



PV Climate

Project Design Document

Restoration of Barren Uplands of Vulnerable Communities in West Bengal and Jharkhand

Birbhum District in West Bengal and Dumka District in Jharkhand, India

Project PDD Version 5.2

PDD Template Version 5.5

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OVERVIEW

Project Title:	Restoration of barren uplands of vulnerable communities in West Bengal and Jharkhand.
Location:	Country- India States- West Bengal and Jharkhand Districts- Birbhum and Dumka.
Version:	5.2
Project Coordinator:	Fair Climate Fund India Private Limited Director: Mr. Jasmeet Singh Email: jsingh@fcfindia.in Phone Number: +91 9560018494
Validator:	4k Earth Sciences Pvt Ltd
Validation Date:	07/08/2026
Project Intervention(s):	Restoration of barren uplands through plantations of native tree species to improve the socio-economic conditions of the tribal communities.
Project Participants:	These are marginal and small holder farmers belonging to the marginalized tribal communities, often migrating to neighbouring cities for daily-wage labour.
Project Area:	The project region is West Bengal and Jharkhand states of India. Total proposed project area (in hectares) is 4000 In the first instance, the project proponent is working on 841.61Ha, out of which 720.091 ha is already implemented 121.517 ha will be implemented in the year 2026. To cover this area 2 Districts (Birbhum in West Bengal and Dumka in Jharkhand) were targeted. To cover 841.61 Ha, PP has targeted 12 blocks for the implementation of the project activity. The blocks include: Jama, Jarmundi, Masalia, Shikaripada, Kathikund, Ramgarh, Dumka, Ranewar, Saraiyahaat and Gopikandar blocks in Dumka, Jharkhand and Rajnagar and Dubrajpur of Birbhum, West Bengal.
Project Period:	30 years
Methodology:	PM001," Agriculture and Forestry Carbon Benefit Assessment Methodology V1.0".
Expected Carbon Benefit:	The project is proposed to remove 1,147,115 tCO _{2e} from the atmosphere over the course of 30 years.
Expected Ecosystem Benefit:	The project is expected to generate significant ecosystem benefits at the landscape level through the establishment of tree plantations and mixed agroforestry systems. By increasing tree cover on farms and degraded lands, the project will improve local micro-climatic conditions such as shade, temperature moderation and reduced wind impact. The plantations will also help improve soil health over time, as leaf fall and plant residues add organic matter to the soil. This improves soil structure, supports beneficial soil organisms and enhances the soil's ability to retain moisture.

	The biodiversity components including flora and fauna, ground water quality, soil type, soil quality, soil carbon etc. will be mapped in the project to assess the biodiversity benefits sought in the project. The biodiversity components including flora and fauna, ground water quality, soil type, soil quality, soil carbon etc. will be mapped in the project to assess the biodiversity benefits sought in the project.
Expected Livelihood Benefit:	The participating households will benefit from consumption and selling of mangoes and Arjuna trees being the host plant for sericulture will ensure a sustainable source of income for the project beneficiaries. Families involved in sericulture will earn an additional annual income of around INR 80000 per hectare per year. Arjun plantation is currently implemented only in 10 ha of the project area in first instance as pilot scale and expansion will be done in suitable areas in the future with collaborating with the TDF farmers as per site suitability. The participating households will also get additional income from the sale of the timber species- Sonajhuri, that grows well in the project areas and will be harvested every 12 years with re-plantation and will be solely used for furniture and house construction. Teak trees will also contribute to long-term financial benefits, as they will be harvested after around 25 years and sold as valuable timber, with farmers receiving direct economic returns. Revenue from carbon will be an additional income for the participating households. Overall, the project will impact approximately 8000 families through various interventions as mentioned above.

1 General Information

1.1 Project Interventions

The project- “Restoration of barren uplands of vulnerable communities in West Bengal and Jharkhand” is being implemented in two States- West Bengal and Jharkhand in the districts of Birbhum and Dumka respectively.

In the project area under consideration, the land in both the districts, Dumka¹ and Birbhum², is currently upland where soil erosion is high due to the slope and heavy erratic rainfall in the region. Degraded land due to high soil erosion coupled with the absence of any irrigation facilities, has mostly been left barren³. These uplands are owned by small and marginal farming households with land holdings of approximately less than or equal to 2 hectares. The land parcels are managed at the household level and are used partly for subsistence production and partly to meet broader family livelihood needs.

These farmers are the most vulnerable to climate change and the project focuses on empowering them. The local communities and Indigenous people are best placed to manage their lands, due to

¹ https://jsac.jharkhand.gov.in/Report_PDF/Land_DEGRADATION/Land_Diggradation_Report_Final.pdf

² Sarkar, G. (2018, February 19). *Poorly designed check dams leave Birbhum farmers high and dry*. VillageSquare.in. <https://villagesquare.in/poorly-designed-check-dams-leave-birbhum-farmers-high-dry/>

³ Jha, V. C., & Ghosh, S. . (2022). Environmental Risk Assessment: A Geomorphic Investigation over the Bolpur-Santiniketan-Illambazar Lateritic Patch of Birbhum District, West Bengal, India. *National Geographical Journal of India*, 66(2), 94–110. Retrieved from <https://ngji.in/index.php/ngji/article/view/5>

their cultural knowledge and traditional practices. Hence, the project involves them in all stages of project implementation.

Under the project, first, a detailed Integrated Natural Resource Management (INRM) Planning is done in a participatory manner involving the community specially led by women members of Self-Help Groups (SHGs)/Women Livelihoods Committee (WLCs). Resource maps are prepared demarcating areas for different interventions like land development, soil moisture conservation activities, irrigation infrastructure, plantation etc. based on the land type, slope and extent of degradation. The plan is then implemented in phases based on the availability of resources.

The project is expected to have the following benefits for the community as well as the environment.

Climate benefit- The plantation of trees in uplands would help in carbon sequestration in the long run. The project is expected to remove 1,147,115 tCO₂e from the atmosphere over the course of 30 years.

Ecosystem benefit- The planting of native species such as Mango, Arjun with Sonajhuri will enhance the biodiversity of the project areas. A biodiversity baseline will be taken at the start of the project and the change in biodiversity will be monitored every five years.

Sustainable rural livelihoods: the project will create long term livelihood opportunities for the communities in project areas through the plantation activities.

These activities would benefit the farmers from the consumption and selling of mangoes in the short term. In some area Arjuna trees being the host plant for sericulture will ensure a sustainable source of income for the project beneficiaries. The Sonajhuri tree, which is a tall tree, growing to the height of 12 meters, is mostly harvested after a period of 12 years⁴. Each tree that will be harvested will be re-planted with the same species. The harvested tree is then used to manufacture furniture. Each tree is sold for a minimum of Rs 3,000 approximately, which is a good added income to the farmers. To establish a Sonajhuri plantation on one hectare requires an input cost of approximately INR 1,07,000, which includes pre-plantation, plantation, and post-plantation activities. Each tree is sold at 3000 INR. If 1,200 trees per hectare survive by the 12th year, a farmer can earn approximately INR 36 lakh, which averages to about INR 3 lakh per year.

Likewise, planting Teak will also get the benefits through the harvestation of the mature trees at 25th year⁵.

Revenue from carbon will be an additional income for the participating households. More than 15000 families will benefit from project interventions and families practicing sericulture will earn an additional annual income of around 80,000 INR per hectare.

In the project region, farmers procure Disease-Free Layings (DFLs) from local cooperatives and federations such as the Tasar Development Foundation (TDF). Each DFL contains about 2,500 eggs and is purchased at a cost of INR 75-100. Following the rearing process, each cocoon is sold in the market at an average rate of INR 1.5-4. A one-hectare plantation with approximately 1,000-1,100 Arjuna trees

⁴ https://plantuse.plantnet.org/en/Acacia_auriculiformis_%28PROSEA%29

⁵ [Islam, M. A., Quli, S. M. S., & Mushtaq, T. \(2017\). Wasteland reclamation strategy for household timber security of tribes in Jharkhand, India. *J. Appl. Nat. Sci*, 9, 2264-2271.](#)

typically yields 30,000-50,000 cocoons in a single season. Based on prevailing market prices, a farmer can earn between INR 60,000 and INR 1.3 lakh per hectare per season from cocoon sales. Given that most farmers rear cocoons for at least two cycles annually, the annual gross income from sericulture can range from INR 1.2 lakh to INR 2.6 lakh per hectare depending on the amount of eggs the farmer rear and mortality. This represents a significant livelihood opportunity, especially for tribal farming households, where annual agricultural incomes from food crops are comparatively lower.

Adoption of an integrated ecosystems approach for natural resource management in Dumka and Birbhum districts of Jharkhand and West Bengal respectively will increase the participants' ability to adapt to the impacts of climate and build their resilience to the changing climate and natural disasters and shocks. By organizing the project participants into community institutions and involving them in all stages of the project, they will develop social resilience. Immediate income from wage labour, intercropping of vegetables and return from mango, sericulture and timber in the long run will help them gain enhanced financial resilience. Moreover, the project will also contribute to the targets outlined in the agenda for Sustainable Development Goals.

1.2 Management Rights

1.2.1 Project Boundaries

Location	Country- India States- West Bengal and Jharkhand Districts- Birbhum in West Bengal and Dumka in Jharkhand
Project Region(s)	The project region is West Bengal and Jharkhand states of India. Total proposed project area (in hectares) is 4000
Project Area(s)	In the first instance, the project proponent is working on 841.61 ha, out of which 720.091 ha is already implemented, and 121.51 ha will be implemented in 2026. To cover this area 2 Districts (Birbhum in West Bengal and Dumka in Jharkhand) were targeted. The blocks include: Jama, Jarmundi, Masalia, Shikaripada, Kathikund, Ramgarh, Dumka, Ranewar, Saraiyahaat and Gopikandar blocks in Dumka, Jharkhand and Rajnagar and Dubrajpur of Birbhum, West Bengal.
Protected Areas- 42 km from Project area	Ballabhpur Wildlife Sanctuary near Santiniketan was declared a sanctuary in 1977. Economically important trees are planted here, and blackbucks, spotted deer, jackals, foxes and a variety of water birds live in its 2 km ² (0.8 sq mi ²).

The geospatial data files of the project area and project region are added in Annex 1.

1.2.2 Land and Carbon Rights

Table 1.2.2 Land and Carbon Rights

Project Area	Ownership and user rights status	Carbon rights	Evidence
Birbhum in West Bengal and Dumka in Jharkhand	The land parcels under consideration are private lands The land ownership belongs to the farmers who will be the beneficiaries of the project. Hence, the project includes privately owned and with farmers who have title deeds to these lands. Private lands are owned through inheritance, hence, there are no land tenure conflicts associated with land ownership or land rights.	In the project area under consideration, the land in both the districts is currently upland area where soil erosion is high and due to lack of any irrigation facilities it has mostly been left barren. All the farmers participating have signed the carbon rights agreement. Since the land holdings are privately owned so any benefits accrued from planting trees, crops, regeneration activities, carbon rights will belong to the individual landowner.	All farmers have access to their title deeds and to further strengthen the rights to carbon the project proponent intends to sign an agreement with the farmers to ensure the same.

2 Stakeholder Engagement

2.1 Stakeholder Analysis

2.1.1 Stakeholder Identification

Table 2.1.1 Stakeholder Analysis

Stakeholder Group	Stakeholder Type	Impact	Influence	Engagement
Women Collectives (Self Help Groups-SHG and Women Livelihoods)	Local	Positive, High	Positive, High	Women collectives are engaged as project stakeholders and implementation partners. They support FPIC and

Committee-WLC				community meetings, participate in planning of plantation and restoration activities (including species selection and identification of participating farmers), take part in village-level decision-making, and help monitor plantation maintenance and survival. They also support preparation and submission of village development plans that include project activities.
Farmer Producer Organizations (FPOs)	Local	Positive, High	Positive, High	FPOs are engaged as project stakeholders and value-chain partners. They support farmers and women's groups by facilitating access to inputs, technical guidance and market linkages. They assist in aggregation, storage, processing and marketing of project produce.
Panchayati Raj Institutions (PRI) Representatives	Local	Positive, High	Positive, High	PRIs are engaged as project stakeholders and provide institutional oversight and approvals. They support and validate FPIC and Gram Sabha processes, approve village development plans and land-based activities, assist in verification of land records and farmer

				consent and coordinate between the community, women's groups and the project team.
Different departments of the Government including Forest, Agriculture, Sericulture etc.	Secondary	Positive, High	Positive, Moderate	Technical skills and expertise in forestry, agriculture, and sericulture for implementation of the project

2.1.2 Indigenous Peoples and Local Communities

Table 2.1.2: Indigenous Peoples and Local Communities

Indigenous Peoples or local communities.	Rights to land or resources in the project area(s)	Governance structure	Involvement of women and marginalised groups	Engagement
Tribe- Santhals	The land parcels included in the project are privately owned. For more information, refer section 1.2.2.	The tribal villages follow the Panchayat system of governance. For detailed information please refer to section 2.5.2	The project interventions are built around the leadership of local communities, especially the women. Women Livelihoods Committees (WLCs) at the village level would be the drivers of the project. Women from the project villages, especially the tribal women, will constitute the WLCs. They will implement several training courses at the beginning of the project to enable them to ensure community	Even before the project implementation began, each indigenous community was consulted at length using Free, Prior and Informed Consent (FPIC) procedures, and through a series of consultations, focused group discussions, participatory rural appraisals (PRAs) and training of the community members. The communities have been clearly appraised for the project design, implementation, monitoring,

			participation during the planning and implementation of the project.	reporting and verification (MRV), cost, risks, and engagement of all stakeholders along with their roles. Engagement is undertaken in English, Hindi, and Bengali (local language). Representatives have also been identified from each village. These representatives belong to the community and select based on their interest and their understanding about the project. The selection of these representatives did not follow any discrimination based on age, sex, religion or creed. These local representatives act as a liaison and ensures a smooth communication between the stakeholders.
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2.1.3 Disputed Land or Resources

There are no land tenure conflicts associated with land ownership or land rights in the proposed project areas. The most common issue that arises is that the land remains in the name of the Father or Grandfather and has not been transferred on papers. In that case, an inheritance certificate is obtained from the Panchayat to justify that the farmer is the legal heir for the particular land parcel

and the change in land title is also initiated, which is a time-consuming process. The project is aware of this process and can manage it throughout the project period should it arise.

2.2 Project Coordination and Management

Table 2.2 Responsibility for Project Coordination and Management Functions

Project Coordination and Management Function	Responsible Party/Parties
Stakeholder engagement during project development and implementation	FIT Climate Foundation and FCF India
Ensuring conformance with the Plan Vivo Standard and compliance with applicable policies, laws and regulations	FCF India
Developing technical specifications, land management plans and project agreements with project participants	FCF India & FIT Climate Foundation
Ensuring that the PDD is updated with any changes to the project	FCF
Registration and recording of management plans, project agreements, monitoring results, and sales agreements	FCF India & FIT Climate Foundation
Managing project finances and dispersal of income to project participants as described by the benefit sharing mechanism	FCF India and FIT Climate Foundation
Managing Plan Vivo Certificates in the Plan Vivo Registry	FCF India
Preparing annual reports and coordinating validation and verification events	FCF India and FIT Climate Foundation
Securing certificate sales and other means of funding the project	FCF India
Assisting Project Participants to secure any legal or regulatory permissions required to carry out the project	FCF India and FIT Climate Foundation
Providing technical assistance and capacity building required for project participants to implement project interventions	FCF India and FIT Climate Foundation
Monitoring progress indicators, livelihood indicators and ecosystem indicators and providing ongoing support to project participants	FIT Climate Foundation and FCF India
Measurement, reporting and verification of carbon benefits	FCF India

Details of the Project Applicant (Project Developer and Coordinator)

The Project Applicant organization and Project Coordinator is Fair Climate Fund India.

The company is registered as private limited company as per the regulations of Government of India.

Long-term objectives of the organisation: As a social enterprise FCF will work on Carbon projects with various stakeholders to ensure that vulnerable communities have a direct and long-term socio-economic and environmental impact through the sale of carbon credits generated.

Brief history of projects and current projects: Involved in various projects with different stakeholders in varying capacities as an investor, carbon project developer providing technical skills and knowledge in the development of carbon projects across different countries, as well as brokering with private sector to ensure a fair pricing for the carbon so FCF India's Experience is Relevant.

Climate Resilient Assessment for rural villages

The climate audit was conducted to assess the vulnerability of each village towards the impact of climate change and identify the possible interventions for consideration to make the agriculture and livelihood system more resilient. The multiple sets of information were assessed for completing the climate audit that includes impact of climate change and resources/opportunities available to minimize risk and market needs and adaptability for the target group.

Clean Air and Healthy Soil

Clean Air and Healthy Soil is a unique soil carbon sequestration project which addresses the severe crop residue burning issue in North India in an environmentally sustainable and cost-effective manner. The project integrates Sustainable Agriculture Land Management (SALM) practices as a solution to stubble burning. The project ensures nutrient recycling, carbon sequestration, weedicide savings, improved yield, climate resilience of crops, and change in farmers' behaviour, which is the primary reason for burning. The adopted practices bring significant improvements to farmer livelihoods, such as improved air quality, and the entire rural ecosystem.

Climate Change study for Fairtrade Rice Producers in India

FCF is working on Fairtrade NAPP's project to develop a climate change strategy for Fairtrade Rice producers to help them adapt to climate change. The study intends to focus on quantifying emissions from current scenario and implementing strategies to reduce carbon emissions while recognising the devastating impacts of climate change and the necessity to develop a more sustainable way of production. The study is planned with the Fairtrade Certified Producer Organisations, who are growing rice in Jammu & Kashmir, Uttar Pradesh, and Uttarakhand in India.

Pan-India Program for Sustainable Agricultural Land Management

FCF India is developing a nation-wide Carbon financing project for farmers by partnering with the Private sector/NGOs/Autonomous bodies, disbursing them knowledge, and consolidating the agricultural land holdings to implement Sustainable Agricultural Land Management (SALM) practices. These activities will increase soil carbon sequestration through improved cropland management, and reduce GHG (CO₂, CH₄, N₂O) emissions by reduced crop residue burning, mulching, composting, growing green manure crops, using more organic fertilisers, reducing biomass burning and agroforestry

Friesland Campina assessment in dairy value-chain

Friesland Campina (FC, Netherlands) is working to design a NetZero strategy for the organization and intends to become carbon neutral by 2050. FC and FCF are working together to plan and execute the preliminary work for assessing emission reduction opportunities in the Dairy sector aligning with Fairtrade principles. The assessment is focused on designing of possible interventions and indication on quantum of impact going to be generated in future. This is providing perspective and directions for FC/FCF to design a successful carbon project separately or in various combinations like soil carbon sequestration, biogas, manure management etc. for Dairy farmers.

Carbon financing for shea farmers in collaboration with Global Shea Alliance (GSA)

FCF, GSA and CO2logic are working together to plan and execute the preliminary work for assessing new and innovative carbon financing opportunities in the Shea Value Chain. We are helping GSA to

finalize the mobilization structure of carbon financing towards shea farming and upliftment of socio-economic conditions of shea farmer community especially women farmers. Besides this, FCF India is helping GSA to develop carbon project separately or in various combinations like afforestation/reforestation, sustainable agriculture land management, energy efficiency system within shea processing, soil organic carbon for better yield and productivity.

Carbon Neutral Tea Value Chains in India with FLOCERT

Under FCF's parent organization ICCO conducted a study on carbon neutral value chains for tea produced in India that is consumed in Europe or the United States. The study was carried out in partnership with FLOCERT under different tea estates which are Fairtrade certified. The study also focused on developing carbon credit projects for tea estates worker communities.

Climate neutral coffee value chain in Ethiopia

FCF has calculated the carbon footprint of the coffee value chain in the coffee sourcing area Oromia. We have implemented CO₂ reduction measures, like cookstoves at household levels and supported the capacity building of the Partner Organizations on climate change, via de Climate Academy, together with Fairtrade Africa.

Study in Cotton Value Chain

FCF through its parent organization ICCO was engaged in a study on the life cycle GHG assessment of organic cotton value chain in India. The study was carried out in partnership with Accenture with a specific objective to create a report on GHG emission profile at each stage of the cotton value chain. Apart from estimation also identify potential GHG emission reduction opportunities at a high level. Cooperation with NFO's and SPO's like Fairtrade Finland, Fairtrade Africa and potentially other NFO's in Europe, like Fairtrade Netherlands

Fairtrade Finland is leading a fund application for the Finnish government including the development and implementation of the Fairtrade Carbon Standard within value chains of cocoa, coffee, flowers and vanilla. Aim is to do both mitigation and adaptation. It involves countries like in Ghana, Kenya, Ethiopia and Madagascar. This fund application is for 5 years. Private sector parties trading in these commodities is involved and co-finance this project, while FCF will support in the footprint calculation and carbon project development, registration and issuance of Fairtrade carbon credits.

Bird Bees & Business (in Burkina Faso)

The Birds, Bees & Business project combines the restoration of biodiversity, climate and business activities in the shea value chain in Burkina Faso. ICCO/ Fair Climate Fund and Bird Life Netherlands work together to create a rich landscape that provides food and a sustainable income to local communities, while nature can restore itself. Economy and ecology are linked in a unique way.

Carbon Financing Landscape in WASH Sector

FCF, in partnership with Aqua for All, conducted a study for analysing the carbon financing landscape for WASH sector. The study analysed the existing WASH projects that have successfully mobilized carbon finance and assessed potential cases that can also be eligible to access carbon finance in the future. The assignment also compares the various carbon standards and associated methodology available in the market and its applicability in different conditions. The study focused on various countries in Asia and Africa, out of which Burkina Faso and Ghana are also part of that.

Cookstove Project in Bangalore

This project reduces CO₂ emissions, harmful indoor smoke and deforestation through the introduction of efficient cookstoves in the Bengaluru region of India.

Details of the Implementation Partner

FIT Climate Foundation is the implementation partner of the project.

FIT Climate Foundation is formed by FCF India and responsible for managing the village-level groups for the planning and overall implementation of the Carbon Project on ground with the support of FCF India. The executive committee of the FIT Climate will be representative of the village executive groups. The village executive groups comprise of community-level institutions such as Self-Help Groups (SHGs), Water/Land Committees (WLCs), Farmer Producer Organizations (FPOs), and other locally formed farmer groups actively involved in project planning and implementation. They will be responsible for building the technical capacities of farmers and mobilising the communities.

They will be responsible to facilitate partnerships in agri-value chain to increase farmers' income as well. They will also be responsible in the implementation of fair benefit sharing to the communities.

2.3 Project Participants

Table 2.3: Project Participants (grouped by village, area, or region)

Project Participant	Participant Type*	Location of Residence	Typical Land Holding	Land and Natural Resource Use
Small and Marginal Farmers	Type 1	Birbhum and Dumka districts Project Villages	Less than or equal to 2 hectares marginal farmers (<1 hectare), with a proportion of small farmers holding approximately 2 hectares.	Agriculture and cultivable fallow land

* Type I = Project Participants that are resident within the Project Region; who manage and use land or natural resources within the Project Region for subsistence or small-scale production; and are not structurally dependent on year-round hired labour for their land or natural resource management activities; Type II = Project Participants that do not meet the Type 1 definition.

The proposed project shall be implemented in 12 blocks spread across two districts and two States (Birbhum District in West Bengal and Dumka District in Jharkhand) impacting 8,000 households approximately in a planned manner covering 4000 hectares throughout the project period. Table below depicts the project area which includes the two states, districts and the blocks in each district.

List of Districts & Blocks under Project Area

Country	State	District	Blocks	Name of Blocks	Households	Area in Ha
India	West Bengal	Birbhum	2	Rajnagar and Dubrajpur	3,000	1300
	Jharkhand	Dumka	9	Jama, Jarmundi, Masalia, Shikaripada, Kathikund, Ramgarh, Ranewar, Dumka, Saraiyahaat and Gopikandar	5,000	2700

	12		8000	4000
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Both Birbhum and Dumka are primarily tribal dominated districts with around 75% of the population being dependent on subsistence agriculture. In the project area under consideration, the proposed villages are dominated by the Santhal tribe who are marginal and small land holding farmers, with landholdings of less than or equal to 2 hectares. The Santhal tribe is the predominant tribal community in the Dumka district of Jharkhand, with Dumka serving as the administrative headquarters of the Santhal Pargana region⁶. A significant portion of the population in this district belongs to the Santhal community, making it a crucial center of Santhal culture and governance. Santhals in Dumka primarily reside in rural areas, often in well-organized settlements known as Santhal villages. These villages are typically located near forests, rivers, and agricultural fields, reflecting their deep connection to nature and traditional ways of living⁷.

High incidence of poverty and food insecurity is rampant in the region. The land under project consideration in both the districts is currently upland area where soil erosion is high and due to lack of any irrigation facilities, it has mostly been left barren.

The vulnerability of the population is amplified by changing climate conditions resulting in less and erratic rainfall, which impacts their food security. A large section of these households are sharecroppers as they have very limited ownership of the land and water resources. All these conditions leave them with no choice but to migrate to other places for work. As husbands migrate to the cities to find work, women farmers here face the increased burden of looking after their family, growing food, and generating income.

There will be no discrimination based on gender, age, ethnicity, religion or social status when selecting project participants; and to reduce potential for tensions or disputes within or between communities.

For this to ensure, periodic PRA exercises, Focus Group Discussions (FGDs), and community consultation meetings will be conducted as the project progresses and new participants are onboarded. Records of participation will be maintained through attendance sheets and minutes of meetings. These records will serve as evidence that no discrimination is practiced in project interventions based on gender, age, ethnicity, religion, or social status while selecting new participants. The women Livelihoods Committees or Women Self Help Groups are Common Interest groups taking members cutting across different social groups, economic status etc. where members come together for a common cause such as plantation, land treatment, vegetable cultivation, livestock etc. Preference is given to vulnerable households and have livelihood activities planned for all categories of households without any discrimination. The community themselves identify the vulnerable households through wealth ranking and include them in various groups and interventions. For Example, the landless households are engaged as labourers in other fields for various activities and livestock interventions like Goatery, Poultry etc. are also planned with them.

⁶ <https://ommcomnews.com/india-news/tribal-population-in-santhal-pargana-shrank-from-44-pc-to-28-pc-centre-tells-jharkhand-hc/>

⁷ <https://link.springer.com/content/pdf/10.1186/s40795-023-00669-1.pdf>

Project Boundary Map - Birbhum & Dumka

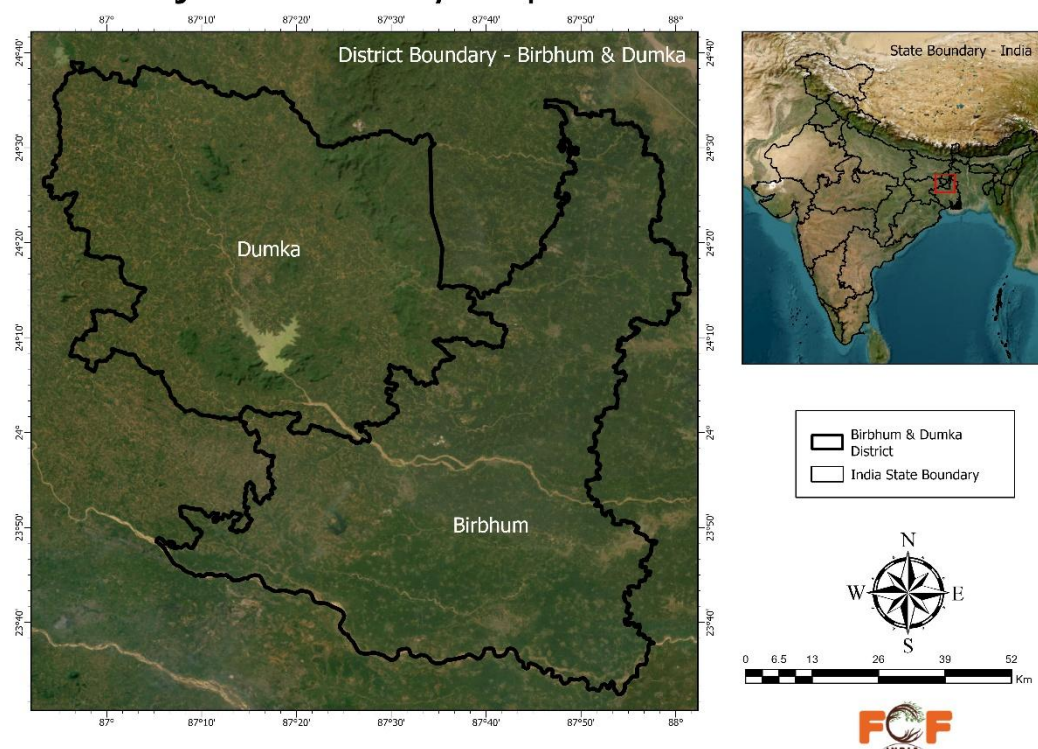


Figure 1: Project boundary map of the districts covering the project area

2.4 Participatory Design

The project intervention is built around the leadership of local communities, especially the women. Women Livelihoods Committees (WLCs) at the village level are the drivers of the project. Women from the project villages, especially the tribal women, constitute the WLCs. They have been oriented at the beginning of the project to enable them for better participation during the planning and implementation of the project.

Women community leaders have been identified among the WLCs together with Community Volunteers who helped in carrying out intensive ridge to valley Integrated Natural Resources Management (INRM) planning at the village level. The selection of the groups is carried out in consultation with local community representatives to ensure fairness and equal opportunity. They used various Participatory Rural Appraisal (PRA) tools and techniques such as wealth ranking, social mapping, vision building, livelihood, and watershed planning in the villages to make the plan inclusive and prioritize the needs of the marginalized communities based on gender, age, ethnicity, religion and social status. Priority was given to poorest of the poor families, single women, destitute, elderly, schedule caste and schedule tribe, minority groups etc. FCF India and FIT Climate staff facilitate the entire process together with the community leaders and volunteers to ensure that the concerns and aspirations of the marginalized communities are considered and addressed through the project interventions. A sample outcome of the Participatory Rural Appraisal (PRA) for Project Planning and Land Management in Saraidaha village of Shikaripada Block of Dumka District is added in Annex 4. In the first instance around 4 PRAs have been conducted and the same process and approach will be followed in the upcoming plantation areas as well. There are Farmers' Producer Organizations (FPO) at the block level to take care of the forward and backward linkages of livelihood activities such as

marketing of horticulture produces, Tasar and other related livelihood activities. Local youths are identified, upskilled, and hosted in the FPO as service providers or entrepreneurs who earn their livelihood by providing various services to the community for ongoing livelihood-related activities. These FPO's are groups of farmers who belong to the economically backward communities and have been economically and socially excluded for a very long time. Through interventions of this project, the aim is to build the capacities of the FPO's through various training and capacity building programs and link them to ongoing government schemes etc that will bring about a substantial impact economically as well as socially.

The project follows two distinct implementation strategies applicable across both project districts. First, the project includes existing or earlier-established plantations that were developed with support from MGNREGA prior to the project start date. For these plantation areas, the maintenance cost for a period of two years were financed through the carbon fund, with investments provided by project investors. During this period, necessary management practices such as the use of biofertilizers, bone meal, and irrigation (where required) will be undertaken. Thereafter, these plantations will continue to receive full support throughout the crediting period, including a regular monitoring schedule to ensure their long-term performance and sustainability.

Second, the project also supports the implementation of new plantation activities. For these areas, both the plantation establishment and the maintenance costs for two years will be fully financed by the Project Proponent. Under both implementation strategies, FCF India and FIT Climate will work closely with local communities and their institutions to ensure timely and quality implementation of maintenance and plantation activities, as applicable.

To reduce the potential for tensions or disputes within or between communities, the project follows a participatory approach, with regular stakeholder consultations, clear communication of project objectives and benefits. Grievance redress mechanisms are in place to address concerns in a timely and transparent manner; the procedure is further detailed down in the following section 3.17.

2.5 Stakeholder Consultation

2.5.1 Design Phase Consultations

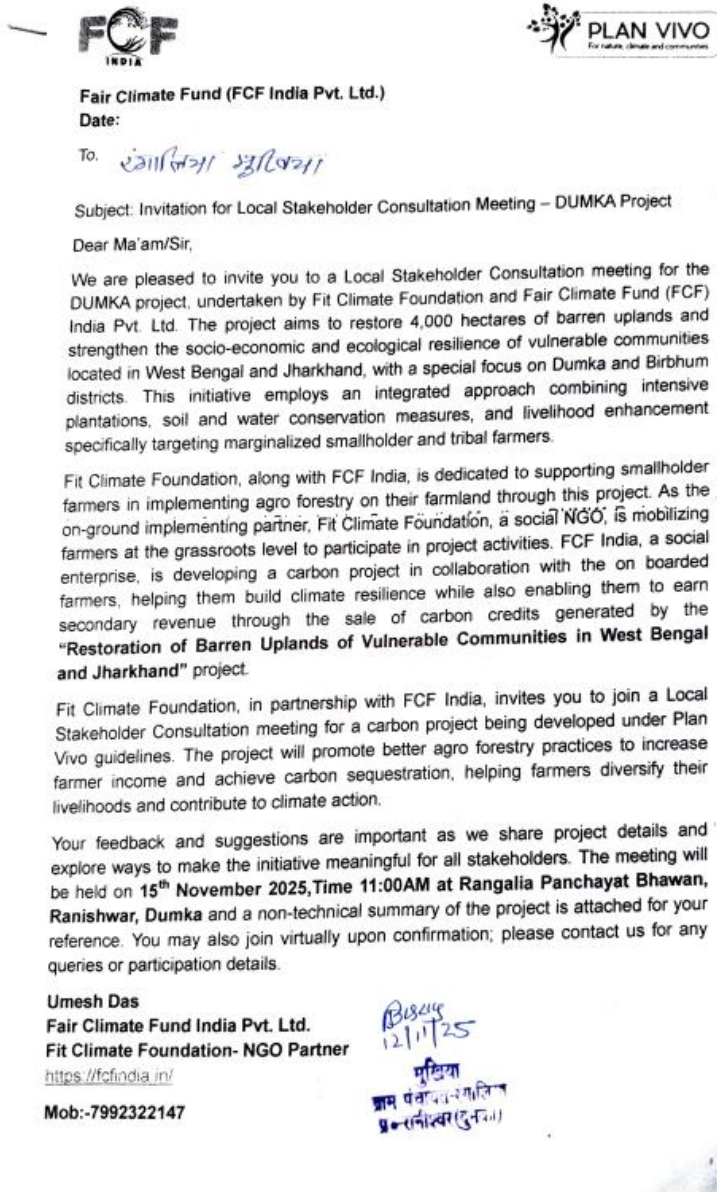
The community engagement is there from the beginning of the project, and the project has been carefully designed with participatory approach and integrating ideas of the participating communities through FPIC and conducting meetings and expert interviews to ensure that project activities will continue even after project life. Even before the project implementation begins, each village was consulted at length using Free, Prior and Informed Consent (FPIC) procedures and also through a series of consultations, focused group discussions, participatory rural appraisals (PRAs) and training of the community members.

Stakeholders, including community groups and local participants, were formally invited through official communication channels, including written invitation letters and formal mail. The invitations clearly explained the purpose and logic of the consultation meetings, the proposed project interventions, and the overall project design and implementation approach. These consultations provided stakeholders with an opportunity to engage directly with the project proponents, seek clarifications, and share their views on the project logic and anticipated outcomes.

The communities have been clearly appraised about the project design, implementation, monitoring, reporting and verification (MRV), cost, risks and engagement of all stakeholders along with their roles.

Engagement was undertaken in English, Hindi and Bengali (the local languages), to ensure full participation and development of transparent project process.

Sample snapshots of the invitation letters



The Project follows the FPIC protocols throughout its entire lifetime and it has, and it will document any lessons learned that can improve future actions. In the first instance around 30-35 FPIC has been conducted in the project region where all the measures were taken to explain the project plan and its outcomes to the beneficiaries. This can better guide the actions of the organization in future and diminish future risks and challenges.

The agreement will be made with the Project Participants i.e., the indigenous communities to get their consent to the project. A proper project-level grievance mechanism will be set through which grievances are managed. This will ensure broad community level confidence and support to the project. Project will ensure to disclose any financial or nonfinancial compensation provided to community members as part of the engagement process.

In this Project as important stakeholders, women are organized into SHGs, WLCs and FPOs and will be involved in preparing village-level micro-plans, work schedules, doing community-based review of activities and protecting and maintaining plantations and community structures.

By organizing the women members into these institutions and involving them in different activities as mentioned, there is a remarkable improvement in their leadership qualities and other skills such as planning for their resources, problem solving, cohesiveness, responsibility sharing, mutual help, collective action, economic and social empowerment etc. Thus, the compensation for their work is not always in monetary terms. Seeing their leadership skills and pro-action, they are also encouraged to take up the role of CRPs where they are provided with specialized skills and paid for their services either through the project or through the government on an assignment basis.

To further strengthen the rights to carbon there will be a signed agreement with the farmers to ensure the same. The community members will be engaged at all levels of the project implementation, from decision making, to monitoring of the project.

The table below presents the LSCs conducted in the project area, including the dates of consultation, participant details, and the overall feedback received.

Date	State	Block	Participants			Stakeholders	Overall Feedback on the Project by the stakeholders
			Male	Female	Total		
18 October 2023	Jharkhand	Jarmundi	5	18	23	Block Development Officer (BDO), Panchayat representatives, members of Self-Help Groups (SHGs) and Community Resource Persons (CRPs)	Participants shared that the project would help reduce air pollution, generate additional income, improve health and well-being, improve soil quality and groundwater levels, enhance local biodiversity and help address long-term climate change impacts. Sonajhuri (<i>Acacia auriculiformis</i>) was identified as the preferred species for income generation. Participants also suggested that provision for irrigation should be included in the project.
30th November 2023	West Bengal	Dubrajpur	13	45	58		
27th December 2023	West Bengal	Rajnagar	21	64	85		
15th November 2025	Jharkhand	Raneshwar	48	60	108		
28th November 2025	Jharkhand	Jarmundi	50	65	115		

						Some participants additionally expressed interest in Sheesham (<i>Dalbergia sissoo</i>), Gamhar (<i>Gmelina arborea</i>) and Guava.
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Feedback received during the consultations was generally positive. Participants highlighted that the project is expected to contribute to reduced air pollution, additional income generation, improved health and well-being, enhanced soil quality and groundwater levels, increased local biodiversity, and long-term climate change mitigation benefits. Sonajhuri (*Acacia auriculiformis*) was identified by stakeholders as the preferred species for income generation. In addition, participants suggested incorporating provisions for irrigation within the project design. Some stakeholders also expressed interest in alternative species such as Sheesham (*Dalbergia sissoo*), Gamhar (*Gmelina arborea*), and Guava.



Figure 2: Women involved in the preparation and planning of the resource maps of their Villages



Figure 3: Team facilitating discussion while preparation of Resource maps

2.5.2 Stakeholder Engagement Plan

The project recognizes the importance of continuous stakeholder engagement beyond the design phase to ensure the long-term success and sustainability of interventions. Engagement with various stakeholders will be maintained throughout the project period through structured interactions, capacity-building initiatives, and collaborative decision-making processes.

1. Women Collectives (Self Help Groups-SHG and Women Livelihoods Committee-WLC, Farmer Producer Organizations-FPOs)

The project intervention is built around the leadership of local communities, especially the women. Women Self Help Groups (SHGs)/ Women Livelihoods Committees (WLCs) at the village level who are the drivers of the project. Women from the project villages, especially the tribal women, constitute these groups. They have been oriented at the beginning of the project to enable them for better participation in the planning and implementation of the project.

In most cases, the SHGs are already there in the villages which are formed by State Rural Livelihoods Mission of the government. FIT Climate Foundation team will work with these SHGs only and build their capacities and leadership qualities through community mobilization, visioning exercises, training and exposure, facilitating participatory planning exercises through them, involving them in monitoring etc.

The engagement with these women's collectives will continue through ongoing training, participatory decision-making, and active involvement in project monitoring and livelihood development. Regular capacity-building sessions will be conducted to enhance their skills in agroforestry, climate-resilient agriculture, and financial management. The project will ensure that SHGs and WLCs remain central to planning by organizing quarterly visioning exercises and participatory planning meetings.

Women community leaders or CRPs have been identified from among the SHGs/WLCs together with Community Volunteers who helped in carrying out intensive ridge to valley integrated natural resources management (INRM) planning at the village level. They used various Participatory Rural Appraisal (PRA) tools and techniques such as wealth ranking, social mapping, vision building, livelihood, and watershed planning in the villages to make the plan inclusive and prioritize the needs of the marginalized communities based on gender, age, ethnicity, religion and social status. Priority

will be given to poorest of the poor families, single women, destitute, elderly, schedule caste and schedule tribe, minority groups etc. FIT Climate staff facilitated the entire process together with the community leaders and volunteers to ensure that the concerns and aspirations of the marginalized communities are considered and addressed through the project interventions. These community resource persons (CRPs) and volunteers will play a long-term role in tracking project implementation. They will be responsible for monitoring plantations and supporting new farmers in adopting best practices throughout the crediting period.

There will be farmers' producer organizations (FPO) at the block level to take care of the forward and backward linkages of livelihood activities such as marketing of horticulture produces, Tasar and other related livelihood activities. Local youths will be selected, trained, and engaged with the FPO as service providers or entrepreneurs, enabling them to earn a livelihood by offering various services to the community for ongoing livelihood initiatives. These FPO's are groups of farmers who belong to the economically backward communities and have been economically and socially excluded for a very long time. Through interventions of this project, the aim is to build the capacities of the FPO's through various training and capacity building programs and link them to ongoing government schemes etc that will bring about a substantial impact economically as well as socially. The project will continue linking FPOs with government schemes, input suppliers, and markets. FPOs will receive ongoing mentorship and exposure visits to enhance their business management skills, ensuring they can independently manage value chains beyond the project period.

2. Panchayati Raj Institutions (PRI) Representatives

The Panchayati Raj Institution (PRI) consists of three levels:

- Gram Panchayat at the village level
- Block Panchayat or Panchayat Samiti at the intermediate level
- Zilla Panchayat at the district level

Key Features of Panchayat Raj System:

- The Gram Sabha is a body consisting of all the people registered in the electoral rolls who belong to a village comprised within the area of the Panchayat at the village level. Gram Sabha is the smallest and the only permanent unit in the Panchayati Raj system. The powers and functions of Gram Sabha are fixed by state legislature according to the law on the subject.
- Seats are reserved for Scheduled Castes (SCs) and Scheduled Tribes (STs) and chairpersons of the Panchayats at all levels are reserved for SCs and STs in proportion to their population.
- One-third of the total number of seats are to be reserved for women. One-third of the seats reserved for SCs and STs, are also reserved for women. This policy extends to the office of the chairperson at all levels as well (Article 243D). The reserved seats may be allotted by rotation to different constituencies in Panchayat.
- There is a uniform policy with each term being five years. Fresh elections must be conducted before the expiry of the term. In the event of dissolution, elections compulsorily within six months (Article 243E).
- Panchayats have the responsibility to prepare plans for economic development and social justice with respect to the subjects as per the law put in place, which also extends to the various levels of Panchayat including the subjects as illustrated in the Eleventh Schedule (Article 243G).

Gram Panchayat consists of a village or a group of villages divided into smaller units called “Wards”. Each ward selects or elects a representative who is known as the Panch or ward member. The members of the Gram Sabha elect the ward members through a direct election. The Sarpanch or the president of the Gram Panchayat is elected by the ward members as per the State Act. The Sarpanch and the Panch are elected for a period of five years. Gram Panchayat is governed by the elected body and administration. The secretary is normally in charge of the administrative duties of Gram Panchayat.

The representatives of Panchayat will be consulted from the design phase itself to involve them in the planning process and to sensitize them on the development needs of the vulnerable communities as well as the ecological needs of the area. This will help them in prioritizing the needs of vulnerable communities and climate change components in the Gram Panchayat Development Plan during Gram Sabha. PRIs will continue to be engaged through structured consultations, training sessions, and integration of project interventions into local governance mechanisms. The project will facilitate annual meetings with Gram Panchayats to align project activities with the Gram Panchayat Development Plans (GDPs). Furthermore, they will be involved in monitoring project progress through joint field visits and community feedback sessions.

3. Different departments of the Government including Forest, Agriculture, Sericulture etc.

They will be consulted about providing technical skills and expertise in forestry, agriculture, sericulture, biodiversity, irrigation etc. throughout the implementation of the project. It may be through training/ on-site demonstrations/exposure visits etc.

The engagement with government departments will be strengthened through formal collaboration agreements, technical training programs, and joint research initiatives. Forestry and agriculture departments will be regularly involved in assessing soil health, monitoring tree growth, and providing expert guidance on improving agroforestry models.

2.6 Free, Prior and Informed Consent (FPIC)

2.6.1 FPIC Legislation

Table 2.6.1: National Legislation and International Standards on FPIC

Legislation/Standard	Relevance to Project	Compliance Measures
United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) ⁸	The proposed carbon project deals with indigenous communities of West Bengal and Jharkhand and hence the said declaration aligns with their universal right to self-determination. FPIC allows Indigenous Peoples to provide or withhold/withdraw consent, at any	The project ensures participation of the indigenous communities of the project area in each and every step starting from planning to implementation and monitoring. They are being informed about the project well in advance and their consent is sought for any authorization or commencement of activities. The participatory methods of planning being done at the village

⁸ https://www.un.org/development/desa/Indigenouspeoples/wp-content/uploads/sites/19/2018/11/UNDRIP_E_web.pdf

	point, regarding projects impacting their territories. FPIC allows Indigenous Peoples to engage in negotiations to shape the design, Implementation, monitoring, and evaluation of projects.	level helps collective decision making of the rights holders with their consent, which is without any coercion, expectations or timelines that are externally imposed.
The International Labour Organization Convention 169 (ILO 169) is a treaty that protects the rights of indigenous and tribal peoples ⁹ . It was adopted in 1989 and has been ratified by 23 countries. It is the only international law that recognizes the collective rights of these groups ¹⁰ .	Since the project participants are indigenous and tribal communities, this law is relevant to the project. Some of the main provisions of ILO 169 include¹¹: • The right to self-identification and consultation on matters affecting them. • The right to participate in decision-making and development processes. • The right to land, territories and natural resources. • The right to education, health, social security and cultural diversity.	The project ensures raising awareness about the conditions in which indigenous peoples live, the development challenges they face and their aspirations for the future through visioning exercises that provide the groundwork for project planning. The project facilitates the inclusion of representatives of indigenous peoples in its consultations and programming cycles. The project facilitates the capacity development for indigenous peoples to offset their vulnerabilities and increase their food and livelihood security The project also recognizes their rights to land, territories and natural resources and ensures the FPIC process and facilitates the signing of carbon waiver agreement with the landowners.
Convention on Biological Diversity (CBD) ¹² - The Convention on Biological Diversity (CBD) , known informally as the Biodiversity Convention , is a multilateral treaty. The Convention has three	Since the project is restoration of barren uplands in Birbhum and Dumka districts of West Bengal and Jharkhand together with soil and moisture conservation measures in the uplands owned by the indigenous	The project will ensure plantation of trees (horticulture/tasar host trees/ timber varieties) on barren uplands thus contributing for biodiversity conservation of the area. The project also includes land treatment to check erosion, soil-moisture conservation measures,

⁹ <https://www.ilo.org/publications/understanding-indigenous-and-tribal-peoples-convention#:~:text=espa%C3%B1ol%20fran%C3%A7ais%20%E0%A4%A8%E0%A5%87%E0%A4%AA%E0%A4%BE%E0%A4%B2%E0%A5%80-,Convention%20No.,joint%20efforts%20for%20its%20implementation.>

¹⁰ <https://www.culturalsurvival.org/news/after-30-years-only-23-countries-have-ratified-indigenous-and-tribal-peoples-convention-ilo>

¹¹ <https://pdpa.georgetown.edu/IndigenousPeoples/ILO169.html>

¹² <https://www.cbd.int/intro>

main goals: the conservation of biological diversity (or biodiversity); the sustainable use of its components; and the fair and equitable sharing of benefits arising from genetic resources.	and tribal communities, the CBD is relevant for the project.	creation of irrigation infrastructure- all of which will help in the sustainable use of the land resource. The project ensures equitable sharing of benefits arising from waiving off the carbon credits owned by the farmers.
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2.6.2 FPIC Process

The Free, Prior, and Informed Consent (FPIC) process exists since the beginning of the project to enable Indigenous Peoples and local communities with statutory or customary rights to land and resources in the initial project areas to collectively negotiate the conditions under which the project would be designed, implemented, monitored, and evaluated. This process provided communities with the opportunity to grant or withhold consent at key stages, ensuring their rights and interests were upheld.

