DETAILED PROJECT REPORT
ODISHA FORESTRY SECTOR DEVELOPMENT PROJECT-PHASE-II

1.0   Background

Forests play a vital role in maintaining ecological stability and contribute significantly to Odisha's economy, especially to the livelihoods of forest-dependent communities which are mostly Scheduled Tribes. Odisha is rich in forest cover. As per the India State of Forest Report, 2011, the forest cover in the State was 48,903 sq km in 2009, which is 31.41 percent of the State's geographical area. The per capita recorded forest area of the State is 0.14 ha, as compared to 0.06 ha at the national level. Forest cover in Odisha is unevenly distributed. Forests are generally located in the districts situated in the Eastern Ghats, Central Table Land and Northern Plateau. The coastal districts with high population density have comparatively smaller areas of forests. From 2007 to 2009, there was an increase in forest area by 48 sq km. With growing population, there has been tremendous pressure on forests, both for forest produce as well as for forest land. By the end of December 2011, 384 forest land diversion proposals covering an area of 39,720 ha forest land have been approved by Ministry of Environment and Forests for non-forest use. Odisha is the third largest producer of kendu leaf with an annual production of around 5 lakh quintals. Odisha has nine percent of the country's total bamboo forest cover and seven percent of the total growing stock of bamboo.

National Forest Policy 1988 mandates that 33 percent of the geographical area should be under forest cover. The Government has, however, taken several steps to maintain and develop a good forest cover. Some development initiatives include restoration of degraded forest lands, afforestation, development of village forests and introduction of social and farm forestry.

2.0   Biodiversity of Orissa

Odisha's biodiversity is rich and varied both in terms of wild flora and fauna and ecosystem types. The biodiversity is based on a diverse physiography that is broadly recognized as the northern plateau, the Eastern Ghats stretching southwest from the Mahanadi river, the central tableland with its river valley systems and the coastal plains.

The forest ecosystem constitutes the main terrestrial biome and is the repository of the most of the state's biodiversity. According to the vegetation pattern five major types of forests are identified, namely, tropical semi-evergreen, tropical moist deciduous, tropical dry deciduous, subtropical broad leaved hill forests, and littoral and swamp forests. The state's flora comprises of 2,757 species, of which 2,630 are flowering plants constituting more than 17 % of India's flowering plants. Key statistics regarding the state's plant diversity is given in the table below.

Highlights of Orissa's Plant Biodiversity

Attribute	Number of species
Total number of plant species	2,754
Endemic plant species	29
Wild species related to crops	66
Medicinal plant species	600
Rare and endangered species	144

Sources: Sahu et al., 1999; SG, 2002

Sal (*Shorea robusta*) is the most dominant singular forest species, for which Odisha is also the southern most range of distribution. Representative forest plants include *Artocarpus lakoocha, Michelia champaca, Syzygium cuminii, Terminalia tomentosa, Adina cordifolia, Dalbergia paniculata, Madhuca indica, Diospyros melanoxylon,* etc.

The fauna of Odisha stands out in the Indian subcontinent for its composition. Occupying the diversity of habitats ranging from semi-evergreen forests to the marine ecosystem are most of the megafauna of the subcontinent. The higher vertebrates of the state total 690 species, the number of species in each group and the related figures for India and the world are given in the table below.
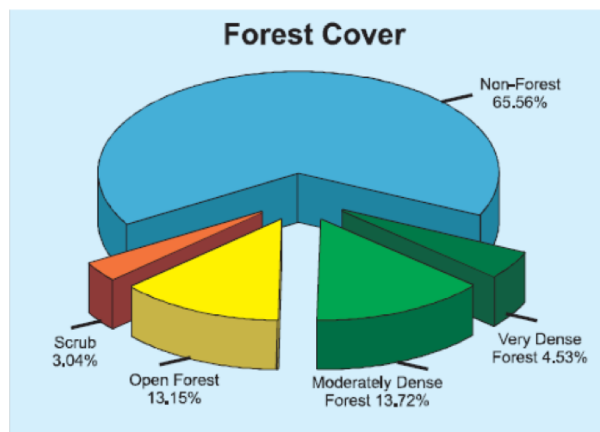
Odisha's higher vertebrate biodiversity

Sl no	Taxa	Species
1	Mammals	86
2	Birds	475
3	Reptiles	110
4	Amphibians	19

Sources: Dutta, 1992; Ghosh,1993; GOI, 2003; Islam&Rahmani,2004; Saharia, 1981;

The mega mammals of Odisha include the Asian elephant (*Elephas maximus*), Gaur (*Bos gaurus*), Tiger (*Panthera tigris*), Leopard (*Panthera pardus*), Sambar (*Cervus unicolor*), Wild buffalo (*Bubalus bubalis*) and Nilgai (*Boselaphus tragocamelus*), Spotted deer (*Axis axis*), the Blackbuck (*Antelope cervicapra*), Chowsingha (*Tetracerus quadricornis*) and Sloth bear (*Melursus ursinus*), and the marine mammals include Irraweddy dolphin (*Orcaella brevirostris*) and Dugong (*Dugong dugon*).

3.0 Forest Cover

The forest cover of the state based on the India State of Forest Report, 2011, published by Forest Survey of India is 48,903 sq km; consisting of 7060 sq km of very dense forests; 21,366 sq km of moderately dense forests and 20,477 sq km of open forests.

Forest Cover

Non-Forest 65.56%

Scrub 3.04%

Open Forest 13.15%

Moderately Dense Forest 13.72%

Very Dense Forest 4.53%

4.0   Forestry Vision, 2020

The Forest and Environment Department in their Forestry Vision 2020 document, has the following salient features:

i.   Improved Forest Extent and Condition by increasing the forest cover on forest lands and tree cover outside forests mainly on private lands as well as non-forest public lands.

ii.   Sustainable Forest Management through Management plans, Working plans and Micro plans.

iii.   Increased flow of NTFPs and timber and access of forest   fringe dwellers to forest produce for sustainable livelihoods.

iv.   Biodiversity conservation strategies within Protected Areas and outside Protected Areas on a landscape level.

v.   Promotion of Joint Forest Management Strategies

vi.   Higher allocations, investment, insurance and incentives for better forest management.

