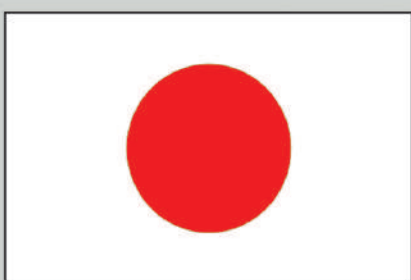


**Minutes of Discussions
for
The Project for Forest and Biodiversity Conservation for
Climate Change Response in West Bengal
between
Japan International Cooperation Agency and
Department of Forests, Government of West Bengal (WBFD)**



**Funded by Japanese ODA Loan as a
Token of Friendship and Cooperation
between**

Japan and India

(Completion Year: 2031)



(Volume-II)

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Attachment 4

Terms of Reference for the Consulting Service

Page No - (1-23)

Draft ToR for Project Management Consultant for WB-FBCCCR

Terms of Reference for Project Management Consultant for the Project for Forest and Biodiversity Conservation for Climate Change Response in West Bengal DRAFT

Chapter 1. Background

- The Government of West Bengal has received a loan from the Japan International Cooperation Agency (hereinafter referred to as "JICA") to finance the Project for Forest and Biodiversity Conservation for Climate Change Response in West Bengal (hereinafter referred to as "the Project") which is to enhance sustainable management of ecosystems in the diverse landscapes in the state.
- The outline of the Project is as follows:
 - Executing Agency: Project Management Unit (PMU) for the Project, Project for Forest and Biodiversity Conservation for Climate Resilience Enhancement in West Bengal.
 - Location of the Project:

Territorial Divisions: Jalpaiguri, Baikunthapur, Kurseong, Darjeeling, Kalimpong, Cooch Behar, Raiganj, Nadia-Murshidabad, Birbhum, Purulia, Kangsabati (North), Kangsabati (South), Jhargram, Medinipur, Rupnarayan, Bankura (South), Bankura (North), Panchet, Burdwan, Durgapur, Kharagpur, North and South 24 Parganas

Wildlife Divisions: Darjeeling WL, Gorumara WL, Jaldapara WL, Buxa Tiger Reserve (East), Buxa Tiger Reserve (West), Sundarban Tiger Reserve

Other Divisions: Purulia Extension Forestry and two Silviculture divisions viz. Silviculture (North) & Silviculture (Hills) and 2 Monitoring Divisions viz. Monitoring North and Monitoring South are included.
 - The Project is expected to be completed by March 2031.
- At this moment, the Project is expected to comprise of the following components:

Components	Main Activities to be Implemented ¹
Component 1: Ecosystem-based Climate Change Measures	1) Upgrading of central nursery 2) Production of quality planting materials 3) Creation of new seed production area and maintenance 4) Preparation of Range Forest Project Implementation Plan (RFIP) 5) Assisted Natural Regeneration (ANR) of degraded Sal forests (coppicing) 6) Plantation in Degraded Forest Areas 7) Tree Plantation Outside of Forest Areas (TPOFA) 8) Eco-DRR activities to strengthen forestry operation ²

¹ Activities have been planned in three landscapes of Hills and North Bengal, Dry Lateritic & Alluvial and Deltaic. Combinations of activities to be implemented in each landscape will vary to address the issues that are specific to each landscape.

² Dry Lateritic & Alluvial and Deltaic landscapes only

Attachment 4: Terms of Reference for the Consulting Services

	9) Green Laboratory Initiatives	
Component 2: Biodiversity Conservation and Restoration	1) Human Wildlife Conflict Mitigation 2) Species Conservation Programme 3) Studies on Wild animals and their behaviour 4) Biodiversity conservation through people's participation in protected area 5) Biodiversity conservation through people's participation for smaller mammals	
Component 3: Livelihood Improvement	1) Preparatory activities with JFMCs - Community mobilisation - Reorganisation/ reconstitution of JFMCs and confirmation and demarcation of JFMC forest boundaries - Familiarisation of Project to JFMC - Micro planning - EPA/ CDA 2) Support for income generation 3) Support for community well-being (promotion of traditional healers)	
Component 4: Institutional Strengthening	1) Strengthening Project Management 2) Capacity Development 3) Monitoring & Evaluation including improvement of MIS & GIS utilisations and use of UAV based monitoring 4) Research 5) Publicity and Publications	
<p>■ The Government of West Bengal intends to use a part of the proceeds of the loan for eligible payments for consulting services for which this ToR is issued.</p> <p>■ Technical information: available relevant basic data and studies, technical standard or specifications to be used, etc.</p> <p>■ Related projects: None.</p>		

Chapter 2. Objectives of Consulting Services

The consulting services shall be provided by an international consulting firm (hereinafter referred to as “the Consultant”) in compliance with Guidelines for the Employment of Consultant under Japanese ODA Loans, April 2012. The objective of the consulting services is to assist the Project Management Unit of the Project (hereinafter referred to as PMU) established at the Project in implementation of the project activities by providing the following services:

- (1) Assistance in the management of the project
- (2) Technical assistance in the implementation of the project components/activities in an efficient and effective manner
- (3) Facilitation of implementation of Environmental and Social Assessment Framework (ESAF) and Vulnerable People’s Planning Framework (VPPF)
- (4) Technology Transfer

Chapter 3. Scope of Consulting Services

(1) Assistance in the management of the project

The Consultant shall:

- (a) Assist PMU in managing the project in an effective and efficient manner
- (b) Assist PMU in periodical monitoring of the project activities with the monitoring formats and improving the project design, framework, and systems based on the monitoring data stored in the GIS-based monitoring system
- (c) Assist PMU in preparing annual work and budget plans based on the appropriate estimation of work quantity as well as unit costs of the respective inputs
- (d) Assist PMU in enhancing the capacity of stakeholders in forest and biodiversity conservation for enhancing climate change resilience
- (e) Assist PMU in procuring the necessary goods and services necessary for the project implementation
- (f) Assist PMU in the proper fund management and smooth communication/coordination with JICA
- (g) Assist PMU in providing guidance and orientation to PMUs, DMUs, FMUs and other specialized agencies for implementation of the projects
- (h) Assist PMU in preparing TORs for the project activities to be outsourced to the contractors
- (i) Assist PMU in monitoring and supervising the works undertaken specialized agencies to secure the expected outputs
- (j) Assist PMU in designing and developing information dissemination project materials
- (k) Assist PMU in monitoring the progress of the project, assessing the results and effects of the project activities, solving any issues and problems that might hinder the effective and efficient operations of the project, and draw lessons learned from the implementation of the project over the course of the project
- (l) Assist PMU in reporting and submitting plans to JICA for approval

(2) Technical assistance in the implementation of the project components/ activities in an efficient and effective manner

The Consultant Shall:

- (a) Assist PMU in developing guidelines and manuals relevant to implementation of the project
- (b) Assist PMU in planning and implementation of Eco-DRR measures
- (c) Assist PMU in planning and implementation of biodiversity conservation measures
- (d) Assist PMU in preparation of manuals required JFMCs to execute Entry Point Activity/ Community Development Activities

- (e) Assist PMU in developing a sustainable financial management and business support system for SHGs
- (f) Assist PMU in establishing an integrated MIS/ web-GIS system, which should be designed in consistent with the WBFD system architecture and can be deployed to the WBFD activity area beyond the project target
- (g) Assist PMU in developing a “WBFD Digital Transformation Strategy” that encompasses a comprehensive concept and approaches on how to transform the WBFD's operations through the use of data and digital technologies and a co-creation mechanism with innovative digital solution providers
- (h) Assist PMU in executing “Proof of Concept” (PoC) activities that include, but not limited to, identifying appropriate use cases, developing a PoC plan, selecting an external partner(s) if necessary, implementing the PoC, reviewing a result, and reflecting lessons learnt to the DX strategy and approaches.
- (i) Assist PMU/DMUs/FMUs to strengthen their technical, managerial, and administrative capacities for implementation of project
- (j) Assist PMU in providing orientation, technical guidance, and advice to specialized agencies for the effective implementation of the project activities.
- (k) Assist PMU in monitoring the planning process of JFMCs
- (l) Assist PMU in preparing the phase-out strategies
- (m) Assist PMU in promoting collaboration with private sectors for maximizing impact of the Project

(3) Facilitation of implementation of Environmental and Social Assessment Framework (ESAF) and Vulnerable People’s Planning Framework (VPPF)

The Consultant Shall:

- (a) Assist PMU in reviewing and updating the ESAF and VPPF.
- (b) Assist PMU in reviewing and supervising contractors’ environmental protection/management plans to be prepared by contractors in accordance with the ESAF and make recommendations to PMU if any necessary amendments are essential for its approval.
- (c) Assist PMU in ensuring that the measures identified in the ESAF and VPPF are implemented.
- (d) Assist PMU in monitoring the effectiveness of ESAF and negative impacts on environment caused by the project activities and figuring out feasible solutions and measures so that PMU can improve situation when necessary.
- (e) Assist PMU in enhancing the capacity of DMU/ FMU staff on environmental management through hands-on training on environmental assessment techniques, mitigation measure planning, supervision and monitoring, and reporting.

(4) Technology transfer

The Consultant shall carry out the technology transfer as an important aspect in design and supervision works. The Consultant shall provide the opportunity to PMU officers and staffs to be involved in the working team of the Consultant during the implementation of the project activities. If requested by PMU, the Consultant shall demonstrate the necessary technical procedures. The consultant shall assist PMU and its staff to build their capacity as a part of on the job training under the Project.

Chapter 4. Expected Time Schedule

The total duration of consulting services will be 76 months. The implementation schedule expected is as shown in Table: 4-1.

Table: 4-1 Implementation Schedule Expected

Key Activities	Date	Duration in Months
Commencement of Consulting Services	1 st December 2023	-
Assistance in preparation of implementation plans and monitoring and procurement of necessary goods and services	1 st December 2023 – end of April 2024	76
Assistance in preparation of guidelines and manuals required for the project activities	1 st December 2023 – end of April 2024	
Assistance in developing IGA fund monitoring and business development system	1 st November 2024 – 31 st January 2030	
Assistance in procurement of and technical guidance to the specialized agency for operationalizing the system	1 st November 2024 – 31 st January 2030	
Project Management related support	1 st December 2023 – 31 st March 2030	
Termination of Consulting Services	31 st March 2030	-

Particulars	Year 1				Year 2				Year 3				Year 4				Year 5				Year 6				Year 7				Year 8				Year 9				Year 10			
	FY 2023				FY 2024				FY 2025				FY 2026				FY 2027				FY 2028				FY 2029				FY 2030				FY 2031				FY 2032			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Lan Agreement 04/2023 - 03/2033 (10 Years)																																								
Project Period 04/2023 - 03 2031 (8 Years)																																								
Projct Phases																																								
Preparatory Phase 04/2023 - 03/ 2024 (12 months)																																								
Implementation Phase 04/2024 - 09/2029 (66 months)																																								
Phase-Out Phase 10/2029 - 3/2031 (18 months)																																								
Batch Wise Schedule (Component 1,2,3)																																								
Batch 1																																								
Batch 2																																								
Batch 3																																								
Component 4																																								

*Component 1, 2, 3 will be implemented in batches.

** Component 4 will be implemented throughout the project period.

Figure 4-1: Indicative Schedule

Chapter 5. Staffing

Two positions of Professional (A) consultants and eight positions of Professional (B) consultants will be engaged over 76 months' duration of consulting services for a total of 18 person-months for Professional (A) and 107 person-months for Professional (B) consultants.

(1) Qualification of key Team Members

The qualification of key Team Members is shown in Table: 5-1.

Table: 5-1 Qualification of key Team Members

Designation	Qualification
Community Resilience against Climate Change (Professional A)	<p><u>Education:</u></p> <ul style="list-style-type: none"> - Post Graduate in forestry, climate change, biodiversity conservation, or other related fields <p><u>Experience:</u></p> <ul style="list-style-type: none"> - 8-10 years or more experiences in the field of sustainable forest management, ecosystem restoration, climate change resilience, Eco-DRR and any other projects of similar objectives in India and rest of the world - Experiences of consulting services for more than 1 ecosystem restoration and management projects in India and other countries - More than one experience in leading the donor funded projects/studies <p><u>Language:</u></p> <ul style="list-style-type: none"> - Proficiency in English in writing and speaking is essential. - Proficiency in Bengali and/ or Hindi (writing and speaking) would be an added advantage. <p><u>Regional Experience:</u></p> <ul style="list-style-type: none"> - Familiarity and experience in countries similar to the landscapes of West Bengal would be an added advantage.
GIS/ MIS / DX (Professional A)	<p><u>Education:</u></p> <ul style="list-style-type: none"> - Master's Degree or higher in engineering, computer science, GIS/ RS or equivalent <p><u>Experience:</u></p> <ul style="list-style-type: none"> ■ General - Strong analytical, problem-solving, and conceptual abilities ■ System Architecture and Strategy - Experience in developing strategic system architecture plans - Experience with computer servers, network switches, load balancers, network analyzers, and network channel or data service units, with solid understanding of network and system development and deployment - Experience with data processing fundamentals and utilization

Designation	Qualification
	<ul style="list-style-type: none"> ■ MIS and GIS / Remote Sensing / UAV - Minimum 10 years of working experience in the field of MIS and RS/GIS - Work experience in designing and/or operation of web based MIS for project management - Work experience in operation of web-GIS - Experience in using various RS and GIS software such as ESRI ArcGIS, ERDAS Imagine, eCognition, ENVI, and QGIS for forest/ecosystem management - Experience in UAV operation, data acquisition & processing for forest monitoring. - Work experience with field data collection (ground truthing) using GPS and/or mobile App - Detailed knowledge about MIS, GIS/RS technology, UAV in forestry sector ■ Use case with PoC - Experience in identifying use cases to verify a given business model - Experience in planning, managing, and monitoring the PoC type of activities in forestry management, or with advanced technologies - Experience in collaboration with public and private sector stakeholders <p><u>Language:</u></p> <ul style="list-style-type: none"> - Proficiency in English in writing and speaking is essential. - Proficiency in Bengali and/ or Hindi (writing and speaking) would be an added advantage.
GIS/ MIS / DX (Professional B)	<p><u>Education:</u></p> <ul style="list-style-type: none"> - Master's Degree or higher in engineering, computer science, GIS/ RS or equivalent <p><u>Experience:</u></p> <ul style="list-style-type: none"> ■ General - Strong analytical, problem-solving, and conceptual abilities ■ System Architecture and Strategy - Experience in developing strategic system architecture plans - Experience with computer servers, network switches, load balancers, network analyzers, and network channel or data service units, with solid understanding of network and system development and deployment - Experience with data processing fundamentals and utilization ■ MIS and GIS / Remote Sensing / UAV - Minimum 10 years of working experience in the field of MIS and RS/GIS - Work experience in designing and/or operation of web based MIS for project management

Attachment 4: Terms of Reference for the Consulting Services

Designation	Qualification
	<ul style="list-style-type: none"> - Work experience in operation of web-GIS - Experience in using various RS and GIS software such as ESRI ArcGIS, ERDAS Imagine, eCognition, ENVI, and QGIS for forest/ecosystem management - Experience in UAV operation, data acquisition & processing for forest monitoring. - Work experience with field data collection (ground truthing) using GPS and/or mobile App - Detailed knowledge about MIS, GIS/RS technology, UAV in forestry sector ■ Use case with PoC <ul style="list-style-type: none"> - Experience in identifying use cases to verify a given business model - Experience in planning, managing, and monitoring the PoC type of activities in forestry management, or with advanced technologies - Experience in collaboration with public and private sector stakeholders <p><u>Language:</u> Proficiency in English and Bengali and/ or Hindi (writing and speaking).</p>
Team Leader/ Sustainable Forest Management (Professional B)	<p><u>Education:</u></p> <ul style="list-style-type: none"> - Post Graduate in forestry, biodiversity conservation, or other related fields <p><u>Experience:</u></p> <ul style="list-style-type: none"> - 15 years or more experiences in the field of sustainable forest management, ecosystem restoration, climate change resilience, Eco-DRR and any other projects of similar objectives in India and rest of the world - Experiences of consulting services for more than four ecosystem restoration and management projects in India and other countries - At least three experiences of leading a consultants' team as the Team Leader or the Co-Team Leader including one experience in a country other than India - More than one experience in leading the donor funded projects <p><u>Language:</u></p> <ul style="list-style-type: none"> - Proficiency in English in writing and speaking is essential. - Proficiency in English and Bengali and/ or Hindi (writing and speaking) <p><u>Regional Experience:</u></p> <ul style="list-style-type: none"> - Familiarity and experience in countries similar to the landscapes of West Bengal
Biodiversity Conservation (Professional B)	<p><u>Education:</u></p> <ul style="list-style-type: none"> - Post Graduate in Botany, Zoology, Biodiversity, Natural Resource Management or any other related field <p><u>Experience:</u></p> <ul style="list-style-type: none"> - 10 years or more experiences in biodiversity conservation (i.e. species conservation and habitat improvement), human wildlife conflict, protected area management, ecosystem restoration and management projects or similar projects

Attachment 4: Terms of Reference for the Consulting Services

Designation	Qualification
	<ul style="list-style-type: none"> - Experiences in working in the landscapes similar to West Bengal - Having wholistic working experience and expertise in coastal and inland landscapes and human wildlife conflict - Experiences in designing and implementing nature conservation activities - Experiences of consulting services for at least three biodiversity conservation projects <p><u>Language:</u></p> <ul style="list-style-type: none"> - Proficiency in English in both writing and speaking is essential. - Proficiency in English and Bengali and/ or Hindi (writing and speaking) <p><u>Regional Experience:</u></p> <ul style="list-style-type: none"> - Familiarity and Experience in South Asia would be an advantage.
Soil/ Water Conservation (Professional B)	<p><u>Education:</u></p> <ul style="list-style-type: none"> - Post graduate degree in agricultural engineering, environmental engineering, civil engineering or any other relevant field <p><u>Experience:</u></p> <ul style="list-style-type: none"> - Experiences in procurement/ tender assistance for the client - Experiences in designing and working in projects of soil and water conservation structures, water harvesting, and any other infrastructures required for ecosystem restoration and biodiversity conservation - Experiences in O&M system for the infrastructures created - Experiences in training the asset owners in O&M - Experiences in working in more than 3 projects on forest management, biodiversity conservation, community-based disaster reduction and prevention or any other projects of similar nature in India - Experiences in working in more than 1 donor supported project in India will be an added advantage <p><u>Language:</u></p> <ul style="list-style-type: none"> - Proficiency in English in writing and speaking is essential. - Proficiency in English and Bengali and/ or Hindi (writing and speaking) <p><u>Regional Experience:</u></p> <ul style="list-style-type: none"> - Familiarity and experience in South Asia, particularly in India.
Capacity Development (Professional B)	<p><u>Education:</u></p> <ul style="list-style-type: none"> - Post graduate degree in education, social science, human resource management, or any other relevant field <p><u>Experience:</u></p> <ul style="list-style-type: none"> - Experiences in procurement/ tender assistance for the client - Experiences in designing and conducting training needs assessment - Experiences in learning outcome evaluation - Experiences in planning a short and mid and long term training plan - Experiences in conducting and organizing training programmes - Experiences in planning and organizing study tour within India and Overseas

Attachment 4: Terms of Reference for the Consulting Services

Designation	Qualification
	<ul style="list-style-type: none"> - Experiences in working in at least 1 donor supported forestry project in India <p><u>Language:</u></p> <ul style="list-style-type: none"> - Proficiency in English in writing and speaking is essential. - Proficiency in English and Bengali and/ or Hindi (writing and speaking). <p><u>Regional Experience:</u></p> <ul style="list-style-type: none"> - Familiarity and experience in forest and biodiversity conservation, climate change action, natural resource management or any other projects of similar nature in South Asia will be advantage.
Micro Finance/ Business Development Support (Professional B)	<p><u>Education:</u></p> <ul style="list-style-type: none"> - MBA or Post Graduate in financial management, rural development/ marketing, entrepreneurship development, or any other related field <p><u>Experience:</u></p> <ul style="list-style-type: none"> - 20 years or more professional experiences in micro finance sector - Experiences in planning management system for a micro lending system - Experiences in business planning and management - Experiences in promoting entrepreneurship - Experiences in contract management - Experiences in designing and conducting training for community <p><u>Language:</u></p> <ul style="list-style-type: none"> - Proficient in English in writing and speaking is essential. - Proficiency in English and Bengali and/ or Hindi (writing and speaking) <p><u>Regional Experience:</u></p> <ul style="list-style-type: none"> - Familiarity and Experience in South Asia, particularly in India is an added advantage.
M&E (Professional B)	<p><u>Education:</u></p> <ul style="list-style-type: none"> - Master's Degree or higher in statistics, data science, GIS/ RS or or geospatial information technology, MIS or any other related field <p><u>Experience:</u></p> <ul style="list-style-type: none"> - Minimum of 10 years of working experience in development work, using satellite imagery data and geospatial information technology - Experiences in developing and operationalising enterprise/ web GIS system - Experiences in database management and system architecture design - Experiences in managing data system related to forest and biodiversity conservation, socio economy, and etc. - Work experiences in more than 2 donor assisted projects <p><u>Language:</u></p> <ul style="list-style-type: none"> - Proficiency in English in writing and speaking - Proficiency in English and Bengali and/ or Hindi (writing and speaking).
Social and Environmental Consideration	<p><u>Education:</u></p> <ul style="list-style-type: none"> - Post Graduate in Environmental Management or any other related field <p><u>Experience:</u></p>

Attachment 4: Terms of Reference for the Consulting Services

Designation	Qualification
(Professional B)	<ul style="list-style-type: none"> - Experience of more than 15 years in environmental and social consideration - Experience of working in the state of West Bengal - Experience of consulting services for environmental and social consideration of similar projects (forestry/ community development projects) funded by international cooperation agencies. - Proven experience in designing environmental and social management framework and implementing monitoring for environmental and social consideration - Proven experience in designing framework for tribal development - Experience in capacity building and training different stakeholders in various aspects of environmental management/ ESC - Experience in preparing periodical environmental and social consideration monitoring reports <p><u>Language:</u></p> <ul style="list-style-type: none"> - Proficient in English in both writing and speaking - Proficient in Bengali and/or Hindi

Consultant may propose other experts and supporting staffs required to accomplish the tasks outlined in the ToR.

(2) Scope of works for the respective personnel

Detailed information on the major tasks and duties each member of Consultant shall perform is provided as follows:

No	Position	I or L	Major Tasks and Duties
A-1	Community Resilience against Climate Change	I (Pro-A)	<p>The Community Resilience against Climate Change Specialist will assist PMU in the following aspects:</p> <ul style="list-style-type: none"> a) Assessing the vulnerability of the communities against climate change and suggesting remedial measures b) Assessing the progress of the indicators related to climate change measures landscape-wise during implementation of the project c) Assist PMU in exploring possibility of collaboration with private sectors for maximizing impact of the Project <p>The Community Resilience against Climate Change Specialist will:</p> <ul style="list-style-type: none"> d) Preparation of conceptual framework and guidelines regarding ecosystem- based disaster risk prevention and community resilience including the connection between ecosystem services and beneficial community. e) Preparation and review guidelines and manuals relating to project activities including the manuals on Entry Point Activities/ Community Development Activities; f) Undertaking technical guidance in planning and implementation of the Component 1 and 3 activities g) Seeking the possibility to apply in the project activities with recent world trend of the resilience against climate change through carbon credit trading etc.

Attachment 4: Terms of Reference for the Consulting Services

No	Position	I or L	Major Tasks and Duties
			h) Carry out any other tasks requested by the Team Leader
A-2	GIS/ MIS / DX	I (Pro-A)	<p><GIS/MIS system development></p> <p>The MIS/ GIS specialist will assist PMU in</p> <ol style="list-style-type: none"> Finalizing the scope of work for development of 1)Web-GIS for WBFD, 2)Applications integrating e-plantation journal and e-monitoring, 3)web-MIS linked to the Web-GIS system in coordination with the section of Working plan/GIS, Monitoring wing and other relevant sections of WBFD, and PMU Preparing WBFD GIS data for upload to the system being developed <p>The MIS/ GIS specialist will</p> <ol style="list-style-type: none"> Conduct needs survey for the web GIS and MIS for preparation of scope of work Prepare a scope of work for development of 1)Web-GIS for WBFD, 2)Applications integrating e-plantation journal and e-monitoring, 3)web-MIS linked to the Web-GIS system in coordination with the section of Working plan/GIS, Monitoring wing and other relevant sections of WBFD, and PMU based on the needs survey result (MIS/GIS based data should be arranged in a relational database such as Oracle, MySQL, MSSQL, PostgreSQL etc. It should be also considered to use Google Earth platform, which will be shared by the GIS lab of WBFD, for precise identification of new afforestation area and their subsequent monitoring.) Prepare a short list of the potential vendors for each system development Obtain quotations for the finalized scope of work for each system Supervise the outsourcing contract for development of each system Prepare material for trainings for the users of each system Prepare user guidelines for the developed Web based MIS, Mobile App, and webGIS in coordination with the vendors (system developers) Provide training to PMU, DMU, FMU on MIS/webGIS/associated mobile App Conduct survey for user feedback to improve the system in the 1st and 3rd year after installation of the system Plan and supervise minor modifications of the systems during the system warranty and maintenance period <p><Development of “WBFD Digital Transformation Strategy”></p> <p>The MIS/ GIS specialist will assist PMU in</p> <ol style="list-style-type: none"> Coordinating with GIS/MIS cell and other relevant units/cells in WBFD in charge of development and maintenance of existing systems relating to forest and biodiversity conservation. Forming and leading a technical working group with members from the relevant unit/cell in WBFD, which gives guidance and reviews on the work of the WBFD DX Strategy. Analyzing WBFD policy documents with relation to digitalization, existing system architecture, and current plan of system development in each system. Drafting a draft strategy encompassing a long-term vision, a

Attachment 4: Terms of Reference for the Consulting Services

No	Position	I or L	Major Tasks and Duties
			<p>comprehensive concept, and approaches on how to transform the WBFD's operations through the use of data and digital technologies and a co-creation mechanism with innovative digital solution providers.</p> <p>e) Obtaining institutional endorsement for the strategy within WBFD in due course.</p> <p><Conduct of “Proof of Concept” (PoC) activities></p> <p>The MIS/ GIS specialist will assist PMU in</p> <p>a) Identifying an appropriate use case(s) that would help WBFD/PMU accelerate digital transformation in line with the concept and concrete approaches to be defined in the WBFD DX strategy</p> <p>b) Developing a PoC plan</p> <p>c) Selecting a digital partner(s) if necessary</p> <p>d) Implementing, managing and monitoring the PoC</p> <p>e) Reviewing the result and reflecting lessons learnt from it to the DX strategy and approaches</p> <p>f) Preparing a work plan to introduce the prioritized advanced technology</p>
B-1	Team Leader/ Sustainable Forest Management	L (Pro-B)	<p>The Team Leader will assist PMU in the following aspects of project management:</p> <p>a) Preparation of the overall work plan of PMC;</p> <p>b) Maintaining close coordination with PMU and offices concerned and assist PMU in coordinating with JICA;</p> <p>c) Guiding and supervising the activities of all PMC specialists, both International and National consultants;</p> <p>d) Supervising the activities of all office staff of PMC;</p> <p>e) Undertaking the managerial responsibilities of PMC, including seeking approvals from PMU on mobilisations/ demobilisations and field visits by PMC specialists;</p> <p>f) Participating in various meetings and events, and with specialists as per requirement and request from PMU;</p> <p>g) Preparing/ reviewing guidelines and manuals relating to project management, accounting procedures and procurement;</p> <p>h) Compiling all periodical reports of consulting services and responsible for outputs of reports (inception reports, monthly, quarterly, annual reports and completion report);</p> <p>i) Undertaking field visits to project sites and prepare Back-to-Office report for PMU;</p> <p>j) Preparing monthly accomplishment reports of PMC;</p> <p>k) Ensuring that all the scope of consultancy is accomplished;</p> <p>The Team Leader/ Sustainable Forest Management will:</p> <p>a) Monitoring the physical and financial work progress of the project implementation;</p> <p>b) Reporting to JICA;</p> <p>c) Any other assistances requested by PMU within the scope of work of the consulting services.</p>
B-2	Biodiversity Conservation	L (Pro-B)	<p>The Biodiversity Conservation Specialist will assist PMU to:</p> <p>a) Undertake procurement of goods and services necessary for Component 2 (biodiversity conservation and restoration)</p> <p>b) Prepare the overall work plan pertaining to Component 2 (biodiversity conservation and restoration)</p>

Attachment 4: Terms of Reference for the Consulting Services

No	Position	I or L	Major Tasks and Duties
			<p>c) Develop any technical guidelines/ reports concerning Component 2</p> <p>d) Prepare the detail monitoring & evaluation plan for Component 2</p> <p>The Biodiversity Conservation Specialist will:</p> <p>a) Provide technical guidance to PMU/ DMU/ FMU/ JFMCs and other technical agencies engaged for Component 2</p> <p>b) Act as a resource person in a training and awareness programme</p> <p>c) Undertake field visits</p> <p>d) Conduct site visits for monitoring of the work progress and technical guidance</p> <p>e) Prepare reports as requested by the Team Leader</p> <p>f) Carry out any other tasks requested by the Team Leader</p>
B-3	Soil/ Water Conservation	L (Pro-B)	<p>The Soil/ Water Conservation Specialist will support PMU to:</p> <p>a) Undertake procurement of goods and services necessary for civil works</p> <p>b) Suggest the format of output of CAT plan</p> <p>c) Ensure the smooth execution of the infrastructure development works undertaken by PMU/ DMU/ FMU and JFMCs</p> <p>d) Prepare O&M Guideline for community infrastructure</p> <p>The Soil/ Water Conservation Specialist will:</p> <p>a) Provide necessary technical guidance to PMU/ DMU/ FMU/ JFMCs and contractors engaged for the civil works</p> <p>b) Conduct site visits for monitoring of the work progress and technical guidance</p> <p>c) Prepare reports as requested by the Team Leader</p> <p>d) Carry out any other tasks requested by the Team Leader</p>
B-4	Capacity Development	L (Pro-B)	<p>The Capacity Development Specialist will assist PMU in:</p> <p>a) Conducting training needs assessment (TNA)</p> <p>b) Planning the training plan and annual training calendar</p> <p>c) Identifying the training institutes/ resource organisations/ trainers to conduct training programmes</p> <p>d) Implementing Green Laboratory Initiative (i.e. collaborative research and environmental education, etc.)</p> <p>e) Planning and coordinate the exposure visits/ study tours within State, India and overseas</p> <p>The Capacity Development Specialist will:</p> <p>a) Conducting training evaluation</p> <p>b) Prepare annual training report</p> <p>c) Conduct site visits as required</p> <p>d) Prepare brief travel reports and monthly accomplishment reports pertaining to his/ her specialty and submit them to the Team Leader</p> <p>e) Undertake any other tasks requested by Team Leader</p>
B-5	Micro Finance/ Business Development Support	L (Pro-B)	<p>The Micro Finance/ Business Development Support Specialist will assist PMU in the following aspects:</p> <p>a) Preparation of the IGA fund management system</p> <p>b) Operationalise IGA fund management system</p> <p>c) Assist PMU in procuring technical agency for managing IGA support fund</p>

Attachment 4: Terms of Reference for the Consulting Services

No	Position	I or L	Major Tasks and Duties
			<ul style="list-style-type: none"> d) Monitoring of the recovery rate e) Prepare guideline for business development support f) Assist PMU in exploring possibility of collaboration with private sectors for maximizing impact of the Project <p>The Micro Finance/ Business Development Support Specialist will:</p> <ul style="list-style-type: none"> g) Provide technical guidance to technical agency for IGA fund management for business development support h) Undertaking field visits to project sites i) Prepare brief travel reports and monthly accomplishment reports pertaining to his/ her specialty and submit them to the Team Leader j) Undertake any other tasks requested by Team Leader
B-6	M&E	L (Pro-B)	<p>The M&E Specialist will assist PMU in:</p> <ul style="list-style-type: none"> a) Establishing effective and efficient monitoring system; b) Procurement of the contractors for baseline survey, periodical assessments, and other related activities etc.; c) Supervising the work of the above contractors and ensuring qualities of their outputs; d) Reviewing baseline and mid-term surveys reports, and other M&E reports/ documents e) Preparation of the guidelines and manuals required for M&E and MIS; f) Operationalising MIS and project accounting system, and g) Monitoring and evaluation of the progress and outputs of Project activities h) Conducting field validation, preparation of the physical and financial progress report; i) Prepare social audit guideline and operationalise j) Providing progress data and information required to be used by the High-Power Committee (HPC), Governing Body (GB) and JICA for review and appropriate decision making; k) Designing, reviewing and revising project performance indicators, and developing methodologies for verification with respect to such indicators; l) Compiling periodical M & E reports; and m) Organising annual review meetings at State Level. <p>The M&E Specialist will:</p> <ul style="list-style-type: none"> a) Work in collaboration with GIS/ MIS Specialist for effective monitoring; b) Assist FMUs/DMUs in the field validation; c) Train PMU and other project related staffs in MIS and project accounting system; d) Accomplish the tasks related to the Project as directed by the Team Leader; e) Undertake field visits to project sites and prepare Back-to-Office report for PMU; and f) Prepare brief travel reports and monthly accomplishment reports pertaining to his/ her specialty and submit them to the Team Leader. g) Undertake any other tasks requested by Team Leader
B-7	Social and Environmental Consideration	L (Pro-B)	<p>The Social and Environmental Conservation Specialist will assist:</p> <ul style="list-style-type: none"> a) PMU PD (Finance), the officer in charge, to supervise the environmental and social safeguard-relevant activities, including the screening and selection of subprojects and

Attachment 4: Terms of Reference for the Consulting Services

No	Position	I or L	Major Tasks and Duties
			<p>determination of the required procedures for specific subprojects following the national and state law/regulations and MOD with JICA.</p> <p>b) PMU in finalizing ESAF and Vulnerable People's Planning Framework with the stakeholders, which are drafted under the preparatory survey, and in implementing the project in accordance with the frameworks.</p> <p>c) PMU in supervising the community level infrastructure development executed by the contractors in terms of compliance with the safeguard relevant law/regulations.</p> <p>d) PMU in preparation of periodical monitoring reports with regard to environmental and social safeguard/ ESMF following the requirement of the national and state law/regulations and MOD with JICA.</p> <p>The Social and Environmental Conservation Specialist will:</p> <p>a) conduct training for PMU/DMU/FMU and subcontractors to enable them to comply with national and state law/regulations and MOD with JICA.</p> <p>b) facilitate participation of PMU and stakeholders in the training activities on the environmental and social safeguard organised by JICA if required.</p>
B-8	GIS/ MIS / DX	L (Pro-B)	<p><GIS/MIS system development></p> <p>The MIS/ GIS specialist will assist PMU in</p> <p>a) Finalizing the scope of work for development of 1)Web-GIS for WBFD, 2)Applications integrating e-plantation journal and e-monitoring, 3)web-MIS linked to the Web-GIS system in coordination with the section of Working plan/GIS, Monitoring wing and other relevant sections of WBFD, and PMU</p> <p>b) Preparing WBFD GIS data for upload to the system being developed</p> <p>The MIS/ GIS specialist will</p> <p>a) Conduct needs survey for the web GIS and MIS for preparation of scope of work</p> <p>b) Prepare a scope of work for development of 1)Web-GIS for WBFD, 2)Applications integrating e-plantation journal and e-monitoring, 3)web-MIS linked to the Web-GIS system in coordination with the section of Working plan/GIS, Monitoring wing and other relevant sections of WBFD, and PMU based on the needs survey result (MIS/GIS based data should be arranged in a relational database such as Oracle, MySQL, MSSQL, PostgreSQL etc. It should be also considered to use Google Earth platform, which will be shared by the GIS lab of WBFD, for precise identification of new afforestation area and their subsequent monitoring.)</p> <p>c) Prepare a short list of the potential vendors for each system development</p> <p>d) Obtain quotations for the finalized scope of work for each system</p> <p>e) Supervise the outsourcing contract for development of each system</p> <p>f) Prepare material for trainings for the users of each system</p> <p>g) Prepare user guidelines for the developed Web based MIS, Mobile App, and webGIS in coordination with the vendors</p>

Attachment 4: Terms of Reference for the Consulting Services

No	Position	I or L	Major Tasks and Duties
			<p>(system developers)</p> <ul style="list-style-type: none"> h) Provide training to PMU, DMU, FMU on MIS/webGIS/associated mobile App i) Conduct survey for user feedback to improve the system in the 1st and 3rd year after installation of the system j) Plan and supervise minor modifications of the systems during the system warranty and maintenance period <p><Demarcation of JFMC boundary (digitization and piling)></p> <p>The MIS/ GIS specialist will assist PMU in</p> <ul style="list-style-type: none"> a) Finalize draft scope of work for the subcontract work of digitization and piling b) Procure subcontractor for digitization and piling <p>The MIS/ GIS specialist will</p> <ul style="list-style-type: none"> a) Draft a scope of work for the subcontract work of digitization and piling b) Guide and supervise the subcontractor c) Evaluate the quality/status of boundary demarcation work and reporting to the DMU/PMU about any irregularities d) Coordinate with WP/GIS cell for their quality assessment and validation of the boundary data. <p><PoC (Pilot project) for use of UAV for development of technical guidelines></p> <p>The MIS/ GIS specialist will assist PMU in</p> <ul style="list-style-type: none"> a) Procure UAV b) Plan and implement the pilot project c) Finalize the technical guidelines for usage of UAV in forest plantation and monitoring work, such as inspection of plantation work, verification of JFMC boundary demarcation etc. <p>The MIS/ GIS specialist will</p> <ul style="list-style-type: none"> a) Provide training to PMU on use of UAV in forestry sector b) Provide training to DMU, FMU on UAV operation and image analysis c) Develop a pilot project plan (site selection, definition of the scope of the guidelines to be developed in the pilot project) d) Develop technical guidelines for usage of UAV in forest plantation and monitoring work, such as inspection of plantation work, verification of JFMC boundary demarcation etc. <p><Development of “WBFD Digital Transformation Strategy”></p> <p>The MIS/ GIS specialist will assist PMU in</p> <ul style="list-style-type: none"> a) Coordinating with GIS/MIS cell and other relevant units/cells in WBFD in charge of development and maintenance of existing systems relating to forest and biodiversity conservation. b) Forming and leading a technical working group with members from the relevant unit/cell in WBFD, which gives guidance and reviews on the work of the WBFD DX Strategy. c) Analyzing WBFD policy documents with relation to digitalization, existing system architecture, and current plan of system development in each system. d) Drafting a draft strategy encompassing a long-term vision, a

Attachment 4: Terms of Reference for the Consulting Services

No	Position	I or L	Major Tasks and Duties
			<p>comprehensive concept, and approaches on how to transform the WBFD's operations through the use of data and digital technologies and a co-creation mechanism with innovative digital solution providers.</p> <p>e) Obtaining institutional endorsement for the strategy within WBFD in due course.</p> <p><Conduct of “Proof of Concept” (PoC) activities></p> <p>The MIS/ GIS specialist will assist PMU in</p> <p>a) Identifying an appropriate use case(s) that would help WBFD/PMU accelerate digital transformation in line with the concept and concrete approaches to be defined in the WBFD DX strategy</p> <p>b) Developing a PoC plan</p> <p>c) Selecting a digital partner(s) if necessary</p> <p>d) Implementing, managing and monitoring the PoC</p> <p>e) Reviewing the result and reflecting lessons learnt from it to the DX strategy and approaches</p> <p>f) Preparing a work plan to introduce the prioritized advanced technology</p>

Chapter 6. Reporting

Within the scope of consulting services, the Consultant shall prepare and submit reports and documents to PMU as shown in Table: 6-1. The Consultant shall provide electronic copy of each of these reports. All reports shall be prepared in English.

Table: 6-1 Reports to be Submitted

Category	Type of Report	Timing	No. of Copies
Consultancy Services	Inception Report	Within 1 months after commencement of the services	5 copies each per time
	Monthly Progress Report	Every month except the month overlapping with the Quarterly Progress and Annual Progress Report.	5 copies each per time
	Quarterly Progress Report	Every quarter except the quarter overlapping with the Annual Progress Report	5 copies each per time
	Annual Progress Reports	10 th day of the first month of the next financial year	5 copies each per time
	Completion Report of the Consulting Services	One month before the closure of the contract	10 copies each per time
Other Report	Back to Office Report	Within 7 days on return of the field visit	1 set of copy per submission
	Technical Report	As required or upon request	As required

Contents to be included in each report are as follows:

- a) Inception Report (5 copies each of English): to be submitted within 1 month after the commencement of the services, presenting the methodologies, schedule, organization, etc.
- b) Monthly Progress Report (5 copies): to describes briefly and concisely all activities and progress for the previous month by the 10th day of each month. Problems encountered or anticipated will be clearly stated, together with actions to be taken or recommendations on remedial measures for correction. Also indicates the work to be performed during the coming month.
- c) Quarterly Progress Report (5 copies): to describe all activities and progress for the reporting period (quarter) by the 10th day of the month on a quarterly basis. Problems encountered or anticipated will be clearly stated, together with actions to be taken or recommendations on remedial measures for correction. Also indicates the work to be performed during the following quarter.
- d) Annual Progress Report (5 copies): to describe all activities and accomplishments made for

the year by the 10th day of the 1st month of the year. Problems encountered together with actions taken should be described. Lessons learned from the project activities done in the year should also be described in the report. The works and activities planned for the following years should be indicated.

- e) Completion Report of the Consulting Services (10 copies): to be submitted one month before the completion of the consulting services. The report should describe the approaches and methodologies taken, all the activities carried out and inputs made by the consultant, the results and accomplishments made by the consulting services, lessons learned for the project as well as consulting services, and recommendations for ensuring the sustainability of the project effect and future projects similar to the project.
- f) Back to Office Report (1 copy): to be submitted to report the findings from the very site visits conducted by the PMC specialists. The report shall be submitted within 7 days from the date of return to the office from the field. One copy of the report shall be submitted to PMU.
- g) Technical Report (as per required): to be submitted as required or upon request by PMU or by the initiation of PMC for technical topics relevant to project implementation.

Chapter 7. Obligations of the Executing Agency

A certain range of arrangements and services will be provided by the Executing Agency to the Consultant for smooth implementation of the Consulting Services. In this context, the Executing Agency will:

(1) Report and data

Make available to the Consultant existing reports and data related to the Project as requested by PMC;

(2) Office space

Provide an office space in the Headquarters of the Executing Agency with necessary equipment, furniture and utility. However, the Consultant's requirement for office space, including necessary equipment, furniture and utilities, should be clearly stated in the proposal with its rental cost for the case where WB-FBCCCR would be unable to provide such facilities;

(3) Cooperation and counterpart staff

Appoint counterpart officials, agent and representative as may be necessary for effective implementation of the Consulting Services;

(4) Assistance and exemption

Use its best efforts to ensure that the assistance and exemption, as described in the Standard Request for Proposal issued by JICA, will be provided to the Consultant, in relation to

- work permit and such other documents;
- entry and exit visas, residence permits, exchange permits and such other documents
- clearance through customs;
- instructions and information to officials, agent and representatives of the Borrower's Government;
- exemption from any requirement for registration to practice their profession;
- privilege pursuant to the applicable law in the Borrower's Country.

Attachment 5

Detailed Implementation Schedule

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Implementation Schedule

	Month	2022	2023	2024	2025	2026	2027	2028	2029	2030
4.3.2 Impact Evaluation	0									
4.3.2.1 Annual Outcome Assessment (DMU level)	14									
4.3.2.2 Baseline and Impact Surveys	0									
i) Socio-Economic/ Gender Surveys	0									
a) baseline	6									
b) Impact (mid and end-term)	12									
ii) Physical Surveys	0									
a) baseline	6									
b) Impact (mid and end-term)	12									
4.3.2.3 Thematic and Short Studies	15									
4.3.2.4 Environmental Impact Assessment	21									
	0									
4.3.3 Audits	0									
a) Statutory Financial Audits	16									
b) Internal Audits (Consumer Audits)	31									
c) Social Audits	14									
	0									
4.4 Strengthening Forest Research	0									
a) Creation of carbon estimation lab	72									
b) Research studies based on the research plan	72									
	0									
4.5 Publicity and Publication	0									
4.5.1 Website maintenance	93									
4.5.2 Guidelines, manuals and annual reports	33									
4.5.3 Short Films/ Digital Documentation	42									
4.5.4 Knowledge material/ course material	15									
4.5.5 "Proof of Concept" (PoC) activities for several digital technology innovation.	0									
	0									
Land Acquisition	0									
C1 Ecosystem based Climate change measures	94									
C2 Biodiversity Conservation and Restoration	78									
C3 Livelihood Improvement	81									
C4 Institutional Strengthening	96									

Attachment 6

Annual Fund Requirement

Page No - (1)

Annual Fund Requirement

Base Year/Month for Cost Estimation: Nov, 2022

Exchange Rate: USD = JPY 147

USD = INR 82.3

INR = JPY 1.79

Price Escalation: FC: 2.06% LC: 4.50%

Physical Contingency: 5.0%

Physical Contingency for Consultant: 5.0%

FC,Total: million JPY

LC : million INR

Item	Total			2022			2023			2024			2025			2026			2027			2028			2029			2030			2031			
	FC	LC	Total	FC	LC	Total	FC	LC	Total	FC	LC	Total	FC	LC	Total	FC	LC	Total	FC	LC	Total	FC	LC	Total	FC	LC	Total	FC	LC	Total				
A. JICA PORTION																																		
I) Procurement / Construction	0	4,994	8,938	0	0	0	0	551	987	0	621	1,112	0	649	1,162	0	678	1,214	0	709	1,269	0	741	1,326	0	659	1,180	0	385	689	0	0	0	
C1 Ecosystem based Climate change measures	0	1,054	1,886	0	0	0	0	123	221	0	135	241	0	135	241	0	135	241	0	135	241	0	135	241	0	135	241	0	123	221	0	0	0	
C2 Biodiversity Conservation and Restoration	0	1,045	1,870	0	0	0	0	161	288	0	161	288	0	161	288	0	161	288	0	161	288	0	161	288	0	80	144	0	0	0	0	0		
C3 Livelihood Improvement	0	757	1,355	0	0	0	0	84	151	0	112	201	0	112	201	0	112	201	0	112	201	0	112	201	0	112	201	0	0	0	0	0	0	
C4 Institutional Strengthening	0	1,075	1,924	0	0	0	0	134	240	0	134	240	0	134	240	0	134	240	0	134	240	0	134	240	0	134	240	0	134	240	0	0	0	
Base Cost for JICA Financing	0	3,930	7,035	0	0	0	0	502	899	0	542	970	0	542	970	0	542	970	0	542	970	0	542	970	0	461	826	0	258	461	0	0	0	
Price Escalation	0	826	1,478	0	0	0	0	23	40	0	50	89	0	76	137	0	104	187	0	133	239	0	164	293	0	166	298	0	109	195	0	0	0	
Physical Contingency	0	238	426	0	0	0	0	26	47	0	30	53	0	31	55	0	32	58	0	34	60	0	35	63	0	31	56	0	18	33	0	0	0	
II) Consulting Services	96	153	369	0	0	0	9	9	26	20	25	64	20	26	67	16	24	59	11	21	49	12	22	51	8	25	52	0	0	0	0	0	0	
Base Cost	85	121	302	0	0	0	9	9	24	18	22	57	18	22	57	14	19	49	10	16	39	10	16	39	6	17	37	0	0	0	0	0	0	
Price Escalation	7	24	50	0	0	0	0	0	1	1	2	4	1	3	7	1	4	8	1	4	8	1	5	10	1	6	12	0	0	0	0	0	0	
Physical Contingency	5	7	18	0	0	0	0	0	1	1	1	3	1	1	3	1	1	3	1	1	2	1	1	2	0	1	2	0	0	0	0	0	0	
Total (I+II)	96	5,146	9,308	0	0	0	9	561	1,013	20	646	1,176	20	675	1,229	16	703	1,274	11	730	1,318	12	763	1,377	8	684	1,232	0	385	689	0	0	0	
B. BORROWER PORTION																																		
a Procurement / Construction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
C1 Ecosystem based Climate change measures	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
C2 Biodiversity Conservation and Restoration	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
C3 Livelihood Improvement	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
C4 Institutional Strengthening	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Base Cost (out of JICA Financing)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Price Escalation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Physical Contingency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
b Land Acquisition	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Base Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Price Escalation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Physical Contingency	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
c Administration Cost	0	427	765	0	0	0	0	47	83	0	54	97	0	56	101	0	58	105	0	61	108	0	63	113	0	57	101	0	32	57	0	0	0	0
d Tax	0	520	931	0	0	0	0	57	101	0	66	118	0	69	123	0	71	127	0	74	132	0	77	138	0	69	123	0	38	69	0	0	0	0
VAT	0	520	931	0	0	0	0	57	101	0	66	118	0	69	123	0	71	127	0	74	132	0	77	138	0	69	123	0	38	69	0	0	0	0
Import Tax	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Other Taxes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total (a+b+c+d)	0	947	1,696	0	0	0	0	103	185	0	120	214	0	125	224	0	130	232	0	134	240	0	140	251	0	125	224	0	70	125	0	0	0	
TOTAL (A+B)	96	6,094	11,003	0	0	0	9	664	1,198	20	766	1,391	20	800	1,453	16	832	1,506	11	864	1,558	12	903	1,628	8	810	1,457	0	455	814	0	0	0	
C. Interest during Construction (IDC)																																		
Interest during Construction (Construction)	612	0	612	0	0	0	15	0	15	31	0	31	49	0	49	67	0	67	86	0	86	106	0	106	124	0	124	134	0	134	0	0	0	0
Interest during Construction (Consultant)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
D. Front End Fee	19	0	19	0	0	0	0	19	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GRAND TOTAL (A+B+C+D)	727	6,094	11,634	0	0	0	43	664	1,231	51	766	1,422	69	800	1,502	83	832	1,573	98	864	1,644	118	903	1,734	131	810	1,580	134	455	948	0	0	0	
E. JICA Finance Portion (A)																																		
F. Borrower Finance Portion (B+C+D)	631	947	2,327	0	0	0	33	103	218	31	120	246	49	125	273	67	130	299	86	134	326	106	140	357	124	125	348	134	70	260	0	0	0	

Administration Cost = 8.2%

VAT = 10.0%

Import Tax = 0.0%

Attachment 7

Cost Breakdown

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Model Estimates

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Model Estimates

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Cost Breakdown for Package

USD 1 =	147	JPY
USD 1 =	82.3	INR
INR 1 =	1.79	JPY

Item	Local	Total
	INR	JPY
Land Acquisition Cost		0

C1 Ecosystem based Climate change measures

Loan Coverage Ratio

100

	Item	Unit	Q'ty	Unit Price		Cost		Amount
				Foreign	Local	Foreign	Local	
				JPY	INR	JPY	INR	JPY
1.1	Hills & North Bengal Landscape					0	0	0
1.1.1	Production of Quality Planting Materials					0	0	0
1.1.1.1	Upgrading Central Nurseries and maintenance	Nr	9		3,000,000	0	27,000,000	48,330,000
1.1.1.2	Production of Quality Planting Material (QPM)	Nr	1,925,000		15	0	28,875,000	51,686,250
1.1.2	Improving Quality of Forests					0	0	0
1.1.2.1	Creation of New Seed Production Areas (SPAs) and Maintenance	ha	50		163,440	0	8,172,000	14,627,880
1.1.2.2	Preparation of Range Forest Project Implementation Plan	Nr	90		0	0	0	0
1.1.2.3	Plantation in degraded forest areas					0	0	0
a)	Sal plantation	ha	100		171,045	0	17,104,500	30,617,055
b)	Misc. plantation	ha	250		155,195	0	38,798,750	69,449,763
1.1.2.4	TPOFA Plantation - Raiganj SF Div.					0	0	0
a)	Strip Plantation	ha	250		165,000	0	41,250,000	73,837,500
1.1.3	Ecosystem-based Disaster Risk Reduction (Eco DRR) Activities					0	0	0
1.1.3.1	Embankment Protection					0	0	0
a)	Large Check dams	Nr	1		2,500,000	0	2,500,000	4,475,000
b)	Medium Check dams	Nr	15		1,500,000	0	22,500,000	40,275,000
c)	Small Check dams	Nr	20		1,000,000	0	20,000,000	35,800,000
d)	Grass planting along the outlet					0	0	0
	i) Large	ha	5		150,000	0	750,000	1,342,500
	ii) Medium	ha	45		150,000	0	6,750,000	12,082,500
	iii) Small	ha	40		150,000	0	6,000,000	10,740,000
e)	Boulder sausage work along the embankments (for large check dams) 2 km/ check dam	km	2		2,500,000	0	5,000,000	8,950,000
1.1.4	Green Laboratory Initiatives					0	0	0
1.1.4.1	Nature Study in forests by Students (National/ International) 10 students/vr; 2 weeks	Students	15		49,000	0	735,000	1,315,650
1.1.4.2	Nature and Forests Programme engaging Education/ Research Institutions	Program	5		1,500,000	0	7,500,000	13,425,000
1.2	Dry Lateritic & Alluvial Landscape					0	0	0
1.2.1	Production of Quality Planting Material					0	0	0
1.2.1.1	Upgrading Central Nurseries and maintenance	Nr	31		3,000,000	0	93,000,000	166,470,000
1.2.1.2	Production of Quality Planting Material (QPM)	Nr	4,004,000		15	0	60,060,000	107,507,400
1.2.2	Improving Quality of Forests					0	0	0
1.2.2.1	Preparation of Range Forest Project Implementation Plan (RFIP)	Nr	90		0	0	0	0
1.2.2.2	ANR of degraded Sal forests (coppicing)	ha	1,000		20,000	0	20,000,000	35,800,000
1.2.2.3	Plantation in degraded forest areas					0	0	0
a)	Sal plantation	ha	400		177,075	0	70,830,000	126,785,700
b)	Misc. plantation	ha	1,600		165,955	0	265,528,000	475,295,120
1.2.2.4	TPOFA Plantation - Purulia Extn. Forestry Div.					0	0	0
a)	Strip Plantation	ha	250		165,000	0	41,250,000	73,837,500
1.2.3	Ecosystem-based Disaster Risk Reduction (Eco DRR) Activities					0	0	0
1.2.3.1	GIS based CAT Plans as pilot for SMC works @1.65 lakh per ha. For 10 ha/ range					0	0	0
a)	GIS based CAT Plan Preparation	DMUs	13		1,000,000	0	13,000,000	23,270,000
1.2.3.2	SMC Works based on CAT Plans	ha	1,000		197,600	0	197,600,000	353,704,000

1.2.4	Green Laboratory Initiatives					0	0	0
1.2.4.1	Nature Study in forests by Students (National/ International) 10 students/vr: 2 weeks	Students	20		49,000	0	980,000	1,754,200
1.2.4.2	Nature and Forests Programme engaging Education/ Research Institutions	Program	0		1,500,000	0	0	0
1.3	Deltaic Landscape					0	0	0
1.3.1	Community resilience measures in Sundarbans					0	0	0
a)	Porcupine Structure (incl. 25% maintenance for 3 yrs.)	SQM	12,150		3,625	0	44,043,750	78,838,313
b)	Permeable Dam (incl. 25% maintenance for 3 yrs.)	RM	8,100		713	0	5,775,300	10,337,787
c)	Survey, Earth Work and Vetiver/Mangrove dibbling (incl. 25% maintenance for 3 yrs.)	SQM	12,150		38	0	461,700	826,443
1.3.2	Green Laboratory Initiatives					0	0	0
1.3.2.1	Nature Study in forests by Students (National/ International) 10 students/vr: 2 weeks	Students	15		49,000	0	735,000	1,315,650
1.3.2.2	Nature and Forests Programme engaging Education/ Research Institutions	Program	5		1,500,000	0	7,500,000	13,425,000
						0	0	0
						0	0	0
						0	0	0
						0	0	0
						0	0	0
	Total					0	1,053,699,000	1,886,121,210

	C2 Biodiversity Conservation and Restoration					Loan Coverage Ratio		100
	Item	Unit	Q'ty	Unit Price		Cost		Amount
				Foreign	Local	Foreign	Local	
				JPY	INR	JPY	INR	JPY
2.1	Hills and North Bengal Landscape					0	0	0
2.1.1	Human Wildlife Conflict Mitigation					0	0	0
a)	2.1.1.1 Stress-induced Conflict Risk Reduction by Wild Animals	km	40		500,000	0	20,000,000	35,800,000
	Control of straying of Wild animal - Elephants, Leopards & Gaur	ls	1		50,000,000	0	50,000,000	89,500,000
2.1.1.2	Support communities for HW mitigation	ls	1		13,500,000	0	13,500,000	24,165,000
2.1.1.3	Pilot (Eco sensitive Zone) plantation with non-palatable/repulsive species	ha	20		300,000	0	6,000,000	10,740,000
2.1.2	Species Conservation Programme					0	0	0
a)	2.1.2.1 Species recovery programme for local RET (50 ha.)	ha	50		155,195	0	7,759,750	13,889,953
	Protection of RET Species in the habitat	Nr	20		90,000	0	1,800,000	3,222,000
2.1.3	Studies on wild animals and their behavior					0	0	0
2.1.3.1	Study on Lesser Cat in North Bengal (5 spp.)	ls	1		3,000,000	0	3,000,000	5,370,000
2.2	Dry Lateritic & Alluvial Landscape					0	0	0
2.2.1	Biodiversity conservation through people's participation in protected area					0	0	0
2.2.1.1	Bethuadahari Wildlife Sanctuary	ls	1		6,000,000	0	6,000,000	10,740,000
2.2.1.2	Ballavpur Wildlife Sanctuary	ls	1		7,400,000	0	7,400,000	13,246,000
2.2.2	Conservation for Smaller Mammals					0	0	0
2.2.2.1	Habitat Improvement (Water bodies creation)	Nr	25		200,000	0	5,000,000	8,950,000
2.2.2.2	Conservation awareness Generation	ls	1		18,500,000	0	18,500,000	33,115,000
2.2.3	Human Wildlife Conflict Mitigation					0	0	0
2.2.3.1	Rescue Centre for elephants including study of their behavior (15 km)	ls	1		500,000,000	0	500,000,000	895,000,000
2.2.3.2	Stress induce conflict risk reduction by wild animals	ls	1		200,000,000	0	200,000,000	358,000,000
2.2.3.3	Tracking of elephant route through radio collaring	Nr	10		226,000	0	2,260,000	4,045,400
2.2.3.4	Enhancement of tranquilizer equipment for wild animals to be kept in Airavat vans	ls	1		2,900,000	0	2,900,000	5,191,000
2.2.3.5	Installation of Early Warning System (EWS) for Wild Elephants	Nr	200		48,000	0	9,600,000	17,184,000
2.2.3.6	Development of software application for compensation for depredation by wild animals	ls	1		5,000,000	0	5,000,000	8,950,000
2.2.3.7	Installation of Elephant Proof Trench (EPT) in South-West Bengal	km	95.36		278,100	0	26,519,616	47,470,113
2.2.4	Species Conservation Programme					0	0	0
2.2.4.1	Dolphin Conservation Programme	ls	1		9,000,000	0	9,000,000	16,110,000
2.2.4.2	Breeding and releasing of Indian pangolin	ls	1		15,700,000	0	15,700,000	28,103,000
2.2.4.3	Breeding and releasing of fishing cat	ls	1		18,000,000	0	18,000,000	32,220,000
2.2.4.4	Breeding and releasing of Indian Vulture	ls	1		10,000,000	0	10,000,000	17,900,000
a)	2.2.4.5 Species recovery programme for local RET (25 ha.)	ha	25		176,640	0	4,416,000	7,904,640
	Protection of RET Species in the habitat	plot	10		90,000	0	900,000	1,611,000

2.3	Deltaic Landscape					0	0	0
2.3.1	Biodiversity conservation through people's participation in protected area					0	0	0
2.3.1.1	Chintamani Kar Bird Sanctuary	ls	1		7,600,000	0	7,600,000	13,604,000
2.3.1.2	Bibhutibhushan Wildlife Sanctuary	ls	1		6,600,000	0	6,600,000	11,814,000
2.3.2	Human Wildlife Conflict Mitigation					0	0	0
2.3.2.1	Stress induce conflict risk reduction by wild animals (Net-fencing installation)	km	84		620,060	0	52,085,040	93,232,222
2.3.2.2	Veterinary facility in Sundarbans	ls	1		21,200,000	0	21,200,000	37,948,000
2.3.3	Studies on wild animals and their behavior					0	0	0
2.3.3.1	Assessment of aquatic biodiversity in Sundarbans and territorial waters	ls	1		4,000,000	0	4,000,000	7,160,000
2.3.3.2	Studies Suggested by Central Asian Flyway	ls	1		10,000,000	0	10,000,000	17,900,000
						0	0	0
						0	0	0
	Total					0	1,044,740,406	1,870,085,327

C3 Livelihood Improvement

Loan Coverage Ratio

100

	Item	Unit	Q'ty	Unit Price		Cost		Amount
				Foreign	Local	Foreign	Local	
				JPY	INR	JPY	INR	JPY
3.1	Hills and North Bengal Landscape					0	0	0
3.1.1	Preparatory Activities for JFMCs					0	0	0
3.1.1.1	Community mobilization					0	0	0
3.1.1.2	Reorganisation/ Reconstitution of JFMCs and Confirmation of Demarcation of JFMC	JFMCs	74		2,500	0	185,000	331,150
3.1.1.3	Familiarization of project to JFMC	JFMCs	74		2,000	0	148,000	264,920
3.1.1.4	Micro-planning					0	0	0
a)	Microplan Preparation	JFMCs	74		6,000	0	444,000	794,760
b)	Revisiting of Microplan	JFMCs	74		1,000	0	74,000	132,460
3.1.1.5	EPA / CDA	JFMCs	74		816,000	0	60,384,000	108,087,360
3.1.2	Support for Income Generation					0	0	0
3.1.2.1	Support to SHGs - JFMC	JFMCs	74		300,000	0	22,200,000	39,738,000
3.1.2.2	Technical Agency	Ls	1		6,000,000	0	6,000,000	10,740,000
3.1.3	Support for Community Wellbeing					0	0	0
3.1.3.1	Support for Community Well Being (Local Traditional Healers)	FMUs	22		60,000	0	1,320,000	2,362,800
3.1.4	Support for Community Mobilizing					0	0	0
3.1.4.1	Extension Worker (74 JFMCs)	Year	3		2,131,200	0	6,393,600	11,444,544
3.2	Dry Lateritic & Alluvial Landscape					0	0	0
3.2.1	Preparatory Activities for JFMCs					0	0	0
3.2.1.1	Community mobilization					0	0	0
3.2.1.2	Reorganization/reconstitution of JFMC and confirmation of demarcation of JFMC boundary	JFMCs	517		2,500	0	1,292,500	2,313,575
3.2.1.3	Familiarization of project to JFMC	JFMCs	517		2,000	0	1,034,000	1,850,860
3.2.1.4	Micro-planning					0	0	0
a)	Microplan Preparation	JFMCs	517		6,000	0	3,102,000	5,552,580
b)	Revisiting of Microplan	JFMCs	517		1,000	0	517,000	925,430
3.2.1.5	EPA / CDA	JFMCs	517		816,000	0	421,872,000	755,150,880
3.2.2	Support for Income Generation					0	0	0
3.2.2.1	Support to SHGs - JFMC	JFMCs	517		300,000	0	155,100,000	277,629,000
3.2.2.2	Technical Agency	Ls	2		6,000,000	0	12,000,000	21,480,000
3.2.3	Support for Community Wellbeing					0	0	0
3.2.3.2	Support for Community Well Being (Local Traditional Healers)	FMUs	57		60,000	0	3,420,000	6,121,800
3.2.4	Support for Community Mobilizing					0	0	0
3.2.4.1	Extension Worker (517 JFMCs)	Year	3		14,889,600	0	44,668,800	79,957,152

3.3	Deltaic Landscape					0	0	0
3.3.1	Preparatory Activities for JFMCs					0	0	0
3.3.1.1	Community mobilization					0	0	0
3.3.1.2	Reorganization/reconstitution of JFMC and confirmation of demarcation of JFM boundary	JFMCs	9		2,500	0	22,500	40,275
3.3.1.3	Familiarization of project to JFMC	JFMCs	9		2,000	0	18,000	32,220
3.3.1.4	Micro-planning					0	0	0
a)	Microplan Preparation	JFMCs	9		6,000	0	54,000	96,660
b)	Revisiting of Microplan	JFMCs	9		1,000	0	9,000	16,110
3.3.1.5	EPA / CDA	JFMCs	9		816,000	0	7,344,000	13,145,760
3.3.2	Support for Income Generation					0	0	0
3.3.2.1	Support to SHGs - JFMC	JFMCs	9		300,000	0	2,700,000	4,833,000
3.3.2.2	Technical Agency	Ls	1		6,000,000	0	6,000,000	10,740,000
3.3.4	Support for Community Mobilizing					0	0	0
3.3.4.1	Extension Worker (9 JFMCs)	Year	3		259,200	0	777,600	1,391,904
						0	0	0
						0	0	0
						0	0	0
	Total					0	757,080,000	1,355,173,200

C4 Institutional Strengthening

Loan Coverage Ratio

100

	Item	Unit	Q'ty	Unit Price		Cost		Amount
				Foreign	Local	Foreign	Local	
				JPY	INR	JPY	INR	JPY
4.1	Strengthening Project Management					0	0	0
4.1.1	Capacity Development on MIS/ DX					0	0	0
4.1.1.1	Digitization of JFMC boundaries	JFMCs	600		11,750	0	7,050,000	12,619,500
a)	Boundary Pillars establishment (5 pillars/ JFMC)	JFMCs	600		18,100	0	10,860,000	19,439,400
4.1.2	Mobility					0	0	0
a)	Cars	Nr	30		1,500,000	0	45,000,000	80,550,000
b)	Motorcycles	Nr	85		100,000	0	8,500,000	15,215,000
c)	Truck (LPT407)	Nr	4		1,500,000	0	6,000,000	10,740,000
d)	Speed Boats for Sundarbans	Nr	7		2,000,000	0	14,000,000	25,060,000
4.1.3	Buildings					0	0	0
a)	PMU building (floor area 4000 sq.ft x 8 (Ground + 7 levels)	Sq.ft.	28,000		4,650	0	130,200,000	233,058,000
b)	CCF Office (Durgapur) (floor area 5000 sq.ft x 2)	Sq.ft.	5,000		3,000	0	15,000,000	26,850,000
c)	Range Office Complex (floor area 1200 sq.ft.)	Units	25		2,400,000	0	60,000,000	107,400,000
4.1.4	Project Contractual Staff					0	0	0
a)	PMU (8 positions)	Years	8		4,068,000	0	32,544,000	58,253,760
b)	DMU (4 positions)	Years	8		17,820,000	0	142,560,000	255,182,400
c)	FMU (3 positions) for 85 FMUs	Years	8		30,600,000	0	244,800,000	438,192,000
4.1.5	Digital Strengthening					0	0	0
a)	Equipment/ Digital interface	ls	30		500,000	0	15,000,000	26,850,000
4.2	Capacity Development					0	0	0
4.2.1	Training Plan based on Training Needs Assessment (TNA)	plan	0		2,500,000	0	0	0
4.2.2	Trainings of Forest Officers (DCF & above ranks)					0	0	0
a)	Specialized Trainings - 20 batches (size 20; one week)	Persons	400		80,000	0	32,000,000	57,280,000
b)	Exposure Trips - 10 batches (size 12; one week)	Persons	120		140,000	0	16,800,000	30,072,000
c)	International training - 3 batches (size 12; 2 weeks)	Persons	36		1,000,000	0	36,000,000	64,440,000
4.2.3	Trainings of Forest Officers/ Frontline Staff (Ranger & below ranks)					0	0	0
a)	Specialized Trainings - 30 batches (size 20; 7-15 days)	Persons	600		54,000	0	32,400,000	57,996,000
b)	Exposure Trips - 10 batches (size 20; 10 days)	Persons	200		100,000	0	20,000,000	35,800,000
c)	International training (Regional) - 5 batches (size 15; 2 weeks)	Persons	75		375,000	0	28,125,000	50,343,750
4.2.4	National Workshop (70 participants from JICA project states) - 3 days; one time	Persons	70		90,000	0	6,300,000	11,277,000

4.2.5	Trainings for JFMC/ SHG members					0	0	0
a)	JFMC members - 120 batches (size 20; 5 days)	Persons	2,400		7,500	0	18,000,000	32,220,000
b)	SHG members - 90 batches (size 20; 5 days)	Persons	1,800		7,500	0	13,500,000	24,165,000
4.3	Monitoring & Evaluation					0	0	0
4.3.1	Progress Monitoring					0	0	0
4.3.1.1	Biodiversity Monitoring	Biennial	4		1,500,000	0	6,000,000	10,740,000
4.3.1.2	Concurrent Monitoring & Periodic Review (PMU and Circle level)	Quarterly	32		60,000	0	1,920,000	3,436,800
4.3.1.3	Community Self-monitoring (by JFMCs)	Quarterly	32		10,000	0	320,000	572,800
4.3.1.4	Computerized MIS & GIS/ applications/ UAV for monitoring					0	0	0
	a) GIS Enterprise (latest) - multi user software	Nr	1		11,050,000	0	11,050,000	19,779,500
	b) Procurement of GPS	Nr	90		20,500	0	1,845,000	3,302,550
	c) Mobile app - upgrade of e-monitoring for e-plantation journal function	ls	1			0	0	0
	d) Development of project MIS platform linked to web-GIS and mobile app (including cost of item c. and AMC for 3 yrs)	ls	1		6,500,000	0	6,500,000	11,635,000
	e) Pilot project for use of UAV	Nr	1		4,700,000	0	4,700,000	8,413,000
4.3.1.5	Computerized Accounting System	DMUs	30		50,000	0	1,500,000	2,685,000
4.3.1.6	Annual Strategy Planning & Review Workshops	Annual	8		350,000	0	2,800,000	5,012,000
4.3.2	Impact Evaluation					0	0	0
4.3.2.1	Annual Outcome Assessments (by DMUs)	Annual	7		750,000	0	5,250,000	9,397,500
4.3.2.2	Baseline and Impact Surveys					0	0	0
	a) Socio-economic/ Gender Surveys					0	0	0
	i) Baseline	times	1		2,500,000	0	2,500,000	4,475,000
	ii) Impact (mid and end-term)	times	2		3,000,000	0	6,000,000	10,740,000
	b) Physical (forest resource) Surveys					0	0	0
	i) Baseline	times	1		2,500,000	0	2,500,000	4,475,000
	ii) Impact (mid and end-term)	times	2		3,000,000	0	6,000,000	10,740,000
4.3.2.3	Thematic and Short Studies	studies	10		1,500,000	0	15,000,000	26,850,000
4)	Environmental Impact Assessment	study	1		2,000,000	0	2,000,000	3,580,000
	i) Baseline					0	0	0
	ii) Impact (mid and end-term)					0	0	0
4.3.3	Audits					0	0	0
1)	Statutory Financial Audits (at PMU and DMUs level)	Annual	8		25,000	0	200,000	358,000
2)	Internal (Concurrent) Audits (in-house by PMU at DMU level)	Annual	7		450,000	0	3,150,000	5,638,500
3)	Social Audits (by JFMCs facilitated by FMUs)	Annual	7		900,000	0	6,300,000	11,277,000
4.4	Strengthening Forest Research					0	0	0
1)	Creation of Carbon Estimation Lab	Units	1		5,000,000	0	5,000,000	8,950,000
2)	Prioritized research topics as per Research Plan	Nr	3		2,500,000	0	7,500,000	13,425,000
4.5	Publicity and Publications					0	0	0
4.5.1	Website maintenance	Years	8		120,000	0	960,000	1,718,400
4.5.2	Guidelines, Manual and Annual Reports	Years	8		500,000	0	4,000,000	7,160,000
4.5.3	Small films/ videos/ Digital documentation	Years	8		900,000	0	7,200,000	12,888,000
4.5.4	Knowledge Material / Course Material	Years	8		500,000	0	4,000,000	7,160,000
4.5.5	PoC	ls	1		25,800,000	0	25,800,000	46,182,000
	Total					0	1,074,634,000	1,923,594,860

Component 1 : Ecosystem based Climate Change measures

1.1 Quality Planting Material

1.1.1.Detailed estimate of upgrading Central Nursery and Maintenance (Model : B1)

A. Provision of one backup deep tube well with pump house

i) Sinking of deep tube- well (100 mt depth 150 mm dia,Tube well top enlarge of 250 mm dia.)

