Source: JICA Survey Team (2016)

#### 5) Satellite Imageries

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

**Table 6.6.8 Details of Satellite Images to be Procured for 1:5000 Scale Mapping**

Satellite Product	Product	No of Images Required (Approx.)	Proposed Cartosat-1 PAN and LISS-IV MX Satellite Image Schedule																											
			2016				2017				2018				2019				2020				2021				2022			
			Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct
PAN (Cartosat-1)	PAN	320	Images for Batch-1/2/3																											
LISS-IV Mx (Resourcesat-1/2)	Geo-referenced/ Ortho kit	75	Images for Batch-1																											
		75	Images for Batch-2																											
		75	Images for Batch-3																											

 Image acquisition months

Source: JICA Survey Team (2016)

### 6.6.7 “1.7 Review and Revision of Project Manuals/ Training materials”

During OFSDP-I, a set of manuals and guidelines were developed. PMU will review and revise such documents and revise accordingly to accommodate the requirements of OFSDP-II. Training materials will also be prepared according to the training programmes planned under OFSDP-II. The existing manuals and guidelines are given below.

**Table 6.6.9 Guidelines and Manuals for OFSDP-II**

To be Reviewed and Revised	Indicative List of Manuals to be Prepared
➤ Operation Manual	➤ Survey and Mapping Manual
➤ Micro plan Preparation handbook for facilitators	➤ Biomass Assessment Manual
➤ Handbook of Micro planning	➤ High-Tech Nursery Guideline <sup>5</sup>
➤ Micro Plan format (Odiya)	➤ SHG Group Management Manual
➤ VSS Management Manual (English)	➤ Gender Monitoring Manual
➤ VSS Management Manual (Odiya)	➤ M&E Manual
➤ Revolving Fund	➤ Q-GIS Manual
➤ Grounding IGAs	➤ Web-GIS Operation Manual
➤ Guideline on Corpus Fund	➤ GPS Manual
➤ SHG MIS Manual	➤ Financial Management and Accounting Manual
➤ Manual on Mobile Application	

Source: JICA Survey Team (2016)

### 6.6.8 “1.8 Engagement of VSS/ EDC Animators”

Once the VSS/ EDCs to be supported by OFSDP-II, animators to act as a community resource person will provide support to VSS/ EDCs and SHGs. Under OFSDP-II, each VSS/ EDC will select one male and one female animator among the VSS/ EDC members by their consensus. The honorarium will be borne by OFSDP-II and paid directly by the respective VSS/ EDC for the initial 3 years of each batch. In the 4<sup>th</sup> year from the engagement, one animator will be selected by the consensus of the VSS/ EDC members for the phase-out/ follow up for the duration of 1 year. The suggested TOR of Animators is

<sup>5</sup> The findings as well as lessons learnt from establishment of high-tech nurseries under the Project and seedling production at such high-tech nurseries will be compiled as the guideline. The guideline is aimed for extension of the extension and dissemination of high-tech nursery construction technology/skills as well as seedling productions technology/skills to other divisions within the state. The preparation of the guideline is planned to outsourced to competent expert/agency.



given in **Attachment 6.6.3**. PMU will finalise the selection process and TOR of the animators prior to the VSS/ EDC selection.

**Table 6.6.10 Indicative Deployment Plan for the Animators**

Batch	Yr. 2	Yr. 3	Yr. 4	Yr. 5	Yr. 6	Yr. 7	Yr. 8
Batch 1 – 300 nos. of VSSs and EDCs (core deployment period – 3 years)	600 (0.5yr)	600	600	600 (0.5yr)			
Batch 2 – 400 nos. VSSs and EDCs (core deployment period – 3 years)		800	800	800			
Batch 3 – 350 nos. VSSs and EDCs (core deployment period – 3 years)			700	700	700		
Batch 4 – 150 nos. VSSs and EDCs (core deployment period – 3 years)				300	300	300	
Batch 1 – follow up period for one year				300 (0.5yr)	300 (0.5yr)		
Batch 2 – follow up period for one year					400		
Batch 3 – follow up period for one year						350	
Batch 4 – follow up period for one year							150

Source: JICA Survey Team (2016)

### 6.6.9 “1.9 Micro Planning”

Under this project, the roles of VSSs/ EDCs are visualised beyond the guardian of the natural resources: an entity that contributes to the overall well-being of the village. For this reason, micro planning process will be very important, through which the community members would learn to plan, implement and monitor community development activities, and acquire skills of problem solving. Furthermore, the process of convergence would require the VSSs/ EDCs to approach and work closely with Palli Sabha and Gram Sabha. This would help the VSSs/ EDCs to become an integral part of the community development process, which would help them continue to function as a total community development institution.

Micro planning is to be an empowering process, which helps communities to understand themselves, their institutions and resources, problems and challenges in resource management, poverty reduction and village development, own strengths and weaknesses. Further it should help them to plan for their own community development, livelihood enhancement and sustainable forest management. The process builds a strong foundation for collective and collaborative action by the communities and other state & non-state development actors. Thus the planning methods will be simplified to the extent that the villagers themselves can continue to own and practice even beyond the project period.

The micro plan will be a comprehensive village development plan with a special focus on forest conservation, wildlife protection, tree planting outside forest and sustainable forest management. The micro plan will guide the VSS and OFD to determine the quantum of works to be taken up with the help of Project and resources need to be raised from other sources for implementation of priority activities by the VSS. The Project will largely follow the guidelines, manuals and proforma developed during OFSDP-I with some minor modifications.

As described in **Chapter 7**, the Environment and Social Management System Framework (ESMSF) and the Scheduled Tribe and Forest Dependents Plan Framework (STFDPF) will be prepared and applied as safeguards documents for the Project. Social assessments and other activities/processes at the community level and required for the planning and implementation of ESMSF and STFDPF will be conducted in accordance with the overall micro planning process for the Project.

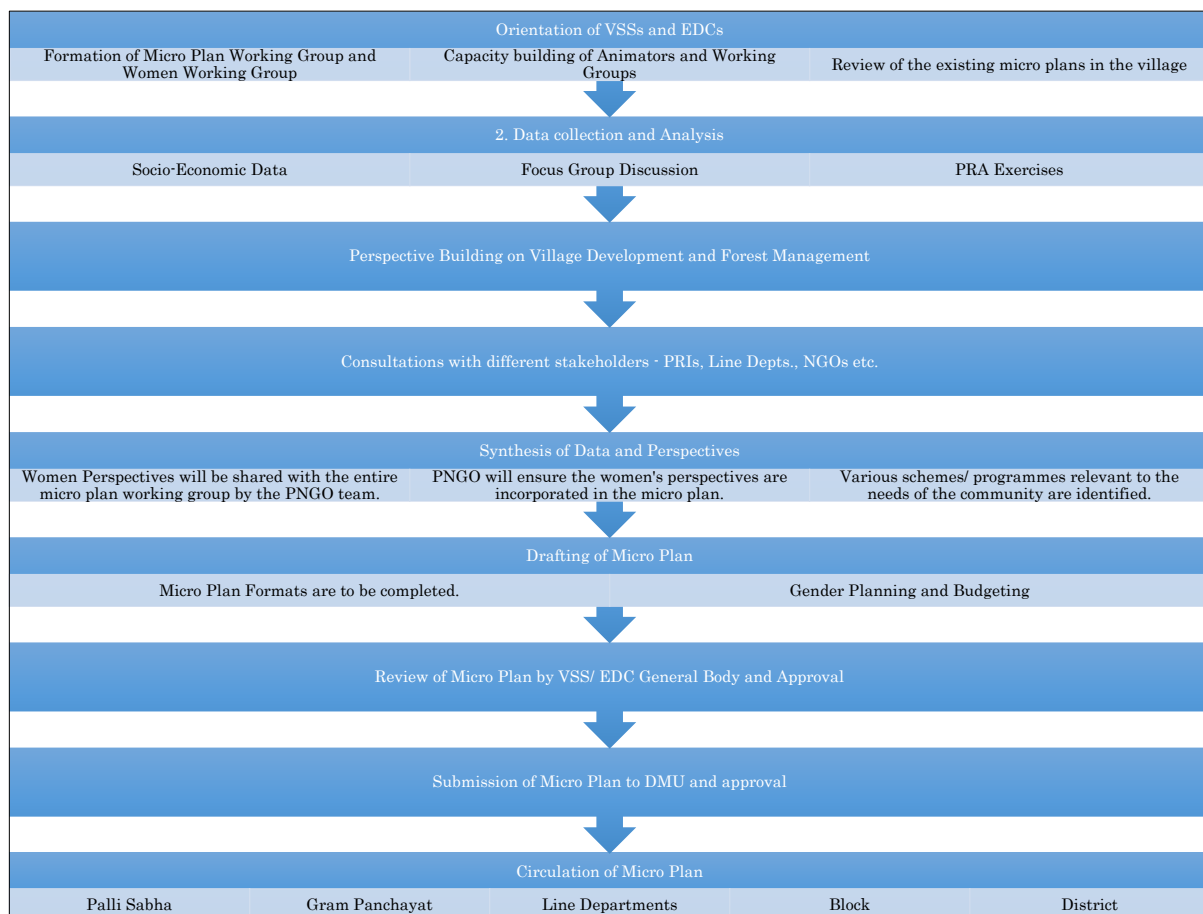
### 1) An Indicative Steps of Micro Planning in OFSDP –II

The micro plan will be prepared by VSS with the help of partner NGO and FMU. While preparing the micro plan efforts will be made to consult other line departments to explore the possibilities of convergence. Similar to Phase-I, Working Group (VSS Leaders, OFD Staff, Partner NGO, Animator, GP representatives and representatives from User Groups within VSS etc.) will be constituted at the VSS level to steer the process of micro planning (Perspective Plan as well as Annual plan). Some minor improvements may be considered in the guidelines, formats and procedures.

The micro planning process is largely comprised of preparatory stage, data collection, data analysis and synthesis along with the consultation with the line departments and other stakeholders. The compiled micro plan will be reviewed by the VSS/ EDC General Body members for approval of GB. Once approved, it will be forwarded to DMU for approval. At this stage, the micro plan should be reviewed by DMU for its compliance to the Working Plan/ Management Plan of OFD. Once the approval of DMU is obtained, the micro plan will be forwarded to Palli Sabha and also shared with other line departments.

During preparatory phase of the micro planning, the Partner NGO will sensitize the VSS members on different community development and poverty reduction programmes and schemes of the Government – community as well as individual beneficiary oriented schemes. IEC materials on the programmes and schemes and entitlements of different cross-sections of population will be collected and used for sensitizing the community. Existing micro plans prepared by other Line Departments (Health, Watershed etc.) need to be reviewed.

The Project will provide orientation and training to Partner NGOs and VSSs to analyse the impact of disaster on forest resources (forest, plantations and nurseries) – forest fire, drought, cyclones etc. and include disaster preparedness interventions in their Annual Plans.



Source: JICA Survey Team (2016)

Figure 6.6.5 Suggested Steps of Micro Planning in OFSDP-II

## 2) Suggested Types of Plans to be Prepared

Bases on the experience from OFSDP-I and the content of existing micro plan preparation handbook, following proforma will be proposed as the content of the micro plan for OFSDP-II

- Proforma – 1: Socio-economic profile
- Proforma – 2: Natural resource profile – inventories of forest and other natural resources and drivers of degradation
- Proforma – 2: Livelihood opportunities
- Proforma – 3: Forest development plan
- Proforma – 4: Village perspective plan
- Proforma – 5: Annual Action Plans
- Proforma – 6: Annual Progress Reports/ benefits

The Project may prepare a Village Perspective Plan for 10 years and also a Forest Development Plan for 10 years.

The Forest Development Plan can be precise emphasizing sustainable forest management/ scientific forest management and in consistency with the Working Plan prescriptions.

Perspective Plan will include broad contours of village development, poverty reduction and livelihood enhancement. More emphasis and rigour may be given to the Annual Planning exercises at the VSS level involving different stakeholders (PRIs, Line Department, Civil Society, and Business Development Agencies etc.).

The Annual Plan of VSS will form the basis for convergence with other programmes, schemes and opportunities. The Partner NGO will be responsible for facilitating the process of preparation of Annual Plan at the VSS level. The NGO will ensure participation of VSS members, Gram Panchayat and Representatives of the line departments. The Working Group will consult with officials in their offices in case they are unable to attend the meetings at the VSS level.

## 3) Women Working Groups

In order to have representation and involvement of the women VSS members it is suggested to have a separate working group of women VSS members and SHG members (OFD Staff – Member Secretary, Partner NGO, Women Extension Workers from Health Dept., Teacher and Women SHG leaders) who will discuss among themselves and feed in their views/suggestions based on concerns/issues. This would ensure maximum participation and involvement of women in micro planning process. The working group will steer a perspective building for women's development. The key tools to be used with women are a) social mapping, b) resource mapping with transect, and c) focus group discussion. The working group for facilitating women's participation will organise a series of FGDs with women on the following themes:

- Socio-economic conditions of village in general and socio-economic status of women living in the village, and their perceptions on gender and equity issues in the village.
- Well-being analysis in the village
- Livelihood analysis – current and opportunities
- Analysis of SHGs – SWOT, successes and failures, future plans, views on federations, cluster development, etc.
- Dependency on forest, issues in forest protection and management, issues in Human-Wildlife conflicts, prescriptions for forest development
- Vision building for village development
- Key recommendations for village development.



#### **4) Compilation of the Micro Plans**

The partner NGO will have the key responsibility to compile the findings from different Focus Group Discussions. FGDs will be conducted with different social groups, occupational groups, gender groups, etc. The finding will be compiled on the basis of key themes and/ or issues. The partner NGO will use the proforma/ tables provided in the micro planning manual for documentation of findings from the FGDs. The contradicting and divergent views emerged from the FGDs will be presented in the meetings of VSS to get a final overview. Social and resource mapping are being done both in large and small groups and in different hamlets / habitations too. The maps prepared from these exercises are compiled/ refined by the partner NGO or the working group, and the final map is presented in VSS meeting for ratification. There are six proforma indicated above will be for presentation of findings from micro planning. The partner NGO and VSS animator will ensure that finding from discussions with women are integrated into these proforma.

#### **5) Role of PRI**

There is already a District Advisory Committee (DAC) set up during Phase-I at the district level under the chairmanship of district collector for promoting convergence. The Project may advocate with the state government to issue directions to the district administration for the following:

- A direction may be issued by the district collector to all the line departments (Agriculture, Horticulture, Animal Husbandry, Fishery, Water Resources, Women and Child Development, Health and Family Welfare, SC&ST Development, Panchayati Raj etc.) in the district to send their staff and extension workers to participate in the process of micro planning. All these departments may use the perspective plan and annual plans of VSS for implementation of different activities in the village.
- Another direction may be issued by the district collector to Panchayat Samitis and Gram Panchayats to include eligible activities recommended by the VSS/ Palli Sabha through their annual plans.
- Reviews of Project implementation and possibilities of convergence can be included as an agenda point in the monthly/ periodical meetings of Panchayat Samiti (PS) and Zilla Parishad (ZP)
- Possibilities of convergence of different schemes with OFSDP-II may be reviewed during the district level review of flagship programmes/ schemes.

#### **6.6.10 “1.10 Revisiting Micro Planning (4<sup>th</sup> Year in each Batch)”**

In the 4<sup>th</sup> year of every batch, the micro plan will be revisited to accommodate the changes as per the situation. This process will be laid out by PMU and facilitated by partner NGOs.

#### **6.6.11 “1.11 Annual Planning”**

##### **1) Annual Plan**

Based on the micro plan prepared by each VSS/ EDC, an annual plan will be prepared. The annual plan will be forwarded to Palli Sabha for its approval and then sent to Gram Panchayat, Block and District Administration to consider for financing and convergence.

To facilitate the efficient and effective convergence, the annual plan needs to be prepared before the preparation of plan by Gram Panchayat for MGNREGS and other schemes so that some of the activities recommended by the Palli Sabha/ VSS will be included in the annual plan of Gram Panchayat (VSS animator and member secretary)

An annual convergence plan will be prepared at the FMU/block level compiling the annual plans of all the VSSs in that FMU/block. This plan will be prepared and presented in the meetings of Panchayat Samiti/ block by the FMU chief.

## 2) Annual Convergence Plan

In the similar manner, an annual convergence plan will be prepared at the DMU level by the Project staff (Micro planning and Livelihood) compiling the annual plans of VSSs for discussion in DAC, ZP, other line departments, etc. Efforts will be made to tap resources available under constituency development fund of MP and MLA. Wherever possible the Project staff at DMU level will explore opportunities to tap resources from private sector agencies, NGOs etc. The Project may send its convergence plan to District Planning Committee for discussion and its recommendation to different departments.

### 6.6.12 “1.12 Social and Environmental Consideration”

The Project will not include any subprojects requiring environmental clearance nor any activities with major social impacts, however certain potential impacts and risks may arise during the implementation of the project. Therefore, the Environment and Social Management System Framework (ESMSF) and the Scheduled Tribe and Forest Dependents Plan Framework (STFDPF) will be prepared and applied as safeguards documents for the Project.

Overall coordination and support for implementation and monitoring of ESMSF/ STFDPF will be provided through the PMU and information related ESMSF/ STFDPF will be centrally managed by the PMU.

An Environmental and Social Consideration Expert is planned to be directly hired by PMU during the preparatory stage before the procurement of the Project Management Consultant (PMC) to support PMU for preparation, updating and implementation of ESMSF/STFDPF.

The Environmental and Social Consideration Expert is expected to assist PMU in following aspects.

- Updating and finalisation of ESMSF/STFDPF
- Preparation of Environmental and Social Management System (ESMS) Plan.
- Preparation of procedures for formulation of the Scheduled Tribes and Forest Dependents Plan (STFDP).
- Formulation of implementation and monitoring procedures for ESMS and STFDP
- Updating of capacity development plan/ programme/ training modules for environmental and social consideration
- Preparation of monitoring reports for environmental and social consideration.
- Conducting training modules for environmental and social consideration as a resource person/ trainer
- Any other environmental and social consideration issues related to the Project.

In addition, an Environmental and Social Consideration Specialist is planned to be deployed under the PMC to assist PMU on environmental and social consideration issues of the Project. The Environmental and Social Consideration Expert is expected to collaborate with the Environmental and Social Consideration Specialist of the PMC.

## 6.7 Component 2: Sustainable Forest Management

### 6.7.1 “2.1 JFM Mode”

#### 1) Composition of the Sub-Component

In considerations of the review of the DPR for OFDP-II, lessons learned from OFSDP-I, and the revised log frame for OFSDP-II, basic sub-component/ activity structures for the forest management activities under the JFM mode will be maintained the same as what has been proposed in the DPR except for the “Coastal Plantation Establishment” sub-component. Since there are no coastal forest divisions proposed for the “Coastal Plantation Establishment” sub-component and also there are limited availability for potential sites for coastal plantation along the coastline of Odisha, the coastal plantation activities will not be considered in the forest management activities under JFM mode.

Sub-components for the forest management activities under JFM mode are described as follows.

- 2.1 JFM-Mode
  - 2.1.1 Site Specific Planning and Monitoring
    - 1) Field Investigation and Planning
    - 2) Treatment area monitoring (2nd year)
    - 3) Treatment area monitoring (4th year)
  - 2.1.2 Drainage Line Treatment (Ex-situ SMC Work)
    - 1) JFM Mode Drainage Line Treatment (DLT)
      - a) DLT Establishment
      - b) DLT Maintenance (after 1st year and 3rd year of establishment)
  - 2.1.3 Assisted Natural Regeneration (ANR)
    - (0year advance works, 1st year plantation works, 2nd to 4th years maintenance works)
    - 1) ANR with no gap planting
    - 2) ANR with 400 seedlings/ha gap planting
    - 3) ANR with 800 seedlings/ha gap planting
  - 2.1.4 Block Plantation
    - (0year advance works, 1st year plantation works, 2nd to 4th years maintenance works)
    - 1) Fuel and Fodder Plantation
    - 2) NTFP Plantation
    - 3) Other Block Plantation
  - 2.1.5 Fire Protection
    - 1) Fire Line (FL) Construction and Maintenance
      - a) FL Construction (4 meter wide: 1<sup>st</sup> year)
      - b) FL maintenance; 2nd 3rd and 4th year
    - 2) Provision of Incentive Measures 1 (25% VSS for 3 years after plantation establishment)

For any of sub-components/ activities under the non JFM mode, emphasis will be given to include processes as well as the cost for planning and monitoring for each of the sub-component/activities.

## 2) “2.1.1 Site Specific Planning and Monitoring”

### i. Site Specific Planning

The planning including selecting sites, species and treatments for the JFM intervention will be the integral part of the micro planning process for the concerned VSSs. However, in order to achieve more effective sustainable forest management by VSSs, field investigations and planning exercise will be conducted to determine site specific treatments for JFM intervention areas (ANR/ plantation treatment areas and drainage line treatment areas), reflecting demands/needs of concerned VSS and also of the natural /geographical conditions of sites concerned. The field investigations and planning exercise will be conducted by VSS members with technical guidance and support from DMU/FMU staff and relevant resource organisations. The output of the activity will be incorporated in the respective micro plan.

### ii. Site Specific Monitoring

The field investigations and other monitoring exercise of the JFM intervention areas will be conducted by VSS members with technical guidance and support from DMU/FMU staff and relevant resource organisations. The monitoring is scheduled to be conducted 1 years (2<sup>nd</sup> year) and 3 years (4<sup>th</sup> year) after the planting work (1<sup>st</sup> year).

## 3) “2.1.2 Drainage Line Treatment (Ex-situ SMC Work)”

The original soil moisture conservation (SMC) activity proposed in the DPR was reorganized as the drainage line treatment (Ex-situ SMC work) activity. The drainage line treatment under the Project will be SMC works for i) drainage lines passing through the direct intervention (JFM treatment) areas

and ii) upstream/downstream JFM/ forest areas of the same watershed/catchment for improvement of water regimes within forest areas in accordance with site-specific requirements. Due to this nature, the actual intervention areas for the Ex-situ SMC work will be significantly less than JFM treatment (ANR/Block plantation) areas.

On the other hand, reflecting the normal practices conducted by OFD, SMC works such as contour trenches, pits, trench ridges, vegetative barriers, etc., which are normally applied within JFM treatment areas (and amongst planted trees) will be considered as “In-situ SWC work” and to be implemented as sub-activities under the ANR/Block plantation activities<sup>6</sup>.

All SMC works under the Project, regardless of Ex-situ or In-situ, will include maintenance activities to effectively improve moisture regimes and achieve expected outputs from the intervention. Also all SMC measures will be implemented prior to the planting activities and monsoon seasons in order to achieve better survival/ growth of planted seedlings as well as better improvement of water regimes of concerned drainage lines.

The Ex-situ SMC work for the drainage line treatment are categorised into:

- i) gully bed stabilisation (live hedges, gully plugs, check dams, earthen/stone bunds, etc),
- ii) gully bank protection (spurs, retaining walls, etc), and
- iii) water harvesting structure (trenches, pits, check dams, earthen embankments, ponds, etc.).

Details of potential Ex-situ SMC works are described in **Attachment 6.7.1**.

For cost estimate purpose, an indicative Ex-situ model was prepared (**Attachment 6.7.1**). However, actual site selection, types/ quantities/ locations of SMC works will be determined based on results of the site specific planning as well as Project’s guidelines and manuals to be prepared referring to existing relevant guidelines /manuals.

The Ex-situ SMC works will be established in and around JFM areas of concerned VSSs at batch-wise. The maintenance works will be planned 1<sup>st</sup> year and 3<sup>rd</sup> year after the establishment.

The collapse of one gully/check dam/stone building will sooner or later affect other structures through head ward erosion. Delayed maintenance can result in the collapse of all SMC structures. Maintenance is essential because SMC works from ridge to valley approach. Not limited to below, but the following maintenance works will be conducted. However actual maintenance works will be determined based on site specific monitoring and requirements for SMC works.

- Firm plugging of breaches.
- Filling up of sags in bunds.
- Restoration of proper height and section.
- Plugging of holes and cracks.
- Repairing of damaged outlets and bunds.
- Growing grasses and trees on bunds.

#### **4) Overview of the Improvement of Degraded Forest by JFM Interventions**

In principle, forest areas having crown density below 40% (open forests and scrubs) will be treated by JFM interventions by the Project (JFM treatment area). JFM treatments/ operations to be taken up in the Project can be broadly divided into “assisted natural regeneration (ANR)” and “block plantation”.

---

<sup>6</sup> Based on necessity, structures described under In-situ SMC works will be also introduced in Ex-situ SMC works.

**Table 6.7.1 Overall Description of JFM Treatments in the Project**

Treatment Type	Description
Assisted natural regeneration (ANR)	<ul style="list-style-type: none"> <li>- Aims to artificially facilitate natural regeneration provided on degraded forests where rootstocks are still available.</li> <li>- Include treatments such as singling coppice shoots, removal of high stumps and climbers and tree planting in blank areas. Gap plantings to be introduced based on objectives/goals as well as site specific feasibilities.</li> </ul>
Block Plantation	<ul style="list-style-type: none"> <li>- Aims to produce specific wood/NTFP products and/or maintain vegetal cover for soil and water conservation.</li> <li>- Planting of seedlings in blocks at certain density</li> <li>- The productive plantation conceivable for the Project have options of: ii) fuel wood and fodder plantation with fast growing species; ii) NTFP plantations and iii) economic plantation consisting of timber species;</li> </ul>

Source: JICA Survey Team (2016)

Operations in the JFM treatment areas will put more emphasis on development and utilisation of forest products, which are beneficial for VSSs. The operations and treatments under the JFM-mode of OFDP-II tries to more emphasize on selection of VSS-demand driven treatments and species in addition to the selection based on natural /geographical suitability.

In this context, production of fuel & folder and NTFP production are regarded as priority treatment purposes. The production of economically valuable species, through the economic plantation which was taken up during OFSDP-I, and aimed mainly for timber production in longer perspective will not be taken up in full-scale at OFSDP-II. However, in case establishment of economic plantations is desired by target VSSs, the economic plantations may be considered as one of the activities for the block plantation. In such case, expected goals and suitable as well as profitable species will be carefully examined and consulted with concerned VSSs.

Selection of target species as well as the necessary silvicultural treatments will be decided by the VSSs through the site specific planning with technical guidance and support from DMU/FMU staff and relevant resource organisations during preparation of the micro-plan. The approved micro-plan will describe species and necessary silvicultural treatments selected and decided by the respective VSSs.

The work will be conducted by the VSSs on an agreement basis. The required costs for establishment and maintenance of the plantation will be paid to the VSSs.

For the operations in the JFM treatment area, basically the same technical norms and practices with the corresponding operations determined in the FD work will be applied. In additions to activities and costs described in the FD plantation norms 2016, additional activities and cost for JFM treatments will be covered by the Project based on the necessity. In general, additional cost for seedling transportation, maintenance of In-situ SMC work will be covered for JFM area treatment by the Project.

The following two sections describe about assisted natural regeneration (ANR) and block plantation, respectively.

### 5) “2.1.3 Assisted Natural Regeneration (ANR)”

**Attachment 6.7.2** describes potential spacing, species for the ANR and the block plantation to be considered in the Project. For planning and implementation of ANR operations, the following aspects will be taken in to account.

- Natural regeneration will also be promoted at sites where rootstock is available.
- Planting density, target species and operations will be decided based on site conditions and desires of the VSSs.
- In gaps and open areas, inter-planting of NTFPs (shrub, herbaceous, grass species), fuelwood, fodder (both woody species and grass), and medicinal plants will be adopted based on the desires of VSSs and the site conditions of the concerned sites

- Grass production will be introduced as intercropping not only for fodder production but also to stabilise the forest floor.
- If VSSs have bamboo concentrated areas within their JFM areas or have demand for bamboo production, in principle, the same norms and practices for bamboo cultural operation/ plantation by OFD will be applied.

For cost estimate purpose, the following three models were developed.

- i) ANR without gap planting
- ii) ANR with gap planting of 400 seedlings/ha
- iii) ANR with gap planting of 800 seedlings/ha

#### 6) “2.1.4 Block Plantation”

**Attachment 6.7.2** describes potential spacing, species for the block plantation and ANR to be considered in the Project. For planning and implementation of block plantation operations, the following aspects will be taken in to account.

- Planting density, target species and operations will be decided based on site conditions and desires of the VSSs.
- If required, planting intensity can be reduced from that of the Plantation Norm 2016. This will allow more growing spaces for grasses, shrubs and other NTFP species desired by VSS members.
- If required, grass production will be also introduced as intercropping not for fodder production but also to stabilise the forest floor.
- If VSSs have demand for bamboo production, in principle, the same norms and practices for bamboo cultural operation/ plantation by OFD will be applied.

For cost estimate purpose, the following three models were developed.

- i) Fuelwood and Fodder Plantation
- ii) NTFP Plantation
- iii) Other Block Plantation

#### 7) “2.1.5 Fire Protection”

Fire protection under JFM mode will cover i) creation and maintenance of fire lines and ii) provision of incentive measures.

##### **i. Creation and Maintenance of Fire Line**

VSSs are expected to protect forest blocks within their JFM area from forest fire by construction and maintenance of fire lines. The required costs for the work will be paid to VSSs. Descriptions of the work are shown below.

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

## ii. Provision of Incentive Measures

VSSs which did not experience forest fires or successfully tackled fire incidences in and around their JFM area during the dry season, will be awarded with a “no fire bonus (monetary incentives)” for the first 3 years after the planting work. For cost estimate purpose, 25% of each batch of VSSs will receive the incentive for the annual average amount of 4,900 Rs per eligible VSS. The actual incentive amount will be categorized based on the achievement criteria to be developed during the preparatory stage.

### 6.7.2 “2.2 Non JFM Mode”

#### 1) Sub-component Composition

In considerations of the review of the DPR for OFDP- II, lessons learned from OFSDP- I, and the revised log frame for OFSDP-II, this Non JFM mode sub-component was restructured more to support and strengthen JFM mode activities and JFM intervention areas to contribute further for the sustainable forest management.