5.0   Odisha Forestry Sector Development Project (OFSDP)- Phase-I

Background of OFSDP in 2005

- Issues of serious concerns in Odisha Forestry Sector
- Degradation of quality forests
- Human-animal conflicts
- Limitation of Odisha Forest Department- Fund constraints, limited facilities and equipments, need for Capacity building and trainings
- Joint Forest Management -Under developed -absence of VSS Manual and System support to VSS
- Poverty- Forest dependence - Social fragmentation- Underdeveloped Market Linkages & Enterprise for Forest Products

OFSDP-Phase-I is being implemented with the loan assistance from Japan International Cooperation Agency (JICA) in 10 districts of Odisha i.e. Angul, Balasore, Bhadrak, Deogarh, Gajapati, Kandhmal, Keonjhar, Koraput, Rayagada and Sundergarh. Initially this project was for a period of seven years from 2006-07 to 2012-13, and thereafter extended up to 2014-15. The overall outlay of the project is Rs 802.30 Crore, with loan assistance from JICA for 13,937 Million JPY. The project is in its 8th year for implementation. It has twin objectives of restoration of degraded forests and livelihood improvement of forest dependent community. The project has covered in 2426 Joint Forest Management Committees (JFMC) for interventions in forest restoration and community development. Summary of detailed activities up include restoration of degraded forests over 2,10,405 ha with Assisted Natural Regeneration, Block Plantations and Teak Plantation; Coastal Plantations over 2,920 ha with Mangrove and Casuarina, Eco-tourism Destination Development; Income Generation Activities in over 7000 SHGs; Livelihood Improvements and Capacity Building.

5.2   How OFSDP has functioned?

- Forestry project not in isolation- inter-sectoral linkages strengthened for large impact
- Strengthening JFM issues – legal, empowerment, and   relationship with village institutions, GP, & Government
- Micro-planning- Participatory and ownership of community – Accountability, Reliability & Transparancy
- Environmental awareness of local landscape
- Marketing linkages on productions
- Innovations and harmonisations
- Focus on consolidation and sustainability of VSS as Institution

The Performance Review undertaken by independent evaluators found the project interventions to be relevant and best fit around all components, significant achievement in project results as envisioned, efficient translation of employed inputs into desired outputs and cost effective service delivery of the interventions.   The project has achieved substantial progress in Sustainable Forest Management. There has been observed an increase in natural capital for nearly 71% HH, financial capital increase in 30 % HH, human capital appreciation for 26%   HH, while overall status of the livelihood assets appreciation for 14% HH. A greater evenness and more biodiverse nature of the forest community, better regeneration status in the treated forest lands and higher variability in survival of seedlings planted. At the village level, the independent impact evaluations observed a clear equity focus through participatory micro-planning; well defined systems for documentation; along with transparency in decision-making and financial transactions.

Evaluation of Income Generating Activity component indicated increased SHG federations/clusters for mobilization and aggregation of Non Timber Forest Produce and increased ability to negotiate with traders through higher volumes. At SHG level, there have been engagements in wide range of activities as per local market demand, which has resulted in increased cash inflows supplementing household income. There has been easy access of credit at the door step from the revolving funds provided under the project thereby contributing to financial inclusion and generating self-confidence of women with opportunity for livelihood enhancement. Overall a process of economic empowerment of the SHG women was noted as a very important output as women have gained a lot of confidence in dealing with traders.

As per the socio-economic changes (between 2008 and 2013) documented in 2020 villages, literacy has increased by 24%, house with RCC roof by 41%, with asbestos roof by 35% with electrification expanding by 221%. Similarly access to water for drinking and agriculture has increased with increased in no of hand pumps by 21%, no of bore wells 188%, no of wells by 14%. Wellness of households as per participatory wealth ranking indicate a jump of 24% in well off group, 23% in manageable group, 8% in poor group, while there is a reduction of 10% in very poor category.

5.3   OFSDP Experience
- ➢ NTFPs have become a focus of interest in their own right. Although they still carry a 'poverty' tag as poor rural communities depend on them to support subsistence

economy, their overall value – ecological, social and commercial – are now being appreciated more by VSS with JFM.

➢ VSS, their executive committee members, and SHGs/ User Groups are playing active roles in negotiating transactions of forest usufruct on state-owned forest lands as well as on IGAs of Forest products/ non forest products.

➢ NGOs and Panchayats too are finding useful roles in JFM.

➢ The Forest officials specially at Village level have gained experience on the multiple numbers of actors and institutions that are involved in the forest dialogue.

➢ Growing clarity on land ownership, benefit sharing mechanisms, acquisition and transaction on forest assets in VSS/EDC

➢ Encouraging financial opportunities that allow the provision of credit, microfinance by community, enabling and empowerment capabilities

The OFSDP model of implementation provides an example of beginning of socio-economic returns from forest ecosystem restoration through VSS Micro-planning & execution by communities in deeply poverty stricken villages. It has made them to understand about heavy forest degradation due to unsustainable farming practices on encroachments and of over-exploited forest resources. The issues of erosion and water harvesting are getting their attention for more SMC works. A restoration investment from project has been able to rejuvenate the land, resulting in income for people living within the restoration area. As a result of the restoration project, a good number of households are lifted out of poverty and overall employment rates, notably for women, increased significantly. During the extension phase, this is getting get further intensified. Therefore, OFSDP model of Sustainable management capacity building with communities stake-holding needs to be further strengthened in Odisha with wider coverage with objectives of

"The stewardship and use of forests and forest lands (JFM & non JFM mode) in a way, and at a rate, that maintains their biodiversity, productivity, regeneration capacity, vitality and their potential to fulfill, now and in the future, relevant ecological, economic and social functions at local levels, and that does not cause damage to other's forests ecosystems".

Japan International Co-operation Agency (JICA) while assisting Governments for environmental improvements from forestry sector services as well as for livelihood improvements of impacting forestry communities currently also identifies biodiversity conservation and climate change & mitigation as emerging focal areas.