Sl. No.	Particulars of Work	Unit	Vol/Qty	Rate	Amount
a	Boring 150mm dia. Including hire charges of labour and machine upto				
	a) first 50 mts	m	50	1141	57,060.00
	b) next 35 mts	m	35	1200.00	42,000.00
b	Washing & developing tubewell with air compressor	no	2	10800.00	21,600.00
c	Supplying of PVC pipes & fittings (medium duty) conforming ISI standard				0.00
	a) 150 mm dia nominal dia	Rmt	45	1080.00	48,600.00
	b) 250 mm dia	Rmt	25	3102.00	77,550.00
d	Supplying of ISI standard superior quality Sub- mersible pump 32 Amp, TPN main switch	no	1	40000.00	40,000.00
	Sub-total				2,86,810.00
e	Contingency	3%			8,604.30
	Total				2,95,414

B. Provision of raised nursery Beds, stands and hypocots shed etc.

i) Laying out beds including supply of Root-trainers & iron stands

a.	Root Trainer made by Black HDPE material, 300 cc capacity, Inner Dia – 71 mm, Outer Dia – 75 mm, Wall Thickness – 2 mm, Length – 129 mm, Inner Ridges – 05 Nos., Inner Ridge height – 2mm, Outer Ring – 1.5 cm from top, Ring Thickness – 2 mm	no	100000	6.00	6,00,000.00
b.	MS Stand: One stand Can hold 100 root trainers of 300 CC capacity, Size: 33" x 33" x 2 ft (ht), Frame-1" x ¼", Patti; ½" x ¼" Middle Support ¼" x ½" ; Stand 1" x ¼", Support Angle 3" x ½"; Weight 15 to 17 kgs	no	1000	1800.00	18,00,000.00
	Sub-total				24,00,000.00
c.	Contingency	3%			72,000.00
	Total				24,72,000

ii) Replacement of damaged Water Pipe line network

a	PVC pipe 2 inches dia	Rmt	120.0	390.00	46,800.00
b	PVC pipe 1 inches dia	Rmt	150.0	180.00	27,000.00
c	Accessories :-				
	Stop Cock - 0.05x0.05mt	no	3	720.00	2,160.00
	End connector - 0.05 mt.	no	3	68.00	204.00
	Straight connector - 0.05 mt.	no	14	36.00	504.00
	End cap - 2.75 cm.	no	4	50.00	200.00
	T- connector	no	3	78.00	234.00
	Straight connector - 2.75 cm.	no	5	36.00	180.00
	End connector - 2.75 cm.	no	4	70.00	280.00
	5 Horse Power Motor Pump.	no	1	20000.00	20,000.00
	50 D.M. Filter.	no	1	5000.00	5,000.00
	Sub-total				1,02,562.00
d	Contingency	3%			3,077
	Total				1,05,638

iii) Replacement of Agronet shed area with pipes over 12mt x 12 mt

a	Supplying of 30-32 mm GI pipes including rafter & purlin	rmt	400	160.00	64,000.00
b	Labour for fitting & fixing the shed	Unskilled	16	340.00	5,440.00
		Skilled	8	422.00	3,376.00
c	Supplying of 50 % Agronet shed - 144m2 + 10% including carriage	m2	144	92.00	13,248.00
d.	Nuts, G.I Wire, hiring of wilding machine etc.	LS			2,500.00
	Sub-total				88,564.00
e	Contingency	3%			2,656.92
	Total				91,221

C. Maintenance of Central Nursery

Item No of SoR	Description	Unit	Quantity	Rate		Amount (in Rs)
				Labour	Material (in Rs.)	
				Unskilled		
RA-25(a)	Cleaning of Central Nursery site which is in regular use	1 ha	5 ha	5	4860	6215
RA-25(b)	Maintenance of hypocots, M.S.Strands by thorough scrapping and painting with primer and rust proof paint	100	1850	20	10000	15420
RA-25 (c)	Cleaning of drain and other sewage of Central Nursery	1 ha	5 ha	10		2710
RA-25 (f)	Repair and maintenance of Agronet shed excluding supply of Agronet shed and other petty repairs etc.	10 Sq mt	144 Sq mt	42		11382
	Sub-Total :			77	14860	35727
	Total :					35727

Item No.A (Back-up watering provision by making additional deep Tube Well) can be used for additional procurement of 300 cc Hypocots with M.S. strand as per actual requirement which to be decided by respective DFO/CF/CCF.

Component 1 : Ecosystem based Climate Change measures								
1.1.1. Detailed estimate of upgrading Central Nurseries and Maintenance (Model B1)								
<i>Capacity : 2,00,000 QPM</i>								
A.	<u>Provision of one deep tube well with pump house</u>							
1	Sinking deep tube-well						Rs.	2,95,414
							Total Part -I	2,95,414
B.	<u>Provision of raised nursery Beds, stands and hycopots shed etc.</u>							
1	Laying out beds including supply of Root-trainers & iron stands						Rs.	24,72,000
2	Replacement of damaged Water Pipe line network						Rs.	1,05,638
3	Replacement of Agronet shed with Iron Pipes						Rs.	91,221
							Total Part-II	26,68,859
C.	<u>Maintenance of Central Nursery</u>						Rs.	35727
							Total Part-III	35727
							GRAND Total Part-I, II & III	30,00,000

Component 1 : Ecosystem based Climate Change measures

1.1.2 Production of Quality Planting Material (QPM)

Estimate for Production of QPM for 2023-24

A. Creation year 2023-24

No. of seedlings			1000 nos in 300 cc hypocot			
Labour Rate (Skilled- Rs.328/- & Unskilled- Rs.271/-)						
Sl No.	Particulars of work	SoR ref. item no.	Rate per Ha (2023-24)			Amount (Rs.)
			Labour (Mandays)		Material (in Rs.)	
			Skilled	Unskilled		
1	Initial cleaning of Central Nursery site which is in regular use	RA-2(ii)	0	6	0.00	1,626
2	Procurement/ purchase/ making of ingredient and preparation of potting mixture (details of ingredient listed below), filling root trainer and arranging then in trays over raised bed	RA-5b	0	10	1023	3,733
	a) Leaf Compost / Vermicompost 0.15 m3	RA-3 (c)	0	0	350	
	b) Sand 0.15 m3	RA-3 (b)	0	0	250	
	c) Good earth 0.15 m3	RA-3 (a)	0	0	150	
	d) Insecticides & fungicides (1/2 Lt)	RA-(h,i)	0	0	150	
	e) Growth hormone, micronutrients etc. 100 ml	RA-(m)	0	0	123	
3	Cleaning and disinfecting Root Trainer (300 cc)	RA-4 (a)	0	1	0	271
4	Collection of Seeds, drying, sorting, treatment etc.	RA-6,7		1	250	521
5	Preparation of mother bed, sowing of seeds in mother beds and hygropits etc	RA-8	0	1	150	421
6	Pricking out of seedlings from mother bed into hypocots	RA-9	0	4	0	1,084
7	Sorting & Shifting whenever necessary	RA-11	0	4	0	1,084
8	Weeding and cleaning of hypocots/root trainer, application of insecticides, growth hormone etc.	RA-12	0	4	0	1,084
9	Watering of seedlings two times a day	RA-13	0	1	100	371
Total			0.0	32.0	1,523	10,195.00
Add : Contingency @3%						304.85
Grand Total						10,500
A. Rate of creation work of one QPM in Central Nurseries- Rs.10.50						

A. Rate of creation work of one QPM in Central Nurseries- Rs.10.50

B. Estimate for Maintenance of QPM in Central Nursery for 2024-25

1	Sorting & Shifting whenever necessary	RA-11	0	6	0	1,626
2	Application of insecticides, fungicides, micronutrients, ,neem cake etc.	RA-14	0	2	205	612
3	Weeding and cleaning of hypocots/root trainer, application of insecticides, growth hormone etc.	RA-12	0	6	0	1,626
4	Watering of seedlings two times a day	RA-13	0	2	100	507
Total			0.0	15.0	305.0	4,370.00
Add : Contingency @3%						130.10
Grand Total						4,500

B. Rate of maintenance of one QPM in Central Nurseries - Rs.4.50

Rate of production and maintenance of one QPM in Central Nursery (A+B) = Rs. 15.00

Component 1 : Ecosystem based Climate Change measures

1.2. Improving Quality of Forests

1.2.1. Creation of new Seed Production Areas (SPAs) and maintenance

Model : B3 Estimate for Seed Production Areas (per Ha)-2022-23

Type of Plantation		SPA				
No. of seedling per ha		2000				
Spacing per ha		2m x 2.5m				
Pit Size		60cm. x 45cm. x 45cm.				
Labour Rate (Skilled- Rs.328/- & Unskilled- Rs.271/-)						
Sl No.	Particulars of Work	SoR Ref. item no.	Rate (2022-23)		Material (in Rs.)	Amount (Rs.)
			Labour (Mandays)			
			Skilled	Unskilled		
1	Survey and demarcation of the plantation site including preparation of Regeneration Map and GPS Survey map	RA-29	0.5	1	90	525
2	Clearance of thick density areas: Clear felling, burning, heaping and re-burning in thick undergrowth and bushes	RA-27(a)	0	35	0	9,485
3	Staking and alignment of plantation site, collection of stakes, pitching etc.	RA-30	0	5	390	1,745
4	Pit cutting : Seed Production areas (60x45x45 cm)	RA-31 (a)	0	35	0	9,485
5	Sorting and shifting of seedlings per each time in Nurseries :Seed Production area	RA-11 (i)	0	5	0	1,355
6	Weeding and cleaning of seedlings in Hycopots / root trainers per each time ::Seed Production area	RA-12 (i)	0	5	0	1,355
7	Watering and cleaning of seedlings in Hycopots two times per day :SPA	RA-13 (i)	0	2	0	542
8	Creation of inspection path by removing weeds, scarping and by providing proper drain along the diagonal of the Seed Production Area of 3 mt wide	RA-42	0	5	0	1,355
9	Pit filling and application of Farm yard Manure ::Seed Production area	RA-33(i)	0	17	2400	7,007
10	Transplanting of Hycopots seedling into pits including man carriags from the unloading point ::Seed Production area	RA-36(iii)	0	24	0	6,504
11	Application of insecticides and other chemicals whenever necessary	RA-41	0	2	690	1,232
12	Vacancy infilling of pits with new seedling wherever there mortality due abiotic and biotic factors	RA-40	0	3		813
13	1st cleaning	RA-38(a)	0	16		4,336
14	1st Mulching with fertilizer including cost of carriage	RA-39(a)	0	14	2300	6,094
15	2nd cleaning	RA-38(b)	0	14		3,794
16	2nd Mulching with fertilizer including cost of carriage	RA-39(b)	0	12	1500	4,752
17	3rd cleaning	RA-38(c)	0	12		3,252
18	4th cleaning	RA-38(d)	0	10		2,710
19	5th cleaning	RA-38 (e)	0	10		2,710
20	Creation of fireline to protect plantation from Fire, by making 3mt wide fireline inside plantation and along boundary, by removing weeds and vegetation and scarpping, cutting of all existing weed growth to a width of 3 m. Heaping, burning and re-burning in younger plantations	RA-44	0	4	0	1,084
21	Providing watch and ward in the form of man days to oversee the plantation and protect the plantation from damages arising out of biotic factors for the entire year	RA-45	0	12	0	3,252
22	Transportation of Hycopots seedling from nursery to Plantation site including loading & unloading: d) lead distance>20km & upto 30km : 300CC Hycopots	RA-34(d)	0	2	3200	3,742
23	Collection of Hycopots after plantation & transporting back to central nursery after careful packing etc. : d) lead distance > 20km & upto 30km : 300 CC Hycopots	RA-43(d)	0	2	0	542
24	Barbed wire / energized fencing, with 4 strand, using wooden post of 6-7 ft height and 6 inch girth at 2.5 mt apart.Fixing the fence posts after digging pits of 30 cm x 30 cm x 40 cm depth and consolidation, ensuring firm fixture, unrolling and fixing barbed wire with 'U' nils in four rows, ensuring proper fixture	RA-46(b)	0	2	20000	20,542
25	SIGNAGE : Installation of sign board with Forest directorate colour code and emblem of size 3 'x4' ft made out of brick work and plastered and well finished and painted with good quality paint	RA-49			300	300
A	Total		0.5	249.0	30,870	98,513
B	Add : Contingency @3%					2,955
C	Grand Total					1,01,468

Projected Cost per ha of Seed Production Areas for the F.Y 2024-25	Skilled	Unskilled	Amount	Price Escalation	Total Labour cost
A. Mandays	0.5	249.0	67,643	-	67,643
B. Materials			30,870	-	30,870
C. Total			98,513	-	98,513
Add: Contingency @3%					2,957
Grand Total (In Rs.)					1,01,470

Estimate for 1st year maintenance of Seed Production Areas (per Ha) for 2022-23

Estimate for 1st year maintenance of Seed Production Areas (per Ha) for 2022-23						
Sl No.	Particulars of work	SoR ref. item no.	Rate per Ha (2022-23)		Material (in Rs.)	Amount (Rs.)
			Labour (Mandays)			
			Skilled	Unskilled		
1	Vacancy infilling of pits with new seedling wherever there mortality due abiotic and biotic factors including cost of transportation	RA-40	0	6	450	2,076
2	1st cleaning	RA-38 (a)	0	16	0	4,336
3	1st Mulching with fertilizer including cost of carriage	RA-39(a)	0	14	2300	6,094
4	2nd cleaning	RA-38 (b)	0	14	0	3,794
5	3rd cleaning	RA-38 (c)	0	10	0	2,710
6	4th cleaning	RA-38 (d)	0	8	0	2,168
7	Creation of fireline to protect plantation from Fire, by making 3mt wide fireline inside plantation and along boundary, by removing weeds and vegetation and scrapping, cutting of all existing weed growth to a width of 3 m. Heaping, burning and re-burning in younger plantations	RA-44	0	5	0	1,355
8	Application of insecticides and other chemicals whenever necessary including carriage (nos.)	RA-41	0	5	690	2,045
9	Providing watch and ward in the form of man days to oversee the plantation and protect the plantation from damages arising out of biotic factors for the entire year	RA-45	0	12	0	3,252
10	Repairing of barbed wire fencing		0	1	600	871
A	Total		0.0	91.0	4,040	28,701
B	Add : Contingency @3%					861
C	Grand Total					29,562

Projected Cost per ha of 1st year maintenance Seed Production Areas for the F.Y 2025-26	Skilled	Unskilled	Amount	Price Escalation	Total Labour cost
A. Mandays	0.0	91	24,661	-	24,661
B. Materials			4,040	-	4,040
C. Total			28,701	-	28,701
Add: Contingency @3%					859
Grand Total (In Rs.)					29,560

Estimate for 2nd year maintenance of Seed Production Areas (per Ha) for 2022-23

Estimate for 2nd year maintenance of Seed Production Areas (per Ha) for 2022-23						
Sl No.	Particulars of work	SoR ref. item no.	Rate per Ha (2022-23)		Material (in Rs.)	Amount (Rs.)
			Labour (Mandays)			
			Skilled	Unskilled		
1	Vacancy infilling of pits with new seedling wherever there mortality due abiotic and biotic factors including cost of transportation	RA-40	0	4	300	1,384
2	1st cleaning	RA-38 (a)	0	16	0	4,336
3	2nd cleaning	RA-38 (b)	0	14	0	3,794
4	3rd cleaning	RA-38 (c)	0	12	0	3,252
5	Creation of fireline to protect plantation from Fire, by making 3mt wide fireline inside plantation and along boundary, by removing weeds and vegetation and scrapping, cutting of all existing weed growth to a width of 3 m. Heaping, burning and re-burning in younger plantations	RA-44	0	4	0	1,084
6	Providing watch and ward in the form of man days to oversee the plantation and protect the plantation from damages arising out of biotic factors for the entire year	RA-45	0	12	0	3,252
7	Repairing of barbed wire fencing		0	1	184	455
A	Total		0	63	484	17,557
B	Add : Contingency @3%					528
C	Grand Total					18085

Projected Cost per ha of 2nd year maintenance of Seed Production Areas for the F.Y 2026-27	Skilled	Unskilled	Amount	Price Escalation	Total Labour cost
A. Mandays	0.0	63	17,073	-	17,073
B. Materials			484	-	484
C. Total			17,557	-	17,557
Add: Contingency @3%					527.72
Grand Total (In Rs.)					18,085

Estimate for 3rd year maintenance of Seed Production Areas (per Ha) for 2022-23

Estimate for 5th year maintenance of seed production Areas (per Ha) for 2022-23						
Sl No.	Particulars of work	SoR ref. item no.	Rate per Ha (2022-23)		Material (in Rs.)	Amount (Rs.)
			Labour (Mandays)			
			Skilled	Unskilled		
1	Vacancy infilling of pits with new seedling wherever there mortality due aboitic and biotic factors including cost of transportation	RA-40	0	2	87	629
2	1st cleaning	RA-38 (a)	0	14	0	3,794
3	2nd cleaning	RA-38 (b)	0	12	0	3,252
4	3rd cleaning	RA-38 (c)	0	8	0	2,168
5	Creation of fireline to protect plantation from Fire, by making 3mt wide fireline inside plantation and along boundary, by removing weeds and vegetation and scrapping, cutting of all existing weed growth to a width of 3 m. Heaping, burning and re-burning in younger plantations	RA-44	0	4	0	1,084
6	Providing watch and ward in the form of man days to oversee the plantation and protect the plantation from damages arining out of biotic factors for the entire year	RA-45	0	10	0	2,710
7	Repairing of barbed wire fencing		0	1	0	271
A	Total		0	51	87	13,908
B	Add : Contingency @3%					417
C	Grand Total					14325

Projected Cost per ha of 3rd year maintenance of Seed Production Areas for the F.Y 2027-28	Skilled	Unskilled	Amount	Price Escalation	Total Labour cost
A. Mandays	0.0	51	13,821	-	13,821
B. Materials			87	-	87
C. .Total			13,908	-	13,908
Add: Contingency @3%					417.24
Grand Total (In Rs.)					14,325

Cost abstract	Amount (in Rs.)
Creation of Seed Production Areas	1,01,470
1st year maintenance of Seed Production Areas	29,560
2nd year of maintenance of Seed Production Areas	18,085
3rd year maintenance of Seed Production Areas	14,325
Grand Total	1,63,440

Component 1 : Ecosystem based Climate Change measures

1.2. Improving Quality of Forests

1.2.2. ANR of degraded Sal forests (Coppicing)

Model : Estimate for Rehabilitation of degraded Sal forests (RDF) in SW Bengal for 2023-24

Type of Plantation		RDF				
	Labour Rate (Skilled- Rs.328/- & Unskilled- Rs.271/-)					
Sl No.	Particulars of work	SoR ref. item no.	Rate per Ha (2023-24)			Amount (Rs.)
			Labour (Mandays)		Material (in Rs.)	
			Skilled	Unskilled		
1	Survey and demarcation of the plantation area including GPS survey by technical person	RA-29	0.5	1	60.00	495
2	Cutting of dead, dying, moribund, bent, suppressed, coppice shoots of sal flush of the ground			8	0	2,168
3	Hoeing around basal portion of living stamp, mulching, application of fertilizer and spraying of insecticide			4	0	1,084
4	Irraction of live edge of Ipomea, Vitex, thorny spp, fencing with bamboo including cost of material			2	500	1,042
8	Soil moisture Conservation- Digging of box trench over a length of 500 mt of size 5 m x 0.45m x 0.45m	RA-32	0	35	0	9,485
A	Total		0.5	50	560	14,274
B	Add : Contingency @3%					426
C	Grand Total					14,700

Model : Estimate for Multiple shoot cutting (MSC) in 4th year after RDF in SW Bengal

Type of Plantation			MSC			
SI No.	Particulars of work	SoR ref. item no.	Rate per Ha			Amount (Rs.)
			Labour (Mandays)		Material (in Rs.)	
			Skilled	Unskilled		
1	Survey and demarcation of the plantation area including GPS survey by technical person	RA-29	0.5	1	60.00	495
2	Cleaning of the brushes in the boundary and inside forest			4	0	1,084
3	Coal taring the leading shoots to be retained 2-3 nos per stump using labour			1	50	321
4	Cutting all non leading shoots per stumps keeping 2-3 coal tarred leading shoots			12	0	3,252
A	Total		0.5	18	110	5,152
B	Add : Contingency @3%					148
C	Grand Total					5,300

Cost abstract `	Amount (in Rs.)
Rehabilitation of degraded Sal forests in SW Bengal	14,700
Multiple shoot cutting after RDF	5,300
Grand Total	20,000

Model : Estimate for Creation of Strip Plantation for 2022-23

Type of Plantation		Strip SB				
No. of seedlings per ha		1600				
Spacing per ha		2.5m x 2.5m				
Pit Size		60cm. X 60cm. X 45cm.				
	Labour Rate (Skilled- Rs.328/- & Unskilled- Rs.271/-)					
Sl No.	Particulars of work	SoR ref. item no.	Rate per Ha (2022-23)			Amount (Rs.)
			Labour (Mandays)		Material (in Rs.)	
			Skilled	Unskilled		
1	Survey and demarcation of the plantation site including preparation of Regeneration Map and GPS Survey map	RA-29	0.5	1	90.00	525
2	Clearance of undergrowth in thick forest areas : Clear felling, burning, heaping and re-burning in thick density areas of undergrowth and bushes	RA-27 (a)	0	35	0	9,485
3	Staking and alignment of plantation site, collection of stakes, pitching etc.	RA-30	0	4	310	1,394
4	Pit cutting : b) Strip Plantation-60x60x45cm	RA-31 (b)	0	50	0	13,550
6	Sorting and shifting of seedlings per each time	RA-11 (ii)	0	5	0	1,355
7	Weeding and cleaning of seedlings in Hycopots / root trainers per each time	RA-12(ii)	0	5	0	1,355
8	Watering of seedlings in Hycopots two times per day	RA-13(ii)	0	3	0	813
9	Creation of inspection path by removing weeds, scraping and by providing proper drain along the diagonal of the plantation site, of 3 mt wide	RA-42	0	5	0	1,355
10	Pit filling and application of Farm yard Manure including cost of carriage	RA-33(ii)	0	22	5520	11,482
11	Transplanting of Hycopots seedlings into pits including man carriage from the unloading point	RA-36 (iv)	0	13	0	3,523
12	Application of insecticides and other chemicals whenever necessary including carriage (nos.)	RA-41	0	2	690	1,232
13	Vacancy infilling of pits with new seedling wherever there mortality due aboitic and biotic factors	RA-40	0	3	0	813
14	1st cleaning	RA-38 (a)	0	14	0	3,794
15	1st Mulching with fertilizer including cost of carriage	RA-39(a)	0	14	2300	6,094
16	2nd cleaning	RA-38 (b)	0	12	0	3,252
17	2nd Mulching with Chemical fertilizer including cost of carriage	RA-39(b)	0	12	1840	5,092
18	3rd cleaning and Multching	RA-38 (c)	0	10	0	2,710
19	4th cleaning and Multching	RA-38 (d)	0	10	0	2,710
20	5th cleaning	RA-38 (e)	0	10	0	2,710
21	Creation of fireline to protect plantation from Fire, by making 3mt wide fireline inside plantation and along boundary, by removing weeds and vegetation and scrapping, cutting of all existing weed growth to a width of 3 m. Heaping, burning and re-burning in younger plantations	RA-44	0	4	0	1,084
22	Providing watch and ward in the form of man days to oversee the plantation and protect the plantation from damages arining out of biotic factors for the entire year	RA-45	0	12	0	3,252
23	Transportation of Hycopots seedling from nursery to Plantation site including loading & unloading: d) lead distance>20km & upto 30km : 300CC Hycopots	RA-34(d)	0	4	3176	4,260
24	Collection of Hycopots after plantation & transporting back to central nursery after careful packing etc. : d) lead distance> 20km & upto 30km : 300CC Hycopots	RA-43(d)	0	2	0	542
26	Cost of signage (one for each 10 Ha or part thereof)	RA-49	0	0	300	300
27	Barbed wire fencing, with 4 strand, using wooden post of 6-7 ft height and 6 inch girth at 2.5 mt apart.Fixing the fence posts after digging pits of 30 cm x 30 cm x 40 cm depth and consolidation, ensuring firm fixture, unrolling and fixing barbed wire with 'U' nils in four rows, ensuring proper fixture	RA-46 (b)	0	2	20000	20,542
A	Total		0.5	254	34,226	1,03,224
B	Add : Contingency @3%					3,096
C	Grand Total					1,06,320

Projected Cost per ha of Strip plantation in SB for the F.Y 2025-26		Skilled	Unskilled	Amount	Price Escalation	Total Labour cost
A. Mandays		0.5	254	68,998		68,998
B. Materials				34,226		34,226
C. .Total				1,03,224	-	1,03,224
Add: Contingency @3%						3,096.72
Grand Total (In Rs.)						1,06,321

Estimate for 1st year maintenance of Strip Plantation in SB for 2022-23						
Sl No.	Particulars of work	SoR ref. item no.	Rate per Ha (2022-23)			Amount (Rs.)
			Labour (Mandays)		Material (in Rs.)	
			Skilled	Unskilled		
1	Vacancy infilling of pits with new seedling wherever there mortality due aboitic and biotic factors including cost of transportation		0	4	300	1,384

2	1st cleaning	RA-38 (a)	0	14	0	3,794
3	1st Mulching with fertilizer including cost of carriage	RA-39(a)	0	14	2300	6,094
4	2nd cleaning	RA-38 (b)	0	12	0	3,252
5	3rd cleaning	RA-38 (c)	0	10	0	2,710
6	Creation of fireline to protect plantation from Fire, by making 3mt wide fireline inside plantation and along boundary, by removing weeds and vegetation and scrapping, cutting of all existing weed growth to a width of 3 m. Heaping, burning and re-burning in younger plantations	RA-44	0	4	0	1,084
7	Application of insecticides and other chemicals whenever necessary including carriage (nos.)	RA-41	0	2	690	1,232
8	Providing watch and ward in the form of man days to oversee the plantation and protect the plantation from damages arising out of biotic factors for the entire year	RA-45	0	12	0	3,252
9	Repairing of fencing		0	2	2500	3,042
10	Labour for watering		0	3	0	813
A	Total		0.0	77	5,790	26,657
B	Add : Contingency @3%					803
C	Grand Total					27,460

Projected Cost per ha of 1st year maintenance of Strip plantation in SB for the F.Y 2026-27		Skilled	Unskilled	Amount	Price Escalation	Total Labour cost
A. Mandays		0.0	77.0	20,867		20,867
B. Materials				5,790		5,790
C. Total				26,657	-	26,657
Add: Contingency @3%						801.71
Grand Total (In Rs.)						27,459

Estimate for 2nd year maintenance of Strip Plantation in SB for 2022-23

Sl No.	Particulars of work	SoR ref. item no.	Rate per Ha (2022-23)		Material (in Rs.)	Amount (Rs.)
			Labour (Mandays)			
			Skilled	Unskilled		
1	Vacancy infilling of pits with new seedling wherever there mortality due abiotic and biotic factors including cost of transportation	RA-40	0	2.5	150	828
2	1st cleaning	RA-38 (a)	0	14	0	3,794
3	2nd cleaning	RA-38 (b)	0	12	0	3,252
4	3rd cleaning	RA-38 (c)	0	10	0	2,710
5	Creation of fireline to protect plantation from Fire, by making 3mt wide fireline inside plantation and along boundary, by removing weeds and vegetation and scrapping, cutting of all existing weed growth to a width of 3 m. Heaping, burning and re-burning in younger plantations	RA-44	0	4	0	1,084
6	Providing watch and ward in the form of man days to oversee the plantation and protect the plantation from damages arising out of biotic factors for the entire year	RA-45	0	12	0	3,252
7	Repairing of fencing		0	1	1000	1,271
8	Labour for watering		0	3	0	813
A	Total		0	59	1,150	17,004
B	Add : Contingency @3%					511
C	Grand Total					17,515

Projected Cost per ha of 2nd year maintenance of Strip plantation in SB for the F.Y 2027-28		Skilled	Unskilled	Amount	Price Escalation	Total Labour cost
A. Mandays		0.0	58.5	15,854		15,854
B. Materials				1,150		1,150
C. Total				17,004	-	17,004
Add: Contingency @3%						508
Grand Total (In Rs.)						17,511

Estimate for 3rd year maintenance of Strip Plantation in SB for 2022-23

Estimate for six year maintenance of shrimp plantation in SB for 2022-23						
Sl No.	Particulars of work	SoR ref. item no.	Rate per Ha (2022-23)			Amount (Rs.)
			Labour (Mandays)		Material (in Rs.)	
			Skilled	Unskilled		
1	Vacancy infilling of pits with new seedling wherever there mortality due abiotic and biotic factors including cost of transportation	RA-40	0	2.0	75	617
2	1st cleaning	RA-38 (a)	0	14	0	3,794

3	2nd cleaning	RA-38 (b)	0	12	0	3,252
4	Creation of fireline to protect plantation from Fire, by making 3mt wide fireline inside plantation and along boundary, by removing weeds and vegetation and scrapping, cutting of all existing weed growth to a width of 3 m. Heaping, burning and re-burning in younger plantations	RA-44	0	4	0	1,084
5	Providing watch and ward in the form of man days to oversee the plantation and protect the plantation from damages arising out of biotic factors for the entire year	RA-45	0	12	0	3,252
6	Repairing of fencing		0	1	500	771
7	Labour for watering		0	2	0	542
A	Total		0	47	575	13,312
B	Add : Contingency @3%					398
C	Grand Total					13710

Projected Cost per ha of 3rd year maintenance of Strip plantation in SB for the F.Y 2028-29	Skilled	Unskilled	Amount	Price Escalation	Total Labour cost
A. Mandays	0.0	47.0	12,737		12,737
B. Materials			575		575
C. .Total			13,312	-	13,312
Add: Contingency @3%					399.36
Grand Total (In Rs.)					13,710

Cost abstract	Amount (in Rs.)
Creation of Strip Plantation in S.B	1,06,321
1st year maintenance of Strip Plantation in S.B	27,459
2nd year of maintenance of Strip Plantation in S.B	17,511
3rd year maintenance of Strip Plantation in S.B	13,710
Grand Total	1,65,000

Component 1 : Ecosystem based Climate Change measures

1.2. Improving Quality of Forests

1.2.4. Plantation in CFC and degraded Forest areas

1.2.4 Plantation in CFC and degraded forest areas

Model : Estimate for Creation of Misc. Plantation NB & Hills (per Ha)-2022-23

Type of Plantation		Misc NB & Hills				
No. of seedling per ha		2500				
Spacing per ha		2m x 2m				
Pit Size		60cm. x 45cm. x 45cm.				
Labour Rate (Skilled- Rs.328/- & Unskilled- Rs.271/-)						
Sl No.	Particulars of Work	SoR Ref. item no.	Rate (2022-23)		Material (in Rs.)	Amount (Rs.)
			Labour (Mandays)			
			Skilled	Unskilled		
1	Survey and demarcation of the plantation site including preparation of Regeneration Map and GPS Survey map	RA-29	0.5	1	90	525
2	Clearance of thick density areas: Clear felling, burning, heaping and re-burning in thick undergrowth and bushes	RA-27(a)	0	35	0	9,485
3	Staking and alignment of plantation site, collection of stakes, pitching etc.	RA-30	0	6	390	2,016
4	Pit cutting : a) Miscellaneous (NB)/ Miscellaneous (Hill)-60x45x45 cm	RA-31 (a)	0	40	0	10,840
5	Sorting and shifting of seedlings per each time : i) Misc (NB)	RA-11 (i)	0	5	0	1,355
6	Weeding and cleaning of seedlings in Hycopots / root trainers per each time : i) Misc (NB)	RA-12 (i)	0	5	0	1,355
7	Watering and cleaning of seedlings in Hycopots two times per day : i) Misc (NB)	RA-13 (i)	0	2	0	542
8	Creation of inspection path by removing weeds, scarpping and by providing proper drain along the diagonal of the plantation site, of 3 mt wide	RA-42	0	5	0	1,355
9	Pit filling and application of Farm yard Manure : i) Miscellaneous (NB)/ Miscellaneous (Hill)	RA-33(i)	0	17	2940	7,547
10	Transplanting of Hycopots seedling into pits including man carriages from the unloading point : iii) North Bengal Miscellaneous	RA-36(iii)	0	30	0	8,130
11	Application of insecticides and other chemicals whenever necessary	RA-41	0	2	690	1,232
12	Vacancy infilling of pits with new seedling wherever there mortality due abiotic and biotic factors	RA-40	0	3		813
13	1st cleaning	RA-38(a)	0	16		4,336
14	1st Mulching with fertilizer including cost of carriage	RA-39(a)	0	14	2300	6,094
15	2nd cleaning	RA-38(b)	0	14		3,794
16	2nd Mulching with fertilizer including cost of carriage	RA-39(b)	0	12	1840	5,092
17	3rd cleaning	RA-38(c)	0	12		3,252
18	4th cleaning	RA-38(d)	0	10		2,710
19	5th cleaning	RA-38 (e)	0	10		2,710
20	Creation of fireline to protect plantation from Fire, by making 3mt wide fireline inside plantation and along boundary, by removing weeds and vegetation and scarpping, cutting of all existing weed growth to a width of 3 m. Heaping, burning and re-burning in younger plantations	RA-44	0	4	0	1,084
21	Providing watch and ward in the form of man days to oversee the plantation and protect the plantation from damages arising out of biotic factors for the entire year	RA-45	0	12	0	3,252
22	Transportation of Hycopots seedling from nursery to Plantation site including loading & unloading: d) lead distance>20km & upto 30km : 300CC Hycopots	RA-34(d)	0	2	4000	4,542
23	Collection of Hycopots after plantation & transporting back to central nursery after careful packing etc. : d) lead distance > 20km & upto 30km : 300CC Hycopots	RA-43(d)	0	2	0	542
24	Fencing : Vegetative fencing using bamboo posts at least of 6 ft height with 1 ft embedded underground and not more than 5 ft apart with splitted bamboo of atleast 5 rows and using ipomea/brushwood/thorn as locally available as filler	RA-46(a)	0	2	7500	8,042
25	SIGNAGE : Installation of sign board with Forest directorate colour code and emblem of size 3 'x4ft made out of brick work and plastered and well finished and painted with good quality paint	RA-49			300	300
A	Total		0.5	261.0	20,050	90,945
B	Add : Contingency @3%					2,725.35
C	Grand Total					93,670

Projected Cost per ha of Misc. Plantation in NB for the F.Y 2025-26	Skilled	Unskilled	Amount	Price Escalation	Total Labour cost
A. Mandays	0.5	261.0	70,895	-	70,895
B. Materials			20,050	-	20,050
C. Total			90,945	-	90,945
Add: Contingency @3%					2,725.35
Grand Total (In Rs.)					93,670

Estimate for 1st year maintenance of Misc. Plantation in NB for 2022-23

Estimate for 1st year maintenance of MISC. Plantation in NB for 2022-23						
Sl No.	Particulars of work	SoR ref. item no.	Rate per Ha (2022-23)			Amount (Rs.)
			Labour (Mandays)		Material (in Rs.)	
			Skilled	Unskilled		
1	Vacancy infilling of pits with new seedling wherever there mortality due abiotic and biotic factors including cost of transportation	RA-40	0	6	450	2,076
2	1st cleaning	RA-38 (a)	0	16	0	4,336
3	1st Mulching with fertilizer including cost of carriage	RA-39(a)	0	14	2300	6,094
4	2nd cleaning	RA-38 (b)	0	14	0	3,794
5	3rd cleaning	RA-38 (c)	0	10	0	2,710
6	4th cleaning	RA-38 (d)	0	8	0	2,168
7	Creation of fireline to protect plantation from Fire, by making 3mt wide fireline inside plantation and along boundary, by removing weeds and vegetation and scrapping, cutting of all existing weed growth to a width of 3 m. Heaping, burning and re-burning in younger plantations	RA-44	0	5	0	1,355
8	Application of insecticides and other chemicals whenever necessary including carriage (nos.)	RA-41	0	5	690	2,045
9	Providing watch and ward in the form of man days to oversee the plantation and protect the plantation from damages arising out of biotic factors for the entire year	RA-45	0	12	0	3,252
10	Repairing of fencing		0	1	127	398
A	Total		0.0	91.0	3,567	28,228
B	Add : Contingency @3%					848
C	Grand Total					29,075

Projected Cost per ha of 1st year maintenance of Misc plantation in NB for the F.Y 2026-27	Skilled	Unskilled	Amount	Price Escalation	Total Labour cost
A. Mandays	0.0	91	24,661	-	24,661
B. Materials			3,567	-	3,567
C. Total			28,228	-	28,228
Add: Contingency @3%					847.83
Grand Total (In Rs.)					29,075

Estimate for 2nd year maintenance of Misc. Plantation in NB for 2022-23

Sl No.	Particulars of work	SoR ref. item no.	Rate per Ha (2022-23)			Amount (Rs.)
			Labour (Mandays)		Material (in Rs.)	
			Skilled	Unskilled		
1	Vacancy infilling of pits with new seedling wherever there mortality due abiotic and biotic factors including cost of transportation	RA-40	0	4	300	1,384
2	1st cleaning	RA-38 (a)	0	16	0	4,336
3	2nd cleaning	RA-38 (b)	0	14	0	3,794
4	3rd cleaning	RA-38 (c)	0	12	0	3,252
5	Creation of fireline to protect plantation from Fire, by making 3mt wide fireline inside plantation and along boundary, by removing weeds and vegetation and scrapping, cutting of all existing weed growth to a width of 3 m. Heaping, burning and re-burning in younger plantations	RA-44	0	4	0	1,084
6	Providing watch and ward in the form of man days to oversee the plantation and protect the plantation from damages arising out of biotic factors for the entire year	RA-45	0	12	0	3,252
7	Repairing of fencing with bamboo		0	1	223	494
A	Total		0	63	523	17,596
B	Add : Contingency @3%					529
C	Grand Total					18125

Projected Cost per ha of 2nd year maintenance of Misc. plantation in NB for the F.Y 2027-28	Skilled	Unskilled	Amount	Price Escalation	Total Labour cost
A. Mandays	0.0	63	17,073	-	17,073
B. Materials			523	-	523
C. Total			17,596	-	17,596
Add: Contingency @3%					528.89
Grand Total (In Rs.)					18,125

Estimate for 3rd year maintenance of Misc. Plantation in NB for 2022-23

Estimate for 3rd year maintenance of mixed plantation in RD for 2022-23						
Sl No.	Particulars of work	SoR ref. item no.	Rate per Ha (2022-23)		Material (in Rs.)	Amount (Rs.)
			Labour (Mandays)			
			Skilled	Unskilled		
1	Vacancy infilling of pits with new seedling wherever there mortality due abiotic and biotic factors including cost of transportation	RA-40	0	2	87	629
2	1st cleaning	RA-38 (a)	0	14	0	3,794
3	2nd cleaning	RA-38 (b)	0	12	0	3,252
4	3rd cleaning	RA-38 (c)	0	8	0	2,168
5	Creation of fireline to protect plantation from Fire, by making 3mt wide fireline inside plantation and along boundary, by removing weeds and vegetation and scrapping, cutting of all existing weed growth to a width of 3 m. Heaping, burning and re-burning in younger plantations	RA-44	0	4	0	1,084
6	Providing watch and ward in the form of man days to oversee the plantation and protect the plantation from damages arising out of biotic factors for the entire year	RA-45	0	10	0	2,710
7	Repairing of fencing		0	1	0	271
A	Total		0	51	87	13,908
B	Add : Contingency @3%					417
C	Grand Total					14325

Projected Cost per ha of 3rd year maintenance of Misc. Plantation in NB for the F.Y 2028-29	Skilled	Unskilled	Amount	Price Escalation	Total Labour cost
A. Mandays	0.0	51	13,821	-	13,821
B. Materials			87	-	87
C. .Total			13,908	-	13,908
Add: Contingency @3%					417
Grand Total (In Rs.)					14,325

Cost abstract	Amount (in Rs.)
Creation of Misc. Plantation in N.B	93,670
1st year maintenance of Misc. Plantation in N.B	29,075
2nd year of maintenance of Misc. Plantation in N.B	18,125
3rd year maintenance of Misc. Plantation in N.B	14,325
Grand Total	1,55,195

Component 1 : Ecosystem based Climate Change measures

1.2. Improving Quality of Forests

1.2.4. Plantation in CFC and degraded Forest areas

1.2.4.(a) Plantation in CFC areas

Model : Estimate for Creation of Sal Plantation SB for 2022-23

Type of Plantation			Sal SB			
No. of seedlings per ha			1600			
Spacing per ha			2.5m x 2.5m			
Pit Size			60cm. X 60cm. X 45cm.			
	Labour Rate (Skilled- Rs.328/- & Unskilled- Rs.271/-)		Rate per Ha (2022-23)			
Sl No.	Particulars of work	SoR ref. item no.	Labour (Mandays)		Material (in Rs.)	Amount (Rs.)
			Skilled	Unskilled		
1	Survey and demarcation of the plantation site including preparation of Regeneration Map and GPS Survey map	RA-29	0.5	1	90.00	525
2	Clearance of undergrowth in thick forest areas : Clear felling, burning, heaping and re-burning in thick density areas of undergrowth and bushes	RA-27 (a)	0	30	0	8,130
3	Staking and alignment of plantation site, collection of stakes, pitching etc.	RA-30	0	4	310	1,394
4	Pit cutting : b) Sal Plantation-60x60x45cm	RA-31 (b)	0	50	0	13,550
5	Soil moisture Conservation- Digging of box trench over a length of 500 mt of size 5 m x 0.45m x 0.45m	RA-32	0	35	0	9,485
6	Sorting and shifting of seedlings per each time	RA-11 (ii)	0	5	0	1,355
7	Weeding and cleaning of seedlings in Hycopots / root trainers per each time	RA-12(ii)	0	5	0	1,355
8	Watering of seedlings in Hycopots two times per day	RA-13(ii)	0	3	0	813
9	Creation of inspection path by removing weeds, scraping and by providing proper drain along the diagonal of the plantation site, of 3 mt wide	RA-42	0	5	0	1,355
10	Pit filling and application of Farm yard Manure including cost of carriage	RA-33(ii)	0	22	5520	11,482
11	Transplanting of Hycopots seedlings into pits including man carriage from the unloading point	RA-36 (ii)	0	13	0	3,523
12	Application of insecticides and other chemicals whenever necessary including carriage (nos.)	RA-41	0	2	690	1,232
13	Vacancy infilling of pits with new seedling wherever there mortality due abiotic and biotic factors	RA-40	0	3	0	813
14	1st cleaning	RA-38 (a)	0	14	0	3,794
15	1st Mulching with fertilizer including cost of carriage	RA-39(a)	0	14	2300	6,094
16	2nd cleaning	RA-38 (b)	0	12	0	3,252
17	2nd Mulching with Chemical fertilizer including cost of carriage	RA-39(b)	0	12	1840	5,092
18	3rd cleaning and Multching	RA-38 (c)	0	10	0	2,710
19	4th cleaning and Multching	RA-38 (d)	0	10	0	2,710
20	Cost of Arhar seeds and application in trenches / SMC sites		0	1	150	421
21	Creation of fireline to protect plantation from Fire, by making 3mt wide fireline inside plantation and along boundary, by removing weeds and vegetation and scrapping, cutting of all existing weed growth to a width of 3 m. Heaping, burning and re-burning in younger plantations	RA-44	0	4	0	1,084
22	Providing watch and ward in the form of man days to oversee the plantation and protect the plantation from damages arising out of biotic factors for the entire year	RA-45	0	12	0	3,252
23	Transportation of Hycopots seedling from nursery to Plantation site including loading & unloading: d) lead distance>20km & upto 30km : 300CC Hycopots	RA-34(d)	0	2	3186	3,728
24	Collection of Hycopots after plantation & transporting back to central nursery after careful packing etc. : d) lead distance> 20km & upto 30km : 300CC Hycopots	RA-43(d)	0	2	0	542
25	Digging dug well/shallow tube well including labour for watering (one no per 10 ha. Sal plantation sites)		1	4	5000	6,412
26	Cost of signage (one for each 10 Ha or part thereof)	RA-49	0	0	300	300
27	Barbed wire fencing, with 4 strand, using wooden post of 6-7 ft height and 6 inch girth at 2.5 mt apart.Fixing the fence posts after digging pits of 30 cm x 30 cm x 40 cm depth and consolidation, ensuring firm fixture, unrolling and fixing barbed wire with 'U' nils in four rows, ensuring proper fixture	RA-46 (b)	0	2	20000	20,542
A	Total		1.5	277	39,386	1,14,945
B	Add : Contingency @3%					3,448
C	Grand Total					1,18,393

Projected Cost per ha of Sal plantation in SB for the F.Y 2025-26		Skilled	Unskilled	Amount	Price Escalation	Total Labour cost
A. Mandays		1.5	277	75,559	-	75,559
B. Materials				39,386	-	39,386
C. Total				1,14,945	-	1,14,945
Add: Contingency @3%						3,445.35
Grand Total (In Rs.)						1,18,390

Estimate for 1st year maintenance of Sal Plantation in SB for 2022-23						
Sl No.	Particulars of work	SoR ref. item no.	Rate per Ha (2022-23)			Amount (Rs.)
			Labour (Mandays)		Material (in Rs.)	
			Skilled	Unskilled		
1	Vacancy infilling of pits with new seedling wherever there mortality due abiotic and biotic factors including cost of transportation		0	4	300	1,384
2	1st cleaning	RA-38 (a)	0	14	0	3,794
3	1st Mulching with fertilizer including cost of carriage	RA-39(a)	0	14	2300	6,094
4	2nd cleaning	RA-38 (b)	0	12	0	3,252
5	3rd cleaning	RA-38 (c)	0	10	0	2,710
6	Creation of fireline to protect plantation from Fire, by making 3mt wide fireline inside plantation and along boundary, by removing weeds and vegetation and scrapping, cutting of all existing weed growth to a width of 3 m. Heaping, burning and re-burning in younger plantations	RA-44	0	4	0	1,084
7	Application of insecticides and other chemicals whenever necessary including carriage (nos.)	RA-41	0	2	690	1,232
8	Providing watch and ward in the form of man days to oversee the plantation and protect the plantation from damages arising out of biotic factors for the entire year	RA-45	0	12	0	3,252
9	Repairing of fencing		0	2	2500	3,042
10	Labour for watering		0	3	0	813
A	Total		0.0	77	5,790	26,657
B	Add : Contingency @3%					800
C	Grand Total					27,457

Projected Cost per ha of 1st year maintenance of Sal plantation in SB for the F.Y 2026-27	Skilled	Unskilled	Amount	Price Escalation	Total Labour cost
A. Mandays	0.0	77.0	20,867	-	20,867
B. Materials			5,790	-	5,790
C. Total			26,657	-	26,657
Add: Contingency @3%					803
Grand Total (In Rs.)					27,460

Estimate for 2nd year maintenance of Sal Plantation in SB for 2022-23						
Sl No.	Particulars of work	SoR ref. item no.	Rate per Ha (2022-23)			Amount (Rs.)
			Labour (Mandays)		Material (in Rs.)	
			Skilled	Unskilled		
1	Vacancy infilling of pits with new seedling wherever there mortality due aboitic and biotic factors including cost of transportation	RA-40	0	2.5	150	828
2	1st cleaning	RA-38 (a)	0	14	0	3,794
3	2nd cleaning	RA-38 (b)	0	12	0	3,252
4	3rd cleaning	RA-38 (c)	0	10	0	2,710
5	Creation of fireline to protect plantation from Fire, by making 3mt wide fireline inside plantation and along boundary, by removing weeds and vegetation and scrapping, cutting of all existing weed growth to a width of 3 m. Heaping, burning and re-burning in younger plantations	RA-44	0	4	0	1,084
6	Providing watch and ward in the form of man days to oversee the plantation and protect the plantation from damages arining out of biotic factors for the entire year	RA-45	0	12	0	3,252
7	Repairing of fencing		0	1	1000	1,271
8	Labour for watering		0	3	0	813
A	Total		0	59	1,150	17,004
B	Add : Contingency @3%					511
C	Grand Total					17,515

Projected Cost per ha of 2nd year maintenance of Sal plantation in SB for the F.Y 2027-28	Skilled	Unskilled	Amount	Price Escalation	Total Labour cost
A. Mandays	0.0	59	15,854	-	15,854
B. Materials			1,150	-	1,150
C. Total			17,004	-	17,004
Add: Contingency @3%					511.11
Grand Total (In Rs.)					17,515

Estimate for 3rd year maintenance of Sal Plantation in SB for 2022-23

Sl No.	Particulars of work	SoR ref. item no.	Rate per Ha (2022-23)			Amount (Rs.)
			Labour (Mandays)		Material (in Rs.)	
			Skilled	Unskilled		
1	Vacancy infilling of pits with new seedling wherever there mortality due abiotic and biotic factors including cost of transportation	RA-40	0	2.0	75	617
2	1st cleaning	RA-38 (a)	0	14	0	3,794
3	2nd cleaning	RA-38 (b)	0	12	0	3,252
4	Creation of fireline to protect plantation from Fire, by making 3mt wide fireline inside plantation and along boundary, by removing weeds and vegetation and scrapping, cutting of all existing weed growth to a width of 3 m. Heaping, burning and re-burning in younger plantations	RA-44	0	4	0	1,084
5	Providing watch and ward in the form of man days to oversee the plantation and protect the plantation from damages arising out of biotic factors for the entire year	RA-45	0	12	0	3,252
6	Repairing of fencing		0	1	500	771
7	Labour for watering		0	2	0	542
A	Total		0	47	575	13,312
B	Add : Contingency @3%					398
C	Grand Total					13710

Projected Cost per ha of 3rd year maintenance of Sal plantation in SB for the F.Y 2028-29	Skilled	Unskilled	Amount	Price Escalation	Total Labour cost
A. Mandays	0.0	47.0	12,737	-	12,737
B. Materials			575	-	575
C. .Total			13,312	-	13,312
Add: Contingency @3%					399.36
Grand Total (in Rs.)					13,710

Cost abstract	Amount (in Rs.)
Creation of Sal Plantation in S.B	1,18,390
1st year maintenance of Sal Plantation in S.B	27,460
2nd year of maintenance of Sal Plantation in S.B	17,515
3rd year maintenance of Sal Plantation in S.B	13,710
Grand Total	1,77,075

Component 1 : Ecosystem based Climate Change measures

1.2. Improving Quality of Forests

1.2.4. Plantation in CFC and degraded Forest areas

1.2.4.(a) Plantation in CFC areas

Model - Estimates for Creation of Misc. Plantation with native spp. in SB (per Ha)-2022-23

Type of Plantation			Misc. SB			
No. of seedlings per ha			1600			
Spacing per ha			2.5 m x 2.5 m			
Pit Size			60 cm. x 45 cm. x 45 cm.			
Labour Rate (Skilled- Rs.328/- & Unskilled- Rs.271/-)						
Sl No.	Particulars of Work	SoR Ref.	Rate per Ha in 2022-23			Amount (Rs.)
			Labour (Mandays)		Material (In Rs.)	
			Skilled	Unskilled		
1	Survey and demarcation of the plantation site including preparation of Regeneration Map and GPS Survey map	RA-29	0.5	1	90.00	525
2	Clearance of undergrowth in thick forest areas : Clear felling, burning, heaping & reburning in thick density areas of undergrowth and bushes	RA-27(a)	0	30	0	8,130
3	Staking and alignment of plantation site, collection of stakes, pitching etc.	RA-30	0	4	320	1,404
4	Pit cutting : Miscellaneous (SB)-60x45x45cm	RA-31 (a)	0	40	0	10,840
5	Soil moisture Conservation-Digging of box trench over a length of 500 mt of size 5 m x 0.45m x 0.45m	RA-32	0	35	0	9,485
6	Sorting and shifting of seedlings per each time : i) Misc (SB)	RA-11 (i)	0	5	0	1,355
7	Weeding and cleaning of seedlings in Hycopots / root trainers per each time : i) Misc (SB)	RA-12 (i)	0	3	0	813
8	Watering and cleaning of seedlings in Hycopots two times per day : i) Misc (SB)	RA-13 (i)	0	2.0	0	542
9	Creation of inspection path y removing weed, scarping and by providing proper drain along the diagonal of the plantation site, of 3 mt wide	RA-42	0	5	0	1,355
10	Pit filling and application of Farm yard Manure : Miscellaneous (SB)	RA-33 (i)	0	17	1882	6,489
11	Tranplanting of Hycopots seedlings into pits including man carriage from the unloading point : i) Misc (SB)	RA-36 (i)	0	20.0	0	5,420
12	Application of insecticides and other chemicals whenever necessary	RA-41	0	2	690	1,232
13	Vacancy infilling of pits with new seedling wherever there mortality due abiotic and biotic factors	RA-40	0	2.0	0	542
14	1st cleaning	RA-38(a)	0	14		3,794
15	1st Mulching with fertilizer including cost of carriage	RA-39 (a)	0	14	2300	6,094
16	2nd cleaning	RA-38 (b)	0	12		3,252
17	2nd Mulching with Chemical fertilizer including cost of carriage	RA-39 (b)	0	12	1840	5,092
18	3rd cleaning	RA-38 (c)	0	10		2,710
19	Creation of fireline to protect plantation from Fire, by making 3mt wide fireline inside plantation and along boundary, by removing weeds and vegetation and scraping, cutting of all existing weed growth to a width of 3 m. Heaping, buring and reburning in younger plantations	RA-44	0	4		1,084
20	Providing watch and ward in the form of man days to oversee the plantation and protect the plantation from damages arining out of biotic factors for the entire year	RA-45	0	12		3,252
21	Transportation of Hycopots seedling from nursery to Plantation site including loading & unloading: d) lead distance>20km & upto 30km : 300cc Hycopots	RA-34(d)	0	1	3000	3,271
22	Collection of Hycopots after plantation & transporting back to central nursery after careful packing etc. D) lead distance> 20km & upto 30km : 300cc Hycopots	RA-43 (b)	0	2		542
23	Barbed wire / energized fencing, with 4 strand, using wooden post of 6-7 ft height and 6 inch girth at 2.5 mt apart.Fixing the fence posts after digging pits of 30 cm x 30 cm x 40 cm depth and consolidation, ensuring firm fixture, unrolling and fixing barbed wire with 'U' nils in four rows, ensuring proper fixture	RA-46 (b)	0	2	20000	20,542
24	SIGNAGE: Installation of sign board with Forest directorate colour code and emblem of size 3' x 4 ft made out of brick work and plastered and well finished and painted with good quality paint	RA-49	0	0	300	300
25	Digging dug well/shallow tube well including labour for watering (one no per 10 ha. Misc. plantation sites)		0	4	5000	6,084
A	Total		0.5	253.0	35,422	1,04,149
B	Add : Contingency @3%					3,124
C	Grand Total					1,07,274

Projected Cost per ha of Misc. Plantation with native spp. in SB for the F.Y 2025-26	Skilled	Unskilled	Amount	Price Escalation	Total Labour cost
A. Mandays	0.5	253.0	68,727	-	68,727
B. Materials			35,422	-	35,422
C. Total			1,04,149	-	1,04,149
Add: Contingency @3%					3,125
Grand Total (In Rs.)					1,07,275

Estimate for 1st year maintenance of Misc. Native spp. In SB Plantation in SB for 2022-23

Estimate for 1st year maintenance of misc. native spp. in SB Plantation in SB for 2022-23						
Sl No.	Particulars of work	SoR ref. item no.	Rate per Ha (2022-23)			Amount (Rs.)
			Labour (Mandays)		Material (in Rs.)	
			Skilled	Unskilled		
1	Vacancy infilling of pits with new seedling wherever there mortality due abiotic and biotic factors including cost of transportation	RA-40	0	4	300	1,384
2	1st cleaning	RA-38 (a)	0	14	0	3,794
3	1st Mulching with fertilizer including cost of carriage	RA-39(a)	0	14	2300	6,094
4	2nd cleaning	RA-38 (b)	0	12	0	3,252
5	3rd cleaning	RA-38 (c)	0	10	0	2,710
6	Creation of fireline to protect plantation from Fire, by making 3mt wide fireline inside plantation and along boundary, by removing weeds and vegetation and scrapping, cutting of all existing weed growth to a width of 3 m. Heaping, burning and re-burning in younger plantations	RA-44	0	4	0	1,084
7	Application of insecticides and other chemicals whenever necessary including carriage (nos.)	RA-41	0	2	690	1,232
8	Providing watch and ward in the form of man days to oversee the plantation and protect the plantation from damages arising out of biotic factors for the entire year	RA-45	0	12	0	3,252
9	Repairing of fencing		0	2	2500	3,042
10	Labour for watering		0	3	0	813
A	Total		0.0	77	5,790	26,657
B	Add : Contingency @3%					800
C	Grand Total					27,457

Projected Cost per ha of 1st year maintenance of Misc plantation in SB for the F.Y 2026-27	Skilled	Unskilled	Amount	Price Escalation	Total Labour cost
A. Mandays	0.0	77	20,867	-	20,867
B. Materials			5,790	-	5,790
C. Total			26,657	-	26,657
Add: Contingency @3%					803
Grand Total (In Rs.)					27,460

Estimate for 2nd year maintenance of Misc. Native Plantation in SB for 2022-23

Sl No.	Particulars of work	SoR ref. item no.	Rate per Ha (2022-23)			Amount (Rs.)
			Labour (Mandays)		Material (in Rs.)	
			Skilled	Unskilled		
1	Vacancy infilling of pits with new seedling wherever there mortality due aboitic and biotic factors including cost of transportation	RA-40	0	2.5	150	828
2	1st cleaning	RA-38 (a)	0	14	0	3,794
3	2nd cleaning	RA-38 (b)	0	12	0	3,252
4	3rd cleaning	RA-38 (c)	0	10	0	2,710
5	Creation of fireline to protect plantation from Fire, by making 3mt wide fireline inside plantation and along boundary, by removing weeds and vegetation and scrapping, cutting of all existing weed growth to a width of 3 m. Heaping, burning and re-burning in younger plantations	RA-44	0	4	0	1,084
6	Providing watch and ward in the form of man days to oversee the plantation and protect the plantation from damages arining out of biotic factors for the entire year	RA-45	0	12	0	3,252
7	Repairing of fencing		0	1	1000	1,271
8	Labour for watering		0	3	0	813
A	Total		0	59	1,150	17,004
B	Add : Contingency @3%					506
C	Grand Total					17,510

Projected Cost per ha of 2nd year maintenance of Misc. plantation in N.B for the F.Y 2027-28	Skilled	Unskilled	Amount	Price Escalation	Total Labour cost
A. Mandays	0.0	59	15,854	-	15,854
B. Materials			1,150	-	1,150
C. Total			17,004	-	17,004
Add: Contingency @3%					506.11
Grand Total (In Rs.)					17,510

Estimate for 3rd year maintenance of Misc. native spp. Plantation in SB for 2022-23

Estimate for 3rd year maintenance of misc. native spp. Plantation in SB for 2022-23						
Sl No.	Particulars of work	SoR ref. item no.	Rate per Ha (2022-23)			Amount (Rs.)
			Labour (Mandays)		Material (in Rs.)	
			Skilled	Unskilled		
1	Vacancy infilling of pits with new seedling wherever there mortality due abiotic and biotic factors including cost of transportation	RA-40	0	2	75	617
2	1st cleaning	RA-38 (a)	0	14	0	3,794
3	2nd cleaning	RA-38 (b)	0	12	0	3,252
4	Creation of fireline to protect plantation from Fire, by making 3mt wide fireline inside plantation and along boundary, by removing weeds and vegetation and scrapping, cutting of all existing weed growth to a width of 3 m. Heaping, burning and re-burning in younger plantations	RA-44	0	4	0	1,084
5	Providing watch and ward in the form of man days to oversee the plantation and protect the plantation from damages arising out of biotic factors for the entire year	RA-45	0	12	0	3,252
6	Repairing of fencing		0	1	500	771
7	Labour for watering		0	2	0	542
A	Total		0	47	575	13,312
B	Add : Contingency @3%					398
C	Grand Total					13710

Projected Cost per ha of 3rd year maintenance of Misc. plantation in SB for the F.Y 2028-29	Skilled	Unskilled	Amount	Price Escalation	Total Labour cost
A. Mandays	0.0	47.0	12,737	-	12,737
B. Materials			575	-	575
C. Total			13,312	-	13,312
Add: Contingency @3%					398
Grand Total (In Rs.)					13,710

Cost abstract	Amount (in Rs.)
Creation of Misc. native spp. Plantation in S.B	1,07,275
1st year maintenance of Misc. native spp. Plantation in S.B	27,460
2nd year maintenance of Misc. native spp. Plantation in S.B	17,510
3rd year maintenance of Misc. native spp. Plantation in S.B	13,710
Grand Total	1,65,955

Component 1 : Ecosystem based Climate Change measures
1.2. Improving Quality of Forests
1.2.4. Plantation in CFC and degraded Forest areas
1.2.4.(a) Plantation in CFC areas
Model : Estimate for Creation of Sal Plantation NB & Hills (per Ha)- 2022-23

Type of Plantation		Sal NB & Hills				
No. of seedlings per ha		2500				
Spacing per ha		2m x 2m				
Pit Size		60cm. X 60cm. X 45cm.				
Labour Rate (Skilled- Rs.328/- & Unskilled- Rs.271/-)						
Sl No.	Particulars of work	SoR ref. item no.	Rate (2022-23)			Amount (Rs.)
			Labour (Mandays)		Material (in Rs.)	
			Skilled	Unskilled		
1	Survey and demarcation of the plantation site including preparation of Regeneration Map and GPS Survey map	RA-29	0.5	1	90.00	525
2	Clearance of undergrowth in thick forest areas : Clear felling, burning, heaping and re-burning in thick density areas of undergrowth and bushes	RA-27 (b)	0	35	0	9,485
3	Staking and alignment of plantation site, collection of stakes, pitching etc.	RA-30	0	4	206	1,290
4	Pit cutting : b) Sal Plantation-60x60x45cm	RA-31 (b)	0	35	0	9,485
5	Sorting and shifting of seedlings per each time	RA-11 (ii)	0	4	0	1,084
6	Weeding and cleaning of seedlings in Hycopots / root trainers per each time	RA-12(ii)	0	4	0	1,084
7	Watering of seedlings in Hycopots two times per day	RA-13(ii)	0	2.0	0	542
8	Creation of inspection path by removing weeds, scraping and by providing proper drain along the diagonal of the plantation site, of 3 mt wide	RA-42	0	5	0	1,355
9	Pit filling and application of Farm yard Manure	RA-33(ii)	0	22	4860	10,822
10	Hoeing of the sal lines (30 cm. x 30 cm.)		0	16	0	4,336
11	Transplanting of Hycopots seedlings into pits including man carriage from the unloading point	RA-36 (ii)	0	12	0	3,252
12	Transportation of Hycopots seedling from nursery to Plantation site including loading & unloading: d) lead distance>20km & upto 30km : 300CC Hycopots	RA-34 (d)		1	2540	2,811
13	Dibbling of Sal seeds (in 3 rows)		0	12	0	3,252
14	Application of insecticides and other chemicals whenever necessary	Ra-41	0	2	690	1,232
15	Vacancy infilling of pits with new seedling wherever there mortality due aboitic and biotic factors	RA-40	0	2.0	0	542
16	Hand weeding and cleaning of sal lines (3 times)		0	18		4,878
17	1st cleaning	RA-38 (a)	0	16	0	4,336
18	1st Mulching	RA-39 (a)	0	14	2300	6,094
19	2nd cleaning	RA-38 (b)	0	12	0	3,252
20	2nd Mulching	RA-39 (b)	0	12	1840	5,092
21	3rd cleaning	RA-38(C)	0	12	0	3,252
22	4th cleaning	RA-38 (d)	0	10	0	2,710
23	5th cleaning	RA-38(E)	0	8	0	2,168
24	Creation of fireline to protect plantation from Fire, by making 3mt wide fireline inside plantation and along boundary, by removing weeds and vegetation and scrapping, cutting of all existing weed growth to a width of 3 m. Heaping, burning and re-burning in younger plantations	RA-44	0	4	0	1,084
25	Providing watch and ward in the form of man days to oversee the plantation and protect the plantation from damages arining out of biotic factors for the entire year	RA-45	0	12	0	3,252
26	Collection of Hycopots after plantation & transporting back to central nursery after careful packing etc. : d) lead distance> 20km & upto 30km : 300CC Hycopots	RA-43(d)	0	1.0	0	271
27	Cost of signage (one for each 10 Ha or part thereof)	RA-49	0	0	300	300
28	Barbed wire / energized fencing, with 4 strand, using wooden post of 6-7 ft height and 6 inch girth at 2.5 mt apart.Fixing the fence posts after digging pits of 30 cm x 30 cm x 40 cm depth and consolidation, ensuring firm fixture, unrolling and fixing barbed wire with 'U' nils in four rows, ensuring proper fixture	RA-46 (b)	0	2	20000	20,542
A	Total		0.5	278	32,826	1,08,328
B	Add : Contingency @3%					3,252
C	Grand Total					1,11,580
Projected Cost per ha of Sal plantation in NB for the F.Y 2025-26		Skilled	Unskilled	Amount	Price Escalation	Total Labour cost
A. Mandays		0.5	278	75,502	-	75,502
B. Materials				32,826	-	32,826
C. Total				1,08,328	-	1,08,328
Add: Contingency @3%						3,251.84

Grand Total (In Rs.)					1,11,580
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Estimate for 1st year maintenance of Sal Plantation in NB for 2022-23