Before the commencement of the project, Indigenous and local communities were engaged in a structured process to assess its potential impacts and benefits. This phase involved multiple rounds of village meetings, Focused Group Discussions (FGDs), and Participatory Rural Appraisals (PRAs) to provide detailed information about the project. To ensure full comprehension, information was shared in English, Hindi and Bengali (the local language) through oral presentations, visual materials, and printed banners. The environmental, social, and economic implications of the project, including potential risks and mitigation measures, were thoroughly discussed. Additionally, sufficient time was provided for communities to internally deliberate on the project before making any commitments.

To ensure the project aligned with community needs and priorities, Indigenous and local communities actively participated in the design phase. General assemblies, known as Village-Level Gram Sabhas, were conducted to discuss the project framework and gather community inputs. Stakeholder representation was ensured by involving local representatives, including elders, Self-Help Groups (SHGs), Community Resource Persons (CRPs), and marginalized community representatives, who voiced concerns and facilitated inclusive decision-making. Through participatory planning, community members contributed to key decisions on land use, project governance structures, benefit-sharing mechanisms, and long-term sustainability plans. Additionally, all community inputs were formally documented in meeting minutes and agreements, ensuring their active role in shaping the project.

Following the deliberation and negotiation phases, the FPIC process ensured that communities had the opportunity to formally grant or withhold consent for project implementation. This was achieved through consensus-based decision-making, where communities engaged in thorough discussions, sometimes over multiple weeks, before reaching a collective decision. Formal consent was documented through village-level resolutions and agreements, including signed attendance sheets and meeting records. Additionally, interested farmers signed carbon rights agreements to ensure a clear understanding of their rights and responsibilities in the project. To maintain transparency and accountability, community members actively participated in monitoring and evaluation through participatory tracking and reporting mechanisms.

Ensuring Transparency and Inclusivity

The FPIC process was designed to be transparent, inclusive, and equitable, ensuring that all affected stakeholders, particularly women and marginalized groups, had a voice in decision-making. This

structured approach enabled communities to thoroughly consider the proposed project, including its potential benefits and risks. It also facilitated their active engagement in the project design process, allowing them to contribute to key decisions on implementation and governance. Furthermore, the process ensured community participation in the project's implementation, with ongoing involvement in monitoring, evaluation, and long-term sustainability efforts.

The FPIC process in the initial project area lasted for more than three months, ensuring that communities had sufficient time to engage in discussions and reach an informed decision free from external pressure. By following this structured approach, the project ensured that Indigenous Peoples and local communities could collectively determine the conditions under which they participated, safeguarding their rights and long-term interests.

To further strengthen the rights to carbon there will be a signed agreement with the farmers to ensure the same. The community members will be engaged at all levels of the project implementation, from decision making, to monitoring of the project.

The Free, Prior, and Informed Consent (FPIC) process was conducted in the initial project area of 814.07 hectares, ensuring that Indigenous Peoples and local communities with statutory or customary rights to land and resources were able to make a collective decision regarding the project. The FPIC process followed a structured approach to enable communities to:

1. Consider the proposed project, including its potential benefits and risks.
2. Engage in the project design process, contributing to key decisions on implementation and governance.
3. Implement the project, ensuring active participation in monitoring, evaluation, and long-term sustainability.
4. Information Provided Prior to Decision-Making

Prior to seeking consent, the project team conducted multiple rounds of community meetings, focused group discussions (FGDs), and participatory rural appraisals (PRAs) in the initial project area. The following information was provided to community members in accessible language English, Hindi and Bengali (local language) through oral presentations, visual materials, and printed banners:

- The objectives of the project and its expected environmental and socio-economic impacts.
- The project's duration, implementation plan, and key activities.
- Land use implications, including any changes in farming or forestry practices.
- Financial aspects, such as costs, benefits, and revenue-sharing mechanisms.
- Roles and responsibilities of different stakeholders, including community members.
- Potential risks, mitigation strategies, and long-term commitments.
- Community rights regarding participation and benefit-sharing.
- The monitoring, reporting, and verification (MRV) process.

Additionally, communities were given sufficient time and opportunity to raise concerns and seek clarifications before making any decisions.

5. Decision-Making Process and Timeline Defined by Rights Holders

The decision-making process followed traditional community structures and governance mechanisms:

- Village-level Gram Sabhas (general assemblies) were conducted in each of the participating villages to discuss the project and its implications.
- The discussions were facilitated by Gram Panchayat and local leaders, ensuring inclusive participation.
- Community members engaged in internal discussions, sometimes over multiple weeks, to deliberate on the project.
- After thorough discussions, formal collective decision-making through consensus was conducted.
- Final FPIC consent was documented through signing of carbon rights agreements of interested farmers.

The FPIC process in the initial project area spanned for more than three months, allowing communities ample time to engage, consult among themselves, and reach a decision without external pressure.

6. Stakeholder Representatives Involved and Selection Process

The FPIC process involved stakeholder representatives chosen through community-established methods to ensure legitimacy and inclusivity:

- Self-Help Groups (SHGs): Women's groups played a key role in decision-making and nursery management.
- Community Resource Persons (CRPs): Acted as intermediaries to convey project details and monitor daily project related activities.
- Elders and Traditional Leaders: Provided insights based on customary land rights and governance as per traditional knowledge.
- Marginalized and Vulnerable Community Representatives: Ensured that the perspectives of all community groups were considered.

These representatives were either elected or selected based on their leadership roles and ability to communicate concerns effectively.

7. Measures to Ensure Involvement of Women and Marginalized Groups

Recognizing the importance of inclusivity, specific measures were taken to ensure that women and marginalized groups actively participated in the FPIC process.

These efforts ensured that the FPIC process was not only transparent but also equitable, allowing all affected stakeholders to have a say in the project's design and implementation.

2.6.3 Initial FPIC

The community engagement is there from the beginning of the project, and the project has been carefully designed with participatory approach and integrating ideas of the participating communities

through FPIC and conducting meetings and expert interviews to ensure that project activities will continue even after project life. Even before the project implementation begins, each village was consulted at length using Free, Prior and Informed Consent (FPIC) procedures and also through a series of consultations, focused group discussions, participatory rural appraisals (PRAs) and training of the community members. The communities have been clearly appraised about the project design, implementation, monitoring, reporting and verification (MRV), cost, risks and engagement of all stakeholders along with their roles. Engagement was undertaken in English, Hindi and Bengali (the local languages), to ensure full participation and development of transparent project process.

The Project follows the FPIC protocols throughout its entire lifetime, and it has, and it will document any lessons learned that can improve future actions. This can better guide the actions of the organization in future projects and diminish future risks and challenges.

The project team has conducted village-level meetings and focused discussions with participating farmers and community members to explain the project objectives, planned activities, roles and responsibilities, potential benefits and risks, implementation timelines, and the voluntary nature of participation in a local language (Hindi and Bengali). Adequate time was provided for community members to ask questions, seek clarifications and discuss the proposal internally before making any decision. Participatory Rural Appraisal (PRA) exercises were also carried out, and resource maps were prepared in consultation with local community institutions, including Women Livelihood Committees (WLCs), Farmer Producer Organisations (FPOs) and Self-Help Groups (SHGs) in the project area. Individual consent was obtained only after participants confirmed their willingness to participate in the project.

Evidence of the key decisions taken during the initial FPIC process has been documented and maintained in the form of signed meeting minutes and participant attendance lists from the village-level consultations. In addition, copies of the information shared with community members prior to decision-making, covering project objectives, activities, roles and responsibilities, potential benefits and risks, and implementation methods have been kept as part of the FPIC records to demonstrate that informed and voluntary consent was obtained before the initiation of project activities.

The agreement has been made with the Project Participants i.e., the indigenous communities to get their consent for the project. A proper project-level grievance mechanism has been set through which grievances are managed. This will ensure broad community level of confidence and support for the project. Project will ensure to disclose any financial or nonfinancial compensation provided to community members as part of the engagement process.

In this Project as important stakeholders, women are organized into SHGs, WLCs and FPOs and will be involved in preparing village-level micro-plans, work schedules, doing community-based review of activities and protecting and maintaining plantations and various conservation structures.

To further strengthen the rights to carbon there will be a signed agreement with the farmers to ensure the same. The community members will be engaged at all levels of the project implementation, from decision making, to monitoring of the project. For the detailed process and evidence, refer to section 2.6.2 and Annex 5.

3 Project Design

Baselines

3.1 Baseline Scenario

In the absence of the project intervention, the uplands would remain fallow and soil erosion and deterioration of ground water table would continue to become worse¹³. The soil health and hydrology of the medium and lowland would also continue to deteriorate¹⁴. In the absence of a sustainable source of income, the people in the area would continue to migrate to other cities and states, making them and their families even more vulnerable.

Both Birbhum and Dumka, where the project is being implemented are primarily tribal dominated districts with around 75% of the population being dependent on subsistence agriculture¹⁵. In the project area under consideration, the proposed villages are dominated by the Santhal tribe who are mostly small holders or marginal farmers having land holding of less than or equal to 2hectare ¹⁶17. High incidence of poverty and food insecurity is rampant in the region¹⁸. The land under project consideration in both the districts is currently upland area where soil erosion is high and due to lack of any irrigation facilities, it has mostly been left barren.

The vulnerability of the population is amplified by changing climate conditions resulting in less and erratic rainfall, which impacts their food security. A large section of these households are sharecroppers as they have very limited ownership of the land and water resources. All these conditions leave them with no choice but to migrate to other places for work. As husbands migrate to the cities to find work, women farmers here face the increased burden of looking after their family, growing food, and generating income.

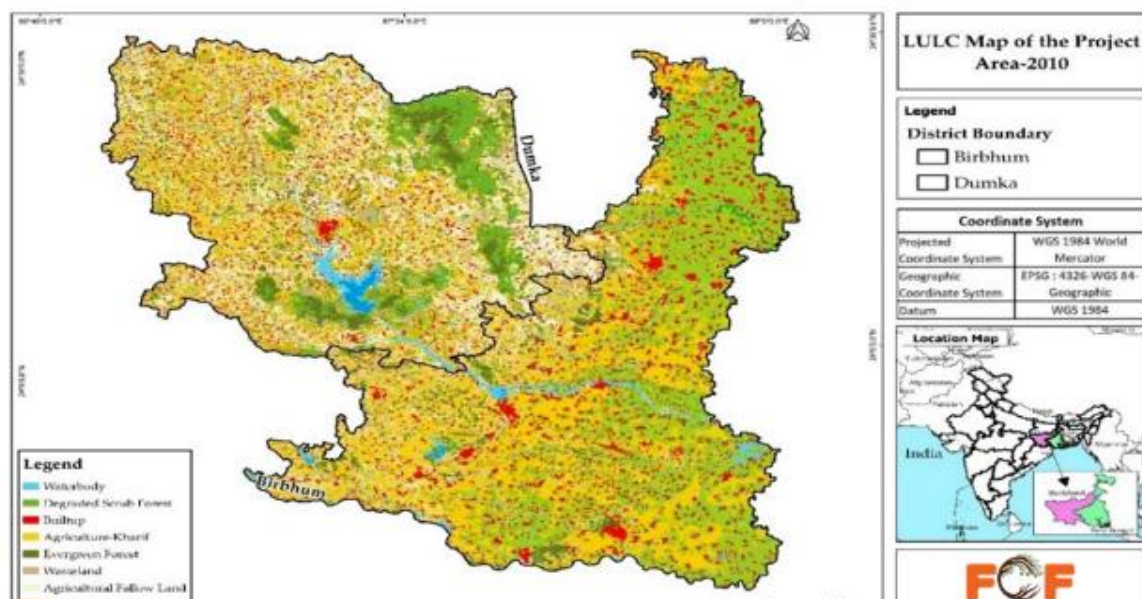


Figure 4: LULC analysis of the project area for 2010

¹³https://www.researchgate.net/publication/365707758_Assessment_of_Intensity_and_Susceptibility_of_Gully_Erosion_through_Multiple_Discriminate_Factors_Analysis_using_Geospatial_Techniques_in_Birbhum_District_of_Rarh_Region_of_West_Bengal

¹⁴ <https://www.scielo.br/j/sn/a/qYnMg4z7FSmgYDTsSMwxtsJ/?format=html&lang=en>

¹⁵ https://wbfpib.wb.gov.in/assets/user_uploads/directorate_fpi/993867997_1484834343.pdf

¹⁶ <https://birbhum.gov.in/agriculture/>

¹⁷ <https://censusindia.gov.in/nada/index.php/catalog/27924>

¹⁸ <https://pmc.ncbi.nlm.nih.gov/articles/PMC9668713/>

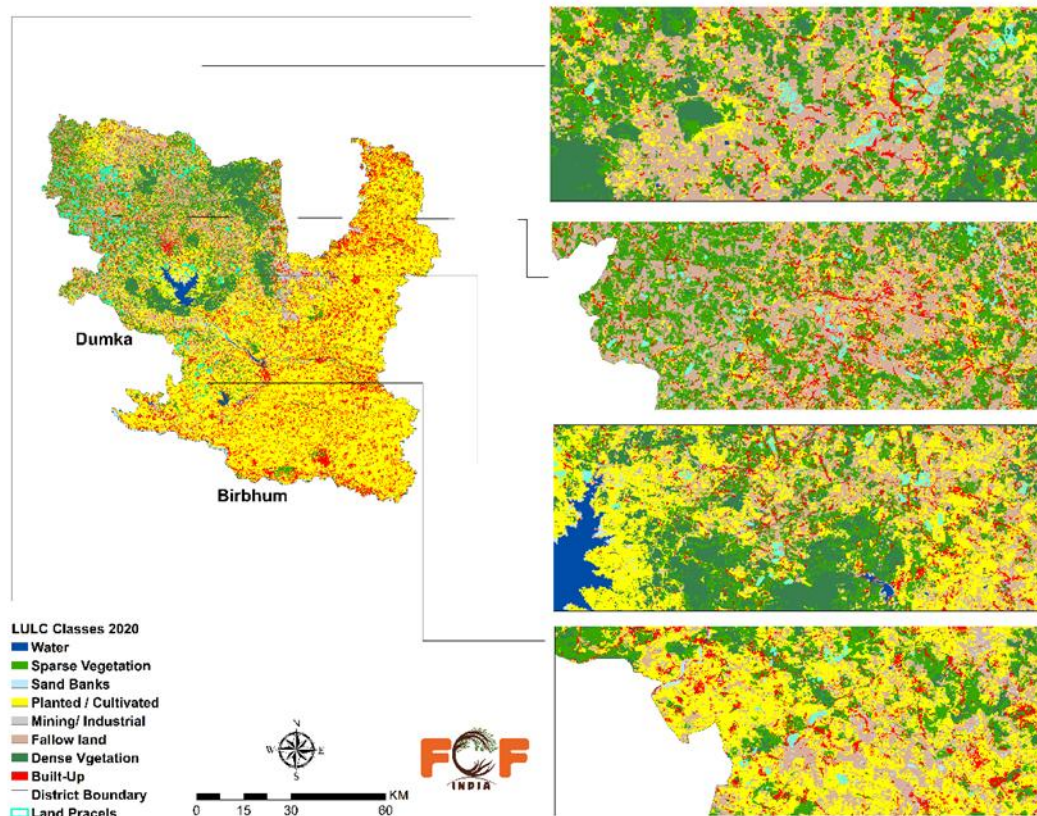


Figure 5: LULC analysis of the project area for 2020

In the absence of the project intervention, the most likely land use scenario in the project area would continue to be characterized by fallow and degraded uplands with minimal or no active land management. Due to limited irrigation facilities, poor soil fertility, and lack of investment, these lands are expected to remain underutilized, with continued soil erosion, declining soil organic matter, and reduced water retention capacity. Agricultural activities would largely remain restricted to rainfed, single-season cultivation, with no significant shift toward sustainable land management or agroforestry practices. The demonstration and assessment of the additionality of the project is made in accordance with the applied methodology (PM001) following the steps of the “Combined tool to identify the baseline scenario and demonstrate additionally in PLAN VIVO project activities” (Version 01). Refer to annex 7 for the steps included in the identification and establishment of baseline scenario. The baseline scenario will be reassessed periodically according to the indicators as per the Monitoring framework. The detailed monitoring plan, including timeline and indicators, is provided in Sections 4.5, 4.6, 4.7, and 4.8

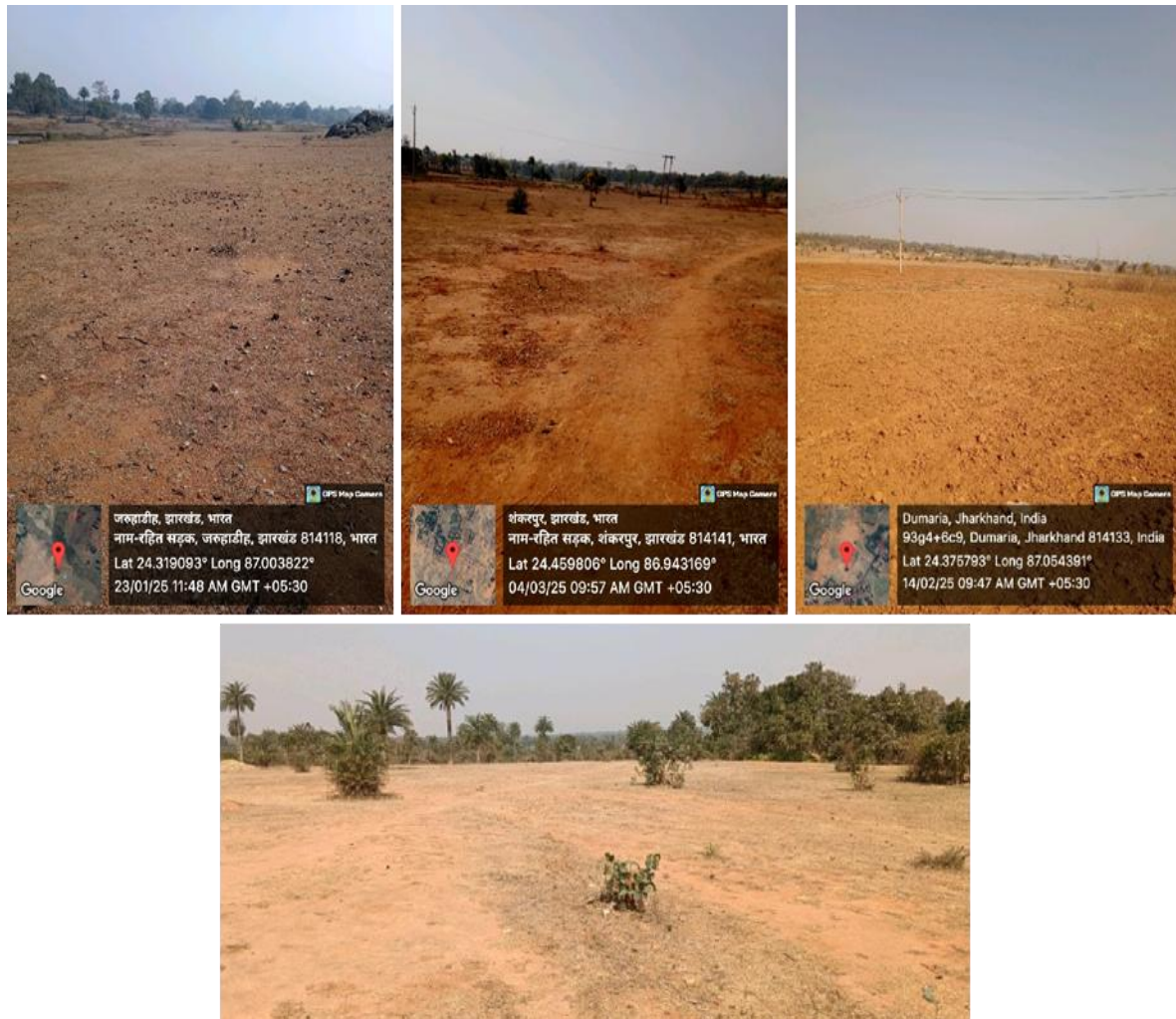


Figure 6: Baseline land condition in the project region



Figure 7: Imagery photographs to show the condition of the land parcels before and after the project implementation stage

3.2 Carbon Baseline

Table 3.2 Total net-greenhouse gas emissions under the baseline scenario

Year	Baseline emissions (t CO ₂ e)
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	0

9	0
10	0
11	0
12	0
13	0
14	0
15	0
16	0
17	0
18	0
19	0
20	0
21	0
22	0
23	0
24	0
25	0
26	0
27	0
28	0
29	0
30	0

To estimate the baseline emissions, the module PU001, “Estimation of Baseline and Project GHG removals by Carbon pools in Plan Vivo projects, Version 1.0 was used. Refer to Annex 6 for the detailed calculations.

3.3 Livelihood Baseline

3.3.1 Initial Livelihood Status

Most of the population in the proposed project area belong to marginalised tribal and scheduled caste social groups -- both groups dependent on agriculture for their livelihoods. The proposed villages are dominated by the Santhal tribes, an integrated part of the central Indian tribal stretch locally called as Adivasis. The vulnerability of the population is amplified by changing climate conditions resulting in less and erratic rainfall, which impacts on their food security. A large section of these households are sharecroppers as they have very limited ownership of the land and water resources. As male members of the family migrate to the cities to find work, women farmers here face the increased burden of looking after their family, growing food, and generating income.

People are dependent on monsoon rain for farming, there is large scale degradation of natural resources, little occupational diversification and high seasonal unemployment resulting in migration to urban areas.

Based on the socio-economic study where atleast 30% of the Households belonging to the project area were surveyed and in the survey 83% respondents reported that the women from the HHs are part of some Self-Help Group (SHG). 67% of the respondents mentioned that they were doing cultivation in only Kharif season however additional 15% of them mentioned that they were performing agriculture activities in both Kharif and Rabi. This implies total 82% of respondents’ involvement in agriculture. INR 6,482 was average income per HH from agriculture and INR 3,949 was

average cost of agriculture per HH. 92% of the respondents reported Wage labour in agriculture and non-agriculture as the prominent livelihood source.

Assessment of earning members data indicated that there were more opportunities for Agriculture labour as ~74% people were involved in Agriculture as labours, 9% were involved as labours in Brick work and 17% reported engaging in both-Agri and Non-Agri (mainly brick work). While Agriculture wage labour resulted in average income per person of around INR 13,349/- per year, Brick work offered higher income opportunity with average per person income of around INR 33,514/- per year. This was largely due to the higher number of days of work availability for these people. INR 197 per day was the average wage rate that was reported by the majority for both males and females. Overall, INR 30,047/- per year was reported as the average per HH income through wage labour.

40% of the Surveyed respondents reported local Migration of family members mainly to Burdwan, a neighbouring city for Agriculture work and Birbhum for brick & mason. Migration offered higher wage rate at an average of INR 218/- with maximum daily wage reported as INR 250/.

As per panchayat data, 30% of the total population depends on Forest product. while the household baseline survey shows about 20% dependency among both women and men. The survey also indicates that women are relatively more dependent on forest resources and have a higher contribution in their collection and use. In a gist there is high dependency on agriculture for self-sufficiency and food nutrition security but due to lack of resources they can use their land for only one season for growing crops. They are dependent on daily wages or even resort to migration for cash income.

These indicators will be reassessed every 10 years throughout the project period or as per the timeline described in the Monitoring section 4.8.

3.3.2 Expected Livelihood Change

In the absence of the proposed project interventions, the livelihood challenges faced by the project participants are expected to persist or worsen due to multiple socio-economic and environmental constraints. Given the high dependency on rainfed agriculture and the increasing unpredictability of monsoon patterns, crop productivity will likely remain stagnant or decline further. With limited access to irrigation, soil degradation, and a lack of diversified livelihood options, most farmers will continue cultivating only *Macrotyloma uniflorum* or left it barren, leading to prolonged periods of food insecurity and economic distress.

The reliance on wage labor, particularly in agriculture and brickmaking¹⁹, will continue to be a key income source for many households. However, due to the seasonal nature of these opportunities, employment will remain uncertain, compelling a significant proportion of the workforce to migrate to main cities like Burdwan and Birbhum in search of work, leaving their families vulnerable²⁰. While migration may offer higher wages than local employment, it also brings social and economic costs, such as family separation, lack of access to basic services, and poor working conditions. Women, who already bear the dual responsibility of managing households and farming, may experience an increased burden as male members migrate for work.

The dependence on forest-based livelihoods is also expected to continue, but without proper conservation and sustainable harvesting practices, the availability of forest products may decline, further reducing household incomes. The current lack of value addition and market linkages means

¹⁹ <https://researchonline.lse.ac.uk/id/eprint/49031/>

²⁰ https://old.rrjournals.com/wp-content/uploads/2019/02/1799-1802_RRIJM190402403.pdf

that communities will continue to earn meagre incomes from the sale of non-timber forest products and agricultural produce.

Overall, under the business-as-usual scenario, livelihood improvements will remain minimal, and economic vulnerability will persist. The lack of interventions to enhance agricultural productivity, soil conservation, and livelihood diversification will limit income growth, forcing many families to rely on low-paying, labor-intensive work or distress migration. The community's exposure to climate risks will also remain unaddressed, further exacerbating their already fragile socio-economic condition.

3.4 Ecosystem Baseline

3.4.1 Initial Ecological Conditions

The proposed districts of West Bengal and Jharkhand are the poorest districts of India. The government has recognized it as an aspirational district as it is characterized by particularly poor socio-economic indicators. The area is featured by hilly, undulating terrain, soils are rich in iron and aluminium and while they are one of the best natural materials to be used in bricks, they are acidic and cannot retain moisture²¹. This is the natural state of the soil in the region, and it is not due to any anthropogenic interaction. The region has degraded forests²², moderate rains, and a high concentration of people belonging to Schedule Tribe communities²³. The area represents an endemic poverty zone with over 80% households earning their livelihoods from subsistence farming and collection Of NTFPS from forests²⁴.

Birbhum and Dumka are adjoining districts of two adjoining states West Bengal and Jharkhand. They have been majorly inhabited by the Santhali tribe for centuries now.

Jharkhand: The state shares a border with Chhattisgarh State and Uttar Pradesh State in the west, West Bengal State in the east, Bihar State in the north, and Odisha State in the south. Most areas of the state are hilly and undulating terrains which come under the Chota Nagpur Plateau, the west and central parts are highly mountainous and gradually lower in the east, south, and north. The river Ganges flows through the west to the south part of the state, and other major rivers include Son, Barakar, North Koel, South Koel, Baitarni, Subarnarekha, and Damodar. About 49 % of the geographical area is agricultural land and around 30 % is under forest cover²⁵. Precipitation of this state varies from 1000 mm in the west-central part to 1500 mm in the southwest, mainly bringing by the southeast monsoon during mid-June to October of each year²⁶.

Dumka district in Jharkhand is part of Santhal Pargana Commissioner and is located in the northeastern part of the state. Total geographical area of the district is 3761 sq. km²⁷. Topographically the district is an upland tract with a hilly backbone running from north to south. A narrow but long strip of alluvial soil which is between the Ganga and Rajmahal hills, flanks the northeast side. There

²¹ <https://www.jetir.org/papers/JETIR1808324.pdf>

²² <https://www.scielo.br/j/sn/a/qYnMg4z7FSmgYDTsSMwxtsJ/?format=pdf&lang=en>

²³ <https://www.censusindia.co.in/district/birbhum-district-west-bengal-334>

²⁴ https://www.researchgate.net/publication/397341323_NTFPs_AND_THEIR_CONTRIBUTION_TO_LIVELIHOOD_SECURITY_AND_INCOME_INEQUALITY_MITIGATION_AMONG_LANDLESS_RURAL_AND_TRIBALS_OF_JHARKHAND_World_Journal_of_Pharmaceutical_Research_Corresponding_Author

²⁵ https://www.researchgate.net/publication/233996702_Land_Use_and_Land_Cover_Analysis_of_Jharkhand_Using_Satellite_Remote_Sensing

²⁶ https://www.researchgate.net/publication/369468305_Landform_classification_and_geomorphological_mapping_of_the_Chota_Nagpur_Plateau_India

²⁷ <https://dumka.nic.in/>

are several hill ranges like Rajmahal hill, Ramgarh hill, Lagwa hills with several small hillocks. The average elevation of the hill ranges between 150 to 300 metres. Geologically the area has basaltic trap and sedimentary beds. Quartz and gneisses are found in some places²⁸. Major rivers draining the district are Ajay, Mor, Barakar, Brahmani etc. Owing to its position near West Bengal and hilly landscape of the region climatic condition is slightly different from the rest of the state. The district receives an annual rainfall of 1500 mm²⁹ and most of the rainfall occurs during the rainy season. During winter season the temperature varies between 16 to 21 °C and during summer season it varies between 22 to 32 degrees Centigrade³⁰.

Dumka is part of the “Damin e-Koh” forest series that starts from Sahibganj, continuing through Godda and Pakur divisions and ending in Dumka. Forests of the division are spread over the northern part of the Santhal Pargana plateau and forests lie mainly on its undulating slopes. The topography is hilly with occasional tracts of flat plateau and valleys. The terrain is extremely varied and is spotted with several prominent hills³¹. Dumka is situated in an idyllic surrounding of hill ranges, rivers and forests. The District of Dumka is an upland tract with a hilly backbone running from North to South. Ramgarh Hills lies in the Southeast of Dumka, Lagwa Hills near Nonihat, adds a fascinating charm to the beauty of the district and gives satisfaction of rare scenic beauty to those who toil hard to scale the heights of the mountain ranges³².

Forest cover of Dumka is around 15% of the total geographic area of the district. Sal trees dominate the natural forest along with a good presence of Mahua, Palash, Khajur and other species, while Kathikund has significant area under bamboo forests³³.

Fauna in Dumka Forest Division includes -mammals like jackals, wild hare, Nilgai etc and many species of birds and reptiles. Dumka division also falls in the traditional migration path of elephants and winter birds³⁴.

Due to the good presence of Sal trees, Dumka Forest Division along with District administration started a program where self-help groups of women were given the training and facility of making Sal leaf plate, popularly known as “dona”. Collection of fallen sal leaves has thus emerged as a major source of extra income to these households³⁵.

West Bengal has 4692 sq.km. of forests under protected area network which is 39.50% of the State’s total forest area and 5.28% of the total geographical area. From the famous Royal Bengal tiger that stalks its prey with legendary cunningness in the Gangetic delta of famous Sundarbans, to the one-horned Indian Rhinoceros grazing in the Terai grassland, the leopards lurking in the foothills of the Himalayas and Red Pandas resting in bamboo groves of Himalayas. The forest of this state has a rich assemblage of diverse habitats and vegetation designated with the help of eight different forest types.

²⁸ <https://link.springer.com/article/10.1007/s12594-014-0110-9?utm>

²⁹ https://cgwb.gov.in/old_website/District_Profile/Jharkhand/Dumka.pdf

³⁰ https://www.sameti.org/Soil_Inventory/Dumka_Soil_Analysis.pdf

³¹ https://forest.jharkhand.gov.in/know-your-division_dumka.aspx

³² https://forest.jharkhand.gov.in/know-your-division_dumka.aspx#:~:text=Located%20in%20the%20North%20Eastern,and%20places%20of%20religious%20tourism.

³³ Department of Forest, Environment & Climate Change, Government of Jharkhand. (2025, July 25). About Dumka Forest Division. Retrieved September 2, 2025, from https://forest.jharkhand.gov.in/know-your-division_dumka.aspx

³⁴ https://forest.jharkhand.gov.in/know-your-division_dumka.aspx

³⁵ https://forest.jharkhand.gov.in/know-your-division_dumka.aspx

The diverse fauna and flora of West Bengal possess the combined characteristics of the Himalayan, sub-Himalayan, and Gangetic plain³⁶.

Diversity is further reflected in different types of ecosystems available here like mountain ecosystem of the north, forest ecosystem extending over the major part of the state, freshwater ecosystem, semiarid ecosystem in the western part, mangrove ecosystem in the south and coastal marine ecosystem along the shoreline. Birbhum district in West Bengal is bounded on the north and west by the Santal Parganas of Jharkhand state, on the east by the districts of Murshidabad and Burdwan; and on the south by Burdwan, from which it is separated by the Ajoy river³⁷.

Lateritic soil of Birbhum district made a different topography which is known as “khoai region.” Another important topography is flood plain. Birbhum is well drained by several rivers and rivulets running in nearly every case from west to east with a slight southerly inclination. Birbhum is under the semiarid ecosystem region³⁸. The district can be divided into four landscape ecological zones (LCZ), namely, Plateau (Buried Pediment) ecosystem with Lateritic landscape, Alluvial Plain ecosystems, Aquatic and Terrestrial ecosystems, and Forest ecosystem³⁹.

The flora of Birbhum: The eastern portion of the district is a continuation of the rice plain of West Bengal, and the vegetation is characterized by rice fields. In Bengal generally, species of *Aponogeton* (Floating Lace Plant), *Utricularia* (Bladderwort), *Drosera* (Sundew), *Dopatrium* (Horsefly eye), *Illysanthes* (Pimpernel), *Hydrolea* (Fiddleleaf), *Sphenoclea* (Gooseweed) and similar aquatic or Palustrine genera being abundant. In the drier undulating country to the west the characteristic shrubs and herbs include species of *Wendlandia* (Tilai, Family- Rubiaceae), *Evolvulus* (Morning-glory), *Stipa* (Needle grass), *Tragus* (Burr grass), *Perotis* (Indian comet grass), *Spermacoce* (False button weed), *Zizyphus* (Jujube), *Capparis* (Caper bush) and other similar plants affecting a laterite soil. Trees like mango, palm, bamboo are frequently found. Other abundant species are jack (*Artocarpus heterophyllus*), arjun (*Terminalia arjuna*), sal (*Shorea robusta*), piar (*Pterocarpus Marsupium*), dhau (*Anogeissus latifolia*), kend (*Diospyrus melanoxylon*) and mahua (*Madhuca longifolia*)⁴⁰.

This baseline data will be reassessed every 10 years throughout the project period or as per the timeline described in the Monitoring section 4.8.

Photos below: the terrain and soil erosion in the region

³⁶ https://www.researchgate.net/publication/353261830_FOREST_COVERS_OF_WEST_BENGAL_A_DISTRICT-WISE_REVIEW

³⁷ https://birbhum.gov.in/geography/?utm_source=chatgpt.com

³⁸ <https://www.researchgate.net/publication/280932970>

³⁹ <https://www.ngji.in/index.php/ngji/article/view/5>

⁴⁰ <https://europub.co.uk/articles/phytosociological-study-of-plant-species-in-three-tropical-dry-deciduous-forests-of-birbhum-district-west-bengal-india-A-38577>



Figure 8: General terrain pattern of the land in the project regions



Figure 9: Condition of soil erosion in the project region

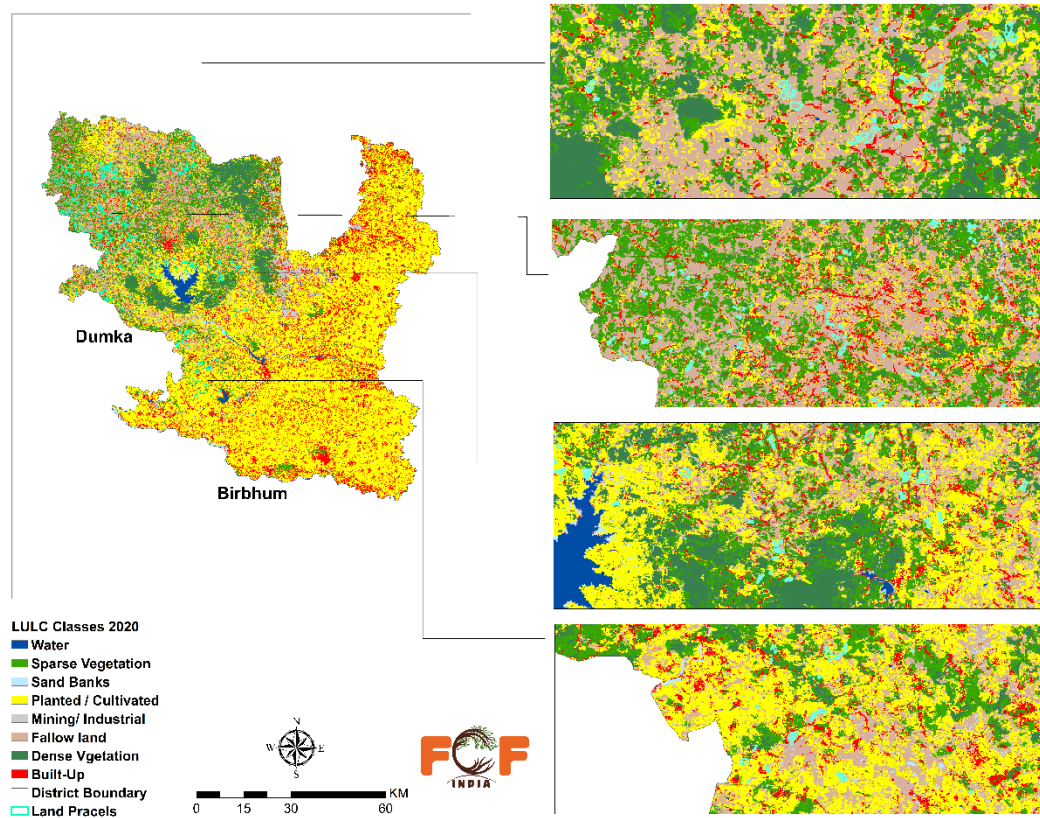


Figure 10: LULC analysis of the project area for 2020

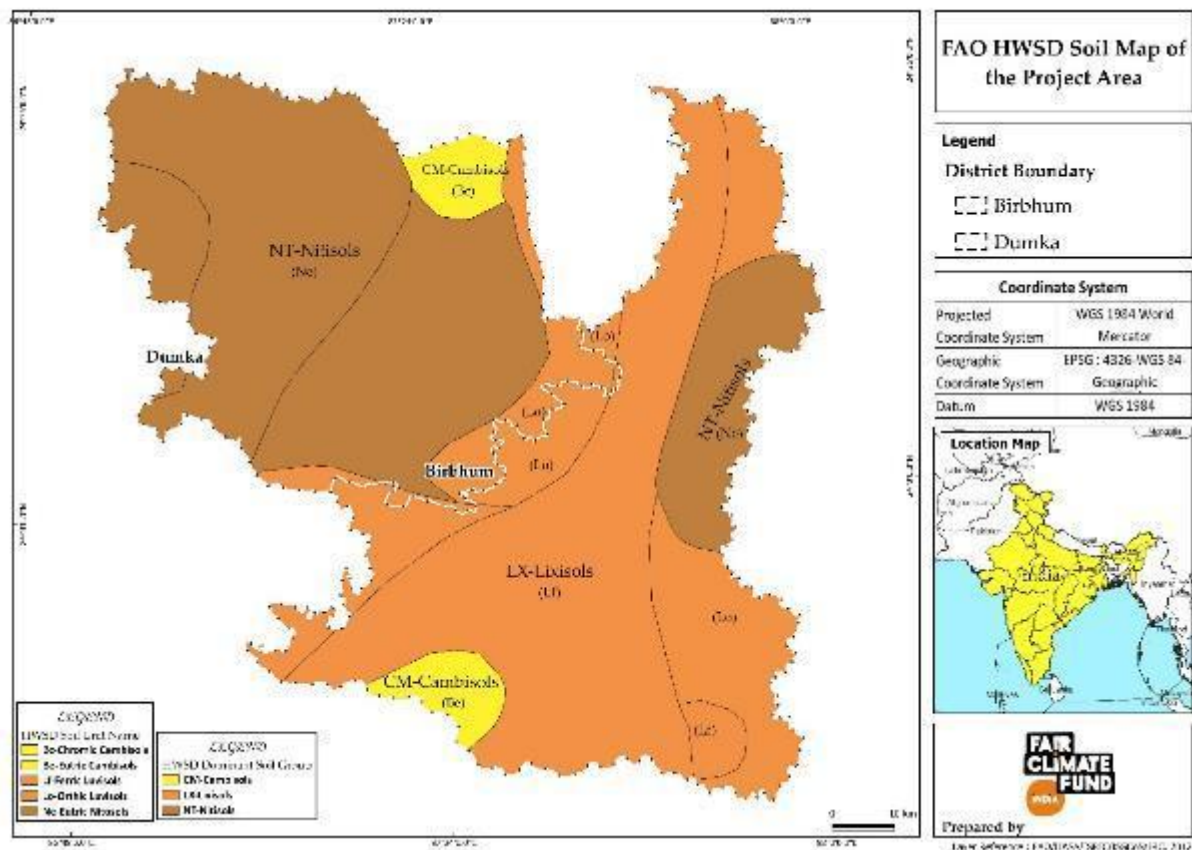


Figure 11: Soil Map of the project area

Expected Ecosystem Change

In the absence of the proposed project interventions, the ecological conditions in the region are expected to deteriorate further due to the combined impact of climate change, resource extraction, and unsustainable land-use practices.

Soil Degradation and Erosion

The naturally acidic and moisture-deficient soils of the region, rich in iron and aluminum, are already unsuitable for intensive agriculture. Without soil conservation measures, the land will continue to experience severe erosion, particularly in the undulating terrain of Dumka and Birbhum. The lack of vegetation cover, exacerbated by overgrazing and deforestation, will lead to further loss of topsoil, reducing fertility and making agricultural lands increasingly unproductive. As a result, soil moisture retention will decline, aggravating the impacts of erratic rainfall patterns and further limiting crop growth.

Water Scarcity and Reduced Groundwater Recharge

Rainfall patterns in the region are already unpredictable⁴¹, with monsoonal precipitation concentrated within a short period. Without interventions such as soil-moisture conservation and afforestation, water runoff will increase, reducing groundwater recharge and leading to prolonged dry spells. The absence of vegetation will further diminish infiltration rates, exacerbate seasonal water scarcity and increase the risk of droughts.

⁴¹ <https://link.springer.com/article/10.1007/s12665-016-5297-y>

Increased Land Degradation and Expansion of Barren Lands

The combination of soil erosion, deforestation, and unsustainable land-use practices will likely lead to the expansion of barren lands, particularly in upland regions. The lateritic landscapes of Birbhum, already prone to degradation, will witness further desertification, making land restoration increasingly difficult in the future. The spread of degraded lands will further limit agricultural potential, forcing communities to rely more heavily on wage labor and migration for survival⁴².

Impact on Agricultural Productivity

Given the limited availability of irrigation facilities and declining soil health, agricultural productivity in the region will stagnate or decrease over time. Farmers will continue to rely on rainfed agriculture, primarily growing crops during the Kharif season, with little scope for Rabi cultivation. The persistent decline in soil fertility, combined with erratic rainfall and lack of access to inputs, will lead to reduced crop yields and lower household incomes⁴³.

Long-Term Climate Vulnerability

Without interventions to restore degraded landscapes and improve ecosystem resilience, the region will become increasingly vulnerable to climate change impacts. Rising temperatures, changing precipitation patterns, and extreme weather events such as droughts and heavy rainfall will further threaten agricultural production and water availability. The absence of climate adaptation measures will leave communities with limited options to cope with these changes, increasing their vulnerability to poverty and food insecurity^{44 45}.

Theory of Change

3.5 Project Logic

Table 3.5 Project Logic

Aim		
The project aims to restore the ecosystem health and improve the livelihood opportunities, resilience and food security of rural communities through adoption of more productive and sustainable resource management practices that are technically feasible and socio-economically viable.		
	Description	Assumptions/Risks
Outcomes		
Carbon Benefit	Adoption of an integrated ecosystems approach for natural resource management in Dumka and Birbhum districts of Jharkhand and West Bengal respectively generating local, national and global benefits including restoration of degraded land, carbon sequestration, climate change mitigation and	Assumption- Strong commitment in the states for climate action Assumption- Resource available at the Gram Panchayat level that may be

⁴² <https://link.springer.com/article/10.1007/s12040-012-0243-1>

⁴³ <https://www.extensionjournal.com/uploads/archives/8-3-30-369.pdf>

⁴⁴ <https://arccarticles.s3.amazonaws.com/OnlinePublish/Final-article-attache-mnt-with-doi-A-6449-6089603e9087340b9bdcbbb1.pdf>

⁴⁵ https://link.springer.com/content/pdf/10.1007/s43621-025-01711-x.pdf?utm_source=mendeley&getft_integrator=mendeley

	adaptation, agro-biodiversity conservation and sustainable use, and improved agricultural practices, leading to enhanced resilience and income of rural communities. Expected GHG benefit after 20 %Buffer (20% Mortality) The project also includes harvesting of <i>Acacia auriculiformis</i> and <i>Tectona grandis</i> which will be replanted in the same year to maintain the committed in GHG benefits from the project. Total tCO₂e- 1,147,115 Annual Average tCO₂e- 38,237 Average per year per hectare tCO₂e- 9.56 Average per year per hectare tC- 2.60	used for climate resilient actions. Risk: Low Survival of Trees Due to Mortality- There is a risk that a proportion of planted trees may not survive due to factors such as poor-quality saplings, inadequate aftercare, pest/disease incidence, or extreme weather events. Assumption: Any mortality identified during monitoring will be promptly addressed through scheduled replanting activities. Risk: Participant Drop-Off- There is a risk that some participants may discontinue their involvement in the project due to migration, shifting livelihood priorities, or lack of sustained interest. Assumption: The project assumes a low participant drop-off rate based on strong community engagement, regular follow-up by field staff, and continuous capacity-building efforts.
Livelihood Benefit	The farmers will benefit from consumption and selling of mangoes in the short term. Farmers adopting Arjuna plantation will have livelihood opportunity through sericulture, providing a sustainable source of income. Farmers planting Teak and Sonajhuri will generate income from the harvest of mature timber at approximately the 25th year for Teak and the 12th year for Sonajhuri. Revenue from carbon will be an additional income for the participating households. Approximately 8000 families/ households will benefit from all these project interventions altogether and the specific families practicing sericulture will earn an additional annual income of around 80,000 INR.	Assumption- Willingness of the community in restoring the degraded upland and taking up alternate livelihoods options that may reverse migration and provide them with a sustainable income earning opportunity. The supply chain risks have been minimised by taking all native species which have better adaptability to the local context and hence better rate of survival and fruiting. There is demand for the local variety and hence the community has

		ownership for that. In addition to the open market, government outlets have also been identified for mango and other products.
Ecosystem Benefit	The project activity comprises plantation in upland areas. The plantation of trees in the uplands is expected to improve soil stability, reduce surface runoff, enhance local micro-climatic conditions and contribute to overall ecosystem improvement of the region, including positive impacts on on-farm biodiversity and livelihood opportunities for participating households.	Risk- Reduction of seedling survival and early growth can adversely affect the plantations. Prolonged dry spells, erratic rainfall, fire incidence, or inadequate post-planting maintenance, which could limit improvements in soil stability, micro-climate regulation and biodiversity enhancement over the project area.
Outputs and activities		
Output 1	Strong community institutions including women SHGs, WLCs and FPOs in place at the village, cluster and block level and their knowledge, skill and capacity enhanced for development, implementation and monitoring of climate resilient plans and sustainable management of land and livelihoods.	Risk- Low participation of members of community institutions in Gram Sabha, Palli sabha and planning.
Activity 1.1	Engaging with the community, Periodic meeting with the community institutions, Leadership Identification to work as community resource persons (CRPs). The CRPs are members from the community who are pro-active, have leadership skills within these institutions or from the community who are trained with some skills to involve them in project activities. The idea is to have a sustainable resource within the community to hand-hold other members even after the project is over. For Ex: if a CRP is trained on the layout and demarcation of pits for a particular species of plant or the package of practice of some crops, the identification of pests and diseases of crops/ livestock and notifying relevant department/officials, maintaining data of progress of work, data collection etc., they are of great help for the community and also	Assumption- The Project Coordinator has established FIT Climate Foundation as a dedicated implementation entity in the region, consistent engagement with communities has already begun through regular meetings, awareness sessions, and collaboration with existing SHGs and FPOs. Therefore, the risk of low participation is considered minimal. To further mitigate this risk, FIT Climate Foundation will maintain continuous field-level interaction, provide technical support, and strengthen local ownership through inclusive decision-

	get compensated for their work not only in terms of money but also in terms of knowledge, skills, awareness, leadership skills, woman empowerment in voicing their needs and aspiration at the right time and right place, respect from the community.	making and capacity-building activities.
Activity 1.2	Selecting project areas suitable for intervention through community led planning exercise using PRA techniques for social and resource mapping and taking up INRM and livelihoods planning.	Assumption- The selected lands are uplands belonging to individual farmers that remain fallow due to lack of water for irrigation. Mitigation: Through INRM planning, the entire ridge to valley treatment is done for improvement in the land through soil moisture conservation, plantation, creation of water bodies, erosion treatment etc. Various participatory tools are used for planning purposes like resource mapping for identifying the various resources, social mapping and wealth ranking to identify the vulnerable households and to give priority to their needs in the planning.
Activity 1.3	Capacity building of the community institutions and CRPs for implementation and monitoring of the plantation and soil-moisture conservation work.	Risk- There might be a risk of delay or quality of implementation which will be mitigated by periodic monitoring by the FCF India/ FIT Climate staff and taking corrective actions.
Activity 1.4	Gender-inclusive participation processes ensure women's representation in all planning and decision-making.	Assumption- Household responsibilities and other activities could delay their participation in meetings and training despite women from SHGs, WLCs and other community groups being willing and able to participate actively. Mitigation- Schedule meetings and training at time and location which aligns with their regular responsibilities

		and ensure that CRPs also include women which can support communication and follow up with the women participants.
Activity 1.5	Establish and implement a community-led grievance redress and feedback mechanism	Assumption- Community members may be reluctant to register concerns to avoid conflict, lack of awareness of the mechanism. Delays in resolving grievances may further hinder complaints. Mitigation- Maintaining a clear grievance timeline, ensuring transparency in concerns resolved. Conducting village level meetings, discussions and training on how the grievance mechanism works, and carrying out regular checks to ensure issues are resolved. Grievances raised by farmers are recorded and maintained in grievance registers for proper documentation and are systematically addressed by the project team. Refer to section 3.17 for detailed grievance mechanism.
Output 2	4000 hectares (ha) of upland restored through plantation of trees supporting livelihoods of participating households in the short term as well as long term.	Risk- High mortality of trees
Activity 2.1	For the new plantation, pre-plantation activities including land preparation, creation of irrigation infrastructure, fencing, CPT, pit digging, composting and termite treatment etc.	Risk- There might be risk of not completing these activities on time/ before the planting season. This will be mitigated by proper planning with timeline and keeping track of the progress and taking corrective actions by the FCF India/ FIT Climate team.
Activity 2.2	Planting activities including sourcing of saplings from Nursery, planting of saplings	Risk- Mortality of young saplings due to lack of water, nutrition, pest attack. This will be minimized through adoption of improved package of practice including use of organic manure and

		pesticides, regular watering by the community in the absence of rain from well/pond/river, digging of cattle proof trench all around.
Activity 2.3	Tree maintenance activities for new as well as existing plantation including watering, weeding, hoeing, application of manure, pruning, thinning, growth monitoring etc.	Assumption- Since the plantations are done on the private lands of farmers, there are minimum risks of low maintenance as they have ownership of the program. Proper fencing will further reduce the risk of destruction of saplings by animals. The maintenance work will be strictly monitored by the FCF India/ FIT Climate team to avoid any delay or neglect.
Activity 2.4	Facilitation and awareness on Capacity Building programs for Pest Management and Environmentally Safe Field Operations, climate resilience. sustainable NTFP harvesting, biodiversity monitoring, and worker safety before field activities, including waste management and climate risks.	Risk- There is a risk that farmers may not consistently adopt improved pest management and environmentally safe field practices due to limited prior exposure, or reluctance to change traditional methods. Mitigation- Provide hands-on training and field demonstrations using local-language and to ensure CRPs conduct regular follow-up support in villages.
Output 3	Sustainability built into the programme through support from the mainstream programmes for agroforestry, land conservation measures.	Risk- Change in the leadership and hence priorities of the government might affect this. This can be mitigated through building relationship with Government Extension Officers who are not affiliated to any political party but leading the development. Efforts will be made to build the social capital by promoting community institutions, conducting participatory planning process, awareness generation among the community.