6.0 Odisha Forestry Sector Development Project (OFSDP)- Phase-II

6.1 Needs Analysis

6.1.1 Need of Restoration and Sustainable Management of Forests

Odisha's forests are of high biodiversity value especially when compared with the recent global trend of species decline. Forty-four mammal species found in Odisha are not seen anywhere else in the world. Similarly there are 55 bird species endemic to the state. Odisha's forests are

home to the more charismatic large mammals, most of which are endangered, on the Indian subcontinent. Of the 2,630 species of flowering plants found in the state, about 5.5% are either rare or endangered at the global level. These forests hold large numbers of medicinal plants and wild relatives of crop plants. The sustainable management of such forests is crucial not only for the state but also beyond, especially since biodiversity is increasingly being recognized as a global heritage.

Apart from causing the decline of biodiversity, the forest degradation leads to lowering its inherent economic value as a source of timber/non-timber products, socio-economic value as a source for livelihood for forest dependents and environmental functions for the public such as mitigating soil erosion, mitigating flood peaks, providing increased and prolonged base flow, and maintaining quality water. Although conventional market economics does not have mechanisms to recognise the full value of ecosystem services provided by the forests, it is obvious that what is at stake is an enormous economic resource with both realized and potential values.

The value of the Project could be judged from the viewpoint of contributing to carbon sink, sequestration or carbon trading.

6.1.2   In need of ecological security

Odisha is frequented by natural disasters of various kinds- floods, droughts, cyclones, coastal floods, heat waves, etc. Between 1963 and 2013, 16 such major disasters occurred in the state causing heavy human toll and widespread destruction. The recurring natural calamities remain a critical impeding factor in the long term development of the state. Deforestation is deemed as one of the causative factors in the genesis of floods and drought. In addition, the coastal woodlands would have provided a green break against the cyclones and tsunami.

The protection and augmentation of forests in the state is imperative in the disaster-prone Odisha to reduce the damage and intensity of natural disasters.

6.1.3   In need of enhancing livelihood security

Odisha has a high proportion of population belonging to below the poverty line (BPL). Although BPL rate in the state has declined from 66 % to 37 % during 1973-2013 (NSSO data), the regional differences within the state have been increasing. In coastal Odisha, BPL has declined at about the same rate as the national average. The rate of reduction has been less in the inland rural area, especially the northern and southern regions. Higher BPL rates are concentrated among the scheduled cast (SC) and scheduled tribe (ST) population. Forests and trees have customarily played an essential role in the livelihood particularly of the local poor in the state. The majority of this group depends fully or in part on forest resources to meet their subsistence needs. Also, small scale manufacturing of forest-based products provides an important source for the rural non-farm dependant poor group. Forest-based activities provide substantial means for survival under the deprived livelihood situation in the state. Such activities have been seriously threatened due to on-going forest degradation.

Considering the close link between local poor and forest degradation, providing means for poverty alleviation in a sustainable manner should be an integral part of restoration of the

degraded forests and sustainable forest management.

7.0   Project Rationale:

The proposed Project named Odisha Forestry Sector Development Project-Phase-II for financial assistance from Japan International Cooperation Agency (JICA) is designed to strengthen the forestry sector of the State, through forest conservation, development and sustainable use through community participation, and improving livelihoods of forest dependent communities with long term goals of Environmental Conservation and Poverty Alleviation. The following highlights the project rationale:

- Conformance with Odisha's Forestry Vision
- Improvement of quality of forests and wildlife in the State
- Expected contribution of OFSDP-Phase-II to poverty alleviation
- OFSDP-Phase-II as a measure to reach out to socially marginal communities
- Complementary effect on JICA assisted OFSDP-Phase-I
- Capability of Odisha Forest Department
- Global movement and JBIC policy
- Necessity of Japanese assistance

8.0   Project Goal and Objectives:

The proposed project will aim at improving 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".

To achieve the overall goal, OFSDP-II will adopt the following objectives:

i) Restore degraded forest and augment forest resources

ii) Secure sustainable forest management by improving forest administration, community organizations and other stakeholders

iii) Conserve and better manage the biodiversity

iv) Promoting inter-sectoral convergence

v) Improve incomes of target forest dependents and their livelihood options

9.0   Project Approach and Strategy

9.1   Contiguous JFM Areas

Geographically contiguous forestlands that are not dispersed are selected to realize the efficiency of project implementation and substantial project impacts. In this context, a watershed approach will be adopted at the division level and a cluster approach will be undertaken at the VSS level for JFM site selection.

9.2   Holistic Approach with Integrated Project Components

The Project will be designed as one with integrity: components of the Project will be constituted to achieve the multiple Project goals with due attention being given to having a comprehensive impact and provide fundamental progress to the lives of local people. For this, the Project components will not focus only on the main component of conservation /restoration of the forests and poverty alleviation but also other supporting components such as institutional strengthening, capacity building of VSSs, community development and researches, and will be designed to organically link with each other to secure the multiple effects.

The scope of each component will be confined to activities that will directly and indirectly contribute to the achievement of the Project goals.

9.3   Poverty Alleviation

Recognizing close linkage between rural poverty and forest degradation in the Project area, one of the Project goals is to facilitate poverty alleviation. This basic philosophy will shape a salient feature of the Project. The Project, therefore, will stress livelihood development through the promotion of IGA, improvement of small-scale village infrastructure and mitigation of natural disasters through coastal plantation.

9.4   Needs-Based Interventions to Forests and Forestlands

As adopted and up scaled in OFSDP-I, the type and mode of forest interventions will be determined an area specific needs basis. The most appropriate type of forest intervention will be chosen among those such as forest conservation and protection, ANR, or block plantation/artificial regeneration, etc., in accordance with the forest conditions (dense, open or scrub forest). The purpose of the intervention should be distinctive: either soil/water conservation-oriented or production-oriented taking into account the slope categories (steep/hilly or undulating/flat) and location of the forest, i.e. whether the forest/forestland is located at crucial watersheds or not. The type and purpose of intervention will influence the selection of species, the micro planning and IGA activities under the Project.

The mode of interventions will be determined depending on geographical distance of intervention sites from villages. Were the intervention site is accessible from the villages, the participatory approach (JFM) will be adopted. If the site is beyond an accessible distance from the village concerned, the forest intervention and management will be conducted by OFD.