Sub-components for the forest management activities under non JFM mode are described as follows.

- 2.2 Non JFM Mode
  - 2.2.1 Consolidation and Demarcation of Forest Boundaries
    - 1) Consolidation and Demarcation of Forest Boundaries
    - 2) Maintenance of Forest Boundaries
  - 2.2.2 Construction /Improvement of Permanent Nurseries
    - a) Construction of Permanent Nurseries
    - b) Maintenance of Permanent Nurseries
    - c) Root Trainer / Material Replacement
  - 2.2.3 Non-JFM Drainage Line Treatment (DLT) (Ex-situ SMC Work)
    - a) DLT Establishment
    - b) DLT Maintenance 1 (after 1 yr. of establishment)
    - c) DLT Maintenance 2 (after 3 yrs. of establishment)

The artificial regeneration activity originally proposed in the DPR will not be included under the Non JFM mode since this activity does not have a strong linkage with the JFM mode to support and enhance JFM related activities.

Fire protection activities under the Project will be confined as activity by the VSS for their JFM areas and general fire protection of forest areas will be not take up by the Project and to be covered as part of regular OFD activity.

Similar to the forest management under JFM mode, in any of sub-components/ activities under the Non JFM mode, emphasis will be given to include processes as well as the cost for planning and monitoring of activities under this component.

#### 2) “2.2.1 Consolidation and Demarcation of Forest Boundaries”

The activity for consolidation and demarcation of forest boundaries will be aimed mainly to improve boundaries of forest areas (reserved forest, demarcated protected forests) and their forest blocks in areas where sites have been selected for JFM interventions under the OFSDP-II<sup>7</sup>. This activity is aimed for clear demarcation and validation of forest areas, to prevent further encroachment to the forest area. This work will include the following activities.

<sup>7</sup> The Survey and Demarcation to be conducted during the preparatory work are for JFM area/ treatment area boundaries, whereas the consolidation and demarcation under the non JFM mode are intended for notified forest area boundaries.

- Review of existing documents and maps
- Boundary identification and demarcation survey using GPS
- Identification of new boundaries to be installed/ re-installed
- Preparation of geo-referenced boundary map based on GPS data
- Fixing and installation of boundary pillars

The boundary pillars to be installed will be the same as that of JFM boundary or whatever pillar requirements imposed by the OFD will be adopted.

### 3) “2.2.2 Construction /Improvement of Permanent Nurseries”

#### i. Construction of High Tech Nurseries

The activity for construction/improvement of permanent nurseries will upgrade existing divisional central permanent nurseries within the Project area into “High-tech Nurseries”. Six divisional central permanent nurseries (one per each Circle) are assumed as the target for upgrading under the Project.

The upgrading aims to achieve the following objectives.

- i) Diversifying planting stock production methodologies/ technologies
- ii) Improving production capacity (quantities and number of species) of higher quality planting stocks of local/regional species including NTFP and agro-forestry species
- iii) Examining effective planting stock production methods for seedlings which have high preference by VSSs and farmers who require favourable seedlings.
- iv) extension of diversified and improved quality planting stock production.

The term “High-tech Nurseries” are used since upgrading of the nursery intended to emphasize more on root trainer technologies and clonal propagation technologies for planting stock production in comparison to conventional production methods such as bare-root seedlings, poly pot seedlings.

Indicative description of work under this sub-component is summarised in the following table. The actual designs, types and quantities of required facilities will be decided in accordance with the site-specific requirements (water availability, access, available space, etc.) and finalized planting stock production capacity/demand of each nursery.

**Table 6.7.2 Indicative Description of Hi-Tech Nurseries to be Established**

Item	Description
Increased Production Capacity	- 400,000 Seedlings/ year per nursery - 200,000 seedlings by root trainers, the remaining 200,000 seedlings by poly pots and other methods.
Required Area	- Indicative net production area: 0.60 ha - Other areas: ~ 1.80 ha
General Usage Facility	- Fencing (barbed wire fencing with RCC pillars, boundary brick wall) - Office with equipment storage room - Cement Concrete Road - Pump House with 4m <sup>3</sup> Over Head Tank and Pump generator house, - Bore well fitted with Submersible Pump - Water Pipe line network - Shed for storage purpose (compost heap, potting media storage, scrap material, root-trainers etc) - Washing and disinfecting sink for root trainer - Labour Shed (without wall)



Item	Description	
Seedling Production Facility	<ul style="list-style-type: none"> <li>- Nursery beds with inspection path and drain</li> <li>- Agronet shed for nursery beds</li> <li>- Parabolic Top Poly House</li> <li>- Mist Chamber</li> <li>- Drying yard with Seed Treatment Facilities</li> <li>- Hardening yard for Root Trainer Seedling</li> <li>- Hygro Pit for germination</li> <li>- Plot for Grafting Facility and Nursery bed</li> </ul>	<ul style="list-style-type: none"> <li>- Ramp for loading and un-loading root trainers</li> <li>- Compost Pit</li> <li>- Composting area</li> <li>- Drying platform for drying compost manure &amp; platform for seed treatment</li> <li>- Chopping machine &amp; fixing the unit , Knap Sacs</li> <li>- Removable shed area (including tools &amp; chemical shed)</li> </ul>

Source: Compiles by JICA Survey Team (2016) based on literature reviews and discussions with concerned PMU officers.

Technical capacity development programmes of nursery officers/workers to be also included in the Project and relevant to establishment of the high-tech nursery (Component 5.1.4 Exposures “3) Hi-Tech Nursery exposure”).

#### ii. Maintenance of High Tech Nurseries

To maintain effective seedling production function of the established high-tech nurseries, maintenance works for nursery facilities are planned. The maintenance is planned to be conducted five years after the establishment of the high-tech nursery. However, the actual timing as well as the content and the extent of the maintenance will be determined in consideration of the nursery specific status. In total, 5% of total estimated budget cost for establishment of high-tech nursery will be allocated for the maintenance activity as a part of the project base (capital) cost.

#### iii. Replacement of Root Trainers and Root Trainer Stands

For effective and constant seedlings production by root trainers, root trainers and trainer stands for 200,000 seedlings will be re-procured at each high-tech nursery under the Project. The replacement is planned to be conducted three years after the establishment of the high-tech nursery.

#### 4) “2.2.3 Non JFM Drainage Line Treatment (DLT) (Ex-situ SMC Work)”

The drainage line treatment under the Non JFM mode is intended to be implemented mainly in upland or downstream forest areas of JFM intervention areas under the Project. This will not only contribute conservation of the moisture of JFM treatment areas to enhance the growth of planted seedlings but also improvement of overall water and moisture regimes of the concern watershed/ catchment areas. Major potential Ex-situ SMC works to be considered will be basically the same as that of JFM mode as described in **Attachment 6.7.1**. However, based on the site conditions and specific necessities for the intervention, more durable SMC structures such as concrete check dams which is not always possible to be established by the JFM mode will be taken up in the Non JFM mode intervention.

### 6.7.3 “2.3 Farm Forestry”

#### 1) An Outline of the Farm Forestry Component

Farm forestry component of OFSDP-II aims at improving the tree cover outside of the forest areas, which also contributes to the improvement of livelihood among the VSS/ EDC members. The Project may cover up to 10,000 ha (indicative target) within the project area. The interventions will be planned based on the Guidelines developed by the OFSDP-I in November 2012. The Project will focus on timber/ tree borne oilseeds (TBO) /NTFP/Agri-horticulture model as defined in the OFSDP-I Farm Forestry Guidelines. During the micro planning process, the VSS/ EDC working plan group will discuss the needs and feasibility of the farm forestry in the respective villages. The suggested outline of the farm forestry component is given below. Key principles and processes of the farm forestry component of OFSDP-II is described in **Attachment 6.7.3**.

**Table 6.7.3 Suggested Outline of the Farm Forestry Component under OFSDP-II**

Sl.	Item	Description/ Remark
1.	Key Principles	<ul style="list-style-type: none"> <li>i. Farm forestry is to be implemented through VSS in a cluster approach.</li> <li>ii. Each VSS, for implementation of the programme, should have at least 4 ha area for farm forestry and the maximum limit for one VSS is 50 ha.</li> <li>iii. For each farmer minimum area available should be 0.5 acre for block plantation and minimum of 100 plants for planting on the field bunds.</li> <li>iv. Survival based incentives will be paid to the farmer through the VSS.</li> <li>v. The VSS will be responsible for farmers' mobilization and capacity building, formation of FIGs, SHGs etc., payment towards planting materials, transfer of incentives to farmers based on performance etc.</li> <li>vi. Land used for food grains cultivation will not be converted for farm forestry. If the farmer is willing to use the farm bunds/ dykes for tree planting, then the project may consider it as agro-forestry and support the farmer. If the farmer is willing to continue the food grain cultivation but intends to plan few trees in the farm, it may be considered under the Agri-horticulture model. The opportunity cost will be reviewed before selecting the sites for farm forestry.</li> </ul>
2.	Eligibility	<ul style="list-style-type: none"> <li>i. Availability of recorded fallow land and land allotted under FRA.</li> <li>ii. Willingness to keep the land under tree cover till harvest.</li> <li>iii. Willingness to prepare the land for planting and commitment for post-plantation maintenance.</li> <li>iv. Willingness to form FIG/ SHG/ Cooperative.</li> </ul>
5	Minimum and maximum area to be considered for farm forestry	<ul style="list-style-type: none"> <li>i. Minimum of 0.5 acre and maximum of 2.5 acre for block plantation.</li> <li>ii. If the farmer is not opting for block plantation then minimum of 100 trees to be planted on farm bunds/ dykes.</li> <li>iii. For VSS to be selected a minimum of 4 ha area has to be there for farm forestry.</li> </ul>
6	Total area to be covered under farm forestry	<ul style="list-style-type: none"> <li>i. 10,000 ha</li> <li>ii. Timber/ Tree Based Oil Seeds (TBO)/ NTFP/ Agri-Horticulture model with intercropping – 10,000 ha</li> </ul>

Source: JICA Survey Team (2016)

## 2) Implementation Plan

The indicative Implementation Plan of the Farm Forestry Component is given in the table below. A scoping study may be carried out during the 2<sup>nd</sup> Year and the overall planning will be carried out by PMU/ DMU/ FMU. As for the mixed plantation model (timber/ tree based oil seeds/ NTFP/ agri-horticulture model) will be guided by FMU/ partner NGOs and marketing will be facilitated by LRC. According to the survival of the saplings, the incentives will be paid to the farmers as per the Farm Forestry Guidelines of OFSDP-II. The proposed implementation plan of farm forestry is given in the table below.

**Table 6.7.4 Suggested Outline of the Proposed Implementation Plan for Farm Forestry**

Particulars	Outline
Preparatory Phase	<ul style="list-style-type: none"> <li>➤ Yr. 2</li> <li>➤ Scoping study</li> <li>➤ Revision of Farm Forestry Guidelines 2012</li> <li>➤ Agri-horticulture model: Identification of partners – line department, research institute, etc.</li> <li>➤ Implementing Agency: Livelihood Resource Centre (LRC) of PMU with the help of PMC/ Experts</li> </ul>
Selection of targeted areas/ VSSs and farmers	<ul style="list-style-type: none"> <li>➤ Yr. 3 to Yr. 5 (Batch-wise)</li> <li>➤ Implementing Agency: FMUs with the help of Partner NGOs and areas to be finalized by DMUs.</li> </ul>
Setting up nurseries/ procurement of	<ul style="list-style-type: none"> <li>➤ Yr. 3 to Yr. 5</li> <li>➤ Implementing Agency: FMUs and Pulp and Paper Industries.</li> <li>➤ Primary QPM will be sourced from the Central Nurseries of the Forest Department and</li> </ul>

Particulars	Outline										
quality planting material (QPM)	line department. ➤ Some SHGs/Entrepreneurs may be mobilized to set up nursery and provide seedlings to the farmers.										
Planting activities	<table border="1"> <thead> <tr> <th>Year</th> <th>Timber/TBO/NTFP/ Agri-horticulture model</th> </tr> </thead> <tbody> <tr> <td>Yr. 3</td> <td>2,500 ha</td> </tr> <tr> <td>Yr. 4</td> <td>4,000 ha</td> </tr> <tr> <td>Yr. 5</td> <td>3,500 ha</td> </tr> <tr> <td>Total</td> <td>10,000 ha</td> </tr> </tbody> </table> <p>Implementing Agency: FMUs, CPTs (Cluster Level Planting Team), Farmers SHGs/ FIGs/ Cooperatives and VSSs.</p>	Year	Timber/TBO/NTFP/ Agri-horticulture model	Yr. 3	2,500 ha	Yr. 4	4,000 ha	Yr. 5	3,500 ha	Total	10,000 ha
Year	Timber/TBO/NTFP/ Agri-horticulture model										
Yr. 3	2,500 ha										
Yr. 4	4,000 ha										
Yr. 5	3,500 ha										
Total	10,000 ha										
Methods of implementation	<ol style="list-style-type: none"> <li>i. The Project will follow the Farm Forestry Guideline, Nov 2012 with necessary modifications made after launching of the Project.</li> <li>ii. The DMUs will identify the VSSs for farm forestry with the help of FMUs and partner NGOs.</li> <li>iii. The partner NGOs and FMUs will carry out necessary orientation programmes for the VSSs on farm forestry project component.</li> <li>iv. A Sub-Committee for planning and execution of farmer forestry will be formed at the VSS level with a member of EC, member secretary, forest guard, farmer, member of NGO.</li> <li>v. A cluster/VSS level plantation team (CPT) will be formed by FMU chief (range officer) to take up planting operation.</li> <li>vi. The VSS with the help of Partner NGO will select the farmers for farm forestry. Farmers will be mobilized to form farmers interest group or SHG or cooperative.</li> <li>vii. A farmer has to apply for necessary land documents and undertaking to be part of the programme. S/he has to prepare the land and take post-plantation care. Pit digging and tree planting will be undertaken by the Project through CPT.</li> <li>viii. Capacity building will be undertaken by the Project in collaboration with NGOs and industries which require raw material from the farm forestry. The Project will provide farm forestry extension materials to the farmers/ SHGs/ FIGs/ Cooperatives.</li> <li>ix. The Partner NGO and FMU Chief will jointly ensure timely supply of planting materials and other inputs to the farmers, and timely planting of seedlings. They will periodically visit the farms for field inspection and monitoring.</li> <li>x. CPT will visit each site for extensive tree counting and report the survival to the FMU Chief and then the FMU Chief will undertake 10 per cent sample check.</li> <li>xi. Distribution of incentives to the farmers based on the survival assessment.</li> <li>xii. The Partner NGO and FMU will provide market information to the farmers.</li> <li>xiii. LRC will facilitate market linkages of farmers/SHGs/FIGs with different industries and other buyers.</li> </ol>										

Source: JICA Survey Team (2016)

### 3) 2.3.2 Scientific Management of Bamboo in VSS Areas

#### i. An Overview

Bamboo is commonly known as “poor man’s timber” and as green gold. Bamboo has multi-faceted uses and one can get the benefits from the bamboo plantation after 4 years of planting. Once the clumps are established it can give production for 80 years. Odisha has 9 per cent of country’s total bamboo forest cover. Pure bamboo forest area is 375 sq. km and bamboo as part of mixed forest areas is spread over about 17,795 sq. km. Odisha has about 13 species of bamboo and *Dendrocalamus strictus* constitutes 80 per cent of the total bamboo resources of the state. Odisha produces about 0.2 million tons of bamboo annually including 50,000 tons produced from the private land.

The basic objectives of this initiative are;

- i) To develop a comprehensive plan for development of bamboo forests in VSS areas in selected DMUs and implement this plan in collaboration with different stakeholders.
- ii) To promote establishment of bamboo plantations on the private land – homestead and farmland of VSS members, and on the community land (land under the disposal of Gram Panchayats).
- iii) To build the capacity of VSSs to scientifically manage bamboo plantations/ forests.

- iv) To enhance the production of bamboo from the VSS areas and to ensure that it becomes a regular source of income for the VSS.

3 DMUs to be identified in consultation with the Forest Department, Odisha Bamboo Development Agency (OBDA) and Odisha Forest Development Corporation (OFDC).

The key issues to be addressed through this initiative are as follows:

- i) Lack of adequate focus on scientific development of the bamboo forests in VSS areas.
- ii) Timely harvesting of bamboo from VSS areas and replanting of bamboo.
- iii) Lack of adequate emphasis on bamboo as a major source of income for the VSSs.
- iv) Declining production of bamboo.

In consideration of these key issues, the Project aims to pilot and improve the scientific management and assessment of bamboo production by the selected VSSs in the 3 DMUs.

## **ii. Partner Agencies and Implementation Arrangements**

Bamboo is a nationalized forest product and OFDC is responsible for harvesting and marketing of bamboo. The Government of Odisha has constituted OBDA to implement programmes under bamboo mission. The Project will work with both OFDC and OBDA to implement this special initiative.

Livelihood Resource Centre (LRC) established under OFSDP-II will coordinate with both the agencies as well as with the target DMUs. DMU will play a key role in bamboo resource assessment and finalization of bamboo resource development plan. FMU and partner NGO will collectively facilitate implementation of the initiative. VSSs with bamboo forests or potentiality to establish bamboo forests will implement the programme with the help of FMU, partner NGO and animators.

LRC in consultation with OBDA and other technical experts will develop training modules on scientific management of forest for the farmers as well as for the VSS.

A series of training programmes will be organised for the VSSs and also for the farmers who intend to promote bamboo plantations. These training programmes will be organised at the FMU level facilitated by the NGO inviting resource persons from OFDC/ OBDA. The periodical monitoring and reviews will be undertaken by DMU and PMU. After the scientific assessment and evaluation of the initiative after 5 years, documentation and dissemination of technical information will be conducted by LRC.

## **6.8 Component 3: Sustainable Biodiversity Management**

### **6.8.1 “3.1 Sustainable Biodiversity Management Adopting Concepts of SATOYAMA Model”**

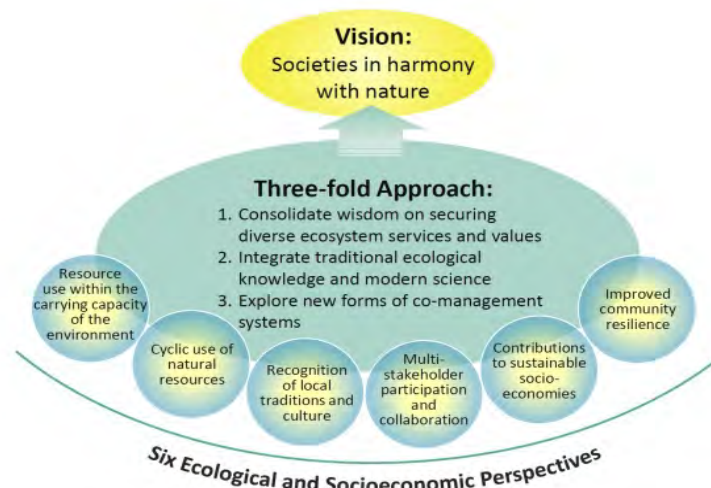
#### **1) SATOYAMA Initiative**

SATOYAMA originally means landscapes in Japan where the productive activities and natural resource management were practiced in a sustainable manner. Sustainable utilisation of the natural resources maintained the optimum condition of soil, water, forest resources, etc and contributed to maintain the rich biodiversity. In Japan, sustainable utilisation of the forest resources also means to nurture forest resources. This concept was evolved as socio-ecological production landscapes and seascapes (SEPLS). At the 10<sup>th</sup> meeting of Conference of the Parties (COP 10) to the Convention on Biological Diversity in 2010, Satoyama Initiative was officially recognised as a “potentially useful tool to better understand and support human influenced natural environment for the benefit of biodiversity and human well-being”<sup>8</sup>.

---

<sup>8</sup> UNU-IAS. (2013). The International Partnership for the Satoyama Initiative (IPSI). Formation and Development.

Satoyama Initiative provides a conceptual framework for the sustainable landscape management through 5 core approaches: 1) Resource use within the carrying capacity and resilience of the environment; 2) cyclic use of natural resources; 3) recognition of the value and importance of local traditions and cultures; 4) multi-stakeholder participation and collaboration; 5) contribution to socio-economies and 6) improvement of community resilience. The combination of these interventions can be implemented by adopting: 1) consolidating wisdom on securing diverse ecosystem services and values; 2) integrating traditional ecological knowledge and modern science to promote innovations; and 3) exploring the new forms of co-management systems.



Source: <http://satoyama-initiative.org/wp-content/uploads/2013/07/Last-version.jpg>

**Figure 6.8.1 Conceptual Framework of Satoyama Initiative**

As the ecosystem in the project areas are exposed to the significant human induced impacts, this framework would throw useful insights to the project interventions. Furthermore, as seen in the various case studies on biodiversity and livelihoods, OFSDP-II would benefit in a great deal in interacting with the key actors in Satoyama Initiative in Japan and may also take part in the International Partnership for the Satoyama Initiative (IPSI) and contribute to the national and international knowledge base on sustainable management of SEPLS.

This also gives an opportunity for collaboration with the Japanese local government or communities to exchange the knowledge and experiences for deepen the learning. As an output of this intervention, a guideline on promoting SATOYAMA approach in Odisha can be developed.

## 2) Proposed Interventions

Basing upon the concept of SATOYAMA model, the activities indicated in the table below are proposed to enhance the sustainable management of biodiversity within Badrama Sanctuary area in Bamra Wildlife Division.

There are 26 EDCs within the Badrama sanctuary in Badrama Range. Out of these EDCs, 10-15 EDCs located in a micro watershed will be selected for the interventions. The selected EDCs will prepare micro plan and people's biodiversity register during the micro planning process. EDCs will not prepare forest development plan which is not applicable to EDCs. The Specialised agencies will be engaged for undertaking the inventory of biodiversity and ecosystem valuation. The detailed implementation plan will be prepared by the PMC Biodiversity Specialist (International). A specialised agency will be procured to implement the activities as a package according to the detailed implementation plan. The work will be directly supervised and monitored by PMU.

**Table 6.8.1 Proposed Activities and Applicable SATOYAMA Principles**

Applicable SATOYAMA Principles	Proposed Activities	Mode of Implementation under OFSDP-II
1. Integration of Traditional Ecological Knowledge and Modern Science	1) Establishment of Biodiversity Inventory 2) Creation of the Monitoring System including community based monitoring system 3) Habitat Improvement Activities will be planned based on the identified species in the biodiversity inventory. <ul style="list-style-type: none"> <li>➤ Intensive habitat improvement work in smaller areas (e.g. 500 to 1000 ha) so that to completely remove anthropogenic threats like fire, livestock grazing, tree cutting/lopping etc.</li> <li>➤ Improvement of the key habitat factors like water, grass/meadow cover, bamboo cover, fruit bearing plants etc. In case of birds, artificial nesting sites can be created to improve nesting frequency.</li> <li>➤ Awareness and campaign to get public support for conservation of species.</li> </ul>	Specialised Agency PMC PMU
2. Multi Stakeholder Participation and Collaboration	1) Creation of People's Biodiversity Register <ul style="list-style-type: none"> <li>➤ The exercise should be undertaken in collaboration with Biodiversity Management Committee of the respective Panchayat. This will help the communities to understand the natural assets in their vicinity and monitor the changes. Necessary interventions will be planned during the Micro Planning Process of the EDCs.</li> </ul>	Specialised Agency/ Panchayat/ Biodiversity Management Committee
3. Contributions to Socio-Economies	1) Alternative Livelihood Activities- agriculture based	Component 4: Livelihood Improvement/ Convergence with OLM
	2) Ecosystem Valuation	Specialised Agency
4. Recognition of the Value and Importance of Local Traditions and Cultures	1) Revival of the Indigenous and Traditional Knowledge <ul style="list-style-type: none"> <li>➤ As part of the sustainable living, indigenous and traditional knowledge of farming and resource utilization can be documented and put into practice.</li> </ul>	Component 7.3: Publicity/ Communication

Source: JICA Survey Team (2016)

### 6.8.2 “3.2 Sustainable Management of Bhitarkanika”

Bhitarkanika Sanctuary is a unique mangrove ecosystem which is a Ramsar Site (registered in 2002) and will soon get recognised as a World Heritage Site. It is located in Kendrapada District and covers 672 km<sup>2</sup> along the north eastern coast. It is one of the largest mangrove ecosystems in the world and provides a habitat for a range of resident and migratory birds from Central Asia and Europe and known for salt water crocodiles (*Crocodylus porosus*) and Olive Ridley Sea Turtles (*Lepidochelys olivacea*), just to name a few. There are 490 villages around the sanctuary and 410 villages within the sanctuary holding the population of 0.9 million. The World Bank assisted Integrated Coastal Zone Management Project (ICZMP) has supported in enhancing the conservation infrastructures in the sanctuary, yet such facilities are not utilised well. While the human interference is rapidly degrading the ecosystem of the sanctuary, there an urgent need to reinforce the management practices of the sanctuary through OFSDP-II.

The “Ecosystem Health Report Card” which is being used by the Chilika Development Authority helped the ecosystem monitoring of Chilika lagoon ecosystem and contributed to maintain its balance. This Ecosystem Health Report Card will be proposed to be used as part of the management practices. Necessary capacity development will also be supported by OFSDP-II. While introducing the Ecosystem Health Report Card, awareness creation will be made through EDCs in the surrounding areas. The following work will be undertaken by the specialised agency and supervised directly by PMU.

**Table 6.8.2 Indicative Work Component for Scientific Monitoring for Bhitarkanika**

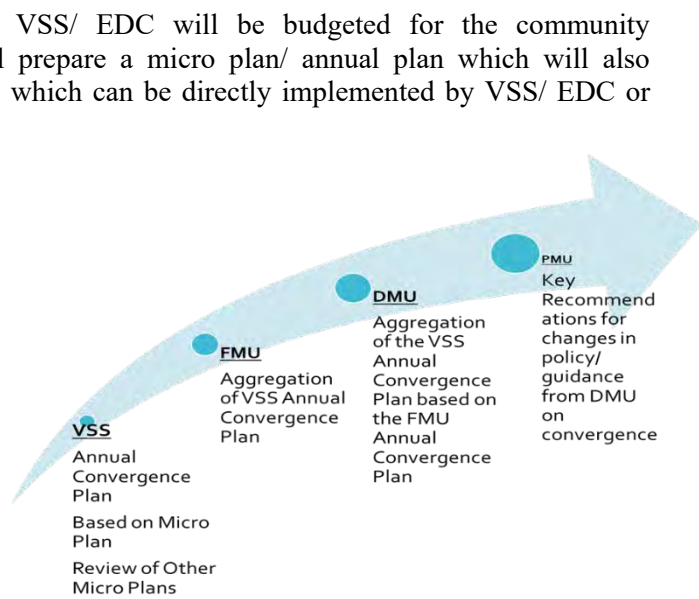
Work Component
1. Creation of database for physical, chemical and biological components of Bhitarkanika National Park
2. Delineation of stress and interventions (Social, environmental and climatic) through ecosystem health card
3. Extension of role of the ecosystem in climate change mitigation through carbon sequestration
4. Development of science based conservation and management plan for Bhitarkanika
5. Capacity Building of local inhabitants for a long term perspectives

Source: OFSDS, (2016)

**6.9 Component 4: Livelihood Improvement**

**6.9.1 “4.1 Community Development Fund”**

Under OFSDP-II, a lump sum budget per VSS/ EDC will be budgeted for the community development activities. Each VSS/ EDC will prepare a micro plan/ annual plan which will also include the community development activities which can be directly implemented by VSS/ EDC or through convergence with other line departments. According to the budget, the community development fund will be utilised wisely for implementing activities or as a matching fund to mobilise the resources through convergence. The fund will be transferred to the Village Development Fund Account (VDF Account) of each VSS/ EDC from DMU after the approval of micro plan and the request for fund transfer is submitted by DMU and approved by PMU. The financial reporting of the utilisation of the Community Development Fund will follow the project financial reporting procedures. The guidelines to review and validate the proposed utilisation of the Community Development Fund based on the micro plan/ annual plan and for the arrangement for the necessary technical guidance for VSS/ EDCs will be prepared by PMU/ PMC prior to the transfer of the fund to VSS/ EDCs.



Source: JICA Survey Team (2016)

**Figure 6.9.1 Roles of Project Implementing Units at Different Levels in Convergence**

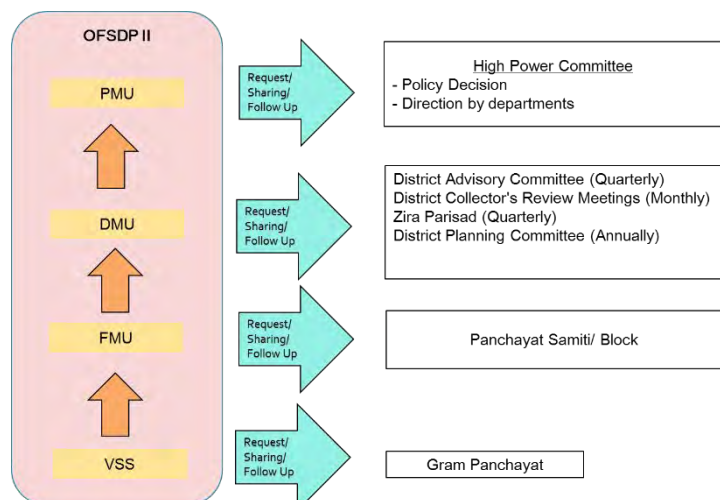
**Promoting Convergence**

Under OFSDP-II, convergence will be promoted by adopting the systematic approach. The following process may be adopted by each level of project management and implementation units of OFSDP-II for the purpose.