SI No.	Particulars of work	SoR ref. item no.	Rate per Ha (2022-23)			Amount (Rs.)
			Labour (Mandays)		Material (in Rs.)	
			Skilled	Unskilled		
1	Vacancy infilling of pits with new seedling wherever there mortality due abiotic and biotic factors including cost of transportation	RA-40	0	4	300	1,384
2	1st cleaning	RA-38 (a)	0	14	0	3,794
3	1st Mulching with fertilizer including cost of carriage	RA-39(a)	0	14	2300	6,094
4	2nd cleaning	RA-38 (b)	0	12	0	3,252
5	3rd cleaning	RA-38 (c)	0	10	0	2,710
	4th cleaning	RA-38 (d)	0	8	0	2,168
6	Creation of fireline to protect plantation from Fire, by making 3mt wide fireline inside plantation and along boundary, by removing weeds and vegetation and scrapping, cutting of all existing weed growth to a width of 3 m. Heaping, burning and re-burning in younger plantations	RA-44	0	4	0	1,084
7	Application of insecticides and other chemicals whenever necessary including carriage (nos.)	RA-41	0	2	690	1,232
8	Providing watch and ward in the form of man days to oversee the plantation and protect the plantation from damages arising out of biotic factors for the entire	RA-45	0	12	0	3,252
9	Repairing of fencing		0	2	1707	2,249
A	Total		0.0	82	4,997	27,219
B	Add : Contingency @3%					817
C	Grand Total					28,035

Projected Cost per ha of 1st year maintenance of Sal plantation in NB for the F.Y 2026-27	Skilled	Unskilled	Amount	Price Escalation	Total Labour cost
A. Mandays	0.0	82	22,222	-	22,222
B. Materials			4,997	-	4,997
C. .Total			27,219	-	27,219
Add: Contingency @3%					817
Grand Total (In Rs.)					28,035

Estimate for 2nd year maintenance of Sal Plantation in NB for 2022-23

Sl No.	Particulars of work	SoR ref. item no.	Rate per Ha (2022-23)			Amount (Rs.)
			Labour (Mandays)		Material (in Rs.)	
			Skilled	Unskilled		
1	Vacancy infilling of pits with new seedling wherever there mortality due abiotic and biotic factors including cost of transportation	RA-40	0	2.5	150	828
2	1st cleaning	RA-38 (a)	0	14	0	3,794
4	2nd cleaning	RA-38 (b)	0	12	0	3,252
5	3rd cleaning	RA-38 (c)	0	10	0	2,710
6	Creation of fireline to protect plantation from Fire, by making 3mt wide fireline inside plantation and along boundary, by removing weeds and vegetation and scrapping, cutting of all existing weed growth to a width of 3 m. Heaping, burning and re-burning in younger plantations	RA-44	0	4	0	1,084
7	oversee the plantation and protect the plantation from damages arising out of biotic factors for the entire year	RA-45	0	12	0	3,252
8	Repairing of fencing		0	1	1416	1,687
A	Total		0	56	1,566	16,606
B	Add : Contingency @3%					499
C	Grand Total					17,105

Projected Cost per ha of 2nd year maintenance of Sal Plantation in NB for the F.Y 2027-28	Skilled	Unskilled	Amount	Price Escalation	Total Labour cost
A. Mandays	0.0	56	15,041	-	15,041
B. Materials			1,566	-	1,566
C. .Total			16,606	-	16,606
Add: Contingency @3%					499
Grand Total (In Rs.)					17,105

Estimate for 3rd year maintenance of Sal Plantation in SB for 2022-23

Estimate for 3rd year maintenance of Sal Plantation in SB for 2022-23						
Sl No.	Particulars of work	SoR ref. item no.	Rate per Ha (2022-23)		Material (in Rs.)	Amount (Rs.)
			Labour (Mandays)			
			Skilled	Unskilled		
1	Vacancy infilling of pits with new seedling wherever there mortality due abiotic and biotic factors including cost of transportation	RA-40	0	2	87	629
2	1st cleaning		0	12	0	3,252
3	2nd cleaning		0	12	0	3,252
4	3rd cleaning		0	8	0	2,168
5	Creation of fireline to protect plantation from Fire, by making 3mt wide fireline inside plantation and along boundary, by removing weeds and vegetation and scrapping, cutting of all existing weed growth to a width of 3 m. Heaping, burning and re-burning in younger plantations	RA-44	0	4	0	1,084
6	Providing watch and ward in the form of man days to oversee the plantation and protect the plantation from damages arising out of biotic factors for the entire year	RA-45	0	12	0	3,252
7	Repairing of fencing		0	1	0	271
A	Total		0	51	87	13,908
B	Add : Contingency @3%					417
C	Grand Total					14,325

Projected Cost per ha of 3rd year maintenance of Sal plantation in NB for the F.Y 2028-29	Skilled	Unskilled	Amount	Price Escalation	Total Labour cost
A. Mandays	0.0	51.0	13,821	-	13,821
B. Materials			87	-	87
C. .Total			13,908	-	13,908
Add: Contingency @3%					417
Grand Total (In Rs.)					14,325

Cost abstract	Amount (in Rs.)
Creation of Sal Plantation in N.B	1,11,580
1st year maintenance of Sal Plantation in N.B	28,035
2nd year of maintenance of Sal Plantation in N.B	17,105
3rd year maintenance of Sal Plantation in N.B	14,325
Grand Total	1,71,045

Component 1 : Ecosystem based Climate Change measures

1.3. Eco DRR activities to strengthen forestry operation

1.3.2. Embankment protection in North Bengal (inside P.As)

1.3.2(d) Grass planting

Model : Estimate for Creation of Grass plantation in NB inside P.As (per Ha)-2022-23

Type of Plantation			Fodder grass plantation			
No. of seedling per ha			10000			
Spacing per ha			1m x 1m			
Labour Rate (Skilled- Rs.328/- & Unskilled- Rs.271/-)						
Sl No.	Particulars of Work	SoR Ref. item no.	Rate (2022-23)		Material (in Rs.)	Amount (Rs.)
			Labour (Mandays)			
			Skilled	Unskilled		
Nursery work (per ha)						
1	Cleaning of nursery site- details of cost of cleaning of fodder grass nursery	17(a)	0	1	0	271
2	Preparation of mother bed by way of hoeing the soil, breaking clods, mixing of manure (Dry farmyard manure, Neem cake) etc.	17(b)	0	2	4000	4,542
	Edging of mother bed with brick and cement		0	2	2500	3,042
3	Collection of fodder grass slips, seeds and preparing the slips/ seeds for planting by treating with fungicide	17(c)	0	4	1000	2,084
4	Details of cost for weeding cleaning of beds upto planting time	17(d)	0	10	0	2,710
5	Details of cost for watering of beds upto planting time	17(e)	0	12	0	3,252
6	Details of cost of application of fungicide/ insecticide/ micronutrients etc.	17(f)	0	2	1455	1,997
A	Total		-	33	8,955	17,898
B	Add : Contingency @3%					534.94
C	Grand Total					18,433

Projected Cost per ha of nursery work for Fodder grass Plantation in NB for the F.Y 2023-24	Skilled	Unskilled	Amount	Price Escalation	Total Labour cost
A. Mandays	0.0	33.0	8,943	-	8,943
B. Materials			8,955	-	8,955
C. .Total			17,898	-	17,898
Add: Contingency @3%					535
Grand Total (In Rs.)					18,433

Creacion works (per ha)

1	Survey and demarcation of the plantation site including preparation of Regeneration Map and GPS Survey map	RA-29	1	1	400.00	999
1	Details of cost for fodder grass plantation- cleaning the plantation site thoroughly.	52(a)	0	12	0	3,252
2	Alignment of planting line and staking of fodder grass plantation	52(b)	0	12	0	3,252
3	Removal of debris before planting and controlled burning over the fodder plantation site	52(c)	0	6	0	1,626
4	Carriage of fodder slips from nursery to planting sites	52(d)	0	10	4000	6,710
5	Cost of digging pits by dug and plant method / digging trenches for planting fodder slips at a spacing of 1m.x 1m.	52(e)	0	20	0	5,420
6	Transplanting of fodder slips into pits / trenches including man carriage from the unloading point		0	20	0	5,420
7	Cost of application fungicide/ insecticide/ micronutrients etc.	52(f)	0	2	1000	1,542
8	Vacancy filling with fodder slips including cost of local carriage	52(g)	0	5	0	1,355
9	1st cleaning	RA-52 (h)	0	16	0	4,336
10	2nd cleaning	RA-52 (i)	0	14	0	3,794
11	3rd cleaning	RA-52 (j)	0	10	0	2,710
12	4th cleaning	RA-52 (k)	0	10	0	2,710
13	Providing watch and ward in the form of man days to oversee the fodder plantation and protect fodder plantation from damages over the entire year	RA-52 (l)	0	10	0	2,710
14	Application of organic manure / farmyard manure along site of planting trenches		0	4	7500	8,584

15	Energized fencing, with 3 strand, using wooden post of 6-7 ft height and 6 inch girth at 2.5 mt apart. Fixing the fence posts after digging pits of 30 cm x 30 cm x 40 cm depth and consolidation, ensuring firm fixture, unrolling and fixing barbed wire with 'U' nails in four rows, ensuring proper fixture	RA-46 (b)	0	2	25000	25,542
A	Total		1	154	37,900	79,962
B	Add : Contingency @3%					2,399
C	Grand Total					82,361

Projected Cost per ha of 1st year maintenance of Fodder grass plantation in NB for the F.Y 2024-25	Skilled	Unskilled	Amount	Price Escalation	Total Labour cost
A. Mandays	1.0	154	42,062	-	42,062
B. Materials			37,900	-	37,900
C. .Total			79,962	-	79,962
Add: Contingency @3%					2,398.86
Grand Total (In Rs.)					82,361

Estimate for 1st year maintenance of Fodder grass Plantation in NB for 2022-23

Sl No.	Particulars of work	SoR ref. item no.	Rate per Ha (2022-23)			Amount (Rs.)
			Labour (Mandays)		Material (in Rs.)	
			Skilled	Unskilled		
1	Vacancy filling with fodder slips including cost of local carriage	52(g)	0	5	2500	3,855
2	1st cleaning	RA-52 (h)	0	16	0	4,336
3	2nd cleaning	RA-52 (i)	0	14	0	3,794
4	3rd cleaning	RA-52 (j)	0	10	0	2,710
5	Uprooting, removal and burning of unwanted invasive aline spp.		0	24	0	6,504
6	Providing watch and ward in the form of man days to oversee the fodder plantation and protect fodder plantation from damages over the entire year	RA-52 (l)	0	10	0	2,710
A	Total		0	79	2,500	23,909
B	Add : Contingency @3%					716
C	Grand Total					24625

Projected Cost per ha of 1st year maintenance of Fodder grass plantation in NB for the F.Y 2025-26	Skilled	Unskilled	Amount	Price Escalation	Total Labour cost
A. Mandays	0.0	79	21,409	-	21,409
B. Materials			2,500	-	2,500
C. .Total			23,909	-	23,909
Add: Contingency @3%					716
Grand Total (In Rs.)					24,625

Estimate for 2nd year maintenance of Fodder grass Plantation in NB for 2022-23

Sl No.	Particulars of work	SoR ref. item no.	Rate per Ha (2022-23)			Amount (Rs.)
			Labour (Mandays)		Material (in Rs.)	
			Skilled	Unskilled		
1	1st cleaning	RA-52 (h)	0	16	0	4,336
2	2nd cleaning	RA-52 (i)	0	14	0	3,794
3	Uprooting, removal and burning of unwanted invasive aline spp.		0	24	0	6,504
A	Total		0	54	0	14,634
B	Add : Contingency @3%					441
C	Grand Total					15075

Projected Cost per ha of 2nd year maintenance of Fodder grass Plantation in NB for the F.Y 2026-27	Skilled	Unskilled	Amount	Price Escalation	Total Labour cost
A. Mandays	0.0	54	14,634	-	14,634
B. Materials			0	-	-
C. .Total			14,634	-	14,634
Add: Contingency @3%					441.02
Grand Total (In Rs.)					15,075

Estimate for Cut Back operation during 3rd year of Fodder grass Plantation in NB for 2022-23

Sl No.	Particulars of work	SoR ref. item no.	Rate per Ha (2022-23)			Amount (Rs.)
			Labour (Mandays)		Material (in Rs.)	
			Skilled	Unskilled		
1	Survey and demarcation of the plantation site including preparation of operational Map and GPS Survey map	RA-29	1	1	500.00	1,099

2	Cutting of matured grass clumps having grown wooding stem rendering it unsuitable as fodder for wildlife, at a hight of 30-45 cm. from ground level and placing the cut portion in inter spaces between the planted clumps to allow it to decomposed naturally			30	0	8,130
A	Total		1.0	31	500	9,229
B	Add : Contingency @3%					277
C	Grand Total					9506

Projected Cost per ha of 2nd year maintenance of Fodder grass Plantation in NB for the F.Y 2027-28	Skilled	Unskilled	Amount	Price Escalation	Total Labour cost
A. Mandays	1.0	31	8,729	-	8,729
B. Materials			500	-	500
C. .Total			9,229	-	9,229
Add: Contingency @3%					276.87
Grand Total (In Rs.)					9,506

Cost abstract	Amount (in Rs.)
Advance work of Fodder grass Plantation in N.B	18,433
Creation of Fodder grass Plantation in N.B	82,361
1st year maintenance of Fodder grass Plantation in N.B	24,625
2nd year of maintenance of Fodder grass Plantation in N.B	15,075
Cut Back operation during 3rd year of Fodder grass Plantation	9,506
Grand Total	1,50,000

2.4.4 Species recovery programme for local RET

Model : Estimate for Creation of RET Plantation SB for 2022-23

Type of Plantation		RET SB				
No. of seedlings per ha		1600				
Spacing per ha		2.5m x 2.5m				
Pit Size		60cm. X 60cm. X 45cm.				
	Labour Rate (Skilled- Rs.328/- & Unskilled- Rs.271/-)					
Sl No.	Particulars of work	SoR ref. item no.	Rate per Ha (2022-23)			Amount (Rs.)
			Labour (Mandays)		Material (in Rs.)	
			Skilled	Unskilled		
1	Survey and demarcation of the plantation site including preparation of Regeneration Map and GPS Survey map	RA-29	0.5	1	90.00	525
2	Clearance of undergrowth in thick forest areas : Clear felling, burning, heaping and re-burning in thick density areas of undergrowth and bushes	RA-27 (a)	0	30	0	8,130
3	Staking and alignment of plantation site, collection of stakes, pitching etc.	RA-30	0	4	310	1,394
4	Pit cutting : b) RET Plantation-60x60x45cm	RA-31 (b)	0	50	0	13,550
5	Soil moisture Conservation- Digging of box trench over a length of 500 mt of size 5 m x 0.45m x 0.45m	RA-32	0	35	0	9,485
6	Sorting and shifting of seedlings per each time	RA-11 (ii)	0	5	0	1,355
7	Weeding and cleaning of seedlings in Hycopots / root trainers per each time	RA-12(ii)	0	5	0	1,355
8	Watering of seedlings in Hycopots two times per day	RA-13(ii)	0	3	0	813
9	Creation of inspection path by removing weeds, scraping and by providing proper drain along the diagonal of the plantation site, of 3 mt wide	RA-42	0	5	0	1,355
10	Pit filling and application of Farm yard Manure including cost of carriage	RA-33(ii)	0	22	5520	11,482
11	Transplanting of Hycopots seedlings into pits including man carriage from the unloading point	RA-36 (ii)	0	13	0	3,523
12	Application of insecticides and other chemicals whenever necessary including carriage (nos.)	RA-41	0	2	690	1,232
13	Vacancy infilling of pits with new seedling wherever there mortality due aboitic and biotic factors	RA-40	0	3	0	813
14	1st cleaning	RA-38 (a)	0	14	0	3,794
15	1st Mulching with fertilizer including cost of carriage	RA-39(a)	0	14	2300	6,094
16	2nd cleaning	RA-38 (b)	0	12	0	3,252
17	2nd Mulching with Chemical fertilizer including cost of carriage	RA-39(b)	0	12	1840	5,092
18	3rd cleaning and Multching	RA-38 (c)	0	10	0	2,710
19	4th cleaning and Multching	RA-38 (d)	0	10	0	2,710
21	Creation of fireline to protect plantation from Fire, by making 3mt wide fireline inside plantation and along boundary, by removing weeds and vegetation and scrapping, cutting of all existing weed growth to a width of 3 m. Heaping, burning and re-burning in younger plantations	RA-44	0	4	0	1,084
22	Providing watch and ward in the form of man days to oversee the plantation and protect the plantation from damages arining out of biotic factors for the entire year	RA-45	0	12	0	3,252
23	Transportation of Hycopots seedling from nursery to Plantation site including loading & unloading: d) lead distance>20km & upto 30km : 300CC Hycopots	RA-34(d)	0	2	3186	3,728
24	Collection of Hycopots after plantation & transporting back to central nursery after careful packing etc. : d) lead distance> 20km & upto 30km : 300CC Hycopots	RA-43(d)	0	2	0	542
25	Digging dug well/shallow tube well including labour for watering (one no per 10 ha. RET plantation sites)		1	4	5000	6,412
26	Cost of signage (one for each 10 Ha or part thereof)	RA-49	0	0	300	300
27	Barbed wire fencing, with 4 strand, using wooden post of 6-7 ft height and 6 inch girth at 2.5 mt apart.Fixing the fence posts after digging pits of 30 cm x 30 cm x 40 cm depth and consolidation, ensuring firm fixture, unrolling and fixing barbed wire with 'U' nils in four rows, ensuring proper fixture	RA-46 (b)	0	2	20000	20,542
A	Total		1.5	276	39,236	1,14,524
B	Add : Contingency @3%					3,436
C	Grand Total					1,17,960

Projected Cost per ha of RET plantation in SB for the F.Y 2025-26		Skilled	Unskilled	Amount	Price Escalation	Total Labour cost
A. Mandays		1.5	276	75,288	-	75,288
B. Materials				39,236	-	39,236
C. .Total				1,14,524	-	1,14,524
Add: Contingency @3%						3,435.72
Grand Total (In Rs.)						1,17,960

Estimate for 1st year maintenance of RET Plantation in SB for 2022-23						
Sl No.	Particulars of work	SoR ref. item no.	Rate per Ha (2022-23)			Amount (Rs.)
			Labour (Mandays)		Material (in Rs.)	
			Skilled	Unskilled		
1	Vacancy infilling of pits with new seedling wherever there mortality due abiotic and biotic factors including cost of transportation		0	4	300	1,384
2	1st cleaning	RA-38 (a)	0	14	0	3,794
3	1st Mulching with fertilizer including cost of carriage	RA-39(a)	0	14	2300	6,094
4	2nd cleaning	RA-38 (b)	0	12	0	3,252
5	3rd cleaning	RA-38 (c)	0	10	0	2,710
6	Creation of fireline to protect plantation from Fire, by making 3mt wide fireline inside plantation and along boundary, by removing weeds and vegetation and scrapping, cutting of all existing weed growth to a width of 3 m. Heaping, burning and re-burning in younger plantations	RA-44	0	4	0	1,084
7	Application of insecticides and other chemicals whenever necessary including carriage (nos.)	RA-41	0	2	690	1,232
8	Providing watch and ward in the form of man days to oversee the plantation and protect the plantation from damages arising out of biotic factors for the entire year	RA-45	0	12	0	3,252
9	Repairing of fencing		0	2	2500	3,042
10	Labour for watering		0	3	0	813
A	Total		0.0	77	5,790	26,657
B	Add : Contingency @3%					798
C	Grand Total					27,455

Projected Cost per ha of 1st year maintenance of RET plantation in SB for the F.Y 2026-27	Skilled	Unskilled	Amount	Price Escalation	Total Labour cost
A. Mandays	0.0	77.0	20,867	-	20,867
B. Materials			5,790	-	5,790
C. .Total			26,657	-	26,657
Add: Contingency @3%					798
Grand Total (In Rs.)					27,455

Estimate for 2nd year maintenance of RET Plantation in SB for 2022-23						
Sl No.	Particulars of work	SoR ref. item no.	Rate per Ha (2022-23)		Amount (Rs.)	
			Labour (Mandays)			Material (in Rs.)
			Skilled	Unskilled		
1	Vacancy infilling of pits with new seedling wherever there mortality due abiotic and biotic factors including cost of transportation	RA-40	0	2.5	150	828
2	1st cleaning	RA-38 (a)	0	14	0	3,794
3	2nd cleaning	RA-38 (b)	0	12	0	3,252
4	3rd cleaning	RA-38 (c)	0	10	0	2,710
5	Creation of fireline to protect plantation from Fire, by making 3mt wide fireline inside plantation and along boundary, by removing weeds and vegetation and scrapping, cutting of all existing weed growth to a width of 3 m. Heaping, burning and re-burning in younger plantations	RA-44	0	4	0	1,084
6	Providing watch and ward in the form of man days to oversee the plantation and protect the plantation from damages arising out of biotic factors for the entire year	RA-45	0	12	0	3,252
7	Repairing of fencing		0	1	1000	1,271
8	Labour for watering		0	3	0	813
A	Total		0	59	1,150	17,004
B	Add : Contingency @3%					511
C	Grand Total					17,515

Projected Cost per ha of 2nd year maintenance of RET plantation in SB for the F.Y 2027-28	Skilled	Unskilled	Amount	Price Escalation	Total Labour cost
A. Mandays	0.0	59	15,854	-	15,854
B. Materials			1,150	-	1,150
C. .Total			17,004	-	17,004
Add: Contingency @3%					511
Grand Total (In Rs.)					17,515

Estimate for 3rd year maintenance of RET Plantation in SB for 2022-23

Sl No.	Particulars of work	SoR ref. item no.	Rate per Ha (2022-23)			Amount (Rs.)
			Labour (Mandays)		Material (in Rs.)	
			Skilled	Unskilled		
1	Vacancy infilling of pits with new seedling wherever there mortality due abiotic and biotic factors including cost of transportation	RA-40	0	2.0	75	617
2	1st cleaning	RA-38 (a)	0	14	0	3,794
3	2nd cleaning	RA-38 (b)	0	12	0	3,252
4	Creation of fireline to protect plantation from Fire, by making 3mt wide fireline inside plantation and along boundary, by removing weeds and vegetation and scrapping, cutting of all existing weed growth to a width of 3 m. Heaping, burning and re-burning in younger plantations	RA-44	0	4	0	1,084
5	Providing watch and ward in the form of man days to oversee the plantation and protect the plantation from damages arising out of biotic factors for the entire year	RA-45	0	12	0	3,252
6	Repairing of fencing		0	1	500	771
7	Labour for watering		0	2	0	542
A	Total		0	47	575	13,312
B	Add : Contingency @3%					398
C	Grand Total					13710

Projected Cost per ha of 3rd year maintenance of RET plantation in SB for the F.Y 2028-29	Skilled	Unskilled	Amount	Price Escalation	Total Labour cost
A. Mandays	0.0	47.0	12,737	-	12,737
B. Materials			575	-	575
C. Total			13,312	-	13,312
Add: Contingency @3%					399.36
Grand Total (In Rs.)					13,710

Cost abstract	Amount (in Rs.)
Creation of RET Plantation in S.B	1,17,960
1st year maintenance of RET Plantation in S.B	27,455
2nd year of maintenance of RET Plantation in S.B	17,515
3rd year maintenance of RET Plantation in S.B	13,710
Grand Total	1,76,640

2.4.4 Species recovery programme for local RET

Model : Estimate for Creation of RET Plantation NB for 2022-23

Type of Plantation		RET NB				
No. of seedling per ha		2500				
Spacing per ha		2m x 2m				
Pit Size		60cm. x 60cm. x 45cm.				
Labour Rate (Skilled- Rs.328/- & Unskilled- Rs.271/-)						
Sl No.	Particulars of Work	SoR Ref. item no.	Rate (2022-23)		Material (in Rs.)	Amount (Rs.)
			Labour (Mandays)			
			Skilled	Unskilled		
1	Survey and demarcation of the plantation site including preparation of Regeneration Map and GPS Survey map	RA-29	0.5	1	90	525
2	Clearance of thick density areas: Clear felling, burning, heaping and re-burning in thick undergrowth and bushes	RA-27(a)	0	35	0	9,485
3	Staking and alignment of plantation site, collection of stakes, pitching etc.	RA-30	0	6	390	2,016
4	Pit cutting : a) RET-60x60x45 cm	RA-31 (a)	0	40	0	10,840
5	Sorting and shifting of seedlings per each time : i) RET (NB)	RA-11 (i)	0	5	0	1,355
6	Weeding and cleaning of seedlings in Hycopots / root trainers per each time : i) RET (NB)	RA-12 (i)	0	5	0	1,355
7	Watering and cleaning of seedlings in Hycopots two times per day : i) RET (NB)	RA-13 (i)	0	2	0	542
8	Creation of inspection path by removing weeds, scarping and by providing proper drain along the diagonal of the plantation site, of 3 mt wide	RA-42	0	5	0	1,355
9	Pit filling and appliction of Farm yard Manure : i) RET	RA-33(i)	0	17	2940	7,547
10	Transplanting of Hycopots seedling into pits including man carriages from the unloading point : iii) North Bengal RET	RA-36(iii)	0	30	0	8,130
11	Application of insecticides and other chemicals whenever necessary	RA-41	0	2	690	1,232
12	Vacancy infilling of pits with new seedling wherever there mortality due abiotic and biotic factors	RA-40	0	3		813
13	1st cleaning	RA-38(a)	0	16		4,336
14	1st Mulching with fertilizer including cost of carraige	RA-39(a)	0	14	2300	6,094
15	2nd cleaning	RA-38(b)	0	14		3,794
16	2nd Mulching with fertilizer including cost of carraige	RA-39(b)	0	12	1840	5,092
17	3rd cleaning	RA-38(c)	0	12		3,252
18	4th cleaning	RA-38(d)	0	10		2,710
19	5th cleaning	RA-38 (e)	0	10		2,710
20	Creation of fireline to protect plantation from Fire, by making 3mt wide fireline inside plantation and along boundary, by removing weeds and vegetation and scarping, cutting of all existing weed growth to a width of 3 m. Heaping, burning and re-burning in younger plantations	RA-44	0	4	0	1,084
21	Providing watch and ward in the form of man days to oversee the plantation and protect the plantation from damages arising out of biotic factors for the entire year	RA-45	0	12	0	3,252
22	Transportation of Hycopots seedling from nursery to Plantation site including loading & unloading: d) lead distance>20km & upto 30km : 300CC Hycopots	RA-34(d)	0	2	4000	4,542
23	Collection of Hycopots after plantation & transporting back to central nursery after careful packing etc. : d) lead distance > 20km & upto 30km : 300CC Hycopots	RA-43(d)	0	2	0	542
24	Fencing : Vegetative fencing using bamboo posts at least of 6 ft height with 1 ft embedded underground and not more than 5 ft apart with splitted bamboo of atleast 5 rows and using ipomea/brushwood/thorn as locally available as filler	RA-46(a)	0	2	7500	8,042
25	SIGNAGE : Installation of sign board with Forest directorate colour code and emblem of size 3 'x4ft made out of brick work and plastered and well finished and painted with good quality paint	RA-49			300	300
A	Total		0.5	261.0	20,050	90,945
B	Add : Contingency @3%					2,725.35
C	Grand Total					93,670

Projected Cost per ha of RET. Plantation in NB for the F.Y	Skilled	Unskilled	Amount	Price Escalation	Total Labour cost
A. Mandays	0.5	261.0	70,895	-	70,895
B. Materials			20,050	-	20,050
C. Total			90,945	-	90,945
Add: Contingency @3%					2,725
Grand Total (In Rs.)					93,670

Estimate for 1st year maintenance of RET. Plantation in NB for 2022-23

Estimate for 1st year maintenance of Ref. Plantation in NB for 2022-23						
Sl No.	Particulars of work	SoR ref. item no.	Rate per Ha (2022-23)		Material (in Rs.)	Amount (Rs.)
			Labour (Mandays)			
			Skilled	Unskilled		
1	Vacancy infilling of pits with new seedling wherever there mortality due aboitic and biotic factors including cost of transportation	RA-40	0	6	450	2,076
2	1st cleaning	RA-38 (a)	0	16	0	4,336
3	1st Mulching with fertilizer including cost of carriage	RA-39(a)	0	14	2300	6,094
4	2nd cleaning	RA-38 (b)	0	14	0	3,794
5	3rd cleaning	RA-38 (c)	0	10	0	2,710
6	4th cleaning	RA-38 (d)	0	8	0	2,168
7	Creation of fireline to protect plantation from Fire, by making 3mt wide fireline inside plantation and along boundary, by removing weeds and vegetation and scrapping, cutting of all existing weed growth to a width of 3 m. Heaping, burning and re-burning in younger plantations	RA-44	0	5	0	1,355
8	Application of insecticides and other chemicals whenever necessary including carriage (nos.)	RA-41	0	5	690	2,045
9	Providing watch and ward in the form of man days to oversee the plantation and protect the plantation from damages arising out of biotic factors for the entire year	RA-45	0	12	0	3,252
10	Repairing of fencing		0	1	127	398
A	Total		0.0	91.0	3,567	28,228
B	Add : Contingency @3%					848
C	Grand Total					29,075

Projected Cost per ha of 1st year maintenance of RET	Skilled	Unskilled	Amount	Price Escalation	Total Labour cost
A. Mandays	0.0	91	24,661	-	24,661
B. Materials			3,567	-	3,567
C. Total			28,228	-	28,228
Add: Contingency @3%					847.83
Grand Total (In Rs.)					29,075

Estimate for 2nd year maintenance of RET. Plantation in NB for 2022-23

Estimate for 2nd year maintenance of KET. Plantation in NB for 2022-23						
Sl No.	Particulars of work	SoR ref. item no.	Rate per Ha (2022-23)		Material (in Rs.)	Amount (Rs.)
			Labour (Mandays)			
			Skilled	Unskilled		
1	Vacancy infilling of pits with new seedling wherever there mortality due aboitic and biotic factors including cost of transportation	RA-40	0	4	300	1,384
2	1st cleaning	RA-38 (a)	0	16	0	4,336
3	2nd cleaning	RA-38 (b)	0	14	0	3,794
4	3rd cleaning	RA-38 (c)	0	12	0	3,252
5	Creation of fireline to protect plantation from Fire, by making 3mt wide fireline inside plantation and along boundary, by removing weeds and vegetation and scrapping, cutting of all existing weed growth to a width of 3 m. Heaping, burning and re-burning in younger plantations	RA-44	0	4	0	1,084
6	Providing watch and ward in the form of man days to oversee the plantation and protect the plantation from damages arining out of biotic factors for the entire year	RA-45	0	12	0	3,252
7	Repairing of fencing with bamboo		0	1	223	494
A	Total		0	63	523	17,596
B	Add : Contingency @3%					529
C	Grand Total					18125

Projected Cost per ha of 2nd year maintenance of RET.	Skilled	Unskilled	Amount	Price Escalation	Total Labour cost
A. Mandays	0.0	63	17,073	-	17,073
B. Materials			523	-	523
C. Total			17,596	-	17,596
Add: Contingency @3%					528.89
Grand Total (In Rs.)					18,125

Estimate for 3rd year maintenance of RET. Plantation in NB for 2022-23

Estimate for 3rd year maintenance of REI Plantation in NB for 2022-23						
Sl No.	Particulars of work	SoR ref. item no.	Rate per Ha (2022-23)		Material (in Rs.)	Amount (Rs.)
			Labour (Mandays)			
			Skilled	Unskilled		
1	Vacancy infilling of pits with new seedling wherever there mortality due abiotic and biotic factors including cost of transportation	RA-40	0	2	87	629
2	1st cleaning	RA-38 (a)	0	14	0	3,794
3	2nd cleaning	RA-38 (b)	0	12	0	3,252
4	3rd cleaning	RA-38 (c)	0	8	0	2,168
5	Creation of fireline to protect plantation from Fire, by making 3mt wide fireline inside plantation and along boundary, by removing weeds and vegetation and scrapping, cutting of all existing weed growth to a width of 3 m. Heaping, burning and re-burning in younger plantations	RA-44	0	4	0	1,084
6	Providing watch and ward in the form of man days to oversee the plantation and protect the plantation from damages arising out of biotic factors for the entire year	RA-45	0	10	0	2,710
7	Repairing of fencing		0	1	0	271
A	Total		0	51	87	13,908
B	Add : Contingency @3%					417
C	Grand Total					14325

Projected Cost per ha of 3rd year maintenance of RET.	Skilled	Unskilled	Amount	Price Escalation	Total Labour cost
A. Mandays	0.0	51	13,821	-	13,821
B. Materials			87	-	87
C. Total			13,908	-	13,908
Add: Contingency @3%					417
Grand Total (In Rs.)					14,325

Cost abstract	Amount (in Rs.)
Creation of RET. Plantation in N.B	93,670
1st year maintenance of RET. Plantation in N.B	29,075
2nd year of maintenance of RET. Plantation in N.B	18,125
3rd year maintenance of RET. Plantation in N.B	14,325
Grand Total	1,55,195

3 Livelihood Improvement

3.1.1.1 Preparatory Activities for JFMCs

74 **3.1.1.2 Reorganisation/ Reconstitution of JFMCs and Confirmation of Demarcation of JFMC Boundaries**

517

9 3.3.1.2

600

4.50%

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	2022	2023	2024	2025	2026	2027	2028	2029	2030
	0.0000	0.0450	0.0920	0.1412	0.1925	0.2462	0.3023	0.3609	0.4221

Physical Contingency:

5.00%[illegible]

3.1.1.3 Familialisation of project to JFMC

3.2.1.3

3.3.1.3

[illegible]

3.1.1.4 Micro-planning

3.2.1.4 a) Microplan Preparation

3.3.1.4

[illegible]

3.1.1.4 Micro-planning

3.2.1.4 b) Revisiting of Microplan

3.3.1.4

Items of Work	UNIT COST (Per JWC)					PHYSICAL TARGETS (JFICA)										FINANCIAL OUTLAYS (Rs)					Total (Rs)	
	Base year Cost 1000 1000	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total	2022	2023	2024	2025	2027	2028	2029	2030			
Revolving & Miscellaneous																						
Total	1000							1,246	1,392	1,361	1,422							1,58,267	1,95,300	2,04,129	2,13,315	7,99,711
																					600,000	
																					1,97,711	
																					39,998	
																					10,666	
																					2,23,981	
																					8,39,696	

3.1.1.5 EPA / CDA

3.2.1.5

3.3.1.5

[illegible]

3.1.1.2 Support for Income Generation

74 3.1.2.1 Support to SHGs - JFMC

517 3.2.2.1 Support to SHGs - JFMC

9 3.3.2.1 Support to SHGs - JFMC

600

Basis of Work	UNIT COST (JPMCs)	PHYSICAL TARGETS (JPMCs)	FINANCIAL OUTLAYS (Rs)	Total (Rs)

[illegible]

3.1.2.2	Technical Agency
3.2.2.2	
3.3.2.2	

Items of Work	UNIT COST					PHYSICAL TARGETS					FINANCIAL OUTLAYS (Ru)					Total (Rs)				
	Bure year Cost	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total	2022	2023	2024	2025	2026	2027	2028	2029	2030
Technical Agency	240,00,000			2,73,87,887	2,98,23,446	2,96,58,367	3,12,54,263	3,41,30,415	-	-	1.00	-	-	-	54,75,987	57,24,089	59,81,679	62,56,940	65,32,137	-
Total	240,00,000										Base Cost	-	-	-	48,00,000	48,00,000	48,00,000	48,00,000	48,00,000	-
											Price Escalation	-	-	-	40,00,000	42,00,000	44,00,000	46,00,000	48,00,000	-
											Physical Contingency	-	-	-	6,77,597	9,24,089	11,81,673	14,50,848	17,32,137	-
											Total Cost	-	-	-	2,73,880	2,86,204	2,99,084	3,12,542	3,26,007	-
												-	-	-	57,41,477	60,10,284	62,80,757	65,63,391	68,46,744	-

3.1.1.3 Support for Community Wellbeing

22 for HNB
57 for DLA

Support local traditional healers	3.1.3.1
	3.2.3.2

[illegible]

3.1.4 Support for Community Mobilizing

3.1.4.1 Extension Worker (120 no)

[illegible]

4 Institutional Strengthening
4.1 Strengthening Project Management
4.1.1 Capacity Development on MIV/DX
4.1.1.1 Digitization of FIM boundaries

Price Escalation	4.6%	Physical Contingency									
		2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
		0.00%	0.04%	0.06%	0.14%	0.10%	0.46%	0.23%	0.26%	0.42%	

Items of Work	UNIT COST (JPY/K)						PHYSICAL TARGETS (JPY/K)						FINANCIAL OUTLAYS (R)						Total (R)																					
	Baseline year Cost	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total	2022	2023	2024	2025	2026	2027	2028		2029	2030																			
Digitization of FIM boundaries	11,750		12,279	12,251	13,409	14,012						600.00	-	18,419.33	19,246.94	20,113.35	21,014.84	-	-	-	79,794.56																			
Total	11,750																																							
Physical Contingency																																								
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4.1.1.1.1 a) Boundary Pillars establishment (5 pillars / JPMC)

Items of Work	UNIT COST (JPY/K)										PHYSICAL TARGETS (JPY/K)										FINANCIAL OUTLAYS (R)										Total (R)
	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total	
Baseline Cost																															
Boundary Pillars establishment (5 pillars / JPMC)	16,100			19,796	20,655	21,586							150.00	150.00	150.00					600.00	-	-	29,849.86	30,984.96	32,374.88	33,833.54	-	-	-	1,26,944.46	
Total	16,100																														
		Physical Contingency																													
		Baseline Cost																													
		Price Escalation																													

4.1.2 Mobility
a) Cars

Items of Work	UNIT COST (Rs)										PHYSICAL TARGETS (Nos)										FINANCIAL OUTLAYS (Rs)										Total (Rs)
	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2022	2023	2024	2025	2026	2027	2028	2029	2030		
Baseline Cost																															
CARs	15,00,000						17,88,778																								
	15,00,000																														
Total																															
Physical Contingency																															
Total Cost																															

b) Motorcycles

Name of Work	UNIT COST (Rs)										PHYSICAL TARGETS (Nos)										FINANCIAL OUTLAYS (Rs)										Total (Rs)
	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	
Baseline Cost																															
Motorcycles	1,00,000																														90,92,733
Total	1,00,000																														90,92,733
Physical Contingency																															
																															90,92,733
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c) Truck (UP7407)

Items of Work	UNIT COST (Rs)										PHYSICAL TARGETS (Nos)										FINANCIAL OUTLAYS (Rs)										Total (Rs)
	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total	2022	2023	2024	2025	2026	2027	2028	2029	2030	2022	2023	2024	2025	2026	2027	2028	2029	2030			
Baseline Cost																															
Truck (LPT 407)	15,00,000																														
Total	15,00,000																														
Physical Contingency																															
Baseline Cost																															
Price Escalation																															
Physical Contingency																															
Total Cost																															
Total Cost																															
Total Cost																															

d) Speed Boats for Sunderban

Items of Work	UNIT COST (JPY/K)										PHYSICAL TARGETS (No)										FINANCIAL OUTLAYS (R)	
---------------	-------------------	--	--	--	--	--	--	--	--	--	-----------------------	--	--	--	--	--	--	--	--	--	-----------------------	--

4.2.2 Trainings of Forest Officers (DCF & above ranks)

a) Specialized Trainings - 20 batches (size 20; one week)

[illegible]

b) Exposure Trips - 10 batches (size 12; one week)

[illegible]

c) International training - 3 batches (size 12: 2 weeks)

[illegible]

4.2.3 Trainings of Forest Officers/ Frontline Staff (Ranger & below ranks)

a) Specialized Trainings - 30 batches (size 20; 7-15 days)

[illegible]

b) Exposure Trips - 10 batches (size 20; 10 days)

[illegible]

c) International training (Regional) - 5 batches (size 15; 2 weeks)

[illegible]

[illegible]

4.2.5 Trainings for JFMC/ SHG members

a) JFMC members - 120 batches (size 20; 5 days)

[illegible]

b) SHG members - 90 batches (size 20: 5 days)

[illegible]

4.3 Monitoring & Evaluation

4.3.1 Progress Monitoring

4.3.1.1 Biodiversity Monitoring System

[illegible]

4.3.1.2 Concurrent Monitoring & Periodic Review (PMU and Circle level)

[illegible]

4.3.1.3 Community Self-monitoring (by JFMCs)

[illegible]

4.3.1.4 Computerized MIS & GIS/ applications/ UAV for monitoring

a) GIS Enterprise (latest) - multi user software

[illegible]

4.5.3 Small films/ videos/ Digital documentation

Items of Work	UNIT COST (Per Year)						PHYSICAL TARGETS (Per Year)						FINANCIAL OUTLAYS (Rs)						Total (Rs)	
	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total	2022	2023	2024	2025	2026	2027	2028	2029		2030
Small films, audio/visual documentation	72,00,000		78,62,860	82,76,586	86,86,134	89,72,510	93,76,273	97,98,265	1,02,26,744	-	-	-	3,95,126	12,32,459	17,17,227	17,94,582	18,76,256	9,79,021	10,23,912	96,16,586

4.5.4 Knowledge Material / Course Material

Items of Work	UNIT COST (Per Year)					PHYSICAL TARGETS (Per Year)					FINANCIAL OUTLAYS (Rs)					Total (Rs)			
	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total	2022	2023	2024	2025	2026		2027	2028	2029
Base year Cost																			
Knowledge Material / Course Material	40,00,000	41,80,000	43,68,100	45,64,665	47,70,074	49,84,726				1.00	-	-	-	8,50,000	8,75,820	9,12,853	9,59,615	9,96,346	-
Total	40,00,000																		

4.5.5 ProC (Proof of Concepts)

Items of Work	UNIT COST (Rs)					PHYSICAL TARGETS (M)					FINANCIAL OUTLAYS (Rs)										Total (Rs)
	2022	2023	2024	2025	2026	2027	2028	2029	2030	2022	2023	2024	2025	2026	2027	2028	2029	2030			
Base year Cost	2,58,00,000	2,68,81,000	2,81,74,545	2,94,42,886																	
Proof of Concept																					
Total	2,58,00,000																				
														</							

Yearly Fund Distribution of Consulting Services

Physical Contingency: 5.00%2030

Attachment 8

**Cost Breakdown
for
Project Management Consulting**

Page No - (1)

Cost Breakdown for the Consulting Services

USD 1 = JPY 147
USD 1 = INR 82.3
INR 1 = JPY 1.79

	Unit	Q'ty	Foreign Portion		Local Portion		Amount
			JPY		INR 1 =		JPY
			Rate	Unit Price ('000)	Rate	Unit Price ('000)	('000)
I Remuneration							
1 International Expert (IE)	M/M	18	3,606,000	64,908	0	0	64,908
-International Expert 1 (IE1)	M/M	18	3,606,000	64,908	0	0	64,908
-International Expert 2 (IE2)	M/M	0	0	0	0	0	0
2 Local Expert (LE)	M/M	107	0	0	352,291	37,695	67,474
-Local Expert 1 (LE1)	M/M	107	0	0	352,291	37,695	67,474
-Local Expert 2 (LE2)	M/M	0	0	0	0	0	0
-Local Expert 3 (LE3)	M/M	0	0	0	0	0	0
-Local Expert 4 (LE4)	M/M	0	0	0	0	0	0
-Local Expert 5 (LE5)	M/M	0	0	0	0	0	0
-Local Expert 6 (LE6)	M/M	0	0	0	0	0	0
-Local Expert 7 (LE7)	M/M	0	0	0	0	0	0
-Local Expert 8 (LE8)	M/M	0	0	0	0	0	0
3 Supporting Staff (SS)	M/M	368	0	0	40,000	14,720	26,349
Subtotal of I				64,908		52,415	158,731
II Direct Cost							
1 International Airfare	RT	18	500,000	9,000		0	9,000
2 Domestic Airfare	RT	55		0	25,000	1,375	2,461
3 Domestic Travel/ Field Trips	RT	30		0	45,000	1,350	2,417
4 Accommodation Allowance (IE)	M/M	18	300,000	5,400		0	5,400
5 Per Diem (IE)	M/M	18	300,000	5,400		0	5,400
6 Accommodation Allowance (LE)	M/M	107		0	150,000	16,050	28,730
7 Per Diem (LE)	M/M	107		0	30,000	3,210	5,746
8 Accommodation Allowance (SS)	M/M	368		0	75,000	27,600	49,404
9 Vehicle Rental	Num-Month	41.6667		0	195,000	8,125	14,544
10 Office Rental	Month	42		0	150,000	6,300	11,277
11 International Communications	M/M	18		0		0	0
12 Domestic Communications	M/M	125		0	15,000	1,875	3,356
13 Office Supply	Month	42		0	20,000	840	1,504
14 Office Furniture and Equipment	Month	42		0	10,000	420	752
15 Report Preparation	Month	42		0	5,000	210	376
16 Per Diem (SS)	M/M	190		0	7,500	1,425	2,551
Subtotal of II				19,800		68,780	142,916
Total				84,708		121,195	301,647

Attachment 9

Manning Schedule for the Consulting Services

Page No - (1)

Attachment 9

Manning Schedule for the Consulting Services

[illegible]

Number of Trips (RT)
0
0
0
0
0
0
0
0
6
12
0
0
18

Attachment 11

Principles of Procurement

Page No - (1-4)

Principles of Procurement under the Project

Guidelines

1. Procurement of goods and services for the Project shall be implemented in accordance with “Guidelines for Procurement under Japanese ODA Loans” dated April 2012 and selection of consultants shall be in accordance with “Guidelines for Employment of Consultants under Japanese ODA Loans” dated April 2012. The Executive Agency (EA) may make the use of the domestic procurement rules, but JICA’s guidelines should overrule whenever JICA’s guidelines and such procurement rules are in conflict.

Consulting Services

2. Whereas requirements of JICA’s review and concurrence would be stipulated in the Loan Agreement, JICA’s review and concurrence is usually required for (a) Short-list, Terms of Reference, and Letter of Invitation (Request for Proposal), (b) evaluation results of proposals, and (c) contract (ex-post concurrence). EA agreed to start preparation of TOR, Letter of Invitation (Request for Proposal), Short-list right after Government of Japan make prior-notification to the Government of India, without waiting for Exchange of Notes between both Governments and signing of Loan Agreement with JICA. Letter of Invitation may be prepared, with reference to JICA’s sample documents. The key features of the JICA’s consultant guidelines are as follows:
 - (a) Selection procedures of consultants should be Quality- and Cost-Based Selection (QCBS). 20% of the financial proposal, 80% of the technical proposal will be evaluated for selection of international consultant.
 - (b) Information on JICA’s files on consultants is available, at the request of the Borrower.
 - (c) Short list should normally consist of not less than three and not more than five consultants.
 - (d) Letter of Invitation should stipulate the details of the selection procedure including technical evaluation categories and the weight for evaluation.
3. However, for cases where QCBS is not the most appropriate, other methods of selection, such as Quality-Based Selection (QBS) or Single-Source Selection (SSS) are applied. QBS is a method based on evaluating only the quality of the technical proposals and the subsequent negotiation of the financial terms and the contract with the highest ranked consultant. QBS should be applied only for the following types of assignments.
 - (a) Complex or highly specialized assignments for which it is difficult to define precise TOR and the required input from the consultants;
 - (b) Assignments where the downstream impact is so large that the quality of the service is of overriding importance for the outcome of the project (for example, engineering

- design of major infrastructure);
 - (c) Assignments that can be carried out in substantially different ways such that financial proposals maybe difficult to compare; and
 - (d) Assignments including supervision of large and complex construction works for which it is particularly important to take safety measures.
4. SSS shall be used only in exceptional cases. SSS may be appropriate only if it presents a clear advantage over competition:
- (a) For tasks that represent a natural continuation of previous work carried out by the firm;
 - (b) In emergency cases, such as in response to disasters;
 - (c) For very small assignments; or
 - (d) When only one firm is qualified or has experience of exceptional worth for the assignment
5. Letter of Invitation (Request for Proposal) usually includes the following:
- (a) Letter;
 - (b) Project Information including (i) introduction and information about the project background, (ii) project description, (iii) information on the area, and (iv) organization to implement the Project;
 - (c) Other Relevant Information including (i) technical information, (ii) relevant laws and regulations, and (iii) service provided by the Employer;
 - (d) Terms of Reference including (i) purpose, (ii) scope of consulting services, (iii) reporting, and (iv) provisions required by JICA;
 - (e) Information to Consultants in Preparation of Proposal;
 - (f) Evaluation Criteria; and
 - (g) Contract Conditions.

Procurement Package and Methods

6. The tender and contract packaging was based on nature of goods and services, and consideration of optimal package size—as large as possible—to attract the maximum participation from capable companies. Packages of procurement of goods and services under Public Awareness Components, which involve many small contracts and are implemented by direct contracting, shopping, LCB or other methods, are not able to be finalized at this stage, but will be determined by EA.
7. According to JICA's Procurement Guidelines, International Competitive Bidding (ICB) is applied in general. When procurement of good and services is made through small contracts and evidently does not attract foreign companies, National (Local) Competitive Bidding (LCB) may be applied and national and state procurement rules can be applied

while abiding by four principles of “Guidelines for Procurement under JICA ODA Loans” dated April 2012: economy, efficiency, non-discrimination among eligible bidders, and transparency. EA agreed to request JICA for prior concurrence in cases of a change in procurement methods.

Standard Bidding Documents

8. EA agreed to use JICA’s Standard Bidding Documents with necessary modification suitable to needs for each package.

Principles of Procurement of Goods and Services

9. The key principles for procurement of goods and services in the Project are as follows:
 - (a) Preferential treatment of Indian companies is not acceptable under international competitive bidding.
 - (b) JICA’s Procurement Guidelines do not allow price negotiation in principle. EA may conduct price negotiation with the lowest evaluated bidders only in exceptional cases subject to consultation with JICA, where the lowest evaluated bidder’s price is substantially higher than credible estimates, as stipulated in Clause 5.10 of JICA’s Procurement Guidelines. JICA is afraid that price negotiation may deteriorate quality of goods and works, and ultimately lead to higher prices including a cushion in bid prices to be given up for negotiation.
 - (c) Contract documents should have adequate price adjustment mechanism and fair claim and dispute resolution procedure based on international rules.
 - (d) A list of taxes and duties imposed and exempted should be clearly indicated in the tendering document to avoid any confusion and disputes with bidders.
 - (e) Submission of alternative bids may be allowed when it is clearly stipulated in the bidding documents, but those of the lowest evaluated bidders alone should be evaluated.
 - (f) In case of slice and package tendering, while bidders are allowed to participate in more than one package, EA may choose a combination of bidders to obtain the lowest evaluated prices as a whole and evaluate qualification of those bidders through predetermined prequalification criteria stipulated in prequalification and tendering documents.
 - (g) In cases of two-envelop procedures (with regard to any contract the value of which is estimated to be not less than THREE BILLION Japanese Yen (¥3,000,000,000)), EA has to request for JICA’s concurrence in evaluation of technical bids before opening financial bids.
 - (h) Consultant Guidelines introduces the Borrower’s debriefing to unsuccessful consultants as follows: “If any consultant who submitted a proposal wishes to ascertain the reasons why its proposal was not selected, such consultant should request an explanation from the Borrower. The Borrower shall promptly provide an explanation as to why its proposal

was not selected.” In addition, Procurement Guidelines introduces the Borrower’s debriefing to unsuccessful bidders as follows: “If any bidder who submitted a bid wishes to ascertain the reasons why its bid was not selected, such bidder should request an explanation from the Borrower. The Borrower shall promptly provide an explanation as to why its bid was not selected.”

JICA’s Review and Concurrence for Procurement

10. Whereas requirements of JICA’s review and concurrence would be stipulated in the Loan Agreement, JICA’s review and concurrence is, depending on the estimated contract amount, usually required for (i) prequalification documents, (ii) prequalification evaluation results, (iii) tender documents, (iv) tender evaluation results, and (v) contract (ex-post concurrence).

Table: Requirement of JICA’s Review and Concurrence
(subject to the stipulations of the Loan Agreement)

	Less than 1,000 million yen	Not less than 1,000 million yen	Not less than 3,000 million yen
Prequalification Evaluation Criteria	No	No	Required
Prequalification Evaluation Result	No	Required (In case of P/Q)	Required (In case of P/Q)
Tender Document	No	No	Required
Tender Evaluation Result	No	Required	Required
Contract	Required (In case of ICB)	Required	Required

Attachment 13

Environmental Checklist

Page No - (1-11)

Attachment 13-1
Environmental Checklist: 17. Forestry (1)

Category	Environmental Item	Main Check Items	Yes: Y No: N	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
1 Permits and Explanation	(1) EIA and Environmental Permits	(a) Have EIA reports been already prepared in official process? (b) Have EIA reports been approved by authorities of the host country's government? (c) Have EIA reports been unconditionally approved? If conditions are imposed on the approval of EIA reports, are the conditions satisfied? (d) In addition to the above approvals, have other required environmental permits been obtained from the appropriate regulatory authorities of the host country's government?	(a) N/A (b) N/A (c) N/A (d) N/A	(a) The project would be taking up plantation activities and establishing nurseries for production of planting material for plantations. As per the EIA notification of 14th Sep 2006 of MoEFCC, Environmental Clearance (EC) is required only for Chemical fertilizers and Pesticides/ insecticides producing plants. Under all the proposed sub-projects there is no plan for such establishments and therefore Environment Impact Assessment report is not required. (b) Not applicable (c) Not applicable (d) Other environmental permits are also not required for the proposed Project.
	(2) Explanation to the Local Stakeholders	(a) Have contents of the project and the potential impacts been adequately explained to the Local stakeholders based on appropriate procedures, including information disclosure? Is understanding obtained from the Local stakeholders? (b) Have the comment from the stakeholders (such as local residents) been reflected to the project design?	(a) N (b) N	(a)(b) Consultation and information disclosure procedures are to be implemented prior to subproject implementation during the preparation of Micro Plan. Such consultations are included in the ESAF/ESMF
	(3) Examination of Alternatives	(a) Have alternative plans of the project been examined with social and environmental considerations?	(a) Y	(a) Social and environmental considerations have been factored into the project design that includes assessment/ identification of degraded forest areas, Identification of WLS for participatory biodiversity conservation, Human-Wildlife stress induced areas for conflict mitigation and adoption of exclusion criteria for project activities)
	(1) Air Quality	(a) Do air pollutants, such as dust, soot and dust, sulfur oxides (SOx), nitrogen oxides (NOx), and organic chemical substances emitted from various sources, such as logging operations, forest products manufacturing processes, and incinerators comply with the country's emission standards and ambient air quality standards? Are any mitigating measures taken?	(a) N/A	(a) There is no activity under the proposed sub-projects having any significant negative impact on air quality.
2 Pollution Control	(2) Water Quality	(a) Is there a possibility that the use of chemicals, such as fertilizers, and agrochemicals will cause water pollution? (b) Where facilities, such as forest products manufacturing facilities are installed, do effluents from the facilities comply with the country's effluent standards and ambient water quality standards?	(a) N (b) N	(a) As part of forestry plantations, fertilizers/insecticides may be used as per the recommended quantity defined in the respective plantation model however the anticipated environmental impact would be minimal/insignificant. It is expected that the project would promote usage of bio-fertilizers/manure/compost and organic insecticides. (b) There is no such facility proposed in the project activities.
	(3) Wastes	(a) Are wastes properly treated and disposed of in accordance with the country's regulations?	(a) Y	(a) There will not be any significant waste associated with project activities as no manufacturing activity is proposed.
	(4) Soil Contamination	(a) Are adequate measures taken to prevent contamination of soil and groundwater by use of chemicals, such as agrochemicals? (b) Are any agrochemicals management plans prepared? Are any usages or any implementation structures organized for proper use of the plans?	(a) N/A (b) N/A	(a) Use of such chemicals will be minimal/ negligible under the project (b) Under the livelihood component there is a possibility of agriculture based activity taken up by SHGs but under the project organic agri production models would be promoted

Attachment 13-1
Environmental Checklist: 17. Forestry (2)

Category	Environmental Item	Main Check Items	Yes: Y No: N	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
3 Natural Environment	(1) Protected Areas	(a) Is the project site or discharge area located in protected areas designated by the country's laws or international treaties and conventions? Is there a possibility that the project will affect the protected areas?	(a) N	(a) One of the sub-project include conservation and restoration of biodiversity in selected WLS and the foreseen environmental impact from the proposed activities is of positive nature.
	(2) Ecosystem	(a) Does the project site encompass primeval forests, tropical rain forests, ecologically valuable habitats (e.g., coral reefs, mangroves, or tidal flats)? (b) Does the project site encompass the protected habitats of endangered species designated by the country's laws or international treaties and conventions? (c) Is there a possibility that changes in localized micro-meteorological conditions, such as solar radiation, temperature, and humidity due to a large-scale timber harvesting will affect the surrounding vegetation? (d) Is there a possibility that a large-scale timber harvesting will result in loss of breeding and feeding grounds for wildlife? (e) In the case of reforestation projects, is there a possibility that mono-species plantations will adversely affect wildlife habitats? Is there a possibility that mono-species plantations will cause outbreaks of pests? (f) If significant ecological impacts are anticipated, are adequate protection measures taken to reduce the impacts on the ecosystem? (g) Isn't an illegal deforestation associated with the project being carried out, or is an acquisition of the forest certification by the project proponent being carried out?	(a) N (b) N (c) N (d) N (e) N (f) N (g) N	(a) The project will be implemented at 4 protected areas (PAs) sites and also include mangroves and areas around PAs. However, project activities are aimed at conservation and restoration of biodiversity and mitigation of human wildlife conflict. (b) The sub-project activities are aimed at conservation of various species such as Dolphin, conservation breeding of Indian Pangolin and Fishing Cat and also plant species recovery programme and their impact would be positive. (c) There is no large-scale timber harvesting proposed in the project (d) There is no large-scale timber harvesting proposed in the project (e) In a sub-project, reforestation/plantation activities are proposed and quality plantation management of native species would be promoted (f) No significant negative impact is anticipated from project activities as the main objective of the proposed activities is ecological restoration (g) The project will support sustainable forest development/ management and protection and thus does not include any deforestation activity. The Forest (Conservation) Act of 1980 ensures conservation of forest and its resources from illegal deforestation.
	(3) Hydrology	(a) Is there a possibility that alteration of rainwater runoff and runoff characteristics due to a large-scale timber harvesting and access road construction will cause impacts on the hydrology of the surrounding areas? (b) Is there a possibility that decreased water retention capacity due to deforestation will affect the existing drainage patterns of the forest?	(a) N (b) N	(a) There is no large scale timber harvesting activities planned in the project. (b) The sub-project 'Ecosystem based Disaster Risk Reduction' project aims to reduce soil erosion and sedimentation of reservoirs through embankment protection and check dams inside PA. Along with the forestry interventions, the sub-project would enhance water retention in critical micro-watersheds.

Attachment 13-1
Environmental Checklist: 17. Forestry (3)

Category	Environmental Item	Main Check Items	Yes: Y No: N	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
3 Natural Environment	(4) Topography and Geology	(a) Is there a possibility that loss of forest stability due to timber harvesting will cause slope failures or landslides?	(a) N	(a) There is no significant timber harvesting anticipated in the project. Activities like tree plantation, grass planting along the outlets and bunding along the embankments would help in stabilising vulnerable slopes.
	(5) Management of Abandoned Sites	(a) Are adequate restoration and revegetation plans considered for the harvested areas? In particular, are adequate measures taken to prevent soil runoff from the harvested areas? (b) Is a sustainable management system for the harvested areas established? (c) Are adequate financial provisions secured to manage the harvested areas?	(a) N (b) N (c) N	(a)-(c) There is no significant timber harvesting anticipated in the project.
	(1) Resettlement	(a) Is involuntary resettlement caused by project implementation? If involuntary resettlement is caused, are efforts made to minimize the impacts caused by the resettlement? (b) Is adequate explanation on compensation and resettlement assistance given to affected people prior to resettlement? (c) Is the resettlement plan, including compensation with full replacement costs, restoration of livelihoods and living standards developed based on socioeconomic studies on resettlement? (d) Is the compensation going to be paid prior to the resettlement? (e) Is the compensation policies prepared in document? (f) Does the resettlement plan pay particular attention to vulnerable groups or people, including women, children, the elderly, people below the poverty line, ethnic minorities, and indigenous peoples? (g) Are agreements with the affected people obtained prior to resettlement? (h) Is the organizational framework established to properly implement resettlement? Are the capacity and budget secured to implement the plan? (i) Are any plans developed to monitor the impacts of resettlement? (j) Is the grievance redress mechanism established?	(a) N (b) N/A (c) N/A (d) N/A (e) N/A (f) N/A (g) N/A (h) N/A (i) N/A (j) N/A	(a) There will be no physical displacement (voluntary or involuntary) nor land acquisition under the project. (b)-(j) Same as Above
4 Social Environment				

Attachment 13-1
Environmental Checklist: 17. Forestry (4)

Category	Environmental Item	Main Check Items	Yes: Y No: N	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
4 Social Environment	(2) Living and Livelihood	<p>(a) Is there a possibility that the project will adversely affect the living conditions of inhabitants? Are adequate measures considered to reduce the impacts, if necessary? Is particular attention paid to the inhabitants whose livelihoods are based on primary industries, such as farming, raising livestock, or hunting and gathering in the forests?</p> <p>(b) Are adequate measures taken to prevent illegal entry into the forestry resource areas from the outside through newly constructed access roads?</p> <p>(c) Is there a possibility that the forest right of common is obstructed?</p> <p>(d) Are considerations given to life of residents before implementation of project?</p>	<p>(a) N</p> <p>(b) Y</p> <p>(c) N</p> <p>(d) Y</p>	<p>(a) The project intends to have a positive impact in terms of alleviating poverty and improving local people's livelihoods/ living conditions. The planned activities under livelihood development and Income Generation Activities would ensure any negative impact, if any, would be negated.</p> <p>(b) No forestry road/ forest access road will be constructed under the project. There may be a possibility that the village access road constructed under community infrastructure to improve connectivity for the local villagers with the main roads. However field officer of the executing agencies conducts regular patrol and local communities are involved in forest resources management.</p> <p>(c) The project does not include activities to increase forest law enforcement or create additional restrictions of access to forest lands and resources</p> <p>(d) The baseline socio-economic and gender survey are planned to be conducted in the beginning of the project to understand and record the livelihood and living condition of the local residents</p>
	(3) Heritage	(a) Is there a possibility that the project will damage the local archeological, historical, cultural, and religious heritage? Are adequate measures considered to protect these sites in accordance with the country's laws?	(a) N	(a) There will be no anticipated impact on the local archeological, historical, cultural, and religious heritage due to project activities
	(4) Landscape	(a) Is there a possibility that the project will adversely affect the local landscape? Are necessary measures taken?	(a) N	(a) The project promotes sustainable forest development/ protection and biodiversity conservation and would rather help in restoring ecological landscape.
	(5) Ethnic Minorities and Indigenous Peoples	<p>(a) Are considerations given to reduce impacts on the culture and lifestyle of ethnic minorities and indigenous peoples?</p> <p>(b) Are all of the rights of ethnic minorities and indigenous peoples in relation to land and resources respected?</p>	<p>(a) Y</p> <p>(b) Y</p>	<p>(a) There would not be any negative impact anticipated on the culture and lifestyle of ethnic minorities and indigenous people due to project activities. Rather the environment in which they live would be conserved/restored and livelihood would be improved.</p> <p>(b) Through compliance with Forest Right Act, the rights of indigenous peoples are respected in terms of access to land and resources and no project activity negatively alters that.</p>

Attachment 13-1
Environmental Checklist: 17. Forestry (5)

Category	Environmental Item	Main Check Items	Yes: Y No: N	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
4 Social Environment	(6) Working Conditions	<p>(a) Is the project proponent not violating any laws and ordinances associated with the working conditions of the country which the project proponent should observe in the project?</p> <p>(b) Are tangible safety considerations in place for individuals involved in the project, such as the installation of safety equipment which prevents industrial accidents, and management of hazardous materials?</p> <p>(c) Are intangible measures being planned and implemented for individuals involved in the project, such as the establishment of a safety and health program, and safety training (including traffic safety and public health) for workers etc.?</p> <p>(d) Are appropriate measures taken to ensure that security guards involved in the project not to violate safety of other individuals involved, or local residents?</p>	<p>(a) N</p> <p>(b) N/A</p> <p>(c) Y</p> <p>(d) Y</p>	<p>(a) All relevant national law for standard working conditions would be applicable under the project.</p> <p>(b) There is no industrial activity planned nor use of hazardous material proposed under the sub-projects/ activities.</p> <p>(c) In Human-wildlife conflict areas appropriate measures would be adopted as recommended by the local authorities and proper instruction and guidance on safety consideration will be given to workers and other individuals involved in the Projects.</p> <p>(d) Field management units established under the implementing agency, will be responsible for the Project activities at the target fields.</p>
	(1) Impacts during Construction	<p>(a) Are adequate measures considered to reduce impacts during construction (e.g., noise, vibrations, turbid water, dust, exhaust gases, and wastes)?</p> <p>(b) If construction activities adversely affect the natural environment (ecosystem), are adequate measures considered to reduce impacts?</p> <p>(c) If construction activities adversely affect the social environment, are adequate measures considered to reduce impacts?</p>	<p>(a) N/A</p> <p>(b) N/A</p> <p>(c) N/A</p>	<p>(a) No physical development relating to forestry development is planned in the project.</p> <p>(b) Same as Above</p> <p>(c) Same as Above</p>
5 Others	(2) Monitoring	<p>(a) Does the proponent develop and implement monitoring program for the environmental items that are considered to have potential impacts?</p> <p>(b) What are the items, methods and frequencies of the monitoring program?</p> <p>(c) Does the proponent establish an adequate monitoring framework (organization, personnel, equipment, and adequate budget to sustain the monitoring framework)?</p> <p>(d) Are any regulatory requirements pertaining to the monitoring report system identified, such as the format and frequency of reports from the proponent to the regulatory authorities?</p>	<p>(a) N/A</p> <p>(b) N/A</p> <p>(c) N/A</p> <p>(d) N/A</p>	<p>(a) ESAF will be used as the basis for monitoring plan.</p> <p>(b)-(d) Same as Above</p>

Attachment 13-1
Environmental Checklist: 17. Forestry (6)

Category	Environmental Item	Main Check Items	Yes: Y No: N	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
6 Note	Reference to Checklist of Other Sectors	(a) Where necessary, pertinent items described in the Agriculture checklist should also be checked.	(a) N/A	(a) No major agriculture activities under the project are expected and would be of very small scale probably as part of Income Generation Activities and do not involve any environmental and social risks
	Note on Using Environmental Checklist	(a) If necessary, the impacts to transboundary or global issues should be confirmed (e.g., the project includes factors that may cause problems, such as transboundary waste treatment, acid rain, destruction of the ozone layer, or global warming).	(a) N/A	(a) The project will not have any significant global or transboundary impact. It will have a positive impact to global phenomenon due to forest restoration and carbon sequestration

- 1) Regarding the term "Country's Standards" mentioned in the above table, in the event that environmental standards in the country where the project is located diverge significantly from international standards, appropriate environmental considerations are required to be made.
In cases where local environmental regulations are yet to be established in some areas, considerations should be made based on comparisons with appropriate standards of other countries (including Japan's experience).
- 2) Environmental checklist provides general environmental items to be checked. It may be necessary to add or delete an item taking into account the characteristics of the project and the particular circumstances of the country and locality in which the project is located.

Attachment 13-2
Environmental Checklist: 19. Other Infrastructure Projects (1)

Category	Environmental Item	Main Check Items	Yes: Y No: N	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
1 Permits and Explanation	(1) EIA and Environmental Permits	(a) Have EIA reports been already prepared in official process? (b) Have EIA reports been approved by authorities of the host country's government? (c) Have EIA reports been unconditionally approved? If conditions are imposed on the approval of EIA reports, are the conditions satisfied? (d) In addition to the above approvals, have other required environmental permits been obtained from the appropriate regulatory authorities of the host country's government?	(a) N/A (b) N/A (c) N/A (d) N/A	(a) The project would include infrastructure development in the form of construction of office buildings in different and small community infrastructure. As per the EIA notification of 14th Sep 2006 of MoEFCC, Environmental Clearance (EC) is required when the built up area is >=20,000 sq.mtrs. Under all the proposed sub-projects the built up area is comparatively very small than the threshold criteria and therefore Environment Impact Assessment report is not required. It is expected that there might be a possibility to have village connecting road under EPA and is very small in comparison to the defined road types such as State Highway/ National Highway that would require EC as per EIA notification 2006. Thus, no EIA report is required for village roads (b) Not applicable (c) Not applicable (d) Other environmental permits are also not required for the proposed Project.
	(2) Explanation to the Local Stakeholders	(a) Have contents of the project and the potential impacts been adequately explained to the Local stakeholders based on appropriate procedures, including information disclosure? Is understanding obtained from the Local stakeholders? (b) Have the comment from the stakeholders (such as local residents) been reflected to the project design?	(a) Y (b) Y	(a)(b) Consultation and information disclosure procedures to be implemented prior to subproject implementation during the participatory preparation of Micro Plan. Such consultations are included in the ESAF/ESMF.
	(3) Examination of Alternatives	(a) Have alternative plans of the project been examined with social and environmental considerations?	(a) Y	(a) The scale of all such infrastructure would be very small thus no negative impact anticipated. Also during the initial stage of the project and at the time of Micro Planning proposed infrastructure type would be examined with social and environmental considerations.
2 Pollution Control	(1) Air Quality	(a) Do air pollutants, (such as sulfur oxides (SOx), nitrogen oxides (NOx), and soot and dust) emitted from the proposed infrastructure facilities and ancillary facilities comply with the country's emission standards and ambient air quality standards? Are any mitigating measures taken? (b) Are electric and heat source at accommodation used fuel which emission factor is low?	(a) N/A (b) N/A	(a) The construction of small-scale community infrastructure could generate unnoticeable dust. However, these impacts are inconsiderably temporal and below the country's emission standard. For office building construction appropriate laid down mitigation measures as per Govt regulations would be included in the contracts of the construction contractors. (b) The construction work would be seasonal and construction period would be relatively small so no electric and heat source is required during the construction.
	(2) Water Quality	(a) Do effluents or leachates from various facilities, such as infrastructure facilities and the ancillary facilities comply with the country's effluent standards and ambient water quality standards?	(a) Y	(a) The construction of small-scale community infrastructure and office building construction could generate very negligible amount of effluents; therefore, these impacts are inconsiderably temporal and below the country's emission standard.