9.5   Emphasis on Capacity Building for People-Led Forest Management

Particular attention will be paid to institutional strengthening and capacity building of the VSSs concerned so that forests/forestlands in the Project area could be managed in a sustainable manner by both the OFD and the VSSs as collaborators. The capacity building for members of the VSS aims to increase their capabilities to an extent that the JFM area concerned could be managed by themselves with minimum assistance from the government after the Project finishes. The Project will therefore be designed to provide significant responsibilities to the VSS members, including plan formulation, intervention, and management of the JFM area allotted to the VSS so as to develop their planning and management skills.

9.6 Effective Project Implementation and Management

The Odisha Forestry Sector Development Society (OFSDS), established for implementation of the OFSDP Phase-I, will be implementation platform for Phase-II. The OFSDS will use the existing Operation Manual and the administrative and financial procedures for smooth Project implementation of Phase-II interventions.
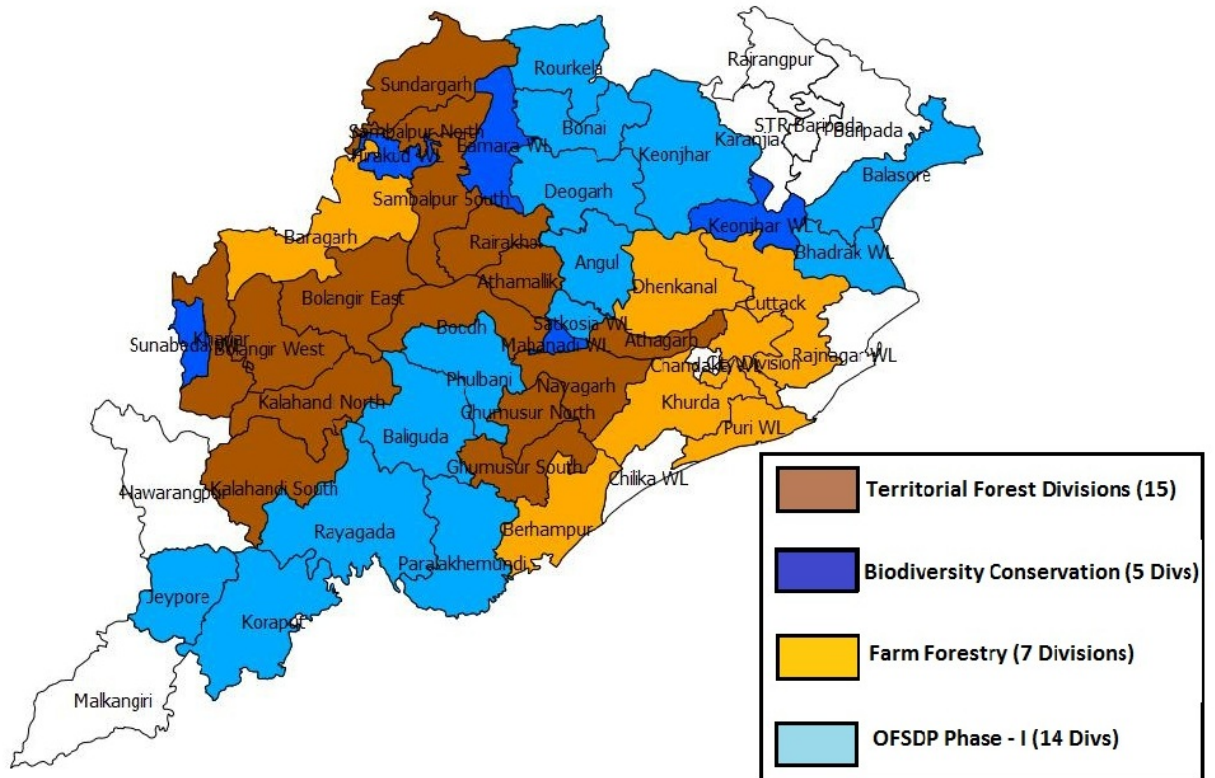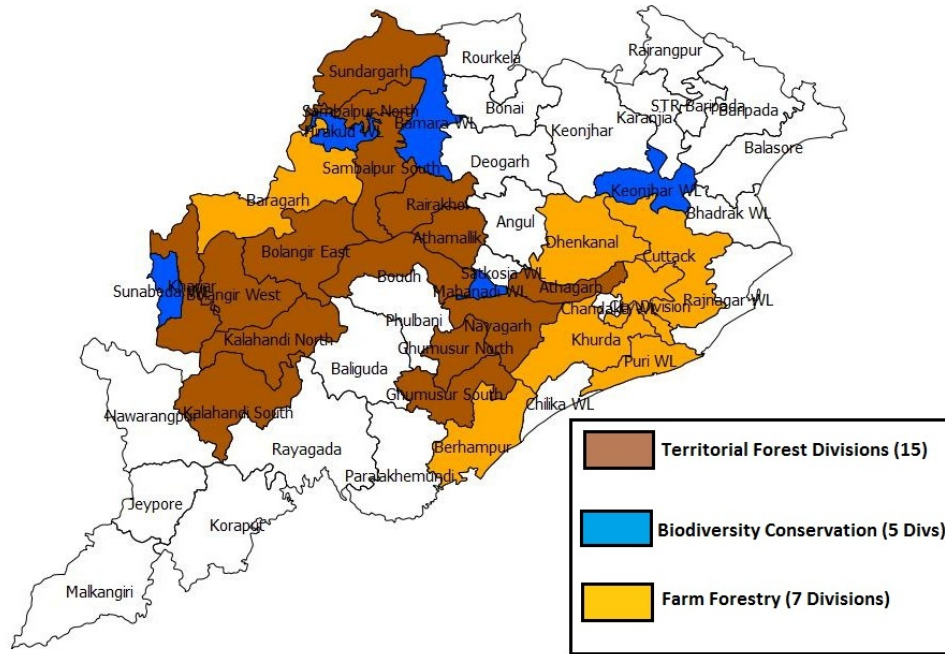
10.0 The Project Area

The Project proposes to cover forests and forest areas including Protected Areas in

i) 15 Forest divisions namely Ghumsur (South), Ghumsur (North), Boudh, Bolangir, Subarnapur, Khariar, Kalahandi (South), Kalahandi (North), Sambalpur (North), Sambalpur (South), Rairakhol, Sundergarh, Athamailk, Athagarh and Nayagarh covering all the major project components;

ii) 5 Wildlife divisions namely Mahanadi (WL), Sunabeda (WL), Bamra (WL), Hirakud (WL) and Keonjhar (WL) for Biodiversity Conservation;

iii) 7 divisions namely Berhampur, Bargarh Khordha, Cuttack, Dhenkanal, City Forest divisions and Puri Wildlife Division for Farm Forestry.

iv) 11 forest divisions and 3 wildlife divisions of OFSDP Phase-I will be taken up for continuing and up scaling IGA and Livelihoods support.