**1) State level**

The following processes and activities will be adopted at the state level convergence

- The Livelihood Resource Centre with the help of PMC may prepare an overall convergence strategy in



Source: JICA Survey Team (2016)

**Figure 6.9.2 Proactive Facilitation for Convergence**

consultations with other line departments including Planning and Convergence, Panchayati Raj, Rural Development, SC&ST Development, Agriculture and Farmers Empowerment, Health and Family Welfare, Energy, Women and Child Development, Food Supplies and Consumer Welfare, Fisheries and Animal Welfare etc. Efforts will also be made to consult other societies and state owned corporations such as Odisha Livelihood Mission, Tribal Development Co-operative Corporation (TDCC), Odisha Rural Marketing Society (ORMAS), Odisha Forest Development Corporation (OFDC), etc. while preparing an overall strategy.

- The High Power Committee Approves the convergence strategy and accordingly issues guidelines to different line departments.
- Livelihood Cell with the help of PMC (within the Livelihood Cell, Programme Manager for Livelihood and Inter-sectoral Convergence will be the key anchor for preparation of this plan) will prepare an annual convergence plan based on key recommendations from the DMUs and other stakeholders at the state level and presentation of this plan in the High Power Committee for discussion and necessary directions.
- The Chief Secretary to organise follow up meeting.
- Programme Manager for Livelihood and Inter-sectoral Convergence will prepare an update on progress and challenges on convergence and to present in the meetings of High Power Committee ()).

## 2) District/DMU level

District Advisory Committee (DAC) may be reactivated or otherwise, the existing planning platform exists in the district will be utilised for facilitating convergence. In case, DAC is to be reactivated, OFSDP-II will explore the possibility of including other members – OLM, DSMS, Fisheries and Animal Welfare etc. The DMU chief or representing project staff will participate in other meetings at the district level (ZP, Review of flagship programmes etc.).

The meetings of the DACs are to be organised on a regular basis at least once in a quarter by the DMU Chief.

The district collector will be requested to issue an official letter to line departments, blocks, Gram Panchayats to participate in micro planning and annual planning exercises at the VSS level and to use the micro plan / annual plan for implementation of different schemes in the target villages of OFSDP-II. It is also recommended that the district collector reviews the status of convergence between OFSDP-II with the schemes/ programmes of other line departments.

The DMU chief with the help of Project staff are to prepare a DMU level convergence plan by compiling the recommendations from FMUs on an annual basis, which plan should be presented at the DAC meetings or any other relevant platforms and sent to other line departments. The DMU level annual convergence plan should also be forwarded to the District Planning Committee by the DMU chief.

The DMU chief and project staff will follow it up with other line departments on the status of the convergence from time to time. Key recommendations for change/ improvement in the mode of convergence will be forwarded to PMU for further discussion at the HPC.

## 3) FMU level

FMU chief with the help of project staff and PNGOs will compile annual plans of VSSs to identify the priority activities for convergence to be presented in Panchayat Samiti/ block meetings and also discussion with officials of other line departments. The FMU chief also requests the block level line department to take part in the micro planning process and also to follow up the status of convergence. Successful cases of convergence will be documented by FMU to be shared with other stakeholders.



#### 4) VSS level

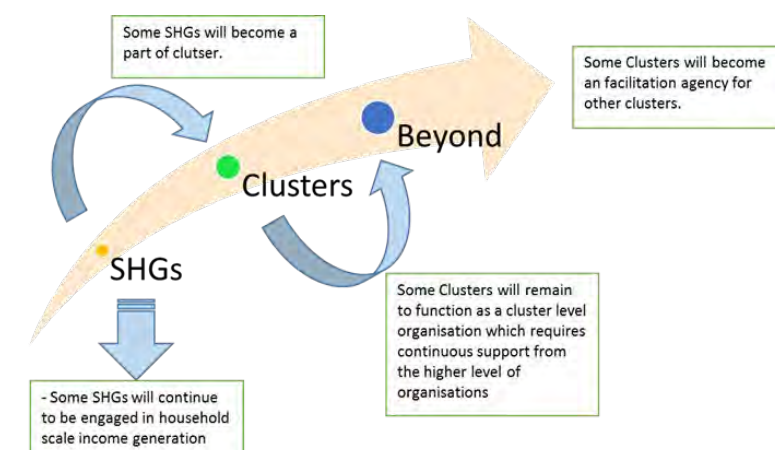
VSS will prepare Annual Plans including activities to be undertaken through convergence with the help of partner NGOs and forward the same to Palli Sabha for its approval. VSS should also discuss with Gram Panchayat for inclusion of some activities under MGNREGS, social security and food security schemes, rural housing schemes, etc. VSS Leaders and animators will also send requests to other line departments for implementation of activities identified in the annual plan and repeated follow up with them. Animators along with the partner NGOs will assist VSS leaders to coordinate with different committees in the village (i.e. education committee, water & sanitation committee, village development committee (watershed), village health committee, water users association).

### 6.9.2 “4.2 Promotion of IGAs”

#### 1) Approach to Promotion of IGAs under OFSDP-II

##### ➤ Trajectory of Women SHG (WSHG)/ Cluster Development

As for the rural households, having limited options to earn income is one of the major constraints they face. WSHGs and cluster based enterprises do provide opportunities for such families in need. These activities may not be the main source of income for them but would help them manage the situation. This is especially important for the households which are particularly economically vulnerable in a village.



Source: JICA Survey Team (2016)

**Figure 6.9.3 Trajectory of SHG/ Cluster Development in OFSDP-II**

The main objective of WSHGs are mainly to mitigate livelihood shocks through internal savings and lending. Its members are often vulnerable households that have limited capacity to take risks. Thus, the visualising all the WSHGs to become profit oriented entity would not be so realistic. But for them, belonging to a WSHG would help them manage their day to day requirement easier than without. Thus, OFSDP-II will keep this in mind and introduce the options for individual or household based income generation activities for such households.

Furthermore, to run a business, the proximity to the market, responsiveness to the market demand, risk taking capacity, management skills, etc are all important, which are not readily available in the rural areas. Yet, the potential for the cluster formation and business opportunities do exist, which could further help the village households to uplift their economic status. OFSDP-II will strategically plan the cluster development and select the WSHGs.

Some cluster level enterprise may succeed in expanding the business while others would remain as cluster level enterprise. Such clusters can continue to work as a provider of inputs to the upper scale business organisation which may emerge out of the cluster level enterprise. Keeping the above trajectory of WSHG/ Cluster development in mind, OFSDP-II will adopt a flexible, responsive and strategic handholding for WSHGs.

##### ➤ WSHGs for overall livelihood improvement

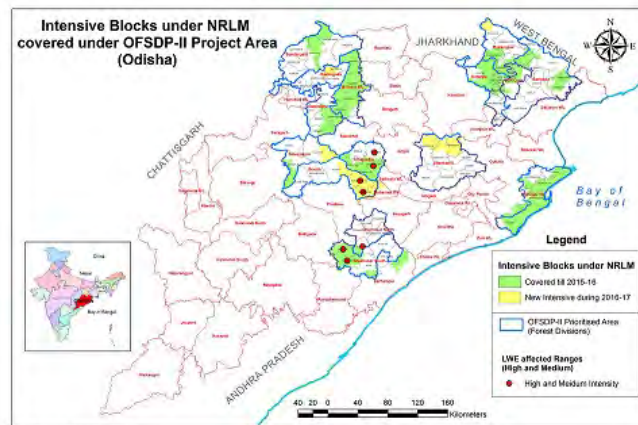
Under OFSDP-II, like VSS/ EDCs become vehicle for wholistic community development, WSHGs will also be envisaged as the same for women empowerment and family wellbeing. Taking advantage of the wholistic micro plan/ annual plan, WSHGs will also work on the health, nutrition, and legal literacy, literacy to cater for their strategic and practical needs along with the income generation activities. By converging with other line departments including Women and Child Development

department and Health Department, these activities can be implemented as per the requirement of the villages.

- Promotion of Odisha Livelihood Mission (OLM)/ National Rural Livelihood Project (NRLP Compliant SHGs for sustainability

OLM is an autonomous body established under the Department of Panchayati Raj, Government of Odisha and is the state nodal agency for National Rural Livelihood Mission. It is a nodal agency for promoting livelihood improvement in the rural areas. OLM provides the capacity enhancement of the SHGs, skills training, promotion and assistance for financial inclusions and cluster based business activities. OLM adopts an approach to saturate the selected blocks and roll out in the rest of the areas. Where OLM is present, the SHGs can receive the continuous assistance for livelihood improvement through its federation at the Panchayat level and through various other interventions under OLM. Since the OFSDP-II is a time bound interventions and has limited capacity to provide the long term assistance for SHGs, it would be an advantage for SHGs to be adopted by OLM as the project activities phases out.

On the other hand, it is understood that not all the project areas come under the intervention areas of OLM and some more time is required for OLM interventions to cover the entire state. Thus, OFSDP-II will adopt the guidelines and processes of promotion of SHGs so that the SHGs promoted under the Project are fully OLM compliant and thus, they can be adopted by OLM. The discussion will be held with OLM at the early stage of the project implementation and MOU may be signed for the collaboration between OLM and OFSDP-II and the adoption of the SHGs organised under OFSDP-II.



Source: Based on the information provided by OLM, prepared by JICA Survey Team (2016)

**Figure 6.9.4 Intensive Blocks in OFSDP-II Project Areas**

## 2) “4.2.1 Identification and Formation of SHGs”

As reviewed in the previous chapters, a number of WSHGs are already organised by different programmes/ initiatives and OLM nearly covers 50% of the project areas. Where OLM has been present, the project will work with the existing WSHGs in villages that would be identified by adopting the criteria given in the table below. The areas where new WSHGs are to be formed or reconstituted, the members should be selected according to the eligibility criteria so that those who are in need of WSHG based assistance can participate. The selection criteria can be revisited once the project implementation begins.

**Table 6.9.1 Indicative Criteria for Identification of WSHGs in OFSDP-Areas**

OLM Area	Non – OLM Area
<b>Exclusion Criteria</b>	<b>Exclusion Criteria</b>
1) Currently taking loan from a financial institution as a group	1) Currently taking loan from a financial institution as a group
2) Have not defaulted	2) Defaulted previously
	3) Members having multiple memberships with other SHGs
<b>Inclusion/ Priority Criteria</b>	<b>Inclusion Criteria</b>
1) Motivated to work with OFSDP-II	1) Motivated to improve their livelihood
2) Understand the OFSDP-II objectives	2) Understands the OFSDP-II objectives
3) Forest Dependents	3) Vulnerable households among the VSS members households identified through micro planning process and not yet a member of any other SHGs
4) Potential for cluster formation	4) Forest Dependents
	5) Potential for cluster formation

Source: JICA Survey Team (2016)

WSHGs supported under OFSDP-II will be nurtured following the guidelines of OLM so that they can be adopted by OLM once the project phases out.

### 3) “4.2.2 Revolving Fund for SHGs”

As in OFSDP-I, OFSDP-II will have a provision for revolving fund to be used by WSHGs in the village to promote small scale IGAs. For this purpose, 300,000Rs per VSS/ EDC will be budgeted. Each VSS/ EDC will be responsible for management of the Revolving Fund. The operational guideline of Revolving Fund prepared during OFSDP-I will be reviewed and revised accordingly for effective utilisation of the Revolving Fund. The responsibilities of recovering the loan will be rest with the VSS/ EDC since the fund is given as a grant to VSS/ EDC.

Although the details of the interventions will be developed after the value chain assessment at the initial stage of the project implementation, indicative interventions for vegetable cultivation/ marketing, goat trading, mahua flower trading, improved backyard poultry, and sal leaf plates trading are given in **Attachment 6.9.1**.

### 6.9.3 “4.3 Promotion of NTFP Based Livelihood Activities”

Under the initiative of the Livelihood Resource Centre (LRC), OFSDP-II will undertake inventory of NTFP in the selected DMUs where NTFP promotion has a potential. Further LRC will also develop a NTFP collection and marketing strategy based on the market survey and value chain analysis. Since NTFP requires a specialized inputs in product development and marketing, a specialized agencies will be engaged for the purpose. LRC will take the lead in procurement of such agencies and extension of the outputs to SHGs and cluster organisations through various channels.

The Project may consider the following interventions on specific NTFPs in order to establish best practices/ product based centre of excellence.

**Table 6.9.2 Indicative NTFP Based Livelihood Activities**

Sl.	NTFP	Key Issues to be Addressed	Interventions	Partner Agency
1	Covered under minimum support price (MSP) - Tamarind, Sal Seed, Gum karaya Honey, Karanj, Lac, Mahua flower and Mahua seed, Chironjee, Myrobalans	<ul style="list-style-type: none"> <li>Lack of adequate Primary Procuring Agencies</li> <li>Poor awareness among the primary collectors</li> <li>Poor procurement</li> </ul>	<ul style="list-style-type: none"> <li>Preparation of a procurement plan –annual</li> <li>Negotiation for timely price fixation (MSP) based on the prevailing market price.</li> <li>Mass awareness campaign to create awareness among the primary collectors.</li> <li>Strengthening the district level structure and efforts for implementation of MSP scheme.</li> <li>Formation of PPAs at the village as well as the cluster level (wherever cluster organisations are there).</li> <li>Strengthening of PPAs – procurement arrangements, arranging revolving fund, quality control etc.</li> <li>Monitoring the procurement procedures and payment to the primary collectors and also to the PPAs.</li> <li>Market research and promotion.</li> </ul>	<ul style="list-style-type: none"> <li>TDCC and OFDC</li> </ul>
2	Kendu Leaf	<ul style="list-style-type: none"> <li>Declining quality of leaves</li> <li>Declining production in VSS areas</li> </ul>	<ul style="list-style-type: none"> <li>Preparation of overall strategy and work plan for improving the quality of kendu leaf and also to enhance the production from the VSS areas through the Project VSSs.</li> <li>Building capacity of the VSSs to oversee <ul style="list-style-type: none"> <li>bush cutting,</li> <li>leaf collection,</li> <li>phadi management</li> <li>other operations</li> </ul> </li> <li>Sensitization of pluckers.</li> <li>Building the capacity of pluckers in sorting, grading, drying, binding/ bundling etc.</li> </ul>	<ul style="list-style-type: none"> <li>OFDC</li> </ul>
3	Lac	<ul style="list-style-type: none"> <li>Declining</li> </ul>	<ul style="list-style-type: none"> <li>Identification of suitable areas and VSSs.</li> </ul>	OFDC

Sl.	NTFP	Key Issues to be Addressed	Interventions	Partner Agency
		<ul style="list-style-type: none"> <li>production</li> <li>Transit restriction even from the private land</li> <li>Lack of availability of brood lac</li> </ul>	<ul style="list-style-type: none"> <li>Promotion lac farming through VSS – both in the forests and private land – training and other inputs.</li> <li>Creation of facilities for storage of brood lac.</li> <li>Smoothening the process of obtaining transit permit.</li> <li>Market promotion.</li> </ul>	
4	Bamboo	<ul style="list-style-type: none"> <li>Declining production</li> <li>Poor management of bamboo areas</li> </ul>	<ul style="list-style-type: none"> <li>Analysis of factors causing degradation of bamboo areas – bamboo production. Important factor may be production o Karadi – bamboo shoots – which is a prohibited activity. Need silvicultural interventions to facilitate bamboo shoots production from some selected area.</li> <li>Developing overall strategy for scientific management of bamboo in forest area, VSS area and private land.</li> <li>Working with VSS for scientific management of bamboo in VSS area as well as bamboo grown on the private land.</li> <li>Enhancing the production of bamboo and ensuring better returns to the VSSs as well as private growers.</li> </ul>	OFDC and OBDA
5	Siali leaf	<ul style="list-style-type: none"> <li>Lack of organised production</li> <li>Declining quality of leaf and availability of raw materials</li> </ul>	<ul style="list-style-type: none"> <li>Work with VSS for productivity enhancement operations within the VSS area to ensure increased availability of good quality siali leaves.</li> <li>Action research with the Forest Department on the silvicultural prescriptions for production enhancement.</li> <li>Mass awareness campaign on sustainable harvesting of Siali leaf.</li> <li>Setting up processing facilities and capacity building of producers to enhance production, quality control etc.</li> <li>Market promotion.</li> </ul>	ORMAS
6	Hill broom	<ul style="list-style-type: none"> <li>Lack of access to better markets</li> <li>Poor quality of brooms</li> </ul>	<ul style="list-style-type: none"> <li>Mass awareness campaign on sustainable harvesting of broom grass.</li> <li>Promotion of cultivation of broom grass both in VSS areas as well as on the private land, wherever feasible.</li> <li>Training of primary collections on sustainable harvesting.</li> <li>Capacitating VSSs to monitor the sustainable harvesting of broom grass from the forest areas.</li> <li>Setting up processing facilities and training of producers to run the facility.</li> <li>Consistence market research and accordingly improvements in design and quality of products.</li> <li>Marketing and ensuring higher returns to the producers.</li> </ul>	ORMAS

Source: JICA Survey Team (2016)

### 1) “4.3.1 Inventorizing of NTFPs”

The Project will support for a scientific inventorizing of NTFPs in selected Divisions or Clusters with the help of technical institutions with the basic objective to understand existing availability and potentiality of different NTFP, trends in production, collection/ extraction systems, consumption patterns and trade, impact of various biotic factors and climate related factors on the production of NTFPs, involvement of women in NTFP collection etc. The inventorisation will also help the project

to prioritize its interventions in NTFP conservation, promotion, sustainable harvesting and marketing through the VSSs.

The inventorying will be carried out on a sample basis. The Divisions will be selected on the basis of abundance of multiple NTFPs. The existing information available with the Working Plan Divisions will be used to finalize the forest divisions as well as forest blocks. The specific sites within the divisions will be selected based on forest cover. Efforts will be made to cover all types of forests. Sample plots will be laid down for assessments of NTFP. For certain NTFPs like Mahua, Char etc. the revenue areas may also be included in the scope of the study.

The inventorisation will be conducted in collaboration with Technical Institutes, Universities and Research Institutes selected through a process of local competitive bidding. The VSSs existing in the study area will be involved in the process of inventorisation.

The methodology will be primarily empirical investigation but will include different participatory assessment methods to capture the ecological, social and economic aspects of NTFP use, management and trade. This may involve interviews with different stakeholders, participatory assessments with communities/ user groups, visit to different processing facilities and trading centre etc.

Necessary consultations will be organised at the FMU and DMU levels to capture views of different stakeholders.

## **2) “4.3.2 Developing NTFP Strategy”**

As there has been less emphasis on the management of NTFP after 69 items handed over to the Gram Panchayat in accordance with the Provisions of the Panchayat (Extension to Scheduled Areas) Act (PESA), 1996, the Project will initiate some actions for developing overall strategy and roll out plan for NTFP conservation and management and trade for the state involving different stakeholders including TDCC, OFDC, OBDA, ORMAS, OLM, Civil Society, Industries, and Traders etc.

The OFSDS will have series of meetings with the State Government (Panchayat Raj, Forest, Tribal Welfare, MSME, Planning and Convergence Departments) for necessary approval for preparation of a strategy for NTFP conservation and management.

The Project will also engage an external expert to steer the process of strategy formulation. The expert will have interactions with different stakeholders at the state and DMU levels. The state and DMU level multi-stakeholders workshops will be organised to discuss the key challenges and way forward. LRC of OFSDP-II LRC will facilitate the process of formulation of the NTFP collection and marketing strategy.

## **3) “4.3.3 Business Development Services including R&D”**

LRC will facilitate linkages of producer groups with appropriate agencies for business development services for NTFP enterprise development. The producer groups will be supported for development and implementation of business plan, capacity building, technological solutions, linkages with financial institutions and marketing agencies.

The Project will carry out the need for R&D works and accordingly explore the possibilities of working with different research institutions. LRC will steer the process of mapping out the needs. During formulation of strategy key requirements will be identified. Based on the need studies will be commissioned to different technical/ research institute.

The Project will support refining the existing protocols for sustainable harvesting and management of NTFPs. It will also develop the standards for different value added products from NTFP in order to ensure the quality of the product produced by the SHGs, producer organisations. LRC in collaboration with other technical agencies to develop protocols for some NTFPs, if needed.

The Project will popularize these sustainable harvesting protocols in the Project Area through mass campaign, training of SHGs and VSSs. The Project will negotiate with the stakeholders to evolve a common brand for NTFPs from Odisha.

As part of the business development services for NTFPs, OFSDP-II may also explore the way to promote the MSP scheme. The Government of India through MoTA has introduced a national scheme during 2013-14 on sustainable management of NTFPs, named as “The Mechanism for Marketing of Minor Forest Produce through Minimum Support Price (MSP) and Development of Value Chain”. The scheme intends to provide social safety measures for the NTFP gatherers/ collectors, who are primarily members of Schedule Tribe communities. The scheme is being implemented in 8 states having Schedule V areas. The scheme is being implemented in Odisha since July 2014.

The basic objective of this initiative under OFSDP-II is to ensure effective implementation of the GOI Scheme on MSP for NTFP in the Project area and the primary collectors get their due share of wages for collection of different NTFP.

**Table 6.9.3 Suggested Outline of Awareness Creation for MSP**

NTFPs covered under MSP	Divisions	Issues that can be addressed
Tamarind, Sal Seed, Gum karaya, Honey, Karanj, Lac, Mahua flower and Mahua seed, Chironjee, Myrobalans.	Karanjia, Sundergarh, Boudh, Ghumsur North and Sambalpur	<ul style="list-style-type: none"> <li>➤ Lack of adequate Primary Procuring Agencies</li> <li>➤ Poor awareness among the primary collectors</li> <li>➤ Poor procurement</li> <li>➤ Inadequate access to market</li> </ul>
Roles and Responsibilities of Stakeholders		<ul style="list-style-type: none"> <li>➤ TDCC and OFDC are the State Procurement Agencies. TDCC holds the key responsibility of implementation of MSP scheme for NTFP in Odisha.</li> <li>➤ The Partner NGO, on behalf of the Project, will play the anchor role in the field for implementation of the scheme.</li> <li>➤ Participation of concerned Gram Panchayats will be crucial for implementation of the scheme.</li> <li>➤ Cluster level producer organisations, VSSs and SHGs in the project area will be the field level organisations directly involved in procurement of NTFPs.</li> </ul>

Source: JICA Survey Team (2016)

The DMUs with the help of the partner NGOs will organise mass awareness campaign in the Project villages to create awareness among the primary collectors, SHGs, VSSs, producer groups on the MSP scheme. Support from TDCC will be sought for conducting awareness campaign as well as training of PPAs.

The DMU will organise meetings with the district level committee for discussion on the procurement plan and the project may take a proactive role in facilitating meetings at the district level on implementation of MSP.

The FMU and the partner NGOs will discuss with Gram Panchayats and VSSs to select one primary procuring agency (PPA) per GP. The partner NGO will assist the PPAs to prepare the procurement plan and institutional arrangements for collection from different SHGs, availability of revolving funds with SHGs and requirement of additional revolving fund, places to be arranged for storage etc. Discussions with TDCC and OFDC will be made to arrange necessary revolving fund and finalize the schedule for lifting the produces from PPAs. The partner NGO will organise necessary orientation and training programmes for the PPAs. It will ensure that PPAs have funds, packaging materials, proper storage space etc. before procurement of NTFP starts.

Once collection of NTFP starts, the VSSs, partner NGO and FMU will provide necessary assistance to the PPAs as well as TDCC and OFDC for procurement, storage and transportation of the products. The DMU will closely monitor the process of procurement and periodically report to the PMU. The process will be well documented with the help of partner NGO and circulated to other DMUs.

### 6.9.4 “4.4 Livelihood Resource Centre (LRC)”

#### 1) Cluster Promotion

As for the efficient marketing through aggregation of the products, clusters may be constituted at each division level. A cluster level organisation will prepare its business plan as in OFSDP-I. LRC will provide guidance in preparation of the plan and facilitate the linkage with financial institutions. It will also provide assistance in marketing and product development. OFSDP-II will provide assistance in establishing infrastructure at a division level. The guideline for business planning and management will be prepared by LRC. The project also adopts the promotion of partnership ecosystem development approach and take advantage of CSR for creating sustained partnership between the cluster level organisations and social entrepreneurs.

#### 2) “4.4.1 LRC”

Under the OFSDP-II PMU, LRC will be established as a dedicated unit for the promotion of cluster level business activities and will be formed during the 2<sup>nd</sup> Year of the Project Implementation. Its work plan (business plan) will be prepared with 12 months after the establishment of the LRC. LRC will also develop a strategic plan for the cluster promotion in OFSDP-II areas based on the market survey and value chain assessment.

LRC will be responsible for managing cluster revolving fund, cluster development fund, cluster corpus fund and the fund for IGA infrastructure for SHGs with VSS/ EDC. It will also take all the responsibilities in supporting small scale IGAs and also business development services for the cluster level organisations including marketing, financial linkages, R&D, marketing and product development for NTFPs, etc.



Source: JICA Survey Team (2016)

**Figure 6.9.5 Indicative Structure of Livelihood Support Unit under OFSDP-II**

The performance review of the LRC will be undertaken after the 4<sup>th</sup> year of its operation and sustainability plan should be developed. The objectives and functions of the LRC are given in **Attachment 6.9.2**.

#### 3) “4.4.2 Business Plan Development for LRC”

It is envisaged that LRC would become a self-sustaining entity at during or after the project duration. It is, therefore, would be beneficial for the LRC to have its own action plan or business plan to earn profits by providing business development services for the cluster level organisations. Therefore, as soon as LRC is established business opportunities will be identified and strategic plans will be prepared. LRC will carry out the activities according to this plan.



#### 4) “4.4.3 R&D and Product Development”

The challenges by the cluster level organisations in terms of the quality and presentation of the products. In order to earn profit from the market by selling the products, the products must respond to the requirement of the market in terms of quality and design. Therefore, LRC will facilitate in mobilising required skills and expertise in improving the quality and design of the products aggregated by the cluster level organisations.

#### 5) “4.4.4 Livelihood Development Fund”

##### i. Cluster Revolving Fund

Cluster level organisation, once formed, may require working capital to manage the activities. This revolving fund will provide the avenue for the infant cluster level organisations which do not have access to financial institutions for credits. In principle, the cluster level organisation will prepare the loan application along with their business plan. LRC will scrutinise the application before disbursing the fund. It will be essential for LRC to help them prepare the repayment plan and provide regular follow up to prevent the default. In the case of default, the member SHGs will collectively repay the amount to replenish the fund. The operational guideline for the cluster revolving fund will be prepared by LRC with an assistance from PMC during its 1<sup>st</sup> year of establishment and approved by the Governing Board of OFSDS.

##### ii. Cluster Corpus Fund

When the cluster level organisation gets registered under the applicable laws, they may opt for loans extended by the financial institutions. In case, the collateral is required for taking the loan, the cluster organisation may request LRC to provide the guarantee in the place for collateral. The operational modality of the cluster corpus fund will be prepared by LRC during the 1<sup>st</sup> year of its establishment with a help from PMC. The prepared guideline will be placed before Governing Board for its approval.

##### iii. Cluster Development Fund

Under OFSDP-II, aggregating SHG produces at the cluster level would be an important sustainability strategy. Thus, the project will work on the cluster promotion strategy at the early stage so that SHG identification can also be done strategically keeping in view of the potential for cluster based enterprise development. At the cluster level, certain infrastructure may be required such as storage space for aggregation of the products, drying yards, space for primary processing or value addition activities. Even in some cases, outlets may also be visualised. This fund will be utilised to support the creation of such assets for the cluster level organisations. General guideline for the utilisation of the fund will be prepared by LRC during the 1<sup>st</sup> year of its establishment. In principle, the applicant cluster level organisation will prepare a proposal and business plan and submit to LRC for review and approval. The necessary technical guidance along with the financial assistance based on the proposal will be provided by the LRC. The preliminary value chain assessment for the 5 product clusters are carried out (**Attachment 6.9.3**).

##### iv. IGA Infrastructure for SHGs with VSSIGA Infrastructure Development Fund

While promoting the IGA development, there may be a case a small infrastructure or some equipments are required. Such investment cost can partly be covered by the Revolving Fund rested with VSS/ EDCs whereas some would be more appropriate to be covered as grant under the project. Such requirement will emerge as the IGAs progress. Thus, 100,000 Rs. per SHG will be budgeted as Infrastructure Development Fund, which will be managed by LRC. To apply for the fund, WSHG (s) will prepare a proposal and submit to LRC through VSS/ EDCs. LRC will review and validate the nature of the proposal and release the fund. The detailed operational guideline of the IGA Infrastructure Development Fund will be prepared by LRC with an assistance from PMC. The prepared document will be approved by the Governing Board of OFSDS.



**6) “4.4.5 Facilitation of CSR/ Private Sector Partnership”**

As seen in the post project period of OFSDP-I, there is a scope to create an enabling environment for the cluster level organisations to sustain themselves by linking them with the private entities. The first attempt was made by OFSDS in September 2016 and some of the social entrepreneurs have started working in the OFSDP-I project areas. Taking advantage of this experience, OFSDP-II will continue to strengthen the linkage between the cluster level organisations and the private sector stakeholders. For this, LRC will establish a web site to facilitate the matching process of those cluster organisations seeking partners and those entities seeking to offer help. This web-site may also be utilised by the non project supported cluster organisations subject to approval of the OFSDS Governing Board. Such application may be submitted to LRC. The design of the web site and operational modality will be worked out during the 1<sup>st</sup> year of the establishment of LRC.

**7) “4.4.6 LRC Business Plan Review and Advisory Committee Meeting”**

LRC will be supported by the advisory committee comprised of the relevant stakeholders. Its progress on the business plan/ work plan will be reviewed once a year by the advisory committee and by PMU.

**6.9.5 “4.5 Annual Partner NGO Meeting”**

OFSDP-II will plans to engage 12 PNGOs for the implementation of the field level activities including SHG capacity building. Thus, LRC will review its performance and also provide updated knowledge on the IGAs/ cluster business development. This review meeting will also be planned for sharing of innovative cases within and out of the OFSDP-II areas.