Attachment 13-2
Environmental Checklist: 19. Other Infrastructure Projects (2)

Category	Environmental Item	Main Check Items	Yes: Y No: N	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
2 Pollution Control	(3) Wastes	(a) Are wastes from the infrastructure facilities and ancillary facilities properly treated and disposed of in accordance with the country's regulations?	(a) Y	(a) No such significant waste generation associated with project activities is anticipated since there will be virtually no manufacturing activity associated. For office building construction appropriate laid down mitigation measures as per Govt regulations would be adopted.
	(4) Soil Contamination	(a) Are adequate measures taken to prevent contamination of soil and groundwater by the effluents or leachates from the infrastructure facilities and the ancillary facilities?	(a) Y	(a) No such significant soil contamination/ ground water is associated with small scale community infrastructure and office building construction is anticipated. For office building construction appropriate laid down mitigation measures as per Govt regulations would be included in the contracts of the construction contractors.
	(5) Noise and Vibration	(a) Do noise and vibrations comply with the country's standards?	(a) Y	(a) No such significant noise and vibration is associated with small scale community infrastructure is anticipated. For office building construction appropriate laid down mitigation measures as per Govt regulations would be included in the contracts of the construction contractors.
	(6) Subsidence	(a) In the case of extraction of a large volume of groundwater, is there a possibility that the extraction of groundwater will cause subsidence?	(a) N	(a) No such large volume extraction of ground water is associated/anticipated with small scale community infrastructure and office building construction
	(7) Odor	(a) Are there any odor sources? Are adequate odor control measures taken?	(a) N	(a) No odor sources are foreseen from the infrastructure activities under the project.
	(1) Protected Areas	(a) Is the project site or discharge area located in protected areas designated by the country's laws or international treaties and conventions? Is there a possibility that the project will affect the protected areas?	(a) N	(a) There is no significant discharge anticipated from the construction activity in the project
	(2) Ecosystem	(a) Does the project site encompass primeval forests, tropical rain forests, ecologically valuable habitats (e.g., coral reefs, mangroves, or tidal flats)? (b) Does the project site encompass the protected habitats of endangered species designated by the country's laws or international treaties and conventions? (c) Is there a possibility that changes in localized micro-meteorological conditions, such as solar radiation, temperature, and humidity due to a large-scale timber harvesting will affect the surrounding vegetation? (d) Is there a possibility that the amount of water (e.g., surface water, groundwater) used by the project will adversely affect aquatic environments, such as rivers? Are adequate measures taken to reduce the impacts on aquatic environments, such as aquatic organisms?	(a) N (b) N (c) N (d) N	(a) No infrastructure development is planned in primeval forest or ecologically valuable habitat. (b) No infrastructure development is planned in the protected habitats of endangered species (c) No large scale timber harvesting is planned for construction of small scale community infrastructure and office building. There is a possibility of construction of village approach road and might require clearing of some amount of vegetation but will not be very significant. Appropriate govt. regulations would be adopted. There will not be construction of forest road under the project. (d) No such significant impact on the aquatic environment associated with small scale community infrastructure and office building construction is anticipated.
3 Natural Environment				

Attachment 13-2
Environmental Checklist: 19. Other Infrastructure Projects (3)

Category	Environmental Item	Main Check Items	Yes: Y No: N	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
3 Natural Environment	(3) Hydrology	(a) Is there a possibility that hydrologic changes due to the project will adversely affect surface water and groundwater flows?	(a) N	(a) No such significant impact on the hydrology that would adversely impact surface and ground water flow is anticipated through the construction activity.
	(4) Topography and Geology	(a) Is there a possibility the project will cause large-scale alteration of the topographic features and geologic structures in the project site and surrounding areas?	(a) N	(a) No such significant large scale alteration of topography and geological structure is anticipated due to construction of small scale community infrastructure as well as construction of office building
4 Social Environment	(1) Resettlement	(a) Is involuntary resettlement caused by project implementation? If involuntary resettlement is caused, are efforts made to minimize the impacts caused by the resettlement?	(a) N (b) N/A (c) N/A (d) N/A (e) N/A (f) N/A (g) N/A (h) N/A (i) N/A (j) N/A	(a) There will be no physical displacement (voluntary or involuntary) nor land acquisition under the project. (b)-(j) Same as Above
		(b) Is adequate explanation on compensation and resettlement assistance given to affected people prior to resettlement?		
		(c) Is the resettlement plan, including compensation with full replacement costs, restoration of livelihoods and living standards developed based on socioeconomic studies on resettlement?		
		(d) Is the compensation going to be paid prior to the resettlement?		
		(e) Is the compensation policies prepared in document?		
	(2) Living and Livelihood	(f) Does the resettlement plan pay particular attention to vulnerable groups or people, including women, children, the elderly, people below the poverty line, ethnic minorities, and indigenous peoples?		
		(g) Are agreements with the affected people obtained prior to resettlement?		
		(h) Is the organizational framework established to properly implement resettlement? Are the capacity and budget secured to implement the plan?		
		(i) Are any plans developed to monitor the impacts of resettlement?		
		(j) Is the grievance redress mechanism established?		
	(2) Living and Livelihood	(a) Is there a possibility that the project will adversely affect the living conditions of inhabitants? Are adequate measures considered to reduce the impacts, if necessary?	(a) N	(a) The construction of small-scale community infrastructure and office building construction is not expected to adversely affect the living conditions of inhabitants. Rather the community infrastructure would benefit the entire community.
	(3) Heritage	(a) Is there a possibility that the project will damage the local archeological, historical, cultural, and religious heritage? Are adequate measures considered to protect these sites in accordance with the country's laws?	(a) N	(a) No anticipated damage to archaeological and historical heritage sites is anticipated.
	(4) Landscape	(a) Is there a possibility that the project will adversely affect the local landscape? Are necessary measures taken?	(a) N	(a) The construction of small-scale community infrastructure and office building construction is not expected to adversely affect the landscape.
		(b) Is there a possibility that landscape is spoiled by construction of high-rise buildings such as huge hotels?	(b) N	(b) No high building would be constructed and the proposed community infrastructure as well as office buildings.

Attachment 13-2
Environmental Checklist: 19. Other Infrastructure Projects (4)

Category	Environmental Item	Main Check Items	Yes: Y No: N	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
4 Social Environment	(5) Ethnic Minorities and Indigenous Peoples	(a) Are considerations given to reduce impacts on the culture and lifestyle of ethnic minorities and indigenous peoples? (b) Are all of the rights of ethnic minorities and indigenous peoples in relation to land and resources respected?	(a) N/A (b) N/A	(a) The construction of small-scale community infrastructure and office building construction is not expected to adversely affect the ethnic minorities, rather the community infrastructure would benefit the entire community. (b) Same as Above
	(6) Working Conditions	(a) Is the project proponent not violating any laws and ordinances associated with the working conditions of the country which the project proponent should observe in the project? (b) Are tangible safety considerations in place for individuals involved in the project, such as the installation of safety equipment which prevents industrial accidents, and management of hazardous materials? (c) Are intangible measures being planned and implemented for individuals involved in the project, such as the establishment of a safety and health program, and safety training (including traffic safety and public health) for workers etc.? (d) Are appropriate measures taken to ensure that security guards involved in the project not to violate safety of other individuals involved, or local residents?	(a) N (b) Y (c) Y (d) Y	(a) All relevant national law for standard working conditions would be applicable under the project in general as well as for construction of buildings and other community infrastructure. (b) Office building construction activities will be done by construction contractors. They will be bound by the provisions of the contract. The provisions of safety and security, fair working conditions, fair wage/minimum wages, basic work place facilities are included in the contract. (c) Same as Above (d) Building construction contractor's Environmental Code of conduct, in line with Environmental Code of Practice, includes warning sign or prohibitions sign around the construction site area that pose potential danger to public and bound to the contract conditions
	(1) Impacts during Construction	(a) Are adequate measures considered to reduce impacts during construction (e.g., noise, vibrations, turbid water, dust, exhaust gases, and wastes)? (b) If construction activities adversely affect the natural environment (ecosystem), are adequate measures considered to reduce impacts? (c) If construction activities adversely affect the social environment, are adequate measures considered to reduce impacts?	(a) Y (b) Y (c) Y	(a) The construction of small-scale community infrastructure and office building construction is expected to have minimal adverse impact. Building construction contractor would ensure adequate measures as per contractor's Environmental Code of conduct. (b) The proposed infrastructure would be constructed outside protected areas and no clear felling required and even the scale of such infrastructure is very small, thus there will not be any adverse impact. (c) There will be no physical resettlement or land acquisition in the project required and therefore social issues are expected to be minimal and thereby any temporary disruption/delays during the construction phase would also be minimal.
5 Others	(2) Monitoring	(a) Does the proponent develop and implement monitoring program for the environmental items that are considered to have potential impacts? (b) What are the items, methods and frequencies of the monitoring program? (c) Does the proponent establish an adequate monitoring framework (organization, personnel, equipment, and adequate budget to sustain the monitoring framework)? (d) Are any regulatory requirements pertaining to the monitoring report system identified, such as the format and frequency of reports from the proponent to the regulatory authorities?	(a) N/A (b) N/A (c) N/A (d) N/A	(a) ESAF will be used as the basis for monitoring plan (b)-(d) Same as Above

Attachment 13-2
Environmental Checklist: 19. Other Infrastructure Projects (5)

Category	Environmental Item	Main Check Items	Yes: Y No: N	Confirmation of Environmental Considerations (Reasons, Mitigation Measures)
6 Note	Reference to Checklist of Other Sectors	(a) Where necessary, pertinent items described in the Roads, Railways and Bridges checklist should also be checked (e.g., projects including access roads to the infrastructure facilities). (b) For projects, such as installation of telecommunication cables, power line towers, and submarine cables, where necessary, pertinent items described in the Power Transmission and Distribution Lines checklists should also be checked.	(a) N/A (b) N/A	(a) There is a possibility of construction of community roads under IGA activity, however the sale of the roads would be too small to make a separate check list, and environmental review for such community infrastructure is covered by this check list.. (b) No such activity is planned
	Note on Using Environmental Checklist	(a) If necessary, the impacts to transboundary or global issues should be confirmed (e.g., the project includes factors that may cause problems, such as transboundary waste treatment, acid rain, destruction of the ozone layer, or global warming).	(a) N/A	(a) The project will not have any significant global or transboundary impact. It will have a positive impact to global phenomenon due to forest restoration and carbon sequestration

- 1) Regarding the term "Country's Standards" mentioned in the above table, in the event that environmental standards in the country where the project is located diverge significantly from international standards, appropriate environmental considerations are required to be made.
In cases where local environmental regulations are yet to be established in some areas, considerations should be made based on comparisons with appropriate standards of other countries (including Japan's experience).
- 2) Environmental checklist provides general environmental items to be checked. It may be necessary to add or delete an item taking into account the characteristics of the project and the particular circumstances of the country and locality in which the project is located.

Attachment 14

Definition of Environmental Categorization

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Definition of Environmental Categorization

1. JICA classifies projects into four categories according to the extent of environmental and social impacts, taking into account an outline of project, scale, site condition, etc.

- ✓ **Category A:** Proposed projects are classified as Category A if they are likely to have significant adverse impacts on the environment and society. Projects with complicated or unprecedented impacts that are difficult to assess, or projects with a wide range of impacts or irreversible impacts, are also classified as Category A. These impacts may affect an area broader than the sites or facilities subject to physical construction. Category A, in principle, includes projects in sensitive sectors, projects that have characteristics that are liable to cause adverse environmental impacts, and projects located in or near sensitive areas. An illustrative list of sensitive sectors, characteristics, and areas is provided below:

■ Sensitive Sectors

Large-scale projects in the following sectors:

- (1) Mining, including oil and natural gas development
- (2) Oil and gas pipelines
- (3) Industrial development
- (4) Thermal power, including geothermal power
- (5) Hydropower, dams, and reservoirs
- (6) Power transmission and distribution lines involving large-scale involuntary resettlement, large-scale logging, or submarine electrical cables
- (7) River/erosion control
- (8) Roads, railways, and bridges
- (9) Airports
- (10) Ports and harbors
- (11) Water supply, sewage, and wastewater treatment that have sensitive characteristics or that are located in sensitive areas or in their vicinity
- (12) Waste management and disposal
- (13) Agriculture involving large-scale land clearing or irrigation

■ Sensitive Characteristics

- (1) Large-scale involuntary resettlement
- (2) Large-scale groundwater pumping

(3) Large-scale land reclamation, land development, and land clearing

(4) Large-scale logging

■ Sensitive Areas

Projects in the following areas or their vicinity:

(1) National parks, nationally-designated protected areas (coastal areas, wetlands, areas for ethnic minorities or indigenous peoples and cultural heritage, etc. designated by national governments)

(2) Areas that are thought to require careful consideration by the country or locality

Natural Environment

a) Primary forests or natural forests in tropical areas

b) Habitats with important ecological value (coral reefs, mangrove wetlands, tidal flats, etc.)

c) Habitats of rare species that require protection under domestic legislation, international treaties, etc.

d) Areas in danger of large-scale salt accumulation or soil erosion

e) Areas with a remarkable tendency towards desertification

(3) Social Environment

a) Areas with unique archeological, historical, or cultural value

b) Areas inhabited by ethnic minorities, indigenous peoples, or nomadic peoples with traditional ways of life, and other areas with special social value

✓ **Category B:** Proposed projects are classified as Category B if their potential adverse impacts on the environment and society are less adverse than those of Category A projects. Generally, they are site-specific; few if any are irreversible; and in most cases, normal mitigation measures can be designed more readily.

✓ **Category C:** Proposed projects are classified as Category C if they are likely to have minimal or little adverse impact on the environment and society.

✓ **Category FI:** Proposed projects are classified as Category FI if they satisfy all of the following requirements: JICA's funding of projects is provided to a financial intermediary or executing agency; the selection and appraisal of the Sub-projects is substantially undertaken by such an institution only after JICA's approval of the funding, so that the Sub-projects cannot be specified prior to JICA's approval of funding (or project appraisal); and those Sub-projects are expected to have a potential impact on the environment.

2. When necessary, JICA can change a category even after screening. This might occur such as when a new significant impact has come to light as a result of the cooperation project process, or in other specific situations.

Source: Japan International Cooperation Agency (JICA)
Guidelines for Environmental and Social Considerations
April 2010

Attachment 15

**Outline of Annual Environmental
and
Social Performance Report to JICA**

Page No - (1-2)

Outline of Annual Environmental and Social Performance Report to JICA

1. Basic Information

Name of Organization:	
Completed by (Name):	
Position in Organization:	
Reporting Period:	From: To:
Completed in (MM/YY)	

2. Sub-projects using JICA Funds during the Reporting Period

Name of Sub-project approved during the reporting period	Industry Sector	Project Scope	Project Cost (JPY)	Approval Date	Environmental Category *	Reason of Categorization	Documents made (e.g. EIA, RAP, IPP)	Any outstanding environmental , IR or IP ¹ issues

* Please refer the Criteria of Categorization finalized by PMU which are in line with JICA Guidelines for Environmental and Social Considerations (April 2010), and in case of **Category B**, please fill out the table below for the specific activities (at ward or GP level).

Location (① Range and ② Village)	Scope of the Activities	Specific Reason of Category B (Environmental/Social Impact)	Executor/ Contractor
① ②			
① ②			

3. Sub-projects using JICA Funds to be Approved in the Next FY

Name of Sub-project approved during the reporting period	Industry Sector	Project Scope	Project Cost (JPY)	Approval Date	Environmental Category *	Reason of Categorization	Documents made (e.g. EIA, RAP, IPP)	Any outstanding environmental , IR or IP** issues

* Please refer the Criteria of Categorization finalized by PMU which are in line with JICA Guidelines for Environmental and Social Considerations (April 2010), and in case of **Category B**, please fill out the table below for the specific activities (at ward or GP level).

¹ IR = Involuntary Resettlement, IP = Indigenous People

Attachment 15: Outline of Annual Environmental and Social Performance Report to JICA

Location (① Range and ② Village)	Scope of the Activities	Specific Reason of Category B (Environmental/Social Impact)	Executor/ Contractor
① ②			
① ②			

4. Environmental and Social Management System (ESMS)

Please describe if ESMS of your organization has changed in any way (e.g. establishment of a new division for environmental and social management) since JICA's appraisal.

Attachment 16

**Environmental
and
Social Management System (ESMS) Checklist**

Page No - (1-3)

• Attachment 16

Environmental Social Management System (ESMS) checklist

No.	Questions (English)	Answer	Improvement Plan
1. Policy			
1)	Does the executing agency have any formal environmental policy or procedures? If yes, please describe them and provide appropriate documentation. If no, does the financial intermediary/executing agency have any plan to set such policy or procedures?	DoE is the nodal department for environmental plan formulation in the state of West Bengal. Environmental plan is already in place in WB. PMU shall follow the plan/policy regulated by DoE.	-
2)	Are there any types of projects in which the financial intermediary/executing agency will not take part due to the environmental risks? (e.g., projects involving handling of hazardous wastes or endangered plants or animals).	No such activity is foreseen under the project. Community based activities and biodiversity, afforestation activities are pro-environment and no such environmental risks are part of the project components/ activities.	-
2. Procedures			
1)	Does the executing agency have any environmental procedures such as screening, categorization and environmental review? If yes, please describe.	In 2018, environmental risk assessment for the phase-1 project was conducted and no negative impact or environmental issues was reported. WBFD has no systematic process such as screening, categorization etc. defined for the project level. Exceptionally, the projects require conversion of forest lands to infrastructure go through the processes defined in EIA Notification, 2006. Most of the projects of WBFD do not have environmental and social risks or community displacement.	PMU assess the expected impact of sub-projects based on Environmental Social Assessment Framework (ESAF). ESAF defines the selection criteria of the sub-projects to avoid/mitigate adverse environmental and social impact.
2)	Please describe how you ensure that your subproject companies and their subprojects are operated in compliance with the national laws and regulations and applicable JICA's requirements.	MOEF&CC provides EIA procedure. It is applicable to the Project as well.	Minutes of Discussion (MOD) on the Project shall define the obligation of the executing agency to ensure appropriate environmental and social consideration regulated by JICA guidelines. PMU operates the project in accordance with the MOD and ESAF.
3. Organization and Staff			
1)	Please provide us with the organization chart of the financial intermediary/executing agency's Environmental and Social Management System (ESMS).	There is no ESMS defined within WBFD. The organogram is shown in Chapter 2 of main text.	Under West Bengal Forest & Biodiversity Conservation Society, there should be ESMS in place and appropriate official should be designated as overall in-charge and the nodal person for
2)	Who is responsible for environmental and social management within the financial intermediary/executing agency? (name/role and title)	Within WBFD there is no designated official for environmental and social management	

No.	Questions (English)	Answer	Improvement Plan
			ESMS (From PMU, designated person will be selected during the implementation of the project if necessity is there.)
3)	Are there any staff with training for environmental and social considerations in the financial intermediary/executing agency? If so, describe.	There is no such official at present within WBFD or within the Society	There should be a provision to deploy environmental and social considerations expert under PMC to support the project in implementation of ESMS.
4)	What experience, if any, does the financial intermediary/executing agency have of hiring or dealing with environmental consultants?	No such experience of hiring or dealing with environmental consultants.	PMU will hire a consultant in charge of environmental and social consideration. The draft ToR of the consultant will be prepared as in Attachment 4.
5)	What was the budget allocated to the ESMS and its implementation during a year? Please provide budget details including staff costs and training as well as any actual costs.	There was no such budget allocated for ESMS.	The necessary budget for ESMS and training of the staff will be estimated in the preparatory survey. PMU shall execute the budget for the ESMS.
4. Monitoring and Reporting			
1)	Do you receive environmental and social monitoring reports from subproject companies that you finance?	Study on ESC Implementation Status under JICA loan Projects in India was conducted by a subcontractor and the report was submitted directly to JICA	Under the proposed project periodical monitoring Reports would be prepared as per the laid down ESMS
2)	Please describe how you monitor the subproject company and their subprojects' social and environmental performance.	JICA conducted ESC implementation status. There is no adverse environmental risk reported under the project based on the report submitted by the subcontractor.	
3)	Is there an internal process to report on social and environmental issues to senior management?	PMU, DFO, Extension Workers go to the project site and report each other periodically. Following Right to Information (RTI) act, the designated official reply back to all the queries and disclose necessary information on the website.	Through the MIS of the Project, an internal regular report flow is established. Besides, the field officers/DMU/PMC report issues to the nodal officer of PMU by group mail/ SNS occasionally in the case of emergency.
4)	Do you prepare any social and environmental reports: - For other multilateral agencies or other stakeholders - E&S reporting in the Annual Report	Environmental aspects are generally neglected in such impact studies although social aspects are covered under project through baseline and midterm or terminal survey studies.	PMU prepares report based on ESAF using MIS to be established in the Project.
5. Experience			

No.	Questions (English)	Answer	Improvement Plan
1)	Has the executing agency signed any national or international agreements or declarations concerning environmental issues?	No	-
2)	Has the executing agency ever received any criticism of its environmental record? If so, what was the criticism?	No	-
3)	Does the executing agency carry out environmental audits of its properties to analyze health and safety issues, waste disposal, etc.?	No	-
4)	Please state any difficulties and/or constraints related to the implementation of the ESMS.	At present there is no dedicated nodal officer for implementation of ESMS	In the institutional arrangement of PMU and PMC, ESMS nodal officer and consultants will be assigned upon implementation of the project.

6. Need of Capacity Development and Improvement Plan

Training of PMU to execute ESAF, especially 1) selection of sub-projects and target area based on the defined selection criteria to avoid adverse environmental and social impact, 2) monitoring of the indicators defined in ESA, and 3) information disclosure and stakeholder engagement in planning and implementation.

Source: Prepared by the JICA Survey Team based on the interview with PMU

Attachment 17

**Environmental
and
Social Assessment Framework (ESAF)**

Page No - (1-53)

Attachment 17 Environmental and Social Assessment Framework (ESAF)

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Abbreviations

Abbreviation	Name
ANR	Assisted Natural Regeneration
CCF	Chief Conservator of Forests
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
DMUs	District Management Units
EA	Executing Agency
EIAs	Environmental Impact Assessments
EMP	Environmental Management Plan
EMoP	Environmental Monitoring Plan
ESAF	Environmental and Social Assessment Framework
ESC	Environmental and Social Consideration
Eco-DRR	Ecosystem-based disaster risk reduction
FI	Financial Intermediary
FMUs	Field Management Units
FPIC	Free, Prior and Informed Consent
FRA	Forest Rights Act
GRM	Grievance Redress Mechanism
HPC	High Powered Committee
IA	Implementing Agency
JFM	Joint Forest Management
JFMC	Joint Forest Management Committee
JICA	Japan International Cooperation Agency
MIS	Monitoring and Information System
MoEF&CC	Ministry of Environment, Forest and Climate Change
NTFP	Non-Timber Forest Produce
OBC	Other Backward Classes
PMC	Project Management Consultant
PMU	Project Management Unit
PRO	Public Relations Officer
R&R	Rehabilitation and Resettlement
RFCTLARR	Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act
SA	Social Assessment
SC	Scheduled Caste
SEAC	State Expert Appraisal Committee
SEIAA	State Environment Impact Assessment Authority

Abbreviation	Name
SHG	Self Help Group
ST	Scheduled Tribes
VP	Vulnerable People
VPPF	Vulnerable People's Planning Framework
WB	West Bengal
WB-FBCCCR	The Project for Forest and Biodiversity Conservation for Climate Change Response in West Bengal
WBFBS	West Bengal Forest and Biodiversity Society
WBFD	West Bengal Forest Department
WHO	World Health Organization

Draft Environmental and Social Assessment Framework (ESAF)

1 Objectives and Scope of ESAF

1.1 Objectives of ESAF

ESAF is prepared to assess the potential negative impacts and ensure that such impacts are safeguarded against in accordance with JICA's policies on environmental and social considerations in development projects, as well as relevant policies, laws and regulations of the country and the state.

1.2 Target Social Groups of ESAF

ESAF will be applicable to all communities and people within and surrounding the project area with full consideration on the depressed/ vulnerable groups to ensure their participation in the course of the project implementation and include as beneficiaries, receive appropriate benefit and avoid/mitigate any impacts affected by the Project. Table 1 indicates the key groups for ESAF to address environmental and social considerations. It should be noted that an individual or household may be categorized into more than one of the categories below;

Table 1 Key Targeted Social Groups of ESAF

Groups	Definition, Reasons, and Characteristics of the Group
Inhabitants of forest villages	<ul style="list-style-type: none">- Forest village is a settlement inside forest, established by Forest Department for forest operation. In order to implement the provision of FRA with regard to conversion of forest villages to revenue mouzas, Land and Land Reform Department of WB published notifications in 2014 to announce the conversion of 25 forest villages in Jalpaiguri and 69 forest villages in Alipurduar districts, however there are still more than 150 forest villages in 7 divisions of the north of WB. In parallel with conversion to mouza village, WBFD promotes relocation of these forest villages to outside forest land area, especially from wildlife sanctuary. The population of forest village is not recorded. Some of the habitants of forest villages are JFMC/EDC members, and engage in forest management/ conservation work.
Forest dwellers	<ul style="list-style-type: none">- Forest dwellers are the people residing inside the forest areas for generations, use forest resources and land for their livelihood. Some of them have already been recognised by the forest right act, and some are under appraisal or preparation for application to FRA.- The project activities are expected to positively affect them in the same way of inhabitants of forest villages.
Members of JFMC/EDC	<ul style="list-style-type: none">- Members of JFMC and EDC are the people who jointly work with forest department on the basis of mutual trust for forest protection and development.- The project activities are expected to positively affect them in the same way of inhabitants of forest villages
Scheduled Tribe (ST)	<ul style="list-style-type: none">- STs are the tribal groups declared by the Article 342 of the Constitution of India.- The ST population of West Bengal is around 5.80% of the state's total population. Out of the total ST population, 92 % lives in rural area, representing 16.69% of the total rural population of the state. Higher concentration of Tribal population is found in the following districts: Darjeeling, Jalpaiguri, Alipurduar, Dakshin Dinajpur, Paschim Medinipur, Bankura and Purulia (Census 2011)- They are the majority of the inhabitants of forest villages/forest dwellers, and JFMC members.
Scheduled Caste (SC)	<ul style="list-style-type: none">- SCs are the groups notified as per the provisions in Clause 1 of Articles 341 and 342/ Clause 24 of Article 366 under the Constitution of India, which require special consideration for safeguarding their interests and to accelerate their socio-economic development.

Groups	Definition, Reasons, and Characteristics of the Group
	<ul style="list-style-type: none"> - The total SC population of West Bengal is around 23.51% of the state's total population, which is about 4 times of ST population. SC population is mainly concentrated in the following districts: 24-Parganas South, 24-Parganas North, Burdwan, and Nadia (Census 2011) - They are the majority of the forest dwellers/forest resources users in the southern region of WB.
Other Backward Classes (OBC)	<ul style="list-style-type: none"> - OBC is a collective term used by GoI to classify castes which are “socially and educationally disadvantaged”. In the Indian Constitution, OBC are described as socially and educationally backward classes. All tribal communities and castes deemed under article 341 and 342 of the constitution of India are considered backward classes and there are OBC, which are not scheduled. - According to the National Commission for Backward Classes (NCBC), around 99 communities in West Bengal belong to OBC. Total population of OBC in West Bengal is about 16% of the total population of the state (Census 2011). - They are also a part of forest dwellers in WB.

Source: JICA Survey Team

1.3 Structure of ESAF

ESAF of the Project is structured as follows:

- i) Project Summary Description – objectives and outline of the components/sub-projects, expected outcomes, target areas, and reasons for remaining the sub-projects and their target areas undecided;
- ii) Environmental and Social Safeguard Policies – national and state level legal framework relevant to the EIA and environmental management;
- iii) Potential Environmental and Social Impacts and Mitigation Measures – potential adverse environmental and social impacts by the sub-projects, potential mitigation measures;
- iv) Environmental and Social Management Measures – screening criteria of the sub-projects/ community infrastructures from the viewpoint of environmental and social consideration, and preparation of environmental and social management plan to address environmental and social concerns, and monitoring plan and forms for monitoring and reporting;
- v) Institutional Arrangement and Capacity Building – proposed institutional arrangement, roles of the stakeholders, such as the implementing units, PMC, JICA, and relevant government institutions, in the process from preparation to approval of EIA of the sub-projects, proposed training outline of the implementing agencies, institutional structure of monitoring and reporting (including reporting to JICA) ;
- vi) Stakeholder Involvement and Grievance Redressal Mechanism - framework of public consultations and consultation with the local stakeholders, information disclosure method (including the disclosure of EIA result of the sub-projects), and proposed method of grievance redressal; and
- vii) Cost Estimation and Budget Allocation - cost estimate to finalise and implement the ESAF.

2 Project Summary Description

2.1 Project Objectives

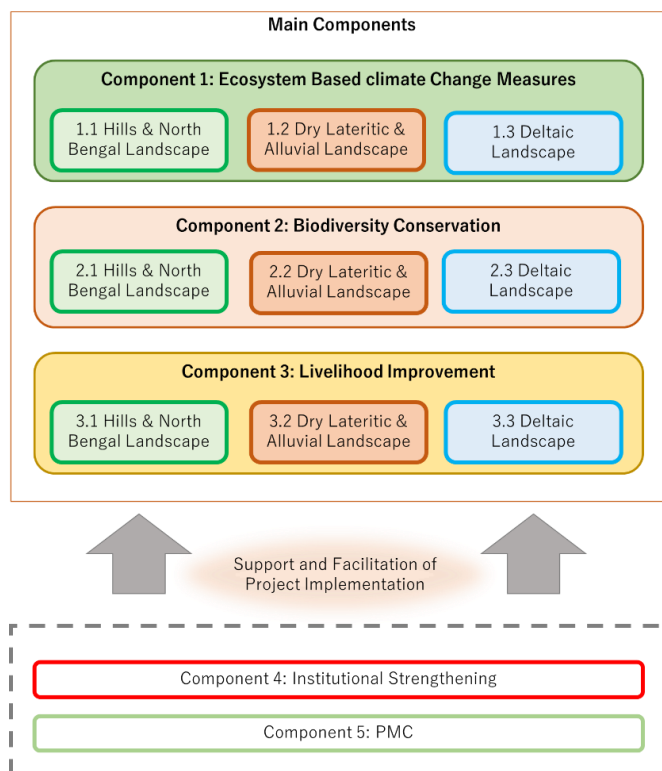
The objective of the proposed Project is “to mitigate and adapt to climate change, improve ecosystems and improve livelihood through ecosystem-based climate change measures, biodiversity conservation and restoration, livelihood improvement activities and institutional strengthening, thereby contributing to sustainable socio-economic development in West Bengal”.

2.2 Identified Project Area

The WBFD has proposed 23 territorial divisions, 6 wildlife divisions, and 5 functional divisions to be covered under the project. The list of divisions and the number of ranges and JFMCs that are covered under Phase 1 and proposed in Phase 2 are given in the table below. Under the Phase 1 of the project, 138 ranges are covered out of 190 ranges. Under the WB-FBCCCR, 90 ranges will be covered, which are mostly overlapping with Phase 1 ranges.

2.3 Proposed Project Components

The proposed project components are indicated in Figure 1. In total there are five Main Components but primarily 3 main components, viz. Component-1: Ecosystem based Climate Change Measures, Component-2: Biodiversity Conservation and Restoration and Component-3: Livelihood are the regarded as the nucleus of the Project. The sub-activities of each component is shown in the following table.



Source: JICA Survey Team

Figure 1 Framework of Project Components

Table 2 Project Outline

Component/ Sub-component	Project Activity
Component 1	Ecosystem Based Climate Change Measures
1.1 Hills & North Bengal Landscape	1.1.1 Production of Quality Planting Materials 1.1.2 Improving Quality of Forests 1.1.3 Eco DRR Activities (Soil Water Conservation Works in Protected Areas) 1.1.4 Green Laboratory Initiatives

Component/ Sub-component	Project Activity
1.2 Dry Lateritic & Alluvial Landscape	1.2.1 Production of Quality Planting Material 1.2.2 Improving Quality of Forests 1.2.3 Eco DRR Activities (including Preparation of GIS-based CAT Plans, Soil and moisture conservation works based on CAT Plan) 1.2.4 Green Laboratory Initiatives
1.3 Deltaic Landscape	1.3.1 Eco DRR activities (field validation of the mangrove forest restoration models and its replication) 1.3.2 Green Laboratory Initiative
Component 2	Biodiversity Conservation & Restoration
2.1 Hills & North Bengal Landscape	2.1.1 Human-wildlife conflict 2.1.2 Species conservation programme 2.1.3 Studies on wild animals and other behaviour
2.2 Dry Lateritic & Alluvial Landscape	2.2.1 Biodiversity conservation through people's participation in protected area 2.2.2 Biodiversity conservation through people's participation for smaller mammals 2.2.3 Human-wildlife conflict mitigation 2.2.4 Species conservation programme 2.2.5 Studies on wild animals and their behaviour
2.3 Deltaic Landscape	2.3.1 Biodiversity conservation through people's participation in protected area 2.3.2 Human-wildlife conflict mitigation 2.3.3 Studies on wild animals and their behaviour
Component 3	Livelihood Improvement
3.0 Preparatory Works (All land scapes)	i) Preparation of Manuals and Guidelines ii) Deployment of Technical Agency for IGA Support Fund Management iii) Finalisation of Selection Criteria of JFMCs & Selection of JFMCs
a) Hills & North Bengal Landscape b) Dry Lateritic & Alluvial c) Deltaic Landscape	3.1. Preparatory Activities with JFMCs (3 batches) including community mobilisation, micro planning, EPA/ CDA) 2. Support for Income Generation 3. Support for Community Well being (Traditional Healers) (Except in Deltaic Landscape) 4. Support for Community Mobilisation (Extension Worker)
Component 4	Institutional Strengthening
4.1 Strengthening Project Management	4.1.1 Demarcation of JFM boundary 4.1.1.1 Digitization of JFMC boundary including procurement of mouza sheet and GPS, and outsourced digitisation of JFM boundaries, and boundary pillar setting 4.1.2 Mobility 4.1.3 Buildings 4.1.4 Project Contractual Staff 4.1.5 Digital Strengthening
4.2 Capacity Development	4.2.1 Training Plan 4.2.2 Training of Forest Officers (DCF & above Ranks) 4.2.3 Trainings of Forest Officers /Frontline staff (Ranger & below ranks) 4.2.4 National Workshop (3 days) 4.2.5 Trainings for JFMC/ SHG members
4.3 Monitoring & Evaluation	4.3.1 Progress Monitoring 4.3.2 Impact Evaluation 4.3.3 Audits
4.4 Strengthening Forest Research	a) Creation of carbon estimation lab b) Research studies based on the research plan
4.5 Publicity and Publication	4.5.1 Website maintenance 4.5.2 Guidelines, manuals and annual reports 4.5.3 Small films/ videos/ digital documentation 4.5.4 Knowledge material/ course material
Component 5	PMC
PMU will be supported by a group of specialists engaged under PMC. In total, nine person-months of international specialist and 91 person-months of national specialists for a duration of 41 calendar-months is proposed. Since the	

Project Management Unit (PMU) of the new project will continue to operate as autonomous registered society within the WBFD, and be made responsible to manage, coordinate, implement and monitor the planned activities. All offices created for the new project will exclusively work to assist and facilitate implementation of the proposed activities following the project implementation schedule, annual plan of operations and envisaged processes adopting an Operational Manual. The High-Power Committee (HPC) created for WB-FBCCCR will act as its highest decision-making body at state government level and will not form a part of the autonomous society. To support project implementation at the field level, PMU will create and coordinate with set of offices viz., District Management Units (DMUs) and Field Management Units (FMUs) those will work as extended arms for the PMU under society mode. The Beat Office with its in-charge will work as a link office for FMU and contact between WB-FBCCCR and village level institutions such as JFMCs/ EDCs and SHGs. Under the propose project implementation structure, PD-Finance of PMU would also be the in charge of Environmental and Social Consideration to ensure smooth implementation, monitoring and compliance of ESAF. He/She would be the focal points to communicate with JICA on environmental and social safeguard matters.

2.5 Implementation Schedule of the Proposed Project

The following are indicative description about the overall implementation schedule for the proposed Project based on the discussion with WBFD.

- ❖ The proposed Project would be total 8 years duration, starting from 2023 until 2030.
- ❖ The plantation activities and the livelihood improvement activities would be implemented in three batches during the course of the project considering the interdependency of one activity on the others. All plantation activities would start from site identification and subsequently followed by survey and demarcation, advance work, plantation and maintenance one after another. Similarly, under Livelihood improvement component JFM based activities would start from community mobilisation and subsequently broadly followed by reorganisation and reconstruction of JFMC, micro planning, and so on.
- ❖ In case 1st Batch preparatory work would start from different period for different plantation model/ species. The production work of Quality Planting material would start from Year-1 (Oct-2023) and would be different for different plantation model. The
- ❖ The actual selection of JFMCs and their batches will be conducted by FMU with thorough consultation/confirmation with concerned JFMCs.

2.6 Reasons for the Sub-projects and their Target Areas Remaining Undecided

The main reasons for the sub-projects and their target areas remaining undecided is due to several factors listed below:

Table 3 Reasons for Remaining Undecided

Sub Project Type	Reasons for Remaining Undecided
Community Development Activities	Type and Number of Community infrastructure and target location are generally democratically identified and prioritised by the JFMC/EDC.

Sub Project Type	Reasons for Remaining Undecided
Soil and Water Conservation structure	Type and size of SWC structure is need based and generally identified/selected based on the site condition and its positive and negative impacts.

Source: JICA Survey Team

Since at the time of project formulation study the infrastructure related sub-projects type, size and quantity remained undecided, thus as part of ESAF detailed screening criteria is prepared to avoid/mitigate the risk of any potential negative impact arising out of them during site specific sub-project type identification.

3 Environmental and Social Safeguard Policies

3.1 JICA Principles for Environmental and Social Considerations

The environmental and social safeguards policies of JICA are covered within the JICA Guidelines for Environmental and Social Considerations (Revised 2022), in which it is committed to ensure that human rights are respected and that environmental issues are seriously considered in its investments, projects and programmes. The basic principles related to environmental/ social considerations are as follows:

- ❖ JICA is committed to address environmental and social issues in a prompt/ timely manner,
- ❖ Assess a wide range of environmental and social impacts in all JICA projects/programmes,
- ❖ Issues related to environmental and social must be considered from an early stage, from design and throughout the project cycle,
- ❖ Accountability and transparency in implementation of cooperation projects ensured by JICA,
- ❖ Stakeholder consultation/participation in consideration of environmental/ social issues would be recommended,
- ❖ Active disclosure of Information on environmental/ social consideration would ensure accountability and promote active participation of various stakeholders,
- ❖ Enhancement of organizational capacity on environmental and social consideration through Implementation of the guidelines to ensure appropriate consideration, management and monitoring of environmental/ social issues.

3.2 Key Process Elements as per the requirements of JICA Guideline

Key processes in JICA projects related to environmental and social considerations are summarised below;

(1) Categorisation of Projects

Projects are categorised according to the scope/severity of the environmental and social impacts or risks, indicated as follows;

- **Category A:** Significant adverse impacts (e.g. Large-scale development/ infrastructure),
- **Category B:** Generally site-specific impacts, with few irreversible impacts, can be addressed by designing normal mitigation measures,

- **Category C:** Minimal/little adverse impact
- **Category FI (Financial intermediary):** Substantial selection and appraisal of sub-projects after JICA approval of funding and those sub-projects are expected to have potential impacts on the environment and society.

The proposed Project is currently categorised as ‘**FI**’ as per the JICA Guidelines (2010), and the classification remains valid for the following reasons:

- JICA’s funding of projects will be provided to a financial intermediary or executing agency,
- The selection and appraisal of the sub-projects will be substantially undertaken by the executing agency only after JICA’s approval of the funding, so that the sub-projects cannot be specified prior to JICA’s approval of funding,
- Sub-project type and their location will be selected in participatory mode by communities and as such cannot be specifically defined at this stage, and
- Sub-projects with significant adverse environmental or social impacts requiring environmental clearance will be eliminated through screening procedures. However, certain potential environmental and social impacts are perceived, and also the Project may involve depressed groups (SCs, STs, OBCs, forest dwellers, etc.).

The Project is anticipated to have primarily positive impacts on the environment, provided that the main objective of the Project is to enhance sustainable forest and biodiversity management practices and improve livelihoods in the project areas. Although it is not possible to precisely state which sub-projects will be executed in which specific location and scale, the Project will exclude “Category A”, sub-projects with significant environmental impacts or risks.

At the time of selection, finalisation and approval of sub-projects, respective sub-projects will be categorized as either “Category B” or “Category C” according to the scope and severity of the environmental and social impacts or risks.

(2) Potential Impacts Assessment

An array of environmental and social impacts and risks are taken into account with a view towards enhancing positive benefits and at the same time avoiding/mitigating negative impacts. Table 4 indicates the required items to be assessed as potential environmental and social impacts.

Table 4 Potential Impacts to be Assessed

Type of Impact	Items to be Assessed
Environmental Impact	Impact on the natural environment transmitted through air, water, soils, waste, accidents, water usage, climate change, ecosystems, fauna and flora and trans-boundary/global scale impacts.
Social Impact	On community/people’s lands, resettlement, economies, livelihoods, employment, social institutions, vulnerable groups, gender, indigenous peoples, children, health, cultural heritage, utilization of land and local resources, existing social infrastructures and services, equality of benefits and losses, local conflicts, working conditions, etc.

Source: JICA Survey Team based on the JICA Guidelines for Environmental and Social Considerations 2022

The impacts through a project life cycle are also considered.

(3) Information Disclosure and Consultation

Implementing Agency (IA) of the Project shall monitor the sub-projects following the Environmental Monitoring Plan (EMoP) which are the requirement for only Category B sub-projects. The environmental and social impacts of the sub-projects shall be disclosed to all relevant stakeholders. Also, IA shall prepare annual report of the Project in which ESC relevant details will be incorporated as dedicated chapter/section.

3.3 Compatibility with International Standards

JICA confirms that project proponents comply with the laws or standards related to the environment and society established by the host country governments, including local governments. JICA also confirms that environmental and social considerations of a project do not deviate significantly from the World Bank's environmental and social policies. JICA refers to standards stipulated by international financial organizations, other internationally recognized standards, and international standards/ treaties/ declarations as well as good practices of developed nations as appropriate.

Although JICA has particular concerns with respect to Indigenous People, it does not reflect a detailed policy with clear procedures for such people affected by the projects interventions, and refers to the World Bank Operational Policy 4.10 (OP4.10) on Indigenous Peoples. Thus, the contents and format of the safeguards framework elaborated for the Project follows that indicated in the World Bank OP 4.10, as requested by JICA for the preparation of the Project.

3.4 Requirements as per JICA Guidelines

As per the JICA guidelines, the following conditions are examined with respect to the project implementation. Financial intermediary or the executing agencies are mandated to comply with the following requirements:

- a) Ensure appropriate environmental and social considerations,
- b) Sufficiency of institutional capacity to confirm environmental and social considerations of the financial intermediary/ executing agency is sufficient; if requires adequate measures be taken to strengthen the capacity,
- c) Financial intermediary or executing agency to assess potential positive and negative environmental impacts of sub-projects, takes appropriate measures to avoid, minimise, mitigate, or compensate for potential negative impacts, and promote positive impacts if any available,
- d) Disclosure of the results of environmental reviews on its website after concluding agreement documents, and
- e) Confirm with project proponents on the results of monitoring items that have significant environmental impacts. Project proponents are undertaking environmental and social considerations for projects that fall under Categories A, B, and FI.

3.5 National and State Legal Framework for Environmental and Social Management

In the Indian context, there are a number of laws, rules, regulations, notifications, and policies for addressing various issues related to control, protection and management of environment.

In the following sections, the processes adopted in India for environmental clearance and the forest clearance is described although the Project is not anticipated any environmental or forest clearances.

(1) Environmental Clearance Procedures

Under the ambit of EIA laws and regulations in India, all projects and activities requiring “Environmental Clearance” (EC) are classified broadly into two categories - **Category A** (hereafter referred to as “Indian EIA Category A”) and **Category B** (hereafter refer to as “Indian EIA Category B”), which is based on the spatial extent of potential impacts on natural and man-made resources. **Indian EIA Category ‘A’** projects or development activities are mandated to conduct EIA studies along with conducting the “Public Consultation” as per the procedure stipulated in the Notification, and the environmental clearance is required from the Central Government or MoEF&CC.

Indian EIA Category ‘B’ projects fall under the purview of the state authority as mentioned in EIA notification 2006 and decentralized procedure is done. The Government of India has constituted the State Expert Appraisal Committee (SEAC) and State Environmental Impact Assessment Authority (SEIAA) committee for decentralized procedure of environmental clearance. The category ‘B’ projects are further divided into **Category ‘B1’** (projects that require submitting an EIA report) and **Category ‘B2’** project activities which do not require EIA report.¹

The stages in the environmental clearance procedure as per EIA notification 2006 is described in **Figure 3**. For convenience, stages of EIA have been divided into the following six stages in this report; 1) *Screening*, 2) *Scoping*, 3) *EIA Study*, 4) *Public Consultation*, 5) *Appraisal*, and 6) *Monitoring*.

(2) Forest Clearance Procedures

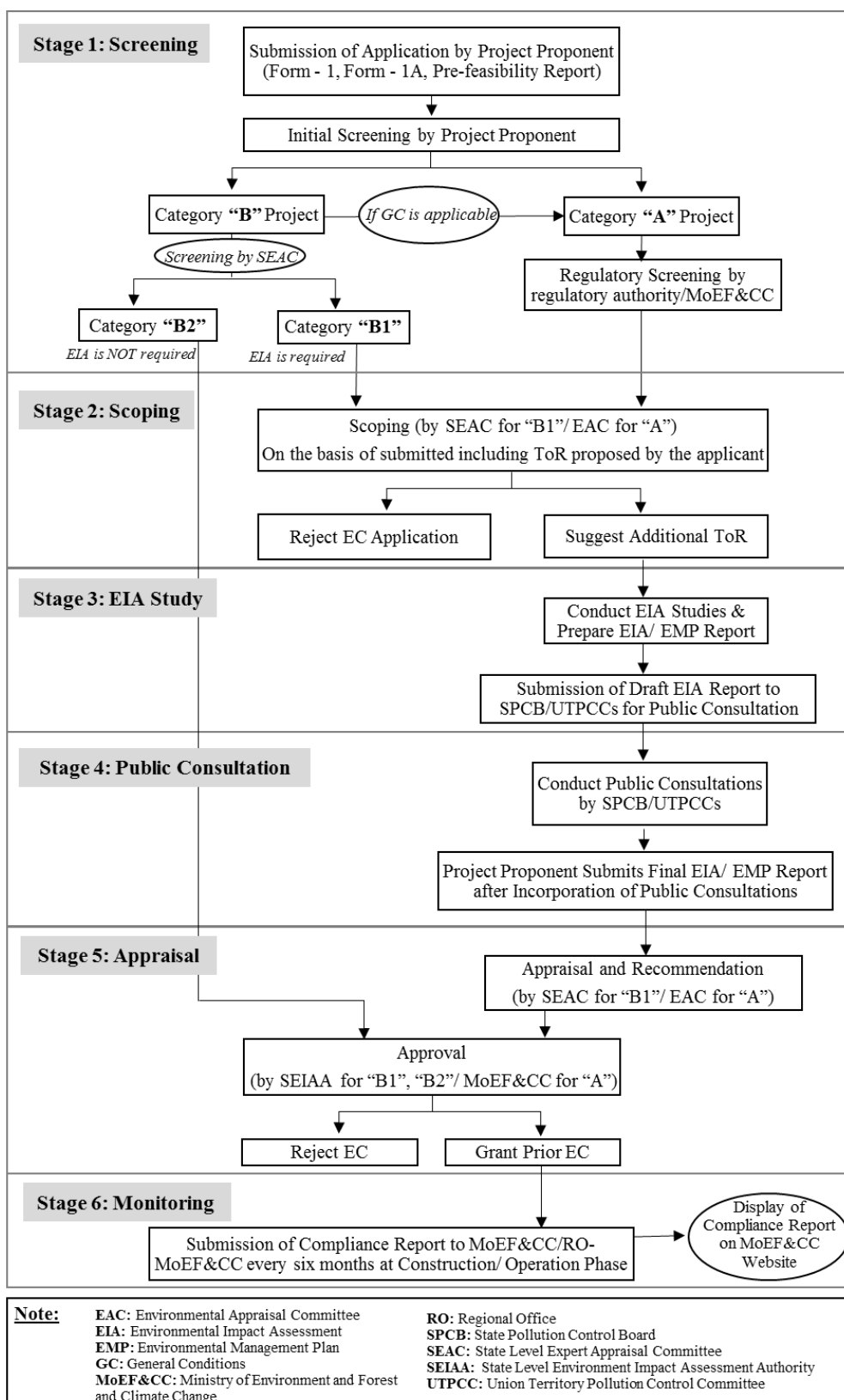
Forest Clearance from the statutory authority will be required if forest area is to be diverted for the Project (including, notified roadside plantations). For this purpose, application is submitted to the state government, which in turn recommends the case to MoEF&CC.

The process of Forest Clearance consists of two stages; **First Stage Clearance** and **Second Stage Clearance**. In the First Stage Clearance, the application could be granted “In Principle Approval”, or it could be subject to fulfilment of conditions, if applicable, which could include: deposition of Net Present Value of Forest (@ 438,000 to 1,043,000 INR/ha), money for compensatory afforestation, plantation of at least double the number of trees felled, submission of plan for afforestation, certificate of compliance under FRA, etc. During this phase, no activity will be allowed until final clearance is accorded and the state can stipulate additional conditions². In the Second Stage Clearance process, it will be ensured if the conditions prescribed have been fulfilled.

¹ Source: EIA Notification 2006 and <http://www.sciencebeing.com/2012/10/eia-notification-and-its-implementation-in-india/>

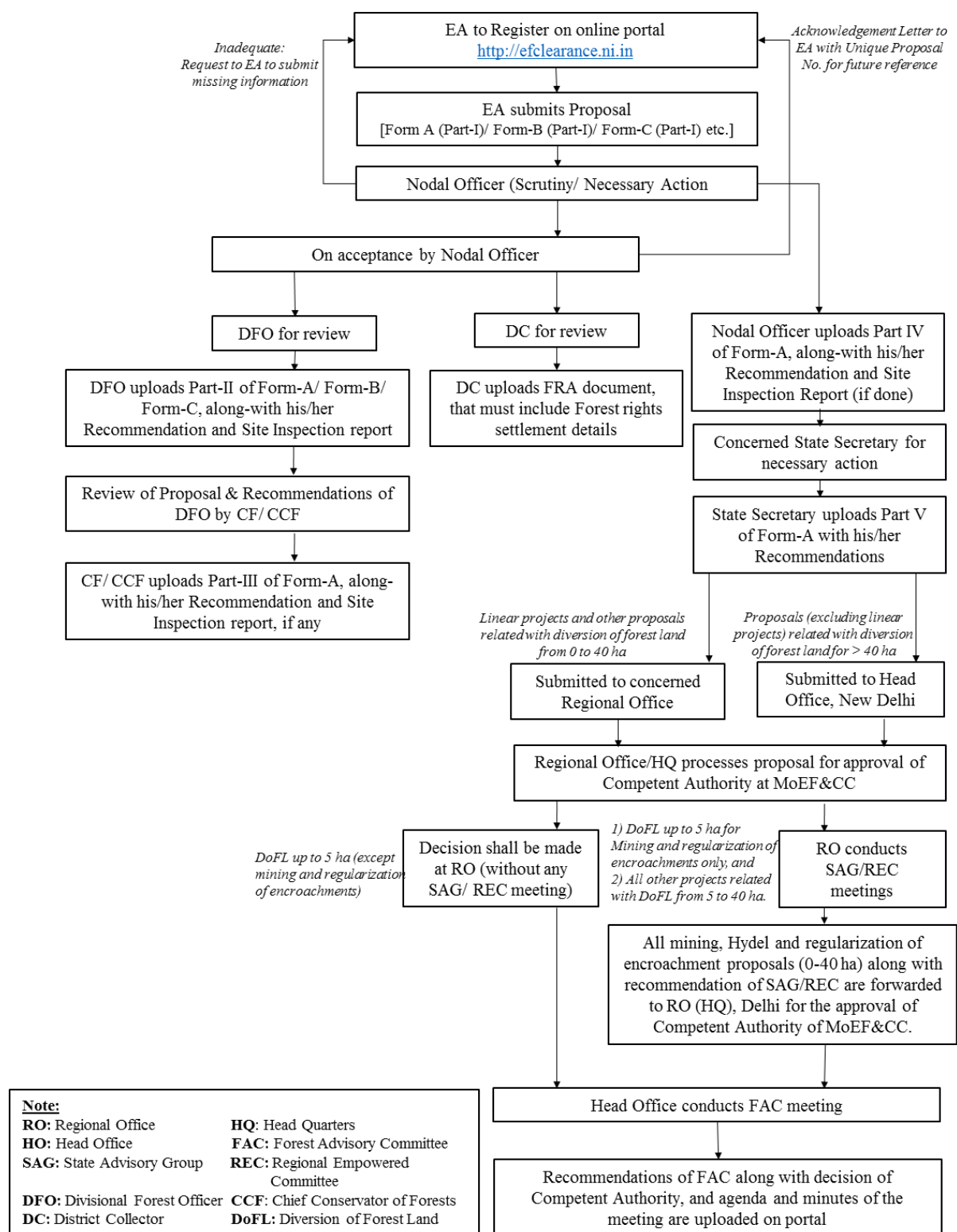
² Source: http://www.teriuniversity.ac.in/mct/pdf/new/environment/Infrastructure_development_and_environment.pdf

Figure 4 describes the process of forest clearance.



Source: JICA Survey Team based on EPA 1984 and Notification 2006 and Amendments, MoEF&CC

Figure 3 Prior Environmental Clearance Process as per Indian EIA Law



Source: JICA Survey Team based on information from MoEF&CC
<https://parivesh.nic.in/downloads.aspx>

Figure 4 Forest Clearance Process as per Relevant Indian Law

(3) Social Management Procedures - Land Acquisition and Involuntary Resettlement

JICA concerns that development projects are implemented with special attention to vulnerable groups such as the poor, landless/landed poor, indigenous peoples (or STs in India) and women.

Rights of local communities and STs should be respected in all interventions.

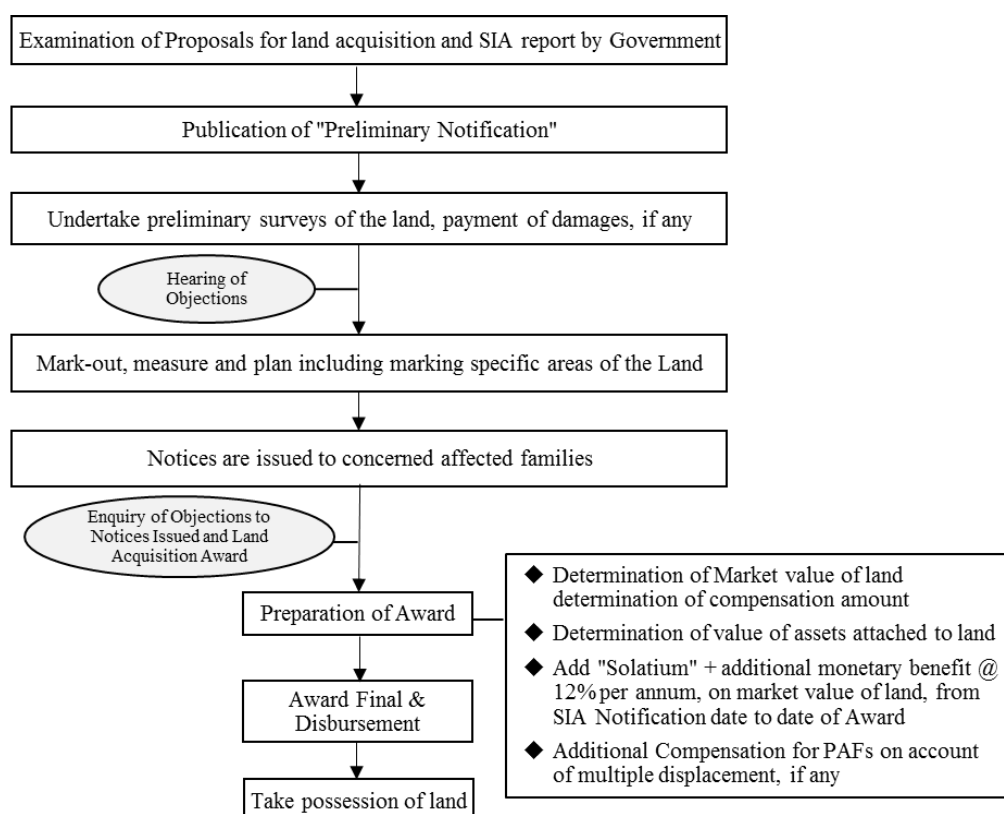
The potential negative social impacts are much lower compared with the large infrastructure projects which involve physical displacement and involuntary resettlement, but still there is a possibility to negatively impacts the local communities on their livelihoods, loss of access, ownership or use rights, and increased conflicts on forest lands by forestry activities which involve restricting practices or change existing land uses. The Project will involve the local communities to work through their respective village level implementation bodies in the designated project areas so that the relevant labour laws are also listed up. In the following sections, the procedures for land acquisition and involuntary resettlement applied in India are presented.

“The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013 [No. 30 of 2013] dated 26th September 2013” (RFCTLARR Act 2013), came into force on 01-Jan-2014, is the legal foundation for all matters related to land acquisition and involuntary resettlement in the country.

According to the Act; it ensures “a humane, participative, informed and transparent process for land acquisition for the purpose of industrialisation, development of essential infrastructural facilities and urbanisation, which is in consultation with the local self-government institutions and Gram Sabhas established under the Constitution”.

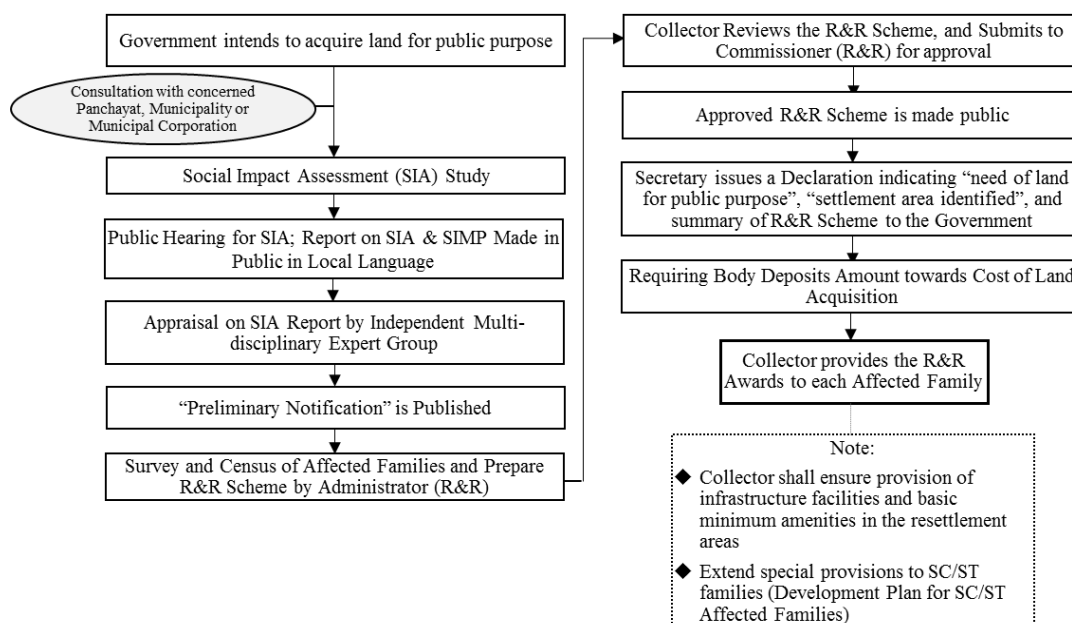
Also, the Act ensures that the negative impacts on the land owners and other affected families shall be minimised with the provision with a just and fair compensation to the affected families, leading to an improvement in their socio-economic status for their rehabilitation and resettlement.

The processes involved in land acquisition and involuntary settlement are depicted in Figure 5 and Figure 6 respectively.



Source: JICA Survey Team based on information from RFCTLARR Act 2013 and subsequent Rules

Figure 5 Flow Diagram for Land Acquisition Process



Source: JICA Survey Team based on information from RFCTLARR Act 2013 and subsequent Rules

Figure 6 Flow Diagram for Resettlement and Rehabilitation

3.6 Gaps between JICA Guidelines and Legal Framework of India

WB-FBCCCR, as the Executing Agency (EA), shall be responsible for the implementation of the entire Project, while the JFMCs/ EDC's and their respective Gram Sabha are PRIs to control and support the project activities in their lands from the community perspective. Key gaps and shortfalls identified in each institution in comparison to international standards as indicated in the JICA Guidelines are summarised in Table 4.

Table 3 Key Gaps and Shortfalls in Comparison to the Standards in the JICA Guidelines

Executing Agency/ Body	Key Gaps and Shortfalls	Possible Gap Filling Measures
Implementing agency	Prior consultations with beneficiaries and project-affected communities are limited Insufficient appraisal of environmental and social considerations prior to implementation (weak baseline for impact evaluation) Restricted procedures for environmental screening and subsequent management of environmental risks associated with small-scale construction and other activities with potential adverse impacts Inadequate monitoring of safeguard processes and procedures	Application of ESAF and VPPF Implementation of Capacity Development Plan for Environmental and Social Safeguards Engagement of Environmental and Social Consideration Expert/ Specialist(s)
Panchayati Raj Institution: JFMCs	Lack/ limitation in owning project activities within their areas Irregular community participation in JFMC meetings, thus paucity of prior consultation with project-affected communities Shortcomings in attending to concerns of ST, SC and OBCs Inadequate awareness of potential adverse environmental impacts Restrictive comprehension of safeguard processes and procedures	Application of ESAF and VPPF Implementation of Capacity Development Plan for Environmental and Social Safeguards

Source: JICA Survey Team

WB-FBCCCR or WBFD does not have any system for environment and social management, for screening, managing and monitoring environmental and social risks. Thus, it is highly recommended that PMU must hire environmental and social safeguards expert during the preparatory stage in order to support PMU for the compliance of the required environmental and social safeguards, that further described in Section 7 of this document

4 Potential Environmental and Social Impacts

As already discussed above that it is unfeasible to assess the detailed environmental and social impacts of the proposed sub-projects at this stage, thus, in this section some of the potential environmental and social impacts for proposed broad types of activities are examined and mitigation measures are proposed through JICA checklist, environmental and component-wise potential deleterious environmental and social impacts assessment (Table 5 and Table 6). The purpose of the initial assessment is to summarise the potential (especially negative) impacts which could be referred when Environmental Management Plans (EMPs) as well as Environmental Monitoring Plan (EMoP) are required to prepare. Also, IA, i.e. PMU/ DMUs/ FMUs, can refer these documents at the screening and selection stage of range level plans as reference documents which indicate major points to be considered from ESC perspective.

4.1 Potential Environmental and Social Impacts

(1) Environmental Considerations

JICA guidelines indicate a wide range of environmental considerations that are required to be taken into account. Initial scoping identified the following impacts on the natural environment to be assessed under the project;

- ◆ Ecosystems (especially afforestation, densification of forests, sites of importance to biodiversity conservation and protected areas)
- ◆ Biodiversity (fauna and flora)
- ◆ Air, Water, Waste and Soils (resulting from infrastructure activities including embankment protection measures)
- ◆ Climate Change

Appendix C reflects the initial environmental screening and assessment by making use of the Environmental Checklists provided by the JICA Guideline. A wide range of environmental and social potential impacts have been assessed and considered. The purpose of scoping is to identify the potential environmental and social impacts caused by the Project based on available secondary data and information, and preliminary site reconnaissance.

(2) Assessment of Potential Environmental Impacts

i) Positive Environmental Impacts

The proposed Project primarily focuses on development, protection and restoration of forests, mitigate man-animal conflict and improves livelihoods for the community, therefore the associated activities are expected to present various environmental benefits, including the following:

- ◆ Sustainable forestry management through production of Quality Planting Material
- ◆ Increase the overall forest area in the state - proportionate increase in dense & moderately dense forests,
- ◆ Restocking of open and scrub forest through additional plantations resulting in decrease of area under open and scrub forests,
- ◆ Climate change mitigation through reduced emissions from deforestation and forest degradation,
- ◆ Enhancement in ecosystem services by Catchment Area Treatment through watershed protection, protection of soils and moisture conservation measures, etc and plantation activities,
- ◆ Reduction in unsustainable utilization of forest resources through improvements and support for NTFPs, medicinal herbs and plants, investments in alternative livelihoods and income generating opportunities,
- ◆ Improvements in pasture management through embankment protection and soil and water conservation measures in North Bengal.
- ◆ Enhancements in protection of protected areas, and significant conservation of species

and habitats,

- ◆ Well managed forests and plantations would augment the livelihood resource base of the forest dependent population,
- ◆ Forest Department to be well equipped and strengthened to manage forest resources with active participation of an empowered & organized community.
- ◆ Protection of Endangered species through species conservation program for Dolphin, Indian Pangolin and Fishing Cat

ii) Negative Environmental Impacts

Table 5 below depicts potential deleterious environmental impacts associated with each project component. The table includes all aspects of implementation components, including project management, monitoring and evaluation components. Specific mitigation measures to the project components and activities are also indicated and these measures will be implemented through ESAF, especially through EMP and EMoP.

4.2 Social Considerations and Potential Impacts

(1) Social Considerations

JICA Guideline specifies a wide range of social aspects to be considered. Initial scoping identified the following social impacts to be assessed:

- ◆ Involuntary resettlement and land acquisition
- ◆ Poverty, vulnerability and livelihoods
- ◆ Specific impacts on Scheduled Castes (SCs), Scheduled Tribes (STs), Inhabitant of forest villages, forest dwellers, JFMC/EDC Members, etc.
- ◆ Gender

(2) Assessment of Potential Social Impacts

i) Positive Social Impacts

Although the primary objective of the project is forest development, protection, restoration, and conservation, equal amount of focus is also on livelihoods of the local communities, thus it is anticipated to provide a number of social benefits that would include;

- ◆ Improvement of physical capital for rural communities, including poor, with the help of prioritised community infrastructure development,
- ◆ Employment and income opportunities from forestry operations and forest protection activities would result in enhanced financial capital,
- ◆ Well managed forests and plantations would supplement livelihood resource-base of the forest dependent population,
- ◆ Increase in income levels of people,
- ◆ Improvements in range/pasture management would cater to fodder requirements of the rural communities,
- ◆ NTFP-based livelihoods would improve due to robust scientific management practices,

and

- ◆ Improved livelihood opportunities through project support for alternative income generating activities.
- ◆ Mitigation of human wildlife conflict through habitat protection

ii) Negative Social Impacts

Table 6 details-out the potential deleterious social impacts or risks associated with each project component. Impacts on the social setting often over-weigh the environmental risks associated with the project activities. The project area includes a diverse variety of tribal communities (also designated as STs), the SCs and other forest dependent communities, vulnerable groups including women, widows, destitute, poor, landless, etc., on whom a number of potentially significant social safeguard issues could be linked with respect to their lands and forest rights and impacts on their livelihoods.