Sl	Forest Division	District	Major Project Components Covered
1	Ghumsur South	Ganjam	All project components including Restoration of Degraded forests and Farm Forestry
2	Ghumsur North		
3	Boudh	Boudh	
4	Bolangir	Bolangir	
5	Subarnapur	Subarnapur	
6	Khariar	Nuapada	
7	Kalahandi (South)	Kalahandi	
8	Kalahandi (North)		
9	Sambalpur (South)	Sambalpur	
10	Rairakhol		
11	Sambalpur (North)	Jharsuguda	
12	Sundergarh	Sundergarh	
13	Athamalik	Angul	
14	Athagarh	Cuttack	
15	Nayagarh	Nayagarh	
16	Mahanadi (WL)	Nayagarh, Boudh	Biodiversity Conservation
17	Sunabeda (WL)	Nuapada	
18	Bamra (WL)	Sambalpur	
19	Hirakud (WL)	Bargarh	
20	Keonjhar (WL)	Keonjhar	
21	Berhampur	Ganjam	Farm Forestry
22	Bargarh	Bargarh	
23	Khurda	Khurda	
24	Cuttack	Cuttack, Jajpur, Jagatsinghpur, Kendrapada	
25	Dhenkanal	Dhenkanal	
26	City Forest	Khurda	
27	Puri (WL)	Puri	

Project Area

11.0 Project Period

The proposed project is planned for duration of 8 years, starting from 2015-16 to 2022-23 in consideration of capacities of stakeholders and time required to conduct activities in sustainable manners. The project will be divided into 3 phases; Preparatory Phase - 1 year (2015-16), Implementation Phase - 5 Years (2016-17 to 2020-21) & Consolidation Phase - 2 Years (2021-22 to 2022-23).

12.0 Proposed Project Components

The proposed Project components are categorised into five parts: i) preparatory works; ii) Restoration of Degraded Forests iii) supporting activities; iv) monitoring and evaluation; v) consulting services.

1	Preparatory works	Preparatory works
		Strengthening of Executing Body (EB)
2	Restoration of Degraded Forests	Forest management under JFM mode
		Forest management under non-JFM mode
		Biodiversity conservation
		Farm forestry
3	Supporting Activities	Capacity building of VSS
		Infrastructure development
		Forest research
		Publicity and communication
4	Monitoring and Evaluation	Monitoring and evaluation
		Phase out / phase In works
5	Consulting services	Consulting services

Main Purposes of the Project Component

Component	Purpose and lead activities
Preparatory Works	• Orient and strengthen the Odisha Forestry Sector Development Society with necessary personnel, contractors and the Operation Manual • Select project sites and identify possible VSS areas / eco-development areas • Prepare appropriate maps and data base of selected project sites (JFM areas) • Customise standard management manual for JFMCs/EDCs • Prepare guidelines and manuals for PMU/DMU/FMU staff and implementing teams for effective implementation of the Project. • Prepare handbooks for VSSs/EDCs/SHGs • Training need analysis and developing training programmes
Strengthening of EB	• Establish DMU and FMU offices with adequate office space. • Augmentation of office facilities and strengthening of mobility for PMU, DMU and FMU. • Capacitate staff members of PMU, DMU and FMU • Engaging Project Support Teams at DMU and FMU
Capacity Building of VSS/EDC/SHG	• Procurement of partner NGOs • Capacity building of Partner NGOs • Organize / reorganize VSS/EDC/SHG and equip their leaders and members with appropriate skills and knowledge to participate in the Project and manage their organisations adequately during and after the Project • Capacity building of VSS/EDC/SHG • Selection and nomination of village animators • Microplan preparation for each VSS/EDC
Community Development and livelihood security enhancement	• Create incentives for VSS/EDC members to meet their basic human needs or IGAs. • Assist VSS/EDC members in improving their livelihood including development of IGAs and micro-enterprises • Income Generation Activities (IGA) through Market research at local level, Business planning, Financial support for initial capital for micro-enterprise/IGAs development, Forest-based IGA/micro-enterprises, Natural resource based IGAs/micro-enterprises, Marketing support, Institutional linkages and convergence. • Formation and Strengthening of SHG Consortiums • Support for Livelihood Security Enhancement

Biodiversity Conservation	• Holistic Solution to Human-Wildlife Conflict
	
	   - Study and identify hotspots of HW conflicts and their nature
	
	   - prepare a Strategic Plan to deal with Human Wildlife Conflict
	
	   - Public Awareness and Communication
	
	   - Preparing an Emergency Response Team: Emergency Response Team at the Forest Division level equipped with special, customized vehicle and provisions for all equipment needed to respond to an emergency.
	
	   - Physical Barriers: Solar powered electric fences
	
	• Incentivized solution for agriculture/horticulture cropping and protection of human habitations and their property, through area specific studies, awareness and participation and plan implementations.
	
	• Ecotourism Development
	
	   - Community based Day visitor centres, Nature camps, Interpretation centres, Promotion of Conservation education.
	
	• Habitat management:
	
	   - Develop water bodies, grass lands, Soil and Moisture Conservation.
	
	   - Fire protection in protected areas
	
	• Eco-development in Protected Areas
	
	   - Provide alternative livelihood for the people living in and around the periphery of the PAs; undertaken through village level EDCs. Skill trainings, financial support and marketing assistance; improvement of irrigation, creation of self-help groups, small business enterprises etc. This component will be integrated into both Capacity Building of VSS/EDC and Community Development components.
	
	• Conservation of Biodiversity Hotspots outside PAs
	
	   - Community Reserve, Biodiversity Heritage sites, Sacred Groves.