		Assumption- Alignment of government priorities with the objective of project.
Activity 3.1	Community plan incorporation into the Gram Panchayat Development Plan for leveraging from the Government.	Risk- There may be procedural or administrative delays in approval and fund release under MGNREGA while integrating community plans into the Gram Panchayat Development Plan. This risk will be mitigated through close coordination with the Gram Panchayat and line departments, timely submission of required documents and regular follow-up during the approval and execution process.
Activity 3.2	Facilitation/Awareness of District and Block level workshops	Risk- Change in leadership in the Government and also their availability might delay the program. This can be mitigated through building relationship with Government Extension Officers who are not affiliated to any political party but leading the development process.

Details of species selection, comprehensive project activities with timeline, nursery details etc. have been provided in section 3.6- Project Design.

Technical Specification

3.6 Project Activities

Table 3.6 Project Activity Summary

Project Intervention	Project Activities	Project Activities	Inputs
Restoration of Barren Uplands of Vulnerable Communities in West Bengal and Jharkand States of India	Community led INRM and Livelihoods planning for identifying and selecting suitable land for project intervention.	Under the project intervention, Women Livelihood Committees (WLCs)/ SHGs will be formed. The team from FIT Climate Foundation, with the help of WLCs/SHGs members and leaders, will conduct intensive ridge-to-valley integrated natural resources	Facilitation support by the FIT Climate Foundation and FCF Indiateam to the community members (WLCs/SHGs/Others) for INRM Planning, Revenue maps of the specific locations,

		management (INRM) planning using various PRA tools and techniques such as wealth ranking, social mapping, vision building, livelihood, and watershed planning in the villages. As an outcome, the land suitable for project intervention is identified. The criterion for selection comprises uplands belonging to individual farmers but not being used for a decade or so, no destruction of native ecosystem, and not been forested for a period of at least 50 years to forested land through planting, seeding, or promotion of natural regeneration.	Technical support for all activities like plantation layout, land development, soil moisture conservation measures, creation of water bodies etc.
	Identifying Private nurseries for sourcing of saplings	Identification of the well-established private nurseries, which are also proximate to the project site for efficient transportation.	Conduct field verification of shortlisted nurseries to check species availability, seedling quality, supply capacity and proximity to project villages.

	Planting of trees	Land cleaning, fencing, marking or layout of pits, pit digging, anti-termite/ anti-fungal treatment, composting and planting.	Monitoring of activities as per the plan and timeline Supply of inputs like compost, anti-termite/ anti-fungal treatment measures, saplings, labour payment for soil work, plantation etc.
	Tree Maintenance	To ensure minimal mortality and proper growth, regular maintenance of the trees will be taken up such as watering, weeding and mulching, composting, pest treatment as and when required, staking, pruning and thinning.	Orientation of the Project Participants on the maintenance activities Monitoring of the maintenance activities.
	Tree Growth Monitoring	Measuring, recording, storing and aggregating data for growth monitoring. In addition to the tree growth details including DBH and height, other parameters such as sprouting progress, any pest infestation, mortality, fencing status, irrigation requirements and facilities available, timely application of compost, community involvement in the care and maintenance activities etc. that have a bearing on the growth of trees will also be monitored.	Verifying methods used to collect field data; Verifying data entry and analysis techniques; and Data maintenance and archiving. Especially this point is important, given the scale and duration of the project.

Plantation Plan

Keeping in mind the year old connect of the communities with plantations, species for the plantation activities were proposed based on their livelihood dependence, species that are better adaptable to climatic challenges in the region, are native to the region and the fruits have high commercial value at local and distant markets.

All proposed species are suitable for uplands of the 2 selected districts. Farmers choose the species based on their preference considering the above factors. The variation in species selection is based on field conditions of providing a good plant diversity addressing different needs while also improving the biodiversity of the area.

Intercropping with vegetables (nitrogen fixing varieties)/spices will also be taken up in the uplands with agroforestry in the initial 3-4 years when the trees are small for maintaining year-round food

security and continuous flow of income. While agroforestry with horticulture, timber and tasar host varieties is mainly attributed to sustenance of livelihoods of the people on a sustainable basis.

The various activities that will be taken up under the project with timeline are as follows:

1. Plantation: Maintenance of existing plantations and taking up new areas under plantation of Mango, Sonjahuri, Arjuna will continue in different regions of West Bengal and Jharkhand, expanding the coverage of the project.
2. Soil moisture conservation measures: Implementing various techniques and measures to conserve soil moisture, such as mulching, contour bunding, terracing. These measures aim to improve water availability for the planted saplings and enhance the overall success of the plantation.
3. Livelihood infrastructure: Developing and establishing infrastructure to support livelihood activities in the project area. This may include setting up processing units, training centres, market linkages, and other necessary facilities to promote income generation and enhance the livelihoods of the local communities.
4. Maintenance and support: Continuously providing maintenance and support to the existing and new plantations, including regular monitoring, watering, and pest control, to ensure the healthy growth and survival of the trees.
5. Monitoring and evaluation: Regular monitoring and evaluation of the project's progress-both physical and financial, including the growth and survival rates of the planted saplings, the socio-economic impact on the communities, and the biodiversity outcomes.
6. Stakeholder engagement: Continued engagement with stakeholders, including local communities, government agencies, and other relevant entities. Conducting stakeholder meetings, consultations, and capacity building workshops to ensure participation, collaboration, and shared ownership of the project.

A detailed financial plan including full costing of the activities listed above including plantation activities, capacity building, benefit sharing commitments and also monitoring and verification activities is done for the project. During the periodic monitoring of the project, both physical and financial monitoring is taken up with verification of evidence for all the expenditures made and physical targets claimed to be achieved.

Timeline of Key Activities:

Activities	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Site identification												
Community planning (PRA and FGD)												
Formation of community groups (WLCs / SHGs)												
FPIC process												

Finalisation of plantation plan and species												
Identification of private nurseries												
Field verification of nurseries												
Land preparation and site development												
Pit digging												
Fencing and cattle protection works												
Plant protection and treatment (anti-termite, anti-fungal etc.)												
Irrigation arrangements (if required)												
Soil and moisture conservation works (mulching, bunds, terracing etc.)												
Sourcing and transport of saplings												
Compost application and plantation of saplings												
Intercropping during early years												
Training and orientation on plantation maintenance												
Regular maintenance												

(weeding, pruning, composting, protection)												
Gap filling (replacement of failed plants)												
Regular field follow-up and handholding												
Monitoring of plantation activities as per plan												
Tree growth and survival monitoring (DBH, height, pests, fencing, irrigation)												
Data verification, storage and record keeping												
Review and learning meetings												
MIS updating												
Progress reporting												

Nursery Overview:

The saplings will be procured from privately established nurseries. This is due to the lack of quality saplings available in government nurseries.

Saplings required for the project will be procured from external/private nurseries. Community members from participating households will be engaged in various plantation establishment activities, including site preparation, planting, gap filling, maintenance and monitoring. This approach ensures local participation and livelihood engagement while sourcing quality planting material through external nurseries.

The species, including mango, Sonajhuri, Teak and Arjun, will be sourced from private nurseries whose cost will be beared by Project proponent. The cost per sapling for mango is INR 38.5, while Sonajhuri and Arjun will be sourced at INR 14 and INR 10 respectively. The procurement of these species from

nurseries will be done by FIT Climate Foundation to ensure the availability of high-quality saplings for the plantation activities, contributing to the success and sustainability of the project.

The nurseries supplying the saplings are located within a range of 20-30 km from the plantation sites. This proximity ensures efficient transportation and reduces the time and costs associated with sapling procurement. The accessibility of the nurseries facilitates the smooth implementation of the project, allowing for timely and convenient delivery of the required species for plantation activities.

The preliminary groundwork has been completed, which includes the identification of nurseries that can fulfil the requirements for quantity, quality, and timing of saplings. Communication has taken place between the project team and the nurseries to discuss and finalize the specific needs. A plan has been formulated for the collection of saplings from the nurseries and their subsequent distribution to the plantation sites. These steps ensure that the necessary preparations are in place to acquire the desired saplings efficiently.

FIT Climate has successfully procured the saplings from the registered nurseries approved by the Government's National Horticulture Board. These saplings are of high quality, meeting the project's standards and requirements. The condition of the saplings received was excellent, and they were delivered on time, ensuring smooth implementation of the plantation activities. The mortality rate of the saplings was minimal, with only 3% attributed to field handling. This demonstrates the effectiveness of the sourcing and delivery process, ensuring the overall success of the project.

In case there is a shortfall in the required number of saplings from the sourced nurseries, it's wise to have a contingency plan in place. By being prepared to purchase the additional saplings from another vendor, you can ensure that the plantation project proceeds smoothly without any delays. This flexibility and readiness to adapt to changing circumstances demonstrate a proactive and effective management approach.

Ordering the saplings six months in advance and transporting them one week before the plantation date is a well-planned approach by the team. This also gives the farmers ample time to prepare for the plantation and make the necessary arrangements to receive and store the saplings on their individual farms.

3.7. Additionality

Table 3.7a Additionality Assessment Summary

Project Intervention	Project Activity	Main Barriers	Activities to Overcome Barriers
Restoration of Barren Uplands of Vulnerable Communities in West Bengal and Jharkand States of India	Engaging with the community, understanding their needs and aspirations and involving them in participatory planning processes, Periodic meeting with the community institutions, Leadership	Social Barriers The target communities are poorly organised and mobilisation is limited. The isolation of the communities due to remoteness and lack of proper communication and infrastructure exacerbates the problem further.	Under the project, the communities will be organised in a way that enhances the implementation operations in field. Regular capacity building and trainings in all the relevant areas will be taken up for the communities. Trained field coordinators or Biodiversity/ Project champions will be employed. They will also

	Identification to work as community resource persons (CRPs).		be responsible for knowledge transfer with respect to biodiversity/ project and also to collate issues and seek solutions.
	Restoration of uplands of individual farmers with plantations.	Cultural Barriers The community is reluctant to adopt new practices and technologies. Since they live in very remote areas, there is lack of information access about new methods and practices that can benefit them and improve land productivity	Sensitizing communities about different methods and practices Holding meetings with community leaders and women groups to build their confidence and acceptance towards newer practices. Also strengthening relationship with local governance. The field coordinators or Biodiversity/ Project champions will be responsible for the above.
	4000 hectares (ha) of upland restored through land restoration by plantation of trees supporting livelihoods of participating households in the short term as well as long term.	Technical Barriers The target communities lack knowledge and skills that can improve the land area and reverse the degradation process The major problem in the dry region of Birbhum and Dumka is absence of irrigation systems like drip and sprinkler. The systems should be popularized in the region to sustain the plantations in the region. The lack of soil testing in the region and farmer trainings results in negligence towards the soil health and moisture. The adaption of synthetic fertilizers in the field further degraded the soil and with soil erosion quite frequent in the region due to constant drought and flood situation. Moreover, there is shortage of technical staff in the	The project intervention ensures that appropriate land treatment plan is prepared for the entire region. Technical experts and other assistance is provided to ensure that the land area is treated in accordance with the requisite understanding of the geophysical conditions and an appropriate plan is designed. This will be done by taking the help of experts from the private/government departments who will be guiding on the soil moisture conservation, soil management, organic farming practices, optimal utilization of uplands and crop production. The capacity building of the community is also ensured for long term sustainability of the project.

		Horticulture Department in the region. This results in less technical support and guidance for the farmers. Establishing village knowledge centers and employing technical personnel at the grassroots level are also essential⁴⁶. The lack of technology adoption among smallholder farmers creates a significant barrier to sustainable agricultural development. Without modern irrigation systems, effective soil management practices, technical support, and proper utilization of infrastructure, farmers struggle to improve productivity and resilience.	
	Sustainability built into the programme through convergence with mainstream programmes for input support related to agroforestry and plantation measures.	Financial Barriers The targeted community lack the financial resources to undertake any such planned treatment in the region. They depend on daily wages to make a living and do not have either the finances or the technical skills to undertake this scale of work. • Many smallholder farmers lack the financial literacy to understand and access available funding options. • Farmers often do not have the required	The project facilitator will ensure a planning process that they will converge the government program with the planned initiatives in the region. This will provide community with daily wages and get the land treatment done. The generation of carbon for the project will further facilitate the plantation and improvement of the soil and water health along with improved biodiversity

⁴⁶ <https://www.nabard.org/auth/writereaddata/tender/0701205000PLP%202020-21%20Birbhum.pdf> - Page 13

		collateral to secure loans, making it difficult to obtain financial support from traditional banking institutions. • Banks and financial institutions perceive smallholder farmers as high-risk borrowers due to unpredictable income, small landholdings, and vulnerability to environmental shocks. • Existing tenancy laws and unrecorded tenancies prevent smallholder farmers from accessing institutional credit and subsidies. • Government and financial schemes often do not reach the most marginalized and small-scale farmers, limiting their ability to invest in agroforestry.	
	Restoration of uplands, improvement in soil moisture	Ecological Barriers West Bengal and Jharkhand are featured by hilly, undulating terrain, degraded forests, moderate rains (800-1200 mm annual rainfall)⁴⁷. The geography is marked by undulating rocky terrain with red lateritic soils⁴⁸. These soils are rich in iron and aluminium and while they are one of the best natural materials to be used in bricks, they are	Land treatment, soil-moisture conservation, creation of irrigation infrastructure

⁴⁷ <https://distantreader.org/stacks/journals/geosi/geosi-34487.pdf>

⁴⁸ Ghosh, G. K., Chattopadhyay, G. N., & Chattopadhyay, S. (2005). Availability and forms of sulphur in red and lateritic soils of Birbhum district of West Bengal. *The Indian Journal of Agricultural Sciences*, 75(6).

		acidic and cannot retain moisture. Ecological conditions in the region create substantial barriers for smallholder farmers. Reliance on rainfall, small land holdings, soil degradation, natural calamities, poor irrigation facilities, declining groundwater levels all contribute to a challenging agricultural environment. These ecological constraints hinder the adoption of advanced agricultural technologies and practices, limiting productivity and sustainability.	
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Refer to Annex 7 for detailed additionality assessment using PM001.

Table 3.7b Regulatory surplus assessment

Project Intervention	Relevant laws, statutes or other regulatory frameworks that could arguably promote intervention	How the interventions fall outside the scope of laws or how laws or not effectively enforced
Restoration of barren uplands through plantation of native species (Mango, Arjun, Sonajhuri, Teak)	• National Agroforestry Policy (2014) • National Afforestation Programme (NAP) • Compensatory Afforestation Fund Act (CAMPA) - State Forest Department plantation schemes	These policies primarily focus on government or forest lands, whereas the project operates on privately owned marginal uplands. Financial and technical support under these schemes does not adequately reach small and marginal tribal farmers. Plantation on private degraded lands at this scale would not occur without carbon finance and project support.
Agroforestry and horticulture-based livelihood systems	• Pradhan Mantri Krishi Sinchai Yojana (PMKSY) • Rashtriya Krishi Vikas Yojana (RKVY)	These schemes promote agriculture broadly but do not provide integrated, long-term support for agroforestry systems, especially in degraded uplands. Limited

	National Mission for Sustainable Agriculture (NMSA)	awareness, access barriers, and fragmented implementation prevent adoption by vulnerable communities without project intervention.
Sericulture promotion through Arjun plantations	- Central Silk Board schemes - State Sericulture Department programs	While sericulture is promoted, initial plantation establishment, capacity building, and long gestation support are not sufficiently covered. The project bridges this gap by integrating plantation with livelihood and providing end-to-end support, which is otherwise missing.
Soil and moisture conservation, land development (INRM planning)	- Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) - Watershed Development Programs (IWMP)	Although MGNREGA supports land development, it is limited to short-term wage employment activities and does not ensure long-term maintenance, plantation survival, or integrated ecosystem restoration. The project ensures continuity, technical planning, and monitoring beyond what government programs deliver.
Community-based natural resource management and participatory planning (INRM, PRA, WLCs)	- Panchayati Raj Institutions (PRI) framework - Gram Panchayat Development Plans (GPDP)	While PRIs enable decentralized planning, effective implementation and technical capacity at village level remain limited. The project strengthens these institutions through capacity building and structured planning processes, which are not systematically implemented under existing frameworks.
Carbon sequestration through long-term plantation and maintenance	- India's Nationally Determined Contributions (NDCs) under UNFCCC - Green India Mission	These are policy-level commitments without direct incentives for smallholder farmers. There is no mechanism to channel carbon finance benefits directly to communities. The project creates a financial incentive through carbon credits, enabling activities that would

		otherwise not be economically viable.
Livelihood diversification (timber, fruits, carbon income)	- National Rural Livelihood Mission (NRLM) - Tribal development programs	Existing programs provide limited and fragmented livelihood support and do not integrate long-term tree-based income systems. The project provides sustained income streams (fruit, timber, sericulture, carbon), which are not ensured under current schemes.

3.8. Carbon Benefits

Table 3.8a Expected Carbon Benefits Summary

Project Intervention	Baseline Emissions (t CO ₂ e/ha)	Project Emissions (t CO ₂ e/ha)	Leakage Emissions (t CO ₂ e/ha)	Carbon Benefit (t CO ₂ e/ha)
Restoration of barren uplands of vulnerable communities in West Bengal and Jharkhand	0	9.56	0	9.56

Table 3.8b Plan Vivo Certificate Potential

Project Intervention	Carbon Benefit (tCO ₂ e/ha)	Project Area (ha)	Total Carbon Benefit (tCO ₂ e)	Risk Buffer (tCO ₂ e/ha)	Potential PVCs (tCO ₂ e)
Restoration of barren uplands of vulnerable communities in West Bengal and Jharkhand	9.56	4000	1,147,115	7.17	1,147,115
TOTAL	9.56	4000	1,147,115	7.17	1,147,115

The project will contribute 10% of the credits generated into the achievement reserve. Refer to Annex 6 & 7 for the detailed assumptions and carbon calculations.

Risk Management

3.9. Environmental and Social Safeguards

3.9.1. Exclusion List

The project does not include selling, buyer linkage, transport, or price negotiations, and does not receive any revenue or benefit from timber sales. However, the project includes harvesting and sale of Sonajhuri (*Acacia auriculiformis*) and Teak (*Tectona grandis*) which is carried out solely by farmers at the individual level as a traditional and pre-existing practice in the region. The project does not promote, support, or engage in the production or trade of wood or forestry products. The project only supports plantation and post-harvest replanting to maintain carbon benefits. The complete exclusion list is provided in Annex 8.

3.9.2. Environmental and Social Screening

Table 3.9.2 Environmental and Social Risks

Risk Area	Potential Risks	Likelihood (1-5)	Magnitude (1-5)	Significance (low, moderate, severe, high)
Vulnerable Groups	There are vulnerable groups within the project area, including tribal households and socio-economically marginalised families who have limited coping capacity against livelihood shocks. The project has been intentionally designed to strengthen their resilience by improving natural resource management, supporting restoration of degraded uplands and promoting tree-based livelihood options that offer both short-term and long-term economic benefits. From the design phase onward, the project team has held continuous discussions with these vulnerable groups regarding plantation models, land development activities, and institutional arrangements for implementation. Their inputs have shaped the intervention strategies, ensuring that the project reflects their priorities and practical needs. As a	2	3	Moderate

	result, the project activities do not pose a disproportionate risk to vulnerable groups; instead, they are expected to improve income stability, reduce exposure to climate-related risks, and enhance livelihood security. Similarly, there is no risk of discrimination in access to project benefits, services, or decision-making. The project actively engages vulnerable groups, particularly tribal women and marginalised households in planning, implementation, and local governance structures such as SHGs, WLCs, and farmer groups. Project information, benefits, and participation opportunities are communicated clearly and consistently to all stakeholder groups, ensuring transparent and equitable access.			
Gender Equality	The project does not pose any risk of disproportionately affecting or discriminating against vulnerable groups. The project area includes tribal and marginalized communities with limited livelihood options, and the intervention is specifically designed to strengthen their resilience by improving natural resources, enhancing income opportunities, and reducing forced	1	3	Low

	migration. Women are a key focus, and the project aims to reduce gender inequalities by increasing their social and economic participation. The design of the project includes plantation models and land treatment plans that has been developed through direct consultations with these groups to ensure their needs are reflected. All project benefits and services are equally accessible and have strong safeguarding systems (including PSEA policies) to protect against any form of exclusion, harassment, or abuse.			
Human Rights	The project does not prevent people from fulfilling their economic and social right, rather it works towards improving their livelihoods and in turn their health, standard of living etc. By including them in community institutions and enhancing their capacities, they will be empowered and enabled to exercise their social rights.	1	3	Low
Community, Health, Safety & Security	The project by design will ensure that at any time health safety and security of community members will not be compromised. All interventions being undertaken as part of the project ensure this aspect. While work on the field areas will be supervised by community leaders and ensure any untoward incidents are	1	2	Low

	avoided. All necessary precautions for safety and security as well shall be ensured.			
Labour and Working Conditions	The project is aligned with the payment terms to men and women as per the government norms and hence there are clear employment terms in the design of the project itself. There are no foreseen occupational health and safety risks for the project beneficiaries. The work is in their own farmlands, and the community sees it as a great advantage to have the support of all the village working on their farmlands. That is how it is planned.	1	1	Low
Resource Efficiency, Pollution, Wastes, Chemicals and GHG emissions	The plantation activities primarily involve tree planting and basic land preparation using manual labour and locally available materials. The project does not involve intensive use of energy, water, or raw materials. Water use is limited to occasional irrigation during early plant establishment.	1	1	Low
Access Restrictions and Livelihoods	There would be no access restrictions as the project activities will be taken up on private lands of the communities that would help in improving their livelihoods and resources on a sustainable basis.	1	2	Low
Cultural Heritage	There is no cultural heritage attached to the project area.	1	1	Low
Indigenous Peoples	The project will involve tribals and other communities. However, no Particular Vulnerable Tribal Groups (PVTG) are present within the	3	3	Moderate

	project area. The project area belongs to the tribal communities, and they will have the carbon rights, and all associated co benefits. The project will in no way negatively affect indigenous people through economic displacement or affect any of their legal or customary rights.			
Biodiversity and Sustainable Use of Natural Resources	The project includes 4000 ha of plantation in barren uplands of individual farmers that will help in improving the biodiversity of the area, in addition to providing sustainable livelihoods options to the beneficiaries in terms of sericulture, horticulture, timber etc. The plantation methods adopted would help in restoration of the degraded upland as well as positively impact the medium and lowlands.	1	1	Low
Land Tenure Conflicts	Since the project activities will be taken up in private land, there would be no land tenure conflicts.	1	3	Low
Risk of Not Accounting for Climate Change	Since the communities involved in the project depend on climate sensitive sectors like agriculture, horticulture, erratic rainfall and occasional drought might influence the effectiveness of project activities.	2	2	Low
Other - e.g. Cumulative Impact	No other negative impacts	1	1	Low
Overall risk assigned to project:				Low

3.9.3. Environmental and Social Assessment

The Environmental and Social (E&S) risk and impact assessment was conducted to evaluate potential risks associated with project activities and ensure compliance with both national and international environmental and social standards. The geographical scope of the project covers Birbhum district in West Bengal and Dumka district in Jharkhand, regions predominantly inhabited by tribal communities. The project focuses on agroforestry and community-led sustainable land-use practices to enhance livelihoods and restore degraded lands.

The assessment examined potential environmental and social risks, including:

- Impacts on vulnerable and indigenous groups, particularly tribal populations with limited economic security and access to resources.
- Gender equality, with a focus on women's inclusion in decision-making, financial empowerment, and economic participation.
- Community health, safety, and security, ensuring that project interventions do not pose risks to local populations.
- Labour and working conditions, ensuring fair employment practices and compliance with national labour laws.
- Land tenure security and access rights, assessing any potential conflicts over land ownership and usage.
- Biodiversity and natural resource management, ensuring that agroforestry interventions contribute positively to ecosystem restoration.

The assessment adhered to national environmental regulations and international frameworks, including the Plan Vivo Standard for E&S Safeguards, and the UN Sustainable Development Goals (SDGs). Safeguard plans were developed to avoid, minimize, and mitigate risks identified through this assessment.

A combination of qualitative and quantitative methods was used to assess the significance of potential environmental and social risks:

- Participatory Rural Appraisal (PRA):

Participatory Rural Appraisal (PRA) was conducted across multiple villages, engaging landowners, women-led Self-Help Groups (SHGs), and other local stakeholders. Through these discussions, the project team identified existing land-use patterns, assessed community needs, and prioritized key interventions as agroforestry plantations. Additionally, participatory land-use and social maps were developed to classify different land types, including agricultural uplands, and wastelands, ensuring a structured approach to sustainable land management.

- Focus Group Discussions (FGDs):

The project actively engaged vulnerable and marginalized groups to understand their specific challenges and expectations. Discussions revealed key concerns, including land tenure issues, limited access to water resources, and economic vulnerabilities. These insights played a crucial role in shaping the project's safeguard plans, ensuring that interventions address the unique needs of these communities while promoting inclusive and sustainable development.

- Key Informant Interviews (KIIs):

The project engaged with local governance bodies, including Gram Panchayats, village elders, and community resource persons, to ensure alignment with existing development priorities. These

consultations helped integrate project activities with ongoing local initiatives, foster community ownership and long-term sustainability.

- Risk Significance Criteria:

Risks were evaluated using a structured framework that considered likelihood (1-5), magnitude (1-5), and overall significance (low, moderate, high, severe). This approach enabled the project team to systematically identify and prioritize risks, ensuring that appropriate mitigation strategies were developed and implemented effectively.

- Sampling Strategy:

In the first instance, socio-economic survey for around 30% of the population was carried out across all 12 blocks included in the project area to capture the diverse socio-economic and ecological conditions.

Based on these methods, mitigation measures were integrated into project design, including community-led grievance redressal mechanisms, financial literacy training for women, and participatory monitoring systems to track progress.

FCF India team details:

Role	Qualification	Year of experience	Relevant experience
Project Director	MBA Management Power	16	Brings extensive experience in soil carbon, biochar, and nature-based solutions, with a strong track record in leading community-focused carbon asset programs across developing nations. Skilled in integrating climate change and agricultural practices to build resilience through carbon finance mechanisms. Has successfully delivered large-scale, multilateral projects aligned with SDGs 3, 5, 7, and 13 across Asia and Africa, including the design, management, and implementation of carbon market initiatives.
E&S Safeguard Expert	M.Sc. Environmental Sciences	18+	Climate and sustainable development

			professional with 18+ years' experience across India, Nepal, Bangladesh, Ethiopia, and Kenya, focused on Nature-based Solutions and carbon finance in voluntary and compliance markets.
Project lead- Development, Operations and GIS	M.Sc. RS & GIS	10	Seasoned geospatial and carbon MRV specialist with 10+ years' experience across forestry, NbS, and land-use programs, leading GIS/remote sensing and spatial modelling from national datasets to multi-state field execution since 2015.
Project Manager and Developer	B Sc Forestry	3	Forestry professional with three years of experience in Carbon project development. Lead multiple ARR and ALM projects across India, Nepal and Ethiopia.
Lead- Operations	B.E in Civil Engineering	10 years	Managed projects across agriculture, horticulture, and livestock development with a strong focus on community mobilization and forest conservation. Led key initiatives promoting government convergence, strengthening local democratic processes, and advancing climate change adaptation efforts in Jharkhand, India.
Project Manager- Operation	MCA	8 years	Led large-scale plantation and monitoring activities

			across multiple geographies in Jharkhand, coordinating field implementation and community participation. Oversaw species selection, survival monitoring, and maintenance processes to ensure project quality and impact. Worked closely with local institutions and farmers to strengthen restoration outcomes and sustainable land management.
Project Manager- Finance	MBA Finance & Quality	15+	Seasoned finance professional with 15 years of experience overseeing project finances, budgeting, fund management, and statutory compliance across development and donor-funded programs. Skilled in financial planning, audit coordination, and establishing robust internal control systems to ensure transparency and accountability. Experienced in managing multi-stakeholder financial reporting, MIS development, and supporting project teams with timely financial analysis for decision-making.
GIS Associate	M.Sc RS & GIS	2 years	Experienced GIS Associate with two years of hands-on work in land-use/land-cover (LULC) mapping,

			KML verification, and spatial data management. Proficient in Google Earth Pro, ArcGIS, and other geospatial analysis tools used for daily mapping, digitization, and accuracy checks. Skilled in producing clean spatial layers, validating field data, and supporting project teams with reliable geospatial insights.
Field Coordinators	Intermediate	5 years	Experience in coordinating plantation activities and field operations across multiple locations in Jharkhand. Supports farmer mobilization, plot verification, and routine monitoring to ensure timely execution of project activities. Skilled in working closely with communities and local institutions to facilitate smooth on-ground implementation

The assessment team ensured strong local knowledge, understanding of tribal socio-economic conditions, and familiarity with international best practices in social and environmental risk management. Their expertise enabled the development of context-specific, community-driven safeguard plans to ensure long-term sustainability and equitable benefits from the project.

The full E&S Report is added in Annex 10.

3.9.4. Environmental and Social Management Plan

Table 3.9.4 Environmental and Social Risk and Impact Mitigation Measures

Risk/Impact	Mitigation Measures	Project Activity	Livelihood Indicator
Low participation of community in	To address the risk of low community participation in	Activity 1.1- Engaging with the community, Periodic meeting with	Number (%) of households participating in

meetings/ planning processes	meetings, the project ensures continuous and transparent engagement from the outset. During FPIC, communities are thoroughly informed about the project objectives, benefits, and roles. The project adopts a community-driven implementation model by onboarding CRPs from within the community, ensuring representation and ownership at every stage of the process. Additionally, women's Self-Help Groups (SHGs) are actively involved and encouraged to participate in planning, monitoring, and decision-making activities.	the community institutions, Leadership Identification to work as community resource persons (CRPs).	community institutions (SHGs/WLCs/FPOs) and project planning meetings
Project includes vulnerable tribal groups with low resilience to livelihood shock. Risks include economic instability and food security.	The project includes activities like plantation of native trees which will provide multiple income streams. The project participants will also be included in pre and post plantation activities which will provide them the opportunity to gain direct benefits.	Activity 1.1- Strengthen consultation with community members to address their concerns. Activity 2.1- Community will be engaged in pre and post plantation activities.	Average annual household income (INR/year) and number of diversified income sources per household
Fair wages for labour and working conditions	The participants engaged in the project will be compensated as per government norms.	Activity 3.2- Discussion with implementing team for smooth execution of wages for plantation activities. .	Number of person-days of employment generated and average wage rate (INR/day) received by participants
Exclusion of landless families into the carbon project, depriving them of income earning opportunity.	This may be mitigated by involving them in pre-planting and planting activities like land development, fencing, pit digging, composting, planting of saplings etc. Also, they	Activity 1.2- Understanding their needs and aspirations based on their resources through visioning exercise, using PRA techniques for social and resource	Number of landless households engaged in project-related wage labour and nursery activities

	may be involved in the community nursery work.	mapping and taking up INRM and livelihoods planning.	
Delay in implementation or quality of implementation not being good	This will be mitigated by periodic monitoring by the FCF India/FIT Climate staff and taking corrective actions.	Activity 1.3- Capacity building of the community institutions and CRPs for implementation and monitoring of the plantation and soil-moisture conservation work.	Survival rate (%) of plantations and area (ha) successfully implemented
There might be risk of not completing these activities on time/ before the planting season.	This will be mitigated by proper planning with timeline and keeping track of the progress and taking corrective actions by the FIT Climate team.	Activity 2.1- For the new plantation- pre-plantation activities including land preparation, creation of irrigation infrastructure, fencing, CPT, pit digging, composting and termite treatment etc	Area (ha) prepared and planted within the planned season and number of households participating in plantation activities
Mortality of young saplings due to lack of water, nutrition and pest attack.	This will be minimized through adoption of improved package of practice including use of organic manure and pesticides, regular watering by the community in the absence of rain from well/pond/river, digging of cattle proof trench all around to curb their entries in the initial plantation days.	Activity 2.2- Planting activities including sourcing of saplings from Nursery, planting of saplings	Survival rate (%) of saplings and productivity of plantations contributing to future income
Low maintenance of the plantations	Since the plantations are done on the private lands of farmers, there are minimum risks of low maintenance as they have ownership of the program. Proper fencing will further reduce the risk of destruction of saplings by animals. The maintenance work will be strictly monitored by the FCF India/ FIT Climate team to avoid any delay or neglect.	Activity 2.3- Post plantation activities for new as well as existing plantation including watering and watch and ward, maintenance work such as weeding, hoeing, application of manure, pruning etc.	Percentage of plantations maintained as per schedule and long-term income generated from tree-based systems

There might be risk of delay in implementation of the measures from the Government	This may be mitigated by rigorous follow ups	Activity 3.1- Community plan incorporation into the Gram Panchayat Development Plan for alignment with the Government programs.	Timeliness of wage payments and number of households receiving wages from project-linked activities
Change in leadership in the Government and also their availability might delay the program.	This can be mitigated through building relationship with Government Extension Officers who are not affiliated to any political party but leading the development process.	Activity 3.2- Facilitation and awareness of District and Block level workshops	Number of households benefitting from convergence with government schemes
Gender Equality	This risk will be mitigated through continuous community engagement at every stage of project development and implementation. Women from SHGs and WLCs will be actively encouraged to participate in planning, decision-making, and field activities to ensure their meaningful involvement. Their participation will strengthen community ownership, enhance transparency, and contribute to more equitable and sustainable project outcomes.	Activity 1.1- Engaging with the community, Periodic meeting with the community institutions	Percentage (%) of women participating in SHGs/WLCs and decision-making processes
Human Rights	The risk will be mitigated by ensuring transparent decisions based on free, prior, and informed consent. Involve all stakeholders, groups, and SHGs in the process, and explain how the community can report any concerns or rights	Activity 1.5 - Community-led grievance redress mechanism. Activity 1.1 - Inclusive community engagement and participation	Number of grievances reported and resolved through the grievance redress mechanism

	violations through the grievance mechanism.		
Community, Health, Safety & Security	The risk will be mitigated by providing safety orientation, training on handling of organic inputs, supervising field works.	Activity 2.5 - Facilitation and awareness on Capacity building programs forest management & safe field operations.	Number of participants trained in safe agricultural and plantation practices
Resource Efficiency, Pollution, Wastes, Chemicals and GHG emissions	The risk can be mitigated by promoting organic manures, nursery waste recycling, avoid chemical fertilizers and, monitor water usage efficiency	Activity 2.1 - Composting and organic soil improvement Activity 2.5 - Training on organic inputs, waste management, climate risks.	Number of households adopting organic inputs and sustainable land management practices
Cultural Heritage	There is no cultural heritage attached to the project area.	Activity 1.2 - Community led participation will include their opinions on preventing cultural sites	Number of community consultations conducted ensuring inclusion of cultural considerations
Biodiversity and Sustainable Use of Natural Resources	The project includes planting of native species that will help in restoring degraded land and enhance biodiversity. Community-led institutions will ensure sustainable resource use, with regular monitoring to maintain ecological balance.	Activity 2.5 - Facilitation and awareness on training for biodiversity monitoring & sustainable NTFP collection.	Number of households engaged in biodiversity-friendly practices and NTFP-based livelihoods
Risk of Not Accounting for Climate Change	The project involves native species which are climate adaptive and implement erosion control in the area and will conduct annual monitoring. Additionally, the project promotes sustainable practices to be adapted by farmers to reduce long-term climate risks.	Activity 2.4 - Ensuring improved plantation management. Activity 2.5 - Facilitation and awareness on Capacity building and farmers training on risk management, plantation maintenance and monitoring	Number of households adopting climate-resilient practices and change in productivity/income over time

3.9.5. Native Species

The project includes the plantation of *Acacia auriculiformis*, a non-native species to the project area. However, over time, it has become naturalized and is widely promoted through government afforestation programs due to its adaptability to degraded and lateritic soils⁴⁹. This species plays a significant role in soil restoration, providing timber and livelihood opportunities for local communities. For more detailed justification and supporting information, refer to the table below.

Table 3.9.5: Non-Native Species Overview

Project Intervention	Non-Native Species Planted/ Introduced	Justification	Risk Assessment and Management
Restoration of barren uplands of vulnerable communities in West Bengal and Jharkhand	<i>Acacia auriculiformis</i>	Although it is native to Australia, Indonesia, and Papua New Guinea, but has become naturalized in India. It is planted extensively in lateritic soils in southwest Bengal. In fact, it has been widely promoted by the Forest Department in West Bengal. There is huge demand for these trees by the local community due to its high return from 12th year onwards and because it is a low maintenance tree. Uses: It is an extremely useful plant to reclaim arid and rocky areas. The wood is heavy and hard, and its timber now finds application in the making of furniture Reference- cm5.pdf westbengalforest.gov.in https://www.westbengalforest.gov.in/upload/development/cm5.pdf	The project includes harvesting of trees of <i>Acacia auriculiformis</i> for timber from 12 th year onwards which will be managed by replacing these with new plants.

⁴⁹ <https://www.westbengalforest.gov.in/upload/development/cm5.pdf>

The project includes harvesting of *Acacia auriculiformis* from 12th year onward of the crediting period. The trees will be replanted after the harvesting to maintain ecological balance and emission reduction from the project.

For the calculation of project removals, section 5.7.1 of the module PU001, “Estimation of baseline and project GHG removals by carbon pools in Plan Vivo projects” was used.

To calculate removals, equation 15 of the module has been used.

$$PR_{WB_LTA,a,y} = \frac{\sum_{t=1}^z PR_{WB,a,t}}{z}$$

Where:

$PR_{WB_LTA,a,y}$ = Long-term average GHG removals in aboveground woody biomass under the Project scenario for project area a up to year y (t CO₂e)

$PR_{WB,a,t}$ = Net GHG removals in aboveground woody biomass under the project scenario for project area a in year t (t CO₂e)

z= Number of years in one or more full rotations (years)

3.10. Achievement of Carbon Benefits

The Project will claim rPVCs, fPVCs and vPVCs and the portion of Carbon benefits that will be held as insurance against non-achievement of carbon benefits is 10%.

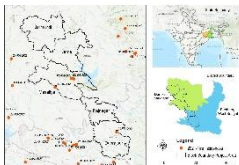
3.11. Reversal of Carbon Benefits

Table 3.11a Risk of Reversal Assessment

Risk Factor	Mitigation Activities	Impact	Likelihood	Score
Internal Risks				
Project participants leave the project or fail to implement all project activities.	Project activities are designed through community consultations to ensure ownership and participation. Regular monitoring, continuous engagement, and capacity-building initiatives are undertaken to maintain participation and ensure proper implementation of activities.	Minor- May affect implementation of activities and delivery of climate and livelihood benefits.	Unlikely- The strong participatory approach of the community institutions is present among the project participants (beneficiaries) in form of FPIC, SHGs, WLCs. Also, the strong presence of the field team makes the likelihood of participants leaving low.	Low
Project coordinator withdraws or fails to coordinate and manage the project effectively.	The project developer and coordinator possess adequate administrative and operational capacity as detailed in Section 2.2. Backup personnel and capacity enhancement measures are in place to ensure continuity in coordination and management.	Minor- May impact project monitoring and coordination temporarily.	Unlikely- The project is managed by experienced institutions (FCF India and FIT Climate Foundation) with prior experience in similar projects. Institutional systems and backup arrangements significantly reduce this risk, though unforeseen organisational or external disruptions cannot be completely ruled out.	Low
Capacity of project participants to implement project activities is not maintained.	Continuous training, technical support, and regular field monitoring are conducted. Identified capacity gaps are addressed through	Minor- May affect quality of implementation and expected benefits.	Unlikely- Considering the low baseline capacity of marginal tribal farmers and the technical nature of plantation and maintenance activities, there is some possibility of gaps over time. However,	Low

	refresher training and on-ground assistance to ensure effective implementation.		continuous capacity-building and CRP support significantly reduces this risk.	
Cash flow is insufficient to sustain project activities.	The project developer has adequate financial capacity and ensures phased implementation. Expected carbon revenue streams and financial planning support long-term sustainability. Financial gaps, if identified, are addressed proactively.	Minor- May affects continuity of activities if not managed.	Possible- While initial funding and phased implementation reduce immediate risks, dependence on carbon revenue and external financing introduces some uncertainty over the long term, especially in case of market fluctuations.	Moderate
Project participants experience a reduction in food supply or income as a result of project activities.	Project activities are designed to complement existing livelihoods and enhance income. Community consultations ensure alignment with local needs. Diversification and improved productivity reduce risk to food security and income.	Minor- Unlikely to negatively impact food security or income.	Unlikely- The project focuses on degraded uplands and integrates livelihood-enhancing activities (agroforestry, sericulture, wage labour), making negative impacts on food security unlikely. In fact, interventions are expected to improve income and resilience.	Low
External Risks				
Land ownership, resource access or carbon rights are disputed.	All land parcels included in the project have clear ownership and documented land tenure rights. Beneficiaries possess legal rights to the land, verified through	Major - Any dispute may affect project implementation and carbon rights.	Unlikely - All land parcels have verified ownership and legal documentation, and due diligence minimizes the risk of disputes.	Moderate

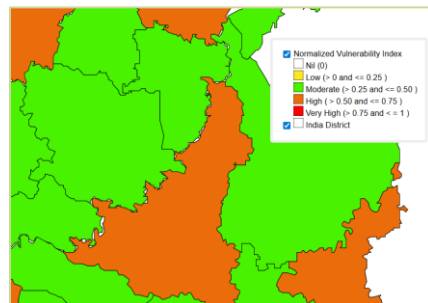
	official records. Due diligence has been conducted prior to inclusion.			
Policy changes affect the project.	The project is aligned with existing regulatory frameworks and the developer monitors policy changes. Diversified funding sources reduce dependency on a single policy mechanism.	Major- Policy changes may influence implementation or financial flows.	Unlikely - The project complies with current regulations, and diversified funding reduces exposure to policy shifts.	Moderate
Political unrest affects the project.	Implementation is spread across multiple villages with strong community engagement, ensuring continuity of activities even during localized disruptions.	Major - May temporarily disrupt field activities.	Very unlikely- Decentralized implementation and community involvement reduce the likelihood of significant disruption.	Low
Changing market and/or socioeconomic conditions make alternative land uses more attractive than the project intervention.	The project targets degraded lands with low productivity. Carbon payments and co-benefits make tree planting a competitive and sustainable option. Continuous engagement ensures participation.	Devastating- Shift to alternative land use may affect project continuity.	Unlikely- Alternative land uses require high investment and are less viable compared to project benefits on degraded lands.	Moderate
Natural Risks				

Hydrological changes affect project area(s)	The project includes soil and moisture conservation measures such as trenching, mulching, and appropriate spacing. Plantation is aligned with monsoon patterns to ensure adequate water availability and reduce hydrological stress.	Major - May affect tree growth and survival due to changes in water availability.	Very Unlikely- The project area (Dumka ⁵⁰ and Birbhum ⁵¹ district) experiences moderate rainfall variability and no significant hydrological disruptions have been recorded historically.	Low
Project area(s) are affected by fire.	Plantation is carried out on fallow and degraded lands with low fire incidence. Regular monitoring and maintenance reduce fire risks. Fire incidence mapping has been conducted to assess risk exposure.	Devastating- Fire can lead to loss of trees and associated carbon benefits.	Very Unlikely The project involves plantation of tree species on fallow lands; hence the risk of fire is negligible. Additionally, the fire incident in the project area has reported normal.  Map showing the fire instances in the year 2021.	Low
Project area(s) are affected by pest or disease outbreak.	Adoption of proper silvicultural practices including application of vermicompost, anti-termite, and anti-fungal	Major - May increase mortality and reduce growth of trees, affecting benefits.	Unlikely As part of maintenance, the interventions include application of vermicompost, anti-	Moderate

⁵⁰ <https://indianecologicalsociety.com/wp-content/themes/ecology/pdf/Indian-Journal-of-Ecology-43-Special-issue-2-2016.pdf>

⁵¹ <https://www.mathematicaljournal.com/article/191/6-1-18-341.pdf>

	treatments. Regular monitoring ensures early detection and management.		termite and anti-fungal treatment to reduce the risk of pest and diseases	
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Extreme weather (drought, flood, wind, temperature extremes) a) Drought	• Prioritize Arjuna and Asana in areas with drier weather condition due to better tolerance to moisture stress, while teak and mango are placed in relatively moisture-retaining sites. • Implement soil moisture conservation techniques such as mulching, irrigation practices. • Align plantation activities with monsoon season and adaptive management practices to reduce establishment risk. • Monitoring and replanting protocols will ensure rapid recovery of plantations affected by drought.	Major: Drought conditions lead to prolonged soil moisture deficit, reduced water availability, and increased plant stress, which can significantly affect survival and growth of plantation species. This results in reduced biomass accumulation, higher mortality in early stages, and long-term decline in carbon sequestration potential⁵²	Unlikely: Dumka and Birbhum generally receive moderate to high monsoon rainfall compared to arid regions. Combined with site-specific planning and moisture conservation practices, the probability of prolonged or severe drought conditions significantly impacting the project area remains low  <u>Drought Vulnerability assessment⁵³</u>	Moderate
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b) Flood	• Plantation planning will avoid low-lying flood-prone areas and riverbanks, prioritizing elevated or well-drained sites. • Use of mixed species systems (Arjuna especially) to improve resilience to temporary inundation. • Monitoring and replanting protocols will ensure rapid recovery of plantations affected by flooding.	Major: River floods are expected to occur periodically and can lead to waterlogging, tree mortality, and reduced growth due to prolonged soil saturation. Flooding can also cause soil erosion and nutrient loss, affecting long-term biomass accumulation⁵⁴.	Unlikely: While Birbhum is classified as having a high river flood hazard, project activities are planned in selected sites with better drainage and away from highly flood-prone zones. Dumka, on the other hand, has a very low flood risk at the district level. Considering site selection, topography, and mitigation measures, the probability of significant flood impact across the overall project area is expected to remain low  River flood vulnerability assessment^{55, 56}	
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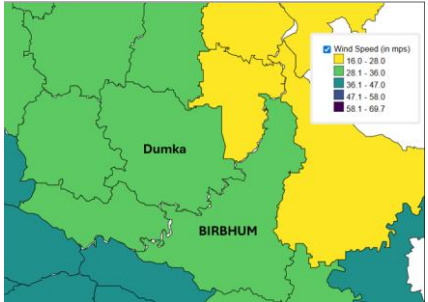
⁵² <https://moef.gov.in/uploads/2017/08/Jharkhand.pdf>

⁵³ <https://imdpune.gov.in/hazardatlas/droughtnew.html>

⁵⁴ <https://www.niti.gov.in/sites/default/files/2021-03/Flood-Report.pdf>

⁵⁵ <https://thinkhazard.org/en/report/70142-india-jharkhand-dumka/FL>

⁵⁶ <https://thinkhazard.org/en/report/17947-india-west-bengal-birbhum/FL>

c) Wind	• Mixed plantations of teak, Arjuna, Asana, and mango improve resilience by reducing the risk of widespread damage from strong winds. • Shelter belts and boundary plantations help lower wind speed and protect inner plantation areas from storm impacts. • Proper spacing, staggered planting, and soil conservation measures strengthen root systems and reduce the chances of uprooting. • Regular monitoring, maintenance, and timely gap replanting support quick recovery of biomass after extreme weather events.	Major: Winds and associated heavy rainfall can lead to partial tree mortality, stem breakage, and reduced growth rates, particularly during early establishment phases. However, the use of mixed species, along with planned replanting and recovery measures, is expected to limit long-term losses and enable gradual recovery of carbon stocks⁵⁷.	Unlikely: While Dumka and Birbhum are not directly in high cyclone landfall zones, they are periodically affected by weakened cyclonic systems and severe storms moving inland from the Bay of Bengal. These events do not occur frequently every year but are recurrent over longer timeframes. Given historical patterns and projected increases in extreme weather variability, there is a moderate probability that such wind events will impact the project area at least a few times during the project lifespan.  Mean Wind Speed Vulnerability assessment⁵⁸	
d) Temperature Extremes	• Selection of heat-tolerant and mixed	Major: Extreme heat can reduce tree growth rates, increase	Unlikely: Although both Dumka and Birbhum fall under a high extreme heat	

⁵⁷ <https://applied.dysona.org/data/pdf/Agricultural-vulnerability-to-cyclones-in-coastal-West-Bengal.pdf>

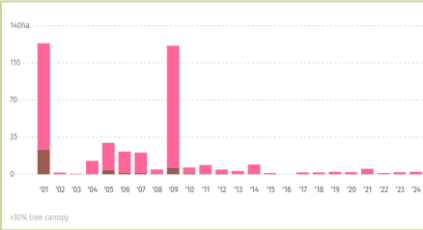
⁵⁸ <https://imd pune.gov.in/hazardatlas/windnew.html>

	species (Arjuna, Asana) to improve resilience against temperature stress. • Practices such as mulching and irrigation to reduce drought and heat stress. • Monitoring and adaptive management, including irrigation support and replanting in heat-affected areas.	evapotranspiration, and cause heat stress-induced mortality, particularly in species like teak and mango during early stages. Prolonged high temperatures may also reduce soil moisture availability, leading to lower biomass accumulation and affecting long-term carbon sequestration	hazard classification, the selected species mix are relatively more tolerant to high temperatures and reduces overall vulnerability. Additionally, plantation establishment aligned with monsoon cycles and moisture-retaining practices further lowers exposure during critical growth stages.  Extreme heat vulnerability assessment^{59, 60}	
e) Fire	• Maintain low fuel loads through periodic clearing of dry grass, leaf litter, and debris around plantation areas.	Minor: Localized fires may occur due to dry biomass or human activities; their impact is typically restricted to surface vegetation and does not result in widespread tree mortality⁶¹.	Unlikely: Fires were responsible for 10% of tree cover loss in Dumka between 2001 and 2004.	