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Table 5 Potential Deleterious Environmental Impacts

Component	Sub-Component	Potential Environmental Concerns	Scoping	Mitigations Measures/ Suggestions
Component 1: Ecosystem-based Climate Change Actions	1.1 Hill & North Bengal Landscape 1.1.1 Production of Quality Planting Materials 1.1.2 Improving Quality of Forests 1.1.3 Eco DRR Activities (Soil Water Conservation Works in Protected Areas) 1.1.4 Green Laboratory Initiatives	Use of chemical fertilizers, insecticides and pesticides in the nursery and plantation site may seep into ground water Use of non-native and exotic species may negatively impact the biodiversity	Low	Ensure judicious use of chemical fertilizers, insecticide/ pesticides Ensure use of bio fertilizers and insecticides/ pesticides Ensure use of native species Ensure propagation of native species
	1.2 Dry Lateritic & Alluvial Landscape 1.2.1 Production of Quality Planting Material 1.2.2 Improving Quality of Forests 1.2.3 Eco DRR Activities (including Preparation of GIS-based CAT Plans, Soil and moisture conservation works based on CAT Plan) 1.2.4 Green Laboratory Initiatives	Soil and moisture conservation structures like contour trench, bunds may lead to removal of top soils resulting in soil erosion Excavated muck from water harvesting tanks may run-off and contaminate sources of water and lands	Low	Ensure proper restoration of areas surrounding structures, through compaction of soils, cover crop or plantation of vegetation, etc. Ensure excavated mud is either disposed properly or it is spread-out and planted with vegetative cover. Proper maintenance of water harvesting tanks
	1.3 Deltaic Landscape 1.3.1 Eco DRR activities (field validation of the mangrove forest restoration models and its replication) 1.3.2 Green Laboratory Initiative			

Component	Sub-Component	Potential Environmental Concerns	Scoping	Mitigations Measures/ Suggestions
Component 2: Biodiversity Conservation	<p>2.1 Hill & North Bengal Landscape</p> <p>2.1.1 Human-wildlife conflict</p> <p>2.1.2 Species conservation programme</p> <p>2.1.3 Studies on wild animals and other behaviour</p> <p>2.2 Dry Lateritic & Alluvial Landscape</p> <p>2.2.1 Biodiversity conservation through people's participation in protected area</p> <p>2.2.2 Biodiversity conservation through people's participation for smaller mammals</p> <p>2.2.3 Human-wildlife conflict mitigation</p> <p>2.2.4 Species conservation programme</p> <p>2.2.5 Studies on wild animals and their behaviour</p> <p>2.3 Deltaic Landscape</p> <p>2.3.1 Biodiversity conservation through people's participation in protected area</p> <p>2.3.2 Human-wildlife conflict mitigation</p> <p>2.3.3 Studies on wild animals and their behaviour</p>	<p>Wildlife movement in/ around project areas may pose threat to human life and property</p> <p>Use of non-native non-palatable/ repulsive species may negatively impact the biodiversity</p>	Low	<p>Provision of nets, trenches, and other mitigation measures to the affected communities.</p> <p>Provision of torches, lights, and other mitigation measures</p> <p>Ensure use of native species</p>
Component 3: Livelihood Improvement	<p>3.1 Hill & North Bengal Landscape</p> <p>3.1.1 Preparatory Activities with JFMCs (3 batches) including community mobilisation, micro planning, EPA/ CDA)</p> <p>3.1.2. Support for Income Generation</p> <p>3.1.3. Support for Community Well being (Traditional Healers) (Except in Deltaic Landscape)</p>	<p>Construction of EPA may lead to air and water pollution</p> <p>Dust from construction sites and smoke from construction equipment, if used, may affect vegetation cover/ forests</p>	Low	<p>Water sprinklers may be used to settle dust and soil</p> <p>Properly serviced equipment to be used</p> <p>Ensure water mixed with concrete from mixers does not mix with run-off</p> <p>Democratically prioritise EPA to ensure benefits to all community members.</p>

Component	Sub-Component	Potential Environmental Concerns	Scoping	Mitigations Measures/ Suggestions
Component 4: Institutional Strengthening	<p>4.1 Strengthening Project Management</p> <p>4.1.1 Demarcation of JFM boundary</p> <p>4.1.1.1 Digitization of JFMC boundary including procurement of mouza sheet and GPS, and outsourced digitisation of JFM boundaries, and boundary pillar setting</p> <p>4.1.2 Mobility</p> <p>4.1.3 Buildings</p> <p>4.1.4 Project Contractual Staff</p> <p>4.1.5 Digital Strengthening</p> <p>4.2 Capacity Development</p> <p>4.2.1 Training Plan</p> <p>4.2.2 Training of Forest Officers (DCF & above Ranks)</p> <p>4.2.3 Trainings of Forest Officers /Frontline staff (Ranger & below ranks)</p> <p>4.2.4 National Workshop (3 days)</p> <p>4.2.5 Trainings for JFMC/ SHG members</p> <p>4.3 Monitoring & Evaluation</p> <p>4.3.1 Progress Monitoring</p> <p>4.3.2 Impact Evaluation</p> <p>4.3.3 Audits</p> <p>a) Creation of carbon estimation lab</p> <p>b) Research studies based on the research plan</p> <p>4.4 Strengthening Forest Research</p> <p>4.5 Publicity and Publications</p> <p>4.5.1 Website maintenance</p> <p>4.5.2 Guidelines, manuals and annual reports</p> <p>4.5.3 Small files/ videos/ digital documentation</p> <p>4.5.4 Knowledge material/ course material</p>	<p>Construction of buildings (office) may lead to air, water and noise pollution</p> <p>Water mixed with concrete, oil from construction equipment may contaminate nearby forest/ private lands, water sources and channels, agricultural fields, plantations, etc.</p> <p>Construction worker's labour camps may lead to deterioration of environment</p> <p>Lack of awareness/capacity of relevant stakeholders on ESC may possibly lead to negative environmental impacts</p>	Low	<p>Water sprinklers may be used to settle dust and soil</p> <p>Properly serviced equipment to be used</p> <p>Ensure water mixed with concrete from mixers does not mix with run-off</p> <p>Ensure proper storage of and control on spillage of diesel, machine lubricants, and other oils</p> <p>Judicious use of water and containment of water from construction site from run-off</p> <p>Proper disposal of solid wastes from labour camps</p> <p>Proper disposal of waste water from labour camps</p> <p>ESC Expert under PMU would assist PMU/DMU/FMU to implement project activities in compliance with ESAF,</p> <p>Provision of the ESC relevant capacity development trainings to the respective administrative stakeholders</p>

Source: JICA Survey Team

Table 6 Potential Deleterious Social Impacts

Component	Sub-Component	Potential Social Concerns	Scoping	Mitigations Measures/ Suggestions
Component 1: Ecosystem-based Climate Change Actions	1.1 Hill & North Bengal Landscape 1.1.1 Production of Quality Planting Materials 1.1.2 Improving Quality of Forests 1.1.3 Eco DRR Activities (Soil Water Conservation Works in Protected Areas) 1.1.4 Green Laboratory Initiatives	Limited access to customarily held resources	Low	Ensure informed consultations and sharing of project related information to prepare the community for intended project activities Ensure participation of community in all aspects of planning, implementation and monitoring of the project activities
	1.2 Dry Lateritic & Alluvial Landscape 1.2.1 Production of Quality Planting Material 1.2.2 Improving Quality of Forests 1.2.3 Eco DRR Activities (including Preparation of GIS-based CAT Plans, Soil and moisture conservation works based on CAT Plan) 1.2.4 Green Laboratory Initiatives	Embankment protection may result in loss of access to customarily held resources, or loss of incomes or loss of agricultural production	Low	Ensure all embankment protection development activities are restricted within forest areas Ensure access to customarily held resources is not limited or restricted due to construction of embankments/ check dams
	1.3 Deltaic Landscape 1.3.1 Eco DRR activities (field validation of the mangrove forest restoration models and its replication) 1.3.2 Green Laboratory Initiative	Conversion of cropping system on which people are dependent on may result in loss of incomes or loss of agricultural production	Low	Ensure conversion of cropping system is as per the soil type, fertility, climatic condition so as to mitigate any risk of crop failure or loss of production/ income to farmers Ensure access to customarily held resources is not limited or restricted due to construction of bio-fencing
	2.1 Hill & North Bengal Landscape 2.1.1 Human-wildlife conflict 2.1.2 Species conservation programme 2.1.3 Studies on wild animals and other behaviour 2.3 Dry Lateritic & Alluvial Landscape 2.2.1 Biodiversity conservation through people's participation in protected area 2.2.2 Biodiversity conservation through people's participation for smaller mammals 2.2.3 Human-wildlife conflict mitigation 2.2.4 Species conservation programme 2.2.5 Studies on wild animals and their behaviour 2.3 Deltaic Landscape 2.3.1 Biodiversity conservation through people's participation in protected area 2.3.2 Human-wildlife conflict mitigation 2.3.3 Studies on wild animals and their behaviour	Wildlife movement in/ around project areas may pose threat to human life and property	Low	Imparting education to community members to drive away wildlife rather than hurt/ killed wildlife Fencing and other similar arrangements to discourage wildlife can potentially destroy plantations and agricultural fields Veterinary Hospital/ Medicare for immediate medical intervention in case of animal induced injury help in reducing risk of mortality.

Component	Sub-Component	Potential Social Concerns	Scoping	Mitigations Measures/ Suggestions
Component 3: Livelihood Improvement	3.1 Hill & North Bengal Landscape 3.1.1 Preparatory Activities with JFMCs (3 batches) including community mobilisation, micro planning, EPA/ CDA) 3.1.2. Support for Income Generation 3.1.3. Support for Community Well being (Traditional Healers) (Except in Deltaic Landscape) 3.1.4. Support for Community Mobilisation (Extension Worker)	Disparity in selection of beneficiaries on income generating activities, and livelihood opportunities Conflicts within the community individuals and institutions may arise on benefit sharing Exclusion of vulnerable groups from project activities and benefits	Low Low Low	Appropriate and representative selection of beneficiaries for livelihood options and income generation activities Ensure cohesion among community institutions, immediate resolution of conflicts and redress of grievances Identify specific activities for marginalized groups such as landless, poor households, female headed households, women, etc. Specify minimum quota for selection of women, SCs, STs, and other vulnerable groups such as women, women headed households, landless, poor/ near poor, etc., as beneficiaries for livelihood development activities
	3.2 Dry Lateritic & Alluvial Landscape 3.2.1. Preparatory Activities with JFMCs (3 batches) including community mobilisation, micro planning, EPA/ CDA) 3.2.2. Support for Income Generation 3.2.3. Support for Community Well being (Traditional Healers) (Except in Deltaic Landscape) 3.2.4. Support for Community Mobilisation (Extension Worker)	Small scale infrastructure development may result in acquisition of private lands, or loss of access to customarily held resources, or loss of incomes or agricultural production	Low	There should not be any acquisition of land: ensure up-gradation of existing infrastructure or ensure alignments that do not require additional acquisition of land (If un-avoidable, encourage voluntary land donation/acquisition on community initiatives)
	3.3 Deltaic Landscape 3.3.1 Preparatory Activities with JFMCs (3 batches) including community mobilisation, micro planning, EPA/ CDA) 3.3.2. Support for Income Generation 3.3.3. Support for Community Well being (Traditional Healers) (Except in Deltaic Landscape) 3.3.4. Support for Community Mobilisation (Extension Worker)	Construction of buildings may result in air, water pollution Construction work may pose a health risk for the workers and neighbourhood	Low	Ensure the contractor follows all laid down guidelines for mitigating risk of air and water pollution Sprinkling of water in the construction sites and nearby areas to control dust Judicious use of water to control contaminated water from construction site from run-off into agricultural fields, water sources, etc.
	4.1 Strengthening Project Management 4.1.1 Demarcation of JFM boundary 4.1.1.1 Digitization of JFMC boundary including procurement of mouza sheet and GPS, and outsourced digitisation of JFM boundaries, and boundary pillar setting 4.1.2 Mobility 4.1.3 Buildings			
Component 4: Institutional Strengthening				

Component	Sub-Component	Potential Social Concerns	Scoping	Mitigations Measures/ Suggestions
	4.1.4 Project Contractual Staff 4.1.5 Digital Strengthening 4.2 Capacity Development 4.2.1 Training Plan 4.2.2 Trainings of Forest Officers (DCF & above Ranks) 4.2.3 Trainings of Forest Officers /Frontline staff (Ranger & below ranks) 4.2.4 National Workshop (3 days) 4.2.5 Trainings for JFMC/ SHG members 4.3 Monitoring & Evaluation 4.3.1 Progress Monitoring 4.3.2 Impact Evaluation 4.3.3 Audits a) Creation of carbon estimation lab b) Research studies based on the research plan 4.4 Strengthening Forest Research 4.5 Publicity and Publications 4.5.1 Website maintenance 4.5.2 Guidelines, manuals and annual reports 4.5.3 Small filems/ videos/ digital documentation 4.5.4 Knowledge material/ course material	Lack of awareness/capacity of relevant stakeholders on ESC may possibly lead to negative social impacts such as loss of access to resources or loss of livelihoods, or involuntary resettlements, Inequitable distribution of benefits based on forest land tenure arrangements. Local community may get isolated or would merely act as target groups of project activity interventions Incestuous relationships between local community and construction workers resulting in spread of Sexually transmitted diseases, AIDS/ HIV, etc.	Low	ESC expert under PMU would assist PMU/DMU/FMU to implement project activities with compliance of ESAF Provision of the ESC relevant capacity development trainings to the respective administrative stakeholders Ensure active participation of beneficiary and affected community members in baseline surveys and micro-planning activities, for selection of project areas, and reduce conflicts Beneficiaries should be selected through a transparent process to ensure equitable benefit-sharing Fully ensure and consider active participation of community in the Project following ESAF Ensure medical check-up for laborers before commencing work in the construction sites, regular health check-ups thereafter

Source: JICA Survey Team

4.3 Consideration for Gender and Differently Abled

Generally, women in the remote areas, especially in rural and mountainous parts, are either excluded or not allowed to participate in natural resource planning and decision-making, more-so due to patriarchal land tenure systems, male-dominated society and cultural beliefs; despite the fact that women are typically more attached to forests and more knowledgeable about various aspects of forest management.

Gender equality and women's empowerment are crucial for sustainable development. In West Bengal many Women work in agriculture and forest produce collection. Their knowledge and skills related to resource use and management can make important contributions to sustainable management of forests. Women's voices and opinions are often overlooked in local discussions and decisions. Towards inclusive project implementation process, appropriate gender considerations shall be made in order to mainstream gender and to ensure equal rights, opportunities and benefits regardless of gender.

Table 7 Plan of Consideration for Gender

Activity	Monitoring Indicators of Consideration Measures/ Targets/ Measures for Consideration	Monitoring Method
Planning stage		
Consultation for site selection and identification of the target JFMCs	<ul style="list-style-type: none"> - 30% of the participants in the consultation is women. - If the women have difficulty in participation of the consultation meetings due to societal norms and other reasons, separate consultation for women group is to be held at their convenient time and venue where they feel secure. - In selection of the target JFMCs, JFMCs with the following characteristics are prioritized: <ul style="list-style-type: none"> i) higher ratio of motivated or <i>de-facto</i> women headed households in their members and committee members; and ii) higher ratio of women-headed households. 	<ul style="list-style-type: none"> - FMUs prepare the lists of participants of the consultation, and report through the project MIS. - FMUs evaluate the criteria during the JFMC selection.
Formulation/activation of JFMCs	<p><Executive committee></p> <ul style="list-style-type: none"> - At least 30% of the executive committee of new JFMCs to be formulated in the Project is women. - At least 30 % of the executive committee of JFMCs newly elected for activation in the Project is women. - Participation of women in the executive committee meeting shall be more than 50% of women executive members. (As per JFM Resolution 2017, 30 % of the executive committee of JFMC is women, while the actual ratio is less than 30%.) <p><Member></p> <ul style="list-style-type: none"> - Women's participation is more than 50% of the general body meetings. <p><Governance></p>	<ul style="list-style-type: none"> - FMUs enters the data of the registered members in WBFD MIS, and report the ratio of women in the project MIS.

Activity	Monitoring Indicators of Consideration Measures/ Targets/ Measures for Consideration	Monitoring Method
	<ul style="list-style-type: none"> - Information sharing mechanism among the JFMC members, especially for those who does not attend the meeting, is established in each JFMC. (Women members sometimes have difficulty in attending meetings due to their household work, weather conditions etc.) 	
Development of micro plan of JFMCs (including planning of EPA/CDA)	<ul style="list-style-type: none"> - Focus group discussion is conducted as per the guidelines for micro plan preparation. At least 30 % of the participants shall be women. - If mixed gender group does not facilitate discussion, gender segregated group discussion shall be conducted and their views shall be shared in plenary by facilitator women leader. They shall also be informed of how the needs/opinions confirmed in the group discussion are incorporated in the micro plan, and shall be given opportunity to give their feedback for finalization of the micro plan. 	<ul style="list-style-type: none"> - FMUs prepare the lists of participants of micro plan development consultations and report through the project MIS. - DMU will monitor the implementation process and report observation to PMU.
Selection of NTFP species for plantation	<ul style="list-style-type: none"> - At least 30% of the NTFP species to be planted is the ones which women are commonly harvesting and selling to the market. 	<ul style="list-style-type: none"> - FMUs report consultation results to DMUs, and DMUs reports the selected NTFPs with selected reasons to PMU.
Implementation stage		
Field work for forest development (nursery maintenance, afforestation, ANR) , participatory biodiversity conservation, community infrastructure development etc.	<ul style="list-style-type: none"> - Equal pay for equal work - In order to provide the equal work opportunity for women, work environment/ conditions are created by various means. For example, gender-wise washroom is established in near the work sites including project units (PMU/ DMU/ FMU); Mobility from the community to the work site is to be provided for women; Short-time part work opportunity for those who have limited time for working is offered, etc. As a result, at least 30% of the labourers engaged by the project shall be women. 	<ul style="list-style-type: none"> - FMUs reports the gender-wise benefit sharing and payment to JFMC members through the project MIS.
Trainings of JFMCs, SHGs	<ul style="list-style-type: none"> - Training venues and duration shall be determined depending on the gender based preference. When organising women's training, the duration shall be short and the venue shall be close to their residence. In case of training organised outside of the village, their spouses also need to be informed and consulted for their participation. - Training duration and timing are proposed considering gender-wise timetable. Gender-wise washroom is prepared in the training facility/sites. Mobility of training 	<ul style="list-style-type: none"> - FMUs prepare the lists of participants of in the trainings and report through the project MIS.

Activity	Monitoring Indicators of Consideration Measures/ Targets/ Measures for Consideration	Monitoring Method
	participation is provided for women groups if required. By means of such measures, more than 50 % of women JFMC members, attend the trainings on the activities which they participate.	
Project management	<ul style="list-style-type: none"> - At least 50 % of extension workers and personnel of the Technical Agencies engaged by the project are women. - 50% of project officials/ staffs at PMU/ DMU/ FMU shall be women. - All the PMU,DMU,FMU members responsible for ESAF/project monitoring are assigned and attend the trainings provided by PMC on ESAF including consideration for gender. - To enhance utilization of grievance redressal mechanism by the women, at least 3 female members of FMUs/DMUs take part in the grievance committee from female stakeholders. 	<ul style="list-style-type: none"> - PMU supervises implementation of ESAF following the monitoring plan described in ESAF, and report to JICA.

Source: JICA Survey Team

The social inclusion of persons with disabilities denotes the process of improving their ability, opportunity, and dignity to take part in society. Design considerations and equal opportunities for deserving differently abled will go a long way in ensuring social inclusion and respectful life for the differently abled.

Table 8 Plan of Consideration for Differently Abled

Activity	Monitoring Indicators of Consideration Measures/ Targets	Monitoring Method
Planning stage		
Consultation for site selection and identification of the target JFMCs	<ul style="list-style-type: none"> - As a part of the consultation/orientation meetings, focus group discussion or individual interview with the differently abled people living inside/near forest area is conducted to enhance their participation in the project activities and JFMCs. - Necessary measures for consideration in communication with them is properly taken by FMUs under the assistance of PMC of ESC (writing communication, sign language interpreter etc.). As a result, at least 20 % of the differently abled people in the target area participate in the consultation/ orientation. - All the selected JFMCs, they should be guided to make appropriate consideration for differently abled JFMC members and ensure their voices are reflected in the decisions made. 	<ul style="list-style-type: none"> - FMUs prepare the lists of participants of the consultation/interview, and report through the project MIS. - FMUs evaluate the criteria during the JFMC selection.
Formulation/activation of JFMCs	<ul style="list-style-type: none"> - Through the public consultation above, the number of the JFMCs members of the differently abled people in the target area is increased compared to the baseline (before the project). 	<ul style="list-style-type: none"> - FMUs enters the data of the registered members in PMU MIS, and report the number of the

Activity	Monitoring Indicators of Consideration Measures/ Targets	Monitoring Method
	<ul style="list-style-type: none"> - Information sharing mechanism among the JFMC members, especially for those who are differently abled, to secure their access to the information. 	members of the differently abled people in the project MIS.
Development of micro plan of JFMCs (including planning of EPA/CDA)	<ul style="list-style-type: none"> - Focus group discussion is conducted as per the guidelines for micro plan development. In this project, group discussion/individual interview with the differently abled people is conducted in each JFMC. Necessary measures for consideration in communication with them is properly taken by FMUs under the assistance from PMC of ESC. As a result, at least 50 % of the differently abled members of JFMCs participate in the consultation for micro plan development. 	<ul style="list-style-type: none"> - FMUs prepare the lists of participants of micro plan development consultations and report through the project MIS.
Implementation stage		
Field work/ Income generation	<ul style="list-style-type: none"> - Equal pay for equal work - In order to promote participation of the differently abled people in JFMCs/SHGs work, various work conditions/work options of JFMCs/SHGs are proposed. (For instance, flexible work shift, larger work space, universal design in the work space, offer of various work types, etc.) As a result, more than 50% of the differently abled members of JFMCs/SHGs increase their annual earnings compared to the baseline. 	<ul style="list-style-type: none"> - FMUs record No. of the differently abled people participated as the workers, and payment/ benefit sharing to them.
Training for community organizations	<ul style="list-style-type: none"> - In order to provide the equal participation opportunity for the differently abled people to the trainings, various measures are to be taken. - For instance, notice on the training is delivered in an appropriate manner to make sure that they have access to the information. - Training method and materials shall be designed so that universally effective in delivering the contents. - More than 50 % of differently abled JFMC and IGA activities participants, attend the trainings on the activities which they participate. 	<ul style="list-style-type: none"> - FMUs prepare the lists of participants of in the trainings and report through the project MIS.
Project management	<ul style="list-style-type: none"> - As for the public information disclosure of ESAF/ other notifications by the Project, not only public disclosure on the internet/ public billboard etc., necessary measures for consideration for the differently abled is properly taken under the technical advice from PMC of ESC such as explanatory meeting with sign language interpreter etc. - All the PMU,DMU,FMU members responsible for ESAF/project monitoring are assigned and attend the trainings provided by PMC on ESAF including consideration for the differently abled. 	<ul style="list-style-type: none"> - PMU supervises implementation of ESAF following the monitoring plan described in ESAF, and report to JICA with technical assistance from PMC ESC.

Activity	Monitoring Indicators of Consideration Measures/ Targets	Monitoring Method
	<ul style="list-style-type: none"> - Following the Persons with Disabilities Act 1995, differently abled people are employed for the project implementation, and work condition accommodates them to ensure their performance at work places. - Various methods of grievance redressal are prepared for the differently abled people. - All the buildings and other public infrastructures to be constructed in the Project adapt the universal design (Braille labelled, elevator, voice alert/notice, slope access, etc.). 	

Source: JICA Survey Team

5 Environmental and Social Management Measures

ESAF has been prepared to ensure that potential adverse environmental and social impacts associated with the Project are either avoided or minimised in line with the JICA Guideline as well as India and policies, laws and regulations relevant to the state of West Bengal. ESAF targets at managing the potential unfavourable and deleterious impacts, with the help of simple procedures to expedite appropriate environmental and social management.

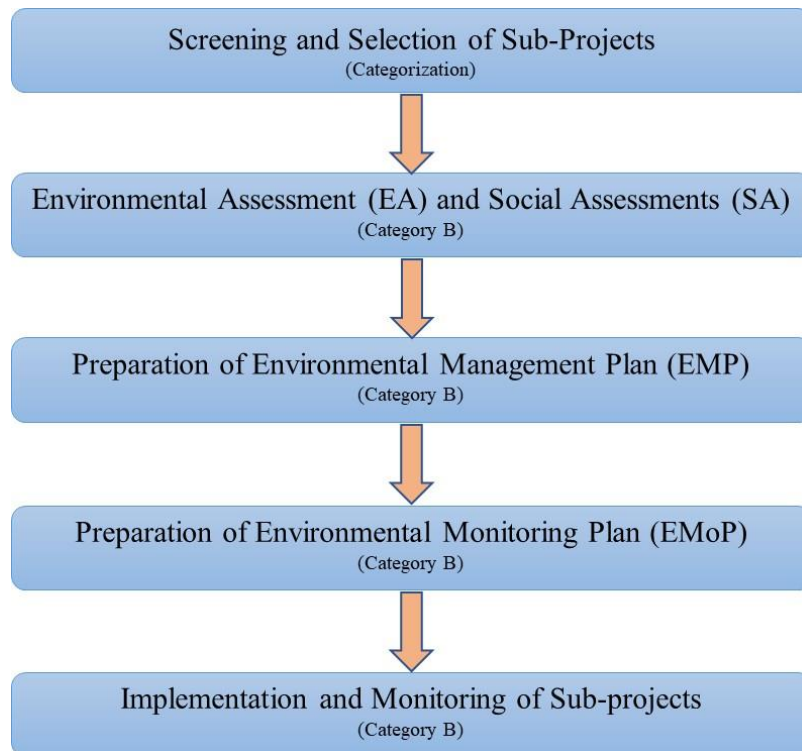
An EIA study would not be required for the entire Project; however, the Project may need to be evaluated from the environmental and social risk perspective before implementation of sub-projects.

All the sub-projects will be screened and Category-A sub-projects would be excluded. Sub-projects categorised as B or C will be implemented and the criteria for classification under Category B, as per JICA Guideline is elaborated below:

Table 9 Definition of Category B & C

Category B	Proposed projects are classified as Category B if the potential adverse impacts on the environment and society are less than those of Category A projects. Generally, these are site-specific, with few irreversible impacts, and can be addressed by general mitigation measures in most cases.
Category C	Proposed projects are classified as Category C if these are likely to have minimal or little adverse impacts on the environment and society.

Source: JICA Guideline on Environment and Social Consideration



Source: JICA Survey Team

Figure 7 Flow Diagramme of Important Procedures of ESAF

5.1 Screening and Selection of Sub-Projects

Generally, the guidelines for selection of sub-project reinforce the key objectives of the Project. Specific sub-projects will be selected based on the preferences of the communities/ needs of WBFD, thus the guidelines should not be too prescriptive in terms of defining what a given community/WBFD can and cannot do. At the same time, exclusion criteria should be clearly shown to eliminate sub-projects that may cause potentially significant adverse environmental impacts, resulting in the requirement of EIA.

The categorisation (Category B or C) of sub-project as per the JICA Guideline and exclusion criteria will be finalised by PMU prior to the commencement of the Project or at the early stage of the preparatory work. In accordance with the JICA Guidelines, the exclusion criteria have also been developed and are summarised in the Table 10. The sub-projects which might satisfy one of the criteria are excluded.

Table 10 Sub-Project Exclusion Criteria

Component	Exclusion Criteria for Sub-project
1. Overall	<ul style="list-style-type: none"> – divert forest land to other land use – require acquisition of private land – require involuntary resettlement – cannot demonstrate the broad community support – likely to have major adverse impacts on the environment – fall into “Category A³” as per the JICA Guideline

³ Though sub-projects which fall into the “Category A” as per the JICA Guideline are not anticipated in the Project, the following scale of sub-projects are regarded as the “Category A”.

Component	Exclusion Criteria for Sub-project
2. Forest and Natural Environment	<ul style="list-style-type: none"> – activities conducted inside protected areas, such as national parks/ wildlife sanctuaries, will not contribute to environmental protection/ conservation of the selected protected areas. – likely to cause damage to wildlife and their habitats – planting of non-native or invasive or exotic species of forest trees, shrubs or plants – felling of trees inside Reserved Forest or PA unless ancillary to conservation and management of forests and wildlife defined in the working plan (e.g. fire breaks, thinning etc.) – collection, processing and sale of NTFP species listed under CITES, India's Red List of threatened species of fauna and flora or scheduled under the Wildlife Act (1972) – use of fertilizers and pesticides banned by WHO (Classes IA, IB and II)
3. Social Environment	<ul style="list-style-type: none"> – activities that promote child labour – activities that could lead to the exploitation of women – activities that have adverse impact on ST/SCs/Vulnerable groups etc. – activities that require acquisition of private land and/or involuntary resettlement – activities that may cause damage to places of religious importance, historical monuments or cultural properties

Source: JICA Survey Team

5.2 Environmental and Social Assessments

Although, the Project is not anticipated to bring about deleterious environmental and social impacts, yet it is suggested to conduct Environmental Assessment (EA) and Social Assessment (SA) for specific sub-project classified as Category B, which shall be conducted after the screening and selection procedures. DMU under the guidance/direction of PMU shall determine the necessity of the assessments, considering the types of potential adverse impacts of the sub-projects. The assessment results will be utilised for the preparation of EMP/EMoP. The following sections describe the key tasks for the assessments and indicative contents of the reports.

(1) Environmental Assessment

The main purpose of EA is to help understand the issues and risks associated with environmental aspects, and its resultant impacts on the target population. Regular monitoring of environmental parameters such as air and water quality, noise levels, degradation of forests and land, soil erosion, solid waste disposal, disposal of sewage, etc., will enable the Project to understand the temporal changes in environmental conditions. Such monitoring activities would enable the Project to devise short/ long-term, recommendations, strategies and mitigation measures to address the concerns and issues that affect environment.

EA plan will be prepared by IA, assisted by PMC ESC hired by PMU providing reasonable details outlining the objectives, contents, methods and schedule for its implementation. Table 11 specifies key tasks for EA.

-
- Conversion or felling of more than 100 ha of forest
 - Construction of embankments/dams with water reservoir area of more than 100 ha
 - Development of more than 100 ha agricultural area

Table 11 Key Tasks for Environmental Assessment

No.	Tasks	Descriptions
1	Describe Environmental Setting	It will address the existing environmental setting, in terms of physiography and geology, land-use patterns, forest cover and dependence on forests, ambient air quality, noise levels, water quality, areas prone to land slips and avalanches, socio-economics, etc.
2	Legal and Regulatory Environmental Consideration	Provides an account of the existing legal and regulatory milieu, compliance with multilateral funding agencies, such as World Bank, JICA, shortfalls, if any, etc.
3	Impacts Assessment and Mitigation Measures	It will describe all the activities/ sub-projects that have potential to impact the environment in a deleterious manner, assess and analyse in-depth various potential negative impacts related activities/ sub-projects, provide mitigation measures environmental risk and vulnerabilities.
4	Devise Strategies to Manage and Monitor Environmental Concerns and Parameters	Provide strategies to manage and monitor potential environmental concerns and parameters. It will also provide roles and responsibilities of various key positions, institutions, bodies that will manage and monitor the control and protection of environmental aspects, conservation of resources, etc. It also examines the opportunities for community involvement in project preparation and implementation, the existing and proposed framework for property rights/ access to resources, and sustainable management and monitoring of environment.
5	Recommendations for Project Design and Implementation Arrangements	It reviews proposals for project design and provide guidance to the implementing agency on participatory alternatives and institutional strengthening measures appropriate to the environmental characteristics of the project area(s). This will provide a basis for integrating the environmental analysis of the core elements into proposals for implementation arrangements.

Source: JICA Survey Team

EA report shall include at least the following contents.

Table 12 Indicative Contents of Environmental Assessment Report

No.	Chapter	Descriptions
1	Introduction	Define basic purposes for EA, its scope and a brief outline of report organisation.
2	Sub-Project Description	Provide an outline of the proposed sub-project, its rationale, objectives, area, key activities, the proposed implementation schedule, etc.
3	Approach and Methodology	Describe the study approach and methodology adopted for carrying-out the EA, including collation of quantitative data and information, describe tools for monitoring and management of environmental parameters
4	Environmental Baseline	Provide brief profiles of the target area, existing environmental conditions in these areas, that will serve as a reference for future comparison and monitoring
5	Sub-Project Impacts	Describe sub-projects, its objectives and activities of the sub-projects, explains potential positive and negative impacts as a result of establishment of the sub-projects.
6	Public Consultation and Information Disclosure	Describe the results of public consultations, meetings and other interaction events with the communities.
7	Conclusion and Recommendations	Provide overall conclusions and recommendations, describe precise measures to avoid, minimise and/or mitigate adverse impacts on the environment, communities and particularly vulnerable groups due to sub-project activities, environmental management mechanism and implementation arrangements and monitoring activities and implementation arrangements.

Source: JICA Survey Team

(2) Social Assessment (SA)

The main purpose of the Social Assessment (SA) is to help understand basic social issues and risks, and to determine social impacts on the target population of the proposed sub-projects. Analysis of the collected socio-economic information enables the Project to prioritise critical issues and means to address them, in consultation with other stakeholders.

The assessment will (i) establish baseline socio-economic situation of the target communities in the project area that will act as a reference for measuring project impacts in future, (ii) assess the access to and opportunities for getting benefits of basic social and economic services, (iii) stipulates a basis to identify appropriate interventions for community development and livelihoods under the Project, and (iv) determine short/ long-term, direct/ indirect, and positive/ negative impacts of the Project on the socio-cultural and economic status, especially for vulnerable groups.

SA shall be carried out by FMU with assistance/supervision by PMC ESC and the results would assist the executing agency in reaching-out to the vulnerable and the poor and thus ensures that the objectives of the Project are acceptable to the intended beneficiaries. Table 13 specifies key tasks for SA.

Table 13 Tasks for Social Assessment

No.	Tasks	Descriptions
1	Review baseline information	Gathering of baseline information on the demographic, social, cultural, and political characteristics of the VP, the land and territories that they have traditionally owned or customarily used or occupied, and the natural resources on which they depend. Review carefully the status of land use and FRA status of forest dwellers and forest village habitants of the target area of afforestation/natural assisted regeneration to identify the area under application of FRA or dispute.
2	Planning of consultation and FPIC	Elaborate a culturally appropriate process for consulting with VP at each stage of project preparation and implementation
3	Consultation	Conduct participatory assessment with VP, on the potential adverse and positive effects of the project based on free, prior, and informed consultation.
4	Examination of the required mitigation measures	Identify measures necessary to avoid adverse effects, or if such measures are not feasible, the identification of measures to minimize, mitigate, or compensate for such effects, and to ensure that VP receive culturally appropriate benefits under the project.
5	Development of a Monitoring plan	The monitoring system needs to have local participation in the generation and refinement of indicators over the project cycle in order for the affected communities to be involved in balancing their own interests in the management of resources for conservation and productive purposes.

Source: JICA Survey Team based on Social Analysis Guidelines in Natural Resource Management (2005) and OP 4.10, Annex A - Social Assessment, World Bank

SA report shall include at least the following contents.

Table 14 Indicative Contents of Social Assessment Report

No.	Chapter	Descriptions
1	Introduction	Define basic purposes for Social Assessment, its scope and a brief outline of report organisation.
2	Sub-Project description	Provide brief outline of proposed sub-project, its rationale, objectives, area, key activities, the proposed implementation schedule etc.
3	Approach and methodology	Describe the study approach and methodology adopted for carrying-out the assessment, including quantitative and qualitative data and information collection
4	Socio-economic baselines	Provide brief profiles of the study (target) area, demography, social, cultural, and political characteristics; the land and territories that they have traditionally owned or customarily used or occupied.
5	Sub-project impacts	Describe sub-projects, its objectives and activities of the sub-projects, socio-economic and livelihoods assessment, explain potential positive and negative impacts of the sub-project.
6	Vulnerable groups	Describe about the identified VP (social group, socio-economic situation, cultural habitat, use of natural resources, potential impact on each sub-group)
7	Public consultation and information disclosure	Describe the results of public consultations, meetings and other interaction events with the communities.
8	Conclusion and recommendations	Provide overall conclusions and recommendations.
9	Mitigation measures	Describe precise measures to avoid, minimise and/or compensate for sub-project activities with adverse impacts on communities and particularly vulnerable groups, which will be integrated in the VPP.
10	Monitoring	Provide the developed monitoring plan including monitoring mechanism and monitoring implementation arrangements, which will be integrated in the VPP.

Source: JICA Survey Team

5.3 Preparation of Environmental Management Plan

Environmental Management Plan (EMP) shall consist and cover environmental mitigations and consideration measures which shall be taken-up during construction and operation phases, which shall examine description and assessment results of environmental, social, health and safety impacts. EMP shall be prepared only for “Category B” sub-projects. Though quantifications of impacts as well as concerned mitigation measures of sub-projects are yet to be determined, indicative EMP is described in Table 15. Any additional costs for the proposed mitigation measures shall be included in the construction cost.

Table 15 Indicative Environmental Management Plan

Potential Environmental Impact	Proposed Mitigation Measures	Responsibility
Construction Phase		
Air Pollution/ generation of dust and smoke	<ul style="list-style-type: none"> - Ensure that dust and smoke is minimised with the help of dust control measures and equipment - Regular servicing of construction equipment and vehicles - Sprinkling of water on dusty roads and construction sites - Loaded and/or stockpiled construction materials to be covered from being exposed to wind - Prevent soils, sands, materials and dusts from scattering during 	IA/ Contractor

Potential Environmental Impact	Proposed Mitigation Measures	Responsibility
	<p>transportation.</p> <ul style="list-style-type: none"> - Installation of air quality monitoring equipment for outdoor ambient air at strategic locations in and around the construction site 	
Water Pollution	<ul style="list-style-type: none"> - Sewage from the labour camps may undergo a Primary treatment, in which sewage is temporarily held in a quiescent basin where heavy solids settle to the bottom while oil, grease and lighter solids float to the surface; the settled and floating materials are removed and the remaining liquid may be discharged or subjected to secondary treatment. - Mobile lavatories must be provided at each construction site depending on the number of laborers; waste and wastewater from toilets be discharged into holding tanks and thereafter removed from the site - Temporary embankments to be created to restrict water mixed with concrete and other construction materials do not run-off to contaminate sources of water and water channels. 	IA/ Contractor
Solid Waste	<ul style="list-style-type: none"> - Litter bins, waste collection bins and pits to be judiciously placed within the construction site/ work areas - Contractor shall educate and ensure all laborers to segregate solid waste into bio-degradable, non-bio-degradable and recyclable. - No burning of refuse, or on-site burying or dumping of solid wastes. - Reusable construction materials such as wooden plates for trench works, steel, scaffolding materials, packaging material, etc. to be collected and separated on-site from other waste sources for reuse, for use as fill, or for sale. 	IA/ Contractor
Chemical or hazardous wastes (Waste)	<ul style="list-style-type: none"> - Designated areas to be properly lined, roofed, fenced and appropriately labelled, for storage of oils, lubricants, chemicals, etc. - Used oil, lubricants, cleaning materials shall be collected in holding tanks and removed from site. 	IA/ Contractor
Soil Erosion and Restoration of affected areas	<ul style="list-style-type: none"> - All sites that include excavation, digging, shall ensure proper restoration after concerned activities, such as compaction and re-vegetation of dug-up areas, and proper disposal of dug-up muck. - All excavations to be avoided during rainy season. - All areas allocated and used for disposal of refuse, site facilities, workers' camps, stockpiles areas, working platforms, any temporarily occupied areas during construction of the project works to be restored using landscaping, re-vegetation, with adequate drainage. - Trees and other soil binding shrubs, herbs and grass, such as vetiver could be planted on exposed and sloping land to prevent or reduce land collapse and stabilize the slopes. Vetiver has multipurpose utilities, such as herbal skin care, soil and water conservation, run-off mitigation and water conservation, crop protection and pest (incl. termite) repellent, animal feed, food and flavouring, perfumery and aromatherapy, etc. 	IA/ Contractor
Noise and Vibrations	<ul style="list-style-type: none"> - All construction equipment to be regularly serviced, and installed with noise mufflers to control noise from construction equipment - To be ensured that noise from construction equipment is within permissible limits prescribed by Law - All vehicles must have appropriate "vehicle inspection certificate," and "technical worthiness and safety protection certificate". - Permissions from local authorities should be obtained in case of night time activities, if necessary. 	IA/ Contractor
Disruption of vegetative cover and ecological resources	<ul style="list-style-type: none"> - Cutting of any tree shall be prohibited, unless authorized by a competent authority. - Temporary protective fence to be set up to protect preserved trees and forest areas before commencement of any works. - No hunting, trapping, shooting, poisoning of any fauna. 	IA/ Contractor

Potential Environmental Impact	Proposed Mitigation Measures	Responsibility
(Ecosystems)	- Chemicals shall not be used to clear vegetation.	
Communication with local communities (Resettlement)	<ul style="list-style-type: none"> - IA shall disseminate project information to communities/ groups/ entities likely to be affected by the construction activities - The contractor shall share project information with communities/ groups/ entities likely to be affected by the construction activities through community meetings before construction commencement. - IA or Contractor may depute a Public Relations Officer (PRO) who will provide project related information about on-site activities, status of Project and implementation, construction and work schedules, interruption of services, traffic detour routes, etc. - Information Banners and Boards to be installed at all construction sites providing project related information. 	IA/ Contractor
Worker and public Safety (Work environment)	<ul style="list-style-type: none"> - Training on Environment, Health and Safety (incl. occupational health and safety) and Social Aspects to be mandatory for all on-site construction workers and staff. - It should be mandated that all construction workers are provided and wear safety equipment (helmets, gloves, shoes, goggles, safety harness if working above ground, etc.) and protective clothing. - Pre-construction medical check-up and subsequent regular health check-ups is mandated for all on-site workers and staff. - Installation of boundary fences, barriers and barricades, Danger warning sign boards, to be installed in and around the construction area. - Depute flag personnel with lights to regulate traffic, traffic access routes and construction areas to be installed with appropriate signs, directions, safety advice, warnings, etc - Emergency evacuation plan to be prepared and shared with all concerned. Emergency evacuation route, assembly areas, to be marked with appropriate signage. - First-aid stations, safety equipment, and warning signals, for immediate administration, fully equipped Ambulance and Fire Engine to be stationed on-site for untoward eventuality. 	IA/ Contractor
Operation Phase		
Air Quality	- Air quality monitoring is recommended under the guidance of SPCB	IA/ Contractor
Water Quality	<ul style="list-style-type: none"> - Judicious use of chemical fertilizers, insecticides/pesticides under prescribed limits - Introduction and Use of bio-fertilizers and insecticides/pesticides 	IA/ Contractor
Accidents	<ul style="list-style-type: none"> - Emergency evacuation plan to be prepared and shared with all concerned and appropriate training imparted to all concerned. - Emergency evacuation route, assembly areas, to be marked with appropriate signage. - On-site First-aid stations with registered medical practitioner, fire safety equipment, and warning signals, fully equipped Ambulance and Fire Engine on call, for untoward eventuality. 	IA/ Contractor

Source: JICA Survey Team

5.4 Preparation of Environmental Monitoring Plan

Environmental Monitoring Plan (EMoP) provides monitoring plan to administer and scrutinize the implementation of proposed environmental mitigation measures and considerations and to regularly monitor the quality of surrounding environments during construction, and operation phases. The same as EMP, EMoP shall be prepared only for “Category B” sub-projects.

EMoP ensures that environmental and social safeguards adopted measures are bringing the desired

results. Therefore, indicators of environmental and social considerations are utilised to measure the quality environmental parameters and safeguard processes. Table 16 presents indicative monitoring items, their indicators, means of verification, frequency and responsible parties for measuring safeguards measures that have been implemented. However, these aspects need to be finalised in relation to EMP, in case, EMP are prepared for some specific sub-projects.

It shall be the responsibility of the designated DMU officers to implement, monitor, and report safeguards, as an integral part of the project implementation, and for the purpose of site-level planning and implementation, the designated DMU and FMU officers ensure the required monitoring activities are conducted. The compliance of environmental and social safeguards during implementation of sub-project must be also closely observed by FMUs, and relevant local stakeholders such as JFMC/EDC, SHGs, youth groups, etc. Periodic visits should also be carried out by the designated officers to confirm that mitigation measures for deleterious impacts are being carried out properly by the contractors.

Table 16 Indicative Environmental Monitoring Programme

Aspects	Parameters to be monitored	Locations	Method	Frequency	Responsibility
Construction Phase					
Air pollution	Dust, smoke, ambient air, are SPM, RPM, SO ₂ and NO _x .	Sub-project areas	Site visits, visual checks,	Twice a year	IA, Environment Safeguard Officer/ Contractor
			High and low volume air sampler	Twice a week for 24 hours for twelve consecutive weeks	IA, Social Safeguards Officer/Contractor
Noise and Vibrations	Noise of equipment, complaints from local residents	Sub-project areas - Major sources of noise	Sound Level Meter	Once in three months	IA, Social Safeguards Officer/Contractor
Ground water quality	pH, Electrical conductivity, Turbidity, TDS, TSS, Total Hardness, Alkalinity, Carbonate, BOD, COD, Nitrates, Phosphates, Fluorides, Chlorides, Sulphates, Sodium, Potassium, Calcium, Magnesium, Oil & Grease, Iron, Manganese, Copper, Zinc, Phenolic Compounds, Colour, Cadmium, Chromium, Cyanides, Lead, Total Coliform	Sub-project areas and nearest villages - 5 location	Collected sample to be analysed from WBSPCB Laboratory	Once in three months	IA, Social Safeguards Officer/Contractor
Surface water quality					
Solid waste	Volume and kind of	Sub-	Site visits and	Once in	IA, Social

Aspects	Parameters to be monitored	Locations	Method	Frequency	Responsibility
(Waste)	construction wastes,	project areas	visual checks	three months	Safeguards Officer/Contractor
	Kitchen and other solid waste generated in labour camp	Sub-project areas	Site visits and visual checks	Once every month	IA, Social Safeguards Officer/Contractor
Chemical or hazardous wastes	Oils, lubricants, cleaning agents, etc	Sub-project areas	Site visits and visual checks	Once in three months	IA, Social Safeguards Officer/Contractor
Drainage and sedimentation		Sub-project areas	Site visits and visual checks	Once in three months	IA, Social Safeguards Officer/Contractor
Soil erosion	Visual inspection of rain water run-off	Sub-project areas	Site visits and visual checks	Twice in a Year	IA, Social Safeguards Officer/Contractor
Disturbance to ecological resources and vegetative cover	Illegal tree felling, wildlife hunting, illegal extraction of forest resources	Sub-project areas	Site visits and visual checks	Twice in a Year	IA, Social Safeguards Officer/Contractor
Interactions with local communities	Complaints and grievances, from local residents	Sub-project areas	Site visits and visual checks	Once in two months	IA, Social Safeguards Officer/Contractor
Resettlement (loss of income or loss of access)	Economic condition of households, process of selection of project areas	Sub-project areas	Interviews	Twice in a Year	IA, Social Safeguards Officer/Contractor
Impact of livelihoods	Direct or indirect impacts of livelihoods	Sub-project areas	Interviews	Twice in a Year	IA, Social Safeguards Officer/Contractor
Health and Safety	Training and health check-ups for workers, fencing, warning signs, emergency evacuation	Sub-project areas	Site visits and visual checks	Twice in a Year	IA, Environment Safeguards Officer/Contractor
Accidents and traffic management	Signage, regular maintenance	Sub-project areas	Site visits and visual checks, record of accidents and training	Twice in a Year	IA, Environment Safeguards Officer/Contractor
Operation Phase					
Ground water quality	pH, Electrical conductivity, Turbidity, TDS, TSS, Total Hardness, Alkalinity, Carbonate, BOD, COD, TN, TP, Total Coloform, Pesticides (to be specified)	Sub-project areas and nearest villages – 5 locations	Collected sample to be analysed from SPCB Laboratory	Once in six months	IA, Environment Safeguards Officer/Contractor
Surface water quality					
Ground water level	Water level of existing well nearby	Sub-project areas	Measurement	Once in three months	Contractor
Impact of livelihoods	Direct or indirect impacts of livelihoods	Sub-project areas	Interviews	Twice in a Year	IA, Social Safeguards Officer/Contractor
Accidents	Direct or indirect	Sub-	Site visits and	Twice in a	IA, Social

Aspects	Parameters to be monitored	Locations	Method	Frequency	Responsibility
	impacts on livelihoods	project areas	visual checks, record of accidents and training	Year	Safeguards Officer/Contractor
Grievance mechanism	Grievance redress condition	Sub-project areas	Interviews	Twice in a Year	IA, Social Safeguards Officer/Contractor

Source: JICA Survey Team

5.5 Implementation and Monitoring of Sub-projects

As for the monitoring of the sub-projects categorised in Category B as per JICA Guideline, subcontractor would undertake monitoring using a sample monitoring format attached in **Appendix E (E-1)**. FMU officer shall compile monitoring results submitted by the subcontractors and reviews regularly, thereafter, DMU shall compile them and report to PMU through the project MIS linked to web GIS. The sample reporting items from DMU to PMU are shown in **Appendix-E (E-2)**. The report contents will be analysed and shared to the concerned departments in the state government as well as JICA. A sample format for the monitoring report from PMU to JICA is described in **Appendix F**. These sample formats shall be revised/updated according to the types of sub-projects and prepared EMoP. A specialist hired by the PMU, and nodal ESC officer, identified in Section 7.1 below shall support PMU/ DMUs/ FMUs for the monitoring related activities which are in line with JICA Guideline.

6 Institutional Arrangement and Capacity Development for ESAF

6.1 Institutional Arrangement

Under the Project, most of the aspects related to environmental and social issues and protection are to be managed by the IA, i.e., West Bengal Forestry and Biodiversity Society (WBFBS) through the Executing Agency, i.e., West Bengal Forest Department along with the support from other departments such as the Department of Environment, West Bengal, West Bengal Biodiversity Board etc. The West Bengal Forest Department would be responsible for overall planned intervention in the Project, legal/policy development, ensuring adequate consultation and participation, inclusion of vulnerable groups such as SC/STs, small-scale and marginal farmers, women-headed households etc., in planning and implementation and the equitable distribution of benefits associated with site-level project interventions. The district administration is the designated agency responsible for land administration, land acquisition, disbursement of compensation and providing Resettlement and Rehabilitation (R&R) benefits to the project-affected families.

ESAF will be implemented through the institutional structure of the Project and a director/officer at each administrative level shall be appointed as focal persons for ESAF compliance. Table 17 highlights institutional structure for ESAF with key environmental and social management roles

and responsibilities.

Table 17 Institutional Structure for ESAF Implementation and Monitoring

Institution	Role in Project Implementation	Role and/or Responsibility in ESAF
High Power Committee	<ul style="list-style-type: none"> - Decision-making body - Lay down the broad policy framework for functioning of the society - Review the society's performance - All administrative and financial powers - Monitor utilization of funds 	<ul style="list-style-type: none"> - Overall supervision of the ESAF and its implementation and M&E - Facilitation and coordination with various line departments such as WB Department of Environment, Biodiversity Board and other agencies - Provide directions/advice to the PMU and DMU to ensure smooth/ efficient project operation on environment and social consideration - Periodical checks and due diligence on safeguards reports and monitoring data.
Project Management Unit (PMU)	<ul style="list-style-type: none"> - Project implementation, supervision and monitoring of all activities. - Documentation and reporting 	<ul style="list-style-type: none"> - Responsible for implementation of ESAF - Report to the concerned departments in the state government as well as to JICA in relation to environmental and social considerations - Disclose information. - Consultation and guidance to DMU, FMU, JFMCs, EDCs, SHG and field level officers on information disclosure and consultation - Technical guidelines on beneficiary selection, safeguard checks/ guidelines for particular activities (if required) - Development of planning/ monitoring forms, review of monitoring data, reporting, assistance with evaluations - Finalize criteria for categorization (Category B or C) as per JICA Guidelines as well as exclusion criteria - Review of participatory environmental and social assessments - Performance of due diligence follow-up - Guide, instruct, prepare guidelines, establish and operate M&E, disseminate project information, hand-holding support in the field for all project activities.
PD-Finance (Environment and social consideration)	<ul style="list-style-type: none"> - Support the PMU and facilitate project implementation at state level, and would extend all technical inputs and guidance to the DMU level as and when required, and through regular review meetings, frequency of which to be determined during the preparatory phase of the Project 	<ul style="list-style-type: none"> - Coordinate, monitor and supervise the ESC-relevant activities at state level, including the screening and selection of subprojects and determination of the required procedures for specific subprojects following the guidance/instruction of the PMU - Liaise with other line departments at the appropriate level for inter-sector convergence - Provide any specific support required for implementation and monitoring of the Project
Divisional Management Unit (DMU)	<ul style="list-style-type: none"> - To act as the dedicated and extended wing of the PMU for project implementation at the division level and as a subordinate office of the autonomous society. - Facilitate project implementation at the division level, and would 	<ul style="list-style-type: none"> - Coordinate, monitor and supervise the ESC relevant activities at the division level - Conduct the screening and selection of subprojects and determine the required procedures for specific subprojects following the guidance/instruction of the PMU - Liaise with other line departments at the appropriate level for inter-sectoral convergence - Provide any specific support required for

Institution	Role in Project Implementation	Role and/or Responsibility in ESAF
	extend all technical inputs and guidance to the Field Management Unit, JFMCs, EDCs, etc.)	<ul style="list-style-type: none"> - implementation and monitoring of the Project - Coordinate with subject matter experts
Field Management Unit (FMU)	<ul style="list-style-type: none"> - To act as the dedicated and extended wing of the DMU for project implementation at the Range level and as a subordinate office of the autonomous society. - Facilitate project implementation at the range level, and would extend all technical inputs and guidance to the JFMCs, EDCs, etc. 	<ul style="list-style-type: none"> - Coordinate, monitor and supervise the ESC relevant activities at the range level - Conduct the screening and selection of subprojects and determine the required procedures for specific subprojects following the guidance/instruction of the PMU - Liaise with other line departments at the appropriate level for inter-sectoral convergence - Provide any specific support required for implementation and monitoring of the Project - Coordinate with subject matter experts
Expert for Environmental and Social Consideration	<ul style="list-style-type: none"> - Support the PMU, DMUs and FMUs facilitate project implementation, through technical inputs and guidance. 	<ul style="list-style-type: none"> - Assist PMU PD (Finance) supervise the ESC-relevant activities, including the screening and selection of subprojects and determination of the required procedures for specific subprojects following the national and state law/regulations and MOD with JICA. - Finalize ESAF and Scheduled Tribe Planning/Development Framework with the stakeholders to be drafted under the preparatory survey, and assist PMU implement the project in accordance with the frameworks. - Supervise the community level infrastructure development executed by the contractors in terms of compliance with the safeguard relevant law/regulations.
Joint Forest Management Committees (JFMC) including former EDC	<ul style="list-style-type: none"> - Participate in project activities such as microplanning, plantation and IGA. 	<ul style="list-style-type: none"> - Assist in selecting target beneficiaries and clarify local needs and expectations on the Project in the planning - Conceive and raise awareness among the local community with respect to environmental and social considerations. - Provide support in micro planning activities at the subproject level - Participate in environmental and social assessments - Support public consultation, due diligence checks, and regular monitoring by the implementing agencies (PMU,DMU,FMU) and PMC.

Source: JICA Survey Team

Since the WBFD does not have any dedicated units or personnel for the purpose of ESC, hence, one safeguard expert and the respective designated nodal officers will support the PMU, DMU, and FMU for the compliance of the environmental and social safeguards. The role of the safeguard expert is proposed as follows:

Expert for Environmental and Social Consideration : The IA would recruit ESC expert to support the PMU, DMU, FMU to review the project activities with a focus on the compliance on ESAF, provide guidance and technical advice to the PMU, DMU and FMU for required environmental

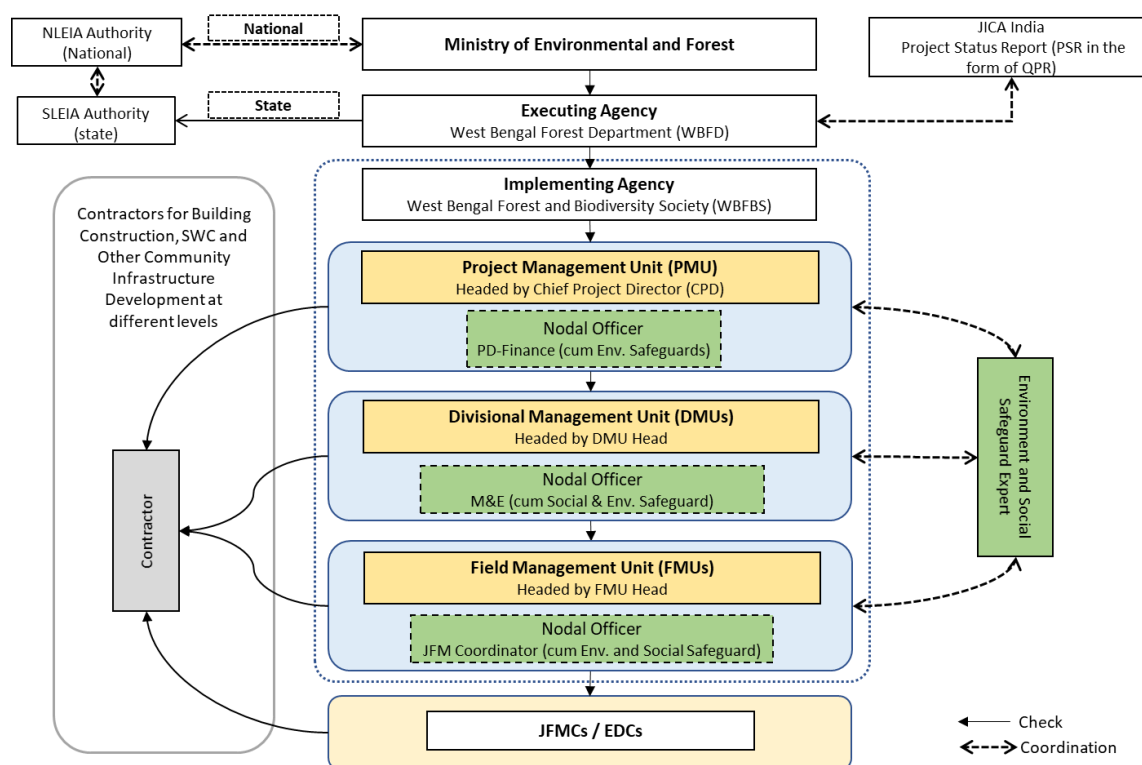
and social safeguard measures, as well as reporting to JICA to ensure smooth and efficient implementation of environmental and social safeguard measures.

PMU officers would be appointed from the department but for DMU and FMU, staff shall be engaged on contractual basis from the initial preparatory phase of the Project. This is to assist the DMU and FMU gain a head start with safeguard-related actions. Once the project implementation begins, the nodal officers shall maintain the continuity of the introduced processes/measures during the intermittent period when the Expert is not mobilized to the Project. The nodal officers will report to the Chief Project Director under PMU who would be holding the additional charge to ensure the compliance of ESC.

Nodal Officer – PD (Finance) cum Environmental safeguard at PMU: The role of the officer will be as listed below.

- (i) To facilitate and coordinate with various implementation and line departments;
- (ii) To update and finalize ESAF;
- (iii) To develop appropriate training materials on environmental and social safeguards, following the requirements in ESAF;
- (iv) To provide training courses and capacity enhancement at the different levels of stakeholders who will be designated with the responsibilities to ensure implementation of environment and social safeguards; and
- (v) To supervise/ manage the project activities to ensure that the required procedures indicated in ESAF are followed properly. The experts may also be required to follow-up in the field, where particular issues are identified and report to PMU.

The institutional arrangement for safeguard monitoring system is more or less similar to the project component monitoring system. At the field level, monitoring and reviews will be conducted by the FMU level implementing organization and report to DMU. Then, the DMU Officer shall compile the monitoring results that need to be reviewed regularly and report to the PMU, which shall analyse the result and share to the concerned departments in the state government as well as in a form of annual report to JICA. The organization chart cum safeguard flow is shown in the following table.



Source: JICA Survey Team

Figure 8 Organisation Chart cum Safeguard Flow

6.2 Capacity Development Programme

In order to ensure effective implementation of the proposed ESAF and associated safeguards procedures under the above proposed institutional arrangement, it would be obligatory to enhance capacity of various agencies and stakeholders. In this regard, capacity development programmes, supported by the above proposed specialist/experts will not only help addresses gaps in the existing environmental and social management system, but would also ensure that environmental and social safeguards are effectively operationalised.

The details of the training programme such as venue, time, date, frequency of the proposed trainings sessions should be further developed by hired specialist/experts with comments and clearance of PMU. An indicative capacity development programme has been devised and depicted in Table 18 as a reference to devise capacity enhancement training programmes.

Table 18 Indicative Capacity Development Programme for Environmental and Social Safeguards

Item	Descriptions
Training 1	Programme for Management/ Administrative Level
Key Participants	Designated officials of PMU, CCF Office
Training Programme	<p>Topic 1: Orientation/Sensitization on Env. and Social Consideration</p> <p>Legal framework on environmental and social safeguards of India and JICA</p> <p>Environmental and social impact assessment: overview & regulations</p> <p>Basic introductory concept of safeguard</p> <p>Safeguard issues (vulnerable groups, SCs, STs, transhumance, Gender, etc.)</p> <p>Free, Prior and Informed Consent (FPIC)</p> <p>Topic 2: ESAF and its importance under the project</p>

Item	Descriptions
	<p>Knowledge and skills necessary for undertaking environmental and social screening and appraisal as per the requirements of the ESAF</p> <p>Conduct ESA and preparation of management/ mitigation plans</p> <p>ESAF: steps and procedures with respect to the Project</p> <p>Topic 3: Monitoring and Evaluation for Environmental and Social Safeguard</p> <p>Concept of M&E</p> <p>M&E - Methods and reporting procedures</p> <p>Use of M&E Results and feedback</p> <p>Grievance Redressal Mechanism</p> <p>Experience sharing and learning</p>
Duration	Two days training (once a year in the first four years at each district)
Training 2	Programme for Field/ Operational Level
Key Participants	Designated officials and staff of DMU, Division, Sub-Division office and FMU
Training Programme	<p>Topic 1: Orientation/Sensitization on Env. and Social Consideration</p> <p>Legal framework on environmental and social safeguards of India and JICA</p> <p>Environmental and social impact assessment: overview & regulations</p> <p>Basic introductory concept of safeguard</p> <p>Safeguard issues (vulnerable groups, SCs, STs, transhumance, Gender, etc.)</p> <p>Process of community consultation and public participation</p> <p>Free, Prior and Informed Consent (FPIC)</p> <p>Topic 2: ESAF and its importance under the project</p> <p>Knowledge and skills necessary for undertaking environmental and social screening and appraisal as per the requirements of the ESAF</p> <p>ESAF: steps and procedures with respect to the Project</p> <p>PRA for data collection, analysis and report preparation</p> <p>Micro Planning and Participatory Land Use Planning</p> <p>Topic 3: Monitoring and Evaluation for Environmental and Social Safeguard</p> <p>Concept of M&E</p> <p>M&E - Methods and reporting procedures</p> <p>Environment Health Standards</p> <p>Use of M&E Results and feedback</p> <p>Grievance Redressal Mechanism</p> <p>Experience sharing and learning</p>
Duration	Two days training (once a year in the first four years at each division)
Training 3	Community Facilitation and Environmental and Social Assessment for ESC
Key Participants	Designated field level officers from Beat, GP representatives, Village level implementing organisations-JFMC/EDC, Field Facilitators
Training Programme	<p>Topic 1: ESAF and its importance under the project</p> <p>ESAF: steps and procedures with respect to the Project</p> <p>Project Activity Planning during Micro Planning and Participatory Land Use Planning</p> <p>Participatory ESA Procedures</p> <p>Working with Ethnic and Vulnerable Groups</p> <p>Mechanisms for addressing Gender Issues</p> <p>Conflict Resolution/Grievance Procedures</p> <p>Role of community level institutions in ESA</p> <p>Community Level Monitoring</p>
Duration	One session as part of other community related trainings (Once a year mandatory or as decided by FMU based on the plan of community level trainings in the first four years)
Training 4	Specific Training for Specific Techniques/Tasks to be Required
4.1	Quality Planting Material
Key Participants	DMU, FMU officials
Training Programme	<p>Usage of prescribed quantity of chemical fertilizers/pesticides</p> <p>Maximum usage of suitable Organic fertilizer/pesticides</p>
Duration	Training sessions on these topics to be clubbed with training on Nursery/ Plantation
4.2	Eco-DRR activities to strengthen forestry operation
Key Participants	DMU, FMU officials in-charge of supervision of the contractor

Item	Descriptions
Training Programme	Safety standards for constructions [check dams]
Duration	Training sessions on these topics be clubbed with training on M&E
4.3 Building	
Key Participants	DMU, FMU officials in-charge of supervision of the contractor
Training Programme	Safety standards for constructions Occupational Health and Safety
Duration	Training sessions on these topics be clubbed with training on M&E and also Construction contractors need to include a session on the same or their workers

Source: JICA Survey Team

7 Stakeholder Involvement and Grievance Redressal Mechanism

7.1 Stakeholder Involvement

Public consultation and participation are some of the key regularity tools employed to improve transparency, efficiency and effectiveness of regulation, regulatory alternatives and improved accountability arrangements. It is a suitable process to provide information to community, project-affected persons and other stakeholders relevant to the proposed Project, so that they (i) are sufficiently educated about the project's objectives, activities, benefits and risks; (ii) have equal opportunities to participate in the Project; (iii) receive culturally appropriate benefits which are more suited to their interests, capabilities and priorities; these shall be identified during the course prior consultations, and such benefits are shared equitably; (iv) are not adversely affected by the Project or its associated activities; adverse impacts shall be mitigated appropriately; and (v) can raise project related grievances and required mechanism is in place.

Consultation and Participation provides an opportunity and platform for people to express and sharing their views and concerns, contribute to design and implementation of the programme activities, discussions on sensitive social mitigation measures, while at the same time creating a sense of ownership for the Project. In this regard, FPIC is an important process to minimise any negative impacts and for a broad community support. Summary of FPIC relevant activities is described in Table 19.

Table 19 Summary of FPIC Activities

Item	Descriptions
Objective	To establishing a broad community support and willingness for implementation of the Project
Topic for Consultation	Disclosure of basic project related information including area, location, purpose/objectives, key activities, stakeholders involved, target beneficiaries. Expected role and involvement of communities. An overview of anticipated environmental and social risks. Involuntary Resettlement Plan and Vulnerable People's Plan (if any)
Participants	Target group of VPPF Other important key persons (e.g. Gram Panchayat President)
Process	a) Before on-set of sub-project implementation, immediately following formations of beneficiary groups, appropriate community meetings and consultations that are culturally appropriate and in simple and understandable language b) Encourage community's participation in discussions, meetings and consultations, facilitate participation of women, elders and other vulnerable groups c) Field level officers will participate in general community meeting to discuss concerns,

Item	Descriptions
	visit individuals who express doubt and/or criticism on any aspect of project implementation. d) Participants to be provided adequate time to assimilate information provided/ shared e) Opportunity to decide if they do not wish to participate. f) Discussion
Material Required	Provision of simple/easy to read project brochures in local language Consultation and Participation Monitoring Sheets

Source: JICA Survey Team

The public consultation mechanism shall reduce conflicts between the affected and the management committees. This is particularly focused on ensuring that vulnerable groups, including the poor, landless, STs/SCs and other forest dependent groups, and women, are properly consulted during site-level project planning and that they are given the opportunities and encourage to participate in the Project. Moreover, public consultation processes can also enhance voluntary compliance for two reasons: (1) changes are announced in a timely manner and there is time to adjust to change, (2) the sense of legitimacy and shared ownership that gives consultation motivate affected parties to comply.

7.2 Information Disclosure

The project would apply the following method of information disclosure to the public and relevant stakeholders respectively to make the process of ESAF implementation transparent.

Table 20 Method of Information Disclosure

Method	Description
Physical Information Disclosure	Through simple and concise details in printed charts/ flip charts/ posters etc. pasted at the community meeting centres [Info. about project objective, activities, area, beneficiaries, Social/ Environmental survey reports, EIA reports, Social/Environmental monitoring reports etc. must be shared in public domain on project website.]
Digital Information Disclosure	On the Project Website – All project docs related to the project objective, activities, area, beneficiaries, social assessment report/ Environmental survey reports, EIA reports, social/Environmental monitoring reports etc. must be shared in public domain on project website.