**6.10 Component 5 Capacity Development****6.10.1 “5.1 Executing Agency”**

Issues and recommendations of the executing agency are described in Section 3.2.1(3) of this report. For institutional capacity development of PMU, DMUs and FMUs, a combination of training methods and approaches would be applied, that includes orientations, training, workshops, exposure visits (outside state and overseas), refresher training, preparation and dissemination of guidelines, manuals, standard operating procedures, field support and guidance by experts and resource/ partner organization etc.

**1) “5.1.1 Training Plan Development”**

For systematically undertaking capacity development of the key project stakeholders and the project staff, a comprehensive training master plan will be developed during the preparatory stage of the project. This training master plan will be followed to train well identified target group on all important elements of the project components and processes in batches during initial 2-3 years of the project implementation. The training master plan will be developed by PMU during first year of operation both for the national as well as for the overseas trainings/ exposures with support from PMC or engaging some experienced and credible resource person/ organisation, in case PMC is not in place by that time. A brief outline of the tasks to be carried out by the resource organisations is given at **Attachment 6.10.1**.

Rapid training need assessment (TNA) exercise will be undertaken across all key stakeholder categories, and based on the findings of the TNA, a comprehensive training master plan will be developed in time-scale of five years. Thus, the project will follow a well-defined capacity development strategy to achieve project objectives/ goals and to capacitate stakeholders for effective project implementation.

Staff nomination policy and nomination criteria would be developed by PMU, and included in the Training Master Plan. The nomination policy must provide equal opportunity to all project staff/ key stakeholders to receive training, and must also encourage women staff to get trained. After the detailed Training Master Plan has been developed, it should be approved by the Governing Body, and concurred by the JICA.

Annual Training Calendar will be developed by PMU and would be included as part of the Annual Plan of Operation. Accordingly, budget allocations for the annual training calendar would be made by PMU. The topics of the training identified in the Training Master Plan would be tentative, and could be modified or changed during project implementation as per the emerging needs identified through various feedback, assessment reports, annual workshops etc.

The training modules designed for the target groups should be simple to comprehend at various level of operations, and should be designed within the scope of the unit rate estimates whereas price escalations can be applied. To keep track of the modifications being made in the plan, as an approval system/flow from a competent authority should be taken for any deviations from the training master plan. Such deviations/ change in topics of training should also get reflected in the quarterly and annual Reports.

The training plan should be revised in fifth year or mid-term (whichever is earlier) of project operation factoring in all earlier deviations and applying price escalations, as required.

## 2) “5.1.2 Regular Training”

### i. Overall

PMU would organize series of regular training for systematically capacitating the stakeholders following the annual training calendar. As a strategy more short duration and local level training should be planned to reduce long absence of staff from field and home. The modules, training content, identification of resource persons and study material will be supported at PMU level to ensure uniformity in training content quality and information dissemination. The scheduling of the trainings and exposure trips could be done adjusting with the priorities and implementation pace of the project.

As a system, PMU would provide templates to training nominees to submit feedback on training and post training report, which should be utilized as a knowledge document, and for unlearning/debriefing of the learning after training with the other staff.

To provide flexibility in identification of training topics by PMU, areas of capacity development are being proposed rather prescribing specific topics of training. The areas on which the key stakeholders need to be trained are summarized in the table below.

**Table 6.10.1 Indicative Training Batches by Area of Training and Key Stakeholders**

Areas of Training	PMU/ DMU No. of Batches (Person-days/ batch)	FMU No. of Batches (Person-days/ batch)	Total	
			Batches	Person-days
a) Managerial/ Skill Improvement	6 (30)	10 (30)	16	480
b) Technical/ Engineering	5 (50)	10 (50)	15	750
c) M&E/ MIS, GIS	7 (50)	12 (50)	32	950
d) Gender	6 (30)	10 (30)	16	480
e) Environmental & Social Considerations	10 (40)	120 (40)	130	5,200

Source: JICA Survey Team (2016)

### ii. Managerial/ Skill Improvement, Technical/ Engineering, M&E/ MIS, GIS and Gender

Though, the project will develop the training master plan, some of the training topics that could be considered for efficient and effective project management, and if could get aligned with the TNA exercise, are given below.

**Table 6.10.2 Suggested Topics of Training**

Areas of Training	Suggestive Topics	Key Participants and Schedule	Possible Resource
a) Managerial/Skill Improvement	Program Evaluation Review Technique (PERT), Critical Path Method (CPM), Leadership and team player, Personal Effectiveness and Behavioral Skills; Documentation/ writing reports including case studies; Resolving group conflicts and Communications Skills, Financial Management in externally aided projects; Double-accounting system and project accounting; internal audits	PMU/DMU: PMU/DMU officers (6 3-day training in the 1 <sup>st</sup> year) FMU: FMU staff (10 3-day training in the 1 <sup>st</sup> year)	ASCI, Hyderabad; NIRDPR, Hyderabad, IIFM, Bhopal IIMs/ XIMB IRMA, Anand NIFM, Faridabad INGAF, GoI
b) Technical/Engineering	Recent Acts and Rules in forestry sector, forest degradation and mitigation measures, integrated watershed management, soil and water conservation methods, Designing and estimation of Engineering structures, Forestry models; nursery raising, indigenous species and management	PMU/DMU: PMU/DMU officers (5 3-day training in the 1 <sup>st</sup> year) FMU: FMU staff (12 5-day training in the 1 <sup>st</sup> year)	CSWCRTI, Dehradun Central Academy for State Forest Service, Coimbatore
c) M&E/ MIS, GIS	Project Evaluation and data analysis using statistical tools and techniques; Project Management Guidelines and Reporting; Indicator based monitoring, Participatory tools and Community self-monitoring, M&E tools & techniques, conducting Social Audits; Preparing annual plan based on Micro-plans; MIS software utilities, Remote sensing and GIS application and spatial analysis	PMU/DMU: PMU/DMU in charge of M&E/MIS and GIS (7 5-day training in the 1 <sup>st</sup> year) FMU: FMU staff in charge of M&E/MIS (12 5-day training in the 1 <sup>st</sup> year)	ASCI, Hyderabad; NIRDPR, Hyderabad IIFM, Bhopal IIMs/ XIMB IRMA, Anand IIRS/ FSI, Dehradun NRSA, Hyderabad
d) Gender	Gender analysis, Approaches and strategies to Gender Mainstreaming and Integration; Human Rights and Gender Based Violence; Gender Awareness, Equality and Advocacy; Gender Responsive Budgeting; Mainstreaming Gender into Leadership and Governance	PMU/DMU: PMU/DMU officers (6 3-day training in the 1 <sup>st</sup> year) FMU: FMU staff (10 3-day training in the 1 <sup>st</sup> year)	NIRDPR, Hyderabad GTI, New Delhi

Source: JICA Survey Team (2016)

### iii. Environmental and Social Consideration

Management and monitoring of environmental and social risks require a certain level of awareness and technical capacity. Particularly for ESMS, certain specialized knowledge and skills will be required at different management levels for operationalising the procedures for assessing and screening environmental and social impacts as well as implementing and monitoring safeguards measures.

Detailed capacity development plan for environmental and social safeguard will be developed by the PMU in the line with the training master plan during at the preparation stage. Currently, the following two capacity development trainings are planned at both PMU and DMU levels for implementing the ESMSF measures, steps and procedures.

- General Orientation on ESMSF and STFDPF for the Project
- Monitoring and Evaluation for Environmental and Social Safeguard

a) Environmental and Social Consideration Training (PMU)

The trainings at PMU are mainly targeted for management/ administrative level officers at PMU and DMU. If conditions allow, participation of FMU chiefs who are management level officers at the range level are highly appreciated. One-day training is scheduled for each training module.

The indicative training plan at PMU level is described hereunder.

**Table 6.10.3 Suggested Training Plan for Environmental and Social Safeguards at PMU**

Module Name	Theme/Topic	Key Participant	Schedule
1. General Orientation on ESMSF and STFDPF for the Project	<ul style="list-style-type: none"> <li>- JICA's safeguard policy</li> <li>- Basic introductory concept of safeguard</li> <li>- Overview of environmental protection, EIA and social safeguard regulations (general)</li> <li>- Safeguard issues (vulnerable groups, SCs, STs, gender rec.)</li> <li>- ESMSF steps and procedures to be applied in the Project</li> <li>- Free and prior informed consent (FPIC)</li> <li>- Environmental and social impact assessment: Overview</li> </ul>	<ul style="list-style-type: none"> <li>- PMU officers / DMU chief</li> <li>- (FMU Chief)</li> </ul>	1 <sup>st</sup> year (One day at the initial stage of the year)
2. Monitoring and Evaluation for Environmental and Social Safeguard	<ul style="list-style-type: none"> <li>- M&amp;E concept and procedures</li> <li>- Monitoring and reporting of safeguards</li> <li>- Use of M&amp;E results and feedback</li> </ul>	<ul style="list-style-type: none"> <li>- PMU / DMU staff</li> <li>- (FMU Chief)</li> </ul>	3rd year (One day at the initial stage of the year)

Source: JICA Survey Team (2016)

b) Environmental and Social Consideration Training (DMU)

The trainings at PMU are mainly targeted for field/ operational level officers at FMU. Also participation of representatives of Project targeted VSSs/EDCs is expected. One-day training is scheduled for each training module at 12 DMUs. The indicative training plan at PMU level is described hereunder.

**Table 6.10.4 Indicative Training Plan for Environmental and Social Safeguards at DMUs**

Module Name	Theme/Topic	Key Participant	Schedule
1. General Orientation on ESMSF and STFDPF for the Project	<ul style="list-style-type: none"> <li>- Basic introductory concept of safeguard</li> <li>- Overview of environmental protection, EIA and social safeguard regulations (specific)</li> <li>- Safeguard issues (vulnerable groups, SCs, STs, gender rec.)</li> <li>- Community consultation processes</li> <li>- Free and prior informed consent (FPIC)</li> <li>- Environmental and social impact assessment: Overview</li> </ul>	<ul style="list-style-type: none"> <li>- FMU chief / FMU Staff</li> <li>- Field level officers</li> <li>- Representatives from VSSs and EDCs</li> <li>- Other representative from Gram Sabha/ (if necessary)</li> </ul>	1 <sup>st</sup> year (One day at the initial stage of the year)
2. Monitoring and Evaluation for Environmental and Social Safeguard	<ul style="list-style-type: none"> <li>- Monitoring principles and procedures</li> <li>- Monitoring and reporting procedures</li> <li>- Use of reporting formats</li> </ul>	<ul style="list-style-type: none"> <li>- FMU chief / FMU Staff</li> <li>- Field Level Officers</li> <li>- Representatives from VSSs/EDCs</li> <li>- Other representative from Gram Sabha/ Palli Sabha</li> </ul>	3rd year (One day at the initial stage of the year)

Source: JICA Survey Team (2016)

### 3) “5.1.3 Refresher Trainings”

#### i. Overall

Many times staff nominations for training are not accomplished well for various reasons (sickness or other priorities with nominee), over the period new staff also join the project, and sometimes it is felt that staff requires to refresh the project processes and learning. For all such reasons provision of refresher trainings has been made, and batches by areas of training is indicated the table below.

**Table 6.10.5 Indicative Refresher Training Batches by Area of Training and Key Stakeholders**

Areas of training	PMU/ DMU No. of batches (Person-days/ batch)	FMU No. of batches (Person-days/ batch)	Total	
			Batches	Person -days
a) Managerial/ Skill Improvement	4 (30)	6 (30)	10	300
b) Technical/ Engineering	4 (50)	8 (50)	12	600
c) M&E/ MIS, GIS	5 (50)	8 (50)	13	650
d) Gender	4 (30)	6 (30)	10	300
e) Environmental & Social Considerations	10 (40)	120 (40)	130	5,200

Source: JICA Survey Team (2016)

#### ii. Environmental and Social Consideration

##### a) Environmental and Social Consideration Training (PMU)

The training modules will be the same as that of the first year training. The refresher training is intended for new project participants and refresher training for those who are required. Four years will be allocated for the refresher training and one-day training is scheduled for each training module per year.

The refresher training for “General Orientation on ESMSF and STFDPF for the Project” is scheduled four years between 2<sup>nd</sup> and 5<sup>th</sup> year of the Project, whereas that of “Monitoring and Evaluation for Environmental and Social Safeguard” is scheduled four years between 4<sup>th</sup> and 7<sup>th</sup> year.

##### b) Environmental and Social Consideration Training (DMU)

As same as the PMU refresher training, the content of training modules, expected participants, and timing/ frequencies will be the same as that of the first year training. One-day training is scheduled for each training module per year at 12 DMUs.

### 4) “5.1.4 Exposure Visits”

#### i. National/ Outside State

Equal importance will be given to national-level exposure visits outside state to be planned for all key stakeholders. The exposures should be planned to study & observes good examples and innovations in other states that are financially assisted by JICA as well as states where good examples are well recognized on livelihoods models and inter-sectoral linkages. Such exposures to other than JICA assisted states would provide opportunity to the forest department to interact and coordinate outside forest department and with other line departments as well. Selection of participants would be done across PMU, DMU and FMU levels for each batch to ensure that a mixed group collectively receives the exposure, and there is an opportunity to learn and share together as a team.

A report would be prepared and submitted by the participants soon after the exposure visits. The experiences and observations documented by the participants on standard template would be compiled at PMU along with the photographs/ video clips, and would be utilized as knowledge document and for training purposes.

#### ii. Overseas Exposure-cum-Training

Identification of participants for Overseas Exposure-cum-Training would be carefully and rationally done by the PMU, and must be linked with the ACR / performance report, and on the basis of contributions made by an individual for project achievements. It must be ensured that the person

nominated should have served the project for at least 1½ ~ 2 years, and would be able to serve the project for at least 3 years after receiving overseas exposure-cum-training. This would also require that nominated person should have at least 4-5 years of service prior to superannuation.

Overseas knowledge and learning report will be prepared and submitted by the participants soon after the exposure visits. The experiences and observations documented by the participants on standard template would be compiled at PMU along with the photographs/ video clips, and would be utilized as knowledge document and for training purposes.

### iii. Hi-Tech Nursery Exposure

The Hi-Tech Nursery exposure visit is intended for FD officers involved in nursery management and full-time nursery workers involved in nursery operation to be exposed to practical nursery management/operation of high-tech nurseries in other states. The detail plan for the exposure visits are to be determined at the initial stage of the Project implementation. The indicative plan is described below.

Visit Places:	i) Maharashtra and ii) West Bengal
Duration:	7 days visit outside of the State, and 1 day training at DMU
Number of DMUs:	12 DMUs
Number of Visits:	2 visits per DMU (Maharashtra and West Bengal), total 24 visits.
Total Number of Participants:	3 FD Officers and 9 Nursery Workers per visit, total 288 participants

### iv. Drainage Line Treatment/ SMC Work Exposure: Non-JFM

The Drainage Line Treatment/ SMC work exposure is intended for FMU level officers who will directly interact with VSSs/EDCs for planning/ implementation / monitoring of the drainage line treatment/ SMC works. The participants will be exposed to success and good practice examples which particularly contribute to guiding VSSs/EDCs in the planning and implementation processes the said interventions. The detail plan for the exposure visits are to be determined at the initial stage of the Project implementation. The indicative plan is described below.

Visit Places:	Division(s) having good practices for planning and implementation of drainage line treatment/ SMC works
Duration:	3 days visit outside of division, and 1day training at DMU
Number of DMUs:	12 DMUs
Number of Visits:	2 visits per DMU, total 24 visits.
Total Number of Participants:	Maximum of 30 participants per visit, total 720 participants

## 5) “5.1.5 National Workshop”

In consultation with JICA, one-time national workshop could be organized by PMU during OFSDP II implementation, inviting key stakeholders from JICA supported projects in India along with key Project Staff and representatives of State/ GOI, other externally-aided project, donor agencies, NGOs, etc.

## 6) “5.1.6 Institutional Capacity Impact Assessment”

Institutional capacity assessment will be carried out at regular intervals across all stakeholder categories and referring to the Annual Training Calendar and Training Master Plan. The study findings will be shared with the Governing Body and JICA.

To assess the impact of the training/ capacity development initiatives under OFSDP II, PMU would engage independent credible and qualified agency. The TOR and procurement details should be shared with JICA for information and feedbacks prior to initiating the assessment exercise. A brief outline of the tasks to be carried out by the agency/ institution is given at **Attachment 6.10.2**. These assessments would be undertaken after 3<sup>rd</sup>, 6<sup>th</sup> and 9<sup>th</sup> years of project implementation.

### 6.10.2 “5.2 Community Institutions”

The overall training plan for SHGs and VSS/ EDC will be prepared by LRC and PMC based on the rapid training needs assessment. Especially for the SHG and Cluster development related training programmes need to be planned according to the potential IGAs and cluster based enterprises. The initial overall planning will be done as a Master Plan and annual plan will be prepared by LRC and PMC to accommodate the requirements.

#### 1) “5.2.1 Training of SHGs”

As not all the SHGs will be active and capable, trainings on the basic skills of group dynamics, managing internal savings and lending, record keeping will be done immediately after the identification of the project SHGs. This training will be done by the partner NGOs at the field level. Where the NRLM intensive blocks are overlapping, some of the training topics may not be relevant. The training topics will be adjusted based on the requirement of every SHG. This basic trainings will be given at every VSS level. The indicative training programmes are given in the table below. In case, where the OLM community resource person is available, she may be invited as a resource person to undertake this training. All these training are introductory and aiming at giving the members an overview of the SHG based project activities and potential of SHGs. The training contents will be revisited prior to the implementation in order to nurture SHGs NRLM/ OLM compliant. The time of the training will be decided by the SHG members and the venue will be identified by the SHG members within the locality.

**Table 6.10.6 Suggested Outline of the SHG Training**

Topics	Outline	Duration	Participants/ Batch size
1. Objectives and Functions of SHG	<ul style="list-style-type: none"> <li>➤ Objectives of SHGs</li> <li>➤ Panch Sutras (Five cardinal principles for SHG)</li> <li>➤ Different activities that can be undertaken by SHGs</li> <li>➤ Importance of SHGs in village livelihood</li> </ul>	0.5 day x 4 times	30 persons per VSS, animators
2. Managing a Group - Record Keeping and Meetings	<ul style="list-style-type: none"> <li>➤ How to conduct meetings</li> <li>➤ Keeping minutes</li> <li>➤ Keeping financial records</li> <li>➤ Keeping records on IGA (Production, sale etc.)</li> <li>➤ Managing bank account</li> </ul>	0.5 day x 6 times following up	4 persons/ SHG x 3 per VSS=12 persons (Chairperson, Vice Chair, Treasurer, Secretary), animators
3. IGA activities (1)	<ul style="list-style-type: none"> <li>➤ Possible activities and different resources available</li> <li>➤ Process of identifying IGAs – market and supply</li> </ul>	0.5 day	30 persons per VSS, animators
4. IGA activities (2)	<ul style="list-style-type: none"> <li>➤ Business planning process for small IGAs</li> </ul>	0.5 day	30 persons per VSS, animators
5. SHG Revolving Fund/ Financial Linkages	<ul style="list-style-type: none"> <li>➤ How to complete application</li> <li>➤ Negotiation on rate of interest, repayment period, instalments etc.</li> <li>➤ Review process by VSS</li> <li>➤ Other financial institutions for linkages</li> </ul>	0.5 day	30 persons per VSS, animators
6. Supports available for SHGs	<ul style="list-style-type: none"> <li>➤ OLM</li> <li>➤ Bank linkages</li> <li>➤ Other possible government interventions that can be utilised for IGAs</li> </ul>	0.5 day	30 persons per VSS, animators

Source: JICA Survey Team (2016)

Where OLM interventions are in progress, OFSDP-II will discuss with the OLM to see the possibility of convergence.

## 2) “5.2.2 Skills Training to Promote IGAs”

Once SHGs identifies the small scale IGAs to take up at the SHG level, some skills training including business planning, financial linkages, marketing, production skills, etc may be required. LRC will undertake the training needs assessment and organise such training programmes. As the training programmes will be linked to business plan of SHGs, partner NGOs may also play a role in arranging the skills training and exposure visits. Each training will be carried out in the mode of Training of Trainers (TOT). The participants to the training will be decided by the SHG members and those who participate should be able to train other members who have not participated in the training programmes. The indicative outline of the training programmes are given in the table below. The training programme will be identified at the village level or could be at the FMU level depending on the requirement of the training resources and the nature of the training programmes.

**Table 6.10.7 Suggested Outline of the Skills Training for IGAs**

Topics	Outline	Duration	Participants per Batch	Venue
1. Exposure Visit to Successful IGAs	➤ Visits to other SHGs undertaking successful IGAs	1 day	40 persons,	As per the requirement
2. Business Plan Development and Management	➤ Review of the plan cum consultation by the resource person ➤ Basics of production and financial management and marketing	0.5 day x 4 days	2 persons/ SHG x 3 SHGs/ VSS, animators	FMU level
3. Skills Training	➤ Skills training for farm based/ non farm based IGA activities (i.e. vegetable cultivation, poultry, siali leaf plate making, hill broom making, food processing, etc.) ➤ As per the business plan.	7 days per IGA	3 persons/ SHG x 3 SHGs/ VSS, animators	FMU
4. Value addition	➤ Primary processing and value addition skills of the various products including NTFPs	3 days per IGA	3 persons/ SHG x 3 SHGs/ VSS, animators	FMU/ VSS
5. Sustainable Harvesting Techniques/ Protocols of NTFPs and MAP and Value Addition	➤ Sustainable harvesting techniques/ protocols of NTFPs and medicinal and aromatic plants (MAP) ➤ Primary processing and value addition (i.e. sal, siali, and kendu leaf, bamboo, etc.)	5 days per NTFP/ MAP including follow up	3 persons/ SHG x 3 SHGs/ VSS, animators	FMU/ VSS
6. Cluster Based Enterprises - Introduction	➤ How it is organised and managed ➤ Its potential and benefit ➤ Facilities available for support	5 days including follow up	2 persons/ SHG x 3 SHGs/ VSS, animators	FMU

Source: JICA Survey Team (2016)

## 3) “5.2.3 Training of VSS/ EDC”

The training plan will be developed by the PMU with assistance from PMC. The indicative training programmes are given in the table below.



**Table 6.10.8 Indicative List of Training and Capacity Building Activities**

Capacity Building Activity	Theme to be Covered	Target Group	Duration	Facilitator/ Trainer	Place of training
1. Re-organisation of VSS	- Confirmation of VSS area, Membership, Election of EC, verification of records etc.	Animators, NGOs, range officers, foresters and forest guard	1 day	DMU chief	DMU level
2. Orientation of VSS/ EDC on Micro planning	- Scope, purpose, need, methods of micro planning and role of VSS and other actors	VSS – all members – GB and EC	1 day	NGO and FMU chief	VSS/ Village
3. Orientation of Working Groups (general and women) of VSS/ EDC for micro planning	- Scope, purpose, need, methods of micro planning and role of Working Groups	Working groups constituted for preparation of micro plan	1 day	NGO and FMU chief	FMU level or one 3-4 VSSs
4. Documentations and maintenance of VSS records	- Records to be maintained, accounting procedures, periodicity, duties and responsibility, transparency etc.	VSS leaders (presidents, member secretaries, treasurers and animators)	10 days during the tenure of the Project (3 days and 1 day follow in every 6 months during first four years)	NGO and FMU staff	FMU level
5. Forest protection and management-basic principles and practices	- Afforestation and regeneration models, - Tree planting outside forest/ farm and agro-forestry, silviculture, NTFP management, fire prevention and mitigation and other disaster management, nursery management etc. - (More emphasis on field demonstrations)	VSS/ EDC leaders (presidents, member secretaries, 2 more VSS/ EDC members and animators), NGO	11 days (3 days basic and 2 days follow up in a year for 4 years)	DMU chief, trainers from Silviculture division	FMU level
6. Sustainable Biodiversity Management	- Understanding the linkage between biodiversity and livelihood - Need of inventorying of resources - Community monitoring of the biodiversity – tools and methods - Economic value of biodiversity	VSS/ EDC leaders (Presidents, Member Secretaries, 2 more VSS/ EDC members and Animators), NGO	2 days	Resource Organisation	FMU
7. Institution Development of VSS/ EDC – Orientation of VSS/ EDC members	- Governance aspects of VSS, - Duties and responsibilities of GB, EC, Office Bearers, Working Groups etc., - Fund management, transparency, accountability, - Planning and execution, - Sustainability of VSS etc.	All VSS/ EDC members	One day – once in six months (To be organised while the GB Meetings are conducted at the VSS level)	NGO	VSS/ EDC level
8. Social Audit	- Objectives of social audit - Responsibilities of VSS/ EDC members and community in the process of social audit	All VSS/ EDC/ GB members, animators	One day in end of January to February	NGO	VSS/ EDC level

Capacity Building Activity	Theme to be Covered	Target Group	Duration	Facilitator/ Trainer	Place of training
	<ul style="list-style-type: none"> <li>- Steps of Social Audit</li> <li>- Preparation of Social Audit Report</li> </ul>				
9. Management of SHG Revolving Fund	<ul style="list-style-type: none"> <li>- Objectives of SHG revolving fund</li> <li>- Application Procedures</li> <li>- Review criteria</li> <li>- Records to be maintained</li> <li>- Interest rates</li> <li>- Utilisation of the interest earned</li> </ul>	2 VSS representatives, animators	One day x 2 times	NGO	FMU
10. Community Disaster Management	<ul style="list-style-type: none"> <li>- Assessment of vulnerability of resources to climate change</li> <li>- Preparation of climate change adaptation plan</li> <li>- Basic preparedness in the communities/ VSS for disaster risk management</li> </ul>	Leaders of VSSs and EDCs, Animator (5 persons from each VSS/ EDC)	Two days (1+1 day)	Resource Agency	FMU
11. Wildlife-Human Conflict	<ul style="list-style-type: none"> <li>- Understanding the changing relationship between human and wildlife</li> <li>- Coping mechanism</li> <li>- Importance of habitat management and the role of community</li> </ul>	All VSS/ EDC/ GB members	One day in end of January to February	FMU/ NGO	VSS/ EDC level
12. Workshop of VSS/ EDC leaders	<ul style="list-style-type: none"> <li>- Sharing of experience, best practices, innovations, future plan etc.</li> <li>- Sharing of ideas on sustainability of VSS.</li> <li>- Possibility of evolving network/federations of VSSs at Range and Division level.</li> </ul>	VSS/ EDC – presidents and member secretaries, NGOs (Each Range may select 5-10 VSSs to participate in the workshop)	Once in a year for 1 day	DMU Chief with the help of PMU/ PMC	DMU level
13. Workshop of VSS/ EDC leaders	<ul style="list-style-type: none"> <li>- Sharing of experience, best practices, innovations, future plan etc.</li> <li>- Sharing of ideas on sustainability of VSS.</li> <li>- Addressing issues common to the VSSs.</li> <li>- Evolving collective action for common issues.</li> <li>- Convergence strategies.</li> <li>- Possibility of evolving network/federations of VSSs/ EDCs at range level.</li> </ul>	All VSSs/ EDCs in the range/ FMU – presidents and member secretaries, NGO	1 days (Twice in a year)	FMU chief with the help of DMU Staff and NGO	FMU level
14. Project Review Workshops	<ul style="list-style-type: none"> <li>- As per the M&amp;E schedule</li> </ul>				

Source: JICA Survey Team (2016)

#### 4) “5.2.5 Exposure visits (within the State)”

Exposure visits to the various sites within DMU and Odisha will be organised by OFSDP-II. The suggested outline of the exposure visits are given in the table below.

**Table 6.10.9 Suggested Outline of the Exposure Visits for VSS/ EDCs**

Capacity Building Activity	Theme to be Covered	Target Group	Duration	Facilitator/ Trainer	Place of training
1. Exposure visit within the DMU	Best practices, innovations in institution development as well as programme implementation	VSS/ EDC leaders (to be nominated by FMU chief and partner NGO)	1 day	DMU to coordinate	One or Two VSSs/ EDCs within the DMU
2. Exposure visit within the State	Best practices, innovations in institution development, building linkages, project implementation	VSS/ EDC leaders (to be nominated by DMU Chief)	2-3 days	PMU to identify places and finalised participants and schedule	Visit to VSS/ EDC or other village institutions within the state

Source: JICA Survey Team (2016)

In addition to the above, the drainage line treatment/ SMC work exposure for JFM is intended for VSSs/EDCs representatives who will be involved in planning/ implementation / monitoring of the drainage line treatment works as well as SMC works in general. The participants will be exposed to success and good practice examples which particularly contribute to planning and implementation of the said interventions. The detail plan for the exposure visits are to be determined at the initial stage of the Project implementation. The indicative plan is described hereunder.

Visit Places:	Division(s) having good practices for planning and implementation of drainage line treatment/ SMC works
Duration:	3 days visit outside of division, and 1day training at DMU
Number of VSSs:	1,200 VSSs/EDCs (2 participants per VSS/EDC)
Total Number of Participants:	2,400 participants
Number of Visits:	Total 80 visits (Maximum of 30 participants per visit)

### 5) “5.2.6 Exposure visits (Outside of the State)”

VSS/ EDC members will be given opportunities for the site visits outside of the state. By interacting with the VSS/ EDCs in other states would give them opportunities to learn from their experiences. The suggested outline of the exposure visits outside of the state is given below.

**Table 6.10.10 Suggested Outline of the Exposure Visits Outside of the State**

Capacity Building Activity	Theme to be covered	Target Group	Duration	Facilitator / Trainer	Place of Training
Exposure visit to other JICA Projects	Successful models of community based forest management, forest based enterprises, women run livelihood programmes, wildlife protection, biodiversity conservation, mitigation of human-wildlife conflicts etc.	VSS/ EDC leaders (to be nominated by DMU chief and finalized by PMU)	One week to 10 days	PMU	States having JICA forestry projects

Source: JICA Survey Team (2016)

### 6) “5.2.7 Gender Training”

The following gender training programmes are proposed for the VSS/ EDC and SHG members.