⁵⁹ <https://thinkhazard.org/en/report/17947-india-west-bengal-birbhum/EH>

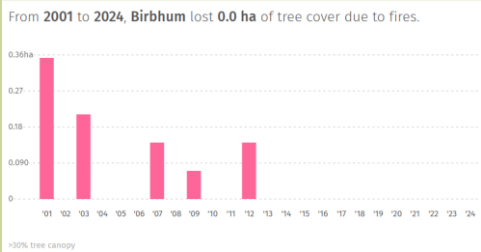
⁶⁰ <https://thinkhazard.org/en/report/70142-india-jharkhand-dumka/EH>

⁶¹ <https://www.pib.gov.in/newsite/erecontent.aspx?relid=32553®=3&lang=2#:~:text=Majority%20of%20forest%20fires%20in,to%20scare%20the%20wildlife%20etc.;>

	• Promote community awareness and controlled burning practices to reduce anthropogenic fire risks. • Provide training on early warning and rapid response systems in coordination with village committees.	Tree cover loss from other sources 350 ha Tree cover loss from fires 38 ha  >30% tree canopy these estimates do not take tree cover gain into account  Fire Vulnerability Assessment Dumka⁶² From 2001 to 2024, Birbhum lost 0.0 ha of tree cover due to fires. Fires were responsible for 0.0% of tree cover loss in Birbhum between 2001 and 2024.	
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<https://www.globalforestwatch.org/dashboards/country/IND/15/5/?category=fires&location=WyJjb3VudHJ5IiwuSU5EliwiMTUuLC11Ii0%3D&map=eyJjYW5Cb3VuZCI6dHJ1ZX0%3D>

			From 2001 to 2024, Birbhum lost 0.0 ha of tree cover due to fires.   Fire Vulnerability Assessment Birbhum⁶³	
f) Precipitation	- Heavy organic mulching and periodic addition of compost/leaf litter to improve water-holding capacity and reduce evaporation. - The adoption of climate-resilient agricultural practices, improved water management strategies will play	Minor: Irregular rainfall such as delayed monsoon onset or uneven distribution can affect plantation establishment, soil moisture availability, and growth rates. However, since the selected species (Arjuna, Asana, teak, mango) are moderately adaptable to rainfall variability, the overall impact on biomass accumulation is expected to be limited and recoverable.	Unlikely: These districts are not classified among high precipitation risk zones. With site-level water management and adaptive planting schedules, the probability of rainfall variability causing substantial impact across the project area remains low.	

⁶³ <https://www.globalforestwatch.org/dashboards/country/IND/36/4/?category=fires&map=eyJjYW5Cb3VuZCI6dHJ1ZX0%3D>

	significant role in mitigating these impacts, Monitoring protocols and adaptive management, including irrigation support and replanting in affected areas.		 Mean Precipitation Vulnerability Assessment⁶⁴	
Geological risk (earthquake, induced landslides, volcanic eruption, desert progression)	Site selection excludes geologically vulnerable areas. Project regions are not prone to major geological disturbances.	Major- Severe geological events could significantly impact project areas.	Very Unlikely The likelihood of significant geological risks such as earthquakes, induced landslides, volcanic activity, or desertification in the project area (Dumka, Jharkhand and Birbhum, West Bengal) is low to very low. Birbhum district falls under Seismic Zone III (moderate risk), while the broader region experiences only low to moderate seismic activity historically⁶⁵. Additionally, landslide hazards in West Bengal are largely confined to the hilly	

⁶⁴ [Link](#)

⁶⁵ <https://nidm.gov.in/pdf/ncrmp/Deliverable%2016-2.pdf>

			terrains of Darjeeling, with negligible occurrence in the plains and plateau regions such as Birbhum. Dumka and adjoining Jharkhand plateau regions similarly experience low seismicity, with only occasional low-magnitude events (e.g., M3.7 recorded), indicating limited geological instability⁶⁶. The project area lies within the stable peninsular region and the alluvial-plateau transition zone of eastern India, characterized by low tectonic activity and limited exposure to geological hazards⁶⁷. Landslide hazards in India are predominantly concentrated in the Himalayan and Western Ghats regions, with negligible occurrence in plateau and plain regions such as Jharkhand and West Bengal⁶⁸. Furthermore, desertification assessments indicate that these states fall within humid to sub-humid zones with low vulnerability to land degradation⁶⁹. Additionally, there is no volcanic activity in mainland India⁷⁰.	
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⁶⁶ <https://riseq.seismo.gov.in/riseq/interactive/index/SlZrdldJWnFqakZFL1pZbHA1dTFCdz09/>

⁶⁷ <https://oicpress.com/ijes/article/view/5656>

⁶⁸ <https://www.nature.com/articles/s41598-025-33446-0>

⁶⁹ [https://vedas.sac.gov.in/en/Desertification_Status_Mapping_\(DSM\)_Atlas.html](https://vedas.sac.gov.in/en/Desertification_Status_Mapping_(DSM)_Atlas.html)

⁷⁰ <https://link.springer.com/book/10.1007/978-3-319-25029-8>

Sea level rise	Not applicable mitigation required due to inland location of the project area.	Minor- No direct impact expected.	Very Unlikely- The project is located in inland districts (Dumka and Birbhum), far from coastal influence.	Low
Climate change (e.g. changes to drought period, rainfall variability, water availability)	Climate-resilient species selection, adaptive plantation practices, and soil-moisture conservation measures are incorporated to address long-term climate variability.	Major - May influence long-term productivity and survival of plantations.	Unlikely- Gradual changes are expected and adaptive measures are integrated into project design to manage variability.	Moderate
Other natural risks	Regular monitoring and adaptive management practices are in place to identify and address unforeseen natural risks during implementation.	Minor- Limited impact expected.	Very unlikely- No significant additional natural risks have been identified in the project area.	Low

Table 3.11b Risk Scores

		Likelihood				
		Very unlikely	Unlikely	Possible	Likely	Almost certain
Impact	Catastrophic	Moderate	Substantial	High	High	High
	Devastating	Low	Moderate	Substantial	Substantial	High
	Major	Low	Moderate	Moderate	Moderate	Substantial
	Minor	Low	Low	Moderate	Moderate	Moderate
	Insignificant	Low	Low	Low	Low	Low

3.12. Leakage

Table 3.12 Leakage Risk Mitigation

Project Intervention	Leakage Risk	Mitigation Measures*
Restoration of barren uplands of vulnerable communities in West Bengal and Jharkhand	As there is no displacement of agricultural production and fuelwood collection from within the project boundary occurs as a result of the project activities, leakage emissions are considered to be zero for the life of the project.	Afforestation in uplands

The leakage for the project has been calculated using the tool PU004⁷¹. The steps mentioned in the tool have been followed to estimate the leakage from the project activities. Considering a conservative approach in assessing the leakage from the project, option 1 of the tool (section 5) has been considered to estimate the potential leakage from the project activities.

1. The leakage estimation using the AR-TOOL15⁷² (section 6) under the following conditions is considered insignificant or accounted as zero:

Conditions	Justification/Explanation
a. Animals are displaced by existing grazing land, and the total number of animals in the receiving grazing land (displaced and existing) does not exceed the carrying capacity of the grazing land	No animals are displaced with any of the existing grazing land; hence, the carrying capacity of the grazing land is not exceeded. The livestock of the beneficiaries in the area are grazed in the gochar land allotted by the village council/state government, as project activities do not result in any kind of animal displacement for grazing.
b. Animals are displaced by existing non-grazing grassland, and the total number of animals displaced does not exceed the carrying capacity of the receiving grassland	No animals are displaced to any existing non-grazing land; hence, the carrying capacity of the receiving grazing land is not exceeded. The area of the barren upland of the beneficiaries has been used for grazing, while gochar land is preferred for grazing in the project area boundary. Primarily, livestock are stall fed by the beneficiaries.
c. Animals are displaced to cropland that has been abandoned within the last five years	The project does not lead to the displacement of animals onto croplands abandoned within the last five years. Field assessments and community interactions confirm that no land-use changes or project activities have resulted in such movement, and the project does not influence or alter animal movement patterns in a manner that would cause displacement to recently abandoned croplands. There are designated grazing areas in and around the project villages, which fall under the common <i>Gair Mazurba Aam (GM)</i> category and are government-owned lands recorded in the village

⁷¹ <https://www.planvivo.org/Handlers/Download.ashx?IDMF=8acbf5d-bb81-430c-964a-8e802bea0ce6> – Section 5

⁷² <https://cdm.unfccc.int/methodologies/ARmethodologies/tools/ar-am-tool-15-v2.0.pdf> - Section 6

revenue maps. In addition, revenue wastelands are also used for grazing purposes.

The available grazing areas are sufficient to support the existing livestock population, and the conversion of private revenue land into orchards under the project will not reduce grazing space for animals. Consequently, no additional migration or displacement of cattle is expected due to the project. The community follows a traditional grazing system, wherein cattle are herded collectively during the monsoon season, and after the harvest of paddy and other monsoon crops, agricultural fields are opened for free grazing. This practice ensures adequate fodder availability throughout the year.



	Image: Gochar land in our project region  Image: Gamra Village Map showing dedicated Gochar land demarcated
d. Animals are displaced into forested lands, and no clearance of trees, or decrease in crown cover of trees and shrubs, occurs due to the displaced animals	No animals are displaced to any forested lands, and no clearance of trees or reduction in crown cover of trees or shrubs has occurred due to the project activities. Dedicated gochar lands are available for grazing within the project landscape, ensuring that livestock continue to use their traditional grazing areas. As a result, there is no impact on forested lands or tree/shrub cover from the project interventions.
e. Animals are displaced with a zero-grazing system	No animals are displaced with any zero-grazing system.

There are very minimal livestock in the project area consisting of a couple of goats, cows and pigs owned by the beneficiaries. During most of the seasons, livestock are stall fed. A gochar⁷³ land is utilized for grazing in the areas where all the village's livestock is grazed. Since a very few portions of the project beneficiaries have livestock, there has been no grazing displacement in the area. The project activities do not hamper the grazing scenario in the villages and remain business as usual.

Calculation of carbon pool leakage emissions from displacement of agricultural activity

$$LE_{CP,a,y} = \sum_{t=1}^y LE_{AGRIC,t}$$

Where,

$LE_{CP,a,y}$ Net GHG emissions due to carbon pool leakage from project area a up to year y (tCO₂e)

⁷³ Gochar land is also known as Fallow land used for grazing in the villages allotted by either the village council or the state government.

$LE_{AGRIC,t}$ Leakage emission due to the displacement of agricultural activities in year t (tCO₂e from AR-TOOL15 v2.0)

Project activities do not result in displacement of livestock or agricultural activities. Livestock belonging to beneficiaries continues to graze on designated gochar lands allocated by village councils/state authorities, and primarily remain stall-fed, ensuring that the carrying capacity of existing grazing or non-grazing lands is not exceeded. Field assessments, community consultations, and LULC analysis confirm that no animals are displaced to abandoned croplands (within the last five years), forested lands, or zero-grazing systems, and no clearance of trees or reduction in crown cover has occurred due to project implementation. Furthermore, project land parcels predominantly comprise fallow, degraded, or low-productivity lands that were not under active cultivation at baseline. As a result, no displacement of grazing or agricultural activities has occurred, and leakage related to livestock movement is considered negligible., hence leakage emission resulting from displacement of the activities is considered as zero.

3.13. Double Counting

The Project Coordinator will ensure that double counting of GHG emission reduction or sequestration is prevented. The Project will use the applicable guidelines and will provide the required evidence/undertaking to Plan Vivo to confirm that the reductions or sequestration generated by the project will not be used in the emissions trading program or for the purpose of demonstrating compliance with the binding limits that are in place in the national/ subnational jurisdiction or sector. There is also a written commitment to this from the Coordinating agency.

Table 3.13 GHG Emission Reduction and Removal Projects and Programmes in the Project Region

Project, Programme or Initiative	Scope	Carbon Credit Generation	Risk Mitigation
NA	NA	NA	NA

There is no Carbon Project within the boundary of the project and hence there is no issue of double counting of carbon benefits. If at a later time there are new carbon projects developed in the same geography, then care will be taken to ensure there are no overlapping benefits. A declaration to the extent will be made by the project coordinator that there are no overlapping claims of the farmers with any other carbon project.

Agreements

3.14. Land Management Plans

Land Management Plans are developed through a structured participatory process involving project participants, community institutions, and the field teams of FCF and Fit Climate Foundation. The process begins with Participatory Rural Appraisal (PRA) exercises, including resource mapping, social mapping, and village-level consultations to identify land use patterns, available resources, and suitable interventions. In addition, assessments of tree-based livelihood opportunities are conducted to guide species selection and utilization planning.

Following the community-level planning, individual consultations are conducted with each participating farmer to develop land parcel-specific plans. During this stage, the location and extent of each project area are identified and verified through field visits, GPS-based mapping, and land records, ensuring clear delineation of project boundaries.

A carbon waiver agreement will also be signed with each of the project participants after their free, prior and informed consent for the transfer of carbon rights to the project coordinator. To ensure that the plans are fully understood and agreed upon, they are explained in detail to each participant in local language (Hindi and Bengali) during consultations. The plantations of mango, sonajhuri, arjuna will help the farmers to get an additional income from the horticulture produce, tasar and the small timber. The soil-moisture conservation measures taken up on the uplands will not only improve the productivity of uplands but also of the medium and lowlands by checking soil erosion. Thus, the said interventions on the farmer's land will not only improve their livelihoods but also the ecosystem and biodiversity of the entire area.

For the detailed Land Management Plan, please refer to Annex 11 of the PDD.

For all details considered to estimate carbon benefits using the appropriate technical specification is added in Annex 7.

3.15. Crediting Period

Carbon benefits are estimated over the period of 30 years and will be renewed to 20 more years to cover up to 50 years.

3.16. Benefit Sharing Mechanism

The benefit sharing mechanism of the project was developed in a way that it is Fair, Inclusive and transparent, and maximum amount of benefit should flow back to the community. The process began with extensive consultations at the village level, where FPIC procedures were followed to secure consent from community members. These consultations involved focused group discussions, participatory rural appraisals, and meetings with community representatives, including Self-Help Groups (SHGs), Women's Livelihood Committees (WLCs), Farmer Producer Organizations (FPOs), and local Panchayati Raj Institutions (PRIs). During these discussions, community members actively contributed their perspectives on how benefits should be shared, ensuring that their interests were prioritized.

The project is designed to ensure that the majority of its financial benefits are directed towards local communities and project participants. Out of the total project budget, approximately 80% has been allocated to community benefit sharing, significantly exceeding the Plan Vivo Standard requirement that at least 60% of Plan Vivo Certificate income be distributed to project participants and local stakeholders.

The community allocation primarily supports plantation establishment and long-term maintenance activities, including labour for pit digging, planting and fertilizer application, procurement of seedlings and planting materials, maintenance operations, engagement of Community Resource Persons (CRPs), fertilizers, and implementation partner associated operational costs as part of the implementation process. These investments not only facilitate successful project implementation but also generate sustainable livelihood opportunities, build local capacity, and strengthen community participation throughout the project lifecycle.

The remaining 20% of the project budget is allocated to FCF India, covering project management and carbon asset development services, ensuring effective project implementation in compliance with certification requirements and long-term project sustainability.

Benefit split across parties:

Recipient	Share	What it covers
Community	80%	Labour, planting material, maintenance, field staff, and cost delivering the plantation
FCF India	20%	Project management, carbon asset development services, capital office cost and pre-project work
Total	100%	

Within the community share, allocations cover:

- maintenance
- fertilizer cost
- field staff (CRPs)
- capital materials and plantation inputs
- fertilizer application, pit filling, and transplanting
- pit-digging labour
- seedlings and plantation models

For more detailed information, refer to section 5.4 and Annex 16 of the PDD.

3.17. Grievance Mechanism

Establishing effective communication and grievance redressal mechanisms is crucial for the success and transparency of any project. FCF and FIT Climate Foundation have taken proactive steps to ensure that stakeholders have accessible channels for voicing concerns and seeking help. It is an avenue for individuals and communities in the project to submit their complaints directly to them if they believe that the carbon project has or is likely to have any adverse impact on them.

Here's a summary of the key points:

- **Designated Contact Person:** The Director of FIT Climate has been appointed as the responsible person for addressing complaints and conflicts. His contact details have been made public during the Local Stakeholder consultation while discussing Input and Grievance redressal mechanism, allowing stakeholders to reach out to him directly.
- **Regular Coordination:** The Community Resource Persons (CRPs) at the village level will maintain regular contact with beneficiaries. They will be responsible for addressing beneficiary concerns within their scope and also to inform the field executives.
- **Escalation to Manager (FCF India):** If the problems or concerns go beyond the field executives' scope, they will not hesitate to report them to Manager (FCF India) for resolution.
- **Monthly Meetings at Block level:** Grievances are discussed openly in the Block level meetings, held twice a month, ensuring that they are addressed collectively and transparently.
- **Monthly meetings at District level:** in addition to the monthly meetings at the Block level twice a month, meetings at the district level are also held once a month. Any issue that remains unresolved in the Block level meeting gets resolved in the district level meeting or escalated to higher level if required.

- Accessible Contact Information: Every beneficiary has access to the contact details of the program team, providing them with direct channels to communicate their grievances. The contact information for grievance redressal and project-related inquiries has been shared while discussing the Input and Grievance Mechanism section in the Local Stakeholder Consultations. Additionally, for farmers who were unable to attend the LSC meetings, access to contact details has been ensured through local Community Resource Persons (CRPs) assigned to their respective areas. These CRPs serve as the primary point of contact, ensuring that all stakeholders, including those who could not participate in the consultations, have a reliable channel to seek information, raise concerns, and engage with the project.

A complaint is considered admissible when:

- It relates to the carbon project.
- It is shared by individuals or communities covered under the carbon project.
- If the individuals or communities allege that they have been or are likely to be affected negatively by the carbon project.

To document all inputs and grievances received from the community, a Grievance Register is maintained at the block level. Any individual from the community can record their inputs or grievances directly in this register. Complaints may be verbal in the block level meetings, or it may be in writing and addressed to the Field Executive/ Manager/ Director of FIT Climate Foundation

As the contact details of the designated persons have been made public, the complaints may be sent to them via:

- Email
- Letter by post or by hand delivery

Information to be included in the complaint:

- Name of the Individual/s submitting the complaint
- In case of representative of the individual/s being affected by the carbon project, name, signature, contact details and written proof of authority of the individual
- Subject/ project's adverse impacts

Supporting evidence is not required but may be helpful in reviewing and resolving the complaints. The complaint may also include suggestions from the complainant on how the issue may be resolved. All complaints will be treated as confidential. FIT Climate Foundation/ FCF India will not disclose any personal data that may reveal the identity of the complainant without their consent.

Any serious negative E&S impact will be reported to Plan Vivo as soon as they become known.

Additionally, The Local governing body for example Gram Panchayats at Village level will serve as an independent arbitrator, ensuring fair and transparent resolution of any grievances that cannot be settled through the standard grievance redressal mechanism. It will act as a neutral mediator, facilitating discussions between stakeholders and ensuring that disputes are addressed in a just and impartial manner. By involving the local government body, the project strengthens community trust, accountability, and long-term commitment, ensuring smooth implementation and minimizing conflicts throughout the project lifecycle.

This comprehensive approach to grievance redressal and communication ensures that concerns are heard, addressed promptly, and transparency is maintained throughout the project's implementation. It also demonstrates a commitment to accountability and responsiveness to the needs of project stakeholders.

Sample snapshots from the Grievance Register

क्रमांक	दिनांक	गाँव	समूह / किसान का नाम	विवरण	प्रतिस्पर्धा	कार्य प्रतिक्रिया	टिप्पणी
1.	27/08/25	आपनवल	विताला पुनड	आम का पौजा मर गया है 120 आम का पौजा बाडि है	C.R.P दिनेश कुमार मल्लिक	120 पौजा दे दिया गया	4/09/25
2.	29/08/25	बोधमोडा	संतोष मंडल	बगान में चाणसी नष्ट है	दिनेश कुमार मल्लिक	C.R.P मिडिंग में सुचना दिया गया	
3.	29/08/25	गामरा	रंजित मंडल	बगान में पाव ठो गया है पाव मारने का काम मांगे	रंजित मंडल	C.R.P मिडिंग में सुचना दिया गया	
4.	31/08/25	मियापानी	कालीचरण पट्टा	पौजा में कीड़ा लग रहा है कीड़ा मारने का काम मांगे	सुमित्रा राय	C.R.P मिडिंग में सुचना दिया गया	
5.	2/09/25	कोरेकना	कुमन कुमर दिग्ध	बगान में पाव ठो गया है साफ लकड़ का मांगे	रंजित मंडल	C.R.P मिडिंग में सुचना दिया गया	
6.	4/09/25	विताला	उषा किराडी	आम का पौजा मर गया है	रंजित मंडल	पौजा दे दिया गया है	16/9/25
7.	5/09/25	आपनवल	प्रदीप मंडल	दिकैचर लगवाने का मांग किया है	समृद्ध मराठ	C.R.P मिडिंग में सुचना दिया गया	
8.	8/09/25	हुमना	स्वीकृत मिश्रा	लकड़ एवं दूध का मांग किया है	रंजित मंडल	C.R.P मिडिंग में सुचना दिया गया	
9.	9/09/25	गामरा	विमरानी मंडल	सगवन पौजा का गुणकता ठीक नही है	रंजित मंडल	C.R.P मिडिंग में सुचना दिया गया	
10.	12/09/25	जगतपुर	समाकान्त राय	मर हुआ पौजा कीड़ा नष्ट पौजा लगाने का मांग है	सुमित्रा राय	पौजा दे दिया गया है	24/09/25
11.	15/09/25	यासकुंडा	जुलियु सुर्	कीड़ा मारने का काम मांगे एवं साफ लकड़ का मांगे	दिनेश कुमार मल्लिक	C.R.P मिडिंग में सुचना दिया गया	

क्रमांक	दिनांक	प्रकार	गाँव	जमुडा/ किलाल का नाम	विवरण	दिशमैजान C.R.P	कार्य योजना	टिप्पणी
24.	15/10/25	मसलिया	पट्टाडीह	गोगरा हंसदा	जंगल के का का मांग	मंगल हेमरा	C.R.P मीटिंग में चुनना दिया गया	
25.	16/10/25	दुमका	आलमसोल	साताराम पुनर	पौजा में 22 किंग कने का मांग	किनी कुमर	रहे किंग किपा	28/10/25
26.	18/10/25	जमुडी	जिरीकबाबा	जालुलाल हॉल	जंगल में चलाए नई है चलाए का मांग	खुराबू देवी	मेनेस कार्य के समय किया जायेगा इसका चुनना दिया गया	
27.	21/10/25	रामगड	पोपरा	बुजवा देहरी	जंगल का पौजा का मांग	सुमिया राय	C.R.P मीटिंग में चुनना दिया गया	
28.	23/10/25	मसलिया	ठाड़ी	विनोद छाँ	पौजा में बीड़ा लया रहा है बीड़ा मारने का मांग	मंगल हेमरा	C.R.P मीटिंग में चुनना दिया गया	
29.	24/10/25	नामा	उकलवाप	अनम कुमर मित्रा	जंगल में जाए हुआ है जाए मारने का मांग	साधुल मयरा	C.R.P मीटिंग में चुनना दिया गया	
30.	25/10/25	कीड़ीकुंड	आमगाफी	फुली मराडी	जंगल की सुरक्षा ठीक से नहीं हो रहा है जंगल की पराव का मांग	रक्षित मंडल	मेनेस कार्य के समय किया जायेगा इसका चुनना दिया गया	
31.	15-11-25	शिकारीपड़ा	गंजकुंड	संतोष कुं	जंगल और पानी का मांग	रक्षित मंडल		
32.	18/11/25	जमुडी	दुमरिया	रविचंद्र मित्रा	पौजा में 22 किंग कने का मांग	खुराबू देवी		
33.	19/11/25	जिरीकबाबा	अनम	सिमा रानी गंडल	जंगल में जाए हुआ है जाए मारने का मांग	साधुल मयरा		

3.18. Project Agreements

The Project will follow the FPIC protocols throughout its entire lifetime, and it has, and it will document any lessons learned that can improve future actions. This can better guide the actions of the organization in future projects and diminish future risks and challenges

The agreement will be made with the Project Participants i.e.; the indigenous farmer belongs to the community to get their consent to the project. A proper project-level grievance mechanism will be set through which grievances are managed. This will ensure broad community level confidence and support for the project. Project will ensure to disclose any financial or nonfinancial compensation provided to community members as part of the engagement process.

A copy of the Project Agreement is enclosed in Annex 12.

In this project, FCF India will directly act as the implementing partner for conducting all project interventions in Dumka district of Jharkhand, while in Birbhum district, FIT Climate Foundation will implement all activities, with FCF responsible for monitoring and serving as the primary point of communication.

In this Project as important stakeholders, women will be organized into SHGs, WLCs and FPOs and will be involved in preparing village-level micro-plans, work schedules, doing community-based review of activities and protecting and maintaining plantations and various conservation structures.

To further strengthen the rights to carbon there will be a signed agreement with the farmers to ensure the same. The agreements were carefully structured to ensure that project participants' rights to land

and resources were not removed, diminished, or threatened. This was done by incorporating clear clauses in the agreements that recognize and respect customary and legal land tenure systems. Additionally, agreements specify that the project interventions will be implemented in collaboration with the community and will not interfere with their existing land-use practices. The agreements also define the financial and non-financial benefits that participants will receive, ensuring transparency in benefit-sharing mechanisms. A grievance redressal mechanism has been established to allow community members to raise concerns and seek resolution without fear of retaliation.

The agreement period aligns with the project's duration and has been designed to allow communities to make a meaningful commitment to implementing and monitoring project activities. Given that land-use and agroforestry interventions require long-term commitment for effective results, the agreements are set for a period that enables community members to see tangible benefits while maintaining flexibility to adapt to evolving circumstances. This ensures that project participants remain engaged and motivated, with the necessary support from the project coordinator and other implementing partners. Regular monitoring and participatory reviews will be conducted throughout the project cycle to document lessons learned, address challenges, and improve future engagement strategies.

The agreement period for the project is 30 years, ensuring long-term commitment and sustained benefits for the participating communities. This duration aligns with the growth and productivity cycles of the selected tree species considered in the project which require extended periods to reach full maturity and provide optimal economic and ecological benefits.

Additionally, the 30-year agreement aligns with the projects crediting period, ensuring that the project can generate and sell carbon credits over time. Sustainable monitoring and verification are required for carbon finance, and a long-term commitment from farmers and communities is essential for maintaining the carbon sequestration potential of these plantations.

Beyond financial and environmental gains, the agreement period ensures that project participants receive continued technical, financial, and institutional support from the project coordinator and implementing agencies.

4. Monitoring and Reporting

Indicators

4.1. Progress Indicators

Table 4.1 Progress Indicators

Output/Activity	Indicator	Means of Verification
Output 1 Strong community institutions including women SHGs, WLCs and FPOs in place at the village, cluster and block level and their knowledge, skill and capacity enhanced for development, implementation and monitoring of climate resilient plans and sustainable management of land and livelihoods.	% of project participants part of any community institutions (SHGs/ WLCs/FPOs)	Signed resolutions of the community institutions These resolutions are done when the community institutions are formed to capture the purpose and the members who become part of the institution.

		The signed resolutions will be maintained at the community institution level, However FIT Climate will have access to these evidences and will be responsible for providing these if required.
Activity 1.1 Engaging with the community, Periodic meeting with the community institutions, Leadership Identification to work as community resource persons (CRPs).	Number of meetings held	Community meeting minutes with signatures of participants The community meeting minutes/ resolutions are maintained in a register at the community level. These are hand written by the President/Secretary/CRP in the local language and signed by all members present. While these do not have a particular format, the details include the date, location details, points of discussion and decisions taken unanimously.
Activity 1.2 Selecting project areas suitable for intervention through community led planning exercise including visioning exercise, using PRA techniques for social and resource mapping and taking up INRM and livelihoods planning.	Number of households participating in the planning exercises The Integrated Natural Resource Planning (INRM) exercise is a one-time activity which is carried out at the start of a project in a particular area. The representatives from all the villages coming under the watershed area participate in the planning exercise. Once the planning is done, the different components like agroforestry, soil moisture conservation, creation of water bodies, land development etc. are implemented in phases based on the availability of resources. There is no particular schedule for this and is taken up based on the requirement.	List of participants in the planning exercise with signature, social and resource maps of the village
Activity 1.3 Capacity building of the community institutions and CRPs for implementation and monitoring of the plantation and soil-moisture conservation work.	Number of capacity building programs held Number of participants attending the capacity building programs	Training Module, Training Report, Photos Registration list with signatures of participants

Output 2 4000 hectares (ha) of upland restored through land plantation of trees supporting livelihoods of participating households in the short term as well as long term.	Number of households in the village engaged in tree planting activity	list of project participants
Activity 2.1 For the new plantation- Pre-plantation activities including land preparation, fencing, CPT, pit digging, composting and termite treatment etc.	Number of pits dug Number of irrigation structures constructed Hectares of land with fencing/CPT done	Photos, carbon waiver agreements, payment sheet The payment sheet has the details of labour payment for the said activities.
Activity 2.2 Planting activities including sourcing of saplings from Nursery, planting of saplings	Tree Species Number of trees planted Area in hectares under existing plantation Area in hectares under new plantation	Tree distribution list Carbon Rights Agreement Photographs
Activity 2.3 Tree maintenance activities for new as well as existing plantation including watering, weeding, hoeing, application of manure, pruning, thinning, growth monitoring etc.	Hectares of land where maintenance activities done	Beneficiary list Field verification This will be done by FCF India on an annual basis.
Output 3 Sustainability built into the programme through support with mainstream programmes for input support related to agroforestry managementpractices.	% of total work from support of the Government	Report, MOM and photographs
Activity 3.1 Community plan incorporation into the Gram Panchayat Development Plan for leveraging from the Government	Components of community plan included in GPDP (Gram Panchayat Development Plan)	Copy of the GPDP ((Gram Panchayat Development Plan) with the community plan incorporated in it

Activity 3.2 Facilitation/Awareness of District and Block level workshops	Number of workshops facilitated	Photos, workshop report
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4.2. Carbon Indicators

Table 4.2 Carbon Indicators

Project Intervention	Carbon Indicator	Means of Verification
Restoration of barren uplands of vulnerable communities in West Bengal and Jharkhand	$\Delta CTREE_BSL, t$ Change in carbon stock in tree biomass under the baseline scenario within the project area in year t	Assumed to be Zero, see Section 3.2
	$\Delta CTREE_PROJ, t$ Change in carbon stock in tree biomass under the project scenario within the project area in year t	To be Calculated with AR-TOOL14 Equation 1. As difference between $CTREE, t1$ and $CTREE, t2$
	$CTREE, t1$ and $CTREE, t2$ Carbon stock in trees in the tree biomass estimation stratum at the start (t1) and end (t2) of the monitoring period	To be Calculated with AR-TOOL14 Equation 12, based on $BTREE, t1$ and $BTREE, t2$ from measurement of sample plots with stratified random sampling to determine (see Annex 7 for detailed sampling and monitoring plan).
	$BTREE, t1$ and $BTREE, t2$. Tree biomass in the tree biomass estimation strata; t d.m	To be Calculated with AR-TOOL14 Equation 13, based on A and $bTREE$.
	A Total area of the tree biomass estimation stratum; ha	To be Calculated as sum of A_i for all biomass strata.

	$bTREE$ Mean tree biomass per hectare in the tree biomass estimation strata; t d.m. ha ⁻¹	Calculated with AR-TOOL14 Equation 14, based on w_i and $bTREE_{p,i}$ for each biomass stratum.
	A_i Area of a stratum i	To be Measured using methods described for the stratification in Annex 7.
	$bTREE_{p,i}$ Mean tree biomass per hectare in stratum i ; t d.m. ha ⁻¹	To be Calculated with AR-TOOL14 Equation 16, based on $bTREE_{p,i}$ and n_i
	$bTREE_{p,i}$ Tree biomass per hectare in plot p of stratum i ; t d.m. ha ⁻¹	To be Calculated with AR-TOOL14 Annex 1 Equation 1, based on $bTREE_{p,i}$ and $APLOT_{p,i}$ From fixed area plot measurements described in Annex 7.
	n_i Number of sample plots in stratum i .	From fixed area plot measurements described in Annex 7.
	$BTREE_{p,i}$ Tree biomass in sample plot p of stratum i ; t d.m.	To be calculated with AR-TOOL14 Annex 1 Equation 2, based on $BTREE_{j,p,i}$

	$BTREE_{j,p,i}$ Biomass of trees of species j in sample plot p of stratum i ; t d.m.	To be calculated with AR-TOOL14 Annex 1 Equation 3, based on $BTREE_{l,j,p,i}$
	$BTREE_{l,j,p,i}$ Biomass of tree l of species j in sample plot p of stratum i ; t d.m.	To be calculated with AR-TOOL14 Annex 1 Equation 4, based on $f_j(x_{1,l}, x_{2,l}, x_{3,l}, \dots)$ and R_j
	$f_j(x_{1,l}, x_{2,l}, x_{3,l}, \dots)$ Above-ground biomass of the tree returned by the allometric equation for species j relating the measurements of tree l to the above-ground biomass of the tree; t d.m.	To be calculated for each tree measured using allometric equations in Annex 7.
	R_j Root-shoot ratio for tree species j ; dimensionless	Refer Annex 7 for root-shoot ratios applied.

For detailed explanation of method of calculating carbon benefits, data and parameter considered, sampling plan and role and responsibilities, refer to Annex 7 of the PDD.

4.3. Livelihood Indicators

India, as a signatory to the Sustainable Development Goals (SDGs), has aligned its national development agenda with a strong focus on poverty alleviation, inclusive growth, and livelihood enhancement through frameworks led by NITI Aayog⁷⁴. At both national and state levels (West Bengal and Jharkhand), development priorities emphasize strengthening rural livelihoods, enhancing income opportunities, and promoting sustainable economic development. In West Bengal, the West Bengal State Rural Livelihoods Mission (Anandadhara)⁷⁵ focuses on poverty reduction through self-employment, skill development, and women's empowerment (West Bengal State Rural Livelihoods Mission, 2012). Similarly, in Jharkhand, the Jharkhand State Livelihood Promotion Society (JSLPS)⁷⁶,

⁷⁴ <https://niti.gov.in/divisions/division/climate-change-and-environment>

⁷⁵ <https://anandadhara.wb.gov.in/index.php/home/benefits>

⁷⁶ <https://jslps.in/AajeevikaJSLPS.aspx>

under the Rural Development Department, implements livelihood promotion and poverty alleviation initiatives by strengthening grassroots institutions and enabling sustainable income generation. These efforts contribute to enhancing economic resilience of rural households and are aligned with broader national objectives of poverty reduction and women empowerment.

Table 4.3. Livelihood Indicators

Livelihood Indicator	Relation to SDGs	Relation to Host Country's SDG Targets	Means of Verification
% increase in disposable income of households as a result of project interventions	Contributes to SDG 1: No Poverty by enhancing rural incomes and improving economic resilience of households, and SDG 5: Gender Equality by promoting women's participation in income-generating activities through SHGs and community institutions.	Aligns with India's national priorities on poverty alleviation and women's economic empowerment under frameworks coordinated by NITI Aayog, focusing on increasing rural household income and strengthening women-led livelihoods.	Income data of at least 10% sample households will be collected at project start (baseline) and monitored every 5 years. Data collection will be undertaken by the FIT CLIMATE FOUNDATION team.
Increased access to high value horticulture and agriculture produce	Contributes to SDG 1: No Poverty by diversifying and increasing household income sources, and SDG 5: Gender Equality by enhancing women's access to productive resources and decision-making in agriculture.	Supports national targets on improving livelihood opportunities and promoting women's participation in agriculture and allied sectors under India's SDG framework.	Records of production data during harvest cycles, including quantity and type of produce, will be maintained and periodically verified by the FIT CLIMATE FOUNDATION team.

4.4. Ecosystem Indicators

India's SDG strategy also prioritizes environmental sustainability, climate resilience, and restoration of degraded ecosystems through policy frameworks such as the National Action Plan on Climate Change (NAPCC)⁷⁷ and State Action Plans on Climate Change (SAPCCs)⁷⁸. States like West Bengal and Jharkhand⁷⁹ focus on land restoration, afforestation, and sustainable natural resource management,

⁷⁷ <https://static.pib.gov.in/WriteReadData/specificdocs/documents/2021/dec/doc202112101.pdf>

⁷⁸ https://www.theclimategroup.org/our-work/resources/developing-state-action-plan-climate-change-west-bengal-india?gad_source=1&gad_campaignid=20892649899&gbraid=0AAAAADxBv6uLWTlxbJf8Hq3SV9zAugys6&gclid=Cj0KCQjw4PPNBhD8ARIsAMo-iczd9n7X-ouGqwMS97kTHNVxhkxxY938ZebjiUExpE5n69BD3nHi0e0aAuvFEALw_wcB

⁷⁹ <https://moef.gov.in/uploads/2017/08/Jharkhand.pdf>

especially in ecologically vulnerable regions such as Birbhum and Dumka. Additionally, India's commitment under the Paris Agreement to enhance carbon sinks through afforestation and reforestation aligns with ecosystem restoration objectives, contributing to improved biodiversity, soil health, and long-term environmental sustainability.

Table 4.4 Ecosystem Indicators

Ecosystem Indicator	Relation to SDGs	Relation to Host Country's SDG Targets	Means of Verification
Tree Species Richness (Number)	Contributes to SDG 15: Life on Land by enhancing terrestrial biodiversity and restoring degraded ecosystems.	Aligns with India's national priorities on afforestation, biodiversity conservation, and ecosystem restoration under SDG 15, as coordinated by NITI Aayog.	A biodiversity register will be maintained at the community level to record flora species richness. Communities will be trained to monitor indicators, and results will be documented and shared every five years.
Tree Cover (%)	Contributes to SDG 13: Climate Action and SDG 15: Life on Land by increasing carbon sequestration and improving land cover.	Supports national targets related to increasing forest and tree cover and creating additional carbon sinks under India's climate commitments.	Periodic monitoring through field surveys and/or remote sensing methods will be undertaken to assess changes in tree cover percentage over time.
Fauna Species Richness (Number)	Contributes to SDG 15: Life on Land by enhancing habitat quality and promoting biodiversity, including animals, birds, and insects.	Aligns with national goals on biodiversity conservation and ecosystem restoration by improving habitat conditions in degraded landscapes.	A biodiversity register will be maintained at the community level to record fauna species richness (including animals, birds, and insects). Community members will be trained for monitoring, and results will be compiled and shared every five years.

Monitoring

4.5. Monitoring Plan

A comprehensive monitoring framework has been established to assess project implementation, carbon monitoring, socio-economic outcomes, and ecosystem impacts over the crediting period. The framework is jointly prepared by FIT Climate Foundation, as the on-ground implementing partner, and Fair Climate Fund India (FCF India), and is designed to ensure systematic data collection, transparent

reporting, and continuous performance improvement. Monitoring outcomes will directly inform adaptive project management, support periodic reporting requirements, and provide the technical basis for carbon certification.

Project progress will be assessed annually through structured field monitoring, GIS-based spatial verification, and project management information systems. Key indicators include farmer participation, plantation coverage (existing and new), tree survival and growth, maintenance operations, and capacity-building initiatives.

Carbon monitoring will be conducted using a stratified random sampling approach to monitor plantation survival assessments, biomass growth measurements, and remote sensing-based verification of project parcels. Changes in carbon stocks will be quantified using approved carbon accounting methodologies, with verification intervals aligned to plantation growth cycles, typically every three to five years. Monitoring data will be used to refine emission reduction estimates.

Socio-economic impacts will be evaluated to ensure representation across landholding sizes, agroforestry models, and participant categories. Key indicators include changes in household income and access to higher-value agricultural and horticultural produce. Livelihood assessments will be undertaken every five years, complemented by annual tracking of selected indicators to capture ongoing project benefits.

Biodiversity outcomes will be monitored through periodic assessments of tree species richness, tree cover, and fauna presence, conducted at five-year intervals and benchmarked against the Rapid Biodiversity Assessment baseline. Community members will be actively engaged in biodiversity surveys and socio-economic assessments, supported by trained project staff. Results from each monitoring cycle will be communicated to participating communities through feedback meetings to ensure transparency and continued engagement.

Monitoring activities will be coordinated by FIT Climate Foundation and FCF India through a dedicated technical team, including project management, operations, GIS, MIS, field coordination, finance, and community resource personnel. Adequate technical, human, and financial resources have been allocated to support monitoring, verification, and reporting functions..

For the detailed monitoring plan, please refer to Annex 13 of the PDD. Refer to Annex 7 for the details of sampling approaches used, sample sizes, sample site locations, stratification, frequency of measurement and QA/QC procedures.

4.6. Progress Monitoring

Activity	Activity Indicator (measure annually)	Annual Target	Achievement			Space for results and mitigating actions
			Full Target Achievement	Partial Target Achievement	Missed Target	
Community Participation	% of project participants part of any community institutions	60%	100 %	>80%	<40%	The % here indicates the % achievement of the annual

	(SHGs/ WLCs/FPOs)	12				target for each indicator. The annual targets will be broken down into monthly targets and will be monitored by the FIT Clilmateteams on a monthly basis. If the targets for these indicators are not met for one monitoring period, the spill over targets will be planned for the next monitoring period.
	Number meetings held for planning	70%				
	% of households participating in the planning exercises	15				
Capaci ty Buildin g	Number of capacity building programs held	12	100%	>80%	<40%	
	Number of participants attending the capacity building programs	600				
Agrofo restry (Pre- plantat ion and Plantat ion activiti es)	Number of households in the village engaged in tree planting activity	300	100%	>80%	<40%	
	Number of pits dug					
	Number of trees planted	1,70,000				
	Area of existing plantation	1,70,000				
	Area of new plantation					

	Hectares of land with fencing/CPT done	428.41				
	Hectares of land covered with application of manure	291.150				
	Tree Species	600				
		600				
		3				
Maintenance of Plantation	Hectares of land where maintenance activities done including watering, weeding and mulching, composting, pest treatment as and when required, staking, pruning and thinning.	720.091	100%	>80%	<40%	
Project Sustainability	Number of workshops done	3	3 100%	2 80%	1 40%	
Livelihood	Percentage of total work from plantation activities like	10	100%	80%	40%	

	pit digging, irrigation facilities, fencing and other maintenance activities					
	Percentage of work from rearing of cocoons for sericulture from Arjun plantation					

If one or more of the indicator values is below its performance target (Partial target achievement) for one or more monitoring period, the full issuance is received but corrective actions must be implemented. The major outcome of all the activities is the planting of trees and the maintenance of existing as well as new plantations. All other activities such as capacity building of the people, planning exercises, field preparations during the pre-planting phase and also establishing community nurseries and building convergence with the Government through Gram Panchayat Development Plan (GPDP) feed into the two outcomes- tree plantation and tree maintenance. Hence if the targets for these two indicators are not met for one monitoring period, the spill over targets will be planned for the next monitoring period. Ideally, this situation would not arise as the progress will be closely monitored by the FIT Climate team on a monthly basis and corrective actions will be taken for the timely achievement of targets.