Source: JICA Survey Team

7.3 Grievance Redress Mechanism

While there are the existing legal frameworks related to the Grievance Redress Mechanism (GRM) in the country⁴, a Project-level GRM for all the sub-projects is expected to be institutionalised, in which project-related grievances such as disputes over locations of forest development and

⁴ EIA Notification 2006 states that “Public Consultation and Public Hearing” which refers to “the process through which the concerns of local affected persons and others who have plausible stake in the environmental impacts of a project or activity are ascertained with a view to taking into account all the material concerns in the project or activity design as appropriate. All Category ‘A’ and Category ‘B1’ projects or activities shall undertake Public Consultation...”. Further, the RFCTLARRA-2013, involves consultations and redress of concerns of affected persons at various stages. Besides, Department of Administrative Reforms & Public Grievances under the Ministry of Personnel, Public Grievances & Pensions, GoI, has issued a Compilation of Guidelines for Redress of Public Grievances and also operates a web-based portal (<http://pgportal.gov.in/>).

management and community development infrastructure, selection of beneficiaries, distribution of project benefits, behaviour of fellow community members, contractor and his workers, project-related staff or consultants, etc. can be reported directly to WB-FBCCCR.

In this regard, FMU officer, would be the first level of intervention, as FMU acts as the link for community liaison and forest management in general. Thus, all concerns of the community shall be recorded in a project grievance logbook on MIS. Individuals can raise their grievances in name or anonymously, or through traditional institutions according to culture and context, as appropriate, which shall be recorded in written form. A grievance redress format/ template could be devised for this purpose, which would depend on the type and context of the grievance.

FMU officers should resolve all concerns or grievances raised by the communities, beneficiaries, etc. and in case an anonymous grievance has been put-up, it shall be addressed through public consultation through a village meeting, retorting generally to the raised point(s) and minutes of the meeting and outcomes shall be recorded. The grievance redress or compliance response is sent to the applicant in written, after resolving the grievance/ concerns.

However, in case the applicant (individual/ group) is not satisfied, s/he may approach to FMU for further redress, or in case of grievances that are more serious in nature, the FMU officers should forward such grievances to DMU. DMU officers shall be responsible to redress the grievance in consultation with the FMU officer, concerned applicants. All grievances should be addressed, redressed and resolved at this level.

In case of more serious grievances, then they should be dealt with through the project hierarchy as necessary and any complainant should be made aware of their legal rights according to the relevant legal documents. The flow of GRM is illustrated in the following figure.

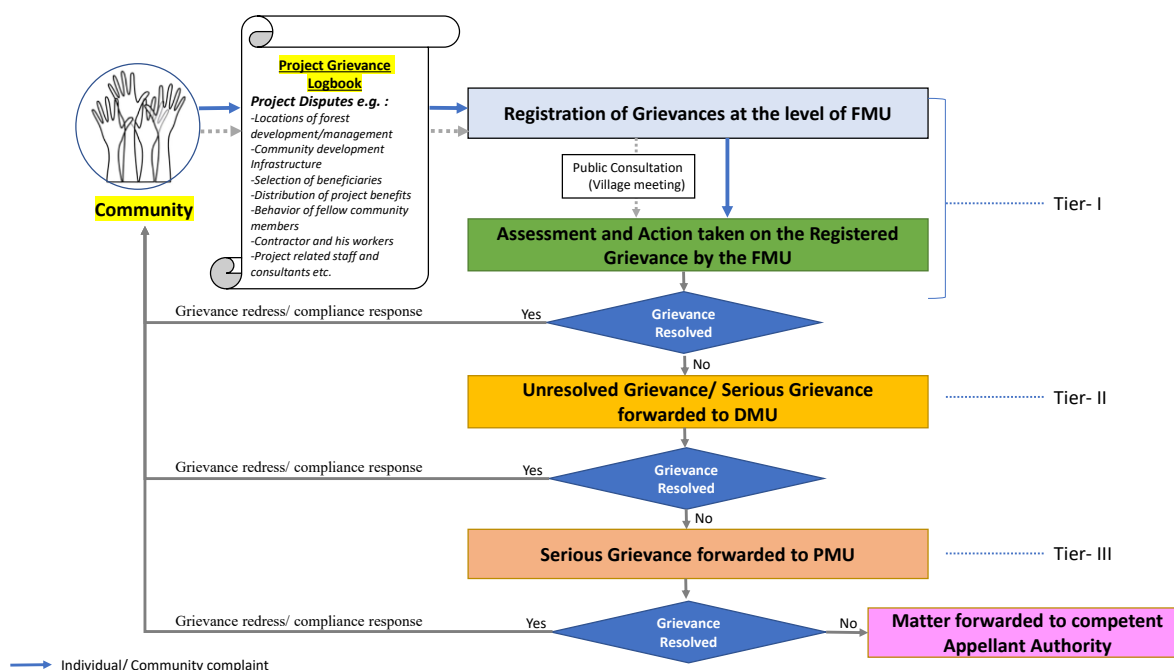


Figure 9 Grievance Redressal Mechanism

Source: JICA Survey Team

8 Cost Estimation and Budget Allocation

The cost estimate for implementation of ESAF and VPPF under this project is summarized in the following table.

Table 21 Cost Estimate for Implementation of ESAF and VPPF

(INR)

Cost item	Unit price	Quantity	Total	Remarks
PMC ESC	368,771	9 Man Month	3,318,939	Dec, 2023 – Mar, 2027 Estimated under Component 5: PMC
Outsourcing work for baseline survey of socio-economic condition	2,500,000	1 l.s.	2,500,000	Estimated under Component 4.3.2 2)
Outsourcing work for baseline survey of the target area	2,500,000	1 l.s.	2,500,000	Estimated under Component 4.3.2 2)
Total			8,318,939	

Source: JICA Survey Team

Attachment 18

Vulnerable People's Planning Framework (VPPF)

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Attachment 18 Vulnerable People's Planning Framework (VPPF)

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Abbreviations

CFR	Community Forest Rights
DMUs	District Management Units
EDC	Eco-Development Committee
EPA	Entry Point Activity
ESAF	Environmental and Social Assessment Framework
ESC	Environment and Social Consideration
Eco-DRR	Ecosystem-based disaster risk reduction
FDST	Forest Dwelling Scheduled Tribes
FMUs	Field Management Units
FPIC	Free, Prior and Informed Consent
FRA	Forest Rights Act
GRM	Grievance Redress Mechanism
HPC	High Powered Committee
IFR	Individual Forest Right
JFMC	Joint Forest Management Committee
JICA	Japan International Cooperation Agency
MoD	Minutes of Discussions
NTFP	Non-Timber Forest Produce
OBC	Other Backward Classe
OTFD	Other Traditional Forest Dwellers
PMC	Project Management Consultant
PMU	Project Management Unit
PVGT	Particularly Vulnerable Tribal Group
PVTGs	Particularly Vulnerable Tribal Groups
R&R	Rehabilitation and Resettlement
SA	Social Assessment
SC	Scheduled Caste
SHG	Self Help Group
ST	Scheduled Tribes
VP	Vulnerable People
VPP	Vulnerable People's Plan
VPPF	Vulnerable People's Planning Framework
WB-FBCCCR	The Project for Forest and Biodiversity Conservation for Climate Change Response in West Bengal
WBFD	West Bengal Forest Department

Draft Vulnerable People's Planning Framework (VPPF)

1 Overview

1.1 Objective of Vulnerable People's Planning Framework (VPPF)

Vulnerable People's Planning Framework (VPPF) is to be applied as an additional framework that works in concert with the Environmental and Social Assessment Framework (ESAF), the primary project safeguards document. The VPPF is applied only in situations where Scheduled Tribes (ST), including Particularly Vulnerable Tribal Group (PVTG), Scheduled Castes (SC), Other Backward Classes (OBC) minorities and Forest Dwellers are affected by project activities and provides guidance for specific measures which may be required in addition to the general provisions of the ESAF.

1.2 Structure of VPPF

The structure of VPPF is described below.

- i) Project Summary Description – objectives and outline of the components/sub-projects, expected outcomes, and target areas;
- ii) Potential Impacts on the Vulnerable People – definition of vulnerable people, potential positive and adverse impacts on the vulnerable people (VP);
- iii) Plan of Social Assessment of Sub-projects – key project stakeholders, baseline information to be confirmed, method of assessment of impact on the vulnerable people;
- iv) Screening of the Sub-projects and Criteria for Selection of Target Area – Method of screening of the community infrastructures in the long list considering the potential impact on the vulnerable people, the selection criteria of the project target area for each sub-project considering the potential impact on vulnerable people, and process of finalisation of the draft VPPF;
- v) Institutional Arrangement and Capacity Building – proposed institutional arrangement, roles of the stakeholders such as the implementing units, PMC, JICA, and relevant government institutions in the process from preparation to approval of the EIA of the sub-projects, institutional structure of monitoring and reporting (including reporting to JICA), method of monitoring and reporting, proposed training outline of the implementing agencies;
- vi) Framework for Disclosure of VPPF and Free, Prior, Informed Consent (FPIC), and Grievance Redressal Mechanism – Method of disclosure of VPPF, framework of consultation for FPIC, mechanism for grievance redressal mechanism;
- vii) Cost Estimation and Budget Allocation – cost estimate to finalise and implement VPPF.

2 Target Social Groups under VPPF

2.1 Rationales for Identification of the Targeted Social Groups under VPPF

This section describes two important source documents which help to identify target social groups

under VPPF, namely (1) World Bank Safeguard Policy (Operational Policy 4.10) and (2) The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act (FRA) 2006.

(1) World Bank Safeguard Policy (Operational Policy 4.10)

There is no widely accepted definition of indigenous peoples. World Bank's official position is that "because of the varied and changing contexts in which Indigenous Peoples live and because there is no universally accepted definition of Indigenous Peoples, this policy does not define the term". OP 4.10 describes "Indigenous People" in a generic sense to refer to a distinct, vulnerable, social and cultural group possessing the following characteristics in varying degrees;

- ◆ self-identification as members of a distinct indigenous cultural group and recognition of this identity by others,
- ◆ collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories,
- ◆ customary cultural, economic, social, or political institutions that are separate from those of the dominant society and culture, and
- ◆ an indigenous language, often different from the official language of the country or region.

OP 4.10 also indicates that Indigenous Peoples may be referred to in different countries by such terms as 'indigenous ethnic minorities,' 'aboriginals,' 'hill tribes,' 'minority nationalities,' 'scheduled tribes,' or 'tribal groups'. And in the Indian context, the term of Scheduled Tribes (STs) appears to be in the line with the "Indigenous Peoples" described in the World Bank's generic definitions. Degrees of social, cultural, ethnical, linguistically, institutional and geographical distinctions fluctuate among STs.

(2) The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act (FRA) 2006

The Forest (Recognition of Forest Rights) Act 2006 defines "the Forest Dwelling Scheduled Tribes (FDST) and the Other Traditional Forest Dwellers (OTFD)" as members or communities who primarily reside in and who depend on the forests or forest lands for bona fide livelihood needs (Section 2 Part c of the Act). The criteria and evidence required for a FDST and OTFD to claim rights under FRA are described in Table 1.

Table 1 Criteria for FDST and OTFD under the FRA

Types of Forest Dwellers	Criteria to be Given the Certification
FDST	1) Must be a Scheduled Tribe in the area where the right is claimed, 2) Primarily resided in forest or forest land prior to 13-12-2005, and 3) Depend on the forest or forests land for livelihood needs
OTFD	1) Primarily resided in forest or forests land for three generation (75 years) prior to 13-12-2005, and 2) Depend on the forest or forests land for livelihood needs

Source: JICA Survey Team based on The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act (FRA) 2006

It is noteworthy to mention that the term “Forest Dweller” has a specific meaning in the context of Indian forest legislation. If a person is certified as a “Forest Dweller” legally, he/she has all right over the forestland. In West Bengal, 12 districts are identified as the target area for implementation of the provisions of the Forest Rights Act (FRA): Purulia, Bankura, Paschim Medinipur, Jalpaiguri, Burdwan, Cooch Behar, Hooghly, Birbhum, Darjeeling, Murshidabad and Nadia. As of June 2022, total claims received for Individual Forest Right (IFR) and Community Forest Rights (CFR) are 131,962 and 10,119 respectively, while 44,444 IFRs and 686 CFRs were titled, and about 68 % of the received claims were rejected. The total forest lands recognised with IFR and CFR are 8,498.24 ha and 404.68 ha.

2.2 Target Social Groups

Considering the World Bank’s OP 4.10, the FRA 2006 and actual socio-economic conditions in the state, two specific social groups, i.e. Scheduled Tribes (STs) and Forest Dwellers under the FRA with only focused on the individuals/communities who could be severely affected their daily lives by project activities are identified as the target social groups under the framework. The requirement of VPPF application for sub-projects shall be decided by DMU under the direction/guidance of PMU at the selection and screening procedures of sub-projects which is further explained in ESAF. Table 2 indicates the key groups for VPPF to address environmental and social considerations.

Table 2 Targeted Social Groups of VPPF

Groups	Definition, Reasons, and Characteristics of the Group
Inhabitants of forest villages	<ul style="list-style-type: none"> - Inhabitants of forest villages were people who were allowed to stay on in the reserved forests on the condition that the villagers work for the forest department in cutting and transporting trees. protecting the forest from fires. - The project activities are expected to positively affect the inhabitants of forest villages in terms of focus on non-timber based Income Generation Activities and through awareness creation about Human Wildlife Conflict mitigation
Forest dwellers	<ul style="list-style-type: none"> - Forest dwellers are people residing in such forests for generations. - The project activities are expected to positively affect the inhabitants of forest villages in terms of focus on non-timber based Income Generation Activities and through awareness creation about Human Wildlife Conflict mitigation
People/ Communities Recognised by Forest Right Act	<ul style="list-style-type: none"> - In West Bengal, 12 districts are identified as the target area for implementation of the provisions of the Forest Rights Act (FRA): Purulia, Bankura, Paschim Medinipur, Jalpaiguri, Burdwan, Cooch Behar, Hooghly, Birbhum, Darjeeling, Murshidabad and Nadia. As of June 2022, total claims received for Individual Forest Right (IFR) and Community Forest Rights (CFR) are 131,962 and 10,119 respectively, while 44,444 IFRs and 686 CFRs were titled, and about 68 % of the received claims were rejected. The total forest lands recognised with IFR and CFR are 8,498.24 ha and 404.68 ha.
Members of JFMC/EDC	<ul style="list-style-type: none"> - Members of the forest fringe villages that jointly work with forest department on the basis of mutual trust and jointly define responsibilities for forest protection and development and form JFMC and EDC - The project activities are expected to positively affect the inhabitants of forest villages through non timber based Income Generation Activities and awareness creation about Human Wildlife Conflict mitigation
Scheduled Tribes (STs)	<ul style="list-style-type: none"> - According to the Article 342 of the Constitution, STs are the tribes or tribal communities or part of or groups within these tribes and tribal communities which have been declared as such by the President through a public notification. - The ST population of West Bengal is around 5.80% of the state's total population. Out of the total ST population, 92 % lives in rural area, representing 16.69% of the total rural population of the state. Higher concentration of Tribal population is found in the following districts: Darjeeling, Jalpaiguri, Alipurduar, Dakshin Dinajpur, Paschim Medinipur, Bankura and Purulia (based on 2011 Census Data) - The project activities are expected to positively affect the inhabitants of forest villages through non timber based Income Generation Activities

Groups	Definition, Reasons, and Characteristics of the Group
Particularly Vulnerable Tribal Group (PVTG)	- PVTG is a sub-classification of Scheduled Tribe, who are most vulnerable in certain parameter than the other Scheduled Tribe community. In West Bengal, three tribal groups are categorised as vulnerable tribal groups that includes Birhor, Lodhas, and Totos.
Scheduled Castes (SC)	<ul style="list-style-type: none"> - Scheduled Caste also known as Dalits, are traditionally and socially marginalised, who faced injustice/discrimination based on their caste status. These communities were notified as the SCs as per provisions contained in Clause 1 of Articles 341 and 342/ Clause 24 of Article 366 under the Constitution of India which require special consideration for safeguarding their interests and to accelerate their socio-economic development. - The total SC population of West Bengal is around 23.51% of the state's total population, which is about 4 times of ST population. SC population is mainly concentrated in the following districts: 24-Parganas South, 24-Parganas North, Burdwan, and Nadia (Census 2011) - The project activities are expected to positively affect the inhabitants of forest villages through non timber based Income Generation Activities
Other Backward Classes (OBC)	- Other Backward Class (OBC) is a collective term used by the Government of India to classify castes which are socially and educationally disadvantaged according to Constitution of India. All tribal communities and castes deemed under article 341 and 342 of the constitution of India are considered backward classes and there are OBC, which are not scheduled. According to the Department of Social Justice and Empowerment and the Himachal Backward Classes Finance and Development Corporation, 48 communities belong to OBC. Social and educational backwardness has been identified as reasons due to which the OBCs also need special attention.

Source: JICA Survey Team

3 Project Summary Description

3.1 Project Objectives

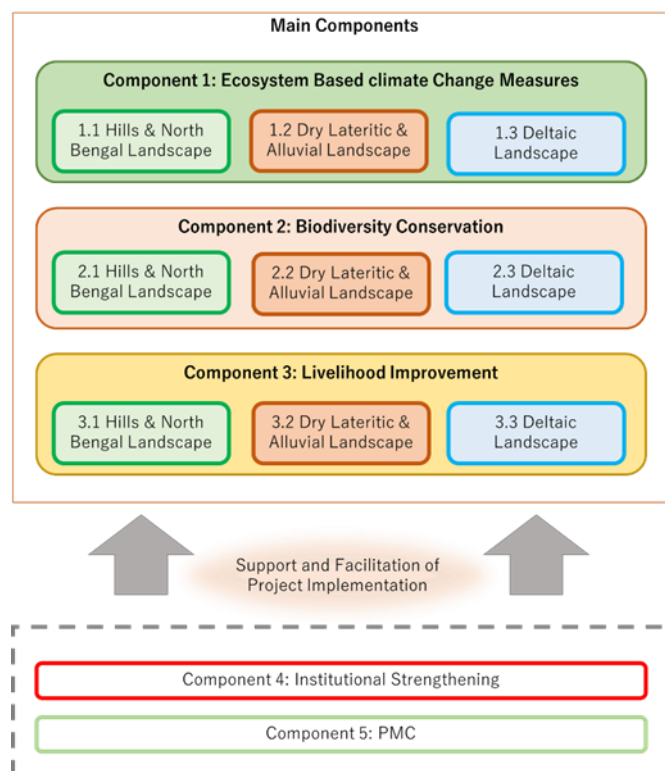
The objective of the proposed Project is “to mitigate and adapt to climate change, improve ecosystems and improve livelihood through ecosystem-based climate change measures, biodiversity conservation and restoration, livelihood improvement activities and institutional strengthening, thereby contributing to sustainable socio-economic development in West Bengal”.

3.2 Identified Project Area

The WBFD has proposed 23 territorial divisions, 6 wildlife divisions, and 5 functional divisions to be covered under the project. The list of divisions and the number of ranges and JFMCs that are covered under Phase 1 and proposed in Phase 2 are given in the table below. Under the Phase 1 of the project, 138 ranges are covered out of 190 ranges. Under the WB-FBCCCR, 90 ranges will be covered, which are mostly overlapping with Phase 1 ranges.

3.3 Proposed Project Components

The proposed project components are indicated in Figure 1 below. In total there are five Main Components but primarily main components, viz. Component-1: Ecosystem based Climate Change Measures, Component-2: Biodiversity Conservation and Restoration and Component-3: Livelihood are the regarded as the nucleus of the Project.



Source: JICA Survey Team

Figure 1 Framework of Project Components and Flow of the Phases

The sub-activities of each component is shown in the following table.

Table 3 Project Outline

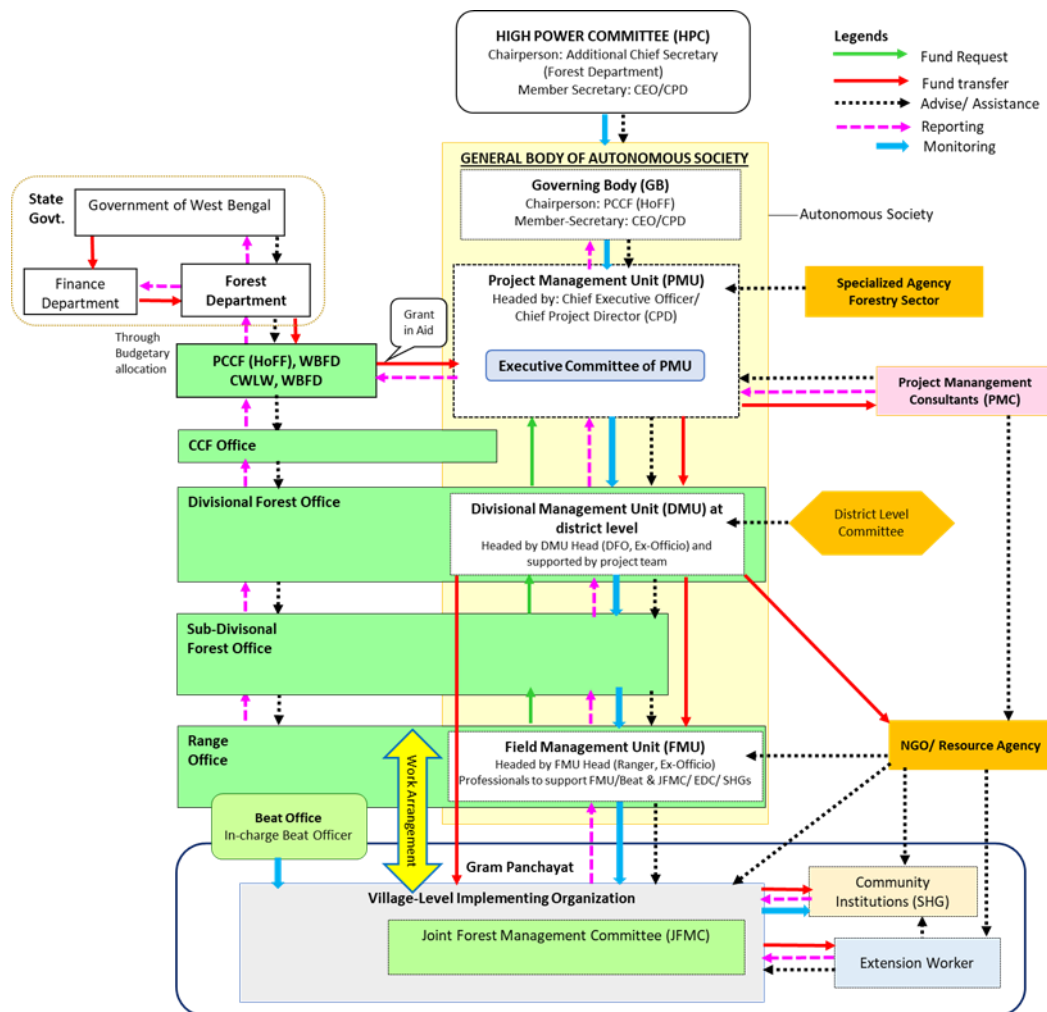
Component/ Sub-component	Project Activity
Component 1	Ecosystem Based Climate Change Measures
1.1 Hills & North Bengal Landscape	1.1.1 Production of Quality Planting Materials 1.1.2 Improving Quality of Forests 1.1.3 Eco DRR Activities (Soil Water Conservation Works in Protected Areas) 1.1.4 Green Laboratory Initiatives
1.2 Dry Lateritic & Alluvial Landscape	1.2.1 Production of Quality Planting Material 1.2.2 Improving Quality of Forests 1.2.3 Eco DRR Activities (including Preparation of GIS-based CAT Plans, Soil and moisture conservation works based on CAT Plan) 1.2.4 Green Laboratory Initiatives
1.3 Deltaic Landscape	1.3.1 Eco DRR activities (field validation of the mangrove forest restoration models and its replication) 1.3.2 Green Laboratory Initiative
Component 2	Biodiversity Conservation & Restoration
2.1 Hills & North Bengal Landscape	2.1.1 Human-wildlife conflict 2.1.2 Species conservation programme 2.1.3 Studies on wild animals and other behaviour
2.2 Dry Lateritic & Alluvial Landscape	2.2.1 Biodiversity conservation through people's participation in protected area 2.2.2 Biodiversity conservation through people's participation for smaller mammals 2.2.3 Human-wildlife conflict mitigation 2.2.4 Species conservation programme 2.2.5 Studies on wild animals and their behaviour

Component/ Sub-component	Project Activity
2.3 Deltaic Landscape	2.3.1 Biodiversity conservation through people's participation in protected area 2.3.2 Human-wildlife conflict mitigation 2.3.3 Studies on wild animals and their behaviour
Component 3	Livelihood Improvement
3.0 Preparatory Works (All land scapes)	i) Preparation of Manuals and Guidelines ii) Deployment of Technical Agency for IGA Support Fund Management iii) Finalisation of Selection Criteria of JFMCs & Selection of JFMCs
a) Hills & North Bengal Landscape b) Dry Lateritic & Alluvial c) Deltaic Landscape	1. Preparatory Activities with JFMCs (3 batches) including community mobilisation, micro planning, EPA/ CDA) 2. Support for Income Generation 3. Support for Community Well being (Traditional Healders) (Except in Deltaic Landscape) 4. Support for Community Mobilisation (Extension Worker)
Component 4	Institutional Strengthening
4.1 Strengthening Project Management	4.1.1 Demarcation of JFM boundary 4.1.1.1 Digitization of JFMC boundary including procurement of mouza sheet and GPS, and outsourced digitisation of JFM boundaries, and boundary pillar setting 4.1.2 Mobility 4.1.3 Buildings 4.1.4 Project Contractual Staff 4.1.5 Digital Strengthening
4.2 Capacity Development	4.2.1 Training Plan 4.2.2 Training of Forest Officers (DCF & above Ranks) 4.2.3 Trainings of Forest Officers /Frontline staff (Ranger & below ranks) 4.2.4 National Workshop (3 days) 4.2.5 Trainings for JFMC/ SHG members
4.3 Monitoring & Evaluation	4.3.1 Progress Monitoring 4.3.2 Impact Evaluation 4.3.3 Audits
4.4 Strengthening Forest Research	a) Creation of carbon estimation lab b) Research studies based on the research plan
4.5 Publicity and Publication	4.5.1 Website maintenance 4.5.2 Guidelines, manuals and annual reports 4.5.3 Small filems/ videos/ digital documentation 4.5.4 Knowledge material/ course material
Component 5	PMC
PMU will be supported by a group of specialists engaged under PMC. In total, nine person-months of international specialist and 91 person-months of national specialists for a duration of 41 calendar-months is proposed. Since the procurement of PMC requires time, PMU shall initiate the process at the earliest possible time. The proposed plan assumes PMC mobilisation in November 2023. The indicative TOR is attached as Attachment 10.2.2.	

Source: JICA Survey Team

3.4 Project Implementation Structure

The Project is proposed to be implemented through an autonomous society, named West Bengal-Forest and Biodiversity Conservation for Climate Resilience Enhancement (WB-FBCCCR). The detailed implementation structure of the autonomous society is depicted in Figure 2.



Source: JICA Survey Team

Figure 2 Proposed Project Implementation Structure

Project Management Unit (PMU) of the new project will continue to operate as an autonomous registered society within the WBFD, and be made responsible to manage, coordinate, implement and monitor the planned activities. All offices created for the new project will exclusively work to assist and facilitate implementation of the proposed activities following the project implementation schedule, annual plan of operations and envisaged processes adopting the Operational Manual. The High-Power Committee (HPC) created for WB-FBCCCR will act as its highest decision-making body at the state government level and will not form a part of the autonomous society. To support project implementation at the field level, PMU will create and coordinate with a set of offices viz., District Management Units (DMUs) and Field Management Units (FMUs) which will work as extended arms for the PMU under the society. The Beat Office with its in-charge will work as a link office for FMU and contact between WB-FBCCCR and village level institutions such as JFMCs/ EDCs and SHGs. Under the project implementation structure, PD-Finance of PMU would also be the in charge of Environmental and Social Consideration to ensure smooth implementation, monitoring and compliance of ESAF. He/she would be the focal point to communicate with JICA on environmental and social safeguard matters.

3.5 Implementation Schedule of the Proposed Project

The followings are indicative description about the overall implementation schedule for the Project.

- ❖ The Project duration would be a total of eight years, starting from 2023 until 2030.
- ❖ The plantation activities and the livelihood improvement activities would be implemented in three batches during the course of the project considering the interdependency of one activity on the others. All plantation activities would start from site identification followed by survey and demarcation, advance work, plantation and maintenance one after another. Similarly, under Livelihood improvement component JFM based activities would start from community mobilisation followed by reorganisation and reconstruction of JFMC, micro planning, and so on.
- ❖ In case of the 1st Batch, the preparatory work would start from different period for different plantation model/ species. The production work of Quality Planting material would start from Year-1 (Oct-2023) and would be different for different plantation model.
- ❖ The actual selection of JFMCs and their batches will be conducted by FMU in consultation/confirmation with the concerned JFMCs.

4 Potential Impact on VP

4.1 Potential Positive Impacts

In general, the Project is anticipated to bring-out mainly positive environmental and social impacts , although minor deleterious impacts by the Project cannot be ruled-out. Considering the fact that at the current stage, all sub-project type and their location are not precisely known, as they will be democratically identified by involving the local communities and suitability of terrain. Thus at this stage, all impacts cannot be anticipated with accuracy. Nevertheless, an attempt was made to assess the key benefits and positive environmental and social impacts on VP by the Project in reference to the indicative subprojects. The results of analysis are indicated in Table 4 below.

Table 4 Key Positive Impacts on VP by the Project

Type of Capital Benefit	Positive Impact
a. Forest / Natural and Physical Capital Benefits	<ul style="list-style-type: none"> - Enhanced awareness towards forest protection and conservation - Increase in forest covered area and density - Degraded areas to be brought under forest cover - Improvement in forest quality and quantity - Human-wildlife conflicts to be reduced - Increase NTFP production - Improved watershed protection, reduction of soil erosion, etc., resulting in improved ecosystem services from forests - EPA would ensure creation of prioritised common need-based infrastructure for the community
b. Social Capital Benefits	<ul style="list-style-type: none"> - Community institutions to be strengthened - Prudent utilization of land, water, forest resources, etc. due to the project interventions, thus safeguarding the environment
c. Financial Capital Benefits	<ul style="list-style-type: none"> - Income levels to be increased - Project activities/ interventions to create direct and indirect employment opportunities, - Diversification of sources of incomes - Reduced financial risk - Value addition and better marketing for their products

Type of Capital Benefit	Positive Impact
	<ul style="list-style-type: none"> - Increased women participation in indirect employment opportunities as labour force (for nursery, plantation, construction) and SHG initiatives lead to their economic independence and empowerment
d. Human Capital Benefits	<ul style="list-style-type: none"> - Increase technical capacity for sustainable forest management and biodiversity conservation - Improved entrepreneurial and business management capacity of JFMCs and SHGs - Active participation towards community development planning and activities to increase - Improved participation of local people in forest management and biodiversity conservation - Cohesion amongst community members, JFMCs, SHGs to improve - Active participation of vulnerable groups particularly forest dwellers, inhabitant of forest villages, ST and SC in decision making process of local institutions

Source: JICA Survey Team

4.2 Potential Adverse Impacts

The Project does not foresee significant deleterious impacts on the targeted VP, although the Project might potentially cause adverse impacts on the environmental and social setting. Table 5 presents potential adverse risks and mitigation measures for them.

Table 5 Adverse Environmental / Social Risks and Possible Mitigation Measures

Activities	Potential Adverse Risks	Possible Mitigation Measures
Planning of JFMC	<ul style="list-style-type: none"> - Disempowerment of customary village forest management institutions - Conflict among community members - Micro planning could lead to conflicts over natural resources, due to formalization of previously fluid, flexible and informal agreements and practices 	<ul style="list-style-type: none"> - Avoid major impacts through participatory procedures for screening of sub-projects - Ensuring adequate consultations and participation of vulnerable groups for micro-planning - Promote best-practices of participatory approaches for forest management planning - Prioritize vulnerable groups as beneficiaries
Sustainable Forest Management/ Biodiversity Conservation	<ul style="list-style-type: none"> - Impacts from construction activities including air (dust), water (siltation of water bodies), soil (soil contamination, erosion, and loss), local fauna and flora, noise pollution, waste disposal etc. - Possibility of loss of access to customary lands and resources - Potential loss of customary/traditional knowledge as communities are trained in formal management approaches 	<ul style="list-style-type: none"> - Participatory procedures for micro planning, screening of sub-projects and avoidance of major impacts - Proper design and planning of activities to minimize environmental risks - Community-based/participatory land/resource use planning - Prioritization of vulnerable groups as beneficiaries - Documentation and utilization of traditional knowledge/ practices - Preparation of Local regulations
Community development activities	<ul style="list-style-type: none"> - Encroachments - Loss of common property resources - Loss of property, houses and other physical assets - Loss of other customary land/ resource access and use - Disempowerment of customary institutions 	<ul style="list-style-type: none"> - Strict delineation and survey of forest boundaries - Stringent action against encroachment - Increased awareness programs - Participatory procedures for screening of sub-projects and avoidance of major impacts - No use of private land or resettlement for community infrastructures - Ensure members of the community participation in Gram Sabha
	<ul style="list-style-type: none"> - Construction activities related air, water, soil and noise pollution - Possible damage to flora and fauna 	<ul style="list-style-type: none"> - Participatory procedures for screening of sub-projects and avoidance of major impacts - Proper design and planning of infrastructure activities to minimize environmental risks - Community-based/participatory land/resource use planning
Livelihood	<ul style="list-style-type: none"> - Denial of basic rights 	<ul style="list-style-type: none"> - Proper implementation and monitoring of

Activities	Potential Adverse Risks	Possible Mitigation Measures
support activities	<ul style="list-style-type: none"> - Increased dependency - Loss of traditional livelihood - Loss of traditional knowledge/skill - Inequitable benefit sharing - Resource use conflicts - Gender issues 	<ul style="list-style-type: none"> - ESAF, VPPF, including Social Assessment - Clear and equitable beneficiary selection and prioritizing VP. - Documentation and utilisation of traditional knowledge/ practices - Active bottom-up approach - Community involvement and employment in all aspects of construction, operation and maintenance - Corpus fund to ensure sustainability of investment - Selection of female beneficiaries with deliberate attempts to empower women

Source: JICA Survey Team

5 Procedures for Preparation of Vulnerable People's Plan

5.1 Overall Procedure for Preparation of VPP

The Vulnerable People's Plan (VPP) shall be prepared at the Gram Panchayat or JFMC level when adverse impacts are anticipated due to the Project on VP. It should be ensured that the contents of VPP should be incorporated in the micro-plan. VPP shall be prepared by FMU and Extension Workers in consultation and active participation of the concerned VP. Indicative steps for the preparation of VPP are described in Table 6.

Table 6 Processes for Preparation of VPP

No.	Step	Safeguard Activity, Methods, Processes
1	Screening and Basic Information Collection	<ul style="list-style-type: none"> - Collection of baseline socio-economic status on the village/ habitation in the target area by means of subcontract work to identify VP - Examine potential VP and potential impacts of the each sub-project on VP.
2	Social Assessment including consultation	<ul style="list-style-type: none"> - Explanation on the project plan to VP - Workshops and discussions with VP on identification of adverse impacts and devising mitigation measures and other support activities
3	Consultation on draft VPP with identified VP	<ul style="list-style-type: none"> - Consult with VP on the draft VPP, especially on the action plan, to receive VP's feedback for finalisation
4	Finalisation and Approval	<ul style="list-style-type: none"> - Finalise the draft VP based on outcomes of workshop/discussion conducted - Meeting at Gram Panchayat or/and JFMC level

Source: JICA Survey Team

VPP shall include at least the following indicative contents as indicated in Table 7.

Table 7 Indicative Contents of VPP

No.	Chapter	Descriptions
1	Introduction	<ul style="list-style-type: none"> - Define the basic purpose of the plan, its scope and objectives, and outline of the report
2	Sub-projects Description	<ul style="list-style-type: none"> - Result of screening, brief description of the sub-projects, rationale, objectives, location/area, key activities, the implementation schedule, etc.
3	Socio-economic Baselines	<ul style="list-style-type: none"> - Brief profiles of the target area. - Baseline information on the demographic, social, economic and cultural characteristics of all categories of VP - Baseline information on natural resources, viz., land, water, forest, forest products, etc., utilized and managed by VP
4	Summary of the Social Assessment	<ul style="list-style-type: none"> - Identify and mapping of key project stakeholders - Stakeholder engagements - Consultations with the targeted social groups under VPP

No.	Chapter	Descriptions
	and Free, Prior and Informed Consultation	- Assess potential adverse and positive effects of the Project in a participatory manner with VP
5	Action Plan	- Define/identify vulnerable people based on the results of socio-economic baselines and social assessment - Identify measures to avoiding potential adverse effects of the Project - Identify mitigating measures for potential adverse effects of the Project - Identify activities support the vulnerable people to participate in the Project (if any) - Grievance redressal mechanism of the project
6	Public Consultation and Information Disclosure	- Document and present results of public consultation with the communities
7	Cost Estimation and Financing Plan	- Provide activities-wise budget and possible sources of finance
8	Monitoring Plan	- Provide details of concurrent and end of project monitoring mechanism for targeted groups under VPP

Source: JICA Survey Team

5.2 Screening of the Sub-Projects and Target Areas

The screening of sub-projects and target areas needs to be completed at the initial planning phase, while identification of the sub-project and target sites identification is undertaken. The broad screening criteria of the sub-project and target areas considering social impact on VPs and forest dwellers are summarized below. In case there is a “No” to one of the questions, the sub-projects/target areas are excluded.

Table 8 Screening Criteria for the Sub-projects and Target Areas

Component	Sub-Component	Screening Criteria
Component 1: Ecosystem-based Climate Change Actions	1.1 Hill & North Bengal Landscape	<ul style="list-style-type: none"> - Information related to the affiliation, ownership and land use status of the sub-project site is available and verified? [<i>The screening cannot be completed until this is available</i>] - The sub-project and the target areas have considerable VP and the project activities will be beneficial for them. - Will the sub-project reduce VP's access to their economic resources, such as land, pasture, water, public services, sites of common public use or other resources that they depend on? - Will the sub-project result in resettlement of VP or require the acquisition of land (public or private, temporarily or permanently) for its implementation? - Will the sub-project result in the temporary or permanent loss of crops, fruit trees and household infrastructure (such as fence, lawn, canal, granaries, etc.), and loss of places for ship anchorage ?
	1.1.1 Production of Quality Planting Materials	
	1.1.2 Improving Quality of Forests	
	1.1.3 Eco DRR Activities (Soil Water Conservation Works in Protected Areas)	
	1.1.4 Green Laboratory Initiatives	
	1.2 Dry Lateritic & Alluvial Landscape	
	1.2.1 Production of Quality Planting Material	
	1.2.2 Improving Quality of Forests	
	1.2.3 Eco DRR Activities (including Preparation of GIS-based CAT Plans, Soil and moisture conservation works based on CAT Plan)	
	1.2.4 Green Laboratory Initiatives	
Component 2: Biodiversity Conservation	1.3 Deltaic Landscape	
	1.3.1 Eco DRR activities (field validation of the mangrove forest restoration models and its replication)	
	1.3.2 Green Laboratory Initiative	
	2.1 Hill & North Bengal Landscape	
	2.1.1 Human-wildlife conflict	
	2.1.2 Species conservation programme	
	2.1.3 Studies on wild animals and other behaviour	
	2.2 Dry Lateritic & Alluvial Landscape	
	2.2.1 Biodiversity conservation through people's participation in protected area	
	2.2.2 Biodiversity conservation through people's	

Component	Sub-Component	Screening Criteria
	participation for smaller mammals 2.2.3 Human-wildlife conflict mitigation 2.2.4 Species conservation programme 2.2.5 Studies on wild animals and their behaviour 2.3 Deltaic Landscape 2.3.1 Biodiversity conservation through people's participation in protected area 2.3.2 Human-wildlife conflict mitigation 2.3.3 Studies on wild animals and their behaviour	-Will the sub-project be implemented in the vicinity of a cultural heritage site? -Will the sub-project require excavation near any historical, archaeological or cultural heritage site?
Component 3: Livelihood Improvement	3.1 Hill & North Bengal Landscape 3.2 Dry Lateritic & Alluvial Landscape 3.3 Deltaic Landscape Below activities are commonly planned in all the subcomponents. i) Preparatory Activities with JFMCs (3 batches) including community mobilisation, micro planning, EPA/ CDA) ii) Support for Income Generation iii) Support for Community Well being (Traditional Healers) (Except in Deltaic Landscape) iv) Support for Community Mobilisation (Extension Worker)	
Component 4: Institutional Strengthening	4.1 Strengthening Project Management 4.2 Capacity Development 4.3 Monitoring & Evaluation 4.4 Strengthening Forest Research 4.5 Publicity and Publications	

Source: JICA Survey Team

For exclusion of the activities which require involuntary resettlement/ land acquisition, the screening checklist is as follows.

Table 9 Screening Checklist Form for Exclusion of Sub-projects entailing Involuntary Resettlement/ Land Acquisition

Resettlement Effects	Yes	No	Extent of Impacts and Other Remarks
Does the sub-project include upgrading or rehabilitation of existing physical facilities?			
Does the sub-project include the construction of new physical facilities?			
Will it require permanent land acquisition?			
Is the ownership status and current usage of the land known?			
Are there any non-titled people who live or earn their livelihood on affected land?			
Will there be loss of housing? Will there be loss of agricultural plots?			
Will there be losses of crops, trees and fixed assets?			
Will there be loss of businesses or enterprises?			

Resettlement Effects	Yes	No	Extent of Impacts and Other Remarks
Will there be loss of incomes and livelihoods?			
Will people lose access to facilities, services, or natural resources?			
Will any social or economic activities be affected by land use-related changes?			

Source: JICA Survey Team

5.3 Social Assessment (SA)

The main purpose of the Social Assessment (SA) is to help understand basic social issues and risks, and to determine social impacts on the target population of the proposed sub-projects. Analysis of the collected socio-economic information enables the Project to prioritise critical issues and means to address them, in consultation with other stakeholders.

The assessment will (i) establish baseline socio-economic situation of the target communities in the project area that will act as a reference for measuring project impacts in future, (ii) assess the access to and opportunities for getting benefits of basic social and economic services, (iii) stipulates a basis to identify appropriate interventions for community development and livelihoods under the Project, and (iv) determine short/ long-term, direct/ indirect, and positive/ negative impacts of the Project on the socio-cultural and economic status, especially for vulnerable groups.

SA shall be carried out by FMU with assistance/supervision by PMC ESC and the results would assist the executing agency in reaching-out to the vulnerable and the poor and thus ensures that the objectives of the Project are acceptable to the intended beneficiaries. Table 10 specifies key tasks for SA.

Table 10 Tasks for Social Assessment

No.	Tasks	Descriptions
1	Review baseline information	Gathering of baseline information on the demographic, social, cultural, and political characteristics of the VP, the land and territories that they have traditionally owned or customarily used or occupied, and the natural resources on which they depend. Review carefully the status of land use and FRA status of forest dwellers and forest village inhabitants of the target area of afforestation/natural assisted regeneration to identify the area under application of FRA or dispute.
2	Planning of consultation and FPIC	Elaborate a culturally appropriate process for consulting with VP at each stage of project preparation and implementation
3	Consultation	Conduct participatory assessment with VP, on the potential adverse and positive effects of the project based on free, prior, and informed consultation.
4	Examination of the required mitigation measures	Identify measures necessary to avoid adverse effects, or if such measures are not feasible, the identification of measures to minimize, mitigate, or compensate for such effects, and to ensure that VP receive culturally appropriate benefits under the project.
5	Development of a	The monitoring system needs to have local participation in the generation and refinement of indicators over the project cycle in order for the affected communities to

No.	Tasks	Descriptions
	Monitoring plan	be involved in balancing their own interests in the management of resources for conservation and productive purposes.

Source: JICA Survey Team based on Social Analysis Guidelines in Natural Resource Management (2005) and OP 4.10, Annex A - Social Assessment, World Bank

SA report shall include at least the following indicative contents.

Table 11 Indicative Contents of Social Assessment Report

No.	Chapter	Descriptions
1	Introduction	Define basic purposes for Social Assessment, its scope and a brief outline of report organisation.
2	Sub-Project description	Provide brief outline of proposed sub-project, its rationale, objectives, area, key activities, the proposed implementation schedule etc.
3	Approach and methodology	Describe the study approach and methodology adopted for carrying-out the assessment, including quantitative and qualitative data and information collection
4	Socio-economic baselines	Provide brief profiles of the study (target) area, demography, social, cultural, and political characteristics; the land and territories that they have traditionally owned or customarily used or occupied.
5	Sub-project impacts	Describe sub-projects, its objectives and activities of the sub-projects, socio-economic and livelihoods assessment, explain potential positive and negative impacts of the sub-project.
6	Vulnerable groups	Describe about the identified VP (social group, socio-economic situation, cultural habitat, use of natural resources, potential impact on each sub-group)
7	Public consultation and information disclosure	Describe the results of public consultations, meetings and other interaction events with the communities.
8	Conclusion and recommendations	Provide overall conclusions and recommendations.
9	Mitigation measures	Describe precise measures to avoid, minimise and/or compensate for sub-project activities with adverse impacts on communities and particularly vulnerable groups, which will be integrated in the VPP.
10	Monitoring	Provide the developed monitoring plan including monitoring mechanism and monitoring implementation arrangements, which will be integrated in the VPP.

Source: JICA Survey Team

6 Institutional Arrangement and Capacity Development for VPPF

6.1 Institutional Arrangement

In the proposed Project, most of the environment and social issues and protection are managed through the institutions responsible for forest management i.e. WBFD, which is responsible for overall planned intervention in the proposed Project, legal/policy development, ensuring adequate consultation and participation in planning and implementation and the equitable distribution of benefits associated with site-level project interventions. Other stakeholders would also be involved in addressing the different environment and social safeguard aspects or issues. For instance, the District Administration is the designated agency responsible for land administration, land acquisition and disbursement of compensation and providing Resettlement and Rehabilitation (R&R) benefits to the project-affected families.

VPPF will be implemented through the institutional structure of the Project. Table 12 highlights

institutional structure for VPPF with key roles and responsibilities.

Table 12 Institutional Structure for VPPF Implementation and Monitoring

Institution	Role in Project Implementation	Role and/or Responsibility in VPPF
High Power Committee	<ul style="list-style-type: none"> - Decision-making body - Lay down the broad policy framework for functioning of the society - Review the society's performance - All administrative and financial powers - Monitor utilization of funds 	<ul style="list-style-type: none"> - Overall supervision of the ESAF including VPPF and its implementation and M&E - Periodical checks and due diligence on safeguards report and monitoring data.
Project Management Unit (PMU)	<ul style="list-style-type: none"> - Project implementation, supervision and monitoring of all activities. - Documentation and reporting 	<ul style="list-style-type: none"> - Responsible for implementation of ESAF including VPPF - Monitoring Report to the concerned departments in the state government as well as to JICA in relation to environmental and social considerations - Disclosure of information - Consultation and guidance to DMU, FMU, JFMCs, EDCs, SHG and field level officers on information disclosure and consultation - Technical guidelines on beneficiary selection, safeguard checks/ guidelines for particular activities (if required) - Development of planning/ monitoring forms, review of monitoring data, reporting, assistance with evaluations - Finalise criteria for categorisation (Category B or C) as per JICA Guidelines as well as exclusion criteria - Review of participatory environmental and social assessments - Performance of due diligence follow-up - Guide, instruct, prepare guidelines, establish and operate M&E, disseminate project information, hand-holding support in the field for all project activities.
PD-Finance (Environment and social consideration)	<ul style="list-style-type: none"> - Support the PMU and facilitate project implementation at state level, and would extend all technical inputs and guidance to the DMU level as and when required, and through regular review meetings, frequency of which to be determined during the preparatory phase of the Project 	<ul style="list-style-type: none"> - Coordinate, monitor and supervise the ESC-related activities at the state level, including the screening and selection of subprojects and determination of the required procedures for specific subprojects following the guidance/instruction of the PMU - Liaise with other line departments at the appropriate level for inter-sector convergence - Provide any specific support required for implementation and monitoring of the Project
Divisional Management Unit (DMU)	<ul style="list-style-type: none"> - To act as the dedicated and extended wing of the PMU for project implementation at the division level and as a subordinate office of the autonomous society. - Facilitate project implementation at the division level, and would extend all technical inputs and guidance to the Field Management Unit, JFMCs, EDCs, etc.) 	<ul style="list-style-type: none"> - Coordinate, monitor and supervise the ESC relevant activities at the division level including adoption of VPPF - Ensure timely submission of monitoring reports from FMU to DMU and to PMU - Conduct the screening and selection of subprojects and determine the required procedures for specific subprojects following the guidance/instruction of the PMU
Field Management Unit (FMU)	<ul style="list-style-type: none"> - To act as the dedicated and extended wing of the DMU for project implementation at the Range level and as a subordinate office of the autonomous society. - Facilitate project 	<ul style="list-style-type: none"> - Coordinate, monitor and supervise the ESC relevant activities at the range level including implementation of VPPF - Conduct the screening and selection of subprojects and determine the required procedures for specific subprojects following the guidance/instruction of the PMU/ DMU

Institution	Role in Project Implementation	Role and/or Responsibility in VPPF
	implementation at the range level, and would extend all technical inputs and guidance to the JFMCs, EDCs, etc.	<ul style="list-style-type: none"> - Ensure regular reporting of monitoring results to DMU - Regular monitoring of ESC related activities
PMC Environmental and Social Consideration Specialist	<ul style="list-style-type: none"> - Support the PMU, DMUs and FMUs facilitate project implementation, through technical inputs and guidance. 	<ul style="list-style-type: none"> - Assist PMU PD (Finance) supervise the ESC-relevant activities, including the screening and selection of subprojects and determination of the required procedures for specific subprojects following the national and state law/regulations and MOD with JICA. - Finalise ESAF and VPPF with the stakeholders to be drafted under the preparatory survey, and assist PMU implement the project in accordance with the frameworks. - Supervise the community level infrastructure development executed by the contractors in terms of compliance with the safeguard relevant law/regulations.
Joint Forest Management Committees (JFMC) including former EDC	<ul style="list-style-type: none"> - Participate in project activities such as microplanning, plantation and livelihood support activities. 	<ul style="list-style-type: none"> - Assist in selecting target beneficiaries and clarify local needs and expectations on the Project in the planning - Conceive and raise awareness among the local community with respect to environmental and social considerations. - Provide support in microplanning activities at the subproject level - Participate in environmental and social assessments - Support public consultation, due diligence checks, and regular monitoring by the implementing agencies PMU, DMU, FMU, and PMC.

Source: JICA Survey Team

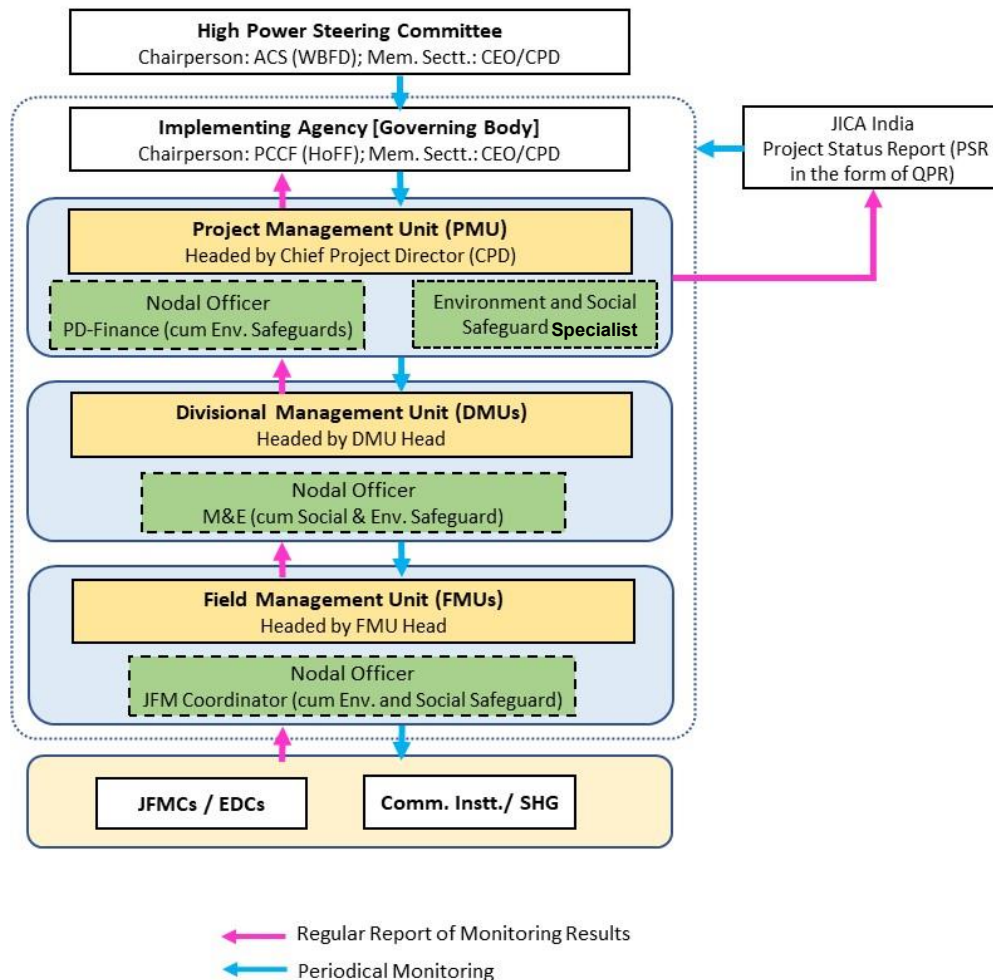
Since WBFD does not have any dedicated units or personnel to deal with ESC related matters, the respective designated nodal officers, who will be supported by the concerned PMC Environment and Social Consideration (ESC) specialist, will guide PMU, DMU, and FMU for the compliance of the environmental and social safeguards.

The nodal officer, PD (Finance) will report to the Chief Project Director under PMU and would be holding the additional charge to ensure the compliance of ESC including VPPF and ensuring timely periodical monitoring of the ESC activities and its regular reporting. The official would ensure development of appropriate training materials on environmental and social safeguards with support from PMC ESC specialist, following the requirements in ESAF and organising capacity enhancement programmes at different levels and ensure the required procedures indicated in ESAF are followed properly. The specialist shall also support PMU in site investigation when the particular issues that are identified or reported to PMU.

The role of PMC ESC specialist is primarily to support PMU, DMU, FMU in reviewing the project activities with a focus on the compliance of VPPF, provide guidance and technical advice to PMU, DMU and FMU for required environmental and social safeguard measures, as well as reporting to JICA to ensure smooth and efficient implementation of environmental and social safeguard measures and report of monitoring results.

The institutional arrangement for safeguard monitoring system is more or less similar to the project

monitoring system. At the field level, monitoring and reviews will be conducted by FMU and report to DMU. Then, DMU Officer shall compile the monitoring results that need to be reviewed regularly and report to PMU, which shall analyse the result and share to the concerned departments in the state government as well as in a form of annual report to JICA.



Source: JICA survey team

Figure 3 Flow of Report of Environmental and Social Monitoring Results

6.2 Capacity Development Programme

The capacity building programme designed for ESAF would also cover aspects related to VPPF as well. The capacity development programme covering VPPF would be supported by PMC ESC specialist, who will not only help addresses gaps in the VPPF, but would also ensure that the framework is effectively operationalised.

The details of the training programme such as venue, time, date, frequency of the proposed trainings sessions should be further developed by hired specialist/experts with comments and clearance of PMU. An indicative capacity development programme has been devised and depicted in Table 13 as a reference to devise capacity enhancement training programmes.

Table 13 Indicative Capacity Development Programme for Environmental and

Social Safeguards

Item	Descriptions
Training 1	- Programme for Management/ Administrative Level
Key Participants	- Designated officials of PMU, CCF Office
Training Programme	<ul style="list-style-type: none"> - Topic 1: Orientation/Sensitization on Env. and Social Consideration - Legal framework on environmental and social safeguards of India and JICA - Environmental and social impact assessment: overview & regulations - Basic introductory concept of safeguard - Safeguard issues (vulnerable groups, SCs, STs, transhumance, Gender, etc.) - Free, Prior and Informed Consent (FPIC) - Topic 2: ESAF and its importance under the project - Knowledge and skills necessary for undertaking environmental and social screening and appraisal as per the requirements of the ESAF (including VPPF) - Conduct ESA and preparation of management/ mitigation plans - ESAF: steps and procedures with respect to the Project - Topic 3: Monitoring and Evaluation for Environmental and Social Safeguard - Concept of M&E - M&E - Methods and reporting procedures - Use of M&E Results and feedback - Grievance Redressal Mechanism - Experience sharing and learning
Duration	Two days training (once a year in the first four years at each district)
Training 2	- Programme for Field/ Operational Level
Key Participants	- Designated officials and staff of DMU, Division, Sub-Division office and FMU
Training Programme	<ul style="list-style-type: none"> - Topic 1: Orientation/Sensitization on Env. and Social Consideration - Legal framework on environmental and social safeguards of India and JICA - Environmental and social impact assessment: overview & regulations - Basic introductory concept of safeguard - Safeguard issues (vulnerable groups, SCs, STs, transhumance, Gender, etc.) - Process of community consultation and public participation - Free, Prior and Informed Consent (FPIC) - Topic 2: ESAF and its importance under the project - Knowledge and skills necessary for undertaking environmental and social screening and appraisal as per the requirements of the ESAF (including VPPF) - ESAF: steps and procedures with respect to the Project - PRA for data collection, analysis and report preparation - Micro Planning and Participatory Land Use Planning - Topic 3: Monitoring and Evaluation for Environmental and Social Safeguard - Concept of M&E - M&E - Methods and reporting procedures - Environment Health Standards - Use of M&E Results and feedback - Grievance Redressal Mechanism - Experience sharing and learning
Duration	- Two days training (once a year in the first four years at each division)
Training 3	- Community Facilitation and Environmental and Social Assessment for ESC
Key Participants	- Designated field level officers from Beat, GP representatives, Village level implementing organisations-JFMC/EDC, Field Facilitators
Training Programme	<ul style="list-style-type: none"> - Topic 1: ESAF and its importance under the project - ESAF: steps and procedures with respect to the Project - Project Activity Planning during Micro Planning and Participatory Land Use Planning - Participatory ESA Procedures - Working with Ethnic and Vulnerable Groups - Mechanisms for addressing Gender Issues - Conflict Resolution/Grievance Procedures - Role of community level institutions in ESA - Community Level Monitoring
Duration	One session as part of other community related trainings (Once a year mandatory or as decided by FMU based on the plan of community level trainings in the first four years)

Source: JICA Survey Team

7 Framework for Disclosure of VPPF and Free, Prior, Informed Consent (FPIC), and Grievance Redressal Mechanism

7.1 Free, Prior and Informed Consultation

Free, Prior and Information Consultations (FPIC) is done with the identified communities that could potentially be affected at each stage of the project, and particularly during the project preparation, to fully identify their views and ascertain their broad community support for the Project. FPIC is important to be carried-out with the target beneficiary population, including VP. At the initial stage, the locations where each of these communities live and derive livelihood will be mapped. Efforts have to be made to ensure that these communities are adequately represented during the preliminary information disclosure and in subsequent consultation meetings. During these disclosures/ consultations, information in the form of written materials and language of communication should be in the local language/ dialect, which are simple and comprehended by everyone. Furthermore, FMU and extension workers should be provided with visual presentations and necessary equipment to facilitate the understanding of participants. Also, sufficient opportunities and adequate facilities are to be provided to encourage participation of women, elders and other vulnerable people

Consultation and Participation provides an opportunity and platform for people to express and share their views and concerns, contribute to design the implementation process of the project activities, discussions on sensitive social mitigation measures, while at the same time creating a sense of ownership for the Project. In this regard, FPIC is an important process to minimise any negative impacts and for a broad community support. Outline of FPIC is provided in Table 14.

Table 14 Outline of FPIC

Item	Descriptions
Objective	To establishing a broad VP community's support and willingness for implementation of the Project
Topic for Consultation:	<ul style="list-style-type: none"> - Disclosure of basic project related information including area, location, purpose/objectives, key activities, stakeholders involved, target beneficiaries. - Expected role and involvement of communities. - An overview of anticipated environmental and social risks and their effect on the VP - Vulnerable People's Plan (if any)
Participants:	<ul style="list-style-type: none"> - Relevant members of VP - Other important key persons (e.g. Gram Panchayat President)
Process:	<ul style="list-style-type: none"> - Before on-set of sub-project implementation, immediately following formations of beneficiary groups, appropriate community meetings and consultations that are culturally appropriate and in simple and understandable language - Encourage community's participation in discussions, meetings and consultations, facilitate participation of women, elders and other vulnerable groups - Adoption of appropriate consultation method as per socio-cultural values of local VP - Field level officers will participate in general community meeting to discuss concerns, visit individuals who express doubt and/or criticism on any aspect of project implementation. - Participants to be provided adequate time to assimilate information provided/ shared - Opportunity to decide if they do not wish to participate. - Discussion
Material Required:	<ul style="list-style-type: none"> - Provision of simple/easy to read project brochures in local language. - Consultation and Participation Monitoring Sheets

Source: JICA Survey Team

The public consultation mechanism is expected to reduce chances of conflicts between the affected VP and the management committees. This is particularly focused on ensuring that vulnerable

people and other forest dependent groups, and women, are properly consulted during site-level project planning and that they are given the opportunities and encouragement to participate in the Project.

7.2 Information Disclosure

The project would apply the following method of information disclosure to the public and relevant stakeholders respectively to make the process of VPPF implementation transparent.

Table 15 Method of Information Disclosure

Method	Description
Physical Information Disclosure	Through simple and concise details in printed charts/ flip charts/ posters etc. pasted at the community meeting centres [Info. about project objective, activities, area, beneficiaries, Social/ Environmental survey reports, EIA reports, Social/Environmental monitoring reports etc. must be shared in public domain on project website.]

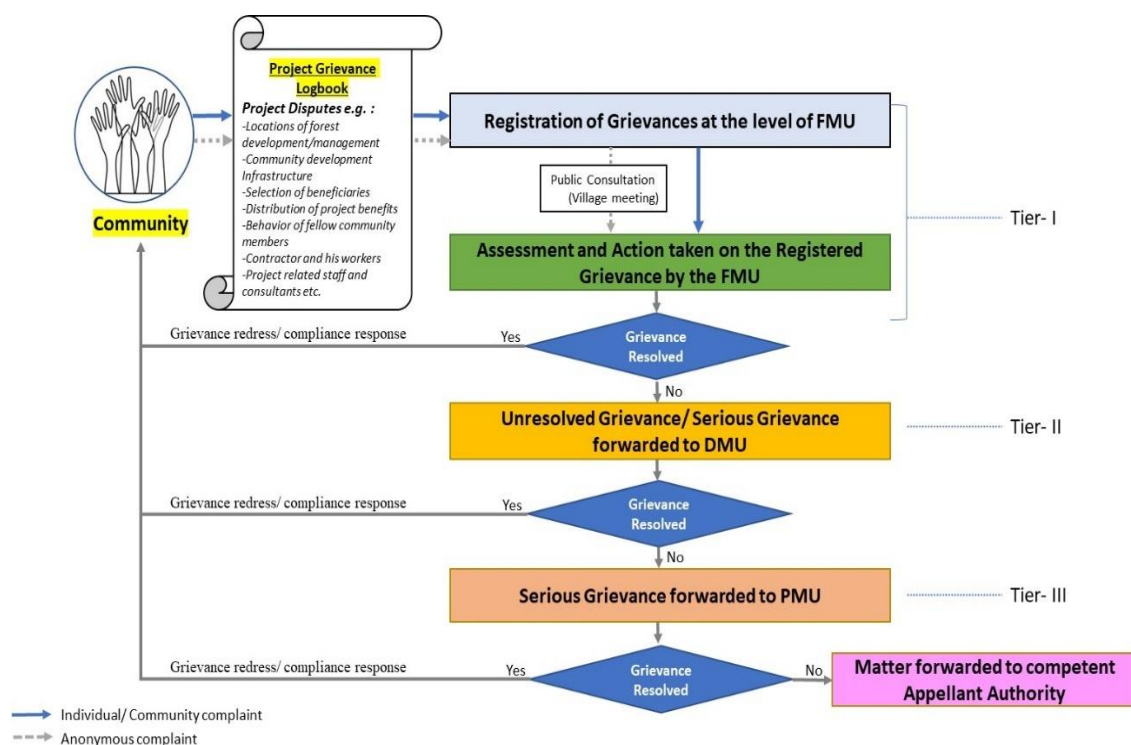
Source: JICA Survey Team

7.3 Grievance Redress Mechanism

While there are the existing legal frameworks related to the Grievance Redress Mechanism (GRM) in the country¹, the Project-level GRM, which shall be applied to all sub-projects, is expected to be institutionalised to handle the project-specific grievances such as disputes over locations of forest development and management and community development infrastructure, selection of beneficiaries, distribution of project benefits, behaviour of fellow community members, contractor and his workers, project-related staff or consultants, etc. can be reported directly to WB-FBCCCR. In this regard, FMU officer, would be the first level of intervention, as FMU acts as the link for community liaison and forest management in general. Thus, all concerns of the community shall be recorded in a project grievance logbook. Individuals can raise their grievances in name or anonymously, or through traditional institutions according to culture and context, as appropriate, which shall be recorded in written form. A grievance redress format/ template could be devised for this purpose, which would depend on the type and context of the grievance.

FMU officer should resolve all concerns or grievances raised by the communities, beneficiaries, etc. and in case an anonymous grievance has been put-up, it shall be addressed through public consultation through a village meeting, retorting generally to the raised point(s) and minutes of the meeting and outcomes shall be recorded. The grievance redress or compliance response is sent to the applicant in written, after resolving the grievance/ concerns.

¹ EIA Notification 2006 states that “Public Consultation and Public Hearing” which refers to “the process through which the concerns of local affected persons and others who have plausible stake in the environmental impacts of a project or activity are ascertained with a view to taking into account all the material concerns in the project or activity design as appropriate. All Category ‘A’ and Category ‘B1’ projects or activities shall undertake Public Consultation...”. Further, the RFCTLARRA-2013, involves consultations and redress of concerns of affected persons at various stages. Besides, Department of Administrative Reforms & Public Grievances under the Ministry of Personnel, Public Grievances & Pensions, GoI, has issued a Compilation of Guidelines for Redress of Public Grievances and also operates a web-based portal (<http://pgportal.gov.in/>).



Source: JICA survey team

Figure 4 Grievance Redressal System

However, in case the applicant (individual/ group) is not satisfied, s/he may approach to DMU for further redress, or in case of grievances that are more serious in nature, FMU officers should forward such grievances to DMU. DMU officers shall be responsible to redress the grievance in consultation with FMU officer, concerned applicants. All grievances should be addressed, redressed and resolved at this level.

In case of more serious grievances, then they should be dealt with through the project hierarchy as necessary and any complainant should be made aware of their legal rights according to the relevant legal documents.

8 Cost Estimation and Budget Allocation

The cost estimate for implementation of ESAF and VPPF under this project is summarized in the following table.

Table 16 Cost Estimate for Implementation of ESAF and VPPF

Cost item	Unit price	Quantity	Total	Remarks
PMC ESC	368,771	9 Man Month	3,318,939	Dec, 2023 – Mar, 2027 Estimated under Component 5: PMC
Outsourcing work for baseline survey of socio-economic condition	2,500,000	1 l.s.	2,500,000	Estimated under Component 4.3.2 2)

Cost item	Unit price	Quantity	Total	Remarks
Outsourcing work for baseline survey of the target area	2,500,000	1 l.s.	2,500,000	Estimated under Component 4.3.2 2)
Total			8,318,939	

Source: JICA Survey Team

Attachment 19

**Environmental
and
Social Compliance Monitoring Form**

Page No - (1-10)

Attachment 19 Environmental and Social Compliance Monitoring Forms

Form-A: Environmental Monitoring (To be used during Construction)

Name of the Sub-Project:
Sub Project ID:
Period of reporting (Quarter/Month/Fortnight):
Name and signature of the Reporting Officer:
Date of reporting:

1. Monitoring of environmental issues (Field observation)

(This shall be used in the sites, where significant environmental issue is expected. If the Environment Expert/ Monitoring Officer feels the need for testing of samples for environmental pollution then a separate Form – A1, appended to this form, may be used for data recording)

Date and time of site inspection	Subproject/ Location	Issues	Mitigation measures undertaken	Remark
1.1	Air pollution			
1.2	Noise and Vibration			
1.3	Surface water			
1.4	Ground water			

1.5	Construction waste			
1.6	Kitchen and other wastes from labour camp			
1.7	Chemical or hazardous wastes			
1.8	Construction waste			
1.9	Subsidence and sedimentation			
1.10	Soil erosion			
1.11	Disturbance to ecological resources and vegetative cover			

Form-A1: Environmental Monitoring
(To be used during Construction)

Lead														
T Coliform														
Pesticides														

Note: Standards set by Central Pollution Control Board as well as BIS-IS:10500, 2012 may be referred.