#### i. VSS/ EDCs (1 Day)

The programme will be conducted by PNGO staff. It may also be scheduled at the village level as the partner NGO staff visit the villages.

**Table 6.10.11 Indicative Outline of VSS/ EDC Gender Training**

Training Objectives		
<ul style="list-style-type: none"> <li>➤ To understand the differences in perspectives between men and women</li> <li>➤ To understand the ways to respect the needs of men and women in the locality through gender responsive planning/ budgeting methods</li> </ul>		
Time	Programme	Group Exercises
AM	<ul style="list-style-type: none"> <li>➤ Understanding Different Perspectives: Men and Women</li> <li>➤ Importance of Gender Mainstreaming</li> <li>➤ Gender Roles in Joint Forest Management</li> </ul>	<ul style="list-style-type: none"> <li>➤ Gender Roles in Community, Household, Forest Management</li> <li>➤ Gender Analysis on Access and Control of Forest Resources</li> </ul>
PM	<ul style="list-style-type: none"> <li>➤ Gender Planning and Budgeting</li> </ul>	<ul style="list-style-type: none"> <li>➤ Mock Micro Planning/ Annual Planning</li> </ul>

Source: JICA Survey Team (2016)

## ii. SHGs

Activities for the SHGs can be organised by PNGOs. Depending on the availability of time among the SHG members, the activities can be scheduled. In the thematic discussions, local resource persons including ASHA, Anganwadi workers, and other relevant government staff may be invited.

**Table 6.10.12 Indicative Outline of the Gender Training for SHGs**

Training Objectives		
<ul style="list-style-type: none"> <li>➤ To create an awareness of value of women's contribution to the community and family</li> <li>➤ To get exposed to the analytical thinking to resolve the problems faced by women in the community</li> <li>➤ To acquire skills to plan for action</li> </ul>		
Time	Programme	Group Exercises
General	<ul style="list-style-type: none"> <li>➤ Understanding Different Perspectives</li> <li>➤ Issues that faced by men and women in the community and how to resolve</li> <li>➤ Catering for Women's Needs</li> </ul>	<ul style="list-style-type: none"> <li>➤ Gender Roles in Community, Household, Forest Management</li> <li>➤ Gender Analysis on Access and Control of Forest and non-Forest Resources</li> <li>➤ Problem Tree Analysis</li> <li>➤ Venn Diagrammes</li> <li>➤ Action Planning</li> </ul>
Thematic Discussions	<ul style="list-style-type: none"> <li>➤ Depending on the issues to be resolved in the community thematic training programmes can be organize by the PNGO staff. Some of the suggested topics are given below:</li> <li>➤ Water</li> <li>➤ Sanitation</li> <li>➤ Nutrition</li> <li>➤ Food Security</li> <li>➤ Drudgery Reduction</li> <li>➤ Literacy</li> <li>➤ Legal Literacy</li> <li>➤ Health/ Reproductive Health</li> <li>➤ Managing Household Economy and Income Generation Activities</li> <li>➤ Social issues – domestic violence/ alcohol/ rehabilitation</li> </ul>	

Source: JICA Survey Team (2016)

### 6.10.3 “5.3 Training of Partner NGOs”

Upon deployment of partner NGOs, TOT will be given to them so that they can deliver the training at the field level targeting VSS/ EDC/ SHG members and animators. Main areas of their training would be in the micro planning process, organisational management, IGA and gender. The outline of the training programmes are given below. Handbook for partner NGOs will be prepared by PMU as a training material.

**Table 6.10.13 Indicative Outline of PNGO Trainings (TOT)**

Topics	Theme to be covered	Duration	Facilitator/Trainer	Place of Training
1. OFSDP-II Project Outline and role of PNGOs and other stakeholders	Project objectives and approach Joint Forest Management – Forest Dependent Community Role of PNGOs and other stakeholders	1 Day	PMU/ PMC	PMU
2. Micro planning – Concept, Approach and Methodology – TOT - Module 1	Training methodologies, Micro planning in OFSDP, Participatory tools, Vision and Perspective Building, Multi-stakeholders engagements, Consensus building, Drafting of micro plan etc.	5 days including practice sessions in the field	PMC/ PMU	DMU level
3. Micro planning – Concept, Approach and Methodology – TOT - Module 2	Recap of module 1 and Annual planning and preparation of convergence plan, Consultation with various stakeholders, Fund raising strategies etc.	3 days	PMC/ PMU	DMU level
4. VSS/ EDC Management	Records to be maintained, accounting procedures, periodicity, duties and responsibility, transparency etc.	5 days including 2 day follow up after 4-5 months	PMC/ PMU	DMU level
5. Community Development Fund/ Revolving Fund	Management of Community Development Fund Revolving Fund	1 Day	PMC/ PMU	DMU level

Source: JICA Survey Team (2016)

In addition to the above, gender training will be carried out as for partner NGOs as TOT.

**Table 6.10.14 Indicative Outline of the Gender Training for Partner NGOs (TOT)**

Training Objectives		
<ul style="list-style-type: none"> <li>➤ To understand the concept of Gender</li> <li>➤ To understand the different perspectives in community, household and joint forest management</li> <li>➤ To understand how to devise gender analysis tools and facilitate the group discussions</li> <li>➤ To gain skills to carry out the gender responsive micro planning/ annual planning budgeting process with VSS/ EDCs</li> </ul>		
Time	Programme	Group Exercises
AM	<ul style="list-style-type: none"> <li>➤ Understanding Different Perspectives – Men and Women</li> <li>➤ Importance of Gender Mainstreaming</li> <li>➤ Gender Roles in Joint Forest Management</li> <li>➤ Gender Planning and Budgeting</li> </ul>	<ul style="list-style-type: none"> <li>➤ Gender Roles in Community, Household, Forest Management</li> <li>➤ Gender Analysis on Access and Control of Forest Resources</li> <li>➤ Mock Micro Planning/ Annual Planning</li> </ul>
PM	<ul style="list-style-type: none"> <li>➤ Gender Responsive Facilitation Skills</li> <li>➤ Issues that faced by men and women in the community and how to resolve</li> <li>➤ Catering for Women's Needs</li> </ul>	<ul style="list-style-type: none"> <li>➤ Principles in Facilitation</li> <li>➤ Role Play</li> <li>➤ Problem Tree Analysis</li> <li>➤ Venn Diagrams</li> <li>➤ Action Planning</li> <li>➤ Existing resources that can help women: Information on the government schemes/ programmes and how to access</li> <li>➤ Water</li> <li>➤ Sanitation</li> <li>➤ Nutrition</li> <li>➤ Food Security</li> <li>➤ Drudgery Reduction</li> <li>➤ Literacy</li> <li>➤ Legal Literacy</li> <li>➤ Health/ Reproductive Health</li> <li>➤ Managing Household Economy and Income Generation Activities</li> <li>➤ Social issues – domestic violence/ alcohol/ rehabilitation</li> </ul>

Source: JICA Survey Team (2016)

#### 6.10.4 “5.4 Training of Animators”

From each VSS/ EDC, one male and one female animators will be engaged. Partner NGOs will provide the orientation and train them in livelihood support activities to be undertaken through VSS/ EDC and SHGs. In addition to these programmes, animator are also required to participate other VSS/ EDC/ SHG training programmes so that they can also provide follow up.

**Table 6.10.15 Indicative Outline of Animator Training**

Topics	Outline	Location of Training
Outline of the project and the role of animators and other stakeholders	Project Objectives and approaches Roles of Animators and other stakeholders	FMU/ follow up at village level
Orientation on Micro planning and facilitating convergence	Process of micro planning Convergence – how it can be facilitated and potential schemes/ programmes Role of animator in micro planning and convergence	FMU/ follow up at village level
SHGs and IGAs	SHGs and IGAs under OFSDP-II Role of Animator in supporting SHGs and promoting IGAs	FMU/ follow up at village level

Source: JICA Survey Team (2016)

#### 6.10.5 “5.5 Promotion of Product Cluster at DMU Level”

According to the cluster business development strategy developed by LRC, the training programmes will be planned by the centre. The basic skills of business planning and management, organisational management and skills training will be conducted according to the requirement. Exposure visits will also be organised to see other successful and innovative cluster based enterprises. LRC will also provide support for cluster level organisations to register as an appropriate form of legal entity.

**Table 6.10.16 Suggested Training Outline for the Product Cluster Promotion at DMU Level**

Themes	Coverage	Duration	Participants
<b>Institution Development</b>			
Exposure Visit to successful Clusters/Producer Organisations	Understanding value chain and market opportunity, genesis and growth of organization, understanding business plan, role of promoting organisation, interventions related to promotion of organisation/cluster, identifying factors that led to success, future challenges and opportunities	3 days	Personnel in charge of cluster promotion (2 persons per cluster – staff at partner NGO and resource organization level)
Exposure Visit to Clusters/Producer Organisations	Understanding context of cluster/producer organization, broad understanding of business plan, governance and leadership, identifying factors that led to success	3 days	Key SHG Leaders and functionaries of producer organisation
Training on Cluster Development	Relevance of cluster development, promotion and management of producer organizations, understanding legal provisions including framing by laws for producer organizations, development of business plans for producer organizations, facilitating producer organisation’s access to credit and benefits under different government schemes	3 days	Personnel in charge of cluster promotion (2 persons per cluster – staff at partner NGO and resource organisation level)
Training on Management of Producer Organizations	Orientation on by law and legal compliance, leadership & governance, operations management, orientation on business plan and marketing	2 days	Key staff and leaders of producer organizations/SHG clusters
<b>Skill Training</b>			
Skill Training of Master Trainers	Product specific - placement of potential trainers or participation in ongoing training offered by different institutions	15 days	Potential persons already dealing with the product
Skill Training of Members	Relates to processing of specific products including raw material handling, equipment handling, quality control and packaging	3 days	SHG members to be associated with processing

Source: JICA Survey Team (2016)

## **6.10.6 “5.6 Quality Enhancement of Kendu Leaf”**

### **1) Background and Objectives**

Kendu Leaf is considered as a golden leaf and provides seasonal employment to nearly one million people in Odisha. Annually 15 million person-days of employment are created by kendu leaf operation. About 11% of the country’s kendu leaf production is from Odisha but the quality is considered to be good. However, despite better pricing of procurement of leaf and various welfare measures, the primary collectors are not giving adequate emphasis on plucking good quality leaves. VSSs in the kendu leaf production areas are also have not proactively engage themselves in kendu leaf L procurement.

The common perception is that the leaf quality has gone down and the production in many places also has fallen.

Odisha is the only state, which sells the kendu leaf in a processed form. The activities proposed under this sub-component aims at the following:

- 1) To ensure quality production of kendu leaf from the Project villages/ VSSs.
- 2) To involve VSSs in different activities of kendu leaf organisation for collection of leaf and establish some best practices in participation of VSS in kendu leaf procurement.
- 3) To enhance the production of kendu leaf from the Project VSSs.

DMUs to be intervened will be identified on the basis of availability of kendu leaf and approval of the KL Organisation of Forest Dept. The suggested divisions are Subarnapur and Athmalik.

### **2) Partner Agencies and Implementation Arrangements:**

Kendu leaf is a nationalized forest product. The kendu leaf organisation of the Forest Department is the sole responsible agency for procurement and processing of kendu leaf. Odisha Forest Development Corporation (OFDC) undertakes the marketing of kendu leaf. The Project will work with the KL Organisation to establish some best practices in kendu leaf procurement and improve the quality of the product.

VSSs will play key role in mobilizing the kendu leaf pluckers in their respective villages and implementation of the initiative. Partner NGO will play a support role in the entire initiative.

### **3) Proposed Interventions:**

The Project will discuss with the Forest Department and kendu leaf organisation to finalize the scope and geographical spread of this initiative, responsibility of kendu leaf organisation, Project – PMU, DMU, partner NGO and VSSs.

A series of discussions will be held with the kendu leaf organisation to prepare a strategy and work plan for improving the quality of kendu leaf and enhancing the total production from the target areas of the Project with the participation of VSSs. A rapid assessment of the ground situation will be done by the LRC.

The Project DMUs will discuss the strategy and work plan with the Officers of kendu leaf divisions and necessary modifications based on the local situation will be made. The work plan will emphasize joint interventions by the Project as well as kendu leaf organisation.

The DMUs will organise orientation programmes for the FMUs, partner NGO and VSS leaders.

A strategy for massive awareness campaign will be chalked out in consultation with partner NGO, FMUs, and VSSs for the Project villages, where kendu leaf is harvested. The campaign will include village level meetings, foot marches, cycle rallies, wall writings etc. The partner NGO will take the lead for awareness campaign. The themes and materials for awareness campaign will be provided by the LRC, PMU.

Awareness campaign will be organised every year before the bush cutting as well as before plucking of leaves to sensitize the pluckers to adopt best practices in leaf collection and processing.

A working group will be formed in each VSS to monitor the following and the members will be oriented on best practices in bush cutting, leaf collection, processing and packing etc.

- bush cutting
- leaf collection
- phadi repair and management
- proper drying of leaves
- binding and packing
- maintenance of cards of the pluckers
- payments to the pluckers
- any other operations related to KL procurement.
- Through this initiative efforts will be made to build the capacity of pluckers in sorting, grading, drying, binding/ bundling, etc.

DMU and kendu leaf division will jointly fix up the target for each VSS for bush cutting and collection of leaf of different grades. The concerned VSS has to take the responsibility for mobilization of members for bush cutting, leaf collection etc. The VSS will be supported by the Animators, Partner NGO and staff of kendu leaf organisation.

The work of VSS will be closely monitored by the FMU as well as the kendu leaf organisation. After the procurement season, work of all the VSSs will be assessed to find out best performing VSS. Award system may also be introduced as an incentive for VSSs for their best performance.

#### **6.10.7 “5.7 Training and Extension of Farm Forestry”**

The mechanism of Farm Forestry under OFSDP-II as per the guideline on the Farm Forestry of OFSDP-II will be explained to VSS/ EDC members by FMU level staff. The technical guidance will be provided by FMU level staff with the support from the partner NGOs. This orientation will be carried out during the micro planning process and the technical guidance prior to the field level plantation.

#### **6.10.8 “5.8 Capacity Development – REDD+ Readiness”**

##### **1) National Level Training**

In order to build the capacity within the OFD, it is recommended that three (3 no.) staff each from the proposed staff of the Geomatics cell of the PMU and IT /GIS lab of OFD, PCCF office along with one staff from each DMU to be sent for a week long national level training in biomass assessment and GIS/remote sensing data processing techniques. Some of the renowned and pioneer national level institutes of repute include:

1. National Remote Sensing Agency, Hyderabad
2. Forest Survey of India
3. Indian Institute of Remote Sensing, Dehradun

##### **2) Division Level Training**

The division level training on GPS, MIS, and awareness creation will be conducted by GIS cell of PMU with technical assistance of the REDD+ specialist of PMC. Necessary training materials will be prepared by GIS cell with a technical inputs from PMC.



## 6.11 Component 6 REDD+ Pilot Projects

### 1) Outline of the Component

As reviewed in the earlier chapter, the REDD+ readiness of the OFSDP II needs to be built based on the assets created during OFSDP-I. To enhance the readiness, the project needs to carry out the activities to establish Reference Level, MRV and safeguards, and build capacity to operationalise MRV and safeguards.

The survey team has reviewed the possible options for REDD+ for OFSDP II. However, as the REDD+ technical cooperation of JICA to enhance the capacity of OFD in REDD+ readiness is in pipeline, REDD+ pilot projects under OFSDP-II will be designed to converge with it so that the efforts made under OFSDP-II can contribute to the state level carbon assessment system as well as Safeguard information system.

**Table 6.11.1 Review of the REDD+ Options for OFSDP II**

Scenario	Proposed action
<p><b>Scenario 1</b>  <b>VSS Treatment areas</b> are considered as project area and considered for change in biomass stock; and a Reference Region is selected around the VSS treatment areas for baseline calculations (although it is recommended that instead of arbitrary reference area better to have VSS assigned areas/ Range boundary as reference area).  Methodology:  <ul style="list-style-type: none"> <li>➤ Pilot REDD+ area will be treatment areas of selected VSS.</li> <li>➤ A reference area will be selected around the REDD+ project area to develop the baseline.</li> <li>➤ Procurement of images covering only the VSS is required which will be covered under OFSDP-II.</li> <li>➤ Change in biomass stock within the treatment area will be accounted for credits under REDD+.</li> <li>➤ All the countermeasures will be only in the treatment areas selected under the REDD+ project.</li> <li>➤ Can be scaled up later to other VSS treatment areas.</li> <li>➤ Will be difficult to potentially link VSS treatment area based REDD+ baseline to the any jurisdiction based baseline at a later time (This issue can be avoided if Range boundary is taken up as Reference Area).</li> </ul> </p>	<ul style="list-style-type: none"> <li>➤ Mapping maybe taken up by the proposed staff under OFSDP-II.</li> <li>➤ Training and handholding will be required in developing LULC transition matrices in the baseline.</li> <li>➤ Surveys to define drivers can be easily integrated with preparation of micro plans.</li> <li>➤ Experts may be required to account emission reductions. Such information may be collated into a Project Description Document (PDD) if the project intends to do so.</li> <li>➤ Working Plan data may not cover the treatment sites. (If Range boundary is considered as reference area then Working Plan data can be used for development of the baseline).</li> </ul>
<p><b>Scenario 2</b>  Each forest <b>division</b> is taken-up as the boundary for developing baseline; <b>VSS treatment areas (project areas) within the division</b> are considered for monitoring and associated change in biomass stock.  Methodology:  <ul style="list-style-type: none"> <li>➤ Pilot REDD+ area will be a divisional jurisdiction.</li> <li>➤ The jurisdictional division will constitute the reference area and will be the area for calculation of the baseline.</li> <li>➤ Procurement of images covering the divisions will be required, which is anyway covered under OFSDP-II.</li> <li>➤ If required, the treatment areas can be considered as nests within the jurisdiction and the change in biomass stock within the treatment area will be accounted for credits under REDD+ in the jurisdiction.</li> <li>➤ All the countermeasures will be only in the treatment areas in the division in this case.</li> <li>➤ Can be scaled up later to other divisions.</li> </ul> </p>	<ul style="list-style-type: none"> <li>➤ Mapping and classification maybe taken up by the proposed staff under OFSDP-II.</li> <li>➤ Training and handholding will be required in developing LULC transition matrices in the baseline.</li> <li>➤ Surveys to define drivers can be integrated with preparation of micro plans. However multi-tiered stakeholder engagements will be needed for a more detailed driver analysis and shortlisting countermeasures for this.</li> <li>➤ Specialized experts will be required to account emission reductions and may be used for Project Description Document (PDD) if the project intends to do so.</li> <li>➤ Baseline data will be collected by OFSDP-II.</li> </ul>

Scenario	Proposed action
<p><b>Scenario 3</b>  <b>State</b> is taken as the boundary for developing baseline; <b>VSS treatment areas (project areas) within the State</b> are considered for monitoring and associated change in biomass stock.</p> <p>Methodology:</p> <ul style="list-style-type: none"> <li>➤ REDD+ area will be the whole state.</li> <li>➤ The State will constitute the reference area and will be the area for calculation of the baseline.</li> <li>➤ Procurement of images covering the whole state will be required.</li> <li>➤ If required, the treatment areas or the divisions can be considered as nests within the jurisdiction and the changes in biomass stocks within the treatment area will be accounted for credits under REDD+ in the jurisdiction.</li> <li>➤ All the countermeasures will be only in the treatment areas in the division in this case.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Procurement of images will be required for the whole state, which is not covered under OFSDP-II and OFSDP-I.</li> <li>➤ Driver analysis and countermeasures will still be focused on treatment areas, and will cover the whole state.</li> <li>➤ Monitoring exercise will need coordinated effort from a central nodal agency.</li> </ul>

Source: JICA Survey Team (2016)

The final decision on adoption of the suitable option for the piloting from the above mentioned 3 scenarios will be taken up at the beginning of the project implementation. The overall process of REDD+ activities will be an integral part of the project implementation. Large part of the activities will be implemented during the initial phase of the project and scheduled according to the progress of the other project activities. MRV will be mounted in the project integrated GIS/MIS system. A separate REDD+ module may be developed in house and field level data collection can be integrated into the project monitoring data collection process. Whether to develop PDD for carbon trading may be considered during the project period, however under the current carbon market situation, the survey team does not propose to do so. The selection of the pilot forest divisions will be taken up at the beginning of the project implementation based on the security situation prevalent at the time of implementation and the suitability of the divisions representing different forest and physiographic conditions out of the selected project divisions.

## 2) Assessment and Measures to Address Drivers at the Community Level

The drivers of degradation will be identified during the micro planning and the activities to address the drivers will be planned as part of the planning process. Some of the interventions that can be supported during the project include: introduction of the alternative means of livelihood and household energy sources, sustainable harvesting of NTFPs, augmentation of forests, etc. Indicative options for the interventions linked with REDD+ are given in the table below. These activities are planned and carried out under the JFM mode and livelihood support.

**Table 6.11.2 Options for Mitigating Forest Degradation**

Type of Mitigation Measures	Activities/ Project Support
Alternative means of livelihoods	<ul style="list-style-type: none"> <li>➤ SHG based income generation activities</li> <li>➤ Value addition and marketing of NTFPs</li> </ul>
Household energy source	<ul style="list-style-type: none"> <li>➤ Distribution of fuel efficient chullas</li> <li>➤ Biogas unit</li> <li>➤ Solar energy</li> </ul>
Sustainable harvesting of NTFPs	<ul style="list-style-type: none"> <li>➤ Training on sustainable harvesting/ non-destructive harvesting of the forest resources</li> </ul>
Augmentation of forests	<ul style="list-style-type: none"> <li>➤ JFM mode plantation in the village forest</li> <li>➤ Silvicultural operation</li> <li>➤ Agro-forestry/Farm forestry</li> </ul>

Source: JICA Survey Team (2016)

## 3) Reference Levels (RLs):

RLs are about deciding on the appropriate benchmark to assess future emissions. Reference levels are expressed as tonnes of CO<sub>2</sub> equivalent per year for a reference period against which the emissions

and removals from a results period will be compared. Reference levels should be transparent, taking into account historic data and be flexible so as to accommodate national circumstances and capabilities. In the initial phase of the project, techniques related to calculation and estimation of forest reference emission level and/or forest reference level (REL or RL) need to be put in place. Setting up REL/RL would require technical intervention from the experts in establishing the techniques for assessing REL/RL. PMC experts would assist the project in setting up methods/techniques of estimation and setting up REL/TL for the pilot projects based on the historical data. Some of the important activities under REL/RL include:

- Defining project areas
- Boundary data for the pilot study areas
- Setting up techniques and methodology for REL/RL assessment
- Identification and procurement of missing historical data/satellite images
- Land use/ forest assessment for the selected historical years
- Land use/ forest change assessment for the selected historical years

**i. Historical Satellite Images:**

Required satellite images for the past years will be procured keeping in mind the available images with OFSDS and the existing gaps with respect to the spatial coverage area. Based on the preliminary analysis it is found that prior to year 2013, satellite images were procured only for OFSDP-1 project areas and complete coverage of state or OFSDP-I was not covered by images of single year. Thus it is proposed that one set of LISS-IV Mx satellite images for year 2011-12 should be procured. Also, for 2009-10, LISS-IV Mx must be carefully selected and procured to fill the gaps where images are not available presently with OFSDS for the same year, so as to cover the historical imprints of the proposed OFSDP-II areas.

Satellite Product	Product	Year														
		2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	
LISS-IV Mx (Resourcesat-2)	Georef-OrthoKit										Procure to cover project Division		73 39 51			
											Entire State*					
LISS-IV Mx (Resourcesat-1)	Georef-OrthoKit									Procure images to fill the gaps/cover project Division						
			12	30	29	70	75	78	27							
		OFSDP-1#														



Source: JICA Survey Team (2016)

**Figure 6.11.1 Proposed Historical Images to be Procured**

**ii. Other Historical Data:**

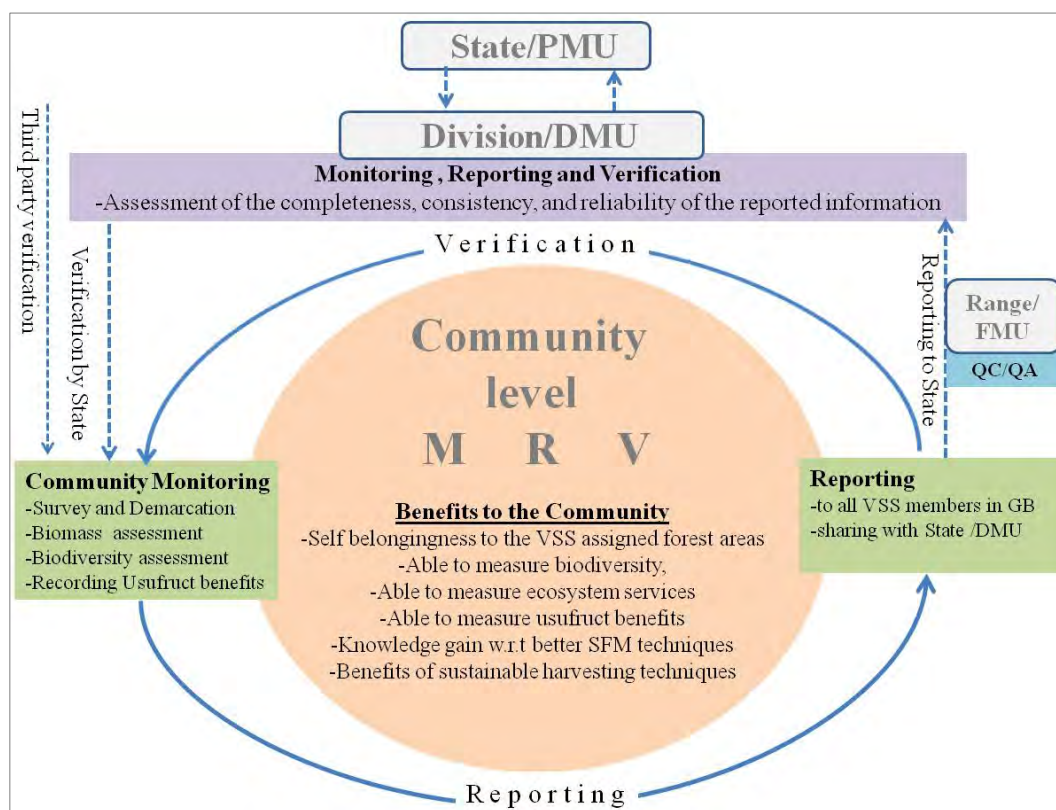
Historical data pertaining to forest type, density, composition, stock, species etc need to be collected, compiled, studied and collate to assess the history of the forest in the REDD+ pilot areas. Lot of useful information would be available in the working plans (refer **Section 5.3.1**) and other sources and must be compiled. Historical maps also need to be compiled to assess the forest condition and trend in the past. Accurate forest admin boundary data must be used for the mapping activity and analysis.

#### 4) Establishing MRV System:

Monitoring, reporting, and verification – an MRV system- measures historical or current event, including tracking carbon densities and estimating emissions from deforestation and degradation. MRV is about tracking change, and in the case of historical emissions, it is about tracking past changes. Some of the key activities under MRV include:

- Identification of monitoring indicators
- System architecture designing
- Sampling technique for sample plots
- Development of tools and techniques for biomass assessment
- Development of tools and techniques for RS based analysis
- Capacity building of the field staff and the community members
- Data collection, reporting and verification protocols

The project will be introducing community level MRV system so as to involve and strengthen the capacity of the community in institutionalizing the concept of community level MRV. The community is expected to be greatly benefitted in sustainable management of entire forest ecosystem. The proposed community level MRV along with its benefit is depicted in **Figure 6.11.2** below:



Source: JICA Survey Team (2016)

**Figure 6.11.2 Proposed community level MRV system**

#### 5) Safeguard Information System (SIS):

The Safeguards Information Systems (SIS) is referred to as one of the four elements (i.e. “National Strategy Action Plan”, “National Forest Reference Level”, “National Forest Monitoring System”, and “Safeguard Information System”) required for REDD+ in the ‘Warsaw Framework 2013’. The SIS was decided in 2010 as part of the Cancun Safeguards to request developing countries to establish a safeguard system in relation to REDD+ (Decision 1/CP.16, Paragraph 71 (d)).

Guidance to SIS was provided in the Durban 2011 (Decision 12/CP.17) and summarised as follows<sup>9</sup>.

- Be consistent with guidance in decision “Cancun Safeguards” 1/CP.16, Appendix 1, Paragraph 1
- Provide transparent and consistent information that is accessible by all relevant stakeholders and updated on a regular basis
- Be transparent and flexible to allow improvements over time
- Provide information on how all of the safeguards are being addressed and respected
- Be country-driven and implemented at national level
- Build upon existing systems, as appropriate

“The UNFCCC REDD+ Safeguards” aims not only to mitigate the risk of adverse social and environmental impacts of REDD+ activities, but also to actively promote benefits beyond carbon emission reductions, such as increased land tenure security, enhancing biodiversity, improving forest governance and empowering relevant stakeholders by ensuring their full and effective participation”.<sup>10</sup> It is recommended that while undertaking REDD+ activities, the following REDD+ safeguards should be promoted and supported<sup>11</sup>.

**Table 6.11.3 Safeguards in REDD+ under the Cancun Agreement**

Points to be Monitored
➤ Actions consistent with the objectives of national forest programs
➤ Transparent and effective national forest governance structures
➤ Respect for the knowledge and rights of indigenous peoples and members of local communities
➤ Full and effective participation of relevant stakeholders
➤ Actions consistent with the conservation of natural forests and biological diversity
➤ Ensure REDD+ actions are not used for the conversion of natural forests
➤ Protection and conservation of natural forests and their ecosystem services
➤ Enhance other social and environmental benefits
➤ Address the risks of reversals
➤ Reduce displacement of emissions

Source: Compiled by JICA Survey Team (2016)

Some of the indicative activities to establish SIS are described below:

- Development of criteria and indicators on the REDD+ outcomes vis-à-vis Cancun safeguards
- Development of methodologies for identified indicators/parameters and their quantification techniques
- Designing and implementation of M&E systems for each of the indicator
- Designing and implementation of a periodic reporting structure for the M&E results

Presently, at national level, there is no safeguard information system in place and thus it is recommended that at the time of implementation, the Project should also review the current situation of the national level SIS.