Forest Management under JFM Mode	*To regenerate forest within degraded forest* *To create benefit (incentives) to VSS members through the enrichment of NTFP and other useful forest products* *To mitigate the damages from natural disasters* - Consolidation of the JFM areas in the entire project areas. - Undertake survey, demarcation and mapping of all JFM areas in the project area including conflict resolution. - Nursery Establishment - Decentralized nurseries established in VSS villages and managed by the VSSs. - Rehabilitation of Degraded Forests - Soil and moisture conservation measures: SMC like gully plugging, contour bunding, staggered contour trench etc. - Assisted natural regeneration (ANR): artificially facilitate natural regeneration on degraded forests where rootstocks are still available; include singling coppice shoots, removal of high stumps and climbers and tree planting in blank areas. - Block plantation: block plantation to produce specific timber/NTFP products and maintain vegetal cover for soil and water conservation. i) economic plantation consisting of timber species; ii) fuel wood and fodder plantation with fast growing species; iii) bamboo plantation; and iv) NTFP plantations. - Fire Protection: i) construction and maintenance of fire lines; and ii) regular watching and patrolling. iii) Monetary Incentives to VSS as "no fire bonus". - Mangrove Plantation on Coastal Zone: Socioeconomic condition survey, Land preparation, Plantation establishment, fencing.

Forest Management under Non-JFM Mode	• *To generate revenue for OFD / Government of Orissa*
	
	• *To protect existing forest and regenerate forest within degraded forest and use the timber species in a sustainable manner*
	
	- Forest area boundary establishment
	
	    - Review of existing documents and maps, Boundary survey, Establishment of supplemental boundary pillars, Mapping, incorporated in a GIS environment.
	
	- Fire Protection
	
	    - Creation and maintenance of fire line, Fire patrol, Firefighting Equipment, Advanced fire alert system by integrating remote sensing with modern communication tools.
	
	- Drainage Line Treatment
	
	    - In-situ SWC work" in relevant plantation areas through contour trenches, pits, trench ridges, vegetative barriers, etc.
	
	    - Ex-situ SWC work for the drainage line treatment includes i) gully bed stabilization, ii) gully bank protection iii) water harvesting Structure
	
	- Forest Type Improvement and Development
	
	    - Silvicultural operations in Reserved Forest blocks, thinning for plantation, artificial regeneration and post thinning operations in the forest blocks with valid working plans. Adequate technological inputs and research study inputs should be incorporated while implementing.
	
	- Artificial Regeneration
	
	    - Intensively managed teak and other economic plantation established in open forest blocks with valid working plan.

Farm Forestry	• *To provide additional income to target VSS and its members* • *To promote re-greening on private land within the project areas* - Promoting timber, pulp wood, NTFP and fast growing tree species in farm lands. - Supply of quality planting material to farmers - Incentive based farm forestry approach - Buy back agreements promoted with industry
Infrastructure Development	• To improve the access to degraded forest where forest rehabilitation activities would take place under the Project • To enhance the market access of target villages

Forest Research	• *Restructure and institutional strengthening og the Forest Research Wing of OFD*
	• *To generate useful technologies and knowledge for Project implementation*
	• *To enhance the knowledge foundation and intellectual capital of forests*
	- Restructuring, Upgrading and Institutional strengthening of the Silviculture wing of OFD.
	- Proper policy and institutional improvement and adequate Resource Allocation for creation of a State Forest Research Institution with appropriate laboratories, buildings, equipments, manpower and other research infrastructure in the field, along with and increasing institutional support, facilities.
	- To generate useful technologies and knowledge for Project implementation
	- To enhance the knowledge foundation and intellectual capital of forests
	- Improving the productivity of plantation forest through use of quality seeds and seedlings of improved genotypes obtained through tree improvement to meet the demands of farmers, industries and forest department.
	- Strengthen the Research Training and Extension infrastructure.
	- Enhance ecological research and modeling of climate change impacts, mitigation and adaptation aspects, genetic improvement and non wood timber forest produce.
	- Forests and Climate Change: Mitigation & Adaption
	- Assessment of Climate change impacts on Natural Ecosystem Processes
	- Assessment of Mitigation potential assessment of State's forests, and impact of Climate Change on mitigation potential
	- Implementing REDD+ Pilot Projects with involvement of communities
	- Estimation of carbon status in different carbon pools in the selected *JFM areas* of the State
	- Estimation of enhancement in forest carbon stocks as a result of conservation efforts in forest
	- Empowering forest dependent communities for forest carbon conservation and developing an MRV system for REDD plus actions
	- Capacity building of participating communities for developing a transparent MRV system at small project level
	- Feasibility study for getting the project registered for carbon credits and developing a system of payment for environmental services (PES) to the participating communities.

	- FD Nursery Development
	
	   - Modernise Existing FD Nurseries under Research
	
	   - Quality Planting Stock at FD Nurseries:
	
	   - Planting stock production for departmental and JFM plantations, Planting stock for agro-forestry, Clonal and NTFP planting stock.
	
	- Bald Hill Plantation
	
	   - Pilot, upscale and standardize plantations and afforestation models and methodologies in Bald Hills.
	
	   - Around 1500 ha of Bald Hill plantations will be taken up in the project divisions and thereafter mainstreamed in the Forest Department.	

Publicity and Communication	• To enhance environmental awareness of the public within the Project areas • To advertise OFSDP and promote the success to other areas.	
Monitoring and Evaluation	• To understand issues on project implementation and work progress • To provide adequate information for project planning • To assess the impact of project	
Phase Out / Phase In Work	• To integrate the EB into a regular government structure under a non-project mode • To have VSS / SHG be prepared for non-project mode	
Consulting Services	• To provide EB with managerial & technical assistance for Project implementation	

13.0 No of VSS proposed to be targeted

Sl No	District	Forest Division	No. of VSS proposed
1	Ganjam	Ghumsur South	150
2		Ghumsur North	200
3	Boudh	Boudh	150
4	Bolangir	Bolangir	300
5	Subarnapur	Subarnapur	220
6	Nuapada	Khariar	300
7	Kalahandi	Kalahandi (South)	300
8		Kalahandi (North)	300
9	Sambalpur	Sambalpur (South)	200
10		Rairakhol	130
11	Jharsuguda	Sambalpur (North)	100
12	Sundergarh	Sundergarh	250
13	Angul	Athamalik	100
14	Cuttack	Athagarh	100
15	Nayagarh	Nayagarh	200
			3000