(2) Groundwater Quality

a) Date of testing:

b) Results:

Parameter	Unit	Measurement (Well/ Tube well/ Dug-well/Handpump)										Average	Limit (E class water)	Remark
		1	2	3	4	5	6	7	8	9	10			
pH														
EC														
Turbidity														
TDS														
TSS														
Hardness														
Alkalinity														
Carbonate														
BOD														
TN														
TP														
Fluorides														
Chlorides														
Sulphates														
Sodium														
Potassium														
Calcium														
Magnesium														
Oil&Grease														
Iron														
Manganese														
Copper														
Zinc														
Phenolic C														
Color														
Cadmium														
Chromium														
Cyanides														
Lead														
T Coliform														
Pesticides														

Note: Standards set by Central Pollution Control Board as well as BIS-IS:2296, 1992 may be referred.

(3) Air Quality

a) Date of testing:

b) Results:

Parameter	Unit	Measurement (Site)										Average	Limit (NAAQS)	Remark
		1	2	3	4	5	6	7	8	9	10			
PM10														
PM2.5														
NO2														
SO2														
CO														
O3														
NH3														
Pb														
Ni														
As														
Benzo(a)pyrene														
Benzene														

Note: National Ambient Air Quality Standards (NAAQS) set by Central Pollution Control Board may be referred

(4) Noise and Vibration

a) Date of testing:

b) Results:

Parameter	Unit	Measurement (Site)										Average	Limit (NANS)	Remark
		1	2	3	4	5	6	7	8	9	10			
dB														

Note: National Ambient Noise Standards (NANS) set by Central Pollution Control Board may be referred

Social Monitoring Form – B
(To be used during Construction)

Name of the Sub-Project: Sub-Project ID: Period of reporting (Quarter/Month/Fortnight): Name and signature of the Reporting Officer: Date of reporting:
--

1. Monitoring of social issue

Date and time of site inspection	Subproject/ Location	Issues	Mitigation measures undertaken	Remark
1.1	Interactions with local communities			
1.2	Resettlement (loss of income or loss of access)			
1.3	Impact of livelihoods			
1.4	Health and safety			
1.5	Accidents and traffic management			
1.6	Labour management			

Form-C: Environmental and Social Monitoring
(To be used during Operations and Maintenance)

Name of the Sub-Project:	
Sub-Project ID:	
Period of reporting (Quarter/Month/Fortnight):	
Name and signature of the Reporting Officer:	
Date of reporting:	

1. Monitoring of environmental issue

(1) Surface water Quality

a) Date of testing:

b) Results:

[illegible]

Note: Standards set by Central Pollution Control Board as well as BIS-IS:10500, 2012 may be referred.

(2) Groundwater Quality

a) Date of testing:

b) Results:

[illegible]

Alkalinity															
Carbonate															
BOD															
TN															
TP															
T Coliform															
Pesticides															

Note: Standards set by Central Pollution Control Board as well as BIS-IS:2296, 1992 may be referred.

2. Monitoring of social issue

Date and time of site inspection	Subproject/ Location	Issues	Mitigation measures undertaken	Remark
1.1	Impact of livelihoods			
1.2	Accidents (including Man-Animal conflict)			
1.3	Voluntary Land Donation			
1.4	Grievances (if any)			

Appendix-E: E-2. Reporting Items from DMU to PMU for Environmental and Social Consideration of Sub-Projects of Category B

1. General information

Items	Descriptions
Name of DMU officer	
Date of submission	
Name/ID of sub-projects and its location	
Contractor undertaking environmental and social monitoring	

2. Monitoring environmental impact and possible mitigation measures of sub-projects for silviculture, soil and water conservation, infrastructure

Items	Environmental impact observed	Mitigation measures applied (Yes/No and descriptions)	Effectiveness of mitigation measures (1-5 Scaling)	Action to be taken for improvement
Dust generation/ Air pollution (Dust and Smoke)				
Water Quality (Change in water quality)				
Drainage and sedimentation				
Solid waste (Waste from construction works (types and volume)				
Chemical or hazardous wastes (oil, lubricants, cleaning materials)				
Disruption of vegetative				

Items	Environmental impact observed	Mitigation measures applied (Yes/No and descriptions)	Effectiveness of mitigation measures (1-5 Scaling)	Action to be taken for improvement
cover and ecological resources (Illegal tree clearing, wild animal hunting)				
Traffic management (Signs)				
Restoration of affected areas				
Soil erosion (Visible soil erosion and water runoff including rill/gully erosion)				
Worker and public Safety (Training for worker, fences, barriers warning signs)				
Communication with local communities (complaints from local residents about resettlement, loss of livelihoods, etc.)				

Attachment 20

**JICA presentation material
for
Digital Transformation (DX)**

Page No - (1-9)



Attachment 20

Discussion Material with WBFD Detailed Fact Finding Mission on the WB-FBCCR Phase 2 for Digital Transformation Components

November 24, 2022

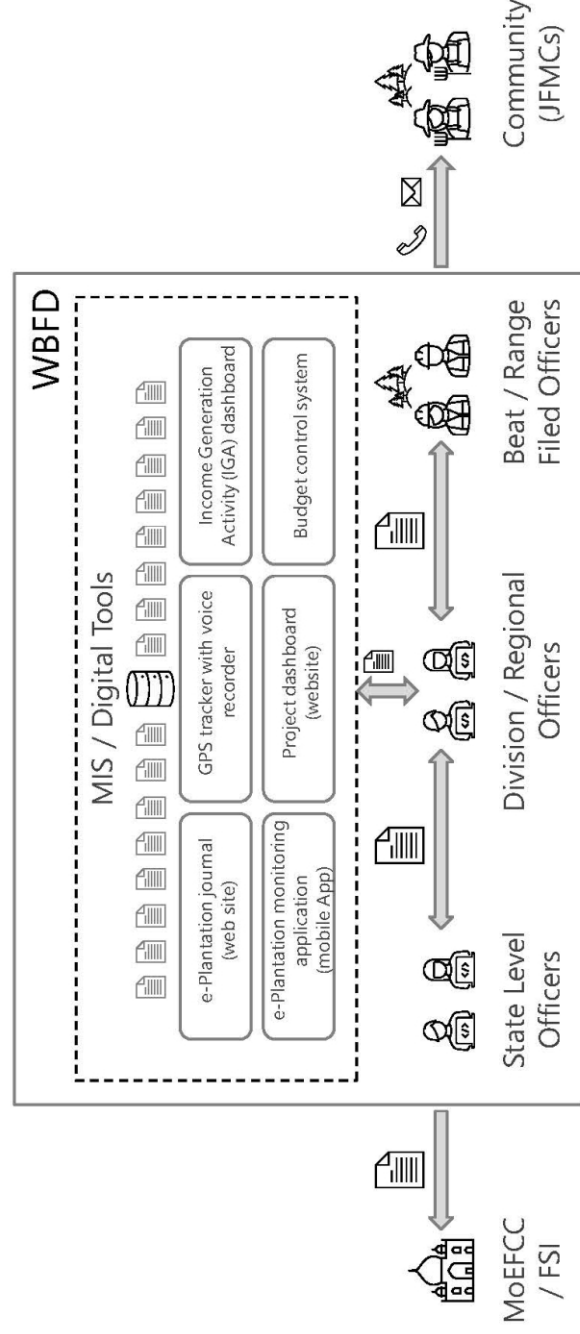
JICA South Asia Division 1, India Office, and Office for STI&DX

Digitization Achieved under the Phase 1

- Unified information management based on data files achieved.
- Forest management information such as plantation monitoring and working plan shared in a common database.
- WBFD officers manually process / input various information to create / handle the data files.

WB-FBCP (Phase 1 completed): File-Based Information Management

Efficient information collection and sharing has been achieved.

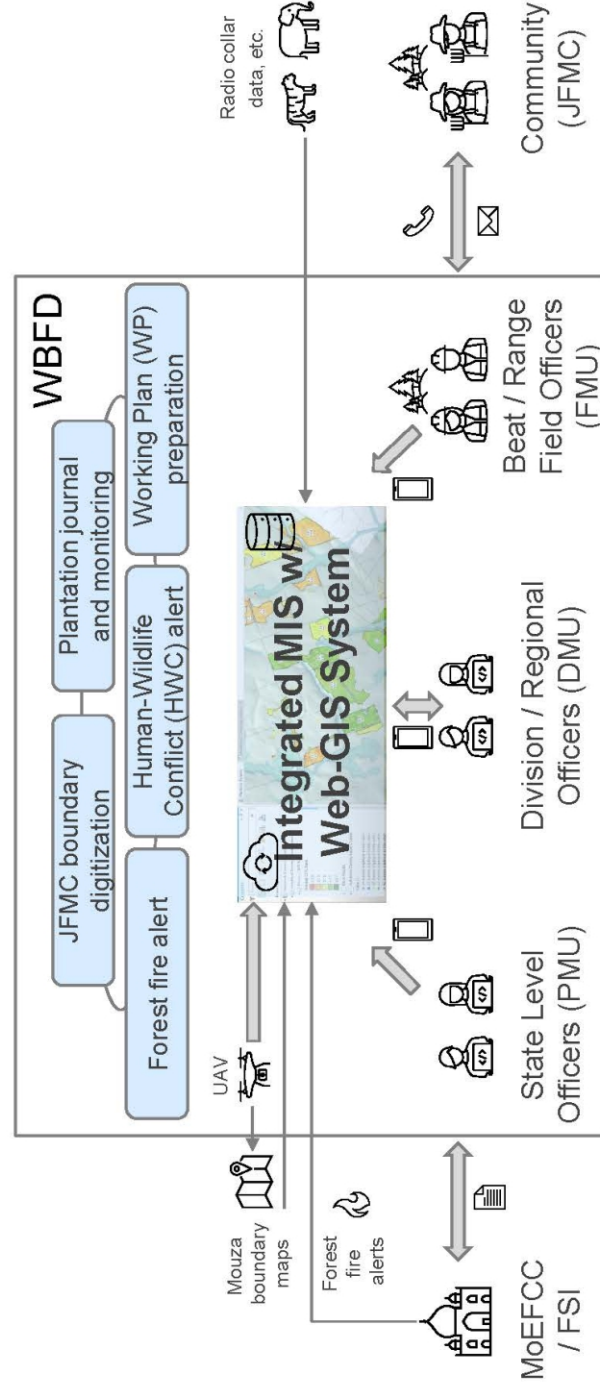


Digitalization Planned by WBFD under the Phase 2

- Integrate the forest management and other related information on Web-GIS.
- Facilitate WBFD officers including FMU to collect and store data for better monitoring and policy making.

WB-FBCCR (Phase 2 proposed by WBFD): Integrated MIS with Web-GIS System

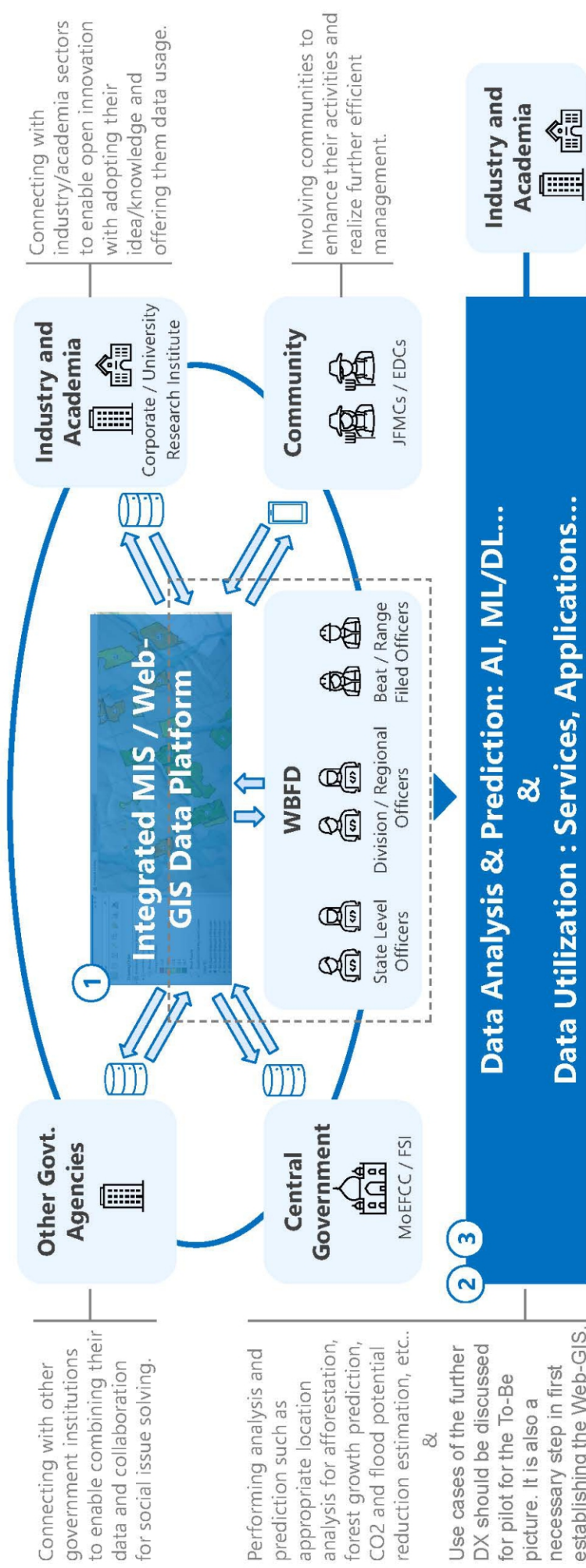
Allowing more information collection and storage with strengthening of the capacity of field staffs.



Digital Transformation to be Proposed for the Phase 2

- MIS/web-GIS system to connect external database and systems to become an integrated data platform.
- Data utilization to create new services and applications with AI, ML/DL etc.

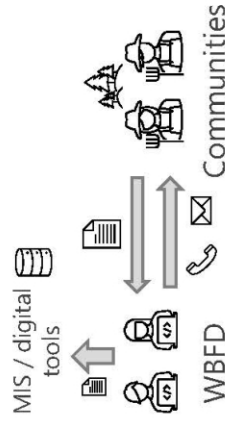
JICA Proposal for Phase 2: Integrated Data Platform and Value Creation with Data



Example ① Community Involvement with Integrated Database Digital transformation

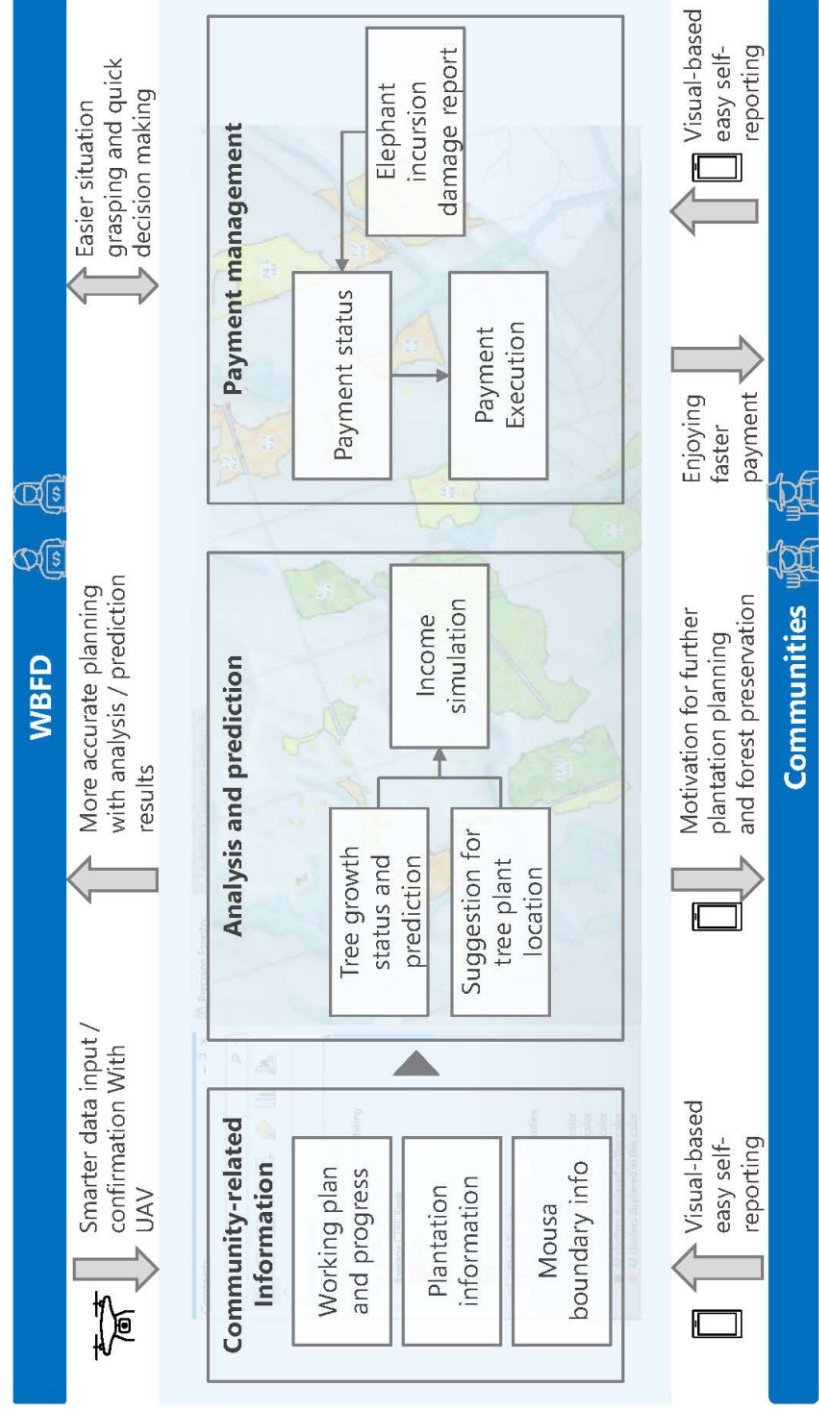
Getting the JFMC to use Web-GIS would enable efficient operations and providing further support for them.

Current communication



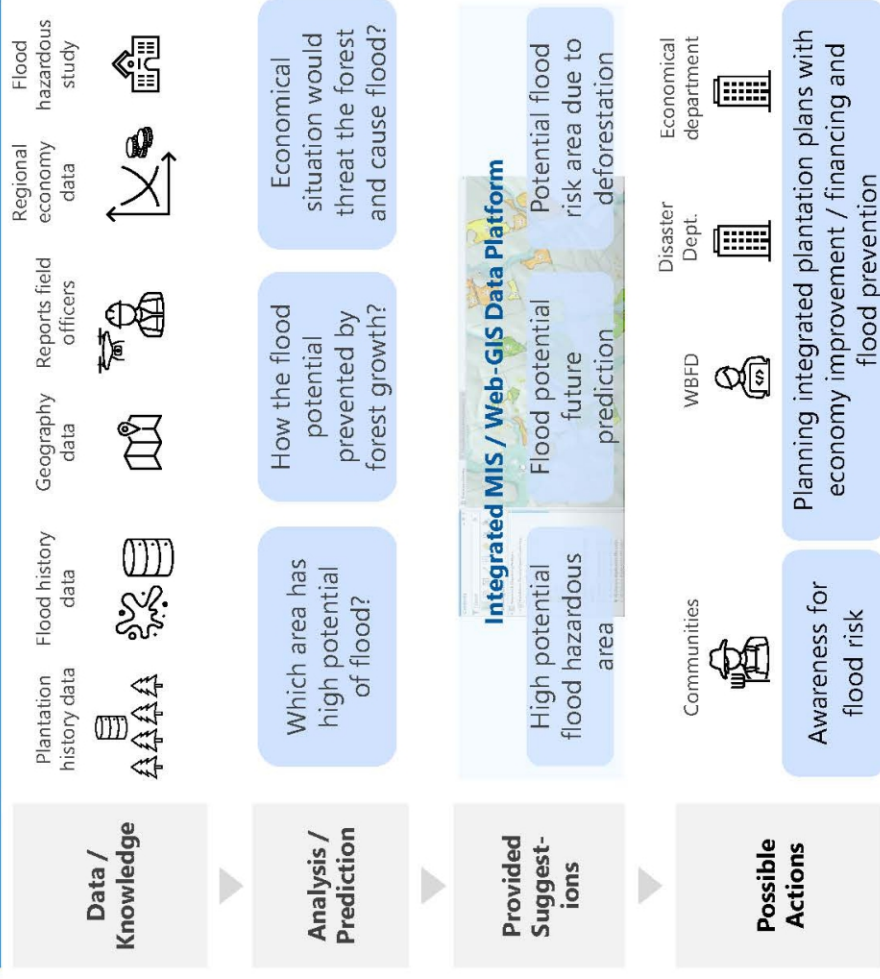
- Officers are burdened processing and management work with data from communities.
- Ways of data sharing with communities are limited.

Enabling community data input and usage for efficient and smart cooperation



Example ②③ Advanced Social Problem-Solving Activities

② Smart Reforestation Planning



③ Elephant Coexistence System



Ref 1: Smart Forest Conservation and Utilization with GIS

J.D. Irving, Limited (Canada)

Overview

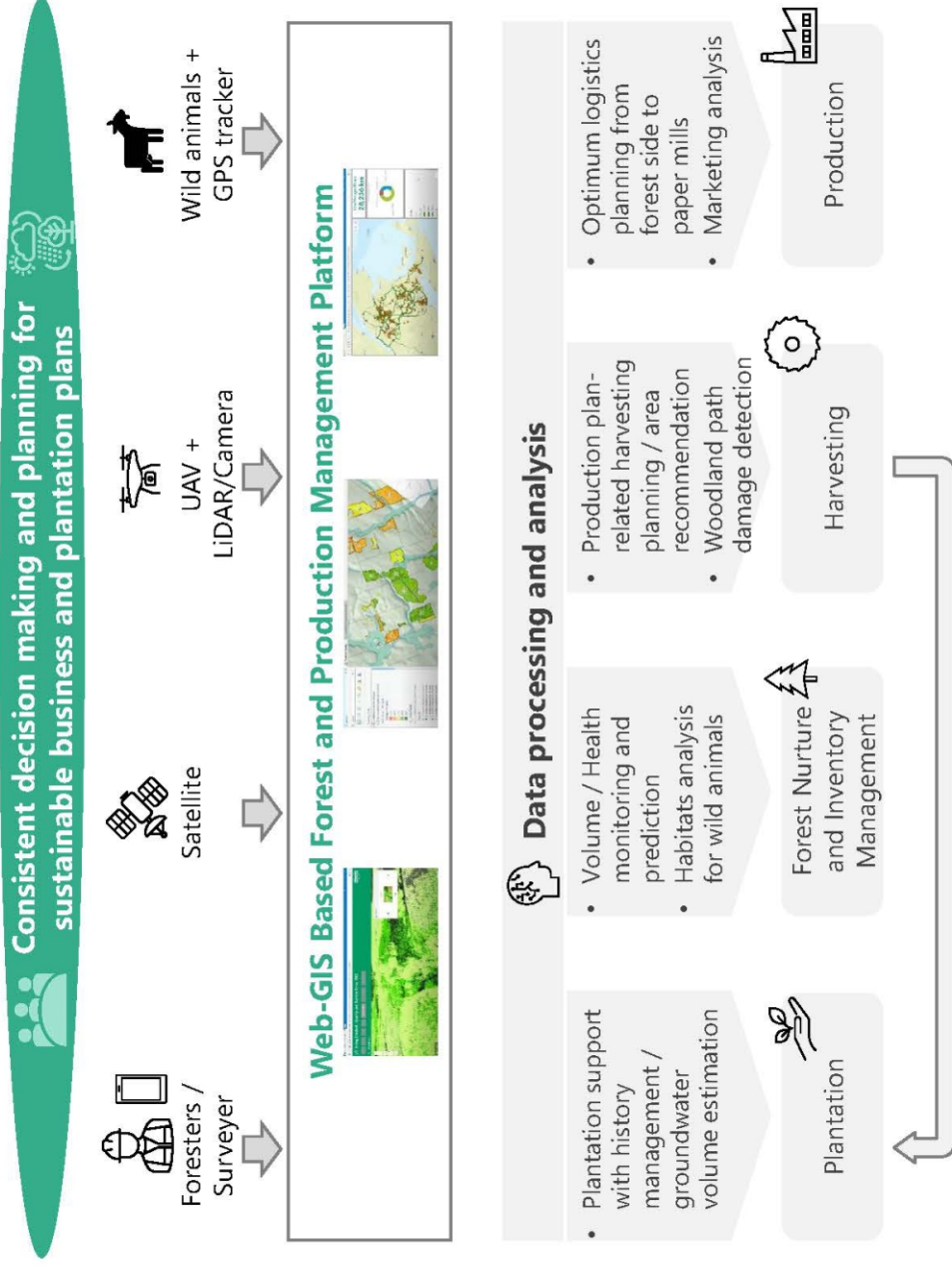
- Analyzing data acquired from satellites, LiDAR, and other sources. Visualizing the information and analysis results with plotting them on the GIS data.
- Gaining a broad understanding of the forest growth, environmental preservation status and production/business information in one picture.

Purpose

- Realizing developing consistent and sustainable business and plantation plans linking with prediction of forest growth and market.
- Balancing nature and wildlife conservation with business.

Insight

- Centralized management and sharing of information contributes smarter decision making.
- Combining and analyzing data from areas surrounding forest conservation enables smart and efficient management and decision-making for the entire forest-related business.



Ref 2: Water Flood Simulation with GIS

Tokio Marine & Nichido Fire Insurance Co., Ltd. (Japan)

Overview

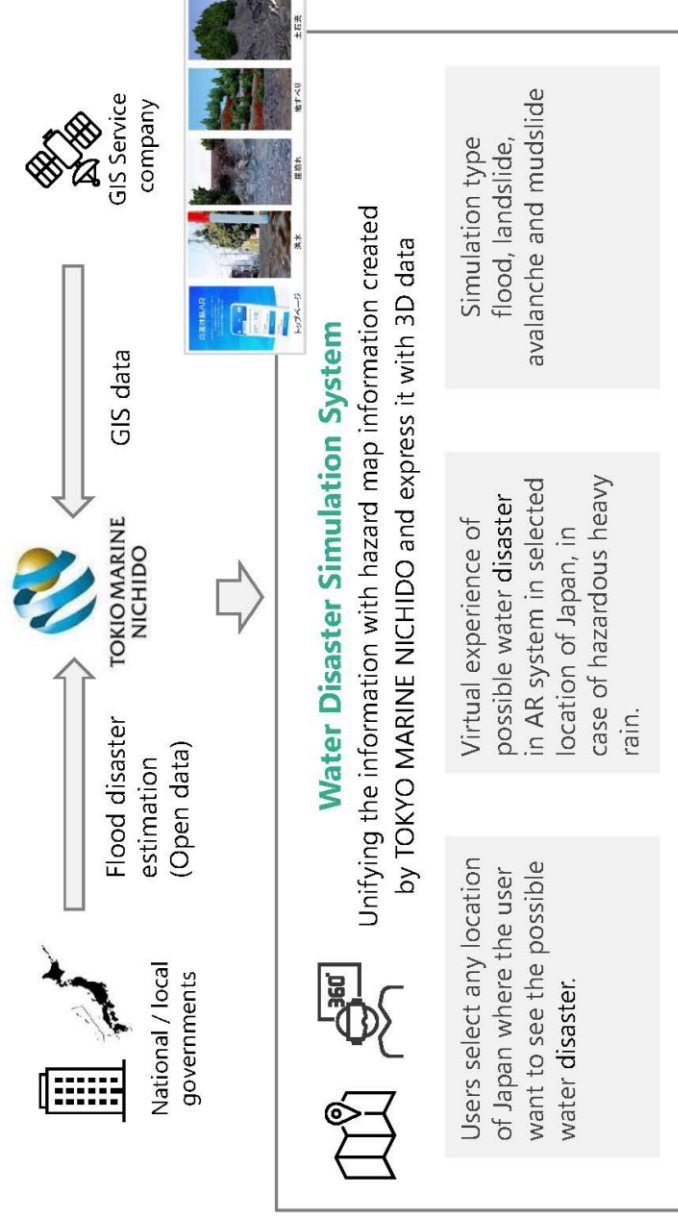
- Mesh data of assumed inundation depths of nationally managed rivers collected from all over Japan are processed and optimized on GIS, and linked to hazard map information.
- Offering AR experience of simulation of flood disasters based on the assumed scale of flooding announced by the national government

Purpose

- Detailed risk calculation
- Raising residents' awareness for the disasters
- Supporting local governments in disaster prevention planning

Insight

- GIS combined with topographic, riverine, and weather information enables a variety of simulations
- The Web-GIS could start as forest management tool, and to be evolved for area-wide planning and monitoring tool.



1. **The integrated MIS/web-GIS system** developed under the Phase 2 will be designed to **deploy beyond the project coverage**.
2. **Developing the “WBFD Digital Transformation Strategy”** if there is a lack of holistic policy for data utilization.
3. **Incorporate a sub-component of executing the PoC activities** for several digital technology / innovation trial with utilizing data.

Attachment 24

Terms and Conditions of Japanese ODA Loans

Page No - (1)

"Terms and Conditions of Japanese ODA Loans
(Effective from October 1, 2022)"

Category	GNI Per Capita (2020)	Terms	Fixed/Floating	Standard/Option	Interest Rate (%)	Repayment Period (years)	Grace Period (years)	Conditions for Procurement
Low-Income Least Developed Countries ¹ (- US\$ 1,045)					0.01	40	10	Untied
Least Developed Countries or Low-Income-Countries (- US\$ 1,045)	Preferential Terms for High Specification (2.same as below)	Fixed	Fixed	Standard	0.25	30	10	
				Option1	0.20	25	7	
				Option2	0.15	20	6	
	Preferential Terms ^(3. same as below)	Floating (4. same as below)	Floating	Option3	0.10	15	5	Untied
				Longer option	TORF+40bp	40	10	
				Standard	TORF+30bp	30	10	
				Option1	TORF+25bp	25	7	
				Option2	TORF+20bp	20	6	
				Option3	TORF+15bp	15	5	
	General Terms	Fixed	Fixed	Standard	1.10	30	10	Untied
				Option1	0.95	25	7	
				Option2	0.80	20	6	
				Option3	0.60	15	5	
				Longer option	TORF+50bp	40	10	
				Standard	TORF+40bp	30	10	
Lower-Middle-Income Countries US\$ 1,046 - US\$ 4,095	Preferential Terms for High Specification	Fixed	Fixed	Standard	0.50	30	10	
				Option1	0.45	25	7	
				Option2	0.40	20	6	
	Preferential Terms	Floating	Floating	Option3	0.35	15	5	Untied
				Longer option	TORF+90bp	40	10	
				Standard	TORF+70bp	30	10	
				Option1	TORF+60bp	25	7	
				Option2	TORF+50bp	20	6	
				Option3	TORF+25bp	15	5	
	General Terms	Fixed	Fixed	Standard	1.50	30	10	Untied
				Option1	1.30	25	7	
				Option2	1.10	20	6	
				Option3	0.85	15	5	
				Longer option	TORF+110bp	40	10	
				Standard	TORF+90bp	30	10	
Upper-Middle-Income Countries and Uppermost-Middle-Income Countries US\$ 4,096- US\$ 10,000	Preferential Terms for High Specification	Fixed	Fixed	Standard	0.60	20	6	
				Option1	0.65	25	7	
				Option2	0.60	20	6	
	Preferential Terms	Floating	Floating	Option3	0.55	15	5	Untied
				Longer option	TORF+110bp	40	10	
				Standard	TORF+90bp	30	10	
				Option1	TORF+80bp	25	7	
				Option2	TORF+70bp	20	6	
				Option3	TORF+60bp	15	5	
	General Terms	Fixed	Fixed	Standard	1.70	30	10	Untied
				Option1	1.50	25	7	
				Option2	1.30	20	6	
				Option3	1.05	15	5	
				Longer option	TORF+130bp	40	10	
				Standard	TORF+110bp	30	10	
Consulting Services	STEP ⁵	Fixed	Fixed	Standard	0.10	40	10	Tied
				Option1	0.15	30	10	
				Option2	0.10	20	10	
	Preferential Terms	Floating	Floating	Option3	0.05	15	5	Untied
				Longer option	TORF+110bp	40	10	
				Standard	TORF+90bp	30	10	
				Option1	TORF+80bp	25	7	
				Option2	TORF+70bp	20	6	
				Option3	TORF+60bp	15	5	
	General Terms	Fixed	Fixed	Standard	1.70	30	10	Untied
				Option1	1.50	25	7	
				Option2	1.30	20	6	
				Option3	1.05	15	5	
				Longer option	TORF+130bp	40	10	
				Standard	TORF+110bp	30	10	
Options for Program Type Japanese ODA Loans	STEP ⁵	Fixed	Fixed	Standard	1.25	15	5	Tied
				Option1	1.20	15	5	
				Option2	1.10	15	5	
	Preferential Terms	Floating	Floating	Option3	0.10	10	5	Tied
				Longer option	TORF+110bp	40	10	
				Standard	TORF+90bp	30	10	
				Option1	TORF+80bp	25	7	
				Option2	TORF+70bp	20	6	
				Option3	TORF+60bp	15	5	
	General Terms	Fixed	Fixed	Standard	1.90	30	10	Tied
				Option1	1.70	25	7	
				Option2	1.50	20	6	
				Option3	1.25	15	5	
				Longer option	TORF+130bp	40	10	
				Standard	TORF+110bp	30	10	

¹ For Low-Income LDCs, three-year transition period will be granted to recipient countries that will move from the category of Low-Income LDCs, and, during the period, the terms and conditions for Low-Income LDCs will be applied to the projects of the countries.

² Preferential Terms for High Specification will be applicable to projects promoting quality infrastructure. The applicability of the terms will be decided on a case-by-case basis.

³ Preferential Terms are applied to the following sectors and fields to all countries (except Low-Income LDCs) :

(i) Issues on Global Environmental and Climate Change

(ii) Health and Medical Care and Services

(iii) Disaster Prevention, and Reduction

(iv) Human Resource Development

⁴ The base rate of floating rate is the value of the 6-month TORF, and the fixed spread remains constant over the life of the loan. If the base rate plus fixed spread is lower than 0.1%, the interest shall be 0.1%.

⁵ Special Terms for Economic Partnership (STEP) is extended to the projects for which Japanese technologies and know-how are substantially utilized, based on the recipient countries' request to utilize and transfer excellent technologies of Japan. Countries (except LDCs), which are eligible for tied aid under Arrangement on Officially Supported Export Credits issued by OECD, are eligible for STEP terms.

⁶ Irrespective of the income category, the term and condition of 0.01% interest rate and 40-year repayment period including 10-year grace period are applied to projects assisting recoveries from disasters, including Stand-by Emergency Credit for Urgent Recovery (SECURE). For Stand-by Emergency Credit for Urgent Recovery (SECURE), the term and condition of 20-year repayment period including 6-year grace period, or 15-year repayment period including 5-year grace period are also available, in order to apply Currency Conversion Option.

⁷ For Contingent Credit Enhancement Facility for PPP Infrastructure Development (CCEF-PPP), only floating rate will be applied irrespective of income category. The terms on conditions are individually set within the following range of interest rate as well as repayment period (In the case of short term financial support, however, the repayment period is 10 years).

-Interest rate: TORF + 35 ~55bp

-Repayment period: maximum 40-year(maximum 30-year drawdown period plus 10 year)

Notes

- Under the EPSA (Enhanced Private Sector Assistance for Africa) initiative, the loan for projects co-financed with the AfDB are extended using "Preferential Terms," determined for each income category, in the case for Low-Income LDCs, the term and condition of 0.01% interest rate and 40-year repayment period including 10-year grace period are applied.
- For countries complying with ongoing IMF-supported programs or receiving grants from IDA, it is possible to modify the terms and conditions of the ODA Loans so as to meet the IMF's concessionality criteria.
- For General terms and Preferential terms, fixed rate for all countries (except Low-Income LDCs) will be revised on a regular basis so that its concessionality will be equal to that of floating rate.
- For Upper-Middle-Income Countries and Uppermost-Middle-Income Countries, floating rate will be applied in principle, although fixed rate could be applied.

Attachment 25

**Prepayment Premium
in
Japanese ODA loan scheme**

Page No - (1-2)

Prepayment Premium in Japanese ODA Loan Scheme

1. Purpose of Prepayment Premium

The purpose of introduction of Prepayment Premium is to ensure financial stability of JICA as a financial institution as well as to sustain Japanese ODA loan scheme and its concessionality.

JICA would have gained interests from remaining balance of the loans without prepayments. In other words, prepayments may affect the financial stability of JICA, which leads to the negative impact on sustainability of Japanese ODA loan scheme itself and as a result, in the medium- and long-term, JICA may need to increase interest rate of Japanese ODA loans. In addition, due to prepayments from borrowers, JICA may need to prepay some of its borrowing funds from Government of Japan. In that case, Prepayment Premium is charged on JICA from Government of Japan.

By introducing Prepayment Premium in Japanese ODA loan scheme, JICA could neutralize the impact of non-accrued interests which may be brought about by prepayments, which in turn enables JICA to maintain its financial soundness and to keep providing concessional loans to the borrowers.

2. Timing of introduction of Prepayment Premium in Japanese ODA loan scheme

Prepayment Premium will be introduced in Japanese ODA loan scheme from Loan Agreements to be signed on and after April 1st, 2011.

3. Calculation method of Prepayment Premium

Prepayment Premium is charged if discounted amount of sum of original principle and interest is larger than actual prepayment amount. Please refer to Appendix I for its concept.

4. Procedural change due to the introduction of Prepayment Premium

Currently, as stipulated in Section 3.02(3) of General Terms and Conditions for Japanese ODA loans, March 2009, a written notice of Prepayment needs to be made thirty (30) days before actual prepayment is made. This necessary procedure period of thirty (30) days will be changed to forty (40) days due to additional procedures such as calculation of Prepayment Premium and communication between borrowers and JICA.

5. Other donors' policy on prepayment premium

Multilateral development banks such as World Bank(IBRD), Asian Development Bank(ADB), Inter-American Development Bank(IDB) as well as other bilateral development banks such as KfW(Germany), AFD(France) have already introduced Prepayment Premium in their loan scheme (even though it may not be called as "Prepayment Premium", they have a similar system in their loan scheme). Since their main products are mainly floating-rate loans, actual calculation method of prepayment premium may be different from that of JICA. Nevertheless, the concept and purpose of Prepayment Premium is the same across all development banks including JICA.

<END>

Calculation of Prepayment Premium

1. Assumption

- The Prepayment Premium shall be equal to the amount calculated by deducting the amount of the prepayment from the net present value of the amount of cash flow which JICA would have received if it were not for the prepayment.
- n: The number of times of amortization which would have remained after the prepayment date if it were not for the prepayment.
- P_i: Nominal principal repayment amount which JICA would have received in the ith amortization after prepayment
- R_i: Nominal interest amount which JICA would have received in the ith amortization after prepayment¹
- Y_i: Remaining Period (the period from but excluding the prepayment date to and including the scheduled date of repayment of principal) in the ith amortization after prepayment. In case of existence of a fraction of one (1) month it shall be rounded up to one (1) month. For example, if the exact period is 1year 2monthes and 13days, the Remaining Period shall be 1.25year(1year and 3 monthes)
- r_i: Applicable zero-coupon yield rate of Japanese Government bond² obtained from financial information provider such as Bloomberg, as of 40 days before the prepayment date, whose term period is no more than, and the nearest to applicable Remaining Period (Y_i). It is utilized as the Discount Rate to calculate the net present value of the amount of cash flow which JICA would have received if it were not for the prepayment.
- Amortization Schedule before Prepayment is as follows; ³

Amortization after Prepayment (times)	1	2	3	...	n
Remaining Period (year)	Y1	Y2	Y3	...	Yn
Nominal Principal Repayment Amount	P1	P2	P3	...	Pn
Nominal Interest Payment Amount	R1	R2	R3	...	Rn

2. Calculation

- Based on the abovementioned assumption, the amount prepayment premium is calculated in the following manner;

$$\text{Prepayment Premium} = \left[\frac{(P_1 + I_1)}{(1 + r_1)^{Y_1}} + \frac{(P_2 + I_2)}{(1 + r_2)^{Y_2}} + \dots + \frac{(P_n + I_n)}{(1 + r_n)^{Y_n}} \right] - (P_1 + P_2 + \dots + P_n)$$

If the result of the calculation becomes zero or negative, no Prepayment Premium shall be charged.

Total net present value of the amount of cash flow which JICA would have received if it were not for the prepayment

Total nominal principal repayment amount which JICA would have received if it were not for the prepayment, which is equal to the amount to be prepaid.

¹ When i=1, R₁ only covers the interest amount which would have accrued during the period from but excluding the prepayment date to and including the 1st amortization after the prepayment, which means that R₁ does not include the interest amount which accrues during the period from but excluding the last amortization before the prepayment to and including the prepayment date.

² The term period of the Japanese government bond is either of the following; 3month, 6month, 1 year, 2 year, 3year, 4year, 5year, 6year, 7year, 8year, 9year, 10year, 15year, 20year and 30year.

³ This is simplified example in order to explain the content of Prepayment Premium.

Attachment 27

**Brochure on Reimbursement Procedure
for
Japanese ODA Loans**

Page No - (1-7)

JAPAN INTERNATIONAL
COOPERATION AGENCY

Brochure on
Reimbursement Procedure for Japanese ODA Loans

November 2019

Brochure on Reimbursement Procedure for Japanese ODA Loans
November 2019

Section 1. Introduction

- 1.01. Unless otherwise defined in this brochure, the capitalized words not defined herein have the same meanings as defined in the Loan Agreement and/or the General Terms and Conditions to which this brochure applies.
- 1.02. If any provision of this brochure is inconsistent with any provision of the Loan Agreement, of which this brochure constitutes an integral part, such provision of the Loan Agreement shall govern.
- 1.03. Headings of Sections herein are inserted for convenient reference only, are not part of this brochure and do not affect the construction of, or be taken into consideration in interpreting this brochure.

Section 2. Procedure

- 2.01. This brochure is to be followed in cases where expenditures, eligible for JICA's financing, have already been incurred. The Borrower shall request JICA to make reimbursement for a sum not exceeding the amount actually paid to the suppliers, contractors or consultants (hereinafter collectively referred to as the "**Supplier(s)**") by sending to JICA a Request for Reimbursement in accordance with the attached Form RFD(R). Each Request for Reimbursement shall be accompanied by the following documents:
 - (a) Summary Sheet of Payments made substantially as per Form SSP(T/R); and
 - (b) supporting documents evidencing each payment and its usage, as stipulated in the Loan Agreement.
- 2.02. When JICA finds the Request for Reimbursement in order and in conformity with the relevant provisions of the Loan Agreement,

JICA shall make reimbursement in Japanese Yen. Reimbursement will be made, in principle, within fifteen (15) business days from the date of receipt of the Request for Reimbursement by paying into the non-resident Yen account (hereinafter referred to as the “**Loan Account**”), which shall be opened, in accordance with the relevant laws and regulations of Japan, in advance with a bank in Tokyo (hereinafter referred to as the “**Paying Bank**”), as stipulated in the Loan Agreement.

- 2.03. The amount stated in the Request for Reimbursement shall be either in Japanese Yen or in an internationally traded currency acceptable to JICA. When the currency used for the actual payment to the Supplier(s) is different from the currency used in the Request for Reimbursement, the amount stated in the Request for Reimbursement shall be calculated using the telegraphic transfer buying (TTB) rate quoted by a foreign exchange bank authorized as such by the authority in the territories of the Borrower, one (1) business day prior to the date on which the Request for Reimbursement is made. The amount paid to the Supplier(s) and exchange rate used for conversion to Japanese Yen or other internationally traded currency acceptable to JICA, shall be described in the Summary Sheet of Payments as per Form SSP(T/R) and submitted together with the evidence of such conversion rate. If the amount stated in the Request for Reimbursement is in a currency other than Japanese Yen, the amount of disbursement in Japanese Yen shall be calculated at the telegraphic transfer selling (TTS) rate quoted by the Paying Bank two (2) business days before the date on which the disbursement is made.
- 2.04. The Borrower shall make the request mentioned in Section 2.01 above so that JICA can receive the necessary documents, in principle, not less than fifteen (15) business days prior to (i) the expiration date of the Disbursement Period and (ii) the date that the Borrower requests JICA to make disbursement, only if so requested.

Section 3. Banking Arrangement

- 3.01. The Borrower shall designate a foreign exchange bank in the territories of the Borrower (hereinafter referred to as the “**Agent Bank**”), as stipulated in the Loan Agreement, as its agent for the purposes of taking any action or entering into any arrangement or agreement, on behalf of the Borrower, required or permitted under this brochure.
- 3.02. Any action taken or arrangement or agreement entered into by the Agent Bank pursuant to the authority conferred on the Agent Bank shall be fully binding on the Borrower and shall have the same force and effect as if such action was taken or such arrangement or agreement was entered into by the Borrower. The Borrower may revoke or modify the authority conferred on the Agent Bank if consent of JICA is obtained.
- 3.03. The Borrower shall cause the Agent Bank to make necessary arrangement with the Paying Bank, including, but not limited to, the following for this brochure:
- (a) to open a Loan Account on behalf of the Borrower with the Paying Bank; and
 - (b) to confirm necessary arrangements for transaction of funds after the proceeds of the Loan is credited to the Loan Account.

Section 4. Foreign Exchange Risk

- 4.01. The Borrower shall bear all risks associated with foreign exchange fluctuations arising from disbursement and JICA shall not be liable therefor.

Request for Reimbursement

Date:

Loan Agreement No.:

Application Serial No.:

To: JAPAN INTERNATIONAL COOPERATION AGENCY

[Name of the Department or JICA Office in charge]

Attention:

1. Pursuant to the Loan Agreement No. _____ dated _____ between the JAPAN INTERNATIONAL COOPERATION AGENCY (hereinafter referred to as “JICA”) and (the Borrower) (hereinafter referred to as the “Loan Agreement”), the undersigned hereby requests for reimbursement under the Loan Agreement, of the sum of _____ (say _____) in reimbursement of expenditures as described in the attached Summary Sheet(s) of Payments.
2. The undersigned has not previously requested for reimbursement of any amounts under the Loan Agreement for the purpose of reimbursing or of meeting the expenditures described in the attached Summary Sheet(s) of Payments. The undersigned has not obtained nor will obtain funds for such purpose out of the proceeds of any other loan, credit or grant available to the undersigned except short-term loans or credits, if any, established in anticipation of the reimbursement requested for herein and to be repaid pro-tanto with the funds reimbursed hereunder and any charges, commission or interest paid or payable under such anticipatory short-term credits are not included in the amount herein requested to be reimbursed.
3. The undersigned certifies that:
 - a) the expenditures, hereby sought to be reimbursed, were made for the purposes specified in the Loan Agreement;
 - b) the goods and services purchased with these expenditures have been procured in accordance with the applicable procurement procedures agreed with JICA pursuant to the Loan Agreement and the cost and terms of purchase thereof are reasonable;
 - c) the said goods and services were or will be supplied by the Supplier(s) specified in the attached Summary Sheet(s) of Payments and were or will be procured in (or, in the case of services, supplied from) the eligible source country(ies) for the Loan Agreement; and
 - d) the amount requesting above does not include any amount payable to non-eligible items for JICA's finance described in the schedule 2 of the Loan Agreement, namely, general administration expenses, taxes and duties, purchase of land and other real property, compensation or other indirect items.
4. Please reimburse the amount requested herein by paying into the Loan Account of (Agent Bank of the Borrower) with (Paying Bank), Tokyo, Japan.
5. Summary Sheet(s) of Payments and other required documents attached to this request shall form an integral part hereof.

Very truly yours,

For: (Name of the Borrower)

By : _____
 (Authorized Person's
 Signature, Name & Title)

Summary Sheet of Payments☐ Transfer Procedure☐ Reimbursement Procedure

Date:

L/A No.:		Application Serial No.		L/A Category Name :		JICA Concurrence No.:	
						Contract No.:	
					(A)	(B)	(C)=(A)×(B)
Item No.	Supplier	Contract Concurrence Amount (or Contract Amount)	Date of Payment (Reimbursement Procedure only)	Description	Payable/Paid Amount and Currency (without Tax)	Disbursement Ratio	Amount for JICA Financing and Currency
1.							
2.							
3.							

Total (A)

Total (C)

If requested currency is different from (C) above:

Exchange rate as of Date/Month/Year : 1 JPY = XXX (name of the currency) (E)**Request Amount and Currency (D)**

(C) ÷ (E)

Please notify (the Paying Bank) that (the Paying Bank) shall transfer the necessary amount of disbursement in the applicable currency to the account of the Supplier(s) calculated at the relevant telegraphic transfer selling rate (TTS) quoted two (2) business days before the date on which the actual disbursement is made in accordance with the Banking Arrangement referred to in the Transfer Instruction.

For (Name of the Borrower)

(Authorized Person's
Signature, Name & Title)

Reference:**[Transfer Procedure / Reimbursement Procedure]** Tick the procedure applied to this request**[Category]:** Category Name described in Section 1 of Schedule 2 of the Loan Agreement**[Contract Concurrence Amount or Contract Amount]:** Concurrence amount by JICA. If not applicable, contract amount**[Description]** : Description of service/goods, & details of payment (i.e. down payment, an installment payment or the final payment, invoice no., monthly payment, etc).**[Amount Paid/Payable]:** Amount in the currency claimed by/paid to the Supplier(s). (A) \geq Eligible amount on the Claims for Payment/or amount on the Receipt**[Disbursement Ratio]:** Ratio to derive the Amount for JICA Financing against Amount Payable/Paid.**[Amount for JICA Financing]:** Amount applicable for JICA financing in the currency claimed by/paid to the Supplier(s). If the currency for the final requested amount to JICA is different from (C), indicate the Exchange rate (E) (TTB rate 1 business day prior to the date on the Request for Disbursement/Reimbursement) quoted in accordance with the Brochure on Transfer/Reimbursement Procedure and relevant provision(s) of the Loan Agreement, to calculate the Request Amount (D).**If the Request for Disbursement/Reimbursement includes payments for more than 1 Category/Concurrence no., prepare the Summary Sheet for each.**

Attachment 28

**Brochure on Commitment Procedure
for
Japanese ODA Loans**

Page No - (1-15)

JAPAN INTERNATIONAL
COOPERATION AGENCY

Brochure on
Commitment Procedure for Japanese ODA Loans

November 2019

Brochure on Commitment Procedure for Japanese ODA Loans
November 2019

Section 1. Introduction

- 1.01. Unless otherwise defined in this brochure, the capitalized words not defined herein have the same meanings as defined in the relevant Loan Agreement and/or the General Terms and Conditions to which this brochure applies.
- 1.02. If any provision of this brochure is inconsistent with any provision of the Loan Agreement, of which this brochure constitutes an integral part, such provision of the Loan Agreement shall govern.
- 1.03. Headings of Sections herein are inserted for convenient reference only, are not part of this brochure and do not affect the construction of, or be taken into consideration in interpreting this brochure.

Section 2. Letter of Credit

- 2.01. In foreign trade transactions, payment for import of goods and services are often arranged under a commercial letter of credit (hereinafter referred to as “L/C”), which is issued by a commercial bank, on behalf of a purchaser, to guarantee the payment by credit. A commercial bank operating in a supplier’s country i) makes payment to the supplier against documents specified in the L/C and then, reimburses itself from funds made available by the purchaser through its bank or ii) collects the funds from the purchaser through its bank by sending documents specified in the L/C and then, makes payment to the supplier.

Section 3. Procedure

- 3.01. This brochure is to be followed in cases where payment for L/C is applied from the proceeds of the Loan. When the Borrower, its designated authority or any other purchaser in the territories of the Borrower chooses to issue an irrevocable L/C for a payment to the suppliers, contractors or consultants (hereinafter collectively referred to as the “**Supplier(s)**”), which is eligible for financing under the Loan, such party who becomes a purchaser (hereinafter collectively referred to as the “**Applicant**”) may instruct a designated foreign exchange bank issuing the L/C (hereinafter referred to as the “**Issuing Bank**”), to provide in the L/C that the bank of the Supplier(s) (hereinafter referred to as the “**Supplier’s Bank**”) will reimburse itself from a bank in Tokyo (hereinafter referred to as the “**Paying Bank**”), as stipulated in the Loan Agreement, in order to use the proceeds of the Loan for such payment. The Issuing Bank may be the same bank as the Paying Bank.
- 3.02. The Paying Bank shall obtain the funds for reimbursement from JICA under the assurance by JICA. Such assurance, whenever provided, takes the form of a letter of commitment from JICA to the Paying Bank (such assurance hereinafter being referred to as the “**L/COM**”) whereby JICA undertakes to disburse, based on the conditions set forth in the L/C and the relevant provisions of the Loan Agreement, the amount to be paid by the Paying Bank under and in accordance with the specified L/C.

Section 4. Procedure for issuing the L/C and the L/COM

- 4.01. The Applicant will request the Issuing Bank to issue an L/C. The Borrower shall confirm and warrant, by submitting or having any Applicant submit the Application for Irrevocable Letter of Credit to the Paying Bank, that:
- (a) the amount of the Application for Irrevocable Letter of Credit represents expenditures to be made for the purpose specified in the Loan Agreement;

- (b) the Borrower has not previously applied for disbursement under the Loan Agreement for the purpose of meeting such expenditures and has not obtained nor will obtain funds for such purpose out of the proceeds of any other loan, credit or grant available to the Borrower;
- (c) the concerned goods and services have been procured in accordance with the applicable procurement procedures agreed with JICA pursuant to the Loan Agreement and the cost and terms of purchase thereof are reasonable;
- (d) the said goods and services are to be supplied by the Supplier(s) and have been or are to be produced in the country eligible for JICA's loan;
- (e) the amount of the Application for Irrevocable Letter of Credit does not include any amount payable to non-eligible items for JICA's finance described in the schedule 2 of the Loan Agreement, namely, general administration expenses, taxes and duties, purchase of land and other real property, compensation or other indirect items; and
- (f) as of the date of the Application for Irrevocable Letter of Credit, there is no existing default under the Loan Agreement, nor, to the best of the Borrower's knowledge and belief, under the Guarantee, if any.

- 4.02. The Issuing Bank shall issue an L/C, on behalf of and under authorization of the Borrower, in favour of the Supplier substantially as per Form LC attached hereto, and shall simultaneously send the L/C to the Paying Bank. The Paying Bank shall send a copy of the L/C to JICA in order to obtain the L/COM from JICA.
- 4.03. When JICA finds such L/C in order and in conformity with the terms of the relevant contract between the Borrower and the Supplier, and the provisions of the Loan Agreement between JICA and the Borrower, JICA shall issue an L/COM to the Paying Bank as per Form LCOM attached hereto.
- 4.04. Upon acknowledgement of receipt of the L/COM by the Paying

Bank, the L/C shall become effective and the Paying Bank shall send the L/C to the Supplier through the Supplier's Bank. The Paying Bank shall simultaneously send a copy of the L/COM to the Issuing Bank when the Issuing Bank is different from the Paying Bank, or send a copy of the L/C and L/COM directly to the Applicant when the Issuing Bank is identical to the Paying Bank.

Section 5. Procedure for Disbursement

- 5.01. The Supplier's Bank shall i) make payment to the Supplier pursuant to the said L/C and then, request the Paying Bank to reimburse the funds by sending documents specified in the L/C, or ii) collect the funds from the Paying Bank by sending documents specified in the L/C and then, make payment to the Supplier pursuant to the said L/C.
- 5.02. Upon receipt of such documents, once the Paying Bank finds that the submitted documents are in order, the Paying Bank shall present to JICA the Request for Disbursement in accordance with the attached Form RFD(C).
- 5.03. JICA shall, in principle, within fifteen (15) business days from the date of receipt of the Request for Disbursement, make disbursement in Japanese Yen of the requested amount to the Paying Bank under the provisions of L/COM. Accordingly, the Paying Bank shall make payment to the Supplier's Bank.
- 5.04. Immediately after disbursement, the Paying Bank shall send the submitted documents to the Applicant through the Issuing Bank.

Section 6. Contract in a Currency Other than Japanese Yen

- 6.01. The L/COM amount shall be in Japanese Yen equivalent to the amount in the relevant currency of the L/C, converted at the

telegraphic transfer selling (TTS) rate quoted by the Paying Bank two (2) business days before the date on which the L/COM is issued.

- 6.02. The amount stated in the Request for Disbursement shall be the equivalent in Japanese Yen, converted at the TTS rate of the Paying Bank two (2) business days before the date on which the disbursement is made.
- 6.03. When the amount of the Request for Disbursement for the L/C is not fully covered by the amount of the L/COM owing to exchange rate fluctuation, the L/COM may be amended by JICA to fully cover the amount of the Request for Disbursement for the L/C within the limit of the Loan Category. In the event that the amount of the Request for Disbursement for the L/C cannot be fully covered by this method, the Borrower shall bear the amount not covered by the L/COM.

Section 7. Others

- 7.01. The Borrower shall cause the Issuing Bank, the Applicant or the Applicant's bank, whichever applicable for this brochure, to take necessary action or enter into necessary arrangement and/or agreement with the Paying Bank, immediately after the signing of the Loan Agreement.
- 7.02. JICA shall not be liable for any banking charges or fees accrued in connection with the aforementioned transactions.
- 7.03. The Borrower shall bear all risks associated with foreign exchange fluctuations arising from disbursement and JICA shall not be liable therefor.
- 7.04. Claims or disputes in connection with the aforementioned L/C shall be settled among the parties concerned and such claims or

disputes shall not exempt the Borrower from any obligation incurred under the Loan Agreement concerned.

(Example LC)

Irrevocable Letter of Credit (Example)

L/C No.:

Date of Issue:

Date of Expiry:

Amount: JPY...(Say Japanese Yen.....)

This Letter of Credit has been issued pursuant to Loan Agreement No. [XXX] dated [Month Day, Year] between [Name of the Borrower] and the JAPAN INTERNATIONAL COOPERATION AGENCY, Tokyo, Japan (hereinafter referred to as the "Loan Agreement").

To. (Name of Address of the Advising Bank)

Dear Sirs,

We request you to advise [the beneficiary] that we have opened our irrevocable credit No. [XXX] in their favour for account of [the applicant] available by the beneficiary's drafts at sight for full invoice value drawn on [Name of the Paying Bank], in accordance the following conditions:

a) Applicable Rules: UCP Latest Version

b) Beneficiary: (Name)
(Address)

c) Accountee: (Name)
(Address)

d) Amount: (Currency and figures)

e) Credit available with ...By: (Any Bank or Nominated Bank (BIC)) By negotiation

f) Draft at: sight

g) Drawee: the Paying Bank

h) Date and Place of Expiry: _____

i) Latest date of Shipment*: _____

j) Partial shipments*: Permitted / Prohibited

k) Transshipment*: Permitted / Prohibited

l) Place of Taking in Charge/Dispatch from.../Place of Receipt*: _____

- m) Port of Loading/Airport of Departure*: _____
- n) Port of Discharge/Airport of destination*: _____
- o) Place of Final Destination/For Transportation to.../Place of Delivery*: _____
- p) Trade Terms*: _____
- q) Description of Goods and/or Services: _____
- r) Contract No.: _____
- s) Contract date: _____
- t) Payment Terms**: _____
- u) Additional Conditions(If any): _____
- v) Period for Presentation*: _____
- w) Confirmation Instructions***: Without
- x) Advising bank****: (BIC)
- y) Advise the L/C by****: SWIFT / Mail
- z) Charges: (Bearer of charges)

* Please fill in only when there is shipment.

** Please refer to the following page for sample form.

*** Confirmation Instruction is always indicated as "Without" since we shall obtain the funds for reimbursement from JICA under the assurance by JICA(I.E: a Letter of Commitment) and upon receipt of a Letter of Commitment, JICA undertakes to disburse, based on the conditions set forth in the L/C and the relevant provisions of the Loan Agreement, the amount to be paid by ourselves under and in accordance with the specified L/C.

**** Please fill in only when beneficiary is outside Japan.

SAMPLE FORM

t) Sample form of Payment Terms/Goods:

I. On Shipment: (CURRENCY "hereinafter referred to as "CCY")AMOUNT
Payable against presentation of:

1. Beneficiary's Signed Invoice (In triplicate)
2. Clean on Board ocean bills of lading (In Full Set)*
*Please always indicate the number of issued.
3. Packing List (In 1 original)

4. Insurance Policy / Insurance Certificate(In duplicate)*

*Please always indicate the number of issued in case of insurance policy

II. On Acceptance: (CCY) AMOUNT

Payable against presentation of:

1. Beneficiary's Signed Invoice(In 1 original)
2. Accountee's Acceptance certificate(In 1 original)

t) Sample form of Payment Terms/Services

I. Advance Payment: (CCY) AMOUNT

Payable against presentation of:

1. Beneficiary's signed invoice(In triplicate)
2. Photocopy of bank guarantee (In 1 fold)

II. Interim Payment: (CCY) AMOUNT

Payable against presentation of:

1. Beneficiary's signed invoice(In 1 original)
2. Accountee's statement of performance (In duplicate)
3. Photocopy of Engineer's interim payment certificate approved by the Accountee (In 3 folds)

III. Final Payment: (CCY)AMOUNT

Payable against presentation of:

1. Beneficiary's signed invoice(In 1 original)
2. Accountee's final acceptance certificate(In triplicate)

All drafts and documents under this credit must be marked "Drawn under

[Name of the Issuing Bank] irrevocable credit No.[XXX] dated [Month Day, Year], and Import Reference No(s).[XXX] (if any)".

Draft must be endorsed and marked

- Letter of credit no. and date
- Drawn under [Name of the Issuing Bank]

Letter of credit number must be marked on all documents except for bank guarantee.

Draft and all documents must be presented only through a nominated bank.

If presented other than a nominated bank,

- We will not examine draft and all documents.
- We will return draft and all documents to the presenter without any responsibility on our part.

This credit is not transferable.

All documents must be issued in English language.

=====

We hereby undertake that all drafts drawn under and in compliance with the terms of this credit shall be duly honored on due presentation and delivery of documents to the [Name of the Paying Bank].

This credit is subject to "Uniform Customs and Practice for Documentary Credits Latest Version".

Special Instruction to the negotiating bank:

1. This credit shall become effective when [Name of the Paying Bank] acknowledges receipt of the Letter of Commitment from the JAPAN INTERNATIONAL COOPERATION AGENCY under the aforementioned Loan Agreement.
After obtaining the reimbursement from the JAPAN INTERNATIONAL COOPERATION AGENCY in accordance with the provisions of the Letter of Commitment, [Name of the Paying Bank] undertakes to remit the amount of the drafts in accordance with instructions issued by you.
2. You must forward the drafts and one complete set of documents to [Name of the Paying Bank].

Yours faithfully,

[Authorized Signature]

[Name of the Issuing Bank]

(Form SOP)

Statement of Performance

Date:

Ref. No.:

To: [Name and address of the Supplier]

L/C No.:

Date of Issue:

Date of Expiry:

Amount: JPY...(Say Japanese Yen.....)

I, the undersigned, representing [Name of the Borrower], hereby issue
a Statement of Performance to entitle
to receive the sum of ¥_____ (Yen_____ Only) from the JAPAN
INTERNATIONAL COOPERATION AGENCY in accordance with the
Payment Terms stipulated in the Contract No._____, dated _____,
between_____ and _____.

[Authorized Signature]

[Name of the Borrower]

(Form LCOM)

Date:

Commitment No.:

[Name of Issuing Bank]:

LETTER OF COMMITMENT

Reference: Letter of Credit No. _____
for _____
in favour of _____

We hereby irrevocably undertake to reimburse you for a sum or sums not exceeding ¥_____ against the Request for Disbursement, accompanied by a copy of the drafts drawn by the beneficiary, in principle, within fifteen (15) business days of our receipt of the Request.

This Letter of Commitment shall expire on [Month Day, Year]

It is further understood that in reimbursing you pursuant to this Letter of Commitment, we shall in no way be liable or responsible for the acts or omissions of the issuing bank, the negotiating bank, the beneficiary and/or any other parties concerned with the captioned Letter of Credit in connection with the issuance, negotiation, payments thereof or any other matters connected therewith.

Very truly yours,

[Authorized Signature]

Japan International Cooperation Agency

(Form RFD(C))

Request for Disbursement

Date:

Ref. No.:

To: JAPAN INTERNATIONAL COOPERATION AGENCY

Attn:

Re: Your Loan Agreement No. _____ Country: _____

Letter of Commitment No. _____

Our Letter of Credit No. _____

Gentlemen:

We have received the documents concerning the supply of [quantity and description of goods and services according to the L/C] and found them in order and in conformity with the terms of the said Letter of Credit.

Pursuant to the above Letter of Commitment we hereby request you to disburse us from the above Loan with the following particulars:

a) Amount of Disbursement: ¥ _____
(Say Yen _____)

b) Amount of the Draft:
(payable under the said Letter of Credit):

c) Rate of Exchange:

d) Date of Disbursement:

(b and c applicable only when the Draft is stated in the currency other than Japanese Yen)

Very truly yours,

[Authorized Signature]

[Name of the Paying Bank]

Enclosed:

Attachment 29

SOE Procedure for Japanese ODA loans

Page No - (1-26)

JAPAN INTERNATIONAL
COOPERATION AGENCY

SOE Procedure for Japanese ODA Loans
Guidance for Borrowers

January 2011

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SOE Procedure

1. What is the SOE Procedure?

“SOE” stands for “Statement of Expenditures” which simplifies the supporting documents for requesting disbursements (The Standard SOE form is as per ANNEX 1). The SOE Procedure is not a distinct method of loan disbursement (disbursement procedures). It is used in conjunction with disbursement procedures such as the Special Account Procedure, or the Reimbursement Procedure and requires no submission of supporting documents (details of “supporting documents” are as per footnote 4 on page4).

2. When is the SOE Procedure applied?

SOE Procedure is applied when it is expected that there will be many expenditures and the amount of each payment will be small, resulting in the frequent adherence to laborious formalities, i.e. lots of invoices and payments receipts.

Normally, the Borrower submits all supporting documents for each payment, such as the receipt of payments and invoices, to JICA when requesting a loan disbursement. JICA checks the eligibility of each expenditure by checking the contents of the supporting documents submitted every time before disbursing the loan.

However, when using the SOE Procedure, individual loan disbursements are made on the basis of a summary of payments (Statement of Expenditures: SOE) which simplifies the supporting documents, without invoices and payment of receipts. The eligibility of the expenditures is confirmed once a year by an independent auditor. Thus, timely disbursement of the loan in accordance with the schedule for the implementation of the project becomes possible.

3. How to apply and implement the SOE Procedure?

(For easy reference, ANNEX 2 shows the required action by the Borrower at each stage of the project cycle when adopting the SOE Procedure)

(1) Application of the SOE Procedure

When the Borrower/Executing Agency wishes to apply the SOE Procedure, or when the adoption of the SOE Procedure is considered appropriate due to the nature of the project, JICA normally examines the use of the SOE Procedure at the time of Appraisal.

The main points to be confirmed when adopting the SOE Procedure are given below (See ANNEX 3 for details):

- Possibility of an independent audit: Whether an audit of the expenditure under Project by an independent and competent auditor is possible.
- Adequate fund management structure: Whether adequate accounting and the internal management capabilities of the Borrower and the Executing Agency are assured, the flow of funds related to payments for the project is clear, and the fund administration system has been established.

(2) Selection of an Auditor

When it is determined that the adoption of the SOE Procedure is appropriate, JICA requests the borrower to select an auditor and submit information about the auditor. In the meantime, JICA studies the adequacy of accounting and internal management capabilities of the Borrower and the Executing Agency.

Two types of auditors can be selected for an audit of SOE. One is a government auditing organization such as the Board of Audit, and the other is a private sector auditing organization that primarily conducts audits of financial statements. In both cases, the main criteria for determining eligibility for selection of an auditor are described in the three points below (See ANNEX 4. for details):

- Independence: The auditor is required to be independent from the organization being audited (the Borrower or the Executing agency) and the body selecting the auditor. In particular, when the auditor is a government auditing organization, JICA has to study the audit system in the country and confirm its legal and organizational independence.
- Expertise: In order to achieve the objectives of the audit, the capacity of the auditor to conduct the audit effectively and efficiently from an expert perspective is critical. This is determined on the basis of the size, reliability, experience with similar audits, and level of training of the auditing organization.
- Auditing Standards: In order to ensure the reliability of the audit, audits must be

conducted on the basis of Generally Accepted Auditing Standards (GAAS)¹. In addition to GAAS, an audit that complies with the International Standards on Auditing (ISA)² for a private sector audit firm or the International Organization of Supreme Audit Institutions (INTOSAI) Auditing Standards for government auditing organizations is also acceptable.

As mentioned above, selection of a competent auditor is an essential factor in ensuring appropriate disbursement operations under the SOE Procedure. It is, therefore, preferable that an agreement be concluded by JICA and the Borrower regarding the auditor to be assigned by the time of the L/A³. In this respect, the L/A requires the Borrower to furnish JICA as soon as possible with an Engagement Letter signed by the authorized person of the selected auditor in which the auditor agrees to audit the records and accounts related to the applicable expenditures financed from the Loan and to submit to the Borrower a certified copy of the report of such an audit (example of an Engagement Letter as per ANNEX 5).