4.7. Carbon Monitoring

The carbon indicators will be monitored every year and based on the emission calculations, issuance will be done and reported in the Annual report. Verification will be taken up once in 5 years and any change in the credits will be adjusted within the crediting period. For the detailed carbon monitoring indicators, please refer to section 4.2 of the PDD.

Additionally, Baseline trees will be inventoried along with the project trees in monitoring of carbon stocks but their continued existence, consistent with the baseline scenario, will be monitored throughout the crediting period of the Project activity.

4.8. Livelihood and Ecosystem Monitoring

Livelihood Monitoring

Activity	Activity Indicator (measure annually)		5 year Targets			Space for results and mitigating actions
		Target	Full Target Achievement	Partial Target Achievement	Missed Target	

Improvement in Income	% increase in income of households as a result of project interventions The increase in income will be measured against a new income baseline every 5 years.	15%	100%	>80%	<10%	Value addition of products will be thought of in case there is less than 10% increase in income at the end of 5 years
Increased access to high value horticulture and agriculture produces	Increased access to high value horticulture and agriculture produces	25%	100%	>80%	<10%	Crop diversification and crop intensification for agri-products will be taken up

Ecosystem Monitoring

Activity	Activity Indicator (measure annually)	Annual Targets				Space for results and mitigating actions
		Total Target	Full Target Achievement	Partial Target Achievement	Missed Target	
Tree Cover The other two indicators included in the ecosystem indicator section 4.4- Tree Species richness and fauna species richness are not included here as they are more of qualitative parameters and will be monitored as part of Biodiversity monitoring.	Number of trees planted	3,825,200	100% of the annual target	<80% of the annual target	<40% of the annual target	Plan to be revised to account for the missed target

The ecosystem indicators will be monitored by the FIT Climate Foundation and FCF India team with the help of the community. Various methods will be adopted for measuring the flora and fauna species richness and tree cover. The community will maintain a biodiversity register for maintaining the data.

For the data collection, the community will take up direct observation/sampling techniques like:

- **Visual Surveys:** Walk through the area and record each species they observe. This method will be followed for plants, larger animals, and easily identifiable species.
- **Photographic Documentation:** The community will use their smartphone to capture images of species for later identification.
- **Quadrat Sampling:** A square or rectangular plot may be used to assess species richness and abundance.

For tracking populations of specific bird or mammal species, the community will use the following methods.

- Point counts for birds.
- Acoustic monitoring for vocal species.
- Direct observation for mammals.

They will conduct surveys multiple times, at different seasons or times of day, to account for species with varying activity patterns. This will also help in observing seasonal changes in plants and animals (e.g., flowering times, migration patterns).

The community members who will be involved in monitoring will be provided training by the FIT Climate Foundation and FCF India team for the following:

- **Species identification, data collection, and interpretation:** Mobile devices and apps for real-time data collection, GPS devices for geotagging observations, analysing images for species identification using apps and online tools.
- **Keep Records:** Using the Biodiversity Register to record observations systematically.
- **Standardize Effort:** Ensure consistency in sampling effort, such as using the same quadrat size or duration of observation.
- **Conservation priorities and strategies:** Be mindful of the environment to avoid harming habitats or species.

In addition, the FIT Climate Foundation and FCF India team will also incorporating indigenous and local knowledge into biodiversity assessments by:

- Conducting interviews with elders and community members.
- Documenting culturally significant species.

By employing these methods, communities can actively contribute to the conservation of biodiversity while enhancing their understanding of the ecosystems they depend on.

The team will ensure that livelihood and ecosystem monitoring results are shared with stakeholders, including project participants and existing community institutions (SHGs, WLCs, FPOs), on an annual

basis through village-level meetings and consultations. Results will be communicated in an accessible format to facilitate stakeholder understanding.

Feedback on observed trends and their likely causes will be collected through structured stakeholder consultations, including focus group discussions (FGDs) and community meetings. These consultations will enable the PP to assess stakeholder perspectives on the effectiveness of project activities and identify any challenges or unintended outcomes. Team will then analyze monitoring data in conjunction with stakeholder feedback to evaluate the relationship between observed trends and project interventions. Based on this assessment, we will implement adaptive management measures, including necessary modifications to project activities, to address identified issues and improve project performance.

There are the following consequences for certificate issuance and corrective actions that will be implemented if the performance targets are not met. These apply to all indicators. The ecosystem and livelihoods monitoring indicators will be monitored and results shared every monitoring period.

- (i) If the values for all indicators meet or exceed their performance target, the full issuance is received;
- (ii) If one or more of the indicator values is below its performance target for one monitoring period, the full issuance is received but corrective actions must be implemented;
- (iii) If one or more of the indicator values is below its performance target for two consecutive monitoring periods, certificate issuance is withheld until corrective actions have been implemented and the performance target(s) have been reached.

Monitoring Results

The monitoring of both livelihood and ecosystem indicators is a crucial aspect of the project, ensuring that the intended benefits are realized and any deviations from targets are addressed through corrective actions. Monitoring will be conducted annually, with a comprehensive review every five years for livelihood indicators and annually for ecosystem indicators (Refer section 4.8.1 and 4.8.2 for detailed information). Data collection will be carried out through household surveys, focus group discussions (FGDs), and interviews to assess income levels, crop production, and diversification. For ecosystem indicators, tree cover will be monitored using remote sensing, field visits, and tree count surveys to verify survival and growth rates. To ensure transparency, community members, implementation partners, and local resource people will actively participate in the monitoring process throughout.

Monitoring results will be compiled into annual progress reports and shared with stakeholders, including local communities, project beneficiaries, implementation partners, and relevant authorities. Findings will also be communicated through village meetings, stakeholder workshops, and discussions with community representatives, and their feedback and input will be collected if required. Additionally, a centralized database will be maintained where monitoring results and corrective actions will be recorded and updated for easy access by key stakeholders.

Corrective action will be taken if targets are not met. If all performance indicators meet or exceed the targets, the full issuance of certificates will proceed without delay. However, if any indicator falls below the target for a single monitoring period, the full issuance will still be granted, but corrective measures will be required. If targets are missed for two consecutive monitoring periods, certificate issuance will be withheld until corrective actions are implemented and verified. In cases where income increases by less than 10%, additional value addition strategies such as market linkages, product processing, and improved agricultural practices will be introduced. If agriculture and horticulture production increase by less than 10%, crop diversification and intensification programs will be

promoted. If tree cover falls below 20,000 trees planted annually, the project plan will be revised to incorporate enhanced community engagement, nursery expansion, and improved planting strategies.

Reporting

4.9. Annual Report

The annual reporting cycle will follow a 1st January to 31st December timeline. The first annual report will be shared in 31st June 2026, covering the period from the project start date to 31st December 2025. Subsequently, annual reports will be shared every 31st January, covering the duration from 1st January to 31st December of the preceding year.

4.10. Record Keeping

The project agreements, land management plans, monitoring results will be maintained in the hard copy as well as digital mode at the project coordinator level. KML files will be maintained for each land parcel per individual farmer level.

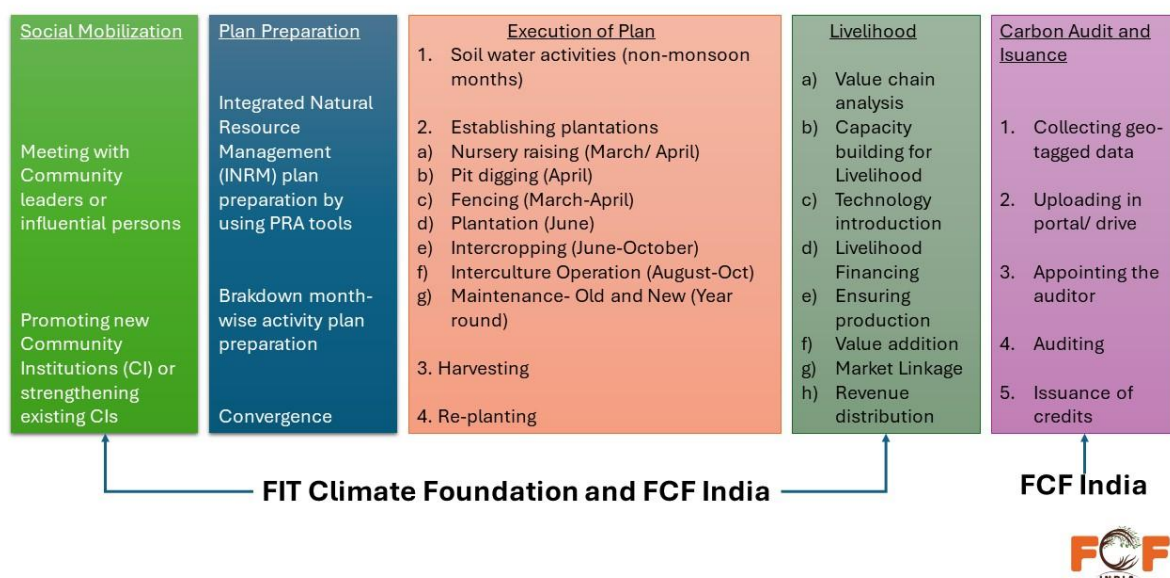
The hard copies of land entitlement document, inheritance certificate certified by Gram Panchayat, carbon rights agreement signed by the project participant and their details such as ID proof and bank details are maintained at the field office level of FIT Climate. All other documents including these are maintained as soft copies in Google drive by FCF India.

Please refer to Annex 14 where more details about record keeping are included.

5. Governance and Administration

5.1. Governance Structure

Governance Structure- Role of different Stakeholders



The Governance and administration of the program will be done by different entities as describes below:

The Project Applicant organization is Fair Climate Fund India.

The company is registered as private limited company as per the regulations of Government of India.

As a social enterprise FCF works on Carbon projects with various stakeholders to ensure that vulnerable communities have a direct and long-term socio- economic and environmental impact through the sale of carbon credits generated.

It will take up different tasks for carbon asset development (CAD) including certification of the project and the processes required for that such as collecting geo-tagged data and verifying and managing it, facilitate the third-party audit of the project and also the issuance and sale of carbon credits.

FIT Climate Foundation

FIT Climate Foundation is responsible for managing the village-level groups for the planning and implementation of the Carbon Project. The executive committee of the FIT Climate will be representative of the village executive groups. They will be responsible for building the technical capacities of farmers and mobilising the communities.

They will be responsible to facilitate partnerships in agri value chain to increase farmers' income as well. They will also be responsible in the implementation of fair benefit sharing to the communities.

The Carbon investment is envisaged to be rolled out through FCF India Private Limited FCF India along with FIT Climate Foundation will plan, implement and monitor the program. There is a formal agreement between FCF India and FIT Climate Foundation with clarities of terms and conditions.

FIT Climate along with FCF India will execute the plan developed for the project. They shall sensitize the farmers to plant trees on their barren uplands and impart training on the correct method of planting, maintenance and related POP of the plants. They shall maintain all records, Management Information Systems (MIS), Audits, and Utilization Certificates. They will also educate the villagers about the carbon credits that would be generated from the plantation activity that should not only improve the environment but also result in carbon revenue and hence the livelihoods. They shall also do the ground implementation and monitoring of the carbon emission project which includes identification of households, land mapping, pre-plantation, plantation and post-plantation activities, signing of carbon rights agreement, growth monitoring, soil moisture conservation activities, convergence with mainstream development programs of the government etc. Further they will also work on value chains and backward and forward linkages for the products undertaken in the project such as mango, sericulture and sonajhuri.

The community or the project participants play a crucial role in the planning process.

The project intervention is built around the leadership of local communities, especially the women. Women Self Help Groups (SHGs)/ Women Livelihoods Committees (WLCs) at the village level who are the drivers of the project. Women from the project villages, especially the tribal women, constitute these groups. They have been oriented at the beginning of the project to enable them for better participation in the planning and implementation of the project.

In most cases, the SHGs are already there in the villages which are formed by State Rural Livelihoods Mission of the government. FCF India and FIT Climate Foundation teams will work with these SHGs only but build their capacities and leadership qualities through community mobilization, visioning exercises, training and exposure, facilitating participatory planning exercises through them, involving them in monitoring etc.

Women community leaders or CRPs have been identified from among the SHGs/WLCs and from the community together with Community Volunteers who help in carrying out intensive ridge to valley integrated natural resources management (INRM) planning at the village level.

The CRPs are selected from among the community. Women members of different community institutions like SHGs/WLCs/FPOs as well as youth are involved in different activities like planning, implementation and monitoring, thereby remarkably improving their leadership qualities and other skills such as planning for their resources, problem solving, cohesiveness, responsibility sharing, mutual help, collective action, economic and social empowerment etc. Seeing their leadership skills and pro-action, they are also encouraged to take up the role of CRPs where they are provided with specialized skills and paid for their services either through the project or through the government on an assignment basis.

The Community Resource Persons (CRPs) visit the hamlet and facilitate a community meeting to gather valuable insights and input from the community members. During this meeting, the CRPs engage with the community to identify the available resources that can be utilized for the project. They encourage active participation and involvement, allowing the community to voice their ideas, suggestions, and aspirations.

They use various Participatory Rural Appraisal (PRA) tools and techniques such as wealth ranking, social mapping, vision building, livelihood, and watershed planning in the villages to make the plan inclusive and prioritize the needs of the marginalized communities based on gender, age, ethnicity, religion and social status. Priority is given to poorest of the poor families, single women, destitute, elderly, schedule caste and schedule tribe, minority groups etc. FCF India and FIT Climate Foundation staff facilitate the entire process together with the community leaders and volunteers to ensure that the concerns and aspirations of the marginalized communities are considered and addressed through the project interventions.

Based on the inputs received from the community, the CRPs work collaboratively with them to formulate a project plan. This plan takes into consideration the identified resources, community priorities, and project objectives. The plan is carefully verified and reviewed to ensure its feasibility and alignment with the project goals.

By involving the community in the planning process and considering their inputs, the project aims to foster ownership, participation, and empowerment among the community members. This approach enhances the project's relevance, effectiveness, and sustainability in addressing the needs and aspirations of the community.

As means of verification, the community meeting minutes and signed resolutions are maintained at the community institution level. However, FIT Climate Foundation has access to all the evidences and will be responsible for providing these.

The community meeting minutes / resolutions are maintained in a register at the community level. These are hand written by the President/Secretary/CRP in the local language and signed by all members present. While these do not have a particular format, the details include the date, location details, points of discussion and decisions taken unanimously.

At the Block level, there will be farmers' producer organizations (FPO) to take care of the forward and backward linkages of livelihood activities such as marketing of horticulture produces, Tasar and other related livelihood activities. Local youths will be selected, trained, and engaged with the FPO as service

providers or entrepreneurs, enabling them to earn a livelihood by offering various services to the community for ongoing livelihood initiatives. These FPO's are groups of farmers who belong to the economically backward communities and have been economically and socially excluded for a very long time. Through interventions of this project, the aim is to build the capacities of the FPO's through various training and capacity building programs and link them to ongoing government schemes etc that will bring about a substantial impact economically as well as socially.

5.2. Equal Opportunities

FCF India and FIT Climate Foundation follow Participatory planning of the watershed activities with the communities, technical skill building of the community and the volunteers, management of Integrated Natural resource Management (INRM) and plantation activities and their linkages with carbon and livelihoods.

Women members are given priority in the form of women Self Help Groups (SHGs)/ women livelihood committees (WLCs) who are identified and their visioning exercise is taken up. It's a detailed exercise where the members are facilitated to make a lot of reflection on their current status, where they want to go, how they will reach there utilizing their existing resources optimally or even by augmenting it. The resources may be in the form of land, water, forest, animals or skill. Various participatory tools are used for planning purposes like resource mapping for identifying the various resources, social mapping and wealth ranking to identify the vulnerable households and to give priority to their needs in the planning.

Using the revenue maps, the women members do a detailed Integrated Natural Resource Management (INRM) Planning clearly laying down the activities to be taken up in different land parcels. These activities include construction/ renovation of water harvesting structures, soil moisture conservation activities like staggered trench, 30-40 model, field bunding etc., plantation in uplands etc. An example is provided below:

Involving the community, particularly women in the design phase itself is important so that- (1) the participants design the activities and set their own livelihood and ecosystem management objectives. (2) There is clarity in understanding the link between livelihoods and land use and natural resources which are the pre-requisites in designing effective project activities. (3) the project should have long-term benefits for the community that extend beyond the project (4) participants enter into project agreements according to the principles of FPIC (4) there are socio-economic impacts from the project in addition to the climate services

FCF India and FIT Climate Foundation also try to facilitate prioritising the socially excluded groups in planning for the project interventions. This is done by taking up wellbeing analysis and social mapping and including the households which tend to get excluded based on gender, caste, wealth/poverty, geographical isolation or land ownership. Any farmer who is willing can participate in this project. There is no discrimination based on age, sex, religion, caste, or creed. To ensure this, the participating members, community-based institution and FIT Climate Foundation which are part of the project governance structure are made up of the Vulnerable groups of the project area. The participatory INRM planning is done with both men and women, and focus is given on women to involve them in the planning process so that their needs are addressed. Care is taken to keep the meetings in the evening when they are free from the household chores and can participate meaningfully in the planning exercise.

Gender disaggregated data is captured in baseline as well as all meetings including Local stakeholder consultations. Emphasis is given on greater participation of women and vulnerable groups including the schedule castes and schedule tribes, small holders etc.

The project has conducted individual FPIC with every participating farmer, ensuring they fully understand and agree to the project activities. Following this, each farmer has signed a Carbon Rights

Agreement, which clearly states that all land and all produce grown on the land remain entirely with the farmer, and only the rights to the carbon generated from project activities are voluntarily transferred to the project. Additionally, 60% of the revenue from the sale of PVCs will flow back to the farmers.

5.3. Legal and Regulatory Compliance

Table 5.3: Legal and Regulatory Compliance

Policy, Law or Regulation	Relevance	Compliance Measures
National Agroforestry Policy ⁸⁰	The Policy aims to improve productivity, employment, income and livelihoods of rural households, especially the small holder farmers. Protect and stabilize ecosystems and promote resilient cropping and farming systems to minimize the risk during extreme climatic events. Supplement the availability of agroforestry products (AFPs), such as fuelwood, fodder, non-timber forest produces and small timber of the rural and tribal populations, thereby reducing the pressure on existing forests. Complement achieving the target of increasing forest/tree cover to promote ecological stability, especially in the vulnerable regions.	The project also aims for the said objectives through its plantation project with small and marginal farmers of West Bengal and Jharkhand. In addition to the plantation, soil moisture conservation will also be done thus impacting the entire ecosystem and also improving biodiversity. The farmers will get additional income from the sale of horticulture products, small timber of Sonajhuri and Tasar products.
Indian Forest Act, 1927 ⁸¹	The Indian Forest Act was adopted in 1927. It was an act to consolidate the law relating specifically relating to forests, the transit of forest-produce and the duty leviable on timber or other forest-produce	The project activity has not been implemented on state or central Government owned lands. The project activity has been implemented on privately owned fallow agricultural lands. Therefore, the project activity is outside the purview of The India Forest Act, 1927

⁸⁰ <https://www.nitiforstates.gov.in/public-assets/Policy/policy-repo/agriculture-and-allied-services/PNC511A000509.pdf>

⁸¹ https://www.indiacode.nic.in/bitstream/123456789/15385/1/the_indian_forest_act%2C_1927.pdf

The Forest (Conservation) Act, 1980 ⁸²	This Act was adopted to protect and conserve forests.	The Act restricts the powers of the state in respect of de-reservation of forests and use of forestland for non-forest purposes (the term 'non-forest purpose' includes clearing any forestland for cultivation of cash crops, plantation crops, horticulture or any purpose other than re-afforestation). Therefore, the project activity is outside the purview of the act.
National Forest Policy, 1988 ⁸³	On the date 12-May-1952, the Central Government of India enacted the National Forest Policy to be followed in the management of State Forests in India.	As per section 3.2 of The National Forest Policy, diversion of good and productive agricultural lands to forestry is discouraged in view of the need for increased food production. In The National Forest Policy, there is also no mandate or enforcement conditions for tree plantation on the fallow agricultural lands as well. Therefore, the project activity is outside the purview of The National Forest Policy, 1988
United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) ⁸⁴	The proposed carbon project deals with indigenous communities of West Bengal and Jharkhand and hence the said declaration aligns with their universal right to self-determination. FPIC allows Indigenous Peoples to provide or withhold/ withdraw consent, at any point, regarding projects impacting their territories. FPIC allows Indigenous Peoples to engage in negotiations to shape the	The project ensures participation of the indigenous communities of the project area in each and every step starting from planning to implementation and monitoring. They are being informed about the project well in advance and their consent is sought for any authorization or commencement of activities. The participatory methods of planning being done at the

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https://www.indiacode.nic.in/bitstream/123456789/19381/1/the_forest_%28conservation%29_act%2C_1980.pdf

83 https://nagaland.gov.in/storage/PostFiles/NATIONAL_FOREST_POLICY_1988.pdf

84 https://www.un.org/development/desa/Indigenouspeoples/wp-content/uploads/sites/19/2018/11/UNDRIP_E_web.pdf

	design, implementation, monitoring, and evaluation of projects.	village level helps in collective decision making of the rights holders with their consent, which is without any coercion, expectations or timelines that are externally imposed.
The International Labour Organization Convention 169 (ILO 169) is a treaty that protects the rights of indigenous and tribal peoples ⁸⁵ . It was adopted in 1989 and has been ratified by 23 countries. It is the only international law that recognizes the collective rights of these groups ⁸⁶	Since the project participants are indigenous and tribal communities, this law is relevant to the project. Some of the main provisions of ILO 169 include: • The right to self-identification and consultation on matters affecting them. • The right to participate in decision-making and development processes. • The right to land, territories and natural resources. • The right to education, health, social security and cultural diversity.	The project ensures raising awareness about the conditions in which indigenous peoples live, the development challenges they face and their aspirations for the future through visioning exercises that provide the groundwork for project planning. The project facilitates the inclusion of representatives of indigenous peoples in its consultations and programming cycles. The project facilitates the capacity development for indigenous peoples to offset their vulnerabilities and increase their food and livelihood security The project also recognizes their rights to land, territories and natural resources and ensures the FPIC process and facilitates the signing of carbon waiver agreement with the landowners.
Convention on Biological Diversity (CBD) ⁸⁷ - The Convention on Biological Diversity (CBD), known informally as the Biodiversity Convention, is a multilateral	Since the project is restoration of barren uplands in Birbhum and Dumka districts of West Bengal and Jharkhand together with soil and moisture conservation measures in the	The project will ensure plantation of trees (horticulture/ tasar host trees/ timber varieties) on barren uplands thus contributing for

⁸⁵ https://en.wikipedia.org/wiki/Indigenous_and_Tribal_Peoples_Convention,_1989

⁸⁶ https://www.gaiaamazonas.org/en/noticias/2019-07-25_what-is-ilo-convention-169-and-why-it-is-important/

⁸⁷ [https://www.un.org/en/observances/biological-diversity-day/convention#:~:text=The%20Convention%20on%20Biological%20Diversity%20\(CBD\)%20is,Education%20*%20Agriculture%20*%20Business%20*%20Culture](https://www.un.org/en/observances/biological-diversity-day/convention#:~:text=The%20Convention%20on%20Biological%20Diversity%20(CBD)%20is,Education%20*%20Agriculture%20*%20Business%20*%20Culture)

treaty. The Convention has three main goals: the conservation of biological diversity (or biodiversity); the sustainable use of its components; and the fair and equitable sharing of benefits arising from genetic resources.	uplands owned by the indigenous and tribal communities, the CBD is relevant for the project.	biodiversity conservation of the area. The project also includes land treatment to check erosion, soil-moisture conservation measures, creation of irrigation infrastructure- all of which will help in the sustainable use of the land resource. The project ensures equitable sharing of benefits arising from waiving off the carbon credits owned by the farmers.
West Bengal Trees (Protection and Conservation in Non-Forest Areas) Act, 2006⁸⁸	The Act provides for protection, conservation and regulation of trees in non-forest areas of West Bengal.	The project activities include plantation of trees on private lands. Hence, the project is out of the purview of the act
Jharkhand Forest Produce (Regulation of Trade) Act, 2002	The Act regulates trade and transit of specified forest produce in Jharkhand.	The rule applies to timber and other forest produce when harvested from forest land under state control. The project includes private lands for the implementation of the project activity and out of the purview of the act.
Biological Diversity Act, 2002⁸⁹	The Biological Diversity Act was adopted by the Government. It is an Act to provide for conservation of biological diversity, sustainable use of its components and fair and equitable sharing of the benefits arising out of the use of biological resources, knowledge and for matters connected therewith or incidental thereto.	There is no provision of tree plantation on agriculture fallow land in the Biological Diversity Act. Therefore, the project activity is outside the purview of Biological Diversity Act, 2002.

⁸⁸ https://tfpd.wbforest.org/pdf/rules/wb_trees_protection_act_2006.pdf

⁸⁹

https://en.wikipedia.org/wiki/Biological_Diversity_Act,_2002#:~:text=If%20a%20person%2C%20violates%20the%20regulatory%20provisions,this%20Act%20is%20non%2Dbailable%20and%20is%20cognizable.

5.4. Financial Plan

FCF India will sell equity stakes in the project to various interested parties including corporates, financial institutions, and intermediaries for raising funds. These equity investors would invest 100% of the total capital required for the project and in return, would have access to the carbon credits generated. Out of this capital, approximately 80% is allocated to community benefit sharing- covering plantation establishment, maintenance, and associated field costs, while the remaining 20% supports FCF India's project management and carbon asset development services, in line with the project's benefit sharing mechanism.

FCF India will sell forward credits to investors/corporates looking to offset their carbon emissions at a later date. Investors/corporates will receive credits at a lower price than the spot market price as they are investing at an earlier date. The carbon project would benefit from the capital they would receive from investors/corporates which will enable the project to scale. This is seen as a win-win situation for both stakeholders involved.

In case of an equity stake sale in the project, the investor/corporate will also take the risk of credit delivery in addition to upfront capital investment. In this case, the project is assured of investment and can scale easily. The investor has assured credit delivery for their offtake commitments.

5.5. Financial Management

Since FCF India plans on giving equity stake in the carbon project, all the subsequent income from sale of carbon credits is taken care by the equity investors. The project would be audited as part of the overall auditing process required by Indian Law. All the income and expenditure are audited at the close of every financial year by a certified auditor and is submitted to the government authorities for certification

The farmer community benefits in three broad categories:

1. The initial investment they receive for plantation and maintenance
2. The farmers have rights over 100% of the total produce and as such receive regular income from the sale of produce
3. A minimum of 10% of the total credits would be set aside for the farmer community. This percentage would be increased in case we receive a premium pricing for the credits.

In the initial investment, farmers gets support for plantation and maintenance immediately after signing the Project Agreement and prior to or during the plantation phase. This support is primarily provided in-kind, including saplings, fertilizers (such as vermicompost), and inputs for land preparation (pit digging, fencing, and soil treatment). In addition, labour support for activities such as planting, weeding, and maintenance is facilitated through project implementation.

Annex 1 - Project Boundaries

Project Boundary Map - Birbhum & Dumka

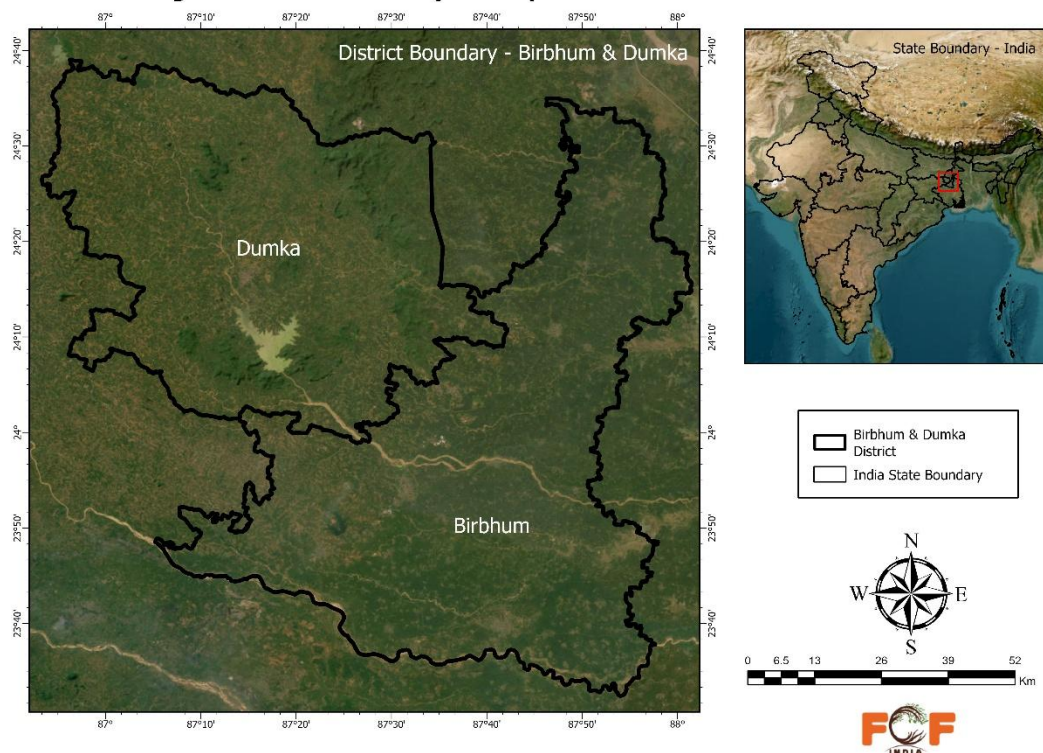


Figure: District Boundary Map of Dumka and Birbhum

The future instances that will be added in the project will lie in the given boundary.

Annex 2 -Registration Certificate and Partner Agreements



GOVERNMENT OF INDIA
MINISTRY OF CORPORATE AFFAIRS
Central Registration Centre

Certificate of Incorporation

[Pursuant to sub-section (2) of section 7 and sub-section (1) of section 8 of the Companies Act, 2013 (18 of 2013) and rule 18 of the Companies (Incorporation) Rules, 2014]

I hereby certify that FAIR CLIMATE FUND INDIA PRIVATE LIMITED is incorporated on this Seventh day of January Two thousand twenty-two under the Companies Act, 2013 (18 of 2013) and that the company is limited by shares.

The Corporate Identity Number of the company is U74994HR2022PTC100429.

The Permanent Account Number (PAN) of the company is **AAECF8813B** *

The Tax Deduction and Collection Account Number (TAN) of the company is **RTKF02503E** *

Given under my hand at Manesar this Seventh day of January Two thousand twenty-two .



Digital Signature Certificate
Mr SHIV PAL SINGH
ASST. REGISTRAR OF COMPANIES
For and on behalf of the Jurisdictional Registrar of Companies
Registrar of Companies
Central Registration Centre

Disclaimer: This certificate only evidences incorporation of the company on the basis of documents and declarations of the applicant(s). This certificate is neither a license nor permission to conduct business or solicit deposits or funds from public. Permission of sector regulator is necessary wherever required. Registration status and other details of the company can be verified on www.mca.gov.in

Mailing Address as per record available in Registrar of Companies office:

FAIR CLIMATE FUND INDIA PRIVATE LIMITED
H.NO.A-601,KASNISHKA TOWER, SECTOR-34, FARIDABAD,
Faridabad, Haryana, India, 121003



* as issued by the Income Tax Department

Registration Certificate of FCF India



**GOVERNMENT OF INDIA
MINISTRY OF CORPORATE AFFAIRS**

Central Registration Centre

Certificate of Incorporation

[Pursuant to sub-section (2) of section 7 and sub-section (1) of section 8 of the Companies Act, 2013 (18 of 2013) and rule 18 of the Companies (Incorporation) Rules, 2014]

I hereby certify that FIT CLIMATE FOUNDATION is incorporated on this FIFTEENTH day of JULY TWO THOUSAND TWENTY FIVE under the Companies Act, 2013 (18 of 2013) and that the company is Company limited by shares

The Corporate Identity Number of the company is **U02401JH2025NPL025369**

The Permanent Account Number (PAN) of the company is **AAGCF5225R***

The Tax Deduction and Collection Account Number (TAN) of the company is **RCHF00694B***

Given under my hand at Manesar this FIFTEENTH day of JULY TWO THOUSAND TWENTY FIVE

Signature Not Verified

Digitally signed by
DS MINISTRY OF CORPORATE
AFFAIRS , CRC MANESAR 2
Date: 2025.07.22 19:02:51 IST

Poonam Sharma

Assistant Registrar of Companies/ Deputy Registrar of Companies/ Registrar of Companies

For and on behalf of the Jurisdictional Registrar of Companies

Registrar of Companies

Central Registration Centre

Disclaimer: This certificate only evidences incorporation of the company on the basis of documents and declarations of the applicant(s). This certificate is neither a license nor permission to conduct business or solicit deposits or funds from public. Permission of sector regulator is necessary wherever required. Registration status and other details of the company can be verified on mca.gov.in

Mailing Address as per record available in Registrar of Companies office:

FIT CLIMATE FOUNDATION

H No-01, C/O DINESH KUMAR, MURABAHAL, ASANSOL, Kurwa, Dumka, Dumka- 814119, Jharkhand

*as issued by Income tax Department



Registration Certificate of FIT Climate Foundation

Annex 3 - Initial Project Areas

Project Participants:	8000 Families across villages in Dumka in Jharkhand and Birbhum in West Bengal). These are small holder farmers belonging to the marginalized tribal communities who often migrate to neighbouring cities for daily wage labour.
Location:	Country- India State- West Bengal and Jharkhand District- Birbhum in West Bengal and Dumka in Jharkhand
Project Intervention(s):	Restoration of barren uplands by undertaking intensive plantations to improve the socio-economic conditions of the tribal communities.
Extent of Project Area:	Total proposed project area (in hectares)- 4000 (Covering approximately 2700 ha in Dumka, Jharkhand and 1300 ha in Birbhum, West Bengal). In the first instance, total of 841.61 hectares is targeted, out of which 720.091 ha is already implemented 121.5 ha will be implemented in the year 2026. This covers 12 blocks for the implementation of the project activity. The blocks include: Jama, Jarmundi, Masalia, Shikaripada, Kathikund, Ramgarh, Ranewar, Saraiyahaat, Dumka and Gopikandar blocks in Dumka, Jharkhand and Rajnagar and Dubrajpur of Birbhum, West Bengal.
Project Agreement Reference:	
Start Date:	01/06/2020
Whether or not they meet project requirement 2.3.1 and/or 2.3.2	Project participants are residents within the project area and manage their lands for subsistence agriculture on their own.

Annex 4 -Participatory Design

The project intervention is built around the leadership of local communities, especially the women. Women Self Help Groups (SHGs)/ Women Livelihoods Committees (WLCs) at the village level would be the drivers of the project. Women from the project villages, especially the tribal women, will constitute the WLCs. They will be imparted several trainings at the beginning of the project to enable them to ensure community participation during the planning and implementation of the project.

Women community leaders will be identified from among the WLCs together with Community Volunteers who will help in carrying out intensive ridge to valley integrated natural resources management (INRM) planning at the village level. They will use various Participatory Rural Appraisal (PRA) tools and techniques such as wealth ranking, social mapping, vision building, livelihood, and watershed planning in the villages to make the plan inclusive and prioritize the needs of the marginalized communities based on gender, age, ethnicity, religion and social status. Priority will be given to poorest of the poor families, single women, destitute, elderly, schedule caste and schedule tribe, minority groups etc. Field staff will facilitate the entire process together with the community leaders and volunteers to ensure that the concerns and aspirations of the marginalized communities are considered and addressed through the project interventions.

There will be farmers' producer organizations (FPO) at the block level to take care of the forward and backward linkages of livelihood activities such as marketing of horticulture produces, Tasar and other related livelihood activities. Local youths will be selected, trained, and engaged with the FPO as service

providers or entrepreneurs, enabling them to earn a livelihood by offering various services to the community for ongoing livelihood initiatives. These FPO's are groups of farmers who belong to the economically backward communities and have been economically and socially excluded for a very long time. Through interventions of this project, the aim is to build the capacities of the FPO's through various training and capacity building programs and also link them to ongoing government schemes etc that will bring about a substantial impact economically as well as socially.

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Meeting Resolution Book

Title: Meeting Resolution Book

Date: 20/3/21 **Time:** 9 AM to 4 PM **Place:** Harhare

Members Present (21 listed): Including: Promila Halder, Surojit, Amalagini Kurmi, Sunia Devi, Rabindranath Majhi, Sindhu Barui, and others

Resolution Text:

To resolve all the existing social problems of the organization, all members were called together to hold a united discussion and to take joint cooperative action.

It was unanimously decided that the organization's committee would be formed properly.

It was proposed to form a new committee. In that context, a new school committee was formed. Taking all members' names- Raghulama Samaj Saheli Nilee- the following new committee was formed: each member was given responsibilities. Names include Tara, Balam, Baku, Bala, Kumar, Ana, Maihiya- weekly meetings to be held.

During the organization's meeting, some evaluation/analysis was done on issues- and all members/participants were given responsibilities. All decisions were implemented with everyone's cooperation.







- **Sample outcome of the Participatory Rural Appraisal (PRA) for Project Planning and Land Management in Saraidaha village of Shikaripada Block of Dumka District:**

The Participatory Rural Appraisal (PRA) and Gram Sabha in Saraidaha village led to several key outcomes. Community members actively participated in land-use mapping, identifying areas for agroforestry interventions. The selection of plant species was done collectively, prioritizing indigenous and economically beneficial trees like *Acacia auriculiformis* and *Terminalia arjuna*, suited to local conditions. The Gram Sabha discussion highlighted critical infrastructure gaps, including the need for wells, cattle sheds, ponds, and the repair of a broken irrigation pump. The meeting, facilitated by the Village Organization (VO), ensured

that decisions were documented in the village Minute Book, fostering transparency, accountability, and collective commitment to land and resource management.

Evidence of Participatory Rural Appraisal (PRA) in Saraidaha village of Shikaripada block of Dumka district:

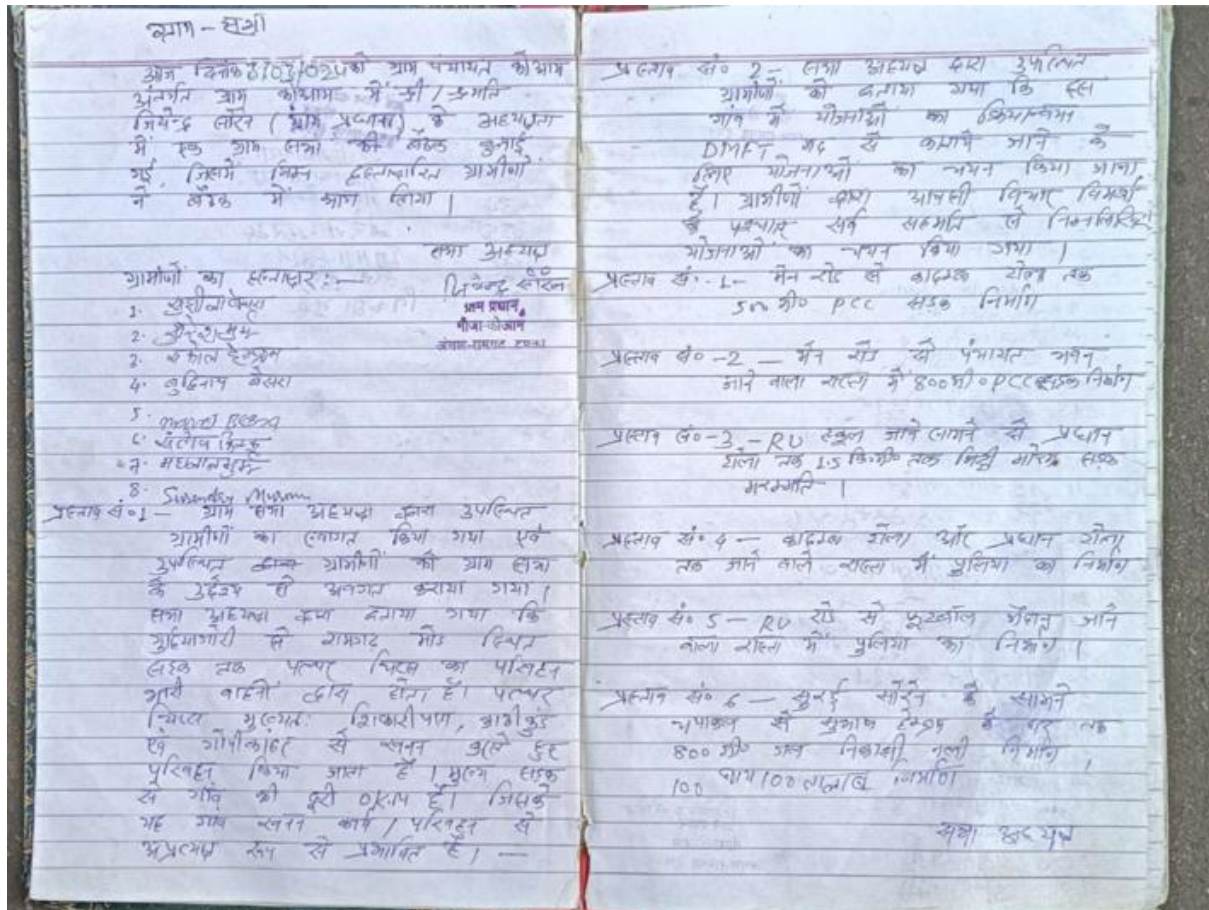


Photo 1: Meeting notes in Gram Sabha Register

Gram Sabha Meeting Minutes

Header: Gram Sabha- Meeting

"Special Gram Sabha meeting was held on 31.03.2024. Under the chairmanship of Shri Jiyendra Soren, with presence of members. The following agenda was discussed and resolutions adopted:"

Members/Attendees listed:

1. Saroj Bala
2. Kolar Devi
3. Prem Bala
4. Mukti Devi
5. Phulwanti
6. Sabhajeet

Proposal No. 1: Gram Panchayat- provide training to members and ensure participation- **50 quintals PCC road material approved**

Proposal No. 2: Old well renovation- ₹800/PCC construction approved

Proposal No. 3: 20 broken slabs/tiles in village- district level 1.5 km mud/gravel road approved

Proposal No. 4: District office and Pradhan's office- call police, implement in village

Proposal No. 5: ₹20 lakh from Gram Panchayat- construction approved, police assistance

Proposal No. 6: Solar garden/boundary wall construction- 400 sq. ft., new construction, 100 Naali/10 Lakh approved

Signed: Gram Sarpanch

Project Design Document, Version 5.5

Meeting Resolution/Minutes

Header: Gram Panchayat- Koam

Agenda/Proposals: *Gram Panchayat (Koam) meeting was held. Members discussed various development and welfare related proposals. The following proposals/resolutions were passed:*

Proposal No. 1: Repair of road in the village - construction of 500 meters of road

Proposal No. 2: Gram Panchayat Bhawan construction - budget of ₹500 (amount unclear) approved

Proposal No. 3: 20 students' scholarship scheme - ₹1.5 lakh approved

Proposal No. 4: Anganwadi center and mid-day meal - construction and repair, police assistance for implementation

Proposal No. 5: ₹25 lakh allocated for school construction - 12-15 districts, machinery assistance approved

Proposal No. 6: Kuchha (unpaved) road/street - ₹22 lakh approved, police deployment

Proposal No. 7: Burial ground/cremation area of poor families - construction of 225 feet boundary wall with tiles

Proposal No. 8: Gram Sabha road construction - ₹4.5 lakh for 250 meters PCC road

Proposal No. 9: School - 80 feet building construction, ₹2.5 lakh

Proposal No. 10: Anganwadi construction - district level, forest department, police approval

Proposal No. 11 - JCB Tender Details:

- ₹1.5 lakh, Plot 506
- ₹1.5 lakh, Plot 431
- ₹1.5 lakh, Plot 200
- ₹1.9 lakh, Plot 178 (24 plots)

Sub-committee formed with listed members

Signed: Gram Pradhan- Jiyendra Soren, Village- Koam, Ramgarh

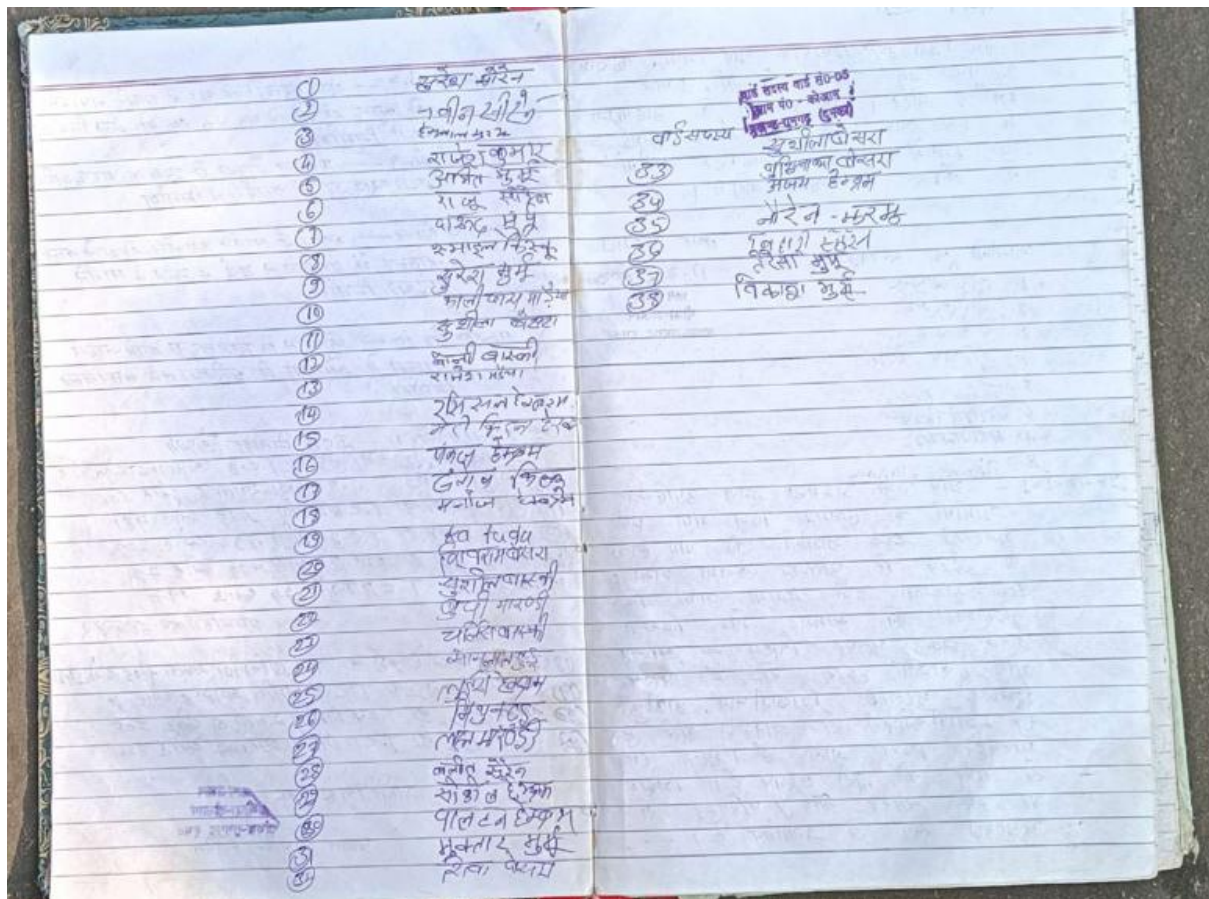


Photo 3: Attendance record in Gram Sabha Register

Attendance List of participants attending the Gram Sabha Meeting

1. Surendra Soren
2. Naveen Soren
3. Rajesh Kumar
4. Amit Murmu
5. Raju Soren
6. Ismail Kisku
7. Suresh Murmu
8. Kusum Bala
9. Kalidas Mandal
10. Susila Besra
11. Koni Baski

And others

Annex 5 - Initial FPIC

The project team has conducted village-level meetings and focused discussions with participating farmers and community members to explain the project objectives, planned activities, roles and responsibilities, potential benefits and risks, implementation timelines, and the voluntary nature of participation in a local language (Hindi and Bengali). Adequate time was provided to community members to ask questions, seek clarifications and discuss the proposal internally before making any decision. Participatory Rural Appraisal (PRA) exercises were also carried out, and resource maps were prepared in consultation with local community institutions, including Women Livelihood Committees (WLCs), Farmer Producer Organisations (FPOs) and Self-Help Groups (SHGs) in the project area. Individual consent was obtained only after participants confirmed their willingness to participate in the project.