## 6) Consultative Workshop/ Awareness Camps:

Consultative workshops and awareness camps are important tools to engage and create awareness among the community on REDD plus and the objective of the piloting and Sustainable forest management and harvesting techniques. Some of the broad areas to be covered in awareness camps include:

<sup>9</sup> <http://www.redd-standards.org/key-issues/redd-safeguards-information-systems>

<sup>10</sup> A guide to understanding and implementing the UNFCCC REDD+ Safeguards - A Review of Relevant International Law

<sup>11</sup> UNFCCC Cancun and Durban Agreements (Decision 1/CP.16 and Decision 12/CP.17)

- REDD plus program
- Objectives of piloting
- Climate change issues
- Local drivers of degradation and how to address them
- SFM techniques
- Sustainable and good harvesting practices for NTFP's and medicinal plants
- Ecosystem services
- Peoples biodiversity register
- Record maintenance of forest product

Along with the awareness camps periodically regular trainings on community level monitoring/MRV and biomass estimation etc need to be organized for both the field staff of OFD as well as the community.

### 7) Measures to Address Drivers at the Community level

The drivers of degradation will be identified during the micro planning and the activities to address the drivers will be planned as part of the planning process. Some of the interventions that can be supported during the project include: introduction of the alternative means of livelihood and household energy sources, sustainable harvesting of NTFPs, augmentation of forests, etc. Indicative options for the interventions linked with REDD+ are given in the table below. These activities are planned and carried out under the JFM mode and livelihood support.

**Table 6.11.4 Options for Mitigating Forest Degradation**

Type of Mitigation Measures	Activities/ Project Support
Alternative means of livelihoods	<ul style="list-style-type: none"> <li>➤ SHG based income generation activities</li> <li>➤ Value addition and marketing of NTFPs</li> </ul>
Household energy source	<ul style="list-style-type: none"> <li>➤ Distribution of fuel efficient chullas</li> <li>➤ Biogas unit</li> <li>➤ Solar energy</li> </ul>
Sustainable harvesting of NTFPs	<ul style="list-style-type: none"> <li>➤ Training on sustainable harvesting/ non-destructive harvesting of the forest resources</li> </ul>
Augmentation of forests	<ul style="list-style-type: none"> <li>➤ JFM mode plantation in the village forest</li> <li>➤ Sylvicultural operation</li> <li>➤ Agro-forestry/Farm forestry</li> </ul>

Source: JICA Survey Team (2016)

## 6.12 Component 7 Supporting Activities

### 6.12.1 “7.1: Institutional and Project Management Support”

#### 1) “7.1.1: Strengthening of PMU Office”

##### i. Equipment/ Office automation/ Gadgets

Detailed analysis was conducted for the IT infrastructure requirement considering the available infrastructure and the proposed staff for the PMU. The detailed list of items to be required for the PMU is elaborated in **Table 6.12.1** below. In principle, the equipment will be procured during the first year of the Project.

**Table 6.12.1 Proposed IT Infrastructure at PMU**

Item	Broad Specification	Unit	Quantity
Workstation (Geomatics Cell)	Intel i7 with Intel HD Graphics 530 or equivalent (3.4 GHz, up to 4 GHz with Intel Turbo Boost); 8GB RAM and 1TB HDD, with 18.5 inch Monitor and preinstalled with latest Windows OS	No.	2.0
Desktop Computers (Proposed Positions)	Minimum 4GB RAM, 1TB HDD, Processor - dual core @ 2.4 GHz (i5 or i7 Intel processor or equivalent, with 18.5 inch Monitor and UPS and preinstalled with latest Windows OS	No.	22.0

Item	Broad Specification	Unit	Quantity
MS-Office	MS Office (Home)	No.	22.0
Laptop	Intel® Core™ i5-6200U With Intel® HD Graphics 520 Processor; 4GB DDR4 RAM / 1TB HDD; preinstalled with preinstalled with Windows OS or equivalent	No.	2.0
MFP-A4 (Mono) Laser	Print, Copy, Scan ; Laser printer, 1200 MHz, Speed; 40 ppm; Scan Up to 1200 dpi, Scan size 216 x 297 mm ; Duplex printing	No.	11.0
Camera	20 Megapixel, 8x Zoom,	No.	5.0
Misc. (Toner, Paper, AMC)		No.	1.0
A3 size Printer	A3 size; Officejet printer (colour)	No.	1.0
Prismatic Compass		No.	2.0
Clinometer	Measuring angle	No.	2.0
Laser Distance Measuring Instrument	Measuring Device- Laser based (lowest model with maximum ranges 60 meters)	No.	2.0
Aluminium Pole (3 feet height)	Set of 3 Poles	No.	2.0
Diameter Tape	Minimum 2 meter length or equivalent	No.	2.0
Densitometer	For forest canopy analyser	No.	2.0
GPS enabled PDA or GPS (Handheld)	GAGAN enabled satellite based DGPS system - Rugged PDA device	No.	5.0
ERDAS Imaging	For satellite image processing	No.	1.0
Anti-Virus	Multi user (3 user / year) for 7 years	No.	61.0

Source: JICA Survey Team (2016)

## ii. PMU Building

### a) Extension of PMU Building

To accommodate PMU staff, upgraded GIS cells and meeting/training venue for the Project, a three story building with a total floor area of 384.63 m<sup>2</sup> (4,140ft<sup>2</sup>) will be constructed at the back side of the existing PMU building. The new construction was planned since the existing PMU building already had series of floor extension in the past, and additional extension may affect adversely to the building structure stability and also a land for the new construction was available.

Major purposes and expected functions of the PMU building extension are as follows.

- To upgrade the GIS cell in relation to project implementation
- To use as meeting/ training place
- To use as office space in relation to project implementation

The GIS cell (GIS cum Computer hall) is designed in the ground floor in this building which is prime requirement for PMU. The first floor is designed for the office space and the second floor for the auditorium to be used for meeting and training. However, the actual design including size and layout will be determined during the detail design stage scheduled at the 1<sup>st</sup> year of the Project.

### b) Maintenance of Extended PMU Building

The maintenance planned to be covered are i) white washing and painting of building's outside surface, and ii) repair of sanitary, water fittings and electrical items within the building. The maintenance will be conducted three years after the construction. However, the actual timing for the maintenance will be determined in consideration of the status of the building. In total, 2% of total estimated budget cost for extension will be allocated for the maintenance activity as a part of the project base (capital) cost.

### c) Renovation of Existing PMU Building

For continued services of the existing PMU building, a renovation of the building is required. In this context the existing PMU building requires the following renovations (but not limited to below).

- Weathered coat white washing outside of building
- Repairing of sanitary pipe fittings, electrical fittings,



- Replacement of submersible motor (pump) and generators.
- Repairing of Garage Space
- Maintenance of front elevation (for rain water protection)
- Terrace water proofing

The renovation will be conducted during the 1<sup>st</sup> year of the Project implementation. The actual types as well as extents of renovation will be determined during the detail design stage.

d) Maintenance of Existing PMU Building Renovation

The maintenance of existing PMUU buildings is also planned. The maintenance planned to be covered are i) white washing and painting of building's outside surface, and ii) repair of sanitary, water fittings and electrical items within the building. The maintenance will be conducted three years after the renovation. However, the actual timing for the maintenance will be determined in consideration of the status of the building. In total, 2% of total estimated budget cost for renovation will be allocated for the maintenance activity as a part of the project base (capital) cost.

2) "7.1.2: Strengthening of DMU Office"

i. **Equipment/ Office Automation/ Gadgets**

The DMUs would play a vital role in project implementation and be a crucial link between the field units and the state level PMU. The IT infrastructure requirement for all project DMUs was assessed based on the staff proposed for each DMU as well as to strengthen effective monitoring and faster mode of communication. The detailed list of items to be required for each DMU is elaborated in **Table 6.12.2** below. In principle, the equipment will be procured during the first year of the Project.

**Table 6.12.2 Proposed IT Infrastructure at DMUs**

Item	Broad Specification	Unit	Quantity
Desktop Computers (Proposed Positions)	Minimum 4GB RAM, 1TB HDD, Processor - dual core @ 2.4 GHz (i5 or i7 Intel processor or equivalent, with 18.5 inch Monitor and UPS and preinstalled with latest Windows OS	No.	6.0
MS-Office	MS Office (Home)	No.	7.0
Laptop	Intel® Core™ i5-6200U With Intel® HD Graphics 520 Processor; /4GB DDR4 RAM / 1TB HDD; preinstalled with preinstalled with Windows OS or equivalent	No.	1.0
MFP-A4 (Mono) Laser	Print, Copy, Scan ; Laser printer, 1200 MHz, Speed; 40 ppm; Scan Up to 1200 dpi, Scan size 216 x 297 mm ; Duplex printing	No.	2.0
A3 size Printer	A3 size; Officejet printer (colour)	No.	1.0
Camera	20 Megapixel, 8x Zoom,	No.	4.0
Misc (Toner, printer paper, AMC)		No.	1.0
Compass		No.	2.0
Clinometer	Measuring angle	No.	2.0
Laser Distance Measuring Instrument	Measuring Device- Laser based (lowest model with maximum ranges 60 meters)	No.	2.0
Aluminium Pole (3 feet height)	Set of 3 Poles	No.	2.0
Diameter Tape	Minimum 2 meter length or equivalent	No.	2.0
Tag Number	For tagging trees during biomass measurement (One set with 100 numbers)	Set	2.0
Densitometer	For canopy density measurement	No.	2.0
GPS enabled PDA or GPS (Handheld)	GAGAN enabled satellite based DGPS system - Rugged PDA device	No.	4.0
Anti-Virus	Multi user (3 user / year) for 7 years	No.	21.0

Source: JICA Survey Team (2016)



## ii. DMU Building

### a) DMU Building Extension

DMU office spaces will be developed by either extending of the existing DFO offices or constructing new office buildings in accordance with the availability of the existing DFO offices. A total of 12 DMU building extension is planned under OFSDP-II. Major purposes and expected functions of the DMU building extension are as follows.

- To use as office with GIS & Computer room facility in relation to project implementation
- To use as meeting/ training place (accommodating 20 to 30 persons)
- To keep stationeries and important documents related to project implementation.

In principle, the DFO building extension will be extension/ construction of a single floor building by a maximum of 101.25 m<sup>2</sup>. No land acquisition will be required for the extension.

Indicative maximum floor areas of major rooms for DMU extension are given hereunder. However, the actual design including size and layout will be determined on the site specific conditions and requirements.

- Office Room: 4.5m x 4.0m
- GIS cum Computer Room: 4.5m x 4.0m
- Meeting Hall/ Training Hall: 4.5m x 5.5m
- Utility Room: 4.5m x 2.1m
- Toilets: 2 (for Male and Female each)

### b) DMU Building Extension Maintenance (after 3rd year)

Similar to PMU buildings, maintenance of extended DMU buildings is planned. The maintenance planned to be covered are i) white washing and painting of building's outside surface, and ii) repair of sanitary, water fittings and electrical items within the building. The maintenance will be conducted three years after the construction. However, the actual timing for the maintenance will be determined in consideration of the status of the building. In total, 2% of total estimated budget cost for extension will be allocated for the maintenance activity as a part of the project base (capital) cost.

## 3) “7.1.3: Strengthening of FMU Office”

### i. **Equipment/ Office Automation/ Gadgets**

To strengthen FMUs as a field level implementing and monitoring unit, it is vital to provide with minimum required IT Infrastructure. The identified required IT Infrastructure details for each FMU are elaborated in **Table 6.12.3** below. In principle, the equipment will be procured during the year when FMU is established.

**Table 6.12.3 Proposed IT Infrastructure at FMUs**

Item	Broad Specification	Unit	Quantity
Desktop Computers (Proposed Positions)	Minimum 4GB RAM, 1TB HDD, Processor - dual core @ 2.4 GHz (i5 or i7 Intel processor or equivalent, with 18.5 inch Monitor and UPS and preinstalled with latest Windows OS	No.	5.0
MS-Office	Word, Excel, Presentation	No.	5.0
Laptop	Intel® Core™ i5-6200U With Intel® HD Graphics 520 Processor; 4GB DDR4 RAM / 1TB HDD; preinstalled with preinstalled with Windows OS or equivalent	No.	1.0
MFP-A4 (Mono) Laser	Print, Copy, Scan ; Laser printer, 1200 MHz, Speed; 40 ppm; Scan Up to 1200 dpi, Scan size 216 x 297 mm ; Duplex printing	No.	1.0
Camera	20 Megapixel, 8x Zoom,	No.	2.0
Misc(Toner, Printing paper, AMC)		No.	1.0

Item	Broad Specification	Unit	Quantity
A3 size Printer	A3 size; Officejet printer (colour)	No.	1.0
Compass		No.	3.0
Clinometer	Measuring angle	No.	3.0
Laser Distance Measuring Instrument	Measuring Device- Laser based (lowest model with maximum ranges 60 meters)	No.	3.0
Aluminium Pole (3 feet height)	Set of 3 Poles	No.	3.0
PVC Pole (3 feet height)		No.	5.0
Diameter Tape	Minimum 2 meter length or equivalent	No.	3.0
Tag Number	For tagging trees during biomass measurement (One set with 100 numbers)	Set	2.0
Densitometer	For canopy density measurement	No.	3.0
Weighing Scale	For weighing	No.	2.0
GPS enabled PDA or GPS (Handheld)	GAGAN enabled satellite based DGPS system - Rugged PDA device	No.	4.0
Anti-Virus	Multi user (3 user / year) for 7 years	No.	14.0

Source: JICA Survey Team (2016)

## ii. FMU Building

### a) FMU Building Extension

FMU office spaces will be also developed by either extending of the existing range offices or constructing new office buildings in accordance with the availability of the existing range offices. A total of 50 FMU building extensions are planned under OFSDP-II. Major purposes and expected functions of the DMU building extension are as follows.

- To use as office with computer room facility in relation to project implementation
- To use as meeting/ training place (accommodating 30 persons)
- To keep stationeries and important documents related to project implementation.

In principle, the FMU building extension will be extension/ construction of a single floor building by a maximum of 60.775 m<sup>2</sup>. No land acquisition will be required for the extension.

Indicative maximum floor areas of major rooms for FMU extension are given hereunder. However, the actual design including size and layout will be determined on the site specific conditions and requirements.

- Office Room cum Computer Room: 5.0m x 3.0m
- Meeting/ Training Hall: 5.0m x 5.0m
- Utility Room: 4.1m x 1.8m
- Toilets: 2 (for Male and Female each)

### b) FMU Building Extension Maintenance (after 3rd year.)

Similar to PMU/ DMU buildings, maintenance of extended FMU buildings is planned. The maintenance planned to be covered are i) white washing and painting of building's outside surface, and ii) repair of sanitary, water fittings and electrical items within the building. The maintenance will be conducted three years after the construction. However, the actual timing for the maintenance will be determined in consideration of the status of the building. In total, 2% of total estimated budget cost for extension will be allocated for the maintenance activity as a part of the project base (capital) cost.

## 4) "7.1.4 Strengthening of Circle Office"

In OFSDP-II, circle office will play an important role in monitoring the project progress and also to maintain the linkage with OFD. It also plays an important role in grievance redressal/ RTI. Thus, the Project will provide resources (computer, furniture, etc.) required to assist the project related work to be undertaken at the Circle Office level.

### **6.12.2 “7.2 Monitoring & Evaluation”**

Primary challenge for any project is to achieve the goals and objectives within the constraints in terms of scope, time, and budget. Sound M&E systems can support project management to achieve these while engaging the stakeholders in understanding project progress and achievements, learning from mistakes, and to introduce corrective measures for improving on the overall strategy and operations. A system need to be established for data collection from the lowest level of project implementation, and for analysis to provide continuing inputs to the management and implementers. Project stakeholders involved in M&E also need to possess minimum level of skills to provide such an input.

Thus, M&E being integral part of project management will require adequate resources, including budget, institutional capacity, clear institutional responsibilities, and reporting mechanisms. It will be important to build capacity and incentives to collect, use, maintain and analyze data for monitoring and evaluation.

The outcome for establishing project level M&E systems should be towards adoption of good practices mainstreamed into overall departmental functioning. This would help in sustaining the project interventions as well. Thus, the project need to develop phase-out strategy, and share with OFD in 8<sup>th</sup> year of its implementation, so as to initiate discussion for securing allocation of resources well ahead of project completion.

The key assumptions that are made while suggesting the M&E plan are; a) The present project design would be adopted with little or no change; b) State government and Forest Department/ PMU would work in facilitation and capacity building of stakeholders; c) PMU will be fully responsible for overall project planning and management of the project; d) Target groups/ stakeholders will be actively involved and play a key role in planning, implementing and O&M of the project interventions; e) Institutional arrangements will be in place to provide mobilization, planning, capacity building and support to the target groups; and f) Project staff will be willing to use and be receptive to M&E System owned by PMU.

Monitoring focuses mainly on implementation processes, and aims to have watchful eye on the functioning of new arrangements. Rigorous monitoring enables to ring alarm bells or helps in highlighting critical issues so that timely corrective measures are taken. Whereas, evaluation of implementation of activities is useful to examine the progress in terms of outputs as well as outcomes of the project. This helps in identifying the gaps and required modifications in implementation strategy for the ensuing year/ annual work plan. However, one should be able to make distinctions amongst inputs, outputs and outcomes of any initiative.

Thus, focus of the project M&E system will be on (i) to track project activities processes and progress, (ii) identify what is working well and what is not, and thus help management for decision making and apply corrective measures during the course of implementation, (iii) evaluate the performance of activities and various institutions, and (iv) estimate project impacts and results on-the-ground and document lessons learned that could be used in future project implementation.

M&E will emphasize on stakeholder participation, and will be designed to facilitate rapid identification of shortcomings/ problem areas and facilitate mid-term corrections, where necessary, to project design and/ or implementation arrangements to ensure that the project meets its defined goals and objectives.

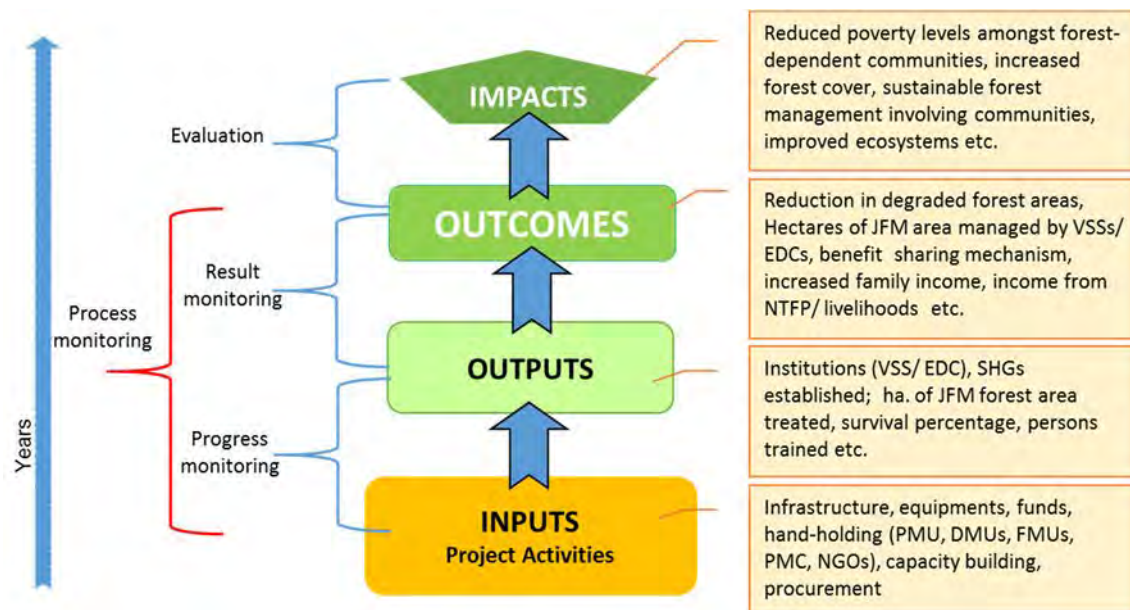
#### **1) Overall M&E Framework**

The Monitoring & Evaluation framework for OFSDP-II will be developed in consideration of the project objectives and goal focused on improving ecosystems of the Odisha state to the extent possible, and address drivers of forest degradation and livelihoods opportunities for forest dependents while working with identified VSS/ EDC in the priority forest divisions. There would be six key principles on which the M&E framework will be developed viz., transparency, participation, fairness/ equity, efficiency, effectiveness and accountability.

The framework would have clear distinction between different levels of project objectives and their achievements that need to be monitored and measured throughout the duration of the Project. The Project logic and causal linkages between different levels of Project objectives (project inputs and activities undertaken, direct outputs generated, resultant outcomes due to outputs and Project impacts realized consequently) and various assumptions, conditions and risk governing the logical links between successive level of these objectives needs to be systematically analyzed and structured in the M&E framework and process. The framework would help to measure implementation performance in the following three ways:

- a) Progress monitoring,
- b) Process monitoring, and
- c) Results monitoring.

The M&E plan would be carefully designed to clearly delineate each of these stages of monitoring. The flow chart below illustrates stages and sample indicators that are included in monitoring process:



Source: JICA Survey Team (2016)

**Figure 6.12.1 Monitoring & Evaluation Framework for OFSDP-II**

Evaluation will build on and use monitoring data to assess the following aspects:

- a. Efficiency (Inputs ⇌ Outputs),
- b. Effectiveness (Outputs ⇌ Intermediate Outcomes ⇌ Final Outcomes);
- c. Relevance, Impact (Outcomes ⇌ Purpose ⇌ Goals); and
- d. Sustainability

Considering the project logical framework, the Survey team set the approach for evaluation along with areas for explorations as follows. These evaluation areas need to be further fine-tuned at the time of project implementation.

**Table 6.12.4 Evaluation Framework for OFSDP II**

Criteria	Evaluation Areas
Efficiency	<ul style="list-style-type: none"> <li>➤ To what extent has the project involved the targeted community institutions and local stakeholders at the village, Gram Panchayat, block and district level thereby helping strengthen participation and ownership in the delivery of project interventions?</li> <li>➤ What factors have enabled the Project to deliver efficiently on the Project objectives?</li> <li>➤ To what extent have the JFM programme and livelihood promotion been efficiently</li> </ul>

Criteria	Evaluation Areas
	<ul style="list-style-type: none"> <li>➤ managed by VSS/ EDC with support from implementing partners?</li> <li>➤ Were activities cost-efficient and were the objectives achieved on time?</li> </ul>
Effectiveness	<ul style="list-style-type: none"> <li>➤ To what extent has the project been effective (immediate and intermediate outcome levels) in helping reducing degraded forests areas (enriching forests), management for assigned forest areas with involvement of community institutions, improved household income levels of target groups through supporting responses to critical gaps, comprehensive micro planning, strengthening community institutions and improving access to resources and services?</li> <li>➤ To what extent did the project, informed by situational analysis and policies, focus on the achievement of results, accountability and the measurement of longer term impacts?</li> <li>➤ To what extent were the objectives achieved or are likely to be achieved? What are the major factors influencing the achievement or non-achievement of the objectives?</li> </ul>
Relevance/ Impact	<ul style="list-style-type: none"> <li>➤ To what extent is the project a relevant response to the multi-dimensional aspects of degraded forest areas, JFM forest management, livelihood opportunities, weaker sections of the society and women?</li> <li>➤ To what extent are the activities and outputs of the project consistent with the overall goal and the attainment of its objectives?</li> <li>➤ What has happened as a result of the project implementation and what real difference has the activity made to the beneficiaries/ target groups?</li> <li>➤ How many people have been benefitted by the project, and in what way?</li> </ul>
Sustainability	<ul style="list-style-type: none"> <li>➤ To what extent did the benefits of a project continue after the funding gets over/ completed?</li> <li>➤ To what extent the implementing agency (OFD) has owned and adopted the project assets and best practices, and provisioned budgets for extending continued support to the community institutions and infrastructures?</li> <li>➤ What were the major factors which influenced the achievement or non-achievement of sustainability of the project?</li> </ul>

Source: JICA Survey Team (2016)

The above proposed approach and method for supporting M&E for the Project is based on the understanding of good practices and issues with the existing system already in place within the Forest Department (**Attachment 6.12.1**) which also needs to be strengthened and fine-tuned to the requirements of the forestry sector.

## 2) M&E Arrangements

PMU will regularly monitor and keep record of the physical and financial inputs and outputs of project activities. To facilitate this, PMU will deploy a full-time senior forest officer having relevant experience and skills in monitoring and evaluation, and also acquire required skill and recruit IT professional having experience in MIS and GIS systems. PMU would procure all relevant resources and would also strengthen existing Geomatics Centre for the project purpose. The responsibility to manage and analyse data would be with the Geomatics Centre during project implementation, and such data would be utilized for generating various project reports.

PMU will coordinate with all institutions according to the institutional arrangements, in monitoring the activities on day-to-day basis. DMUs would further coordinate with FMUs, Partner NGOs to keep track of the project implementation. VSSs and EDCs would also be involved for monitoring and reporting activities at the village level. The representatives from various community institutions will be trained to use simple tools to monitor project progress and impacts, and discuss its implications as well.

PMU will work to modify existing web-enabled monitoring information system (MIS), and would tailor the software to meet the requirements of the OFSDP-II. The details are described at “(6) “7.2.1 Monitoring”, iv. Computerised MIS & GIS” of this section.

### 3) Reporting Requirement

PMU will prepare quarterly reports on prescribed reporting structure, and timely furnish to JICA to apprise on the project implementation progress. PMU will also publish annual report along with updated project implementation schedule after getting approval from the Governing Body/ HPC at completion of each fiscal year. The reports will be available both in print forms as well as in digital form, and shared by way of publications and project website to facilitate further information dissemination.

PMU will develop templates for both quarterly and annual reporting during first year of project operation. If required, the reporting templates would be shared to obtain concurrence from JICA. These reports will include: (a) physical progress and financial expenditure by components/ sub-components against annual plan along with analysis, photographs and graphs to support claimed achievements; (b) project operation and effect indicators; (c) problems/ constraints encountered during the reporting period, with suggested remedial actions; (d) observation and recommendations of PMC; and (e) updated status on social and environmental safeguard requirements of the project.

For reporting of Project's environmental and social considerations aspects to JICA, a monitoring form agreed with JICA during the project appraisal stage will be used. A draft monitoring form is attached to ESMSF and indicated in **Attachment 7.2.3**. Based on this draft form, the form need to be finalised and included in the Project's monitoring report templates.

Annual Plan of Operation (APO) will be prepared for each fiscal year. PMU will get the APO approved from HPC preferably by March every year, and would share with JICA for information. PMU will also establish a system of preparing demand responsive annual plans, involving key stakeholders. PMU will provide all necessary guidance and support, and will regularly follow-up with stakeholders to get APO compiled well on time. Preparing demand responsive annual plan would require capacity development of the project staff and institutions at each operational level, and PMU would ensure to provide necessary training for that purpose. The following table provides key reporting requirement for OFSDP-II.