15.0 Physical Quantities targeted on project components

Components	Unit	Project Target
Restoration of Degraded Forests in 14 divisions	ha	2,55,000 ha
ANR	ha	1,80,000 ha
Block Plantations	ha	60,000 ha
Artificial Regeneration	ha	15,000 ha
Coastal Plantation	ha	1,000 ha
Mangroves	ha	500 ha
Non Mangroves (Type-IV)	ha	500 ha
Farm Forestry	ha	60,000 ha
Ecotourism destination development	no	5
Community Reserves/Heritage Sites	no	5
Formation of VSS / EDCs	no	3000
EPA (VSS)	no	3000
IGA (SHG)	no	9000

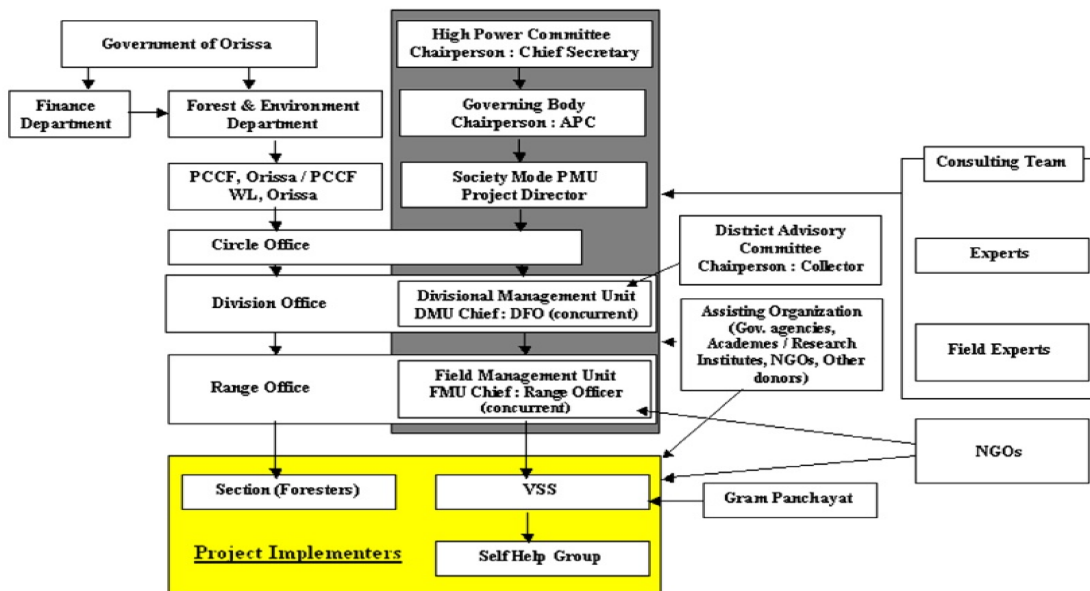Detailed component wise, work quantity shown at ***Annexure-I.***

16.0 Institutional Framework

The Forest and Environment Department, Government of Odisha, through the Odisha Forestry Sector Development Society (OFSDS), will be responsible for the implementation of the Project. The OFSDS was constituted during 2006-07 at the state level and was registered as an autonomous independent Society in compliance with the Society Registration Act, 1860 for implementation of the OFSDP Phase-I project. The OFSDS will consist of a High Power Committee (HPC), a Governing Body (GB), a Project Management Unit (PMU), 40 Divisional Management Units (DMUs) and 216 Field Management Units (FMUs).

The PMU at the state level will guide and manage Project implementation in the OFSDS. The HPC will be the highest decision-making body for Project policies and coordinate with the other relevant agencies. GB will be responsible for monitoring the progress of disbursement of the Project implementation. At the field level, DMUs will supervise and monitor the activities of FMUs, while the FMUs will be the front line of the Project implementation. A District Advisory Committee will be organized for each of the DMUs to monitor Project implementation.

New VSSs will be formed and existing ones will be revitalized as main proponent for Project implementation. Each VSS would have a couple of SHGs who will participate in income generating activities (IGAs) under the Project. Organizations such as other government agencies, academies/research institutes, NGOs, other donor agencies, etc. are expected to support the DMUs and FMUs as assisting organizations for the Project.

A project consultant will be employed to assist and advise the OFSDS for smooth and quality Project implementation. The overall framework of project implementation is shown below.

17.0 PROJECT COST

17.1 Summary of Cost Estimate

The total project investment cost is estimated to be **Rs. 1739.5 Crore**. The project cost breakdown is summarized below. Detailed cost breakdown and work quantity is placed at **Annexure-I**.

Summary of Project Cost

PROJECT COST	
COMPONENTS	**PROPOSED OUTLAY (Rs in Crore)**
Preparatory Work	31.62
Strengthening of Executing Body	43.78
Capacity Building of VSSs	112.24
Community / tribal development & Capacity building of VSSs	312.15
Biodiversity Management	83.71
Forest Management under JFM Mode	592.04
Forest Management under Non-JFM Mode	87.46
Farm Forestry Development	162.50
Forest Researches	53.55
Publicity and Communication	1.50
Monitoring and Evaluation	3.85
Phase-out and Phase-in Activities	0.10
consulting services	25.00
Total JBIC Loan	**1509.50**
Govt share	200.00
Interest during construction	30.00
Grand total	**1739.50**

17.2 Conditions and Assumptions

The project costs are estimated based on the following conditions.

a) The project costs in the Project period of eight years are estimated based on November 2013 constant prices in Indian Rupees.

b) The exchange rate of Rs. 1.0 = JPY 1.5988 as of November 2013 is applied.

c) The unit cost for each sub-component and activity was estimated on the basis of detailed cost breakdown for each unit cost.

17.3 Cost Component

17.3.1 JICA Loan Component

The major part of project cost is the cost for all components of the activities, including Preparatory Works, Strengthening of Executing Body, Capacity Building of VSS, Community/Tribal Development, Biodiversity Conservation, Forest Management under JFM Mode, Forest Management under Non-JFM Mode, Farm Forestry Development, Forest Research, Publicity and Communication, Monitoring and Evaluation and Phase-

out / Phase-in Work. The total cost of all these components is estimated to be **Rs. 1509.50 Crore**. This component will be met from the JICA loan component.