Evidence of the key decisions taken during the initial FPIC process has been documented and maintained in the form of signed meeting minutes and participant attendance lists from the village-level consultations. In addition, copies of the information shared with community members prior to decision-making, covering project objectives, activities, roles and responsibilities, potential benefits and risks, and implementation methods have been kept as part of the FPIC records to demonstrate that informed and voluntary consent was obtained before the initiation of project activities.

Photo: Women involved in the preparation and planning of the resource maps of their Villages



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 ২) প্রাচীন সভ্যতার বিকাশ
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Annex 6 - Carbon Calculations Spreadsheet

To estimate the baseline emissions, the module PU001, “Estimation of Baseline and Project GHG removals by Carbon pools in Plan Vivo projects, Version 1.0 was used.

The baseline net GHG removals by sinks shall be calculated according to the PV Climate methodology- Agriculture and Forestry Carbon Benefit Assessment Methodology version 1.0, as follows:

$BR_{a,y} = BR_{WB,a,y} + BR_{NB,a,y} + BR_{BG,a,y} + BR_{LI,a,y} + BR_{DW,a,y} + BR_{SO,a,y} + BR_{WP,a,y}$ **Equation 1: Calculation of baseline removals by carbon pools**

Where:

$BR_{a,y}$ = Net GHG removals under the baseline scenario for project area a up to year y (tCO_2e)

$BR_{WB,a,y}$ = Net GHG removals in aboveground woody biomass under the baseline scenario for project area a upto year y (tCO_2e)

$BR_{NB,a,y}$ = Net GHG removals in aboveground non-woody biomass under the baseline scenario for project area a upto year y (tCO_2e)

$BR_{BG,a,y}$ = Net GHG removals in belowground biomass under the baseline scenario for project area a upto year y (tCO_2e)

$BR_{LI,a,y}$ = Net GHG removals in Litter under the baseline scenario for project area a upto year y (tCO_2e)

$BR_{DW,a,y}$ = Net GHG removals in dead wood under the baseline scenario for project area a upto year y (tCO_2e)

$BR_{SO,a,y}$ = Net GHG removals in soil organic carbon under the baseline scenario for project area a upto year y (tCO_2e)

$BR_{WP,a,y}$ = Net GHG removals in wood products under the baseline scenario for project area a upto year y (tCO_2e)

$BR_{a,y}$ is accounted as zero, and baseline conditions are mentioned below:

- The Baseline trees are neither harvested, nor cleared, nor removed throughout the crediting period of the Project activity;
- The Baseline trees do not suffer mortality because of competition from trees planted in the project, or damage because of implementation of the Project activity, at any time during the crediting period of the project activity;
- The Baseline trees are inventoried along with the project trees in monitoring carbon stocks but their continued existence, consistent with the baseline scenario, is monitored throughout the crediting period of the Project activity.

The baseline trees will undergo inventory using high-resolution satellite imagery or Google Earth. Given their maturity and substantial canopy coverage, these trees will be initially identified and marked utilizing high-resolution satellite images. Subsequently, ground validation will be conducted to ensure accuracy. Throughout the project's crediting period, the identified trees will be continuously monitored. $BR_{WB,a,y}$, $BR_{NB,a,y}$ and $BR_{BG,a,y}$ are conservatively assumed to be zero in the baseline scenario, due to the fact that changes in carbon stock of above and below ground biomass of non-tree vegetation of the degraded land in baseline scenario is not possible.

Also $BR_{LI,a,y}$ and $BR_{DW,a,y}$ are assumed to be zero due to the fact that the baseline scenario was degraded fallow.

$BR_{SO,a,y}$ and $BR_{WP,a,y}$ are assumed to be zero due to the fact that the baseline scenario was degraded fallow and no vegetation was present, which had an adverse effect on the Soil Organic Carbon. As in the baseline no vegetation was present, GHG removals by wood products under the baseline scenario was zero.

That is why the estimated baseline emissions or removals are considered insignificant and hence accounted as zero. $BR_{a,y} = 0$

Annex 7 - Technical Specifications

Project Intervention:	Restoration of barren uplands of vulnerable communities in West Bengal and Jharkhand
Version:	5.1
Date Approved:	03/07/2026
Methodology:	PV Climate Methodology PM001, version 1.0
Modules/Tools:	• PU001 Estimation of Baseline and Project GHG Removals by Carbon Pools in Plan Vivo Projects, Version 1.1⁹⁰ • PU002 Estimation of Baseline and Project GHG Emissions from Carbon Pools in Plan Vivo Projects, Version 1.1⁹¹ • PU003 Estimation of Baseline and Project GHG Emissions from Emission Sources in Plan Vivo Projects, Version 1.1⁹² • PU004 Estimation of GHG Emissions from Leakage in Plan Vivo Projects, Version 1.1⁹³ • PU005 Estimation of Uncertainty of Carbon Benefit Estimates in Plan Vivo Projects, Version 1.1⁹⁴ • AR-TOOL02 Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities, Version 195 AR-TOOL04 Tool for testing significance of GHG emissions in A/R CDM project activities, Version 196.
Certificate Type(s):	fPVC, rPVC and vPVC

Applicability conditions

This technical specification is applicable only to the defined project area located in Dumka district (Jharkhand) and Birbhum district (West Bengal), covering the specified project blocks and land parcels

⁹⁰ <https://www.planvivo.org/projects/certify-a-project/pvclimate/methodologies/approved-modules>

⁹¹ <https://www.planvivo.org/projects/certify-a-project/pvclimate/methodologies/approved-modules>

⁹² <https://www.planvivo.org/projects/certify-a-project/pvclimate/methodologies/approved-modules>

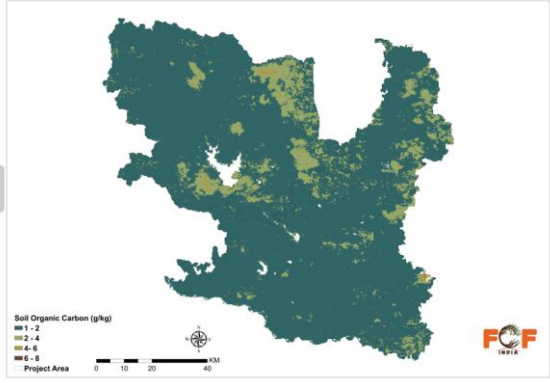
⁹³ <https://www.planvivo.org/projects/certify-a-project/pvclimate/methodologies/approved-modules>

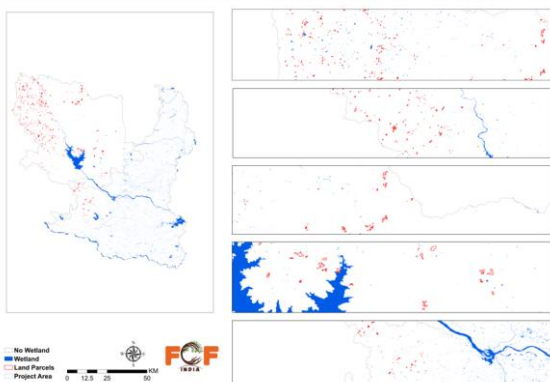
⁹⁴ <https://www.planvivo.org/projects/certify-a-project/pvclimate/methodologies/approved-modules>

⁹⁵ <https://cdm.unfccc.int/methodologies/ARmethodologies/tools/ar-am-tool-02-v1.pdf>

⁹⁶ <https://cdm.unfccc.int/methodologies/ARmethodologies/tools/ar-am-tool-04-v1.pdf>

included under the project boundary. The applicability is limited to the agro-climatic, ecological, and socio-economic conditions of these regions and does not extend beyond the project area. The applicability conditions of the methodology and associated tools has been described with justification in the table below:

Applicability Conditions	Justification
Project activities must not include flood irrigation, drainage, or other activities that affect the ground water table as per the applied methodology PM001, v1.0	The project activities do not include flood irrigation, drainage, or any interventions that could negatively impact the groundwater table. Instead, the project focuses on land restoration through the plantation of diverse tree species, which enhances soil moisture retention and promotes natural groundwater recharge.
Projects applying the methodology PM001, v1.0 must comply with the applicability conditions of any modules and tools applied.	The project will comply with all the applicability conditions of all modules and tools applied. All the applicability conditions mentioned in the applied tools are added in this table.
The module PU001 (Estimation of baseline and project GHG removals by carbon pools in Plan Vivo projects) is applicable to Plan Vivo project interventions that result in net-removal of GHGs from the atmosphere. This includes any of the following intervention types: ● Afforestation and reforestation; ● Forest restoration; ● Agroforestry and farm forestry; and ● Changes to cultivation practices	The project activity includes plantation of different tree species in the land parcels of local community members. The intervention comes under the category of Agroforestry and Farm forestry.
The module PU001 (Estimation of baseline and project GHG removals by carbon pools in Plan Vivo projects) is applicable if the below conditions are met. Soil disturbance attributable to the project activity does not cover more than 10 per cent of the area in each of the following types of land, when these lands are included within the project boundary: - Land containing organic soils; - Land which, in the baseline scenario, is subjected to land-use and management practices and receives inputs listed in appendices 1 and 2 of CDM Methodology ARACM003 v2.0; - Wetlands.	The project activity includes pit digging for the plantation of trees in the project area. However, it will not cover more than 10 percent of the total area. Additionally, the project does not include any land containing organic soils or falling under wetlands.  Within the project boundary, soils are predominantly characterized by low organic carbon contents (1-2 g/kg), with only scattered pockets exhibiting moderate to relatively higher SOC levels (2-8 g/kg), indicating substantial

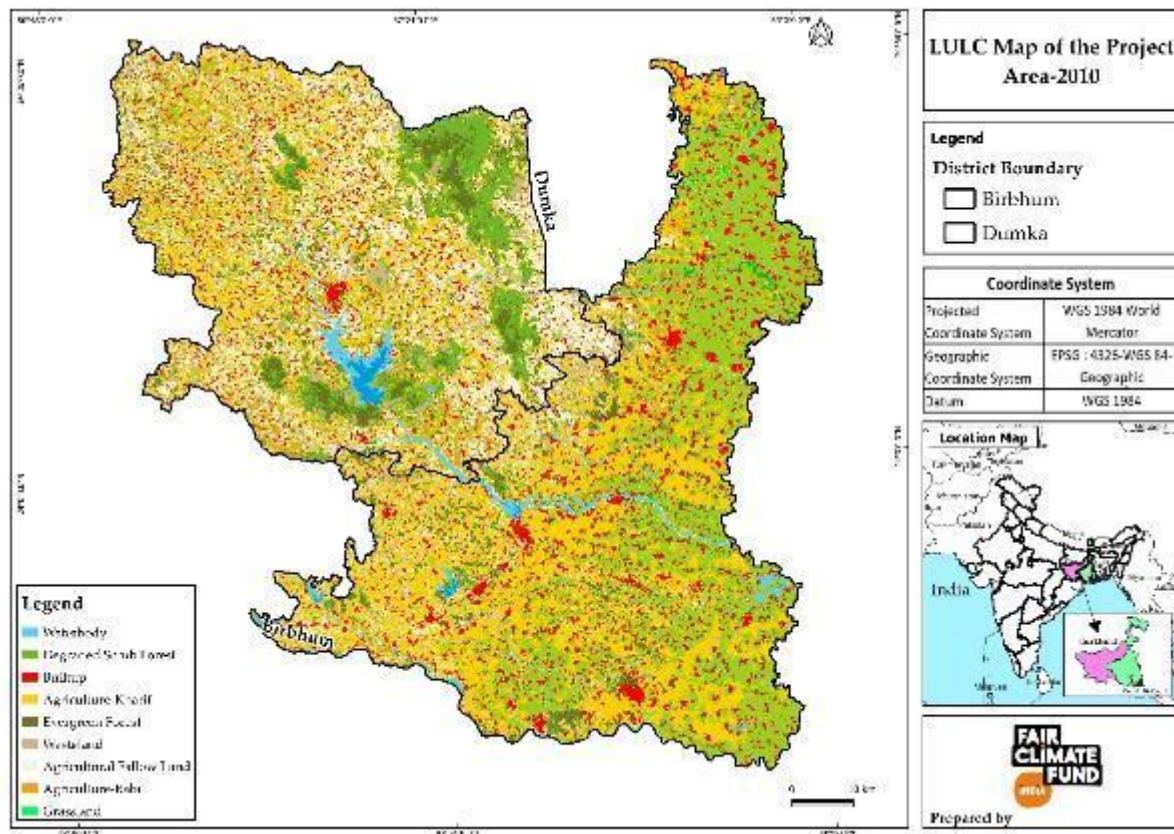
	potential for SOC enhancement through project interventions.  The wetland map of the project boundary shows that all the proposed land parcels lie outside mapped wetlands and major water bodies, with only limited clusters occurring in proximity to these features.
The project activity does not lead to alteration of hydrology of the project area (PU001- Estimation of baseline and project GHG removals by carbon pools in Plan Vivo projects)	The project does not include any activity which leads to alteration of the natural hydrology or drainage pattern of the area. Instead, the introduction of trees will improve soil infiltration, enhance groundwater recharge, and reduce surface runoff and erosion over time.
Forestation of the land within the proposed project boundary performed with or without being registered as the A/R CDM project activity shall not lead to violation of any applicable law even if the law is not enforced. (AT-Tool 02: Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities)	Forestation of the land will not lead to violation of any applicable law (as mentioned in section 5.3). Hence, the project meets the applicability condition.
This tool is not applicable to small-scale afforestation and reforestation project activities. (AT-Tool 02: Combined tool to identify the baseline scenario and demonstrate additionality in A/R CDM project activities)	Net anthropogenic GHG removals by sinks is expected to be 38,250 tons of CO ₂ per year which is above the annual average of 16,000 tons of CO ₂ per year. Hence, the tool is applicable to the project

Baseline Scenario- Geographic Area

In the baseline scenario majority of land parcels are fallow uplands or under subsistence agriculture. Land parcels which include some existing biomass have been conservatively removed from the baseline calculations and project removals. The Baseline trees are inventoried along with the project trees in monitoring carbon stocks but their continued existence, consistent with the baseline scenario, will be monitored throughout the crediting period of the Project activity. Any presence of scattered trees in the first instance of the project has been identified on high-resolution satellite

imagery and removed from the kml file of the land parcels and also photographs of existing trees have been taken to identify trees at the time of verification.

In the absence of the project intervention, the identified land use scenario shall include continuation of the pre-project land use which is leaving it barren. The uplands would remain fallow and soil erosion and deterioration of ground water table would continue to become worse. The soil health and hydrology of the medium and lowland would also continue to deteriorate. In the absence of a sustainable source of income, the people in the area would continue to migrate to other cities and states, making them and their families even more vulnerable.



Livelihood Baseline- Socioeconomic Status of Participants The Birbhum district of West Bengal faces development challenges across various sectors such as health and nutrition, education, agriculture and water resources, basic infrastructure, financial inclusion and skill development. The majority (87%) of the district population stays in rural areas. 27.7% of the district-population lives below the poverty line. 71% of the district population belongs to SCs, STs and marginalized communities including Muslims. The main tribes living in this district are Santhal, Kol, Ho, Paharia, Mahali and Lohar⁹⁷.

⁹⁷ https://www.researchgate.net/profile/Kartick-Barman-2/publication/280774912_Historical_Geography_of_Tribal_Peoples_in_Bibhum_District_of_West_Bengal_Pub/links/58d6795292851c44d476e62a/Historical-Geography-of-Tribal-Peoples-in-Bibhum-District-of-West-Bengal-Published-from-Periodic-Research-A-Peer-Reviewed-International-Journal-Vol-III-ISSUE-III-February-2015-PISSN-NO2231-0045_E_ISSN/links/58d6795292851c44d476e62a/Historical-Geography-of-Tribal-Peoples-in-Bibhum-District-of-West-Bengal-Published-from-Periodic-Research-A-Peer-Reviewed-International-Journal-Vol-III-ISSUE-III-February-2015-PISSN-NO2231-004.pdf

A Baseline Study was carried out in Birbhum District to collect insights from the field covering 250 respondents across 30 Villages of 6 Village Councils. Focus Group Discussions with the community and different stakeholders were also carried out to know about the “as is status” of the people in the district.

A majority of the respondents were females from the Santhal community. Nearly two thirds of the respondents fell between the age range of 25 to 50 Years. Literacy rate of males and females was reported as 69% and 62% respectively. Average household size was 4-5 members. 78% of respondents reported owning Kuccha House. Handpumps and tube wells were reported as the main source of water and women largely fetched water for the household. 80% reported having toilets in their homes and 85% reported using the same. 83% reported having electricity access at their homes. Firewood was reported as the major fuel by 91% of respondents.

72% respondents reported owning land. Landholding % varied across different Village Councils. Nearly 25% respondents reported having more than one land parcel. These were of three types- upland, mid upland and low land. 89% of the landholding was reported as ancestral landholding and the remaining was reported as purchased.

The Dumka district of Jharkhand also faces development challenges across key sectors such as agriculture, water resources, livelihoods, and basic infrastructure. The district is predominantly rural, with communities largely dependent on rainfed agriculture and forest-based resources. A significant proportion of the population belongs to socially and economically marginalized groups, particularly OBC and ST communities, reflecting a relatively homogeneous socio-economic profile across blocks.

A Baseline Study was carried out in Dumka district covering 76 respondents across all the project blocks. The survey captured household-level socio-economic, ecological, and livelihood-related information, supplemented by field interactions and community consultations to understand the existing conditions.

A majority of the respondents were female, with most households belonging to OBC (around 59%) and ST (around 36%) communities. Household sizes were typically moderate, with 4-5 members on average. Education levels varied, with a large proportion having primary to secondary level education.

Handpumps were reported as the primary source of domestic water for most households, often supplemented by nearby natural sources such as rivers or ponds. Firewood, either alone or in combination with LPG, was the dominant cooking fuel, indicating continued dependence on traditional energy sources.

Most respondents reported being engaged in agriculture as their primary livelihood, with landholdings varying across households. The land is largely rainfed, and agricultural productivity is influenced by limited irrigation access. A considerable number of households also depend on Non-Timber Forest Produce (NTFP) and seasonal migration as supplementary livelihood strategies.

Wage Labour (Agriculture and Non-Agri), Agriculture, & Cattle Rearing are the four major livelihood sources of the Santhal Community. While 86% of the population are involved in wage labour(agriculture), 69% are involved in wage labour(non-agriculture), 69% in agriculture and 65% in cattle rearing. Nearly 30% are also involved in collection of forest produce, goatery and poultry according to village council data.

The average annual income of the household from the four major livelihood source (wage labour-agriculture and non-agriculture, agriculture and cattle rearing) is around INR 52,422/- out of which around INR 30,047/- comes from wage labour. 40% of the Surveyed respondents reported local migration of family members mainly to Burdwan for Brick Work and Birbhum for Agriculture.

On an average approximately 2-3 people of age more than 15 years including male and female members contribute to the household income.

41% of the respondents reported that they were food secure for 6 months while 36% reported being food secure for 3 months and remaining 23% reported having food security for less than 3 months. Rajnagar is among the most insecure food blocks of Birbhum District.

67% of the respondents mentioned that they were doing cultivation in only Kharif season however additional 15% of them mentioned that they took up agriculture in both Kharif and Rabi. Paddy was reported as the major Kharif season crop in this region with 94% of the total cultivated area under Paddy in Kharif. Average area under Paddy cultivation was around 2.5 Bigha per household, the Paddy productivity reported by the respondents was around 4.6 Quintal per Bigha. Paddy was consumed as well as sold in the market. Mustard was reported as the main crop of Rabi season. 21% respondents reported cultivating a second crop. 22% respondents reported growing Brinjal, Chilli, Spinach, Tomato, Onion, Pumpkin, Puin Shak, Beans, Papaya (Fruit) in homestead land.

Only 12% were aware of SRI Paddy and only 8% were practicing the same.

Primary value addition was reported by only 12% respondents. Block and Village were the two key markets and 33% of respondents mentioned that they were not satisfied with the price. Lack of availability of water for irrigation, unpredictable rains and diseases and pest attacks were reported as the top 3 challenges in Agriculture by most of the respondents.

83% respondents reported that the women from the HHs are part of some Self-Help Group (SHG). 27% of the total Surveyed HHs reported that they were part of some farmer institution.

FGDs indicated good access to support under different Govt. Schemes. 95% of the Surveyed respondents reported having at least one person with the Job Card in the HH. 98% reported having a Ration Card. Awareness and access of Swastha Sathi and MGNREGA schemes was found high. Awareness of Bangllar Awaas was also good at 54%. Awareness about Krishak Bandhu was moderate but access was low.

87% of the Surveyed HHs reported that one or more people have bank accounts within the family.

53% of respondents said that they had taken loan. SHGs and Banks were the key sources for loans.

Although, a baseline study has not been carried out in Dumka district in Jharkhand, being a neighbouring district of Birbhum, West Bengal, the socio-economic condition of the people there is more or less similar.

Thus, as the baseline study reveals, the population in the proposed project area belongs to marginalised tribal and schedule caste social groups and are dependent on agriculture for their livelihoods. The proposed villages are dominated by the Santhal tribes, an integrated part of the central Indian tribal stretch locally called as Adivasis. The vulnerability of the population is amplified by changing climate conditions resulting in less and erratic rainfall, which impacts on their food security. As husbands migrate to the cities to find work, women farmers here face the increased burden of looking after their family, growing food, and generating income.

People are dependent on monsoon rains for farming, there is large scale degradation of natural resources, little occupational diversification and high seasonal unemployment resulting in migration to urban areas.

The project intervention that includes empowering of tribal women and marginalized community to access their rights and entitlements, restoration of degraded uplands through plantation of trees providing short term and long-term returns will help in providing sustainable income earning opportunities to them and curb migration. It will also improve the quality of natural resources, thus making them more productive.

Photo below: Livelihood of the tribal community



Figure 12: Livelihood of the tribal community



Figure 13: Daily activities of the community



Figure 14: Cattle Proof Trench (CPT) as barrier

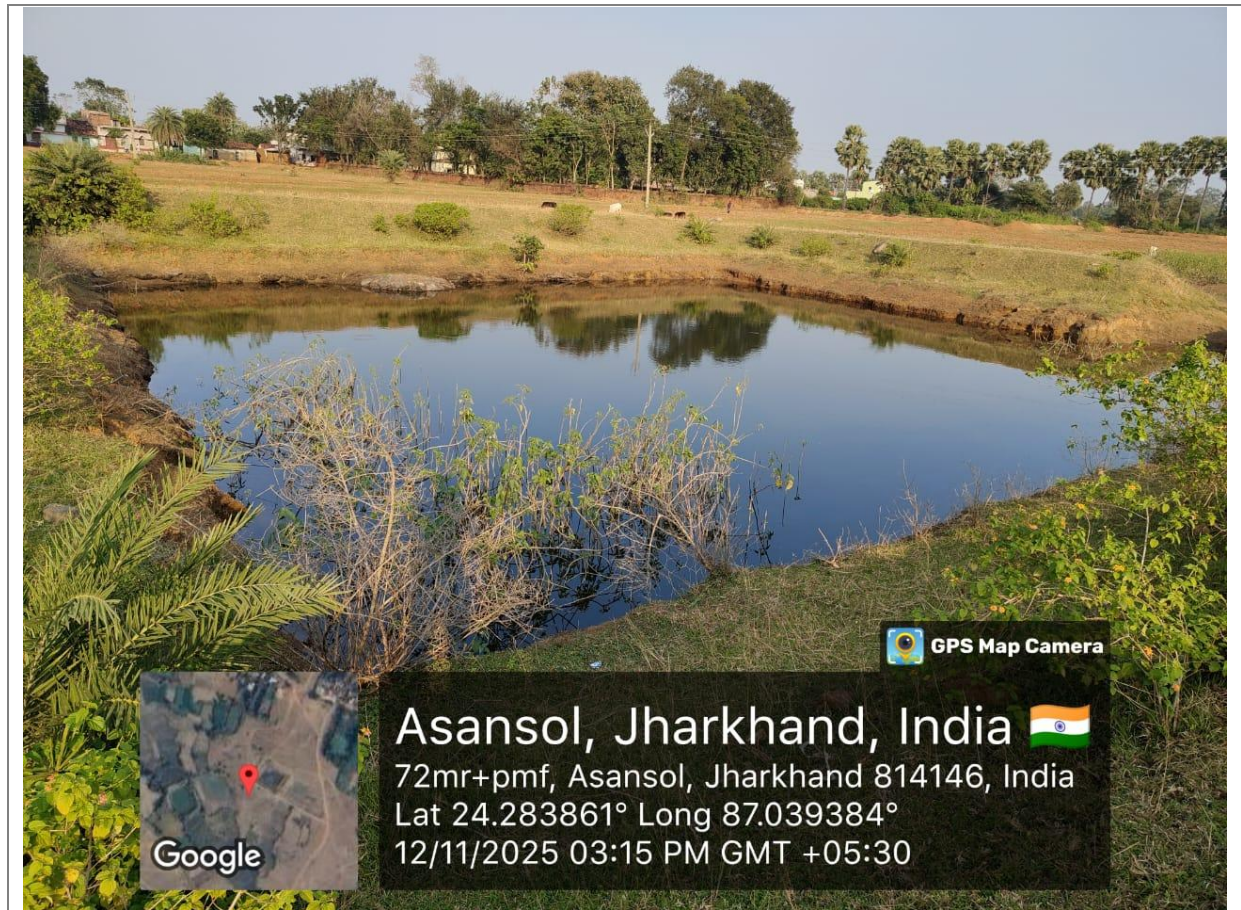


Figure 15: Natural farm pond which can treat as irrigation source



Figure 16: Staggered trenches for protection

Ecosystem Baseline - Ecological Conditions

The proposed districts of West Bengal⁹⁸ and Jharkhand⁹⁹ are the poorest districts of India. The government has recognised it as an aspirational district as it is characterised by particularly poor socio-economic indicators.

The area is featured by hilly, undulating terrain, degraded forests, moderate rains (800-1200 mm annual rainfall), and high concentration of people belonging to Schedule Tribe communities. The area represents an endemic poverty zone with over 80% households earning their livelihoods from subsistence farming and collection of NTFPs from forests.

The geography is marked by undulating rocky terrain with red lateritic soils. These soils are rich in iron and aluminium and while they are one of the best natural materials to be used in bricks, they are acidic and cannot retain moisture.

Additionality

The demonstration and assessment of the additionality of the project is made in accordance with the applied methodology (PM001) following the steps of the “Combined tool to identify the baseline scenario and demonstrate additionally in PLAN VIVO project activities” (Version 01).

STEP 0. Preliminary screening based on the starting date of the A/R project activity

During the LSC meetings, stakeholders were provided with information regarding carbon credits and carbon markets. Additionally, there was a discussion on the sale of PVCs produced from plantations and the generation of incentives from the sale of PVCs. As there were existing plantations in the project, stakeholders were informed about the onboarding process for a carbon project and the incentives generated through it. This information was also captured in the minutes of the LSC meetings, which aligns with the consideration of the planned sale of PVCs from the project activity.

The project has also signed Carbon Rights Agreements with all beneficiaries, which clearly specify that 60% of the revenue from the sale of PVCs will be shared with the community.

Also, an MoU is signed between the project coordinator (FCF India) and the implementation partner (FIT Climate Foundation), where the incentive from the planned sale of the PVCs was seriously considered in the decision to proceed the project activity.

The project consists of private lands, owned by the farmers and they have the land documents available with them to demonstrate clear ownership of the land.

STEP 1. Identification of alternative land use scenarios to the proposed PLAN VIVO project activity

Sub-step 1a. Identify credible alternative land use scenarios to the proposed PLAN VIVO project activity

According to PLAN VIVO methodological tool version 01, “Combined tool to identify the baseline scenario and demonstrate additionally in PLAN VIVO projects activities” alternative land use scenario for the proposed PLAN VIVO project has been meticulously identified.

98 https://my.msme.gov.in/myMsme/List_of_AspirationalDistricts.aspx

99 <https://niti.gov.in/sites/default/files/2023-07/List-of-112-Aspirational-Districts%20%281%29.pdf>

The alternative land-use scenarios outlined in the project documentation are deemed credible, meeting the criteria specified in point 10 and 11 of the PLAN VIVO tool. These scenarios were identified through field surveys, consultations with local stakeholders, which were supported by secondary and spatial information. This determination was made through a comprehensive analysis of land records and baseline surveys conducted by the project proponent, who has been actively engaged with farmers in the project area for nearly a decade.

PP's extensive experience and intimate knowledge of the local conditions have been instrumental in accurately assessing the existing land use scenarios. They are considered feasible, accounting for various sectoral circumstances such as historical land uses and practices prevalent in the region.

Furthermore, stakeholder input and feedback were carefully considered when developing alternative land use scenarios. As section 3.1 of the PD mentions, baseline scenario depends on the land type in the project area boundary. The additionality assessment for the private lands has been done and explained in the below sections.

The alternate land use case scenarios for private lands owned by the beneficiaries, in the project are as follows:

Scenario 1: Continuation of pre-project land use: i.e., subsistence low-output agriculture

Agriculture in the Birbhum region primarily depends on rainfall, with groundwater being difficult and costly to harvest. Moisture stress on standing Kharif crops during the late monsoon period is common. Over 73% of the land is owned by small and marginal farmers, with an average land holding size of 0.71 hectares, making the application of advanced technology challenging. Paddy is the dominant crop, occupying 94% of the total cultivated area during Kharif. Other significant crops include oilseeds, wheat, pulses, and vegetables. The district's major cropping pattern includes Aman/Aus Paddy, Wheat, Vegetables, Oilseeds, Pulses, and Boro Paddy.

Based on on-field observations and discussions with farmers, the lands are uplands, and farmers engage in seasonal cropping in their fields. While paddy is cultivated in the region as a major crop, due to the fields' location in the uplands, farmers cultivate seasonal crops such as potatoes and certain pulses for their own consumption. Below are the glimpses of on-ground plantations and intercropping in the region.

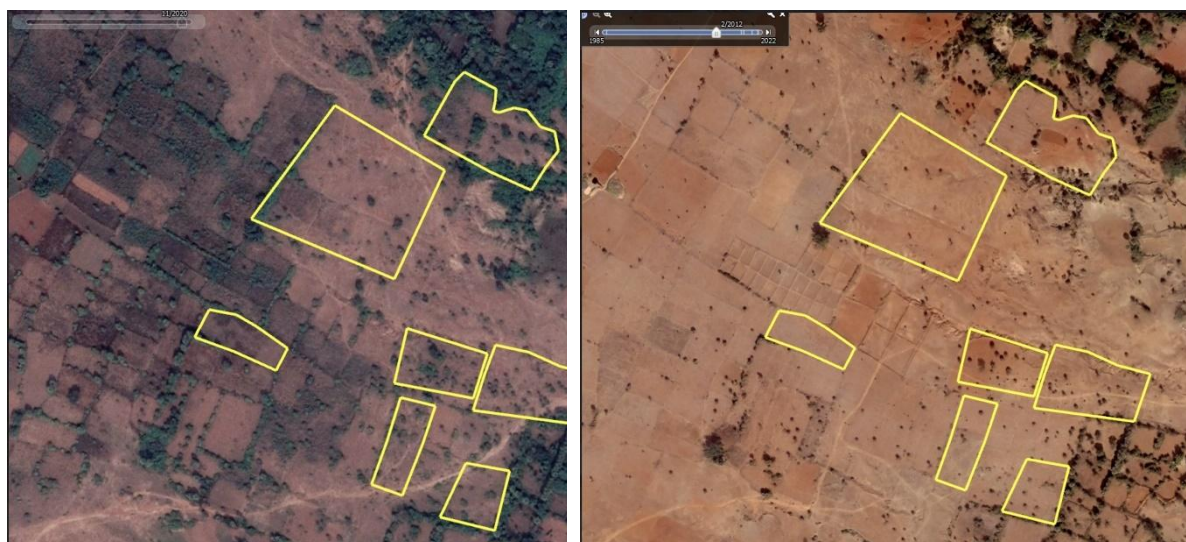


High dependence on chemical fertilizers, minimal use of organic fertilizers and farmyard manure (FYM), and unscientific cropping systems have led to deteriorating soil fertility. Continuous puddling of soil further exacerbates the problem. Chemical contamination of agricultural produce and living organisms is a serious concern. Key issues hindering agricultural development in the district include small land holdings, resurgence of insect pests, poor marketing facilities, and frequent natural calamities like droughts, floods, hailstorms, and heavy population pressure on land. The groundwater resources in most blocks are overexploited, leading to a declining groundwater level, which poses a significant problem for drinking water supply and agricultural production¹⁰⁰.

Irrigation is a major challenge in Birbhum district, where the network of canal irrigation is limited. Many areas rely on groundwater lifting for irrigation, which can deplete the groundwater table. The continuous increase in population exerts immense pressure on agricultural land, leading to fragmentation into small holdings. These small, fragmented lands hinder the implementation of modern technological interventions. Additionally, the progress in reclaiming wasteland has been very slow. Areas such as Mahammad Bazar, Suri I, Rajnagar, Nanoor, and Sainthia have a significant percentage of cultivable wasteland¹⁰¹.

¹⁰⁰ <https://birbhum.gov.in/agriculture/>

¹⁰¹ <https://www.allsubjectjournal.com/assets/archives/2016/vol3issue1/3-1-91.1.pdf> - Page 4



Year 2020

Year 2012

Image: Historical land change analysis in Jama Block of project area

Dumka, located in the northeastern part of Jharkhand, is among the poorest and drought-prone districts in the state. Agriculture is the primary occupation, but it suffers from low productivity due to a lack of scientific management¹⁰². The Santhal Pargana region of Jharkhand features typical rain-fed agriculture, with 89% of the area dependent on rainfall and 46% consisting of barren cultivable wasteland. The region is predominantly inhabited by tribal populations. Farmers in this region are generally poor, often living below the poverty line. Most are landless or marginal farmers. The main crop grown is rice during the Kharif season, while a significant portion of land remains fallow during the Rabi and summer seasons.

Despite receiving annual rainfall exceeding 1100-1200 mm, large parts of eastern India, including Jharkhand and West Bengal, continue to face water constraints for agriculture. Farming systems remain highly dependent on the monsoon, and most agricultural land is cultivated only during the rainy season due to limited irrigation and seasonal water availability. As a result, large areas remain fallow after the monsoon despite adequate rainfall¹⁰³.

Prolonged periods of insufficient rainfall have also affected forested areas, reduced water availability and leading to a decline in tree health and forest density. This results in increased tree mortality, reduced biodiversity, and exacerbated soil erosion, further depleting the fragile soil quality.

The state's large tribal population relies on agriculture and forest products such as Mahua flowers, Tendu leaves, and tamarind for survival. Drought conditions have severely impacted these

¹⁰²https://www.researchgate.net/publication/318039197_Geospatial_Approach_for_Agroforestry_Suitability_Mapping_To_Enhance_Livelihood_and_Reduc_Poverty_FAO_based_Documented_Procedure_Case_Study_of_Dumka_District_Jharkhand_India

¹⁰³

https://www.researchgate.net/publication/347508987_Impact_of_small_ditches_Dhobha_in_rainfed_areas_in_Dumka_district_of_Santhal_Pargana_Jharkhand-A_case_study_-_Page_1-2

communities, reduced the abundance and quality of forest products and thereby affecting their income¹⁰⁴.



Year 2012

Year 2020

Image: Historical land change analysis in Rajnagar Block of project area

Scenario 2: Forestation of the land within the project boundary performed without being registered as the PLAN VIVO project activity

For the year 2020-21 in West Bengal, the assessed credit potential for Forestry and Wasteland Development stands at INR 218.53 crore. Forestry, agro-forestry, and wasteland development on private and government-leased lands have proven to be financially sound and commercially viable activities. The government is actively promoting agro and social forestry through various missions and programs. These initiatives include developing nurseries for quality planting material and distributing quality seedlings under schemes like the Sabujshree Scheme¹⁰⁵.

However, the sector faces several challenges¹⁰⁶:

1. Stringent government norms for tree cutting and transportation
2. Bankers' reluctance to finance long gestation projects
3. Non-availability of quality seedlings in sufficient numbers
4. Lack of awareness and extension services

The credit potential for Plantation and Horticulture, including Sericulture, is assessed at INR 2744.18 crore for the year 2020-21 in West Bengal. Sericulture is widespread across the state, producing all four varieties of natural silk: Mulberry, Tasar, Eri, and Muga. The state government has introduced numerous schemes to expand areas under perennial fruits and vegetable crops, especially in the six districts of North Bengal. Subsidy programs promote the use of Poly/Green/Shade-Net houses, and

¹⁰⁴ <https://www.switchon.org.in/wp-content/uploads/2024/06/Land-Restoration-Desertification-Drought-Resilience-in-Jharkhand.pdf> - Page 8

¹⁰⁵ <https://www.nabard.org/auth/writereaddata/tender/1702202123West%20Bengal%20.pdf> – Page 39

¹⁰⁶ <https://www.nabard.org/auth/writereaddata/tender/1702202123West%20Bengal%20.pdf> – Page 40

Horticultural Farmer Producer Organizations (FPOs) have been established. Multipurpose cold storage is supported, and beekeeping is promoted as part of an Integrated Farming System¹⁰⁷.

With increasing income from horticultural crops per unit of area and government initiatives to facilitate the export of fresh horticultural produce to the Middle East, Southeast Asia, and the European Union, the sector's credit potential has risen. The entire horticulture supply chain system, along with the introduction of high-tech practices, is capital intensive.

Constraints in the Development of the Plantation & Horticulture Sector¹⁰⁸:

1. Poor supply of quality planting materials
2. Inadequate storage, transportation, market infrastructure, and market intelligence
3. Bankers' reluctance to extend long gestation investment credit
4. Lack of adequate technical staff at bank branches

Landscape and socio-economic characteristics are crucial when determining the expansion of agroforestry projects (FAO, 2018). The scale of an agroforestry project is influenced significantly by community needs and access to resources such as land, labor, agricultural technology, and adequate funding. An analysis indicates that five districts in Jharkhand have higher agroforestry potential (>60%) based on climate, topography, ecology, and socio-economic factors. Simdega District has the highest agroforestry potential at 78.2%, followed by Pakur (76.52%), West Singhbhum (72.7%), and Dumka (68.84%)¹⁰⁹.

In Jharkhand, traditional agroforestry systems include homestead gardens and scattered trees like Acacia, Palas, and Mahua on agricultural fields. In agri-horticultural systems, fruit trees are planted on field bunds alongside crops. Lac cultivation is a prevalent practice, and the agrisilviculture system with Lac cultivation is the most important traditional agroforestry system. Kusum (*Schleichera oleosa*), Palash (*Butea monosperma*), Ber (*Zizyphus mauritiana*), and hedge species like *Flemingia semialata* are suitable plants for Lac cultivation in this system¹¹⁰.

Various afforestation schemes have been implemented in Jharkhand to rehabilitate degraded forests, conserve soil, and plant fast-growing species:

- 2016-17: 3196.63 hectares (31.96 lakh plants), 1391 hectares (23.17 lakh plants), and 1505 hectares (37.62 lakh plants) were planted under different schemes.
- 2018-19: 5910 hectares (59.09 lakh plants) for rehabilitating degraded forests, 4147 hectares (69.09 lakh plants) for afforestation cum soil conservation, and 1610 hectares (40.25 lakh plants) for fast-growing species. Additionally, 100 hectares (6.15 lakh plants) were planted with sisal.

¹⁰⁷ <https://www.nabard.org/auth/writereaddata/tender/1702202123West%20Bengal%20.pdf> – Page 38

¹⁰⁸ <https://www.nabard.org/auth/writereaddata/tender/1702202123West%20Bengal%20.pdf> – Page 39

¹⁰⁹ <https://www.indiawaterportal.org/articles/jharkhands-agroforestry-potential>

¹¹⁰ <https://krishi.icar.gov.in/jspui/bitstream/123456789/53550/1/Volume-2-Issue-2-February-2020.pdf> - Page

Advance work included the rehabilitation of degraded forests (3000 hectares, 30.00 lakh plants), afforestation cum soil conservation (5000 hectares, 83.30 lakh plants), and fast-growing plants (500 hectares, 12.50 lakh plants)¹¹¹.

It is also to state that, as per the field data, project area is characterized by low-income farming communities facing severe water scarcity and overexploited groundwater, limiting agriculture to seasonal monsoon cropping with low productivity. Historical LULC analysis over the past decade indicates no significant land-use change due to persistent drought-like conditions and lack of irrigation support. While some farmers previously cultivated Sonajhuri, the remaining farmers have not received comparable benefits and are unable to sustain plantations under existing constraints. The project interventions through provision of quality saplings, improved access to irrigation, and continuous technical support from FCF India and FIT Climate Foundation can address these key barriers.

In 2016, the Government of Jharkhand launched the "Jan Van Yojana" welfare scheme to increase green cover, maintain environmental balance, conserve groundwater, reduce pressure on notified forests, and boost farmers' income through tree planting on private lands. The scheme includes planting 445 timber-yielding species (e.g., Rosewood, Teak, Ghamar, Mahogany, Clonal Eucalyptus, and Acacia) and 160 fruit-yielding species (e.g., Kalmi Mango, Guava, Gooseberry, Litchi, Jackfruit, and Beal) per acre in block plantations or linear afforestation along field ridges¹¹².

Issues and Failures in Plantations:

- Mulberry plantation was destroyed by fire in few blocks
- The site selection for a horticulture scheme was risky due to high tension wires overhead¹¹³.
- Plantations under MGNREGS in some areas were short of the expected number of mango trees (350 planted instead of 449). High mortality rates were observed due to insufficient irrigation and lack of maintenance.



Image: Failed plantations and high mortality rate of mango plantations in project area

¹¹¹ https://www.jbino.com/docs/Issue06_46_2020.pdf - Page 7-8

¹¹² https://www.jbino.com/docs/Issue06_46_2020.pdf - Page 9

¹¹³ https://cag.gov.in/uploads/download_audit_report/2017/Report_No.1_of_2017_-_General_Social_and_Economic_Sectors_Government_of_Jharkhand.pdf - Page 137

Scenario 3: If applicable, forestation of at least a part of the land within the project boundary of the proposed PLAN VIVO project at a rate resulting from:

- Legal requirements
- Extrapolation of observed forestation activities in the geographical area with similar socio-economic and ecological conditions to the proposed PLAN VIVO project activity occurring in a period since 31 December 1989 as selected by the PP.

For scenario 3, all lands within the project boundary of the proposed AFOLU project are subject to the same legal requirements, and there are no additional legal requirements for conducting similar project activities. Additionally, satellite imageries and baseline survey data show the project area was fallow, and minimal agricultural practices were followed under subsistence agriculture for over ten years prior to the project start date. Therefore, (iii) is not applicable in this context.

Outcome of sub-step 1a: Alternative land use scenarios to the proposed project activity include:

1. Scenario 1: Continuation of pre-project land use: i.e., Subsistence low-output agriculture
2. Scenario 2: Forestation of the land within the project boundary performed without being registered as the PLAN VIVO project activity

Sub-step 1b: Consistency of credible land use scenarios with enforced mandatory applicable laws and regulations:

The selected alternative land use scenarios are entirely in compliance with applicable legal and regulatory requirements, currently and in the foreseeable future.

Outcome of sub-step 1b: According to the information presented and considering the systematic lack of application of the law due to financial and institutional barriers in the project area, the scenarios identified in Sub-Step 1a are maintained.

STEP 2. Barrier analysis

Sub-step 2a: Identification of barriers that would prevent the implementation of at least one alternative land use scenario

Alternate land use scenarios	Scenario 1	Scenario 2
Investment barrier		X
Institutional barrier		
Technological barrier		X
Local tradition		
Prevailing practice		
Ecological conditions		X
Social conditions		

Outcome of sub-step 2a: The barriers that are considered plausible for the implementation are: Investment barrier, technological barrier, and ecological conditions

Investment Barrier: There is a lack of awareness in the farmers regarding the adoption of agroforestry in their fields. This lack of awareness results in lack of interest in them¹¹⁴. To promote agroforestry, it is essential to sensitize farmers and bankers about the sector's benefits. Lack of awareness about the agroforestry sector results in unavailability of financial benefits from the banks and financial institutions.

The West Bengal Pulpwood Development Corporation can play a proactive role by developing the sector and seeking financial assistance from NABARD under NIDA for setting up units. Banks should finance loans under government-sponsored schemes to support this sector, making the process more accessible and adoptive for farmers¹¹⁵.

There have been certain constraints in financing agricultural term loans that need to be addressed. These include the low contribution of Private Sector Commercial Banks, delays in the online charge creation by banks, and restrictive provisions of the Chotanagpur Tenancy (CNT) Act and Santhal Pargana Tenancy (SPT) Act. To enhance term lending, each bank branch should disburse at least 30% of their total agricultural loans as agri-term loans. Banks should also take advantage of various State and Central Government subsidy schemes to increase agri-term loan financing. Additionally, banks should increase credit flow to non-farm activities, rural housing, and education. To increase per hectare credit to at least ₹25,000 on average, banks need to take necessary actions to enhance credit flow¹¹⁶.

Providing institutional finance to cultivators without land in their names has always been a challenge. Regulatory restrictions have led to unrecorded tenancies, mainly affecting small and marginal farmers who lease small plots on insecure terms without institutional support like credit or subsidies. The government should enact a Land Leasing Policy based on a collective farming and community-managed Common Property Resources (CPR) oriented sustainable agriculture model in tribal areas. This would facilitate pooling of land, joint investment in fencing, creation of water resources, farm machinery banks, storage, and other essential infrastructure¹¹⁷.

Investment remains a significant barrier for small-holder farmers due to several interconnected factors:

- Many smallholder farmers lack the financial literacy to understand and access available funding options.
- Farmers often do not have the required collateral to secure loans, making it difficult to obtain financial support from traditional banking institutions.
- Banks and financial institutions perceive smallholder farmers as high-risk borrowers due to unpredictable income, small landholdings, and vulnerability to environmental shocks.

¹¹⁴https://www.researchgate.net/publication/347508987_Impact_of_small_ditches_Dhobha_in_rainfed_areas_in_Dumka_district_of_Santhal_Pargana_Jharkhand-A_case_study - Page 1-2

¹¹⁵<https://www.nabard.org/auth/writereaddata/tender/0701205000LP%202020-21%20Birbhum.pdf> - Page 17

¹¹⁶<https://www.nabard.org/auth/writereaddata/tender/0603202025Jharkhand.pdf>

¹¹⁷<https://www.nabard.org/auth/writereaddata/tender/0603202025Jharkhand.pdf>

- Existing tenancy laws and unrecorded tenancies prevent smallholder farmers from accessing institutional credit and subsidies.
- Government and financial schemes often do not reach the most marginalized and small-scale farmers, limiting their ability to invest in agroforestry.

Technological Barrier: Significant challenges to agricultural development in the district include small land holdings, the resurgence of insect pests, inadequate marketing facilities, and frequent natural calamities like droughts, floods, hailstorms, and heavy population pressure on land. The district's declining groundwater level poses a serious threat to drinking water supply and agricultural productivity. The district's high reliance on chemical fertilizers, minimal use of organic fertilizers and farmyard manure (FYM), and unscientific cropping systems have resulted in deteriorating soil fertility. Ongoing puddling of the soil exacerbates this problem. Chemical contamination of agricultural produce and living organisms is a major concern¹¹⁸.

Despite receiving annual rainfall exceeding 1100-1200 mm, large parts of eastern India, including Jharkhand and West Bengal, continue to face water constraints for agriculture. Farming systems remain highly dependent on the monsoon, and most agricultural land is cultivated only during the rainy season due to limited irrigation and seasonal water availability. As a result, large areas remain fallow after the monsoon despite adequate rainfall¹¹⁹.

Extended stretches of insufficient rainfall have also had an impact on the forest, lowering the amount of water available and decreasing the density and health of the trees. This worsens soil erosion, lowers biodiversity, and increases tree mortality, all of which worsen the already precarious soil quality¹²⁰.

To support the plantations, there is a lack of irrigation facilities in the region. The major problem in the dry region of Birbhum and Dumka is absence of irrigation systems like drip and sprinkler. The systems should be popularized in the region to sustain the plantations in the region. The lack of soil testing in the region and farmer trainings results in negligence towards the soil health and moisture. The adaption of synthetic fertilizers in the field further degraded the soil and with soil erosion quite frequent in the region due to constant drought and flood situation. Moreover, there is shortage of technical staff in the Horticulture Department in the region. This results in less technical support and guidance for the farmers. Establishing village knowledge centers and employing technical personnel at the grassroots level are also essential¹²¹.