**Table 6.12.5 Key Reporting Requirement at Various Level**

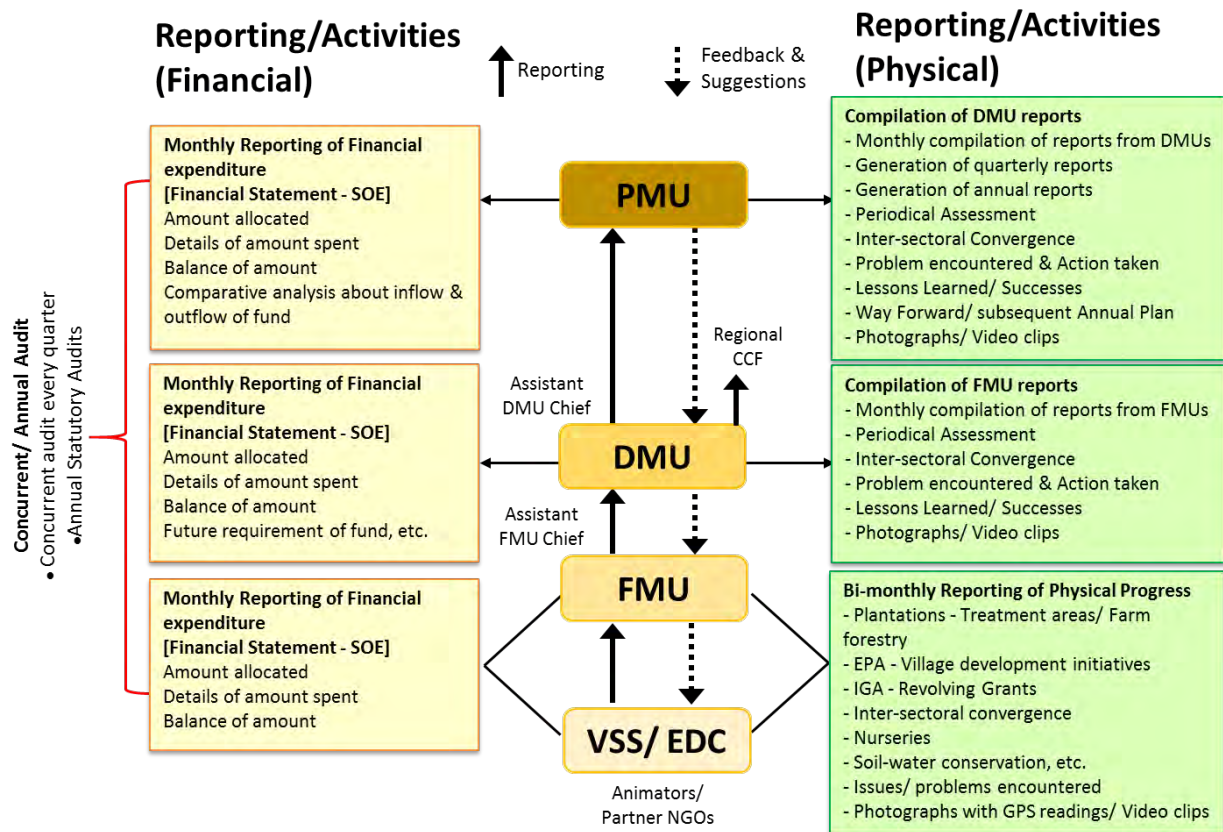
Type of Report	Responsibility to Generate Report	Submission Level	Circulation / User	Remarks
Annual Report	PMU	GB	HPC, State Govt., MOEF/GOI, JICA, RCCFs, APCCF (M&E and Internal Vigilance)/ OFD	<ul style="list-style-type: none"> <li>- Achievement (physical and finance) and status against the annual plan, and reasons for shortfalls, if any</li> <li>- Operation &amp; Effect indicators, Updated Social and Environment Safeguards</li> <li>- Successful cases and innovations</li> <li>- Inter-sectoral Convergence</li> <li>- Lessons learnt and Way forward</li> <li>- Photographs, graphs etc.</li> <li>- To be uploaded on website and kept in public domain</li> </ul>
Quarterly Report	PMU	JICA	GB, HPC, JICA	<ul style="list-style-type: none"> <li>- Achievement (physical and finance) and status against the annual plan on prescribed format</li> <li>- Inter-sectoral Convergence</li> <li>- Problems and constraints</li> <li>- Photographs, graphs etc.</li> </ul>
Statement of Expenditure (SOE)	PMU	JICA	JICA/ CAAA, MOEF/ GOI, DEA	<ul style="list-style-type: none"> <li>- Reimbursement claims based on financial reporting against the annual plan consolidating expenses at VSSs/ EDCs, FMUs, DMUs and PMU level</li> <li>- The SOE to be prepared based on the entries made in the accounting software</li> </ul>
Annual Plan of Operation (APO)	PMU	HPC	PMU, DMUs, FMUs, District Admin., GB, RCCFs, APCCF (M&E)	<ul style="list-style-type: none"> <li>- Planning activities as per Overall Implementation Plan (OIP),</li> <li>- Plan for backlog/ delayed activities, and Strategy;</li> <li>- Component-wise and activity-wise fund requirement</li> </ul>

Type of Report	Responsibility to Generate Report	Submission Level	Circulation / User	Remarks
			and Internal Vigilance)/ OFD	
Annual Implementation Plan (AIP)	VSS	FMU	DMU, PMU	<ul style="list-style-type: none"> <li>- Planning activities as per approved Micro Plan,</li> <li>- Plan for backlog/ delayed activities, and Strategy;</li> <li>- Component-wise and activity-wise fund requirement</li> </ul>
Statutory Audit Report	PMU	GB	JICA/ CAAA, MOEF/ GOI, DEA	<ul style="list-style-type: none"> <li>- Confirming the SOEs and eligible portions</li> <li>- Annual Audit Report on standard/ prescribed format</li> </ul>
Monthly Reports	DMU	PMU	RCCFs	<ul style="list-style-type: none"> <li>- Achievement (physical and finance) and status against the annual plan, and reasons for shortfall, if any</li> <li>- Inter-sectoral Convergence</li> <li>- Problems and constraints</li> <li>- Photographs, graphs etc.</li> </ul>
Bi-monthly Report	FMU	DMU	-	<ul style="list-style-type: none"> <li>- Achievement (physical and finance) and status against the annual plan, and reasons for shortfall, if any</li> <li>- Inter-sectoral Convergence</li> <li>- Problems and constraints</li> </ul>
Back-to-Office Report (BTOR)	By visiting officers	as applicable	All concerns	<ul style="list-style-type: none"> <li>- Make observations on the project implementation progress vis-à-vis annual plan, identifying the issues/ areas of concern, status on action points</li> </ul>

Source: JICA Survey Team (2016)

#### 4) Information Flow

For continuous tracking of project implementation, an information and communication system needs to be in place with clear roles and responsibilities, including frequency of data compilation and reporting. It is expected that from FMU level onwards there would be digital flow of information utilizing the MIS/ GIS applications and software. Assistant FMU chief would be responsible for information compilation as per the frequency of reporting and transmit to DMU through FMU chief. At the DMU level assistant DMU chief would be responsible for information flow and transmit the report to PMU through DMU chief. Paper-based reporting could be adopted for information being captured at VSS/ village level, and data compilation and reporting of VSS/ EDC activities would be facilitated by animators/ partner NGOs. PMU would ensure connectivity and requisite infrastructure/ equipment during the preparatory phase of the project. The information from lowest operational level to the PMU will be utilized to generate reports indicated in previous section. Figure below illustrates the flow of information and data/ information to be reported at different levels of operations.



Source: JICA Survey Team (2016)

**Figure 6.12.2 Information Flow and Reporting Arrangement for OFSDP-II**

To make information generation and reporting efficient, PMU would create systems to address information needs of sectoral heads within PMU as well as for external sharing with other agencies and state/ central governments. Discipline in accessing information from the lower level will be established to avoid multiple channels for seeking information from DMUs that may otherwise burden DMUs and functionaries below to respond to day-to-day information needs of various sectoral heads. Rather, information requests will be channelized through Project Director, OFSDP-II to maintain uniform communications, and avoid multiple directions/ instructions.

## 5) M&E System for OFSDP II

Following the M&E framework, activities for tracking project progress and performance will be systematic carried out during the project implementation. M&E system will enable the project to take remedial actions based on the lessons learnt. M&E system for OFSDP-II will have the following 15 key elements grouped into a) Monitoring, b) Impact Assessment, and c) Audits. PMU would ensure to put the system in place during preparatory phase of the project and would also take necessary steps to build capacities of the project staff at all level of operations on M&E aspects.

### 6) “7.2.1 Monitoring”

#### i. Concurrent Monitoring and Periodic Reviews

Concurrent monitoring would be the key approach to bring in transparency and efficiently track the project implementation. The monitoring would be undertaken following multiple approaches – field visits, periodic reviews, reporting, assessments and feedbacks etc. Monitoring would be an in-house routine affair. Standard checklist, semi-structured questionnaire and set of indicators would be



developed by the PMU for undertaking concurrent monitoring. In addition, monitoring could also be undertaken by hiring independent credible monitoring agency from time-to-time, if required. The planned activities would be monitored against the approved Annual Plan of Operation (APO). In addition, PMU would develop and publish guidelines and manual on M&E system. A set of Operation & Effect indicators would be identified and would necessarily be updated on annual basis by PMU.

PMU would create a system for undertaking field visits by PMU officials at regular intervals, and feedback the project management by way of structured 'Back-to-Office Reports'. Geomatics Cell would be made responsible to facilitate generation of analytical reports based on the data captured through various MIS modules at different level of project implementation. The analytical reports would be utilized by sectoral head for identifying critical gaps, and such issues would be transmitted by Project Director along with action points to all DMUs at a regular interval.

Concurrent monitoring and Periodic Reviews will be undertaken at all levels of project operations. The key institutions that would be responsible for monitoring and periodic reviews are – VSS/ EDC, FMUs, DMUs, Regional Circles, PMU, and stakeholders/ agencies that would be interested in keeping regular track of the project implementation and performance, e.g. state/ central government, JICA.

PCCF (HoFF), OFD along with PCCF (Wildlife), OFD would review the project activities annually with PMU, DMUs and RCCFs responsible for project divisions. APCCF (Monitoring & Evaluation and Internal Vigilance), OFD would be responsible for initiating and conducting the annual review meeting. The following would be the frequency of monitoring & review by various stakeholders/ agencies:

**Table 6.12.6 Frequency of Monitoring & Review Meetings**

Frequency of Monitoring & Reviews	Stakeholders/ Agency
Weekly	Animators, VSS/ EDC members
Fortnightly	FMU, Partner NGOs
Monthly	DMU, PMU
Quarterly	Regional Circles, GB members
Six-monthly	HPC members, JICA representatives
Annual	PCCF (HOFF) and PCCF (Wildlife); APCCF (M&E and Internal Vigilance) to coordinate

Source: JICA Survey Team (2016)

## ii. Inter-sectoral Coordination Meetings

To address the requirements generated out of the micro-plans of project VSSs/ EDCs by way of Inter-sectoral Convergence, coordination meetings will be conducted at regular interval at all level of project operation. These meetings would be the opportunities to systematically place the requirements generated at village level, and steer the processes to ensure that the proposals are accepted and executed by the line departments in timely manner. Proceedings of Coordination meetings would be prepared for each meetings, and would be shared with all participants and concerned. Follow-up actions on the proceedings need to be discussed and recorded in the subsequent meetings.

For state level meetings Project Director, PMU could place request through Principle Secretary (Forests & Environment) in advance for seeking a slot in the meetings being organized by the Planning & Convergence Department, Government of Odisha on 11<sup>th</sup> and 26<sup>th</sup> day of every month.

At the district level DMU Chief will coordinate with the Steering Committee chaired by District Collector. The Steering Committee is created to assist District Planning Committee (DPC) for preparing draft district plan considering the development plans prepared by each Block level Planning Committee for all Panchayat Samities within their jurisdictions. The District Planning Committee is

chaired by Minister in the Council of Ministers of the State or a Member of the Legislative Assembly of the state representing the constituency. DMU will follow-up with the district administration every quarter along with the consolidated convergence plan created on the basis of micro-plans prepared by VSSs supported under OFSDP II.

Similarly, FMU Chief will coordinate with Block-level Planning Committee whose Member-Secretary is Block Development Officer. FMU will follow-up with the block administration every month along with the consolidated convergence plan created on the basis of micro-plans prepared by VSSs supported under OFSDP II.

The organization of coordination meetings will be monitored at PMU, and status on actions taken will be assessed, and will get reflected in Annual and Quarterly reports of the PMU. The schedule and responsibility to organize Coordination Meetings is given in the following table.

**Table 6.12.7 Inter-Sectoral Coordination Meetings Schedule**

Meeting level	Responsibility to Organize	Meeting frequency	Proceeding Circulation / User
Principal Secretary (Planning & Coordination)	PMU/ Project Director	Quarterly	HPC, JICA, GB, and participants
District Magistrate/ ADM	DMU	Quarterly	PMU, and participants
Block Development Officer	FMU	Monthly	DMU, and participants

Source: JICA Survey Team (2016)

### iii. Community Self-monitoring

System of self-monitoring by community institutions based on the annual implementation plans would also be in place at village level. Community institutions would be facilitated and guided to fine-tune and adopt simple participatory tools for generating performance reports based on actual achievements. Quarterly performance Report Card of each VSS/ EDC would be displayed at FMU level that will be based on colour code performance rating system. A caution is required that such a system should get evolved by community themselves rather than be project-driven. To ensure that it happens initial hand-holding and capacity development on participatory M&E tools and processes, both for community representatives and project staff, would be required. To facilitate the process guidelines, for the Community base Self-monitoring would be developed by PMU, and disseminated at the field level.

### iv. Computerised MIS &GIS

Web-enabled MIS would be utilized for capturing the progress and achievements on a day-to-day basis. MIS will be planned till range-level from where the data would get integrated upwards. This would be done in phased manner. Paper-based formats would be used to capture information at VSS/ EDC and SHG level. The output reports generated by the MIS would give status of project performance.

The modified MIS will be utilized to consolidate and manage primary data reported by various implementing units or received from various other agencies. The MIS software would have feature to integrate data with GIS platform for undertaking spatial analysis. PMU will also adopt standard accounting software for fund management and project accounting, and would be customized for generating statement of expenditures at all operational levels viz., PMU, DMUs and FMUs. Data from MIS will be used to update the operation and effect indicators of the project to input into the monthly, quarterly, and annual progress reports. Use of GIS and other modern information tools will help collate, compare, analyse, and visualize the information.

The existing MIS software will be modified by PMU within first year of the project initiation. In-house capacities of the PMU built during implementation of OFSDP-I would be utilized to design or modify MIS modules as per the OFSDP-II requirements considering the project logical framework and proposed M&E system.

Specialists in PMC team will assist to review the existing M&E framework for the project as well as help PMU in establishing proposed M&E system and MIS/ GIS applications for OFSDP-II. PMC will also assist PMU in developing measurable indicators (both operation and effect) based on logical framework and protocols including preparing and improving M&E guidelines and reporting formats for the project, and help in modifying/ redesigning computerized MIS/ GIS for different component of the project. Geomatics Cell within PMU will also have mandate to provide technical back-stopping to DMUs and FMUs during the operational phase of the MIS system. Training manual would also be developed for the MIS software prior to commissioning, and will be used to train the project staff at all level of operation. Details on MIS is being provided in separate section as well.

#### a) Existing Facilities and Further Actions Required

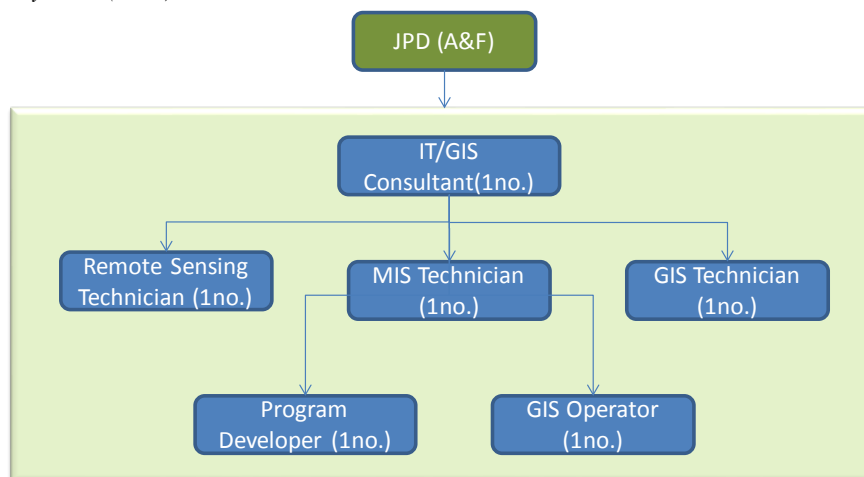
Under OFSDP-I several initiatives were taken up to strengthen IT based planning and monitoring system. The details of the initiatives taken under OFSDP-I, their present status, and scaling up of the initiatives to next level in sync with OFSDP-II and REDD+ requirement is described in table below.

**Table 6.12.8 Situation Analysis of Information Systems**

Requirements	Present scenario	Action Items
<b>Project Monitoring and Reporting System</b>		
OFSDP MIS	<ul style="list-style-type: none"> <li>-MIS developed under OFSDP-I covered all project components and was very detailed.</li> <li>-The developed system was operational and all data is in the system in structured manner and reports can be generated from the application which is web based.</li> <li>-In the developed MIS there was no direct linkage with GIS and thus the reported area figures were not exactly in sync with the GPS surveyed area figures.</li> <li>-Under OFSDP-I MIS software development work was outsourced.</li> <li>-Some of the additional components under OFSDP-II need to be plugged into the system additionally</li> <li>-MRV features not linked with MIS system</li> </ul>	<ul style="list-style-type: none"> <li>-The learning from MIS of OFSDP-I would help in better database structure for MIS which would enable in a single database for GIS and MIS app and that would remove the redundancy and duplication of records and efforts as well.</li> <li>-Considering the advantages associated with open source technology in comparison to commercial software technology, it is recommended to develop the required MIS for OFSDP-II using the open source technology. This would enable in easy and need based up gradation/ modification whenever required.</li> <li>-At present programme developers are working in GIS cell of OFSDS and additional programme developer positions are proposed;</li> <li>-Under OFSDP-II, MIS would be developed in-house for better integration with WebGIS, Mobile app and any future integration of applications.</li> <li>-MRV features can be plugged into the MIS system</li> </ul>
OFSDP WebGIS	<ul style="list-style-type: none"> <li>-The web application is being used to access the GIS data from the Server from any remote location.</li> <li>-All project data layers as well as data layers of AJY project are integrated in the system</li> <li>-For monitoring the change detection data can be accessed from the WebGIS app.</li> <li>-The app is developed in-house using Open Source technology</li> <li>-The MIS data can be pulled into the WebGIS app (the two datasets MIS and WebGIS are separately maintained and there is redundancy and duplication of data in two datasets, which sometimes have some variations, particularly in geographical entities like area and measurements)</li> <li>-Field survey data is verified by RO for each surveyed data submitted on the server and then only integrated into the final data layers on WebGIS</li> </ul>	<ul style="list-style-type: none"> <li>-The app is open source and developed in-house so up gradation or adding modules is easier.</li> <li>-MRV requirements can be further strengthened by plugging in additional features and data layers into the system pertaining to REDD+ requirement.</li> </ul>
OFSDP Mobile GIS	<ul style="list-style-type: none"> <li>-The application is developed in-house and is an android application that works with any android based smart phone and having user based login feature.</li> <li>-The app is loaded with features to do GPS survey under required component (menu driven) such as GPS survey of various plantation and protection models, area estimation, capturing real time photograph and other associated details.</li> </ul>	<ul style="list-style-type: none"> <li>-Since the app is developed in-house thus adding additional features and module is easier.</li> <li>-A module can be plugged into the application for GPS based geo-referencing of sample plots, recording plot level biomass estimation survey details as a requirement of REDD+.</li> <li>-The data would be sent to the single database of MIS and WebGIS servers.</li> <li>-The developed app to be integrated with the android based PDA systems with GAGAN enabled satellite</li> </ul>

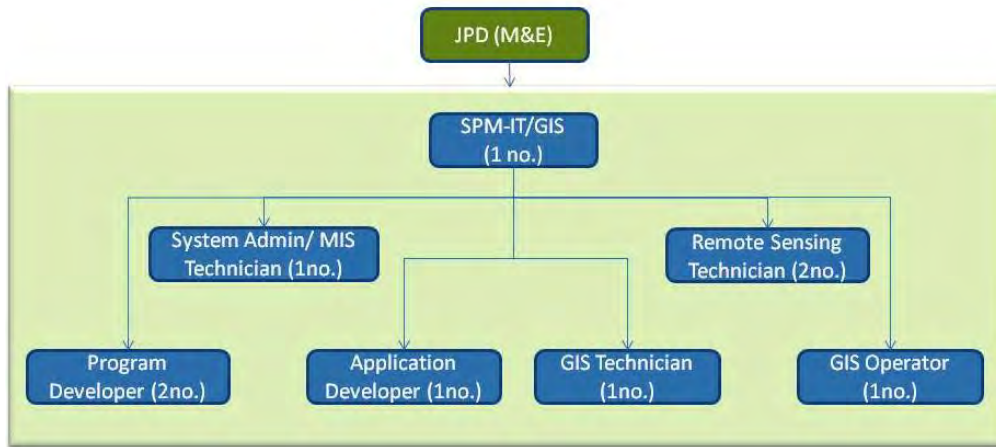
Requirements	Present scenario	Action Items
		based DGPS technology. This would provide higher positional accuracy with ease of handling handheld PDA instrument. Perimeter/ boundary of all plantation/ protection treatment areas undertaken under OFSDP-II need to be surveyed using PDA based GPS. Also all assets created need to be captured as point or line feature.
SHG monitoring system	-The SHG monitoring system is used for IGA Loan monitoring and management system, SHG information, Loan Information and repayment of Loans. -SHG monitoring system was also developed in-house and is working. -The web enabled system caters to the requirement of the SHG monitoring	-For OFSDP-II the existing SHG monitoring system, which is web based application, can be readily adopted.
Micro Plan Database	-Micro plan data is not maintained in database format. -Lot of valuable information is available in the micro plan data but since not maintained in database format is usually not utilised whenever required.	-The developers must design a module for integrating micro plan information in the MIS database -Information on forest product collected and utilised, drivers of degradation, socio-economic data etc. which are crucial from the perspective of MRV under REDD+ can be pulled from the Micro Plans.
<b>Institutional setup and Manpower</b>		
Administrative Unit of operation	-Since all the developed applications are web enabled thus can be accessed from any distant location thus could function from DMUs or FMUs as well. -Since under OFSDP-I most of the information was generating from VSS (field units) and Divisions (channel of financial fund allocation) thus the unit of MIS data entry was kept at DMU level	- Under the proposal, Ranges would be provided with required minimum IT infrastructure, thus going down to FMUs is not difficult. - Considering the importance of IT infrastructure in better planning, monitoring, reporting and faster communication, key IT infrastructure is identified for each project FMU and DMUs that must be in place immediately after the initiation of the project.
Manpower	-As present there are six trained manpower at GIS cell of PMU to develop, operationalise and maintain the MIS and GIS system .(Figure 6.8.4) -Under OFSDP-I there was a provision of Data Entry Operators at DMU level for MIS and GIS data management.	-It is proposed that in addition to the existing trained manpower additionally one application developer, one program developer and one RS technician would be required at GIS cell of PMU (Figure 6.8.5) -The following staff members are proposed at DMU level: > One Subject Matter Specialist GIS/MIS (M&E) for GIS/MIS/Mapping activity support, One Project Accountant for Tally base accounts management; > One Data Entry Operator for MIS/GIS work
IT Infrastructure	-Details of the available IT infrastructure with <u>GIS Lab, PCCF Office, OFD, Geomatic cell of PMU, Divisions and Ranges</u> is elaborated in <b>Section 5.9 of Chapter 5</b> .	- The details of the identified required IT infrastructure for PMU, DMUs and FMUs are identified.

Source: JICA Survey Team (2016)



Source: JICA Survey Team (2016)

Figure 6.12.3 Present Manpower of GIS Cell of PMU



Source: JICA Survey Team (2016)

**Figure 6.12.4 Proposed Manpower for GIS Cell of PMU**

b) Implementation Plan - GIS/MIS

It is recommended to have MIS, WebGIS and other applications in place by the initial phase of the implementation so that subsequent activities like operationalisation, capacity building, maintenance and data management takes as per the plan. The schedule of activities with respect to WebGIS, Mobile app, MIS, is given in **Table 6.12.9** below.

**Table 6.12.9 Implementation Schedule for MIS, WebGIS, Mobile Apps**

Component	Phases	Implementation schedule - WebGIS, Mobile apps & MIS system development, operationalisation and maintenance																							
		2017		2018		2019		2020		2021		2022		2023		2024		2025		2026		2027			
		Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan
Development of WEBGIS (Modules-wise)	Development/Testing (Modules-phase wise)																								
	Operationalisation																								
	Maintenance/ Data management																								
Development of Mobile App -Survey & Biomass (Modules-wise)	Development/ Testing (Modules-phase wise)																								
	Operationalisation																								
	Maintenance/ Data management																								
Development of MIS (Component-wise)	Development/ Testing (Component wise)																								
	Operationalisation																								
	Maintenance/ Data management																								


Source: JICA Survey Team (2016)

c) Satellite Images Requirement for Monitoring

Forest monitoring across the project areas including treatment areas of the project would be mainly done with the help of satellite remote sensing techniques. It is suggested to procure satellite images every year from year 2020-21 onwards. Satellite images prior to 2020-21 will be procured for 1:5,000 scale mapping (refer **Table 6.12.10**).

**Table 6.12.10 Proposed Satellite Image for Monitoring – Schedule of Procurement**

Satellite Product	Product	No of Images Required (Approx.)	Proposed LISS-IV MX Satellite Image Schedule																															
			2020				2021				2022				2023				2024				2025				2026				2027			
			Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct	Jan	Apr	Jul	Oct				
LISS-IV Mx (Resourcesat-1/2)	Geo-referenced/Ortho kit	385																																

 Proposed schedule of satellite image procurement

Source: JICA Survey Team (2016)

Along with the satellite images it is recommended to procure bi-annual digital data on forest cover produced by FSI. Also, digital georeferenced data on forest type will also be procured for the areas where type data is not available with the Geomatic cell of OFSDS. The details of the satellite data type and other data required for monitoring purpose is elaborated below:

**Table 6.12.11 Proposed List of Key Spatial Data Sets Required for Project Monitoring**

Item	Broad Specification	Unit	Quantity
Satellite Images-LISS4 Mx	Georeferenced/ Ortho Kit images for Monitoring -3 times, i.e. every alternate year from - Years (2020-21, 2022-23, 2023-24, 2024-25, 2025-26, 2026-27)	No.	385
ISFR Data-Forest Cover (FSI Digital Bi-annual Data)	Forest Cover Map Digital Geo-referenced (ISFR 2017, 2019, 2021, 2023) covering entire state.	No.	4.0
ISFR Data-Forest Type (FSI Digital Bi-annual Data)	Forest Type Map Digital Georeferenced (One Set-Latest) The available date with OFSDS is not complete for the state	No.	1.0
Procurement of Vegetation/Land use Map (1:50,000)	Maps to be procured from ORSAC	sheet	330.0
Other data	e.g. Soil type map, topographical maps etc.	-	-

Source: JICA Survey Team (2016)

#### v. Computerized Accounting System

Computerized accounting system based on standard accounting software would be utilized for maintaining financial records till range-level for real-time reporting. The accounting software would be customized and adopted for financial management, tracking disbursement as per annual plans and efficiently compiling Statement of Expenditures (SOEs) for submission to JICA, state government, and Central Aids, Accounts and Audit Division (CAAA) under Ministry of Finance, Department of Economic Affairs.

All levels (PMU, DMU, FMU) would be strengthened both in terms of equipment/ connectivity and human-resource to implement the plan. Systematic training would be planned for all key staff at all level to handle and utilize these softwares for maintaining records and generating reports.

Financial and accounting procedures and policies already designed during OFSDP-I would be revisited and modified, if required. The finalized accounting procedures and policies will be documented in form of “Financial Management and Accounting Manual”, and will be disseminated to all key stakeholders by way of sharing published approved manual. This manual will be essential reference document for maintaining transparency, providing clarity regarding financial aspects to the various stakeholders and finance staff, ensuring uniformity, and enforcing accountability. All units of operations will comply and follow the accounting procedures and policies as per the Financial Management and Accounting Manual approved by HPC and adopted by the project. Training on using

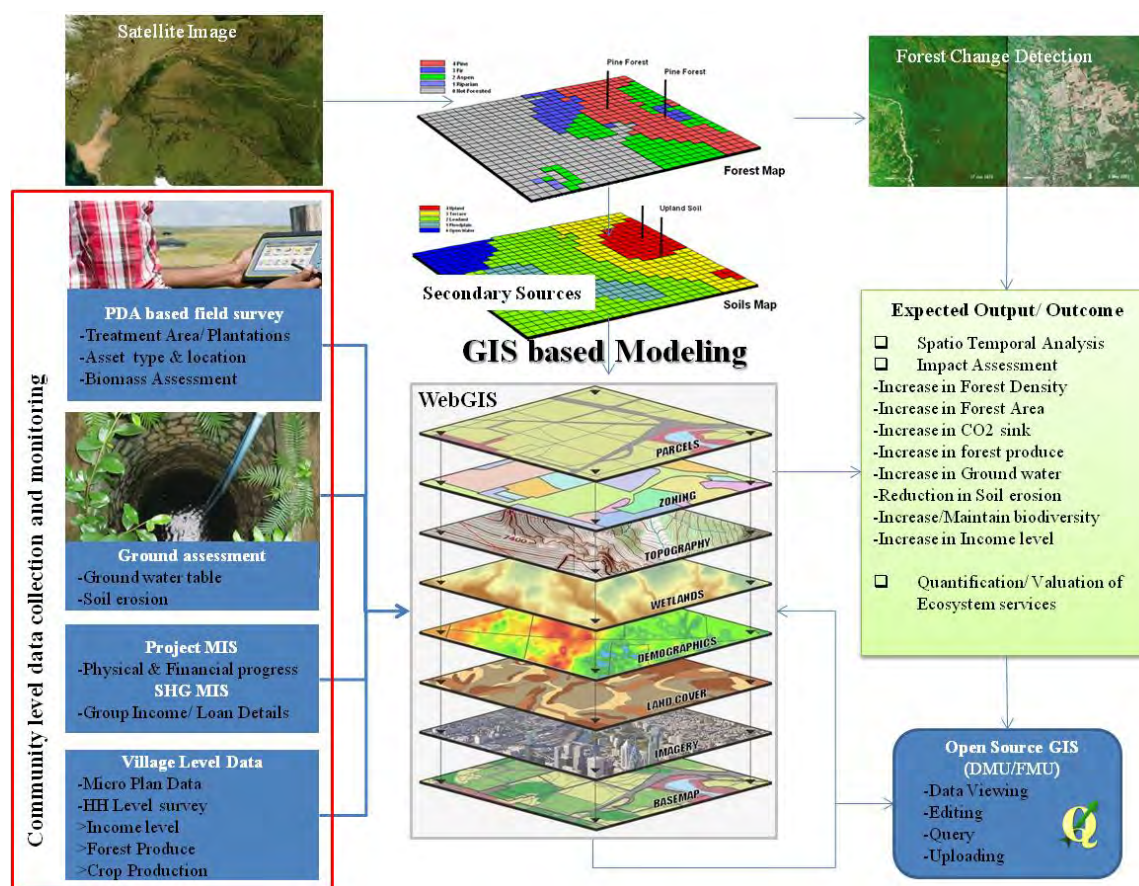


the financial management and accounting manual, and project account keeping would be planned for all key stakeholders.

#### vi. Technology based Monitoring - GIS applications

PMU at state-level would be further strengthened for undertaking GIS operations. All the project sites and treatment areas would be geo-coded and would be translated on digitized maps for planning and analysis. The project / forest department staff would also be trained to contribute to the MRV system to be put in place within the Geomatics Cell at PMU. In addition, the Geomatics Cell would also be capacitated of undertaking technology based analysis and related assessments utilizing both MIS and GIS tools.