(3) Maintenance of records and accounts

The Borrower or the Executing Agency should maintain or cause to be maintained records and accounts that are adequate to reflect, in accordance with consistently maintained sound accounting practices, the expenditures financed from the proceeds of the Loan.

JICA may inspect the Borrower or the Executing Agency's status of such custody from time to time.

(4) Coverage of the SOE audits and the Auditor's Terms of Reference (TOR)

The objective of an SOE audit is ex post facto confirmation of the eligibility and conformity of the expenditure (or in case where a Special Account Procedure is applied, withdrawals from the special account) stated in the SOE prepared by the Borrower or the Executing Agency, and its compliance with the provisions and objectives of the Loan Agreement by an expert, independent third party auditor. In other words, the objective of an SOE audit is, by using an auditor, to confirm whether the expenditures entered in the relevant SOE (and special account

¹ GAAS is a general term that includes international auditing standards and the auditing standards of the relevant country. Specifically, the auditing standards commonly used in the relevant country are included in addition to the International Standards on Auditing (ISA), and the International Organization of Supreme Audit Institutions (INTOSAI) Auditing Standards.

² International Standards on Auditing (ISA): Auditing standards for public accounting established by the International Federation of Accountants (IFAC).

³ In cases where reference to the name of the auditor in the L/A is not applicable, (e.g. selection of the auditor every year is required), it could be substituted by, for example, "an auditor acceptable to JICA" in the L/A.

withdrawals) are eligible for financing under the Loan Agreement and backed by necessary and sufficient supporting documents. In order for the auditor to understand the coverage of the SOE audit and the auditor's TOR, the Borrower is required to explain the objectives of any SOE audit as well as the objectives of the Loan Agreement, including non-eligible items for JICA's financing, to the auditor before conducting the audit. Especially for countries adapting the SOE Procedure for the first time, this consultation between the Borrower and the auditor is importantly necessary.

In this respect, the audit shall cover, but not limited to, the following points;

- Statement of Expenditures (SOE): The auditor is required to audit whether expenditures stated in the SOE, according to which the Borrower or the Executing Agency has requested disbursement, are eligible for financing under the Japanese ODA Loans and were used for the objectives of the Loan Agreement.
- Withdrawals from the special account: When the Special Account Procedure is used as the method of loan disbursement, the auditor is required to audit whether any withdrawal from the special account is eligible for financing under the Japanese ODA Loans and was used for the objectives of the Loan Agreement.
- Custody of supporting documents⁴: The auditor is required to confirm whether necessary and sufficient supporting documents for the SOE are being maintained by the Borrower or the Executing Agency or not.

In order to confirm that the audit of SOE has been promptly implemented, the Borrower or the Executing Agency is required to use the Standard Audit Report as per ANNEX 6.

(5) Required Action in response to the Auditor's opinion

In response to the Auditor's opinion other than an Unqualified Opinion, the Borrower or the Executing Agency is required to take appropriate action before submitting the Audit Report to JICA, as described in the following paragraph (6). The details of each audit opinion and the necessary action required of the Borrower and the Executing Agency are as per ANNEX 8.

⁴ Supporting documents are as follows:

Supporting documents	(1) Documents that prove the receipt of the funds by the contractor or consultants in exchange for the provision of goods or services	(2) Documents that can confirm the use of the funds
Acceptable examples	(i) Bill of Exchange, (ii) Receipt, (iii) Cancelled Bank Check, and (iv) Cancelled Demand Draft	Invoices

(6) Submission of an Audit Report to JICA

The Borrower or the Executing Agency is required to furnish JICA with a certified copy of the Audit Report by the auditor, as soon as it is available, and no later than 6 to 9 months from the end of each fiscal year in accordance with the stipulation of the Loan Agreement. The cases that the Audit Report shall be submitted are as follows.

[The Audit Report for the S/A Procedure]

Before the initial disbursement	no need to be submitted
After the initial disbursement, when there are no loan disbursement in that year and no withdrawals from the S/A account (confirmed by evidenced documents)	no need to be submitted
After the initial disbursement, when there are no loan disbursements in that year but withdrawals from the S/A account	must be submitted (*)

(*)As the SOE is not yet applied to JICA from the Borrower or the Executing Agency, the S/A account management shall be confirmed.

[The Audit Report for the Reimbursement Procedure]

When the contract between the Borrower or the Executing Agency and the Supplier(s) is unconcluded	no need to be submitted
---	-------------------------

(7) Expenditures related to the Audit

When additional expenses arise due to the conduct of an audit, JICA usually considers including such expenses in the project costs as a part of the local currency portion (or the foreign currency portion if the auditor is not from the Borrower's country).

If there is a request from the Borrower, JICA also examines the possibility of making these expenses eligible for JICA's financing. Expenses are only made eligible for financing when the relevant additional expenses can be clearly distinguished from general administration expenses (For example, such a distinction would be difficult if the Board of Audit has been assigned as the auditor).

(8) Adjustment

In the event that the use of a specified amount of the Loan is not justified⁵ according to the certified copy of the audit report, the Borrower is required to refund this

⁵ Examples of an unjustified payment: no supporting documents were maintained or the payment was made for non-eligible items

amount to JICA or JICA will deduct this amount from the next disbursement⁶.

If the Borrower, in the opinion of JICA, has failed to perform its obligations related to the SOE Procedure, most of which are stated in 3. (2)~(6) above, JICA may, by giving notice to the Borrower, suspend in whole or in part the rights of the Borrower under the Loan Agreement until JICA has determined that such a failure has been fully remedied.

⁶ See the Standard L/A text for SOE Procedure (ANNEX 9). “(i) in the event that the use of a specified amount of the Loan is not justified according to the certified copy of the report of the audit referred to in paragraph (c) above, refund to JICA, upon the request of JICA, the unjustified amount.”

ANNEX 1 Standard SOE format

**STATEMENT OF EXPENDITURES
(SOE)**

Date:

Serial No.:

1. Trans- action	2. Purchaser	3. Supplier	4. * Nationality of the Supplier	5. Description of the goods and/or services	6. Origin	7. Contract Amount	8. Date of Payment	9. ** Amount of Payment	10. *** Category of Payment	11. **** Method of Procurement	12. Amount Applied for Financing	13. Disburse- ment Ratio
1.												
2.												
3.												
.												
.												
Total												

The undersigned certifies that the Supplier(s) and goods and/or services stated above are eligible under the Loan Agreement.

* Note for 4

Nationality of the Supplier: Country in which the Supplier(s) is incorporated and registered.

** Note for 9 & 12

Amount of Payment: If not in Japanese Yen, state both the amount in the currency in which the Payment was made to the Supplier(s), and the converted amount(s) calculated in accordance with the Loan Agreement.

*** Note for 10

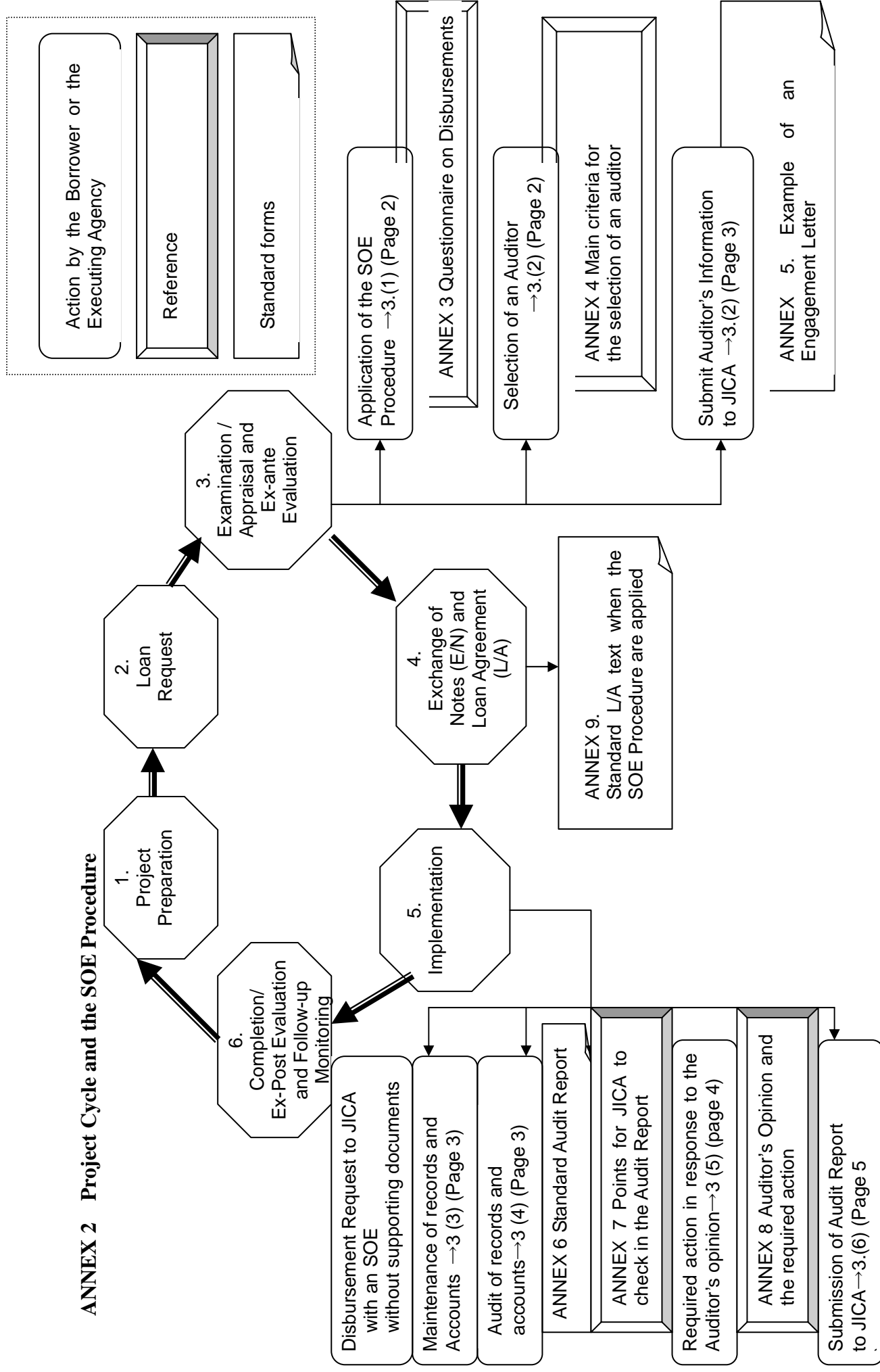
Category of Payment: Advance payment, monthly payment or the final payment, etc.

**** Note for 11

Method of Procurement: State the reason for the choice where this is other than international competitive bidding.

Authorized Signature

ANNEX 2 Project Cycle and the SOE Procedure



This questionnaire shows the criteria for the application of the SOE Procedure. JICA requires the answers to the following questions from the Borrower or the Executing Agency when the Borrower or the Executing Agency wishes to apply the SOE Procedure.

ANNEX 3 Questionnaire on Disbursements

Questionnaire on Disbursements Addressed to the Borrower or the Executing Agency

1. Procedure for payment

Please briefly explain the following:

- (1) function of the organizations concerned (executing agency, bank, etc.) with regard to the payment to the suppliers as well as to the request for disbursement to Japan International Cooperation Agency (hereinafter referred to as “JICA”)
- (2) procedural flows (approval system) required in each organization concerned in order to make payment to the suppliers, including how to discriminate non-eligible items
- (3) procedural flows (approval system) required in each organization concerned in order to make a request for disbursement to JICA
- (4) storage system of payment records, including evidence as well as the period of storage
- (5) training system for the staff in charge of accounting, payments, etc., in the Executing Agency

2. Special Account (In case of applying Special Account Procedure only)

Please briefly describe the following:

- (1) procedural flows required for approving each withdrawal from the Special Account(s)
- (2) financial flows from the Special Account(s) (Is there any intermediate financial institution between the Special Account and the end-users?)
- (3) procedural flows required for the administration of the Special Account (how to keep account of each withdrawal)
- (4) (in the case of the opening of multiple Special Accounts) the reasons for opening multiple accounts as well as the procedural flows required to administer the multiple Special Accounts

3. Audit and Statement of Expenditures (SOE) Procedure

Please briefly describe the following:

- (1) procedural flows required for employing an Auditor
- (2) law or legislation with regard to the employment of Auditors, if any (Is there any law or legislation that requires the employment of a specific Auditor?)
- (3) coordination and communication scheme with the Auditor after employment
- (4) (In cases where it is necessary to employ a private audit firm as your auditor) Is this acceptable? (Are there any requirements or restrictions other than the above-mentioned law or legislation on the employment of a private audit firm) If not, what would be the problems?
- (5) (In cases where it is necessary to employ a private audit firm as your auditor) Do you wish to include the auditor's costs in the project costs, so that part or all of the auditor's costs can be financed by JICA loan?
- (6) Do you have any experience of applying the SOE Procedures? If yes, please briefly describe the following:
 - name of the project as well as the sector related to the project
 - procedures that you followed
 - any problems that arose, if any, under these procedures
- (7) (In cases where the Auditor has already been chosen) Will your Auditor agree to conduct an audit on the SOEs? If not, please specify the reasons.

ANNEX 4 Main criteria for the selection of an auditor

1. For private external audit firms

(1) Independence

- The internal regulations of the audit firm concerned shall require the partners to be independent.
- More than half of the audit firm concerned shall not consist of full-time partners and / or employees of the Borrower and the Executing Agency, beneficiaries or other parties related to the project.
- The Borrower and the Executing Agency (or their employees), beneficiaries or other parties related to the project shall not have the right to make important decisions, such as the right to appoint the full-time directors of the audit firm concerned or the right to determine personnel management.
- The audit firm concerned, or any employees of the audit firm concerned, shall not have any specific relationship to the project covered by the audit.
- The employees of the audit firm concerned shall not have any other relationship with the Borrower or the Executing Agency, beneficiaries or any other party that could give rise to any economic or political benefit.

(2) Expertise

- Previous auditing track record (SOE auditing experience, auditing experience of similar projects, auditing experience of projects by the World Bank, etc.).
- The number and experience of current specialist staff at the audit firm concerned, number of staff to ensure implementation of the auditing of this project.
- Current work volume of the relevant audit firm (Is it possible to complete the audit and submit the audit report by the deadline?).
- If the audit firm concerned is a subsidiary, branch or affiliate of an internationally renowned audit firm, such as one of the so-called BIG 4¹⁶, is there a substantial relationship with the relevant BIG 4 firm?

(3) Auditing Standards

It is required that an audit be conducted in accordance with either of the auditing standards below.

- Generally Accepted Auditing Standards (GAAS) (auditing standards that are generally accepted in the relevant country).
- International Standards on Auditing (ISA): Auditing standards on public accounting

¹⁶ BIG 4: A general term that refers to the four large international accountancy firms of PriceWaterhouse Coopers, KPMG, Deloitte Touche Tohmatsu, and Ernst & Young.

established by the International Federation of Accountants (IFAC).

2. Official (Legislature or Government) control agencies

(1) Independence

- The existence of laws that guarantee the independence of the relevant auditing agency.
- The Borrower or the Executing Agency (or their employees), beneficiaries or other parties related to the relevant project shall not own more than half of the issued shares in the auditing agency (if shares have been issued).
- More than half of the audit firm concerned shall not consist of full-time partners and / or employees of the Borrower or the Executing Agency, beneficiaries or other parties related to the project
- The Borrower or the Executing Agency (or their employees), beneficiaries or other parties related to the relevant project shall not have the right to make important decisions, such as the right to appoint the full-time directors of the relevant auditing agency or the right to determine personnel management.
- The employees of the relevant auditing agency shall not have any other relationship with the Borrower or the Executing Agency, beneficiaries or any other party that could give rise to any economic or political benefit
- If the relevant auditing agency is a local government auditing agency, the local government shall not control over half of the issued shares, over half of the full-time employees or have the right to make important decisions, such as the right to appoint the full-time directors or the right to determine personnel management.

(2) Expertise

- Existence of legal restrictions on the activities of the relevant auditing agency (implementation of the SOE audit and the expression of an audit opinion is not recognized, no legal jurisdiction over the Borrower or the Executing Agency, etc.).
- Previous audit track record of the relevant auditing agency (SOE auditing experience, auditing experience of similar projects, auditing experience of projects by the World Bank, etc.).
- The number and experience of current specialist staff at the relevant auditing agency, the number of staff to ensure implementation of the audit of this project.
- Current work volume of the relevant auditing agency (Is it possible to complete the audit and submit the audit report by the deadline?).

(3) Auditing Standards

It is required that the audit be conducted in accordance with either of the audit standards below.

- Generally Accepted Auditing Standards (GAAS) (auditing standards that are generally accepted in the relevant country).
- Auditing Standards of the International Organization of Supreme Audit Institutions (INTOSAI).

ANNEX 5 Example of an Engagement Letter

Engagement Letter

To: [The Borrower]

[Date:]

Re: Statement of Expenditures Audit for the Loan Agreement No. []

[The Auditor] has hereby agreed with [the Borrower] to:

- (a) audit the records and accounts related to the applicable expenditures financed out of the loan under the Loan Agreement No. [], dated [], between JICA and [the Borrower], within [] months after the end of each fiscal year in [the Borrower's country], in accordance with generally accepted auditing standards, and
- (b) submit to the Borrower a certified copy of the report of such an audit, whose format shall be substantially similar to the attached sample format.

(In the case of government auditors only) The authorized person(s) to certify such an audit report are [name, title]

[Name of the Auditor]

[Title of the Auditor]

[Name and Address of the Audit firm]

ANNEX 6 Standard Audit Report

AUDIT REPORT (Unqualified Opinion)

To: [The Borrower]

【A: Addressee and Submission deadline】

Date: []

【B: Introductory Paragraph】

We have Audited the accompanying Statements of Expenditures (SOEs) of the [(Project Name)] Project financed under the Loan Agreement (L/A) No. [] for the year(s) []. The SOEs are the responsibility of [(Name of the Borrower or the Executing Agency)]'s management. Our responsibility is to express an opinion on the SOEs based on our audit.

【C: Scope Paragraph】

We conducted our audit in accordance with Generally Accepted Auditing Standards [or relevant national standards or practices]. These Standards require that we plan and perform the audit to obtain a reasonable assurance about whether the SOEs are free of material misstatements. An audit includes verifying the SOEs with the accounting records, supporting documents, and physical inspection of the work done, or the goods and services acquired. We believe that our audit provides a reasonable basis for our opinion.

【D: Opinion Paragraph】

In our opinion, with regard to the SOEs, adequate supporting documents has been maintained to support the claims to JICA for reimbursement of the expenditures incurred; and which expenditures are eligible for financing under the Loan Agreement.

【E: Auditor】

.....
Note: Each section of this standard audit report identified alphabetically from A to E corresponds to the checklist in ANNEX 7, which shows the points to be covered by the SOE audit report.
.....

[Name of the Auditor]

[Title of the Auditor]

[Name and Address of the Audit firm]

[Completion Date of the Audit]

EXAMPLES OF AUDIT REPORTS OTHER THAN THOSE WITH AN UNQUALIFIED OPINION

Qualified Opinion:

Separate paragraph required after the Scope Paragraph

-
-

Revised Opinion Paragraph

In our Opinion, with regard to the SOEs, except for the items as described in the preceding paragraph, adequate supporting documents has been maintained to support the claims to JICA for reimbursement of the expenditures incurred; and which expenditures are eligible for financing under the Loan Agreement.

Adverse Opinion:

Separate paragraphs required after the Scope Paragraph

-
-

Revised Opinion Paragraph

In our opinion, with regard to the SOEs, subject to the matter discussed in the preceding paragraph, adequate supporting documents has not been maintained to support claims to JICA for reimbursement of the expenditures incurred; or which expenditures are not eligible for financing under the Loan Agreement.

Disclaimer of Opinion:

Revised Introductory Paragraph

We were engaged to audit the accompanying Statements of Expenditures (SOEs) for the years []. The SOEs are the responsibility of []'s management. (Omit the sentence stating the responsibility of the auditor.)

(Scope paragraph would either be omitted or amended according to the circumstances.)

Revised Opinion Paragraph

Because of the significance of the matters discussed in the preceding paragraph, we do not express an opinion on the SOEs.

ANNEX 7 Points for JICA to check in the Audit Report

【A: Submission deadline and addressee】

- (1) Was the audit report submitted by the submission deadline stipulated in the L/A?
- (2) Is the addressee the appropriate organization, such as the Borrower or the Executing Agency, as stated in the Engagement Letter?

If the items above have not been observed, JICA asks for correction to the Borrower or the Executing Agency.

【 B: Items stated in the Introductory Paragraph】

In an SOE audit, there must be a clear demarcation between the responsibility for preparing the SOE (and in addition, responsibility for the account management in case of the Special Account Procedure) and the responsibility for auditing the SOE and the special account. Moreover, it is necessary to specify the coverage of the audit and limit the scope of responsibility of the auditor. Consequently, the audit report must specify the SOEs covered by the audit. Checking of the items below specifies the coverage of the audit as well as clarifying the separation of responsibility.

- (1) Are the project name and L/A number stated?
- (2) Is the period covered by the audit stated, and does the audit cover all SOEs for the period¹¹?
- (3) Is the separation between the responsibility for preparing SOEs (Borrower or Executing Agency) and the responsibility for expressing an opinion (auditor) noted?
- (4) Are the SOEs covered by the audit attached to the audit report?
- (5) If a number of reports are submitted for a single L/A, are the numbers and names provided to enable identification?

If (1) through (3) above have not been stated and the coverage of the audit cannot be identified, the relevant audit report is returned to the auditor via the Borrower or the Executing Agency and resubmission of an amended report with the correct descriptions is required.

If the items in (4) above have not been attached, the auditor is requested to submit them via the Borrower or the Executing Agency.

If the items in (5) above have not been noted, making identification impossible, the auditor is requested to provide confirmation via the Borrower or the Executing Agency.

¹¹ Although all the SOEs for the target period are covered by the audit, a sample check is made of the corresponding supporting documents. The auditor determines the coverage ratio of the supporting documents and where to place the focus of the sample check at the audit plan formulation stage prior to beginning the audit. This is based on factors that include the details of the project, the management system of the Executing Agency, the results of the audit of a similar project in the previous fiscal year or of the same Executing Agency, and the current capacity of the Executing Agency (including the capacity of its local offices). When necessary, JICA obtains the audit plan from the auditor via the Borrower or the Executing Agency and reviews the supporting documents coverage ratio and the focus of the sample check.

【C: Items stated in the Scope Paragraph】

Unless the audit is conducted using an appropriate audit approach, it is ineffective. JICA checks the appropriateness of the auditing approach according to the items below.

- (1) Is there a description to the effect that the audit was conducted in accordance with Generally Accepted Auditing Standards (GAAS)? An audit that conforms to International Standards on Auditing (ISA) for a private sector audit firm or the International Organization of Supreme Audit Institutions (INTOSAI) Auditing Standards for public auditing organizations is also acceptable.
- (2) Is there a note to the effect that the audit plan was formulated and implemented in order to obtain sufficient corroborating evidence for the formation of an audit opinion on the SOEs?
- (3) Is there a note on the audit procedures implemented to examine the soundness of the SOEs, and are the procedures appropriate?
- (4) Is there a description indicating that sufficient corroborating evidence was obtained in order to form an audit opinion?

If there is no description related to (1) through (4) above, and it is not possible to confirm whether or not the audit was conducted and the opinion formed in accordance with GAAS, JICA obtains confirmation from the auditor via the Borrower or the Executing Agency. If it is still not possible to obtain confirmation, the relevant audit report is returned, and an amended report must be resubmitted.

【D: Items stated in the Opinion Paragraph】

The audit is conducted in order to achieve the audit objectives, and the audit opinion must be expressed in accordance with the audit objectives. If, as a result of checking the audit opinion section, the audit opinion is not clearly expressed, JICA requests the auditor to provide an audit opinion via the Borrower or the Executing Agency and requires that the audit report be resubmitted.

【E: Auditor】

An audit can only be effective when conducted by an independent and competent auditor. JICA checks whether the auditor who conducted the audit differs from the auditor selected following the initial determination of competence according to the following items.

- (1) Is the name of the auditing organization the same as that stated in the L/A, and is the auditor selected on the basis of the prescribed procedures and approved by JICA?
- (2) Is the auditor's name and signature present?
- (3) Is the date of the auditor's signature within the deadline determined by the L/A?

If (1) above has not been observed, JICA returns the relevant audit report to the Borrower or the Executing Agency, and it is required to resubmit a report from the correct auditor.

If (2) above has not been observed, JICA returns the relevant report to the auditor via the Borrower or the Executing Agency, and the resubmission of an amended report with the correct entries is required.

If there are no entries relating to (3) above, JICA recommends correction by the auditor

via the Borrower or the Executing Agency.

ANNEX 8 Auditor's Opinion and the required action

【Unqualified Opinion】

Definition: An Unqualified Opinion is expressed when there are no important qualifications and the SOE covering expenditures is sound. In this case, the Borrower or the Executing Agency can send the Audit Report in accordance with 3 (6) on page 4.

【Qualified Opinion】

Definition: A Qualified Opinion is expressed when there are important qualifications regarding deviation from the criteria (L/A), or the scope limitation of the audit, or both, but the overall influence is not sufficiently important to express an Adverse Opinion or to withhold an audit opinion (Disclaimer regarding the Opinion).

Action required of the Borrower

When a Qualified Opinion is expressed, the Borrower or the Executing Agency takes the following measures in phased steps.

Step (1): Obtainment and Confirmation of a Settlement Certificate

The Borrower or the Executing Agency obtains a Settlement Certificate for the qualifications noted in the audit report that indicates that the auditor has confirmed the settlement of the relevant qualifications. If the details noted in the Settlement Certificate are unclear, the Borrower or the Executing Agency requires the auditor to provide additional explanation according to JICA's instructions.

Disbursements through the SOE Procedure can be suspended, depending on the importance of the qualifications, until a Settlement Certificate with sufficient details can be obtained.

Reference

On confirmation that the qualifications have been settled, JICA checks whether the decision on the settlement of the qualifications and the basis for the decision are appropriate.

Example:

- For qualifications based on the eligibility of expenditures for financing: JICA confirms whether the decision to recognize the relevant expenditures as eligible for financing in the Settlement Certificate and the basis for that decision are appropriate.
- For qualifications due to insufficient presentation of the supporting documents: JICA confirms whether the additional corresponding supporting documents are presented and whether the details of the supporting documents are sound.

Step (2): If a Settlement Certificate cannot be obtained, or if there are qualifications that are not stated on the obtained Settlement Certificate

The Borrower or the Executing Agency provides JICA with information regarding the details of the qualifications, the reasons why a Settlement Certificate has not yet been obtained, and the possibility of and schedule for obtaining it in the future.

Step (3): If there are qualifications for which a Settlement Certificate cannot be obtained even after a reasonable period

After discussions with JICA, the Borrower or the Executing Agency is required to refund the corresponding amount. (If a subsequent disbursement is scheduled, adjustment of the amount of the subsequent disbursement is also possible.) In addition, it is necessary to decide whether to continue the SOE Procedure in subsequent disbursements or whether to change to procedures that do not use an SOE (submission of all supporting documents).

【Adverse Opinions and Disclaimer regarding the Opinion】

Definition: An Adverse Opinion is expressed when the effect of the important qualifications regarding deviation from the criteria of the L/A is significant, and the overall SOE is considered unsound. A Disclaimer regarding the Opinion is expressed when the effect of important qualifications related to the restrictions of an audit is significant, and an opinion cannot be expressed on the soundness of the SOE.

A specific example of an adverse opinion is expressed when expenditures that are ineligible for JICA financing are recorded in the SOE. A specific example of a disclaimer regarding an opinion is when the supporting documents for determining the appropriateness of expenditures has not been submitted.

When an adverse opinion is expressed or a disclaimer regarding an opinion is recorded, disbursement by the SOE Procedure is temporarily suspended until the qualifications that led to the opinion are settled. Moreover, in projects in which the same auditor conducts audits of a number of special accounts regarding which an adverse opinion has been expressed for some of the special accounts or a disclaimer regarding the opinion has been recorded, disbursements for the other special accounts audited by the same auditor are also temporarily suspended.

Action required of the Borrower

The specific measures for when an adverse opinion is expressed or a disclaimer regarding the opinion is recorded are as below, and JICA responds as noted in phased steps.

Step (1) Request for correction of the relevant SOE and resubmission of the audit report

The Borrower or the Executing Agency is required to correct the relevant SOE and to submit a new audit report.

→ When a corrected SOE and audit report are resubmitted

JICA continues disbursement using the SOE if the resubmitted audit report gives an unqualified opinion or a qualified opinion and a Settlement Certificate for the qualifications can be obtained.

Step (2): If a corrected SOE and audit report are not submitted

In this situation, major flaws are frequently apparent in the internal administration system (department and personnel systems and compliance, etc.) that the Borrower or the Executing Agency was required to establish in the first place in order to prepare

sound SOE. As a result, JICA surveys the establishment and operational status of the internal administration system for preparing SOE within the Borrower or the Executing Agency, if the corrected SOE and audit report are not resubmitted despite a request from JICA.

→ If JICA finds, as a result of the survey, that the internal management system of the Borrower or the Executing Agency has been adequately established

The Borrower or the Executing Agency is required to correct the relevant SOE and submit a corresponding audit report. JICA continues disbursement using SOE if the resubmitted audit report gives an Unqualified Opinion or a Qualified Opinion with a Settlement Certificate for the qualifications can be obtained.

Step (3): If JICA finds, as a result of the survey, that the internal management system of the Borrower or the Executing Agency has been inadequately established

Based on the survey results, JICA provides guidance to improve the establishment and operation of the internal management system of the Borrower or the Executing Agency to a level that is adequate for the continuation of the SOE Procedure.

Step (4): If JICA finds, as a result of the survey, that the internal management system of the Borrower or the Executing Agency cannot be improved.

The borrower is requested to repay the corresponding amount. In addition, the disbursement procedures will be changed to a method that does not use the SOE Procedure (submission of all supporting documents will be required).

ANNEX 9 Standard L/A Text when the SOE Procedure is applied

Section 4 Administration of Loan

(X) The Borrower shall:

- (a) furnish JICA as soon as possible, with an engagement letter signed by authorized person of [Auditor's name (i)], in which the said auditor agrees to audit the records and accounts related to the applicable expenditures financed out of the Loan and to submit the Borrower a certified copy of the report of such audit;
- (b) maintain, or cause to be maintained, records and accounts adequate to reflect, in accordance with consistently maintained sound accounting practices, the expenditures financed out of the proceeds of the Loan;
- (c) have the records and accounts referred to in paragraph (a) above for each fiscal year audited, in accordance with appropriate auditing principles consistently applied by the said auditor;
- (d) furnish JICA as soon as available, but in any case not later than [due date of the audit report submission (ii)] months after the end of each such year, with a certified copy of the report of such an audit by the said auditor, of such scope and in such detail as JICA may reasonably request;
- (e) furnish JICA with such other information concerning said records and accounts, and the audit thereof, as JICA may from time to time reasonably request;
- (f) retain, until at least five (5) years after the Completion Date, all records (contracts, orders, invoices, bills, receipts and other documents) evidencing such expenditures;
- (g) enable JICA's representatives to examine such records;
- (h) ensure that such records and accounts are included in the annual audits referred to in paragraph (c) above and that the report of such audit contains a separate opinion by the said auditor as to whether the statements of expenditures submitted during the relevant fiscal year, together with the procedures and internal controls involved in their preparation, can be relied upon to support the related

disbursements; and,

- (i) in the event that the use of a specified amount of the Loan is not justifiable according to a certified copy of the report of such audit referred to in paragraph (c) above, refund to JICA, upon request of JICA, such unjustifiable amount.

(Y) When the Borrower, in the opinion of JICA, fails to perform its obligations stated in any of the paragraphs of the sub-section (X) above, JICA may, by notice to the Borrower, suspend in whole or in part the rights of the Borrower under the Loan Agreement until JICA determines that such failure has been fully remedied. However, this stipulation does not impair JICA's further exercise of the rights stated in the Section 6.01 of the General Terms and Conditions.

(i) The specific name of the auditor shall be selected and agreed upon. If this agreement has not been made at the time of the L/A, "an auditor acceptable to JICA" shall be substituted for the auditor's name. When, according to the regulations of the Borrower's country, the Auditor employed by the Borrower obligatorily conducts the audit, this article is omissible.

(ii) Any number between 6 to 9 months shall be inserted. See P5, 3. (6) of this Guidance.

Attachment 32

Risk Management Framework

Page No - (1-6)

Risk Management Framework

1. Key Assumptions

The overall design of the project focuses on the following key goals which are to mitigate and adapt to climate change, improve ecosystems, and improve livelihood through ecosystem-based climate change measures, biodiversity conservation and restoration, livelihood improvement activities, and institutional strengthening, thereby contributing to sustainable socio-economic development in West Bengal. The project area considers landscapes, viz., Hills and dry lateritic and deltaic North Bengal, to address specific issues identified as flood/ landslides, human-elephant conflict, drought and erosion, and cyclones and salinity of water.

The Risk Management Framework is a template and guideline used by stakeholders to identify, eliminate, and minimise risks during the project implementation. The framework has been evolved around the institutional arrangements that have been proposed for the project management to deliver the envisaged results. However, the key results of the project are expected under certain assumptions. The key assumptions considered for the project are:

- 1) Willingness of the state government, with the necessary budget and support for human resources and other administrative and operational costs;
- 2) No political instability during the project implementation, and project is continued to be supported both by state and central governments;
- 3) Funds are timely allocated, and PMU proactively submits regular claims for disbursement during the implementation;
- 4) All envisaged procurements are approved without delays by the key decision-making authorities like the High-Power Committee (HPC) and the Governing Body (GB) of the project;
- 5) There are no major changes in strategies, policies, plans, and organisational structures in the forest sector, that may adversely impact on the project results;
- 6) Project receiving cooperation and support from relevant line departments at all level of operations;
- 7) There are no legal and critical social conflicts or disputes occurring in the target divisions, and selected project areas prior to initiating interventions; and
- 8) The project implementation is not severely impacted from any drastic economic recession in the national and regional economy and natural disasters.

2. Possible Key Risks

No project can be isolated from external and unforeseen risks. In West Bengal, natural disasters like droughts, cyclones, and floods are common every year. Further, climate change has led to the exacerbating of disasters, both in numbers and complexity, in the lower Gangetic basin of Bengal. In recent years, the state has witnessed two of the deadliest cyclones in West Bengal's history, Cyclone Amphan (2020) and Cyclone Yaas (2021), which wreaked havoc in the Sundarbans (South 24 Parganas district) and its adjacent districts. The geographical location of West Bengal also makes it vulnerable to year-round flooding from the Teesta, Damodar, Kangsabati, and Subarnarekha river systems. By this, it is evident that the project is going to be implemented in a context where the project needs to adopt strategic and adoptive approach to its management.

Some of the key risks that are identified / perceived at the project formulation stage are:

- 1) The envisaged human resources are not deployed by WBFD/ state government, and the project is managed mostly through outsourcing and/ or contracts;
- 2) Post-project sustainability is not well addressed in the absence of O&M processes and adequate allocation of funds;
- 3) The capacity of WBFD/ project staff and other key stakeholders is not effectively built to undertake the desired processes. Such situation may adversely impact on the project results;

- 4) West Bengal gets adversely impacted by cyclones, floods, and landslides, that gravely results in huge loss of life and property. Thus, there may be risk of unforeseen large-scale natural disasters, such as cyclones, forest fire, landslides, severe flooding, or any climate change adversaries; and
- 5) Global political conditions are favourable and stable, and India's geo-political situation do not pose threats for the smooth implementation of the project.

The project risks are further analysed in the table below.

Table 1 Risk Management Framework

Project Name:	The Project for Forest and Biodiversity Conservation for Climate Change Response in West Bengal (WB-FBCCCR)	
Country:	The Republic of India	
Sector:	Forestry	
Responsible Agency:	West Bengal Forest Department (WBFD), Government of West Bengal	
Officers In-Charge:	Contact: Amitabh Vibhakar Mishra	Title: APCCF Chief Project Director, West Bengal Forest & Biodiversity Conservation Project
	Mobile: +91-9831252896 +91-	Email: wfbcp@gmail.com
Operational Staff	To be named	
Engineering Staff	To be named	
Country Office Staff	To be named	

KEY RISKS AND MITIGATION MEASURES

Potential Project Risks	Assessment
1. Stakeholder Risk	Probability: H/M/L
(Description of risk)	Impact: H/M/L
<p>The West Bengal Assembly elections were concluded in the year 2021, and it is expected that the current government will complete its full term of five years. The next state assembly elections schedule will come sometime on or before March-April 2026 when the project will be in its fourth year (mid-term) of operations.</p> <p>It is expected that the current government will make a gradual success that lies in the economic progression of the state and the well-being of the majority of people. Reports indicate a marginal improvement of agriculture and rural people, relying on the delivery of welfare schemes at the cost of overall growth (including industrial and service sectors). This approach may lead towards dependency of low-income people on limited resources.</p> <p>Even if there is a change in political situations and governance models as well as priorities, it is expected that the commitments and priorities related to the forest sector will remain the same and no significant changes are assumed.</p> <p>For project implementation, the existing structure, and human resource of WBFD will be utilised. During the project period, it may happen that WBFD officials responsible for project implementation may either get elevated and transferred to new positions or may be superannuated. Thus, continued capacity development</p>	Analysis of probability and impact:
	Moderate risk is estimated. The regular forest field staff may not proactively participate in the project works and may view the project as additional tasks under regular departmental function. However, through notifications, regular follow-ups and capacity building to achieve the desired support will be ensured.
	Initial challenge with the project will generate interest amongst the community for participation in the project. Continuous handholding support, awareness, IEC, and engagement of NGOs/ Resource Organisations will minimise such risks.
	Mitigation measures:
	The mitigation measures to the risks are identified as follows: (a) strengthening the training and IEC support to stakeholders to help enhance the understanding of the project processes and benefits; (b) enhancing information disclosure and quick grievance redressal by the state as well as by the WBFD; (c) continuous guidance and supervision, including capacity building initiatives; and (d) intersectoral coordination with the line departments and planning with the local/ district/ block administration will ensure support sectoral convergence in project-supported villages/ sites.
	Action during the implementation:
	Not required
	Contingency plan (if applicable):

Potential Project Risks	Assessment
<p>initiatives need to be in place to support the project implementation.</p> <p>The JFMCs and SHGs will receive continued guidance and handholding support and are sufficiently capacitated to manage and/or generate or arrange funds for post project sustainability of assets and institutions.</p>	Not applicable
2. Executing Agency Risk	
2.1. Capacity Risk	Probability: H/M/L
(Description of risk)	Impact: H/M/L
<p>WBFD and other key stakeholders will get exposed to new approaches, processes, and technical know-how particularly for the ecosystem management, climate change mitigation and adaptation measures, landscape monitoring, use of MIS/ GIS applications and drone technology for planning and monitoring, engineering structures, private/ CSR partnerships, etc.</p> <p>Thus, acquiring required skills and expertise for the planned interventions will be critical given the vacancy positions in WBFD and the limited institutional capacity in new areas introduced under the project for planning, management, monitoring, and efficient delivery of services.</p> <p>The society for project implementation created during the previous JICA-assisted project will continue to function and manage the project, and WBFD/ the project staff will quickly learn about the requirements of project operation and management under society-mode.</p>	<p>Analysis of probability and impact:</p> <p>Moderate risk is estimated. There may be some difficulties for the project stakeholders to fully understand the project processes and implement the project in the initial years. The capacities of the project staff deployed or engaged will be critical to the project success.</p> <p>Mitigation measures:</p> <p>The proposed mitigation measures to the risks that could be adopted are as follows: (a) the project will focus on strengthening the institutional capacity. The project will implement capacity development strategy and annual training calendar for the project staff. If required, the project may acquire necessary skills and expertise from the market; (b) Project Operation Manual and Accounting Rules/ guidelines will be developed and adopted during the first year of operation.</p> <p>Action during the implementation:</p> <p>PMU with technical assistance from the PMC will i) prepare the project implementation guidelines, ii) organise orientation and guidance workshops/ seminars for information dissemination amongst stakeholders, iii) provide training to the project staff to enable them to operate and manage the project as envisaged, and iv) continuously provide technical and managerial support.</p> <p>Contingency plan (if applicable):</p> <p>Not applicable</p>
2.2. Governance Risk	Probability: H/M/L
(Description of risk)	Impact: H/M/L
<p>The High-Power Committee (HPC), Governing Body (GB), PMU and other institutions are established for overall decisions making, coordination, and implementation of the project. The role of PMU and the Member-Secretary to GB and HPC will be critical to use such institutions for accelerating project implementation as well as seeking guidance and support for efficient management, including conflict resolution and inter-sectoral convergence.</p> <p>Sufficient authorities to be delegated to PMU for day-to-day decision making, and adequate funds to be allocated to execute annual plans in an efficient manner.</p>	<p>Analysis of probability and impact:</p> <p>Moderate risk is estimated. The society mode project management and establishing the envisaged institutions will minimise the operational, coordination, and management risks.</p> <p>Mitigation measures:</p> <p>HPC led by Additional Chief Secretary, and PMU led by full-time cadre officer on deputation to manage the project should be established at the respective levels. For intra-departmental coordination and project management, GB is chaired by the Head of Forest Force (HoFF); WBFD will play an efficient role. For the convergence, more linkages at district and blocks (under the district) by the project level offices (DMUs/ FMUs) is envisaged.</p> <p>Action during the implementation:</p>

Potential Project Risks	Assessment
	Same as above.
	Contingency plan (if applicable):
	Not applicable
2.3. Fraud & Corruption Risk	Probability: H/M/⓪
(Description of risk)	Impact: H/M/⓪
Absence of robust financial control and procurement systems may increase risks for malpractices, frauds, and corruptions.	Analysis of probability and impact:
Procurement protocols for goods and services must be in place. The international competitive bidding has well laid-out procedures and prior concurrence is required from JICA at each stage of selection, whereas for local/ national bidding, existing procedures and state procurement rules will be adopted by PMU.	Low risk is estimated. There is less probability that any fraud, misappropriation, or issues on financial management will take place. There is only the possibility that some inappropriate sub-projects, which may not necessarily benefit the local people who participate in the project activities, might be selected and implemented.
Some lack of understanding on the procurement procedures and capacities to develop the Terms of Reference (TOR) may sometime dilute or leave some gaps in the procurement of goods and services. The project staff may also lack orientation on the mercantile accounting system that may be adopted for project accounting and reporting. Thus, the key staff needs to be trained both on procurement as well as accounting procedures.	Mitigation measures:
	Under the managerial features of the institutional arrangements there are provisions of establishing computerised accounting system and for conducting independent CA audits, CAG audits, as well as system of undertaking concurrent audits. Under the Monitoring & Evaluation, system of Grievance Redressal as well as RTI could bring in more transparency as well as accountability. For procurement of Goods & Services, a well-defined procurement guideline will be in place at the state level and the key staff will be sufficiently trained. Also, prior concurrence will be required from JICA on the implementation of key sub-projects and services.
	Action during the implementation:
	At the start of the project implementation, financial management and accounting rules and regulations for the project will be developed and will form part of the Operation Manual. PMU, with technical assistance from PMC, will monitor the project implementation.
	PMC will also provide guidance and advice for proper and transparent management on a regular basis over the course of the project.
	Contingency plan (if applicable):
	Not applicable
3. Project Risk	
3.1. Design Risk	Probability: H/Ⓜ/L
(Description of risk)	Impact: H/Ⓜ/L
Activities planned under the project for climate change mitigation and adaptation, ecosystem management, and landscape management – coastal, lateritic plains, North Bengal Hills, grasslands, degraded forests, and protected areas are diverse and big in scope. Thus, substantial time and effort is required to collect and compile basic data required for robust planning. Further, to capture the features of various landscapes, detailed survey and mapping requirements will be necessary, which will require substantial time and resource.	Analysis of probability and impact:
Furthermore, the identified project areas are scattered all	Moderate risk is estimated. It might be difficult for PMU to quickly identify qualified contractors/ facilitators capable to implement the envisaged processes at the state/ field level. In case no eligible individuals or organisations could be identified at the state level, PMU will try to procure at the national or regional level.
	The project divisions and ranges will need managerial and technical support from PMU for planning, data collection, monitoring, and reporting.
	Mitigation measures:

Potential Project Risks	Assessment
over the state and many of the component activities would require very rigorous and intense efforts. Thus, adequate capacities among the project implementation units at all levels of the project need to be built.	<p>The proposed mitigation measures for the risks are identified as follows: (a) the provision of technical support in the form of PMC to PMU/ WBFD during preparatory phase, and hiring resource organisations/ NGOs; (b) the lessons learnt by WBFD from the past project will help in mitigating the risk; and (c) planning for phase out strategy prior to closure of the project will ensure systematic transfer of assets and responsibilities for proper O&M.</p> <p>Action during the implementation:</p> <p>Same as above.</p> <p>Contingency plan (if applicable):</p> <p>Not applicable</p>
3.2. Program & Donor Risk	Probability: H/M/⓪
(Description of risk)	Impact: H/M/⓪
The project design has been aligned with the state's sector strategies and policies. The design also considers the priorities set for the sector at the national level, as well as priorities with WBFD. It is assumed that the policies may remain unchanged during the implementation period, and project will help to achieve the aims and objectives spelt out in policies and acts and rules, for the forestry sector.	<p>Analysis of probability and impact:</p> <p>Low risk is estimated. West Bengal is situated in eastern India and shares its borders with Jharkhand, Bihar, Odisha, Sikkim, and Assam. The state also shares international borders with Bangladesh, Bhutan, and Nepal. The Bay of Bengal is in the south of West Bengal. The state has abundant natural resources of minerals and suitable agro-climatic conditions for agriculture, horticulture, and fisheries.</p> <p>West Bengal offers wide topographic diversity and intricate drainage network of the Ganga, the Brahmaputra, and the Subarnarekha River basins.</p> <p>West Bengal boasts a biosphere rich in flora and fauna. Being highly diversified in history, culture, and nature, the state has flourished as one of the major eco-tourism destinations in India. With its broad network of river channels and geographical features, the deltaic region in South Bengal is renowned for exhibiting the largest mangrove forest in the world. Thus, there is a good rationale for designing a project following the landscape approach.</p> <p>Mitigation measures:</p> <p>Commitment from the state government to extend annual budgetary support to the forestry sector project.</p> <p>Action during the implementation:</p> <p>PMU proactively approaches the state government to secure the annual fund for the project implementation.</p> <p>Contingency plan (if applicable):</p> <p>Not applicable</p>
3.3. Delivery Quality Risk	Probability: H/Ⓜ/L
(Description of risk)	Impact: H/Ⓜ/L
It is necessary to develop a robust project management	Analysis of probability and impact:

Potential Project Risks	Assessment
<p>system and introduce a mechanism for quality delivery of processes to achieve the envisaged results, and O&M during post project period. A system also needs to be developed for utilising latest technologies for survey and mapping as well as for planning and monitoring purposes. Thus, identification of project areas along with rationale may pose some challenges and may have to deal with the local political priorities.</p> <p>It is expected that the project beneficiaries or local communities who participate in the project will be engaged for consultations and planning and implementation/ maintenance for project interventions.</p>	<p>Moderate risk is estimated. There is probability that PMU will face some difficulties in gathering/collecting necessary data and information in timely manner for planning and monitoring of the operation and effect indicators, particularly for landscape level data.</p> <p>In case collaborative management system is not well developed during the initial phase, the project sustainability and project results may be impacted. Also, may be due to some ignorance or carelessness, the equitable distribution of benefits may not happen properly.</p> <p>Mitigation measures:</p> <p>The initial orientations and capacity building of the stakeholders will help to develop sound understanding on project processes. GIS tools and techniques along with MIS will help to identify and prioritise the project intervention areas. Guidelines and manual will also help to uniformly disseminate the project information.</p> <p>Action during the implementation:</p> <p>Same as above.</p> <p>Contingency plan (if applicable):</p> <p>Not applicable.</p>
4. Other Risk – Financial Capacity and Arrangements	Probability: H/M/L
(Description of risk)	Impact: H/M/L
<p>WBFD has been managing budgets around 850 Cr. annually as a department, and the size of the subsequent JICA project is estimated around INR 650 Cr. Thus, WBFD may require efforts and strategies to demonstrate financial capacities, particularly when vacancies at the field level varies between 47% ~ 65%.</p> <p>It is assumed that the state government will consider the forestry sector as priority sector for making investments and will proactively allocate annual budgets as per the annual fund requirements of the new project. With the enhanced capacities of WBFD through JICA-assisted projects in the past, it is likely that WBFD will be able to deliver a project that may cost around INR 650 Cr. in a span of eight years.</p>	<p>Analysis of probability and impact:</p> <p>Moderate risk is estimated. The state government allocates the required annual funds right at the start of the fiscal year without delay. WBFD allocates dedicated staff for the project. PMU is well-equipped to manage and extend funds at the implementation level and be able to guide and handhold the field operations and implementation efficiently.</p> <p>Mitigation measures:</p> <p>Annual budgetary flows for the project to be ensured by the state government under the Loan Agreement. If the annual budget releases are not possible, the government may consider providing upfront revolving fund to the project.</p> <p>Action during the implementation:</p> <p>PMU/ WBFD proactively approach the state government for release of budgets on time every year and must obtain timely approval of the annual budgets and annual plans from HPC and GB prior to the start of each fiscal year.</p> <p>Contingency plan (if applicable):</p> <p>Not applicable.</p>
5. Overall Risk Rating	Probability: H/M/L
(Overall comments)	Impact: H/M/L
<p>The overall risk is estimated as Moderate. The project faces significant risks in (a) institutional capacity for implementation and sustainability, particularly for O&M of the project assets and human resources; (b) technical design of the project that may require to acquire skill sets and build capacities of the stakeholders; (c) delivery quality adopting the envisaged procedures and rules; (d) financial capacities and arrangements for timely availability of adequate funds; and (e) stakeholders to willingly participate and receive benefits out of the project. The key risks, which may impair the effective implementation of the project, are related to the new processes and participatory approach for implementing and managing activities, the institutional capacity, and ongoing human resource constraints faced by WBFD.</p>	

Attachment 33

**Estimated Annual Greenhouse
Gas Emissions Reduction**

Page No - (1)

Attachment 33 : Estimated Annual Greenhouse Gas Emissions Reduction

Year	1.1.2.1				Hill&North Bengal								1.1.2.3 b)				1.1.3				1.2.2.2				Dry Latentic Alluvial				1.2.2.3 a)				1.2.2.3 b)				1.2.2.4				Deltaic				All	All
	Creation of New Seed Production Areas and Maintenance				1.1.2.3 a)				1.1.2.3 b)				1.1.2.4				1.1.3				1.2.2.2				1.2.2.3 a)				1.2.2.3 b)				1.2.2.4				1.3.1									
					Sal Plantation				Misc Plantation (Teak&Bamboo)				Strip Plantation				Soil and Water Conservation (Grassland)				Sal Copicing				Sal Plantation				Misc Plantation				Strip Plantation				Mangrove Plantation									
	Area	Annual amount of sequestration	Annual Value	Cumulative amount of sequestration	Area	Annual amount of sequestration	Annual Value	Cumulative amount of sequestration	Area	Annual amount of sequestration	Annual Value	Cumulative amount of sequestration	Area	Annual amount of sequestration	Annual Value	Cumulative amount of sequestration	Area	Annual amount of sequestration	Annual Value	Cumulative amount of sequestration	Area	Annual amount of sequestration	Annual Value	Cumulative amount of sequestration	Area	Annual amount of sequestration	Annual Value	Cumulative amount of sequestration	Area	Annual amount of sequestration	Annual Value	Cumulative amount of sequestration	Area	Annual amount of sequestration	Annual Value	Cumulative amount of sequestration	Annual amount of sequestration	Annual Value								
	ha	tCO ₂ /yr	INR/yr	tCO ₂	ha	tCO ₂ /yr	INR/yr	tCO ₂	ha	tCO ₂ /yr	INR/yr	tCO ₂	ha	tCO ₂ /yr	INR/yr	tCO ₂	ha	tCO ₂ /yr	INR/yr	tCO ₂	ha	tCO ₂ /yr	INR/yr	tCO ₂	ha	tCO ₂ /yr	INR/yr	tCO ₂	ha	tCO ₂ /yr	INR/yr	tCO ₂	ha	tCO ₂ /yr	INR/yr	tCO ₂	tCO ₂	INP Thousand								
1																																					0	0								
2																																					0	0								
3	10	40	15,538	40	30	90	34,961	90	80	160	62,153	160	80	240	93,229	240	15	6	2,250	6	500	1,000	388,456	1,000	150	450	174,805	450	500	1,500	582,684	1,500	80	240	93,229	240	15	15	5,827	15	3,741	1,453				
4	30	120	46,615	160	80	240	93,229	330	180	360	139,844	520	180	540	209,766	780	30	12	4,500	17	1,000	2,000	776,912	3,000	350	1,050	407,879	1,500	1,300	3,900	1,514,978	5,400	180	540	209,766	780	30	30	11,654	45	8,792	3,415				
5	50	200	77,691	360	100	300	116,537	630	250	500	194,228	1,020	250	750	291,342	1,530	45	17	6,750	35	1,000	2,000	776,912	5,000	400	1,200	466,147	2,700	1,600	4,800	1,864,589	10,200	250	750	291,342	1,530	45	45	17,481	90	10,562	4,103				
6	50	200	77,691	560	100	300	116,537	930	250	500	194,228	1,520	250	750	291,342	2,280	45	17	6,750	52	1,000	2,000	776,912	7,000	400	1,200	466,147	3,900	1,600	4,800	1,864,589	15,000	250	750	291,342	2,280	45	45	17,481	135	10,562	4,103				
7	50	200	77,691	760	100	300	116,537	1,230	250	500	194,228	2,020	250	750	291,342	3,030	45	17	6,750	70	1,000	2,000	776,912	9,000	400	1,200	466,147	5,100	1,600	4,800	1,864,589	19,800	250	750	291,342	3,030	45	45	17,481	180	10,562	4,103				
8	50	200	77,691	960	100	300	116,537	1,530	250	500	194,228	2,520	250	750	291,342	3,780	45	17	6,750	87	1,000	2,000	776,912	11,000	400	1,200	466,147	6,300	1,600	4,800	1,864,589	24,600	250	750	291,342	3,780	45	45	17,481	225	10,562	4,103				
9	50	200	77,691	1,160	100	300	116,537	1,830	250	500	194,228	3,020	250	750	291,342	4,530	45	17	6,750	104	1,000	2,000	776,912	13,000	400	1,200	466,147	7,500	1,600	4,800	1,864,589	29,400	250	750	291,342	4,530	45	45	17,481	270	10,562	4,103				
10	50	200	77,691	1,360	100	300	116,537	2,130	250	500	194,228	3,520	250	750	291,342	5,280	45	17	6,750	122	1,000	2,000	776,912	15,000	400	1,200	466,147	8,700	1,600	4,800	1,864,589	34,200	250	750	291,342	5,280	45	45	17,481	315	10,562	4,103				
11	50	200	77,691	1,560	100	300	116,537	2,430	250	500	194,228	4,020	250	750	291,342	6,030	45	17	6,750	139	1,000	2,000	776,912	17,000	400	1,200	466,147	9,900	1,600	4,800	1,864,589	39,000	250	750	291,342	6,030	45	45	17,481	360	10,562	4,103				
12	50	200	77,691	1,760	100	300	116,537	2,730	250	500	194,228	4,520	250	750	291,342	6,780	45	17	6,750	156	1,000	2,000	776,912	19,000	400	1,200	466,147	11,100	1,600	4,800	1,864,589	43,800	250	750	291,342	6,780	45	45	17,481	405	10,562	4,103				
13	50	200	77,691	1,960	100	300	116,537	3,030	250	500	194,228	5,020	250	750	291,342	7,530	45	17	6,750	174	1,000	2,000	776,912	21,000	400	1,200	466,147	12,300	1,600	4,800	1,864,589	48,600	250	750	291,342	7,530	45	45	17,481	450	10,562	4,103				
14	50	200	77,691	2,160	100	300	116,537	3,330	250	500	194,228	5,520	250	750	291,342	8,280	45	17	6,750	191	1,000	2,000	776,912	23,000	400	1,200	466,147	13,500	1,600	4,800	1,864,589	53,400	250	750	291,342	8,280	45	45	17,481	495	10,562	4,103				
15	50	200	77,691	2,360	100	300	116,537	3,630	250	500	194,228	6,020	250	750	291,342	9,030	45	17	6,750	209	1,000	2,000	776,912	25,000	400	1,200	466,147	14,700	1,600	4,800	1,864,589	58,200	250	750	291,342	9,030	45	45	17,481	540	10,562	4,103				
16	50	200	77,691	2,560	100	300	116,537	3,930	250	500	194,228	6,520	250	750	291,342	9,780	45	17	6,750	226	1,000	2,000	776,912	27,000	400	1,200	466,147	15,900	1,600	4,800	1,864,589	63,000	250	750	291,342	9,780	45	45	17,481	585	10,562	4,103				
17	50	200	77,691	2,760	100	300	116,537	4,230	250	500	194,228	7,020	250	750	291,342	10,530	45	17	6,750	243	1,000	2,000	776,912	29,000	400	1,200	466,147	17,100	1,600	4,800	1,864,589	67,800	250	750	291,342	10,530	45	45	17,481	630	10,562	4,103				
18	50	200	77,691	2,960	100	300	116,537	4,530	250	500	194,228	7,520	250	750	291,342	11,280	45	17	6,750	261	1,000	2,000	776,912	31,000	400	1,200	466,147	18,300	1,600	4,800	1,864,589	72,600	250	750	291,342	11,280	45	45	17,481	675	10,562	4,103				
19	50	200	77,691	3,160	100	300	116,537	4,830	250	500	194,228	8,020	250	750	291,342	12,030	45	17	6,750	278	1,000	2,000	776,912	33,000	400	1,200	466,147	19,500	1,600	4,800	1,864,589	77,400	250	750	291,342	12,030	45	45	17,481	720	10,562	4,103				
20	50	200	77,691	3,360	100	300	116,537	5,130	250	500	194,228	8,520	250	750	291,342	12,780	45	17	6,750	295	1,000	2,000	776,912	35,000	400	1,200	466,147	20,700	1,600	4,800	1,864,589	82,200	250	750	291,342	12,780	45	45	17,481	765	10,562	4,103				
21	50	200	77,691	3,560	100	300	116,537	5,430	250	500	194,228	9,020	250	750	291,342	13,530	45	17	6,750	313	1,000	2,000	776,912	37,000	400	1,200	466,147	21,900	1,600	4,800	1,864,589	87,000	250	750	291,342	13,530	45	45	17,481	810	10,562	4,103				
22	50	200	77,691	3,760	100	300	116,537	5,730	250	500	194,228	9,520	250	750	291,342	14,280	45	17	6,750	330	1,000	2,000	776,912	39,000	400	1,200	466,147	23,100	1,600	4,800	1,864,589	91,800	250	750	291,342	14,280	45	45	17,481	855	10,562	4,103				
23	50	200	77,691	3,960	100	300	116,537	6,030	250	500	194,228	10,020	250	750	291,342	15,030	45	17	6,750	348	1,000	2,000	776,912	41,000	400	1,200	466,147	24,300	1,600	4,800	1,864,589	96,600	250	750	291,342											

Attachment 34

Covid Mitigation Measures Matrix

Page No - (1-2)

S.No.	A. Measure at the Ongoing Projects	By whom	By when	Action taken
Immediate Action at Site				
1	Indian (Namaste) and or Japanese type greetings should be followed in place of handshake or hugs, while meeting.	JICA/EA/PMC/Contractor	Immediately	
2	Hand washing at all levels before and after the activity should be promoted and strictly implied in order to ensure good health and hygiene, effectiveness of the prevention measures.	EA/PMC/Contractor	Immediately	
3	Thermal screening (mapping of body temperature) should be made mandatory at all work stations/offices to ensure healthy and non-fearing environment around the work places.	EA / PMC / Contractor	Immediately	
4	Display of the pandemic prevention measures to be taken at all the construction sites including the promotion of social distancing. Sufficient PPE (personal protective equipment such as mask, gloves, sanitizers, soaps, etc.) and essentials are required for the countermeasures at all the offices/buildings/sites under the project.	EA /PMC/ Contractor	Immediately	
5	Provisions of the sufficient transportation arrangements for the construction workers, supervisory staff, project staff and others should be provided in view of social distancing norms.	EA/PMC/Contractor	Immediately	
6	Issuance of the necessary ID and Passes to the project personnel of Consultants/Contractors for smooth access to office and project sites considering the essential services.	EA/Government	Immediately	
7	Consider allowing construction work in multiple shifts/extended hours with necessary permissions to counter the productivity gap with social distancing norms.	EA/PMC	Immediately	
8	Preparation of the project specific Standard Operating Procedure (SoP) for construction activities during the ongoing pandemic situation.	EA/PMC/Contractor	Immediately	
9	Establishment of the Monitoring Committee (or a Task Force) to monitor the pandemic/disaster situation and compliance of SoP on daily basis.	EA/PMC/Contractor	Immediately	
10	Development of project specific website to be viewed by relevant people for monitoring the progress and input of NGOs on a routine basis including steps taken for safeguarding safety of people and contractors.	EA/PMC	Progressively	
11	Assessment of the disruption in supply chain, delay in procurement of equipment due to restrictions on inter- state migration of workers, the work plans/project schedules should be taken up and brought up for the resolve.	EA/PMC/Contractor	Immediately	
12	Remote communications for the project monitoring, supervision or coordination should be preferred/practiced.	EA / JICA / Government	Progressively	
Contract and Payment				
13	Necessary budgeting exercise within the project for the COVID-19 mitigation measures should be taken up.	EA	Immediately	
14	Upon request from EA, utilization of contingencies through L/A Amendments (reallocation) should be promptly reviewed and approved by the Line Ministries and DEA, in order to provide sufficient provision of funds for pandemic mitigation measures.	EA/Line Ministry/DEA	As and when necessary	
15	COVID-19 (or severe disasters) should be treated as an extraordinary situation. All records of the manpower, machines and materials affected by the pandemic situation must be recorded jointly and acceded. Consequent time period extension, compensation, price variation or other contingent requirements as claimed by consultant/contractors should be dealt based on contract stipulations including application of Force Majeure.	EA	Immediately	
16	Prompt release of due payments to the contractors/consultants should be considered. For example, 80% of the due payments to be released on adhoc basis within 7 working days period, while the remaining payments (20%) should be finally settled and released within 28 days of the receipt of invoices.	EA	Regularly	
17	Payment release to the contractors/consultants for the regular office operation & maintenances costs (e.g. office rent, utility charges, support staff etc.) during the pandemic/lockdown period in the same manner as in the normal times should be made. Likewise, payment for manpower at work places (or near the construction site), who could not work due to pandemic restrictions imposed by the Government or lock down, shall be treated appropriately irrespective of the work output.	EA	Immediately	
Public Awareness				
18	All the Public Outreach Programs (POP) or public participation and public awareness programs within the projects should be redefined by including the pandemic/disaster prevention measures and implemented.	EA/PMC	Progressively	
19	Appointment of suitable NGOs with hygiene/medical background to take up the POP should be promoted.	EA/PMC	Regularly	
Water Sector Related Considerations				

20	Due to longer sustenance of virus in sewage/household waste, the full use of PPE for the operators must be enforced by developing the training module for appropriate disinfection process to be adopted (with compulsion) for healthy and hygienic conditions especially in a wastewater treatment plants since the virus can be traced in the fecal matter and it can sustain in wastewater plants. The operator should be directed to develop bacteria and virus assessment, monitor in the plant lab to determine presence of COVID-19 virus status and or any other future viruses that might be present in wastewater – influent and effluent.	EA/Operator	Immediately
S.No.	B. Measures to be considered at the Project Preparation Stage	By whom	
1	Taking clues from the present pandemic situation, mitigation measures action plan should be a part of the project scope and necessary budgeting required to be provisioned.	EA	
2	Procurement of prevention implements (gloves, face mask, sanitizers, etc.) should be provided within the project. Safety, security and disaster management prevention measures should be clearly defined with necessary costing structure. It includes thermal screening of all the personnel and appropriate hand-washing facilities as well.	EA	
3	The protocols (SOP) for practicing during the disaster times and the prevention measures of the disease should be clearly defined, which should be followed under the project.	EA	
4	Public Outreach Program (POP) comprising of public participation and awareness campaign, and the development of prevention and awareness action plans should be kept mandatory in all the JICA-assisted Loan Projects. The detailed action plan shall cover Project impact, behavioral changes, conservation of resources, optimal utilization of service deliveries, disaster prevention/protection measures, campaigns, visibility for all segments of the beneficiaries/society, etc.	EA	
5	Budget provision for POP @Rs. 3 cr per year (tentative) during the project implementation should be included in all JICA-assisted Loan Projects. It should start from the beginning of the Project and continue until completion involving all the stakeholders concerned including beneficiaries. POP should ideally cover the public in whole of the city and region as well.	EA	
6	For effective implementation of POP, the involvement of NGO, CBOs, associations, societies and other entities should be ascertained. The restructuring of POP during the implementation based on implemented feedback/results should be promoted.	EA	
7	While preparing the action plans, the coordination with other international agencies, other programs run by the EAs/State Governments should also be taken in to consideration.	EA	
8	Other measures as indicated above at "Measures at the Ongoing Projects" should be considered and included.	EA	
S. No.	C. Measures to be considered during the Project Execution Phase	By whom	
1	All the measures as indicated above at "Measure at the Ongoing Projects" should be considered and included.	EA	
2	Safety and security to fight with disasters/exigencies arising during the project implementation should be well defined and documented by PMCs. The display of such protocols from the beginning of the project start should be practiced.	EA/PMC	
3	EAs should keep provision of providing the accommodation to all construction workers including the project staff near the workplace with sufficient health and hygiene provisions.	EA/Contractor	
4	The general training, awareness, behavioral changes advocacy with mitigation implements and publicity material should be used during the project implementation stage.	EA/PMC	
5	Necessary provisions for vaccination of the project concerned people, promotion of hygiene practices and disaster mitigation training should be ensured.	EA/PMC/Contractor	
6	Contractors/ Consultants must ensure Health Insurance for the employees and workers. Relevant clauses in the General Conditions of JICA Standard Documents shall be strictly followed.	EA/PMC/Contractor	
7	Allowing consultants to work from home during design and development of the documents and its approvals excluding Team Leader / Deputy Team Leader, and few specialists to provide better management of the team during pandemics/disasters.	EA	
8	Online Project monitoring/tracking systems shall be developed by EAs.	EA	

Attachment 35

The Comments of the Ministry

Page No - (1)

Annexure- I**The Project for Forest & Biodiversity Conservation for Climate Resilience Enhancement in West Bengal Phase II for JICA ODA Loan.****The comments on DPR of West Bengal Project- Phase II from ICFRE are as follow:**

1. In the project objective, “To provide Nature based Solutions for Biodiversity Conservation and Management”, it is suggested that Ecosystem based Approach (EbA) may be considered in place of Nature based Solutions (NbS) as EbA is the integrated management of land, water, and living resources that promotes conservation and sustainable use in an equitable way.
2. Standard operating procedures on selection, seed collection and processing, nursery techniques and plantation along with post plantation operation may be developed for the concerned major economic species and Rare Endangered and Threaten species (RET) and lesser known indigenous species which have been depleted from the forest area.
3. Some specific comments also has been given by the Institute i.e. in Page 6 Section (3.d.vi) Study on species composition diversity index and regeneration of forest in different sensitive wildlife sanctuary specially Senchal wildlife sanctuary to better understand the problem of climate change. In Page 10 Section 1 (1.2.2) Creation of New Seed Production Areas & Maintenance and Identification of Candidate Plus Trees and Plus Trees.
4. One suggestion is also given by ICFRE on DPR i.e. the development of Agro-forestry models in combination with *Khaya antiotheca* and *Swietenia macrophylla* and trials on clonal development of *Melia dubia* for Agro-forestry models will boost the tree outside forest but will also help in increasing the farmer income.

The comments on DPR from Forest Survey of India (FSI) are given below:

1. Improvement well-being of (Forest Fringe village) FFVs in that para FSI has given the some comments that the FSI has also published a study report on ascertaining the dependence of FFVs (living up to 5km buffer of RFA) with respect to their dependence on forests for fuel wood, fodder, small timber and bamboo in the year 2020. The finding of the report along with sampling methodologies used for the study cab be useful. therefore, the report may be utilized for planning such study.
2. Some more important comments for MIS/ GIS based data should be arranged in a relational database such as Oracle, MySQL, MSSQL, PostgreSQL etc.
3. For afforestation activities, help of Satellite Imageries in Google Earth platform can be taken to monitor the growth of Plantation. Decision support system (DSS) portal can be used identify the Open Forest and Scrub areas for afforestation activities. polygon can be created which can be seen on Google Earth platform for precise identification of new afforestation area and their subsequent monitoring.



PROJECT MANAGEMENT UNIT
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