17.3.2 Government Share (Administration Costs)

Administration costs consist of cost of salary and establishment of Government staff engaged for project activities at PMU, DMUs and FMUs, as well as direct costs that would include fuel, travel expenses and expenses for supporting staff, etc. This would be borne by the State Government.

17.4   Tentative Annual Cost Schedule

The annual cost disbursement schedule is shown below:

(Rs. Crore)

COMPONENTS	TOTAL OUTLAY (Rs in Crore)	Year-1	Year-2	Year-3	Year-4	Year-5	Year-6	Year-7	Year-8
Preparatory Work	31.62	1.63	1.63	3.45	8.43	6.24	6.58	2.18	1.47
Strengthening of Executing Body	43.78	2.26	2.26	4.78	11.68	8.64	9.11	3.02	2.04
Capacity Building of VSSs	112.24	5.79	5.79	12.25	29.93	22.16	23.37	7.73	5.22
Community / tribal development & Capacity building of VSSs	312.15	0	16.11	34.06	83.25	77.73	64.99	21.51	14.51
Biodiversity Management	83.71	0	4.32	9.13	22.33	20.84	17.43	5.77	3.89
Forest Management under JFM Mode	592.04	0	30.55	64.59	157.9	147.42	123.26	40.79	27.53
Forest Management under Non-JFM Mode	87.46	0	4.51	9.54	23.33	21.78	18.21	6.03	4.07
Farm Forestry Development	162.5	0	8.39	17.73	43.34	40.46	33.83	11.2	7.56
Forest Researches	53.55	0	4.22	7.57	13.28	12.86	7.9	6.62	1.1
Publicity and Communication	1.5	0	0.08	0.16	0.4	0.37	0.31	0.1	0.07
Monitoring and Evaluation	3.85	0	0.2	0.42	1.03	0.96	0.8	0.27	0.18
Phase-out and Phase-in Activities	0.1	0	0.01	0.01	0.03	0.02	0.02	0.01	0
consulting services	25	1.29	1.29	2.73	5.38	6.23	5.21	1.72	1.16
Total JBIC Loan	**1509.54**	**10.97**	**79.36**	**166.42**	**400.31**	**365.71**	**311.02**	**106.95**	**68.8**
Govt share	200	15	20	22	23	30	30	30	30
Interest during construction	30		1.55	3.273	8.001	7.47	6.246	2.067	1.395
Grand total	**1739.54**	**25.97**	**100.91**	**191.693**	**431.311**	**403.18**	**347.266**	**139.017**	**100.195**

17.5   Financial Plan

Basing on the JICA funding policy, administration cost and taxes and duties relating to the Project activities will not be covered by loan. As a result, total cost to be born by Government of Orissa (GOO) is estimated at **Rs. 230 Crore** , while the total cost to be covered by the loan is estimated at **Rs. 1509.50 Crore** (24,133 Million JYP; 1 INR=1.5988 JPY equivalent).

18.0   Risk Analysis

1. Mitigation of damages from natural disaster would be influenced by uncontrolled factors, such as precipitation and frequency of cyclones.
2. The law and order situations in the project areas would have influence in the project implementation. The activities of Naxalites and extreme Maoists in the project areas should be monitored closely.
3. Positive impact of OFSDP-Phase-II on poverty alleviation would take a long time to be apparent. The project would also look at the impacts beyond the project life.

19.0   Sustainability

19.1   Phase-Out / Phase-In Plan of VSS

The project will be focusing on empowering the VSSs so that they become self-sustaining financially and organizationally for enabling People-Led Forest Management. Particular attention has been paid to institutional strengthening and capacity building of the VSSs so that forests could be managed in a sustainable manner by both the Forest Department and the VSSs as collaborators. The "Phasing over" strategies will be in a way an integral part of the Project's design and implementation; some of which are explained below.

19.1.1   Capacity Building and Organizational Development of VSS:

The capacity building for the VSS members will be designed to increase their capabilities to an extent that they could manage the JFM areas by themselves with minimum assistance from the government after the Project exits. The Project will provide significant responsibilities to the VSS members during the course of implementation, including plan formulation, intervention, and management of the JFM area allotted to the VSS so as to develop their planning and management skills.

19.1.2   VSS Management Manual

In order to enable VSSs to manage their respective JFM areas, organizations and forests; a standard VSS Management Manual which was piloted and up scaled successfully in OFSDP-Phase-I, will be used across all project VSS. The manual will be used by VSS members to cover a range of thematic areas including Maintenance of records, Financial management, Conducting meetings, Duties and responsibilities of VSS functionaries, Conflict   resolution   mechanisms, Forest protection and management arrangements, Sustainable harvesting practices, Benefit-sharing arrangements, Alliance building and interface with different agencies/institutions, Resource mobilisation etc.

19.1.3   Village Forest Development Fund (VFDF):

The Project will create a Village Forest Development Fund in each VSS for continuing VSS activities and making VSS self-sustaining beyond Project duration. VFDF will be created out membership contributions, User fees, sale of forest produces, interest earned and a Corpus fund of Rs 1.00 lakh. The VFDF is a key component under the project to address sustainability, where in the funds will be utilised for forest resource management, maintenance of community

assets and VSS management expenses. The operational guideline of the VFDF is designed to manage and regulate the utilisation of the fund in perpetuity.

19.2   Phase-Out / Phase-In Plan of SHGs

The promotion of Self Help Groups (SHG) and implementation of Income Generation Activity (IGA) component under the Project is aimed to make the SHGs financially self-sustaining micro enterprises. The Project will promote and support over 9,000 SHGs and around 50 SHG Clusters to undertake micro enterprises involving forest based products, farm based products and other tertiary activities. These SHGs over the project period will receive intensive technical assistance and market support from the Project. The trajectory of implementing the IGA under the project will emphasize on the vital steps undertaken for Market Research, Institutional Strengthening of SHGs, Revolving funds, Micro enterprise development and business planning, Market linkage support and formation of SHG clusters for gaining economies of scale. Many "Phasing over" strategies for the SHGs will be incorporated during the implementation phase of the project. These strategies would prepare the SHGs to undertake operations without assistance after project withdraws.