It would also be important to record geographical location (GPS based coordinates) of each individual asset created under the project for closely monitoring of the work progress. Location specific inventory of assets would be created to better manage the assets in future. For impact assessment studies and quantification of ecosystem services as well, technology based monitoring tools and techniques will be utilised. An example of technological intervention and expected output is impact assessment and assessment/evaluation of ecosystem services is depicted in the figure below.



Source: JICA Survey Team (2016)

**Figure 6.12.5 Technological Tools, Type of Information and Expected Outputs**

Scientific means of valuation of ecosystem services would be taken up and periodically information would be recorded and analysed using spatio-temporal computer based modelling techniques.

#### vii. Annual Strategy Planning & Review Workshops

The workshops would be organized annually at division and state-level. At divisions, it would be one-day event, whereas at state it would be a two-day event. PMU would be responsible to organize

state level annual workshop every year, and would also follow-up with the DMUs for proposing Divisional Annual Planning and Review Workshops every year.

Responsibility to organize this annual event at divisional level would be with DMU chief (i.e. DFO). These events would be planned during January/ February (as per climatic conditions) in which representatives of VSSs/ EDCs Gram Panchayats, SHGs, partner NGOs, animators, and project staff (FMUs and DMU), would participate. The event at divisional level would be chaired by regional CCF.

During the divisional workshops, regional circle heads would review the annual progress. Representatives of DMU and FMU offices would make presentations on achievements vis-à-vis annual plan. Performing VSSs/ EDCs and SHGs would share their experiences and achievements vis-à-vis annual implementation plan based on the approved micro plan, and their efforts would be recognized by way of some citations/ awards system. The workshop will also discuss next year planning, and would take inputs from participants for preparing subsequent annual plans. DMUs would prepare and submit a report on the template circulated by the PMU soon after completion of the event within a reasonable timeframe.

State level event would be organized after the divisional workshops are concluded. Synthesis and learning of the workshops would be compiled by the PMU and published.

## **7) “7.2.2 Impact Assessment”**

### **i. Annual Outcome Assessments**

Annual Outcome Assessments (AOAs) would be focused on outcomes in context of the project outputs achieved by the project. Framework of the AOA would be developed in line with the logical framework of the project. The AOA would also review the annual plan of operation, quarterly reports, and other reports produced during the financial year, and would also include assessment of the institutional and financial performance of VSS/ EDCs, SHGs and partner NGOs. This exercise would also highlight key bottlenecks and constraints where immediate remedial actions are required. The exercise would be undertaken immediately after completion of a financial year, and would necessarily be completed during April-June quarter every year. Eligible and credible agency could be hired by PMU for such exercise. The TOR and procurement details should be shared with JICA for information and feedbacks. Suitable assessment tools would be developed in consultation with the stakeholders, and later fine-tuned and finalised with PMU by studying the project intervention and logical framework prior to the exercise.

### **ii. Baseline and Impact Surveys**

Two set of baselines would be created prior to initiation of project interventions viz., a) socio-economic, and b) physical situations of the project areas. Information from representative target groups and project areas on identified parameters and variables would be collected by a qualified and credible agency. Based on the actual situations and after studying the field conditions, the Terms of Reference for baselines and impact surveys would be developed by PMC in consultation with PMU. The TOR and procurement details should be shared with JICA for information and feedbacks. The baselines should necessarily be completed during the preparatory phase of the project, and would capture gender segregated data and analysis.

To ensure that methodologies and approach for analyzing data generated out of the surveys are comparable, as far as possible one credible and eligible agency should be identified for one type of surveys viz., a) socio-economic, and b) physical to be engaged at each of the stages viz., baseline, mid-term and end-term. Use of GIS technologies should be considered to further strengthen the survey information. GPS coordinates of all the sample sites should also be recorded. GIS maps of selected samples sites should be created, and scope for spatial analysis with associated primary survey data should also be included.

Baseline surveys will be undertaken in collaboration of the project units, to collect primary data on the key project indicators including gender, and following the methodology agreed with the PMU. Randomized sampling design will be followed for selection of project sites/ areas or target groups. Baseline will also capture situations in control villages/ sites, and data will be utilized as reference for



making comparisons during evaluations exercise. The baselines should get completed for all batch sites during first two year of project initiation.

This baseline data set would be utilized for future comparisons to know the performance and impact of the project investments. The impact surveys would be planned one at mid-point (after 5<sup>th</sup> year) and end-term (after 9<sup>th</sup> year).

### iii. Thematic and Short Studies

While the robust monitoring system planned under the project would be helpful to provide alerts or flagging concerns to the project management during implementation, however, there would be some areas where in-depth analysis would be required to further understand the causes/ factors responsible for some situations or for getting not so satisfactory results through defined processes as envisaged. It may also happen that some project areas could be innovating and exceptionally performing well, and in-depth study would be desired to learn about the factors of success that could be utilized for further replication, adoption and dissemination. All such areas of interest could be identified from time to time by PMU based on the reviews and feedbacks from the field.

Thematic/ Short studies would be undertaken as and when required to understand the issues and impact of certain interventions/ processes during the project implementations as well as document best practices and innovations identified in the project. These studies would be for 3-4 months durations, and could be planned from 2<sup>nd</sup> year onwards till 9<sup>th</sup> year; one study per year. The TOR and procurement details should be shared with JICA for information and feedbacks.

## 8) “7.2.3 Audits”

### i. Social Audits

To empower the VSS/ EDC members and community in decentralized planning and decision making, and to bring in transparency in the processes, a system of six-monthly social audits would be in place. This one-day event would give an opportunity to all members to know about the project activities and raise voice, if concerns are identified, while Executive Committee of VSS/ EDC shares all the records, proceedings, achievement vis-à-vis annual plan, accounts, expenditure, wage-payment details, etc. in public. Other stakeholders including representatives of Gram Panchayat, Block Panchayat, Forest Department, Revenue Department, partner NGOs, animators, other Project staff etc. will also participate in this event. Community institution representatives/ members (VSS/ EDC, SHG) and project staff at field level will receive training, to be organized under the Capacity Development Component, for systematically conducting Social Audits. PMU will develop and disseminate guidelines for conducting Social Audits. The Social Audits would be conducted twice in a year preferably during May and November each financial year at a common place. Advance announcement of dates for Social Audits to be made by VSS/ EDC office bearers to ensure maximum participation by VSS/EDC members, particularly women.

Proceeding of the Social Audits would be compiled by VSS/ EDC Executive Committee office bearers with assistance from animator and partner NGO staff, and would submit the a copy of the same to concern FMU and DMU highlighting action to be taken by respective stakeholders on identified issues. DMU would compile the results/ findings of all the Social Audits and submit a report to the PMU every time.

### ii. Statutory Financial Audits

Project would provide support to undertake annual statutory financial audits of the funds provided to various implementing agency during a financial year. Separate bank accounts would be opened for VSSs/ EDCs, DMUs, FMUs and PMU for the OFSDP-II, and would be annually audited by qualified and credible CA firm(s).

### iii. Concurrent Audits

Beside the annual Statutory Audits, there would be a system of undertaking concurrent audits every six-months at PMU, DMUs and FMUs to keep close track of funds and its utilization, and also capacitate various project offices to maintain systematic and proper records as per the JICA norms. Qualified and credible CA firms experienced in auditing externally aided projects would be engaged for concurrent audits.

### iv. Grievance Redressal, RTI and Public Disclosure

The Department of Administrative Reforms and Public Grievances (AR & PG) is the nodal agency of the Government of India for administrative reforms as well as redressal of public grievances relating to the states in general and those pertaining to Central Government agencies in particular. Collaborating with the Department of AR & PG, GOI, the Odisha state government has initiated online Grievance Redressal portal (URL: <http://cmgcodisha.gov.in/>) through which anyone can register grievances, initiate reminders, and view status of action taken on the grievances.

In a democratic set-ups it is obvious to receive grievances, and thus during the project implementation there may be instances where there are disagreements and dissatisfactions at various level of operations. To ensure proper redressal of grievances under the OFSDP-II there would be two systems in place to register the grievances and provide adequate solutions viz., a) Quarterly hearing at Circle offices, and b) Six-monthly Social Audits.

Proper records of all such applications received on grievances in the office of Regional CCF would be maintained, and status on these application would be entered in the Grievance Register after each hearing. This register would be necessarily maintained at RCCF level and would be regularly monitored by PMU. Similarly, at VSS/ EDC level grievances would be included in the Social Audit proceedings and follow-up would be taken-up at DMU level for its redressal in a time-bound manner.

Right to Information Act (RTI) has created additional opportunities for enhancing transparency and accountability. Thus, the Project will make efforts to enhance disclosure of project information and facilitate community institutions, NGO/ civil society partnership resulting in increased responsiveness. The key elements of strategy that PMU would work on must include:

- i) Enhance disclosure of information utilizing project website;
- ii) Facilitate NGO/ civil society involvement for social intermediation and other support
- iii) Develop a credible system to handle comments, suggestions and grievances
- iv) Define clearly incentives, benefits and remedies available
- v) Develop monitoring indicators for compliance to the above

### v. Operation and Effect Indicators

To have the basis for evaluation of effects of the interventions that may produce substantial measurable results towards end of the Project, continuous monitoring and assessment is required in the Project areas, which spreads over 12 Project divisions of the state. While tracking the physical and financial progress on an on-going basis would be a critical project management requirement, monitoring the project progress towards the project goals/ objectives, and sustainability dimension of the project intervention would be of immense strategic importance.

Performance Indicators basically are measure of project progress and realization for achieving project development objectives. Sustainable forests and biological diversity management is an adaptive management process, and requires evaluations of social, economic, and ecological conditions and trends that contribute to sustainability and that, therefore, reflect achievements toward the project goals.

As per JICA Operation Indicator and Effect Indicator Reference in ODA loan projects (Evaluation Department, JICA, July 2014) "Operation indicator" is used to quantitatively measure the operation of the project, and "Effect indicator" is used to quantitatively measure the effects of the project. In other words, when equipment, facilities, etc. (outputs) are installed or established by the project, (1) operation indicator

is used to measure whether or not the outputs are appropriately run and used, and (2) effect indicator is used to measure the effects which the outputs had on the recipients and the project area.

PMU will adopt ‘operation’ and ‘effect’ indicators for tracking project progress, and update status on the indicators in the Quarterly and Annual Reports. Some of the key Operation and Effect Indicators are given in the following table, whereas the narrative summary of the Project Design Matrix (PDM) is given in **Attachment 6.12.2**.

a) Operation Indicator

**Table 6.12.12 Operation Indicators**

Project Component	Indicator	Method of establishing indicator	Target	Purpose
Sustainable Forest Management	Degraded area treated under JFM (ha.)	Hectares of assigned area treated	xx ha.	To assess quantum of degraded areas treated
	Degraded area treated under Non-JFM (ha.)	Hectares of area treated	xx ha.	To assess quantum of degraded areas treated
	Plantation in JFM treatment areas (numbers)	Count of plants by kind of species (by sampling method)	xx nos.	To assess quality of forest areas treated
	Plantation in Non-JFM treatment areas (numbers)	Count of plants by kind of species (by sampling method)	xx nos.	To assess quality of forest areas treated
	Survival rate (%) – JFM areas	(Count of plants survived/ Count of seedlings planted) x 100; (in first and third year after planting)	xx% after first yr; and xx% after third yr	To assess the extent that the seedlings are surviving
	Survival rate (%) - Non-JFM areas	(Count of plants survived/ Count of seedlings planted) x 100; (in first and third year after planting)	xx% after first yr; and xx% after third yr	To assess the extent that the seedlings are surviving
	Production capacity of nursery	area of nursery (ha.) for raising seedling for project requirements; established or improved by the project	xx ha.	To assess the enhanced capacities of nurseries
	Production of seedlings (numbers)	Number of seedlings supplied from nursery established or improved by the project	xx/ year	To assess the enhanced capacities of nurseries
	Farm forestry plantation under mixed model	Hectares of area covered	xx ha.	To assess quantum of private waste/ non-agriculture land brought under tree cover
	Farmers opted for mixed farm-forestry model (numbers)	Count of farmers	xx nos.	To assess farmers interest for the model
Livelihood Improvement	Plantation under mixed farm-forestry model (numbers)	Count of plants by kind of species (by sampling method)	xx nos.	To assess quality of private waste/ non-agriculture land improved under farm forest
	SHGs supported for income generation (numbers)	Counts of SHGs	xx nos.	To assess quantum of community institutions capacitated and supported for income generation
	Women SHGs supported for income generation (numbers)	Counts of Women SHGs	xx nos.	To assess quantum of community institutions capacitated and supported for income generation
	SHGs members supported for	Counts of SHGs	xx nos.	To assess outreach of

Project Component	Indicator	Method of establishing indicator	Target	Purpose
	income generation (numbers)	members		project for income generation
	Business plan prepared for IGAs by SHGs	Counts of SHGs	xx nos.	To assess extent of capacity development with the SHGs for initiating small business/ enterprise
	SHGs accessing loans for small business/ enterprise from VSS/ EDC (%)	(Counts of SHGs received loan/ SHGs promoted) x 100 (after eligibility rating)	xx %	To assess extent, the SHGs are capacitated and accessing loans for income generation
	SHGs members accessing loans for small business/ enterprise (%)	(Counts of SHGs members received loan/ total SHGs members) x 100 (after eligibility rating)	xx %	To assess extent, the SHGs members are capacitated and accessing loans for income generation
	SHGs members accessing loans for small business/ enterprise - off farm activities (%)	(Counts of SHGs members received loan for off farm IGA/ total SHGs members accessing loan) x 100 (after eligibility rating)	xx %	To assess extent, the SHGs members opting off farm activities for income generation
	SHGs linked to the cluster-level producers organisation (numbers)	Counts of SHGs linked with Cluster institution	xx nos.	To assess quantum of community institutions capacitated and linked at clusters for further up-scaling/ / business expansion
	SHGs members linked to the cluster-level producers organisation (%)	(Counts of SHGs members linked/ total SHGs members) x 100	xx %	To assess extent, the SHG members are capacitated and linked at clusters for further up-scaling/ business expansion
Capacity Development – Community Institutions (VSSs/ EDCs/ SHGs)	VSSs/ EDCs organized/ reconstituted for JFM (numbers)	Count of VSSs/ EDCs	xx nos.	To assess the outreach of project to involve community institutions for JFM
	Micro plans prepared by VSSs/ EDCs (numbers)	Count of VSSs/ EDCs	xx nos.	To assess quantum of community institutions capacitated on decentralized planning
	Households benefitted through VSSs/ EDCs under the Project (numbers)	Count of households associated with Project VSSs/ EDCs	xx nos.	To assess the outreach of project to involve household linked to community institutions
	VSSs/ EDCs with women as chairperson (numbers)	Count of VSSs/ EDCs with women elected as chairperson	xx nos.	To assess how women are empowered to lead community institutions
	Training conducted for community institutions (numbers)	Count of training conducted by years	xx nos.	To assess quantum of trainings conducted as per planned targets
	Exposure trips organized for community institutions (numbers)	Count of exposures organized by years	xx nos.	To assess quantum of exposures organized as per planned targets
	VSSs/ EDCs persons trained (numbers)	Count of persons trained through various initiatives	xx nos.	To assess outreach of trainings to capacitate community on various processes and skills
	EC members of VSSs/ EDCs trained (numbers)	Count of EC members trained through various initiatives	xx nos.	To assess outreach of trainings to capacitate EC office bearers on various processes and skills
	Women candidates trained representing VSSs/ EDCs	Count of women trained through various	xx nos.	To assess outreach of trainings to capacitate

Project Component	Indicator	Method of establishing indicator	Target	Purpose
	(numbers)	initiatives		women on various processes and skills
	Women candidates representing VSSs/ EDCs trained through exposure trips (numbers)	Count of women trained through exposure trips	xx nos.	To assess outreach of exposure trips to capacitate women on various processes and skills
	Social audits conducted by VSSs/ EDCs twice every year (numbers)	Count of audits every year	xx nos.	To assess extent of transparency and accountability within community institutions
Capacity Development – Executing Agency (PMU/ DMUs/ FMUs)	Training conducted for executing agency (numbers)	Count of training organized by years	xx nos.	To assess quantum of trainings conducted as per planned targets
	Exposure trips organized for executing agency (numbers)	Count of exposures organized by years	xx nos.	To assess quantum of exposures organized as per planned targets
	Women candidates in executing agency trained through various capacity development initiatives (numbers)	Count of women trained through various initiatives	xx nos.	To assess outreach of trainings to capacitate women on various processes and skills
	Women candidates in executing agency trained through exposure trips (numbers)	Count of women trained through exposure trips	xx nos.	To assess outreach of exposure trips to capacitate women on various processes and skills
Sustainable Biodiversity Management	EDCs in which biodiversity monitoring system has been established (numbers)	Count of EDCs	xx nos.	To assess quantum of community institutions capacitated on biodiversity monitoring system
	EDCs in which People's Biodiversity Register (PBR) is prepared (numbers)	Count of EDCs	xx nos.	To assess quantum of community institutions capacitated to prepare PBRs
REDD+	Reference area brought under MRV protocols (ha.)	Measure of area under REDD plus pilot	xx ha.	To assess quantum of area identified under REDD+ pilot
	VSSs/ EDCs associated with REDD + pilots (numbers)	Counts of VSSs/ EDCs	xx nos.	To assess quantum of community institutions oriented on MRV protocols
	Carbon stock levels	tonnes of carbon dioxide equivalent (tCO <sub>2</sub> e) in 1 <sup>st</sup> , 5 <sup>th</sup> and 9 <sup>th</sup> years	xx tonnes	To assess the quality of forests over period of time by adopting MRV protocols

Source: JICA Survey Team (2016)

## b) Effect Indicators

**Table 6.12.13 Effect Indicators**

Project Component	Indicator	Method of establishing indicator	Target	Purpose
Sustainable Forest Management	Reduction in degraded forest areas (%)	(Ha. of area treated/ Ha. of total degraded area within assigned areas of project VSSs/ EDCs) x 100 (in 1 <sup>st</sup> , 5 <sup>th</sup> and 9 <sup>th</sup> years)	xx %	To assess extent/ pace to treat the degraded areas; year 1 would be baseline
	Crown density -Rate of forest cover (%)	Usually density is worked out by setting 20 sq.mt of sample areas and dividing the shaded area with the crowns by the total sample area;	xx %	To assess the degree of growth of forest tree in a certain area of a forest; year 1 would be baseline

Project Component	Indicator	Method of establishing indicator	Target	Purpose
		sun position should be on the top (in 1 <sup>st</sup> , 5 <sup>th</sup> and 9 <sup>th</sup> years)		
Livelihood Improvement	Per-capita household income (Rs.)	additional annual household income that could be attributed to project interventions (1 <sup>st</sup> , 3 <sup>rd</sup> , 5 <sup>th</sup> and 9 <sup>th</sup> years)	xx Rs.	To assess the extent project has helped the communities to enhance income
	SHGs accessing credits from bank/ MFIs	(Counts of Project SHGs accessing credit from banks/ MFIs/ SHGs promoted) x 100 (after eligibility rating)	xx %	To assess extent, the SHGs have established linkages with banks/ MFIs, and capacitated for accessing credit from alternate sources
Capacity Development	Community capacitated through trainings (%)	(Counts of trained through various initiatives/ total number of persons eligible for training at VSS/ EDC level) x 100	xx %	To assess the extent of community trained on various processes and skills
	Executing agency capacitated through trainings (%)	(Counts of trained through various initiatives/ total number of persons eligible for training at PMU/ DMUs/ FMUs level) x 100	xx %	To assess the extent of executing agency personnel trained on various processes and skills
Sustainable Biodiversity Management	Reduction in incidence of human-elephant conflicts (%)	Count of incidences in a year as percentage of incidences recorded in previous years (1 <sup>st</sup> , 3 <sup>rd</sup> , 5 <sup>th</sup> and 9 <sup>th</sup> years)	xx %	To assess the extent habitats are improved in the intervention areas
REDD+	Forest staff well trained on MRV (%)	(Count of project/ forest staff trained/ Total project staff) x 100 (1 <sup>st</sup> , 5 <sup>th</sup> and 9 <sup>th</sup> years)	xx %	To assess quantum of forest staff capacitated and trained on MRV protocols
	VSS/ EDC members well trained on MRV (numbers)	(Count of VSS/ EDC members trained/ Total number of VSS/ EDC members) x 100 (1 <sup>st</sup> , 5 <sup>th</sup> and 9 <sup>th</sup> years)	xx %	To assess quantum of community institutions capacitated and trained on MRV protocols

Source: JICA Survey Team (2016)

### 6.12.3 “7.3 Communication and Publicity”

Communication and Publicity would be very important and integral element of the project design, as it would be very vital for creating awareness environment as well as for sharing knowledge and information with the stakeholders for efficient project implementation, and facilitate delivery of planned results. The Project will evolve a communication strategy followed by a communication plan during the preparatory phase. The communication plan will serve as roadmap for undertaking communication and publicity activities.

The communication strategy of OFSDP-II will guide to evolve Communication Plan for the entire project program or interventions. The strategy will set the tone and direction so that all communication activities, products and materials work in harmony to achieve the desired project goals, objectives and results. The communication strategy will also enable the stakeholders and partners to provide input and agree upon the best way forward so that actions are unified. The program managers and communication specialist in the PMU, will work closely with relevant stakeholders and partners to develop the strategy.

The communications strategy, that will lead to evolve communication plan for the project will ensure to: a) help achieve our overall project objectives, b) engage effectively with stakeholders, c) demonstrate the success of project, d) ensure people understand what project do, and e) help change behaviour and perceptions where necessary.

The communication strategy of OFSDP-II will incorporate lessons learnt from OFSDP-I, and will serve as a pathway to achieve project goals, objectives and results. The communication strategy could be formal, informal, educational or amusing, detailed or broad, and should depend on the needs of the Project and on the target to be reached. The overall strategy should be drawn out keeping in mind: what is the message, where it is going to be utilized, who needs it, and how goals and results are going to be reached.

While making the choice about communication methods, roles and information flows should be well defined. Some of the example of methods are – adoption of folk media, integrated multimedia, network with institutions and partners etc. The communication strategy should not be fixed for entire duration of the project, but according to experiences, results, learning from mistakes and new events, it should be updated at appropriate intervals during project implementation, say 3<sup>rd</sup> and 5<sup>th</sup> year, if required.

A communication plan not only helps in increasing visibility of the project/ programmes to stakeholders, donors, governments and general public, but also helps in ensuring transparency as well as participation of the stakeholders in the project/ programme. Thus, during first year, after project initiation, the PMU will develop the communication strategy and plan, and would seek concurrence from GB and JICA.

The communication plan should include: a) objectives (goal of communication, what is to be achieved), b) target group (who will be communicated, how to get targets), c) messages (key messages, slogan), d) tools (media and non-media tools, communication channels), e) evaluation/ feedback (measurement and documentation of achievements), and f) roles and responsibilities including plan of activities.

Based on the project’s communication strategy and plan, and considering the information needs of the target groups, the information and communication activities should be planned annually, and will form part of the annual plan of operation of the project. This plan should help to disseminate information about the project and its results.

Mainly, three forms of project communication would be followed – a) knowledge management, b) internal communication, and c) external communication. Purpose for each is explained below:

### 1) “7.3.1 Knowledge Management”

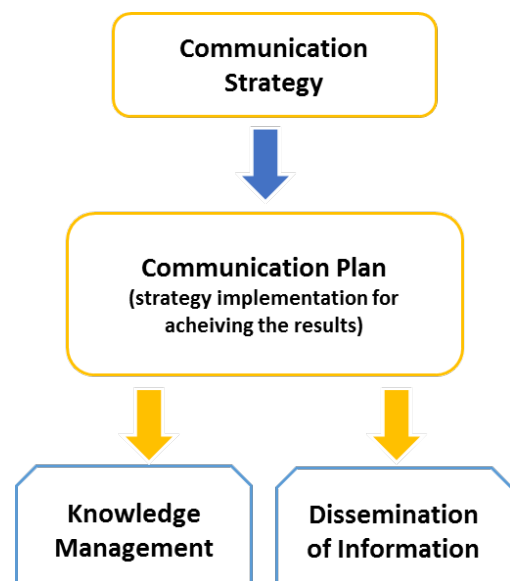
**Knowledge Management** – is to collect, systematically prepare and disseminate among all project stakeholders relevant and adequate knowledge about the project and its processes. For creation of knowledge material it is required to consider the project environment and make use of the all available information. The following activities would be planned under the sub-component.

**Table 6.12.14 Knowledge Management Activities**

Category	Activities
Knowledge Management	Project operation and accounting manual, guidelines, manuals, handbooks, flip charts, posters, brochure/ leaflet, books, activity calendar/ plans, process document etc.

Source: JICA Survey Team (2016)

To support such activities continuous design and development support for production of IEC/ knowledge material along with the allocations for printing is provided. The concept and content development of all such required material would be in-house and responsibility of the PMU.



Source: JICA Survey Team (2016)

**Figure 6.12.6 Project Communication**

## 2) “7.3.2 Internal Communication”

**Internal Communication** – is to take adequate measures to support an efficient flow of information within, and keep the stakeholders updated. The following activities would be planned under the sub-component.

**Table 6.12.15 Internal Communication Activities**

Category	Activities
Internal Communication	Procurement of equipment and publicity aids; project office orders, proceedings, review & back-to-office reports, e-mails, bulk SMS

Source: JICA Survey Team (2016)

PMU is further strengthened with communication and publicity aids, and adequately supported with equipment, gadgets to photo documentation and creation of video clips that could be utilized both as knowledge material as well as for dissemination of best practices. Further, allocations are made for utilizing services of bulk emails and SMSs for sharing information and messages with the stakeholders at all level of operation.

## 3) “7.3.3 External Communication”

**External Communication** – is to make sure that outputs, results, and best practices are shared outside as well as with the stakeholders and disseminated to all in an effective manner. The following activities would be planned under the sub-component.

**Table 6.12.16 Knowledge Management and Information Dissemination**

Category	Activities
External Communication	Folk media (street plays, dances, songs, puppetry shows), print media, electronic media (radio/ TV) – jingles, spots, talks etc., newsletter/ magazine, short films, exhibitions/ melas, workshop/ seminars, publications - papers/ articles, success stories, annual reports, assessment reports etc., project website

Source: JICA Survey Team (2016)

Flexibility has been provided with PMU to plan and execute the activities aligned with the project pace and requirements, and accordingly allocations have been made. Use of folk media has been proposed for all Project VSSs/ EDCs, as it is acknowledged as one of the strong and effective communication methods for communities. Concept and script development aligned to project requirements would be facilitated and supported by PMU. During OFSDP-I, publicity vehicle was procured, and the same could also be utilized for OFSDP-II areas.

Print media could be utilized for sharing events and messages including announcing of tenders and recruitment notices. In addition, electronic media (radio and television) should be utilized for spots, jingles, talks and messages on various aspects of the Project. In-house quarterly newsletter will be published by PMU both in Odia and English languages. Content and material for the newsletter would developed and coordinated in-house, and will be responsibility of the PMU. Short films/ documentaries could also be prepared during the course of implementation to feature successes and key thematic processes of the project.

Provision of participation in various exhibitions and melas (both with state and well as outside state) has been made to encourage women SHGs to display and sale products. PMU would be responsible for identification and showcasing successful business models, and also encouraging women SHGs for product development and sales.

At several stages during project implementation, it would be necessary to have consultations on various generic issues and areas where project may require views, collaborations and for sharing successes as well. This would also provide a good opportunity to PMU to listen to learning and best practice from outside experts, engage with like-minded people with shared interests, inspire and generate ideas and new thinking,



to form new partnerships and networks, to get results and disseminate messages face to face, to initiate action and collectively bring about change, to encourage PR and media coverage, and to celebrate achievements.

Publications would be useful to document knowledge material and progress/ results of the project. Some of the period and regular publications would be annual report, annual plan of operation, quarterly reports, successful cases and stories, paper/ articles etc.

### **6.13 Component 8 Phase-Out and Phase-In Activities**

Although the institutional capacity development at the community level would be an integral part of the Phase-Out/ Phase-In activities, the project would also take the following actions to further ensure the sustainability of the project impacts and continuity of the VSSs/ EDCs and SHGs. The phase out/ phase in activities with VSS/ EDC/ SHGs will take place towards the end of 4<sup>th</sup> year of each batch.

#### **1) Asset Inventory**

It is important to undertake the asset inventory created at all levels with the OFSDP-II funds. Such assets will be transferred to the responsible institutions/ agency for the operation and maintenance in the post project period. As per the memorandum of association, the PMU of OFSDP-II will close its operation after the transfer of the assets and completion of all the necessary formalities.

#### **2) Revisiting of Micro Plan of VSS/ EDCs**

The micro plans will also be revisited to try to build capacity within VSS and institutionalise the planning, networking and fund raising process at the VSS level within 4-5 year so that the VSS can continue the micro planning process beyond the project period.

#### **3) Phase-Out Training for VSS/ EDC/ SHGs**

Phase out training of the VSS/ EDC/ SHGs will take place in the 4<sup>th</sup> year of each batch. This training will give an opportunity to reconfirm the process of planning, record keeping, process of convergence, organisational management, etc. The programme will be developed by PMU and delivered to each VSS/ EDC/ SHG through partner NGOs.

#### **4) FMU level VSS/ EDC Federation**

In order to strengthen VSS/ EDCs as institutions and enhance the potential for continuity, FMU level federation can also be encouraged to be organised as a continuity strategy.

#### **5) LRC**

By the phase out period, the future plan for LRC will be clearly defined. The decision may be taken even before the phase-out period. If not, it needs to be decided during the Phase-out/ phase-in period. Since LRC will manage the corpus fund and revolving fund during the project period, the roles and responsibilities of LRC and OFSDS need to be defined and documented in this regard.

### **6.14 Component 9: Consulting Services**

The service period is for 4 years starting from the date of deployment.