The lack of technology adoption among smallholder farmers creates a significant barrier to sustainable agricultural development. Without modern irrigation systems, effective soil management practices, technical support, and proper utilization of infrastructure, farmers struggle to improve productivity and resilience. Addressing these technological gaps is crucial for enhancing soil health, ensuring water availability, and ultimately, improving the livelihoods of smallholder farmers in the region.

Ecological conditions: Agriculture in the Birbhum region primarily depends on rainfall, with groundwater being difficult and costly to harvest. Moisture stress on standing Kharif crops during the

¹¹⁸ <https://birbhum.gov.in/agriculture/>

¹¹⁹

https://www.researchgate.net/publication/347508987_Impact_of_small_ditches_Dhobha_in_rainfed_areas_in_Dumka_district_of_Santhal_Pargana_Jharkhand-A_case_study - Page 1-2

¹²⁰ <https://www.switchon.org.in/wp-content/uploads/2024/06/Land-Restoration-Desertification-Drought-Resilience-in-Jharkhand.pdf> - Page 8

¹²¹ <https://www.nabard.org/auth/writereaddata/tender/0701205000PLP%202020-21%20Birbhum.pdf> - Page

late monsoon period is common. Over 73% of the land is owned by small and marginal farmers, with an average land holding size of 0.71 hectares, making the application of advanced technology challenging. Paddy is the dominant crop, occupying 94% of the total cultivated area during Kharif. Other significant crops include oilseeds, wheat, pulses, and vegetables. The district's major cropping pattern includes Aman/Aus Paddy, Wheat, Vegetables, Oilseeds, Pulses, and Boro Paddy.

The state is in a humid tropic region and close to the Bay of Bengal, often it undergoes natural challenges like cyclones and floods¹²². High dependence on chemical fertilizers, minimal use of organic fertilizers and farmyard manure (FYM), and unscientific cropping systems have led to deteriorating soil fertility. Continuous puddling of soil further exacerbates the problem. Chemical contamination of agricultural produce and living organisms is a serious concern. Key issues hindering agricultural development in the district include small land holdings, resurgence of insect pests, poor marketing facilities, and frequent natural calamities like droughts, floods, hailstorms, and heavy population pressure on land. The groundwater resources in most blocks are overexploited, leading to a declining groundwater level, which poses a significant problem for drinking water supply and agricultural production¹²³.

In Birbhum district, agriculture is the primary economic activity. Out of the total area of 454,500 hectares, 76.06% is cultivable, which is above the state average of 66.94% (HDI report, 2008). The Net Sown Area is 320,610 hectares, the Gross Cropped Area is 548,724 hectares, and the Cropping Intensity is 171.15%¹²⁴.

In Dubrajpur, productivity is moderate due to relatively low irrigation facilities (except in Sainthia) and a higher percentage of wasteland. The sandy loamy soil in Rajnagar results in very low productivity, with shallow soil depth and degraded lateritic soil with low organic matter further reducing soil fertility. The presence of vast wastelands and lack of groundwater facilities are major hindrances to agriculture in Rajnagar¹²⁵.

Dubrajpur is characterized by negative composite values, low productivity, and low irrigation intensity, placing it in a low agricultural development zone. Indicators such as net sown area, labor availability, number of fertilizer depots, cooperative societies, and groundwater facilities do not favor this region¹²⁶.

Rajnagar is also categorized as a very low agricultural development zone. The hard rock structure and negligible groundwater facilities are primary factors contributing to this classification. Agricultural development indicators such as cooperative societies, seed stores, agricultural labor, irrigation intensity, and crop productivity all show negative z-score values¹²⁷.

Farmers and their families in Dumka district in northeast Jharkhand rely on open wells for drinking water, but these wells are nearly dry. Over the past five years, authorities installed hand-pumps in the region; however, only a few of them yield water, and that too in trickles. Farmers blame monsoon

¹²² https://www.researchgate.net/profile/Gopal-Shukla/publication/379643410_Cultivating_Sustainability_Exploring_Diverse_Agroforestry_Practices_in_West_Bengal/links/661248307476d47e4445933c/Cultivating-Sustainability-Exploring-Diverse-Agroforestry-Practices-in-West-Bengal.pdf

¹²³ <https://birbhum.gov.in/agriculture/>

¹²⁴ <https://www.jetir.org/papers/JETIR1902268.pdf> - Page 2

¹²⁵ <https://www.jetir.org/papers/JETIR1902268.pdf> - Page 7-8

¹²⁶ <https://www.jetir.org/papers/JETIR1902268.pdf> - Page 9

¹²⁷ <https://www.jetir.org/papers/JETIR1902268.pdf> - Page 10

failure for their plight, with Jharkhand experiencing a 41 per cent rain deficit last year compared to two per cent in the rest of the country. Some districts received as little as 500 mm of rain, well below the state's normal rainfall of 1,100 mm.

Data from the state's groundwater directorate confirms this dire situation. Jharkhand's water table has declined by an average of three metres between 2009 and 2010, from 17 metres to 20 metres, and has fallen even further since then. Following the drought of 2004, farmers reverted to traditional water harvesting systems, but there has been no concerted effort to conserve rainwater, resulting in 70 per cent of the water being lost as runoff. The decline in the water table is exacerbated by the use of non-scientific methods. Additionally, poor implementation of the MGNREGS (Mahatma Gandhi National Rural Employment Guarantee Scheme) is another factor contributing to agricultural failure in the region¹²⁸.

Ecological conditions in the Birbhum region create substantial barriers for smallholder farmers. Reliance on rainfall, small land holdings, soil degradation, natural calamities, poor irrigation facilities, declining groundwater levels all contribute to a challenging agricultural environment. These ecological constraints hinder the adoption of advanced agricultural technologies and practices, limiting productivity and sustainability.

Sub-step 2b. Elimination of land use scenarios that are prevented by the identified barriers:

The subsistence low-output agriculture is a prevailing activity in the project region and is considered the baseline scenario due to its dominance. However, the adoption of plantation activities without carbon incentives encounters significant barriers, including a lack of technological guidance and robust monitoring and execution protocols.

Outcome of sub-step 2b: The land use case scenario that avoids the identified barriers is "Scenario 1: Continuation of pre-project land use: i.e., Subsistence low-output agriculture" which is prevalent in the project's region.

This activity is dominant due to the challenging ecological conditions of the area, characterized by high soil runoff and limited knowledge and resources among the communities. As a result, it is **easier** for the communities to leave the land fallow and practice minimal agriculture in the region to plant upland paddy, rather than attempt alternative land uses.

Sub-step 2c. Determination of baseline scenario:

Is forestation without being registered as an A/R project activity included in the list of land use scenarios that are not prevented by any barrier? → NO

If NO then: Does the list contain only one land use scenario? → YES

if YES, then the remaining land use is the baseline scenario.

Continue with Step 4: Common practice test

¹²⁸ <https://www.downtoearth.org.in/environment/drought-hit-33030>

STEP 4. Common practice analysis

The agricultural economy of Jharkhand is heavily reliant on the monsoon, characterized by low investments, low productivity, and a predominance of paddy mono-cropping, which covers 80% of the total cropped area. The average landholding size in the state is 1.17 hectares, with marginal farmers averaging 0.41 hectares and small farmers averaging 1.38 hectares. Small and marginal farms make up 83% of the total holdings, covering 37% of the operational area, while only 0.69% of operational holdings are above 10 hectares, covering about 9% of the operational area.

With most agricultural and allied activities concentrated in rural areas, there is a pressing need to develop irrigation, transportation, storage, marketing, and communication infrastructure. This requires sustained capital expenditure from both Central and State Governments. A mission-oriented approach is necessary to promote capital formation through planned investments and effective convergence and coordination. Implementing key Government of India Missions and State Plan Schemes should aim to promote institutional credit flow to increase private participation alongside public spending. To boost capital formation in agriculture, investment credit for agriculture and allied activities needs to be augmented¹²⁹.

The local Santhals define "Bir" as forest, implying that Birbhum once had extensive forest cover. Although the forest cover has diminished, agroforestry has great potential in the district. Suitable tree species for agroforestry in Birbhum include Eucalyptus, Acacia, Terminalia, Tamarind, Aonla, Babul, Cashewnut, Neem, Jatropha, Subabul, Sissoo, Sirish, Teakwood, Gamar, Melia, and Cassia¹³⁰.

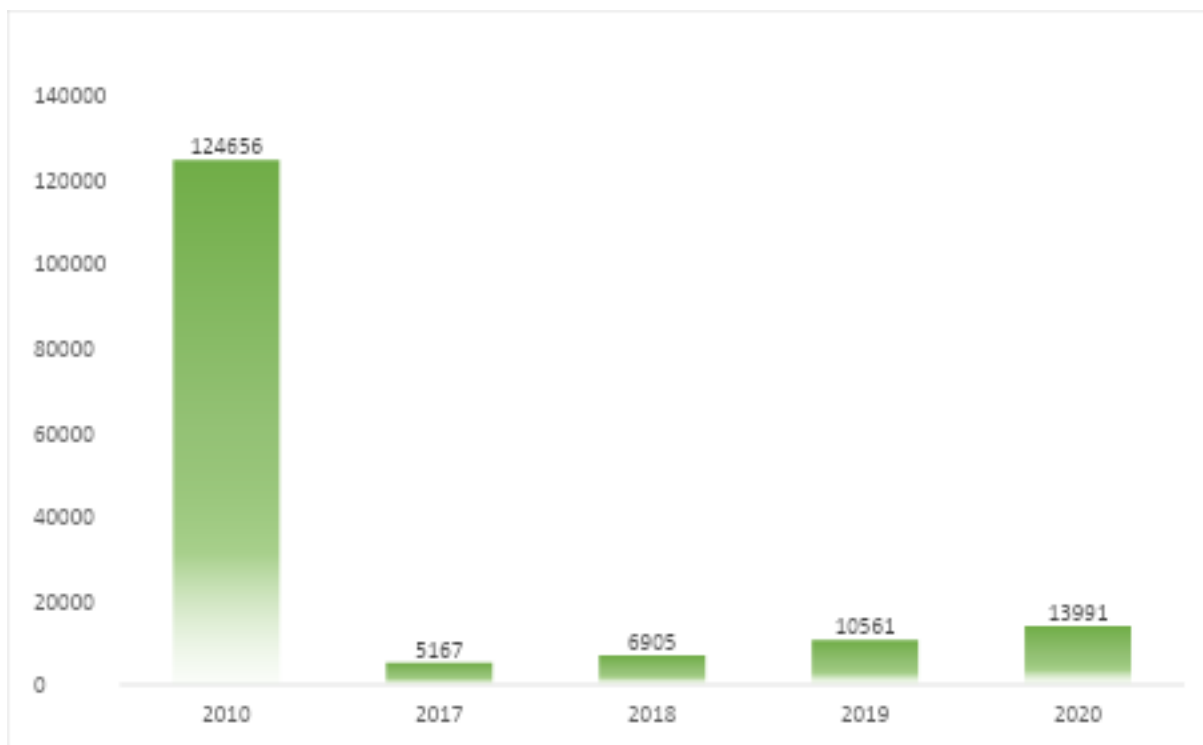
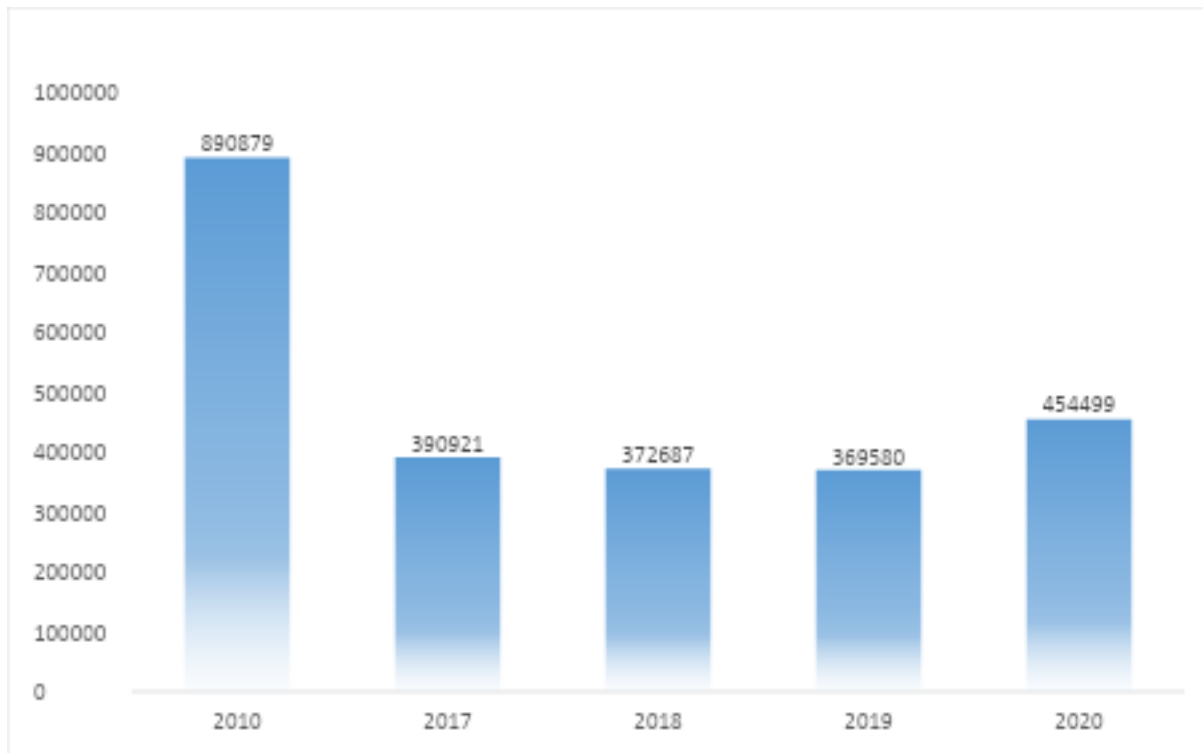
As per discussion with the implementation partner and literature review for the project region, Birbhum and Dumka, droughts occur in the area and impact agricultural productivity directly. The lack of irrigation facilities in the area further boosts this negative impact resulting in dependency of the smallholder and marginal farmers on rainfed agriculture. Due to lack of awareness on agroforestry plantations in the region and lack of financial availability, the adoption rate of agroforestry plantation is very low in the region. As per the discussion with the project stakeholder, there has been plantation conducted through MGNREGA and NABARD in the project area, Birbhum and Dumka¹³¹, but the survival rate of these plantations is significantly low. Lack of maintenance and irrigation systems, make it harder for the plantations to survive. As per the monitoring surveys conducted in the project area, Birbhum and Dumka, it was found that only 350 mango saplings were planted in the field where 449 saplings were targeted. Also, the survival rate of these 350 saplings is very poor and has a high mortality rate of approximately 35%- due to unavailability of irrigation systems, proper maintenance and technical guidance.

The above ground biomass data for both the districts, Birbhum and Dumka, have been calculated and the trend has been analyzed. There is a huge reduction in the above ground biomass from the year 2010 to year 2020. The trend shows there is a huge loss of tree cover via deforestation in both the districts and has a huge potential for afforestation and reforestation in the region.

¹²⁹ <https://www.nabard.org/auth/writereaddata/tender/0603202025Jharkhand.pdf>

¹³⁰ <https://www.nabard.org/auth/writereaddata/tender/0701205000PLP%202020-21%20Birbhum.pdf> - Page 16

¹³¹ <https://www.downtoearth.org.in/agriculture/jharkhand-s-success-story-of-fruit-plantation-under-mgnrega-63102>



Data source: <https://catalogue.ceda.ac.uk/uuid/02e1b18071ad45a19b4d3e8adafa2817>

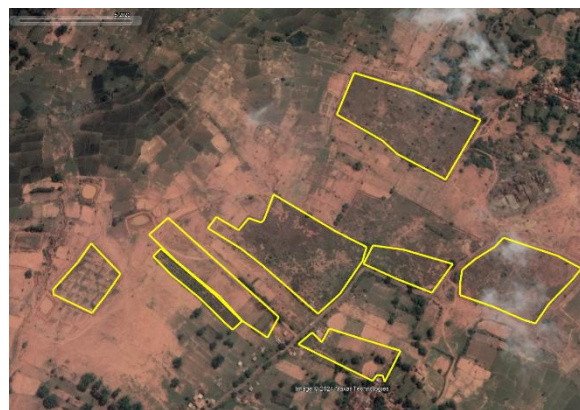
Agroforestry system has been laying the scientific foundations for decoding the problems of rural livelihood in India by providing farmers with economic and ecological stability. Agroforestry significantly contributes to livelihood security by providing essential resources such as food, fodder, timber, and fuel with low input costs, thereby generating additional income for farmers and communities. This practice enhances socio-economic security and economic resilience. Agroforestry systems improve soil quality, making them a sustainable practice for degraded lands. By integrating

trees and crops, agroforestry enhances soil health, which is defined as the soil's continuous ability to function as a biological system promoting floral and faunal growth, sustaining ecological environments, and maintaining land productivity¹³².

Agroforestry systems, play a crucial role in women's empowerment by offering employment opportunities and encouraging gender equality. These systems enable women to become significant income generators, contributing to their livelihoods and socio-economic status¹³³. Horticulture is vital for meeting the nutritional needs of the population by increasing the production of fruits and vegetables. It also generates higher income through the cultivation of flowers, medicinal plants, and aromatic plants on smaller plots of land¹³⁴.



Year 2012



Year 2020

Image: Historical land change analysis in Jarmundi Block of project area

As per the historical land change images of the project area shared above, it is evident that the project area remained barren and degraded and no afforestation activities has taken place in the project area and nearby. With the project interventions focusing on afforestation activities by planting Mango, Sonajhuri and Arjuna trees and livelihood generation, the project is not a common practice in the region. Hence, the proposed A/R project is additional.

Project activities

Intervention Type	Project Intervention	Expected Benefits
Identification of suitable land for the project through Participatory planning	Under the project intervention, Women Livelihood Committees (WLCs)/ SHGs will be formed. The team from FIT Climate, with the help of WLCs/SHGs members and leaders, will conduct intensive ridge-to-valley integrated natural resources	Involving community in the planning process builds their ownership into the programme. They are able to make informed decision regarding the optimal utilization of their resources for plantation and other treatments as per the plan. Since they know their

¹³²https://www.researchgate.net/publication/379643410_Cultivating_Sustainability_Exploring_Diverse_Agroforestry_Practices_in_West_Bengal - Page 237-238

¹³³https://www.researchgate.net/publication/379643410_Cultivating_Sustainability_Exploring_Diverse_Agroforestry_Practices_in_West_Bengal - Page 239

¹³⁴<https://www.nabard.org/auth/writereaddata/tender/0701205000LP%202020-21%20Birbhum.pdf> - Page

Intervention Type	Project Intervention	Expected Benefits
	management (INRM) planning using various PRA tools and techniques such as wealth ranking, social mapping, vision building, livelihood, and watershed planning in the villages. As an outcome, the land suitable for project intervention is identified. The criterion for selection includes uplands belonging to individual farmers but not being used for a decade or so, no destruction of native ecosystem has been done in the last ten years and there are no large trees in more than 10% of the land parcel. Other activities like soil-moisture conservation measures, creation of water bodies etc. are also mapped out in the resource maps based on slope and extent of degradation.	area and the community quite well, their inputs are very valuable in the planning process.
Identifying Private nurseries for sourcing of saplings	Identification of well-established private nurseries nearby for efficient transportation.	Conduct field verification of shortlisted nurseries to check species availability, seedling quality, supply capacity and proximity to project villages.
Tree Planting	Once the area is prepared, preparatory activities for tree planting like land cleaning, fencing, marking or layout of pits, pit digging, anti-termite/ anti-fungal treatment, composting etc. will be taken up followed by planting of trees. The species include Mango, Sonajhuri and Arjun.	The plantation of trees in uplands would help in carbon sequestration in the long run while the community would benefit from sericulture being supported by Arjun and from consumption and selling of mangoes. The Sonajhuri tree, which is a tall tree and grows to the height of 12 meters the tree is mostly harvested after a period of 12 years. The harvested tree is then sold to the furniture market.

Intervention Type	Project Intervention	Expected Benefits
		Each tree is sold for Rs 8000 which is a good added income to the farmers. It will improve the ecosystem of the region, impact biodiversity and provide livelihood opportunities to the beneficiaries. More than 15000 farmers would earn an additional annual income Revenue from carbon will be an additional income for the poor communities.
Tree Maintenance	Regular maintenance of the trees will be taken up such as watering, weeding and mulching, composting, pest treatment as and when required, staking, pruning and thinning.	Regular maintenance will ensure minimal mortality and proper growth of the trees. This also means a higher carbon sequestration potential of trees during the crediting period. Good growth of the trees will motivate the farmers to care and nurture the trees even more.
Tree growth monitoring	Measuring, recording, storing and aggregating data for growth monitoring. In addition to the tree growth details including DBH and height, other parameters such as sprouting progress, any pest infestation, mortality, fencing status, irrigation requirements and facilities available, timely application of compost, community involvement in the care and maintenance activities etc. that have a bearing on the growth of trees will also be monitored.	Monitoring of tree growth data as well as other parameters as mentioned will help in taking corrective actions as and when required for ensuring 100% survival and proper growth of the trees. Since the implementation will be done in phases, the learnings from one phase will help in proper planning and ensuring zero mortality and proper growth of trees in subsequent phases.

Carbon benefits

Crediting Period

Carbon benefits are estimated over the period of 30 years and will be renewed to 20 more years to cover upto 50 years.

Carbon Pools and Emission Sources

To identify the inclusion and exclusion of the carbon pool in the project AR- TOOL 04 “Tool for testing significance of GHG emissions in A/R CDM project activities” (Version 01)¹³⁵ of CDM has been used.

Source	Gas	Included?	Justification
Above-ground woody biomass	CO ₂	Yes	Major portion of the carbon stock is expected to store in the pool, hence considered for ex-ante calculations.
Aboveground non-woody biomass	CO ₂	No	Non-woody biomass contributes less than 5% of the total GHG emission reduction and does not contain major portion of carbon stock and hence can be conservatively ignored from the calculations
Below-ground biomass	CO ₂	Yes	Major portion of the carbon stock is expected to store in the pool, hence considered for ex-ante calculations.
Soil Organic Carbon	CO ₂	No	Soil organic carbon has been excluded from the carbon benefit calculations, as its omission is considered conservative and does not result in any overestimation of project emission reductions or removals. In addition, the contribution of SOC to total project carbon benefits is expected to be relatively insignificant when compared to the

¹³⁵<https://cdm.unfccc.int/methodologies/ARmethodologies/tools/ar-am-tool-04-v1.pdf>

			living biomass pools, which constitute the primary carbon pools for the proposed A/R activities..
Dead Wood	CO ₂	No	Dead Wood contributes less than 5% of the total GHG emission reductions and does not contain major portion of the carbon stock and in the ex-ante calculations can be conservatively ignored.
Litter	CO ₂	No	Litter contributes less than 5% of the total GHG emission reductions and does not contain a major portion of the carbon stock and in the ex-ante calculations can be conservatively ignored.
Wood Products	CO ₂	No	The project includes the harvesting of <i>Acacia auriculiformis</i> from the 12th year onwards. For the estimation of emission reductions, the PP has applied the long-term average (LTA) approach. After harvesting, the wood will be utilized for furniture manufacturing, which represents a sustainable and long-lived use of the harvested biomass. The PP would also like to clarify that all

			harvested trees will be replanted in the same area to maintain the carbon stocks associated with the emission reductions claimed. Therefore, emissions from harvested wood products are negligible and can be conservatively excluded from the emission reduction calculations.
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Litter and dead wood on land in the baseline scenario remains in-situ and is not removed from the project boundary and the carbon stock in them are expected to decrease further in the absence of the project. Additionally, the land parcels included in the project are degraded fallow lands where Soil organic carbon will also decrease with time in the absence of the project activity. Considering all these factors and the conservative approach, the project participants have selected to account only for above-ground and below-ground carbon.

GHG emission sources

To identify the inclusion and exclusion of the GHG emission sources in the project AR- TOOL 04 “Tool for testing significance of GHG emissions in A/R CDM project activities” (Version 01) of CDM has been used.

GHG Emission Sources	Gas	Included?	Justification
Nitrogen Fertilisers	N ₂ O	No	The project includes the plantation of native tree species. The plantation does not include the use of nitrogen fertilisers. Hence, the emission source can be conservatively ignored.
Nitrogen fixing species	N ₂ O	No	The project includes the plantation of native tree species. The plantation does not include nitrogen fixing species. Hence, the emission source can be conservatively

			ignored.
Biomass burning	CH ₄	No	As there is no burning considered in the pre and post project scenario, no woody biomass for the purpose of site preparation or as part of management is included. Additionally, the project includes the plantation of native tree species. Hence, the emission source can be conservatively ignored.
Fossil fuel use	CO ₂	No	Pit digging and other land development activities in the project are primarily carried out manually. However, for a few larger land parcels (>10 ha), JCBs were used to expedite the excavation of cattle-proof trenches, which would take months if done manually. All pit digging activities, across both small and large parcels, and the construction of cattle-proof trenches in these large parcels were conducted manually. Since the use of JCBs was limited to only a few large parcels, representing a very small proportion of the total project area, the associated emissions are minimal and can be conservatively excluded from the emission reduction calculations.

Enteric fermentation	CH ₄	No	The project will not lead to increase in cattle number against the baseline scenario. The project does not include enteric fermentation. Hence, the emission source can be conservatively ignored.
Manure deposition	CH ₄ , N ₂ O	No	The project includes the plantation of native tree species. The project does not include the deposition of manure. Hence, the emission source can be conservatively ignored.
Soil Methanogenesis	CH ₄	No	The project activity does not include or lead to water logging that can create anaerobic conditions. There is no methane emissions related to the project. Hence, the emission source can be conservatively ignored.

Baseline Emissions/Removals

For the calculation of biomass removals, the module PU001, “Estimation of Baseline and Project GHG removals by Carbon pools in Plan Vivo projects, Version 1.0 was followed.

According to the section 5.1.2 of the applied tool, baseline removals in woody biomass can be estimated assuming no change in woody biomass carbon stocks if the conditions in AR-TOOL14 v4.2 Section 5 paragraph 12, or PT004 are met.

According to the section 5 paragraph 12 of AR-TOOL14 V4.2, the baseline conditions meets the requirement of point ‘g’, which states that:

- (a) The pre-project trees are neither harvested, nor cleared, nor removed throughout the crediting period of the project activity;
- (b) The pre-project trees do not suffer mortality because of competition from trees planted in the project, or damage because of implementation of the project activity, at any time during the crediting period of the project activity;

(c) The pre-project trees are not inventoried along with the project trees in monitoring of carbon stocks but their continued existence, consistent with the baseline scenario, is monitored throughout the crediting period of the project activity.

Hence, the changes in carbon stocks in trees and shrubs in the baseline may be accounted as zero.

Calculation of baseline removals in woody biomass (equation 1 of the applied tool):

$$BR_{WB,a,y} = \sum_{t=1}^y \Delta C_{TREE_BSL,t} + \Delta C_{SHRUB_BSL,t}$$

Where:

$BR_{WB,a,y}$ = Net GHG removals in aboveground and belowground woody biomass under the baseline scenario for project area a up to year y (t CO₂e)

$\Delta C_{TREE_BSL,t}$ = Change in carbon stock in tree biomass under the baseline scenario within the project area in year t (t CO₂e)

$\Delta C_{SHRUB_BSL,t}$ = Change in carbon stock in shrub biomass under the baseline scenario within the project area in year t (t CO₂e)

$\Delta C_{TREE_BSL,t}$ is accounted as zero, and baseline conditions are mentioned below:

- The Baseline trees are neither harvested, nor cleared, nor removed throughout the crediting period of the Project activity;
- The Baseline trees do not suffer mortality because of competition from trees planted in the project, or damage because of implementation of the Project activity, at any time during the crediting period of the project activity;
- The Baseline trees are not inventoried along with the project trees in monitoring of carbon stocks but their continued existence, consistent with the baseline scenario, is monitored throughout the crediting period of the Project activity.

The baseline trees will undergo inventory using high-resolution satellite imagery or Google Earth. Given their maturity and substantial canopy coverage, these trees will be initially identified and marked utilizing high-resolution satellite images. Subsequently, ground validation will be conducted to ensure accuracy. Throughout the project's crediting period, the identified trees will be continuously monitored. Each tree will be geotagged on-site and excluded from the project area boundary to prevent their carbon stocks from being counted. This process is facilitated by the implementation partner, who will easily identify and geotag any trees within the project area boundary, ensuring accurate delineation of project boundaries. $\Delta C_{SHRUB_BSL,t}$ conservatively is assumed to be zero in the baseline scenario, due to the fact that changes in carbon stock of above and below ground biomass of non-tree vegetation of the barren land in baseline scenario is not possible.

Hence, $BR_{WB,a,y} = 0$.

To estimate the baseline emissions, the module PU001, "Estimation of Baseline and Project GHG removals by Carbon pools in Plan Vivo projects, Version 1.0 was used.

The baseline net GHG removals by sinks shall be calculated according to the PV Climate methodology-Agriculture and Forestry Carbon Benefit Assessment Methodology version 1.0, as follows:

Equation 1 of the methodology is as follows:

$$BR_{a,y} = BRWB_{a,y} + BRNB_{a,y} + BRBG_{a,y} + BRLL_{a,y} + BRDW_{a,y} + BRSO_{a,y} + BRWP_{a,y}$$

Where:

$BR_{a,y}$ = Net GHG removals under the baseline scenario for project area a up to year y (t CO₂e)

$BRWB_{a,y}$ = Net GHG removals in aboveground woody biomass under the baseline scenario for project area a up to year y (t CO₂e)

$BRNB_{a,y}$ = Net GHG removals in aboveground non-woody biomass under the baseline scenario for project area a up to year y (t CO₂e)

$BRBG_{a,y}$ = Net GHG removals in belowground biomass under the baseline scenario for project area a up to year y (t CO₂e)

$BRLL_{a,y}$ = Net GHG removals in litter under the baseline scenario for project area a up to year y (t CO₂e)

$BRDW_{a,y}$ = Net GHG removals in dead wood under the baseline scenario for project area a up to year y (t CO₂e)

$BRSO_{a,y}$ = Net GHG removals in soil organic carbon under the baseline scenario for project area a up to year y (t CO₂e)

$BRWP_{a,y}$ = Net GHG removals in wood products under the baseline scenario for project area a up to year y (t CO₂e)

$BR_{a,y}$ is accounted as zero, and baseline conditions are mentioned below:

- The Baseline trees are neither harvested, nor cleared, nor removed throughout the crediting period of the Project activity;
- The Baseline trees do not suffer mortality because of competition from trees planted in the project, or damage because of implementation of the Project activity, at any time during the crediting period of the project activity;
- The Baseline trees are inventoried along with the project trees in monitoring of carbon stocks but their continued existence, consistent with the baseline scenario, is monitored throughout the crediting period of the Project activity. Baseline trees are inventoried through geo tagging and the carbon stock generated won't be included in the estimation of project removals.

$BRWB_{a,y}$, $BRNB_{a,y}$ and $BRBG_{a,y}$ are conservatively assumed to be zero in the baseline scenario, due to the fact that changes in carbon stock of above and below ground biomass of non-tree vegetation of the degraded land in baseline scenario is not possible.

Also $BRLL_{a,y}$ and $BRDW_{a,y}$ are assumed to be zero due to the fact that the baseline scenario was degraded fallow, which did not allow accumulation of dead wood and litter.

$BRSO_{a,y}$ and $BRWP_{a,y}$ are assumed to be zero due to the fact that the baseline scenario was degraded fallow and no vegetation was present, which had an adverse effect on the Soil Organic Carbon. As in the baseline no vegetation was present, GHG removals by wood products under the baseline scenario was zero.

That is why the estimated baseline emissions or removals are considered insignificant and hence accounted as zero. $BR_{a,y} = 0$

Expected Project Emissions/Removals

The actual net GHG removals by sinks are estimated according to the PV Climate methodology- “Agriculture and Forestry Carbon Benefit Assessment Methodology” version 1.0. To estimate the project removals, the module PU001, “Estimation of Baseline and Project GHG removals by Carbon pools in Plan Vivo projects, Version 1.0 will be used.

Equation 4 of the methodology as follows:

$$PR_{a,y} = PRWB_{a,y} + PRNB_{a,y} + PRBG_{a,y} + PRLI_{a,y} + PRDW_{a,y} + PRSO_{a,y} + PRWP_{a,y}$$

Where,

$PR_{a,y}$ = Net GHG removals under the project scenario for project area a upto year y

$PRWB_{a,y}$ = Net GHG removals in above ground woody biomass under the project scenario for project area a upto year y.

$PRNB_{a,y}$ = Net GHG removals in above ground non-woody biomass under the project scenario for project area a upto year y.

$PRBG_{a,y}$ = Net GHG removals in below ground biomass under the project scenario for project area a upto year y.

$PRLI_{a,y}$ = Net GHG removals in litter under the project scenario for project area a upto year y.

$PRDW_{a,y}$ = Net GHG removals in dead wood under the project scenario for project area a upto year y.

$PRSO_{a,y}$ = Net GHG removals in soil organic carbon under the project scenario for project area a upto year y.

$PRWP_{a,y}$ = Net GHG removals in wood products under the project scenario for project area a upto year y.

Estimation in the changes in carbon stock in litter:

Litter is expected to remain in the project area and will not be removed. Conservatively, the carbon stock contained in this pool is expected to remain unchanged for the programme duration.

Hence, $PRLI_{a,y} = 0$

Estimation in the changes in carbon stock in dead wood:

Deadwood is expected to remain in the project area and will not be removed. Conservatively, the carbon stock contained in this pool is expected to remain unchanged for the programme duration.

Hence, $PRDW_{a,y} = 0$.

Estimation in the changes in carbon stock in soil organic carbon:

Change in carbon stock in soil organic carbon is not taken into consideration as a part of the project activities as therefore this parameter will be estimated as zero in both ex-ante and ex-post calculations.

Hence, $PRSO_{a,y} = 0$.

Estimation in the changes in carbon stock in wood products:

Change in carbon stock in wood products is not taken into consideration as a part of the project as the project intervention does not involve manufacturing of any wood products. The harvested Sonajhuri wood will be used to make long-lasting items like furniture and doors, enabling the carbon captured

in the trees to remain sequestered for many years. Also, the trees will be re-planted as part of the project activity after the first harvesting of Sonajhuri trees. Therefore, this parameter is conservatively considered as zero in both ex-ante and ex-post calculations.

Hence, $PRWP_{a,y} = 0$.

Assumptions made in the calculations are tabulated below:

Species	Allometric Equation	Wood Density	Biomass Expansion Factor	Root to Shoot Ratio	Carbon Fraction	
<i>Acacia Auriculiformis</i>	$0.04235 - 0.74240 * D + 7.26875 * D^2$	0.575	1.5	0.27	0.47	
<i>Mangifera Indica</i>	$V = 0.108 - 1.706 * D + 7.559 * D^2$	0.55	1.5	0.27	0.47	
<i>Tectona grandis</i>	$V = 0.19112 - 3.25372 * D + 17.9194 * D^2 - 1.66117 * D^3$	0.5	1.5	0.27	0.47	
<i>Terminalia arjuna</i>	$V = (0.08565 - 1.51685 * D + 10.24871 * D^2)$	0.68	1.5	0.27	0.47	
Species	Allometric Equation	Wood Density	Biomass Expansion Factor	Root to Shoot Ratio	Carbon Fraction	Growth Data Source
			Global Default Values			
<i>Acacia Auriculiformis</i>	https://fsi.nic.in/isfr-2021/reffere-ance-annxure-contribute.pdf	http://db.worldagroforestry.org/wd/species/Acacia_auriculiformis	https://www.ipcc-nggip.iges.or.jp/public/gpglulucf_files/Chp3/Anx_3A_1_Data_Table_s.pdf	https://cdm.unfccc.int/methodologies/ARmethodologies/tools/ar-am-tool-14-v2.1.0.pdf	https://cdm.unfccc.int/methodologies/ARmethodologies/tools/ar-am-tool-14-v4.2.pdf	https://www.researchgate.net/publication/307545702_Growth_and_biomass_of_three_important_energy_plantations_tree_species_in_Jharkhand_state_of_India#:~:text=Abstract,(roots)%20where%20also%20

						20collected. https://so04.tci-thaijo.org/index.php/kjss/article/download/246884/167772/862531
<i>Mangifera Indica</i>	https://www.researchgate.net/publication/305394050_Biomass_Distribution_and_Development_of_Allometric_Equations_for_Non-Destructive_Estimation_of_Carbon_Sequestration_in_Grafted_Mango_Trees https://www.researchgate.net/publication/305394050_Biomass_Distribution_and_Development_of_Allometric_Equations_for_Non-Destructive_Estimation_of_Carbon_Sequestration_in_Grafted_Mango_Trees	https://www.fao.org/4/w4095e/w4095e0c.htm	https://www.ipcc-nggip.iges.or.jp/public/gpglulucf_files/Chp3/Anx_3A_1_Data_Table_s.pdf	https://cdm.unfccc.int/methodologies/ARmethodologies/tools/ar-am-tool-14-v2.1.0.pdf	https://cdm.unfccc.int/methodologies/ARmethodologies/tools/ar-am-tool-14-v4.2.pdf	https://www.researchgate.net/publication/305394050_Biomass_Distribution_and_Development_of_Allometric_Equations_for_Non-Destructive_Estimation_of_Carbon_Sequestration_in_Grafted_Mango_Trees

<i>Tectona grandis</i>	https://fsi.nic.in/isfr-2021/reffernce-annxure-contribute.pdf	https://www.fao.org/4/w4095e/w4095e0c.htm	https://www.ipcc-nggip.iges.or.jp/public/gpglulucf_files/Chp3/Anx_3A_1_Data_Table_s.pdf	https://cdm.unfccc.int/methodologies/ARmethodologies/tools/ar-am-tool-14-v2.1.0.pdf	https://cdm.unfccc.int/methodologies/ARmethodologies/tools/ar-am-tool-14-v4.2.pdf	https://bepls.com/NOV_2017/11.pdf
<i>Terminalia arjuna</i>	https://fsi.nic.in/isfr-2021/reffernce-annxure-contribute.pdf	https://www.fao.org/4/w4095e/w4095e0c.htm	https://www.ipcc-nggip.iges.or.jp/public/gpglulucf_files/Chp3/Anx_3A_1_Data_Table_s.pdf	https://cdm.unfccc.int/methodologies/ARmethodologies/tools/ar-am-tool-14-v2.1.0.pdf https://cdm.unfccc.int/methodologies/ARmethodologies/tools/ar-am-tool-14-v2.1.0.pdf	https://cdm.unfccc.int/methodologies/ARmethodologies/tools/ar-am-tool-14-v4.2.pdf	Book-Plantation Trees by R.K Luna

Tree Growth

For the calculation of tree growth throughout the crediting period, the diameter at breast height (DBH) for all species was determined using secondary literature. DBH values were obtained for various ages to calculate the Mean Annual Increment (MAI), which was then used to estimate DBH for the remaining ages. To ensure the reliability and accuracy of the data, the secondary literature chosen for DBH values was sourced either from the same area or from a similar agro-climatic zone. In cases where such localized data was unavailable, country-specific secondary literature was referred to as an alternative.

Furthermore, to adopt a conservative approach in emission reduction calculations, the MAI was reduced by 50% after the age of 20. This adjusted MAI was subsequently applied to estimate the DBH for trees aged 21 to 30. Refer to the calculation spreadsheet for more detailed explanation.

Potential Leakage

As there is no displacement of activities or resources from inside the project area to locations outside the project area as a result of project activities, there is no increase in net GHG emissions as a result of that. Hence, the leakage emissions are considered to be zero throughout the crediting period of the project. Detailed explanation has been added to section 3.12 of the PDD.

Uncertainty

To calculate the uncertainty of measured carbon benefits, PU005, “Estimation of uncertainty of carbon benefit estimates in Plan Vivo projects, Version 1.1 will be used. The PP will follow all the applicable steps in line with section 5 of module PU005.

For carbon stocks and GHG emissions estimated with sampling approaches, the percentage uncertainty at a 90% confidence level will be calculated by Equation 1 of the methodology.

$$U_x = z \cdot \frac{SD_{CDx}}{\sqrt{n}} \cdot \frac{1}{CD_x}$$

Where:

U_x = Uncertainty of the carbon stock/GHG emission estimate x at a 90% confidence level (percent)

z = Critical value for one-tailed test of significance at a 90% confidence level and $n - 1$ degrees of freedom (from t distribution table)

SD_{CDx} = Standard deviation of the estimated value (t CO₂e/ha)

n = Sample size used to estimate the value

CD_x = Carbon density or GHG emissions per hectare for estimated value x (t CO₂e/ha)

Confidence intervals will be calculated separately for each value (x) of carbon density/ GHG emissions per hectare estimated with sampling approaches. Estimates from the start and end of the monitoring period, and project, baseline and leakage estimates will be treated as separate values.

Uncertainty Adjustment

To calculate the uncertainty of measured carbon benefits, PU005, “Estimation of uncertainty of carbon benefit estimates” in Plan Vivo projects, Version 1.1 will be used.

$$UD_T = 0.25 \cdot \left(\frac{\sqrt{\sum_v [(CB_{v,t2} - CB_{v,t1}) \cdot U_{v,T}]^2}}{(CB_{t2} - CB_{t1})} - 0.5 \right)$$

To increase conservativeness and provide an incentive for greater precision, the Plan Vivo Methodology Requirements require the adjustment for uncertainty calculated with Equation 4.

Where:

UD_t represents the *uncertainty adjustment for the climate benefits achieved during monitoring period T* (from t_1 to t_2).

$CB_{v,t2}$ is the *carbon benefit of a specific project intervention v up to time t_2* (in tCO₂e, as per PM001).

$CB_{v,t1}$ is the *carbon benefit of the same project intervention v up to time t_1* (in tCO₂e, as per PM001).

$U_{v,t}$ represents the *uncertainty associated with the measured carbon benefit for intervention v during monitoring period T* (expressed as a percentage).

CB_{t2} is the *total carbon benefit of the project up to time t_2* (in tCO₂e).

CB_n is the *total carbon benefit of the project up to time t₁* (in tCO₂e).

Expected Carbon Benefits

The actual net GHG removals by sinks are calculated according to the PV Climate methodology-Agriculture and Forestry Carbon Benefit Assessment Methodology version 1.0, as follows:
For the calculation of project removals, equation 7 of the methodology is used.

$$CB_{CP,y} = \sum_a PR_{a,y} - BR_{a,y} - LE_{CP,a,y}$$

Equation 7: Calculation of carbon benefits from removals

Where;

CB_{CP,y}= Carbon benefit of the project from carbon pools up to year y (t CO₂e)

PR_{a,y} = Net GHG removals under the project scenario for project area a up to year y (t CO₂e)

BR_{a,y} = Net GHG removals under the baseline scenario for project area a up to year y (t CO₂e)

LE_{CP,a,y} = Net GHG emissions due to carbon pool leakage from project area a up to year y (tCO₂e)

For the calculation of carbon benefits from reduced emissions from Carbon pools, equation 8 of the methodology is used:

$$CB_{CP,y} = \sum_a BE_{CP,a,y} - PE_{CP,a,y} - LE_{CP,a,y}$$

Where;

CB_{CP,y}= Carbon benefit of the project from carbon pools up to year y (t CO₂e)

BE_{CP,a,y} = Net GHG emissions from carbon pools under the baseline scenario for project area a up to year y (t CO₂e)

PE_{CP,a,y} = Net GHG emissions from carbon pools under the project scenario for project area a up to year y (t CO₂e)

LE_{CP,a,y} = Net GHG emissions due to carbon pool leakage from project area a up to year y (tCO₂e)

For the calculation of carbon benefits from reduced emissions from emission sources, equation 9 of the methodology is used:

$$CB_{ES,y} = \sum_a BE_{ES,a,y} - PE_{ES,a,y} - LE_{ES,a,y}$$

Where;

CB_{ES,y} = Carbon benefit of the project from emission sources up to year y (t CO₂e)

BE_{ES,a,y} = Net GHG emissions from emission sources under the baseline scenario for project area a up to year y (t CO₂e)

PE_{ES,a,y} = Net GHG emissions from emission sources under the project scenario for project area a up to year y (t CO₂)

$LE_{ES,a,y}$ = Net GHG emissions due to emission source leakage from project area a up to year y (t CO₂e)

For the calculation of total carbon benefits, equation 10 of the methodology is used:

$$CB_y = CB_{CP,y} + CB_{ES,y}$$

Where;

CB_y = Carbon benefit of the project up to year y (t CO₂e)

$CB_{CP,y}$ = Carbon benefit of the project from carbon pools up to year y (t CO₂e)

$CB_{ES,y}$ = Carbon benefit of the project from emission sources up to year y (t CO₂e)

The calculations are done for 30 years.

The summary of expected project removals are tabulated below:

Year	Expected GHG benefit after 20% Buffer		
1			
2			
3	2924		
4	2447		
5	4274		
6	4939		
7	2468		
8	14112		
9	39353		
10	62797		
11	80100		
12	39058		
13	40146		
14	39706		
15	35072		
16	30419		
17	38570		
18	34405		
19	44325		
20	48320		
21	55234		
22	60966		
23	59175		
24	64065		
25	67848		
26	69841		

27	66175		
28	56635		
29	41397		
30	42344		
Total tCO2e	1,147,115		
Annual Average tCO2e	38,237		
Average per year hectare tCO2e	9.56		
Average per year per hectare tC	2.60		

Table. Plantation Model and Density

Location	Tree Scientific Name	Type Of Plantation	Trees/ Ha
Model 1	Mango - West Bengal	Main Field	190
Model 2	Mango - Jharkhand	Main Field	190
Model 3	Sonajhuri - West Bengal	Main Field	886
Model 4	Mango- Jharkhand	Main Field	250
Model 5	Sonajhuri - Jharkhand	Main Field	1000
Model 6	Teak- Jharkhand	Main Field	1400
	Arjuna- Jharkhand (2 rows)	Boundary	300
Model 7	Arjuna- Jharkhand	Main Field	1212
Model 8	Teak- Jharkhand (2 rows)	Boundary	300
	Mango- Jharkhand	Main Field	450
Model 9	Teak- Jharkhand	Boundary	96
	Mango- Jharkhand	Main Field	336
Model 10	Sonajhuri- Jharkhand	Main Field	1500

The project proponent has accounted for a 20% mortality rate, with plans in place to replant any lost trees to maintain project goals.

The project followed a robust method to calculate the carbon benefits generated through its activities. Tree growth data sets for each species were identified based on secondary literature and field measurements. The calculation steps were as follows:

- Identification of Tree Growth Data Sets: Tree growth data sets for each species were identified using secondary literature and field measurements.
- Calculation of Volume: The volume for each species was calculated using species and area-specific volumetric equations.
- Calculation of Above Ground Biomass: The above-ground biomass was calculated by multiplying the volume by wood density and biomass expansion factors.

- Calculation of Below Ground Biomass: The below-ground biomass was calculated using appropriate factors for each species.
- Calculation of Total Biomass: The total biomass was calculated by summing the above-ground and below-ground biomass.
- Calculation of Carbon Stock: The total biomass was multiplied by the global default value of 0.47 to calculate the carbon stock.
- Calculation of CO₂ Equivalent: The carbon stock was multiplied by the global default value of 3.67 to calculate the CO₂ equivalent.

This detailed process was followed for each species to accurately calculate the carbon credits from the project. By adhering to these steps, the project ensures that the carbon benefits are precisely quantified, contributing to its overall impact on climate change mitigation. Additionally, an excel sheet has been prepared for the ex-ante calculations of the credits that can be generated from the project activities is in place and can be provided if required.

Table 4.2

Project Intervention	Carbon Indicator	Means of Verification
Restoration of barren uplands of vulnerable communities in West Bengal and Jharkhand	Project Area (Ha)	It is the area used for plantation. The area shall be delineated either on the ground, using GPS or from geo-referenced remote sensing data. It will include each polygon that is part of the project. Data will be collected at every monitoring of the project.
	Number of Sample Plots (N)	For the calculation of the sample size, stratified random sampling approach will be adopted, making sure that it represents different categories of people, area, species selected, land-holding size etc. Once a number of sample plots are identified, random stratified sampling will be used to identify the geo-points to lay sample plots.
	Height of Tree (H)	Height of each tree will be recorded that lies inside the sample plot. Clinometer, altimeter or rangefinder will be used to record the height

		of the tree. Height will be recorded at every verification period.
	Diameter at breast height (cm)	DBH will be recorded for each tree present inside the sample plot. It is recorded in centimetres with the help of measuring tape. DBH will be recorded at each verification period.

The project developer has considered long term average in ex ante calculation for the species that are planned for selective harvesting. The excel sheet for the ex-ante calculation can be submitted if required.

For the ex-ante calculations, the project developer has used modelled values based on secondary literature. Please refer to Annex 7

Please refer to the response to CAR02 for the justification of baseline scenario.

For the initial instance, project developer is conducting baseline survey for each farmer that has taken part in the project.

For deriving the bio-physical plots where measurements/ sample will be collected, the project developer has planned for monitoring of the project as a whole and defined the tasks to be undertaken and technical requirements therein as per the details below:

a) Defining Sampling intensity and sample plots based on random stratified sample.

For the calculation of the sample size, stratified random sampling approach will be adopted, making sure that it represents different categories of plantation model, year of plantation and location etc. . The technical requirement here is the knowledge for correct identification and stratification of sample plots to make it a representative sample of the different categories of land parcels. The sample should be spread across all blocks and districts, should include all models of plantation, plots with and without irrigation facilities, plots having different slopes, located at different distances from the community etc.

b) Collecting data from planting sites effectively.

This requires orientation of the team who would be involved in the data collection process on the various parameters and tools for data collection. The team is conversant with using Google Sheet as well as the Kobo tool for data collection. The various parameters of monitoring include % of existing woody biomass in the planting sites, spacing of plants, species and number of plants in the main field as well as on the boundaries, status of fencing, application of compost and termite treatment, irrigation requirements, rate of survival, community involvement in care and maintenance etc.

c) Management practices for Ensuring good survival rate.

The additional parameters for management practices included in monitoring apart from the plantation details like status of fencing, application of compost and termite treatment, irrigation requirements,

disease/ pest infestation, community involvement in care and maintenance etc. will be done to take corrective action wherever required for ensuring a 100% survival. Gap plantation to replace losses if any, will be taken up to ensure 0% mortality.

d) Measuring tree growth details (DBH and Height).

The team of FIT Climate Foundation involved in the monitoring processes will be trained on measuring tree growth details (DBH and Height) by FCF India to become skilled for carbon monitoring. The team will undertake all carbon project monitoring surveys in the project area to ensure consistency in the measurements. The team will do periodic physical checks in the field and ensure all quality control measures are being followed.

e) Establishment of project boundaries using GIS.

The field team has collected KML files for all land parcels included in the first instance of the project, which will enable accurate verification of project boundaries and ensure that no plot contains more than 10% pre-existing woody biomass, as required under the eligibility criteria

Monitoring

Data/ Parameter	Area of stratum
Data Unit	Ha
Value Applied	Will be decided after data collection
Source of Data	Monitoring of strata and stand boundaries will be done using a Geographical Information System (GIS)
Purpose of Data	Definition of project spatial boundary and calculation of Project emission reductions

Data/ Parameter	Volume
Data Unit	m ³
Value Applied	Will be calculated on the basis data collected
Source of Data	Field measurement
Purpose of Data	Calculations of project removals

Data/ Parameter	Wood Density (D)
Data Unit	t d.m./m ³
Value Applied	Depends upon the species
Source of Data	IPCC default values
Purpose of Data	Calculations of project removals

Data/ Parameter	Root to Shoot Ratio
Data Unit	Dimensionless
Value Applied	Depending upon the equation used for the calculation
Source of Data	Tool "Estimation of carbon stocks and change in carbon stocks of trees and shrubs"
Purpose of Data	Calculation of project removals

Data/ Parameter	CF (Carbon Fraction)
Data Unit	t C t ⁻¹
Value Applied	0.47
Source of Data	IPCC default Values
Purpose of Data	Calculations of project removals

Data/ Parameter	BEF (Biomass Expansion Factor)
Data Unit	Dimensionless
Value Applied	From 1.15 to 3.4, depends upon secondary source
Source of Data	IPCC default Values
Purpose of Data	Calculation of project removals

Data/ Parameter	DBH
Data Unit	cm (centimetre)
Value Applied	Will be collected for every tree present in the sample plot
Source of Data	Field measurement
Purpose of Data	Calculations of project removals

Data/ Parameter	Height
Data Unit	m (metre)
Value Applied	Will be collected for every tree present in the sample plot
Source of Data	Field measurement
Purpose of Data	Calculation of project removals

The project followed a robust method to calculate the carbon benefits generated through its activities. Tree growth data sets for each species were identified based on secondary literature and field measurements. The calculation steps were as follows:

- Identification of Tree Growth Data Sets: Tree growth data sets for each species were identified using secondary literature and field measurements.
- Calculation of Volume: The volume for each species was calculated using species and area-specific volumetric equations.
- Calculation of Above Ground Biomass: The above-ground biomass was calculated by multiplying the volume by wood density and biomass expansion factors.
- Calculation of Below Ground Biomass: The below-ground biomass was calculated using appropriate factors for each species.
- Calculation of Total Biomass: The total biomass was calculated by summing the above-ground and below-ground biomass.
- Calculation of Carbon Stock: The total biomass was multiplied by the global default value of 0.47 to calculate the carbon stock.
- Calculation of CO₂ Equivalent: The carbon stock was multiplied by the global default value of 3.67 to calculate the CO₂ equivalent.

This detailed process was followed for each species to accurately calculate the carbon credits from the project. By adhering to these steps, the project ensures that the carbon benefits are precisely quantified, contributing to its overall impact on climate change mitigation. Additionally, an excel sheet has been prepared for the ex-ante calculations of the credits that can be generated from the project activities is in place and can be provided if required.

Table 4.2

Project Intervention	Carbon Indicator	Means of Verification
Restoration of barren uplands of vulnerable communities in West Bengal and Jharkhand	Project Area (Ha)	It is the area used for plantation. The area shall be delineated either on the ground, using GPS or from geo-referenced remote sensing data. It will include each polygon that is part of the project. Data will be collected at every monitoring of the project.
	Number of Sample Plots (N)	For the calculation of the sample size, stratified random sampling approach will be adopted, making sure that it represents different categories of people, area, species selected, land-holding size etc. Once a number of sample plots are identified, random stratified sampling will be used to identify the geo-points to lay sample plots.
	Height of Tree (H)	Height of each tree will be recorded that lies inside the sample plot. Clinometer, altimeter or rangefinder will be used to record the height of the tree. Height will be recorded at every verification period.

	Diameter at breast height (cm)	DBH will be recorded for each tree present inside the sample plot. It is recorded in centimetres with the help of measuring tape. DBH will be recorded at each verification period.
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The project developer has considered long term average in ex ante calculation for the species that are planned for selective harvesting. The excel sheet for the ex-ante calculation can be submitted if required.

For the ex-ante calculations, the project developer has used modelled values based on secondary literature. Please refer to Annex 7

Please refer to the response to CAR02 for the justification of baseline scenario.

For the initial instance, project developer is conducting baseline survey for each farmer that has taken part in the project.

For deriving the bio-physical plots where measurements/ sample will be collected, the project developer has planned for monitoring of the project as a whole and defined the tasks to be undertaken and technical requirements therein as per the details below:

a) Defining Sampling intensity and sample plots based on random stratified sample.

For the calculation of the sample size, stratified random sampling approach will be adopted, making sure that it represents different categories of plantation model, year of plantation and location etc. . The technical requirement here is the knowledge for correct identification and stratification of sample plots to make it a representative sample of the different categories of land parcels. The sample should be spread across all blocks and districts, should include all models of plantation, plots with and without irrigation facilities, plots having different slopes, located at different distances from the community etc.

b) Collecting data from planting sites effectively.

This requires orientation of the team who would be involved in the data collection process on the various parameters and tools for data collection. The team is conversant with using Google Sheet as well as the Kobo tool for data collection. The various parameters of monitoring include % of existing woody biomass in the planting sites, spacing of plants, species and number of plants in the main field as well as on the boundaries, status of fencing, application of compost and termite treatment, irrigation requirements, rate of survival, community involvement in care and maintenance etc.

c) Management practices for Ensuring good survival rate.

The additional parameters for management practices included in monitoring apart from the plantation details like status of fencing, application of compost and termite treatment, irrigation requirements, disease/ pest infestation, community involvement in care and maintenance etc. will be done to take corrective action wherever required for ensuring a 100% survival. Gap plantation to replace losses if any, will be taken up to ensure 0% mortality.

d) Measuring tree growth details (DBH and Height).

The team of FIT Climate Foundation involved in the monitoring processes will be trained on measuring tree growth details (DBH and Height) by FCF India to become skilled for carbon monitoring. The team will undertake all carbon project monitoring surveys in the project area to ensure consistency in the measurements. The team will do periodic physical checks in the field and ensure all quality control measures are being followed.

e) Establishment of project boundaries using GIS.

The field team has collected KML files for all land parcels included in the first instance of the project, which will enable accurate verification of project boundaries and ensure that no plot contains more than 10% pre-existing woody biomass, as required under the eligibility criteria

Measuring, recording, storing and aggregating data

The FCF India and FIT Climate Foundation team will prepare a monitoring calendar for capturing and recording the data against the monitoring parameters as provided in the table below:

Sl No	Parameters to be monitored
1	Name of the Farmer
2	Village
3	Block
4	District and State
5	Geo-coordinates and KML of the plantation Site
6	% of existing woody biomass present in the plots if any
7	Date of Plantation
8	Species diversity and number in main field and boundary
9	Tree growth details- DBH and Height
10	Health of Plants- sprouting progress, pest/ disease infestation
11	Survival Rate of plants
12	Spacing of plants
13	Fencing status
14	Irrigation requirements and facilities available
15	Application of compost and termite treatment
16	Involvement of community in the care and maintenance work and benefit sharing mechanism

The data against these parameters will be measured, recorded and verified by the FCF India team. Using the monitoring calendar, the team will ensure that detailed records are maintained for each farmer, including the date of planting, distribution of saplings, and follow-up actions taken. This data is critical for tracking the progress of individual farmers and the overall success of the project.

The calendar will play a role in issue resolution by ensuring that problems are identified, documented, and addressed promptly.

The monitoring calendar will be an essential tool for effective project management and ensures that plantation activities are carried out systematically and in accordance with project goals and standards. It will help maintain transparency, accountability, and data-driven decision-making throughout the project duration.

Initially, it will be maintained in an excel sheet and later a robust Management Information System (MIS) will be developed for capturing and reporting the monitoring parameters.

In addition, the project baseline including KML files and other pertinent socio-economic information related to the project will be digitally stored and managed through the open-source data collection

application known as Kobo Toolbox. This platform allows for the efficient storage and retrieval of data, The accessibility of this data will be facilitated through the application, streamlining project monitoring and management.

Commissioning studies to enhance the knowledge of the social, economic, institutional and cultural framework; food security strategies and perceptions of the communities.

Responsibilities and competencies of the personnel that will be carrying out monitoring activities

FCF India is in process of standardising monitoring process for all project activities. It has planned for training programmes to sensitize all stakeholders involved in the project and also the skilled personnel in the project placed in different project areas. The team will undertake all carbon project monitoring surveys in the project area to ensure consistency in the measurements.

The FCF India team will do periodic physical checks in the field and ensure all quality control measures will be followed. In addition, FIT Climate Foundation team will do the cross-check of collected data by visiting surveyed plot.

The skilled personnel of FIT Climate Foundation who will carry out the survey and data collection will be given training on the following topics:

- How to collect data from plantation sites effectively.
- How to ensure a good survival rate.
- Measuring tree growth (DBH and height).
- Tree identification.
- Establishment of project boundary using tracking systems

The responsibilities and competencies of the staff who will be carrying out the monitoring activities are provided in the table below:

Position	Competency	Responsibility
Project Director	Postgraduate in Power Management with more than 16 years of experience in the development sector.	Oversee the entire project in the two districts i.e., Dumka of Jharkhand and Birbhum of West Bengal
Project Manager and Developer	Forestry graduate with three years of experience in carbon project development across standards	Leads the overall development and guide the operations on the timely completion of the activities
Lead- Operations	Civil Engineer graduate with 10+ years of experience in the development sector	Leads the overall activities related to ground
Project Manager- Operation	Postgraduate with 8 years of experience in the development sector. Led large-scale plantation and monitoring activities across multiple geographies in Jharkhand	Manages the ground activities, team and the communities
GIS Associate	Experienced GIS Associate with two years of hands-on work in land-use/land-cover (LULC) mapping, KML	Responsible for GIS related activities

	verification, and spatial data management with two years of working experience.	
Field Coordinators	Intermediate/Graduate/Diploma in Agriculture with 3 Years of experience in implementation of Agri - Allied projects.	Coordinates and facilitates community engagement and mobilization efforts, ensure CRPs work smoothly and scheduled activities are implemented timely and of requisite quality.
MIS Coordinator	IT graduate with 3 years of working experience	Manages Project Data and updates management regarding project progress.
Accountant	B.com/M.com with 5 years of relevant experience	Maintains the financial data and monitors expenses versus planned, Prepares financial reports
Community Resource Person	He/she must be a good farmer, physically fit and have mobility and basic writing and arithmetic skills.	Motivate and Mobilize farmers, Regular plot visit, collect data and ensure scheduled activities for each farmer.

Sampling approaches used, sample sizes, sample site locations, stratification, frequency of measurement and QA/QC procedures.

Establishment of project boundary using tracking systems.

All land parcels subject to plantations under this project activity are delineated using GPS tracking function and for this, extensive training is conducted. Each planting plot, and the tracks are downloaded and recorded as Google Earth kml file, as shapefile and an Excel file. This allows for further processing of the tracks via GIS applications.

Stratification and sampling framework

The ex-ante stratification of the project will be done on the year of planting. The sampling framework adopted will be as follows:

The number of samples and sample size will be calculated using “Calculation of the number of sample plots for measurements within A/R CDM project activities (Version 02.1.0)”. The number of required plots will be calculated using the following equation:

$$n = \frac{N * t_{VAL}^2 * \left(\sum_i w_i * s_i \right)^2}{N * E^2 + t_{VAL}^2 * \sum_i w_i * s_i^2}$$

Where:

n = Number of sample plots required for estimation of biomass stocks within the project Boundary; dimensionless

N= Total number of possible sample plots within the project boundary (i.e. the sampling space or the population); dimensionless

tval= Two-sided Student's t-value, at infinite degrees of freedom, for the required confidence level; dimensionless

wl= Relative weight of the area of stratum l (i.e. the area of the stratum l divided by the project area); dimensionless

sl= Estimated standard deviation of biomass stock in stratum i; t d.m. (or t d.m. ha⁻¹)

E= Acceptable margin of error (i.e., one-half the confidence interval) in the estimation of biomass stock within the project boundary; t d.m. (or t d.m. ha⁻¹), i.e., in the units used for si

l= 1, 2, 3, biomass stock estimation strata within the project boundary

The number of plots allocated to each stratum will be calculated as follows:

Where:

ni= Number of sample plots allocated to stratum i; dimensionless

n= Number of sample plots required for estimation of biomass stocks within the project boundary; dimensionless

wi= Relative weight of the area of stratum i(i.e. the area of the stratum l divided by the project area); dimensionless

Sl= Estimated standard deviation of biomass stock in stratum i; t d.m. (or t d.m. ha⁻¹)

l= 1, 2, 3, . biomass stock estimation strata within the project boundary

The sampling plot area to 20 m x 20 m plots of 0.04 ha (400 m²) will be laid out calculated as per the CDM afforestation field manual.

The QA/QC measures for monitoring and collection of field data will be as follows:

- (1) Collection of field data promptly.
- (2) Independent random checking of data by an independent expert
- (3) Entering the data in a computer system followed by analysis and storing the same in cloud storage.

Description of steps

(1) Collection of field data promptly- A team consisting of people belonging to the project area will be formed. The team will be carrying out field monitoring. Before that, they will undergo training in data collection, data entry and data analysis. Specific duties will be assigned to each team member.

(2) Independent random checking of data by an independent expert- The independent expert will do random checks from sampling plots. In case of any error reported, they will be collected and recorded.

(3) Entering the data in the computer system followed by analysis and archiving the same- Data management will be done in electronic and paper format. Data entering will cover all the parameters for the calculation of GHG removals, carbon stock changes and records of project participants. GIS shapefiles and maps will be stored electronically in the local hard drive and cloud network.

Sampling design

- Type of Plots- For monitoring the project over the project period, permanent sample plots will be established and managed just like the rest of the project area.
- Number of plots- The number of plots will be calculated using the aforementioned formulae

- Location of sampling plots- The locations of sampling plots will be randomly distributed to avoid any project developer biases and it will represent all strata. The geographical locations (geo coordinates), ID numbers of the stratum will be recorded and archived.
- Monitoring frequency- Permanent sample plots will be monitored annually to measure the parameters required for assessing change in carbon stock accumulation.
- Measuring and estimating carbon stock change- Using the parameters measured from the permanent sample plots carbon stocks in aboveground biomass and belowground biomass will be estimated.
- Stratification and sample size- Sample plots of 0.04 ha (400 m²) with 20 m x 20 m will be established randomly in each stratum based on the year of plantation. The ex-ante stratification will be according to the year of planting.

Annex 8 - Exclusion List

Activities	Included in Project ('Yes' or 'No')
1. Any project activities leading to or requiring the destruction [1] of critical habitat [2] or any forestry project which does not implement a plan for improvement and/or sustainable management.	☐ Yes ☒ No
2. Any activity which could be associated with the significant impairment of areas particularly worthy of protection of cultural heritage (without adequate compensation in accordance with international standards).	☐ Yes ☒ No
3. Trade in animals, plants or any natural products not complying with the provisions of the CITES/Washington convention [3].	☐ Yes ☒ No
4. Destructive fishing methods or drift net fishing with a net more than 2.5 km in length, explosives and/or poison.	☐ Yes ☒ No
5. Large-scale commercial logging operations for use in primary tropical moist forest.	☐ Yes ☒ No
6. Production or trade in wood or other forestry products other than from sustainably managed forests [4].	☐ Yes ☒ No
7. Exploitation of diamond mines and marketing of diamonds where the host country has not adhered to the Kimberley Process.	☐ Yes ☒ No
8. Activities involving harmful or exploitative forms of forced labour [5] or harmful child labour [6].	☐ Yes ☒ No
9. Projects that include involuntary physical displacement and/or forced eviction.	☐ Yes ☒ No
10. Production or activities that encroach on lands owned, or claimed or occupied by Indigenous	☐ Yes ☒ No

Peoples, without full documented consent of such peoples.	
11. Harmful and unsafe production, use, sale or trade of pharmaceuticals, ozone layer depleting substances [10], and other toxic [11] or dangerous materials such as asbestos or products containing PCB's [12], wildlife or products regulated under CITES, including all products that are banned or are being progressively phased out internationally	☐ Yes ☒ No
12. Production or trade of arms, ammunition, weaponry, controversial weapons, or components thereof (e.g., nuclear weapons and radioactive ammunition, biological and chemical weapons of mass destruction, cluster bombs, anti -personnel mines, enriched uranium).	☐ Yes ☒ No
13. Procurement and use of firearms.	☐ Yes ☒ No
14. Provision of finances to military institutions involved in conservation or security activities.	☐ Yes ☒ No
15. Production or trade of strong alcohol intended for human consumption or other alcoholic beverages (excluding beer and wine).	☐ Yes ☒ No
16. Production or trade of tobacco and other drugs	☐ Yes ☒ No
17. Gambling, gaming establishments, casinos or any equivalent enterprises and undertaking [10].	☐ Yes ☒ No
18. Any trade related to pornography or prostitution.	☐ Yes ☒ No
19. Production or trade in radioactive material. This does not apply to the procurement of medical equipment, quality control equipment or other application for which the radioactive source is insignificant and/or adequately shielded	☐ Yes ☒ No
20. Production or trade in unbound asbestos. This does not apply to the purchase or use of cement linings with bound asbestos and an asbestos content of less than 20%.	☐ Yes ☒ No
21. Production, trade, storage, or transport of significant volumes of hazardous chemicals, or commercial scale usage of hazardous chemicals. Hazardous chemicals include gasoline, kerosene, and other petroleum products.	☐ Yes ☒ No

22. Transboundary trade in wastes, except for those accepted by the Basel Convention and its underlying regulations [11].	☐ Yes ☒ No
23. Any activity leading to an irreversible modification or significant displacement of an element of culturally critical heritage [12].	☐ Yes ☒ No
24. Production and distribution, or investment in, media that are racist, antidemocratic or that advocate discrimination against a part of the population.	☐ Yes ☒ No
25. Projects involving the planting or introduction of invasive species	☐ Yes ☒ No
26. Projects that increase the dependency of primary participants and other stakeholders on fossil fuels.	☐ Yes ☒ No

Annex 9 - Environmental and Social Screening Report

Guidance on use

Background

The questionnaire includes questions aligned with the Plan Vivo Standard Environmental and Social Safeguards (Section 3.9, V5.0) and other Safeguard Provisions that are embedded in V5.0 of the Standard (namely Stakeholder Engagement, Stakeholder Consultation, Free Prior and Informed Consent, Grievance Redress Mechanism).

The questionnaire also draws from the Plan Vivo Environmental and Social Policy Framework (ESPF)

The questionnaire is structured around the IUCN ESMS Questionnaire, which itself is designed to be aligned with the IUCN ESMS (2016), and the World Bank Environmental and Social Framework (2017), including World Bank Standards 1-10.

The number of questions has been limited in this version of the questionnaire to ensure that it is practical and user-friendly.

The purpose of the questionnaire is to establish: 1) the project risk rating; 2) the significance of risks and impacts; 3) alignment with safeguard provisions; 4) the need for further E&S assessment during project design; 5) the likely safeguard plans that should be developed.

Due to the early stage in project design, the questionnaire is not designed to assess alignment with the Plan Vivo Standard requirements, but rather prompt projects as to what will be expected regarding those requirements that relate to E&S safeguards.

Any social and environmental risks must inform the design of the Project.

Requirement

As per the Plan Vivo Standard v5, every project must conduct a screening of environmental and social risks and impacts at the PIN stage of project design. The questionnaire and screening report are to be submitted alongside the PIN to the Plan Vivo Foundation.

Process for use of the E&S questionnaire

The Project Coordinator is to fill in the “Project coordinator response” section of the questionnaire. This is the column shaded light grey.

Once completed by the Project Coordinator, the Plan Vivo Foundation Project Officer and E&S reviewer is to fill in the “E&S reviewer comments” section of the questionnaire. This includes filling in the “E&S reviewer conclusions”.

The screening report is then completed at the end by the Plan Vivo Foundation E&S reviewer, and the results are shared and discussed with the Project Coordinator.

Establishing significance of risks and impacts

Table 1 illustrates how risk significance can be established based on an estimate of likelihood of something happening, and the impact it should occur. This likelihood-magnitude matrix can be used by the Project Officer and the E&S reviewer to estimate the risk and impact significance of the E&S risk areas indicated in the E&S questionnaire Section B, below. Note that while the questionnaire focuses on key topics and issues that are common to natural resource management projects, the project coordinator should include other known E&S risks and impacts associated with the planned project.

Likelihood represents the possibility that a given risk event is expected to occur. The likelihood should be established using the following five ratings:

- Very unlikely to occur (1)
- Not expected to occur (2)
- Likely - could occur (3)
- Known to occur - almost certain (4)
- Common occurrence (5)

Impact (or consequence) refers to the extent to which a risk event might negatively affect environmental or social receptors - see below criteria distinguishing five levels of impacts:

Table 1: Rating impact of a risk area

Severe (5)	Adverse impacts on people and/or environment of very high magnitude, including very large scale and/or spatial extent (large geographic area, large number of people, transboundary impacts), cumulative, long-term (permanent and irreversible); receptors are considered highly sensitive; examples are severe adverse impacts on areas with high biodiversity value ¹³⁶ ; severe adverse impacts to lands, resources and territories of indigenous peoples; significant levels of displacement or resettlement with long-term consequences on peoples' livelihood; impacts give rise to severe and cumulative social conflicts with long-term consequences.
Major (4)	Adverse impacts on people and/or environment of high magnitude, including large scale and/or spatial extent (large geographic area, large number of people, transboundary impacts), of certain duration but still reversible if sufficient effort is provided for mitigation; receptors are considered sensitive; examples are adverse impacts on areas with high biodiversity value; adverse impacts to lands, resources and territories of indigenous

¹³⁶ For the definition see IUCN ESMS Standard on Biodiversity Conservation and Sustainable Use of Natural Resources.

	peoples; significant levels of displacement or resettlement with temporary consequences on peoples' livelihood; impacts give rise to social conflicts which are expected to be of limited duration.
Medium (3)	Adverse impacts of medium magnitude, limited in scale (small area and low number of people affected), limited in duration (temporary), impacts are relatively predictable and can be avoided, managed and/or mitigated with known solutions and straight forward measures.
Minor (2)	Adverse impacts of minor magnitude, very small scale (e.g. very small affected area, very low number of people affected) and only short duration, may be easily avoided, managed, mitigated.
Negligible (1)	Negligible or no adverse impacts on communities, individuals, and/or on the environment.

Table 2: Rating significance of a risk area (Source: IUCN ESMS questionnaire, 2020)

		Likelihood of occurrence				
		Very unlikely to occur (1)	Not expected to occur (2)	Likely - could occur (3)	Known to occur - almost certain (4)	Common occurrence (5)
Magnitude	Severe (5)	Moderate	Substantial	High	High	High
	Major (4)	Low	Moderate	Substantial	Substantial	High
	Medium (3)	Low	Moderate	Moderate	Moderate	Substantial
	Minor (2)	Low	Low	Moderate	Moderate	Moderate
	Negligible (1)	Low	Low	Low	Low	Low

Establishing project risk category

The project risk category will be determined based on an understanding of the types of potential E&S risks and impacts associated with the project, and the availability of appropriate and known mitigation measures. Most Plan Vivo projects are thought to be of either low or moderate risk. If high risk projects are identified, the E&S impact assessment would look to understand the alternative project designs available to reduce the potential risks and impacts.

Table 3: Rating significance of a risk area (Source: IUCN ESMS questionnaire, 2020)

Risk Category	Definition
Low	Insignificant or low potential environmental and social risks and impacts have been identified. No additional management measures are required; no Environmental and Social Management Plan (ESMP) section of the PDD required.

Moderate	Moderate and/or substantial potential adverse risks and impacts have been identified, in one or more risk areas. These risks and impacts can be mitigated through known mitigation measures, such as a Stakeholder Engagement Plan, livelihood restoration plan, or through the project's ESMP.
High	High risks and impacts that are potentially diverse and irreversible, and for which standard solutions are not sufficient to manage, and for which specialist safeguard plans and expertise is required.

Alignment with safeguard provisions

Section C of the questionnaire refers to the Plan Vivo Standard (V5.0) safeguard provisions which are integrated into the Standard. These include:

- Stakeholder engagement and consultation
- Free, Prior and Informed Consent
- Grievance Redress Mechanism

The project coordinator will answer the questions related to these provisions and clarify the project's intentions to meet these Standard requirements during the project design phase.

Environmental and Social Assessment

The E&S questionnaire should determine what E&S assessment is required during the project design phase (PDD development). For low and moderate risk projects, a tailored E&S assessment is required. For high-risk projects, an Environmental and Social Impact Assessment (ESIA) is required. The project coordinator should consider in responses what further assessment of risks and impacts is required, and the E&S reviewer will comment on this and include a summary in the Screening Report section.

Safeguard Plans

The E&S questionnaire should determine which Safeguard Plans are required by the project. For low-risk projects, it is unlikely that an ESMP will be required. For moderate risk projects, an ESMP will be required. Projects will, according to the Standard, also require a mandatory Stakeholder Engagement Plan and a Grievance Redress Mechanism.

Some projects might require specialist plans, such as an Indigenous Peoples Plan (IPP) or a Livelihood Restoration Plan.

SECTION A: PROJECT INFORMATION	
Project title:	Restoration of barren uplands of vulnerable communities in West Bengal and Jharkhand
Project coordinator:	Mr. Jasmeet Singh, Director Fair Climate Fund India Private Limited Email: jsingh@fcfindia.in Phone Number: +91 9560018494
Country:	India

Geography/ landscape:	Birbhum District in West Bengal and Dumka district in Jharkhand, India		
Project summary:	The project involves restoration of 4000 hectares of barren uplands by undertaking intensive plantations to improve the socio-economic conditions of the vulnerable communities of two States- West Bengal and Jharkhand in India. It will cover approximately 2700 ha in Dumka district, Jharkhand and 1300 ha in Birbhum district of West Bengal. Around 8000 Families (covering both the districts Dumka in Jharkhand and Birbhum in West Bengal) will be benefitting from this project. These are small holder farmers belonging to the marginalized tribal communities who often migrate to neighbouring cities for daily wage labour. The Restoration of uplands will improve the ecosystem of the region, will have positive impact on biodiversity and improve livelihood opportunities of the communities involved in the project. In the first instance, PP is working on 814 ha, out of which 720.091 ha is already implemented 121.5 ha will be implemented in the year 2026. To cover this area in two States (West Bengal and Jharkhand), 2 Districts (Birbhum in West Bengal and Dumka in Jharkhand) were targeted. To cover 655.73 Ha, PP has targeted 11 blocks for the implementation of the project activity. The blocks include: Jama, Jarmundi, Masalia, Shikaripada, Kathikund, Ramgarh, Ranewar, Saraiyahaat and Gopikandar blocks in Dumka, Jharkhand and Rajnagar and Dubrajpur of Birbhum, West Bengal.		
Name and role of project coordinator staff member filling this questionnaire:	Mr. Jasmeet Singh, Director Fair Climate Fund India Private Limited Email: jsingh@fcfindia.in Phone Number: +91 9560018494 His role is to oversee the entire project and ensure the key milestones of the project. Build the capacity of staff members, ensure documentation of key learnings of the project and take corrective action wherever and whenever required.		
SECTION B: POTENTIAL E&S RISKS AND IMPACTS			
Topic	Question	Project coordinator response	E&S reviewer comments
Vulnerable Groups	Are there vulnerable or disadvantaged groups or individuals, including people with disabilities (consider also landless groups, lower income groups less able to cope with livelihood shocks/stresses) in the project area, and are their livelihood conditions well understood by the project?	The population in the proposed project area belong to marginalized tribal and schedule caste social groups and are dependent on agriculture for their livelihoods. The proposed villages are dominated by the Santhal tribes, an integrated part of the central Indian tribal stretch locally called as Adivasis. The vulnerability of the population is amplified by changing climate conditions resulting in less and erratic rainfall, which impacts on their food security. People are dependent on monsoon rains for	Reviewer comments

		farming, there is large scale degradation of natural resources, little occupational diversification and high seasonal unemployment resulting in migration to urban areas. So, yes, there are vulnerable groups in the project area who struggle to cope with livelihood shocks and the proposed project is designed to make them more resilient through improving their livelihoods and enabling them to manage their resources in a better manner.	
	Is there a risk that project activities disproportionately affect vulnerable groups, due to their vulnerability status?	The project intervention includes empowering of tribal women and marginalized community to access their rights and entitlements, restoration of degraded uplands through plantation of trees providing short term and long-term returns. Since the project activities will help in providing sustainable income earning opportunities to the vulnerable groups and also enhance their resilience to the impacts of climate change by improving the natural resource base on which they depend for their livelihoods, there no risk to their vulnerability status.	Reviewer comments
	Is there a risk that the project discriminates against vulnerable groups, for example regarding access to project services or benefits and decision-making?	From the design phase itself, there has been discussion with the vulnerable groups on the plantation models, land development, soil moisture conservation, community institutional framework for managing the project etc. and the project is conceptualized based on their inputs and requirements. Also, the project and its benefits has been explained to them and hence there is no discrimination against the vulnerable groups with respect to their access to	Reviewer comments

		services or benefits and decision making.	
E&S reviewer conclusions Estimated likelihood of risks (1-5) & justification: Reviewer conclusions Estimated magnitude of risks (1-5) & justification: Reviewer conclusions Risk significance: Reviewer conclusions			
Gender equality	Is there a risk of adverse gender impacts due to the project/ project activities, including for example discrimination or creation/exacerbation or perpetuation of gender-related inequalities?	In the absence of a sustainable source of income of the vulnerable groups, the men in the families have to undergo forced migration, leaving behind women who have to face the increased burden of looking after their family, growing food, and generating income. The project in fact will reduce the gender related inequality by ensuring reverse migration of men in the family through adequate income earning opportunity at the village level. Moreover, since the project is focused on women, it seeks to reduce gender-related inequalities through empowering them socially, politically and economically.	Reviewer comments
	Is there a risk that project activities will result in adverse impacts on the situation of women or girls, including their rights and livelihoods? Consider for example where access restrictions disproportionately affect women and girls due to their roles and positions in accessing environmental goods and services?	There would be no adverse impacts on the situation of women and girls including their rights and livelihoods, rather the project would positively impact their livelihoods including their resources.	Reviewer comments
	Is there a risk that project activities could cause or contribute to gender-based violence, including risks of sexual exploitation, sexual abuse or sexual harassment (SEAH)? Consider partner and	The partner and collaborating partner have policies and systems in place to deal with cases of sexual harassment or abuse. There is a Prevention of Sexual Exploitation and Abuse Policy (PSEA) and also Ethics Committee in the organization and all the staff	Reviewer comments

	collaborating partner organizations and policies they have in place. Please describe.	members have been oriented on these.	
E&S reviewer conclusions Estimated likelihood of risks (1-5) & justification: Reviewer conclusions Estimated magnitude of risks (1-5) & justification: Reviewer conclusions Risk significance: Reviewer conclusions			
Human Rights	Is there a risk that the project prevents peoples from fulfilling their economic or social rights, such as the right to life, the right to self-determination, cultural survival, health, work, water and adequate standard of living?	The project does not prevent people from fulfilling their economic and social right, rather it works towards improving their livelihoods and in turn their health, standard of living etc. By including them in community institutions and enhancing their capacities, they will be empowered and enabled to exercise their social rights.	Reviewer comments
	Is there a risk that the project prevents peoples from enjoying their procedural rights, for example through exclusion of individuals or groups from participating in decisions affecting them?	Since the project focuses on involving community in the planning process and all other aspects of implementation, there is no risk of exclusion of individuals or communities in decisions affecting them.	Reviewer comments
	Are you aware of any severe human rights violations linked to project partners in the last 5 years?	No, there has been no human rights violations linked to project partners in the last 5 years.	Reviewer comments
E&S reviewer conclusions Estimated likelihood of risks (1-5) & justification: Reviewer conclusions Estimated magnitude of risks (1-5) & justification: Reviewer conclusions Risk significance: Reviewer conclusions			
Community, Health, Safety & Security	Is there a risk of exacerbating existing social and stakeholder conflicts through the implementation of project activities? Consider for example existing conflicts over land or natural resources, between communities and the state.	The project by design would involve all stakeholders including the community, various departments of the government, Panchayati Raj Institutions in different phases of implementation including the planning process and hence possibility of any conflict is ruled out. Moreover, the	Reviewer comments

		implementation will be done in the private lands of the participating households that also rules out possibility of any conflict over land and natural resources.	
	Does the project provide support (technical, material, financial) to law enforcement activities? Consider support to government agencies and to Community Rangers or members conducting monitoring and patrolling. If so, is there a risk that these activities will harm communities or personnel involved in monitoring and patrolling?	The community resource persons (CRPs) who will be promoted at the community level to monitor and provide handhold support to the beneficiaries of the project will be provided technical know how and also remuneration for their services from the project and it will in no way harm the communities or the CRPs in any way. There would be layers of monitoring at the community as well as at the implementing organization level for smooth implementation of the program.	Reviewer comments
	Are there any other activities that could adversely affect community health and safety? Consider for example exacerbating human-wildlife conflict, affecting provisioning ecosystem services, and transmission of diseases.	There is no possibility of human-wildlife conflict or transmission of diseases to the community during the course of implementation of the program.	Reviewer comments
E&S reviewer conclusions Estimated likelihood of risks (1-5) & justification: Reviewer conclusions Estimated magnitude of risks (1-5) & justification: Reviewer conclusions Risk significance: Reviewer conclusions			
Labour and working conditions	Is there a risk that the project, including project partners, would lead to working conditions for project workers ¹³⁷ that are not aligned with national labour laws or the International Labor Organization's (ILO)	The project is aligned with the payment terms to men and women as per the government norms and hence there are clear employment terms in the design of the project itself.	Reviewer comments

¹³⁷ Project workers include project coordinator staff, staff of other project partners, third party groups fulfilling core functions of the project, and community volunteers or contracted workers.

	Declaration on the Fundamental Principles and Rights at Work (discriminatory working conditions, lack of equal opportunity, lack of clear employment terms, failure to prevent harassment or exploitation, failure to ensure freedom of association etc.)?		
	Is there an occupational health and safety risk to project workers while completing project activities?	No, there would not be any occupational health and safety risk to the project workers while completing the project activities as everything being done will be natural and in their own lands and vicinity.	Reviewer comments
	Is there a risk that the project support or be linked to forced labour, harmful child labour, or any other damaging forms of labour?	No, the project does not involve child labour or any other damaging forms of labour.	Reviewer comments
E&S reviewer conclusions Estimated likelihood of risks (1-5) & justification: Reviewer conclusions Estimated magnitude of risks (1-5) & justification: Reviewer conclusions Risk significance: Reviewer conclusions			
Resource efficiency, pollution, wastes, chemicals and GHG emissions	Is there a risk that project activities might lead to releasing pollutants to the environment, cause significant amounts of waste or hazardous waste or materials?	There will be no hazardous waste or materials or pollutants in the project, rather it is designed to reduce the emission of GHGs.	Reviewer comments
	Is there a risk that the project will lead to significant consumption of energy, water or other resources, or lead to significant increases of greenhouse gases?	No.	Reviewer comments
E&S reviewer conclusions Estimated likelihood of risks (1-5) & justification: Reviewer conclusions			

Estimated magnitude of risks (1-5) & justification: Reviewer conclusions			
Risk significance: Reviewer conclusions			
Access restrictions and livelihoods	Will the project include activities that could restrict peoples' access to land or natural resources where they have recognised rights (customary, and legal). Consider projects that introduce new access restrictions (e.g. creation of a community forest), reinforce existing access restrictions (e.g. improve management effectiveness and patrolling of a community forest), or alter the way that land and natural resource access restrictions are decided (e.g. through introducing formal management such as co-management).	There are no activities in the project that could restrict people's access to land or natural resources. In fact, the alternative livelihoods options that the project would provide to the participating households would reduce their dependency on forest and in turn help in rejuvenating the resource.	Reviewer comments
	Is there a risk that the access restrictions introduced /reinforced/alterd by the project will negatively affect peoples' livelihoods?	No, there are no such risks.	Reviewer comments
	Have strategies to avoid, minimise and compensate for these negative impacts been identified and planned?	Yes.	Reviewer comments
E&S reviewer conclusions			
Estimated likelihood of risks (1-5) & justification: Reviewer conclusions			
Estimated magnitude of risks (1-5) & justification: Reviewer conclusions			
Risk significance: Reviewer conclusions			
Cultural heritage	Is the Project Area officially designated or proposed as a cultural site, including international and national designations?	No.	Reviewer comments

	Does the project site potentially include important physical cultural resources, including burial sites and monuments, or natural features or resources of cultural significance (e.g. sacred sites and species, ceremonial areas) and is there risk that the project will negatively impact this cultural heritage?	No, the project site does not include any such physical cultural resource.	Reviewer comments
	Is there a risk that the project will negatively impact intangible cultural heritage? Consider for example cultural practices, social and cultural norms in relation to land and natural resources.	No, there is no such risk.	Reviewer comments
E&S reviewer conclusions Estimated likelihood of risks (1-5) & justification: Reviewer conclusions Estimated magnitude of risks (1-5) & justification: Reviewer conclusions Risk significance: Reviewer conclusions			
Indigenous Peoples	Are there Indigenous Peoples ¹³⁸ living within the Project Area, using the land or natural resources within the project area, or with claims to land or territory within the Project Area?	The project would work with tribals including Santhals to improve their livelihoods and also create productive assets for them to provide them with sustainable livelihood opportunities. They will be involved in all phases of implementation right from the planning process. However, there are no PVTGs in the project area.	Reviewer comments
	Is there a risk that the project negatively affects Indigenous	The project does not pose any risk of economic	Reviewer comments

¹³⁸ As per the IUCN Environmental and Social Management System, Indigenous Peoples include: "(i) peoples who identify themselves as "indigenous" in strict sense; (ii) tribal peoples whose social, cultural, and economic conditions distinguish them from other sections of the national community, and whose status is regulated wholly or partially by their own customs or traditions or by special laws or regulations; and (iii) traditional peoples not necessarily called indigenous or tribal but who share the same characteristics of social, cultural, and economic conditions that distinguish them from other sections of the national community, whose status is regulated wholly or partially by their own customs or traditions, and whose livelihoods are closely connected to ecosystems and their goods and services" (IUCN 2016).

	Peoples through economic displacement, negatively affects their rights (including right to FPIC), their self-determination, or any other social or cultural impacts?	displacement, as households currently depend mainly on low-productivity and unsustainable upland farming, and are expected to benefit from improved agricultural and horticultural outputs under the project. Community members will be involved in all phases of the project, starting from the planning stage, through a Free, Prior and Informed Consent (FPIC) process, ensuring that their rights, cultural values and local priorities are respected.	
	Is there a risk that there is inadequate consultation of Indigenous Peoples, and/or that the project does not seek the FPIC of Indigenous Peoples, for example leading to lack of benefits or inappropriate activities?	No, there is no such risk as all the community groups including the indigenous people will be involved in the planning and FPIC process.	Reviewer comments
E&S reviewer conclusions Estimated likelihood of risks (1-5) & justification: Reviewer conclusions Estimated magnitude of risks (1-5) & justification: Reviewer conclusions Risk significance: Reviewer conclusions			
Biodiversity and sustainable use of natural resources	Is there a risk that project activities will cause adverse impacts on biodiversity (both in areas of high biodiversity value, and outside of these areas) or the functioning of ecosystems? Consider issues such as use of pesticides, construction, fencing, disturbance etc.	The project involves the use of native species like Mango, Asan, Arjun, Gamar and Neem. The fence is natural fence with Neem and Gamar. The intercropping that will be done in the uplands would use organic compost.	OK
	Is there a risk that the project will introduce non-native species or invasive species?	No, the project involves the promotion of native species only.	OK
	Is there a risk that the project will lead to the unsustainable use of natural resources?	No, the project promotes sustainable use of natural resources through adoption of organic farming practices	OK

	Consider for example projects promoting value chains and natural resource-based livelihoods.	and soil moisture conservation measures. The additional source of livelihoods through plantations in uplands will in fact reduce the dependency of the participating households on the forest.	
E&S reviewer conclusions Estimated likelihood of risks (1-5) & justification: Estimated magnitude of risks (1-5) & justification: Risk significance:			
Land tenure conflicts	Has the land tenure and use rights in the project area been assessed and understood?	The project activities will be taken up in private lands of people and hence there would not be any land tenure or use right conflicts.	OK
	Is there a risk that project activities will exacerbate any existing land tenure conflicts, or lead to land tenure or use right conflicts?	No.	<i>OK - participatory land mapping and consistent monitoring will ensure this remains so.</i> The participatory land management is explained in detail in Annex 11
E&S reviewer conclusions Estimated likelihood of risks (1-5) & justification: Reviewer conclusions Estimated magnitude of risks (1-5) & justification: Reviewer conclusions Risk significance: Reviewer conclusions			
Risk of not accounting for climate change	Have trends in climate variability in the project areas been assessed and understood?	Yes. The climate variability in the project areas have been assessed and understood. There might be instances of drought and erratic rainfall.	OK
	Has the climate vulnerability of communities and particular social groups been assessed and understood?	Yes, the climate vulnerability of the community has been clearly assessed and understood and hence the project activities include mitigation measures such as soil moisture conservation measures, land treatment etc.	OK
	Is there a risk that climate variability and changes might influence the effectiveness of project activities (e.g.	Since the communities involved in the project depend on climate sensitive sectors like agriculture, horticulture, erratic rainfall	OK

	undermine project-supported livelihood activities) or increase community exposure to climate variation and hazards? Consider floods, droughts, wildfires, landslides, cyclones, etc.	and occasional drought might influence the effectiveness of project activities.	
E&S reviewer conclusions Estimated likelihood of risks (1-5) & justification: Reviewer conclusions Estimated magnitude of risks (1-5) & justification: Reviewer conclusions Risk significance: Reviewer conclusions			
Other - e.g. cumulative impacts	Is there a risk that the project will contribute cumulatively to existing environmental or social risks or impacts, for example through introducing new access restrictions in a landscape with existing restrictions and limited land availability?	This has been covered above.	OK
	Are there any other environmental and social risks worthy of note that are not covered by the topics and questions above?	No other significant environmental or social risks have been identified beyond those already covered	OK
E&S reviewer conclusions Estimated likelihood of risks (1-5) & justification: Reviewer conclusions Estimated magnitude of risks (1-5) & justification: Reviewer conclusions Risk significance: Reviewer conclusions			
SECTION C: SAFEGUARD PROVISIONS			
Stakeholder engagement	Has a stakeholder analysis been conducted that has identified all stakeholders that could influence or be affected by the project, or is this still to be completed? Please describe.	Stakeholder analysis has been done and the roles and responsibilities have been chalked out for each of the stakeholder groups in the project (Refer Table 2.1).	<i>OK - a description of stakeholder engagements and consultations and the following impact on project design is required in the PDD.</i> Refer Table 2.1
	Are the local community and indigenous peoples statutory	Yes, the rights of people over their land have been	OK

	or customary rights to land or resources within the project area already clear and documented, or is further assessment required? Please describe.	assessed. Most of the land are private lands and a few are on lease for minimum 30 years.	
	Are local governance structures and decision-making processes described and understood (including details of the involvement of women and marginalized or vulnerable groups), or is further assessment required? Please describe.	The project clearly defines the role of community, their institutions and also the local governance structures in the planning process and also implementation and monitoring of the project.	<i>OK - a description of this governance structure is required in the PDD.</i> It is given in Section 5 and 5.1
	Are past or ongoing disputes over land or resources in the project area known and documented, or is there need for further assessment? Please describe.	There are no disputes over land and resources in the project area as of now.	<i>OK - participatory land mapping and consistent monitoring will ensure this remains so.</i> Refer to Annex 11
Stakeholder consultation	Does the project have a Stakeholder Engagement Plan with clear measures to engage Vulnerable Groups, or is this plan still to be developed? Please describe.	The stakeholder engagement plan is clearly documented and is part of the project.	<i>OK - a description of stakeholder engagements and consultations and the following impact on project design is required in the PDD.</i> Refer to Section 2.5
	Has the Project Coordinator informed all stakeholders of the project, through providing relevant project information in an accessible format, or does this still need to be completed? Please describe.	Yes, the Project Coordinator has informed all stakeholders about the project through one-to-one meetings and will be again taken up in a more structured manner once the project gets initiated.	<i>OK - a description of stakeholder engagements and consultations and the following impact on project design is required in the PDD.</i> Refer to Section 2.5
Free, Prior and Informed Consent	Has the project analysed and understood national and international requirements for Free Prior and Informed	Yes, the project has a good knowledge of the national and international requirement for Free Prior and Informed Consent (FPIC). The project proponent has always practiced this	<i>OK - a description of these trainings and the outcomes of the sessions would be a great thing to include in the PDD!</i>

	Consent (FPIC)? Please describe.	approach in the field to ensure that the community has knowledge and gives consent to any interventions. There are trainings and capacity buildings planned around this process to ensure that community has full prior knowledge and understanding of the process.	Details are mentioned in the land management plan
	Has the project identified potential FPIC rightsholders and potential representatives in local communities and among indigenous peoples, or is this still to be completed? Please describe.	The project has identified the potential rightsholders and potential representatives in local communities. Since the project is spread over two neighboring districts and each village under the project is spread out, the team will be holding discussions and trainings. Once the process is complete in all of the project area, there will be a common signed agreement between FCF India and the potential community leaders.	<i>OK - a description of these community consultations and the outcomes of the sessions will be required in the PDD, alongside a copy of the signed agreement mentioned here.</i> Refer to Section 2.5
	Has the project worked with rightsholders and representatives of local communities and indigenous peoples to understand the local decision-making process and timeline (ensuring involvement of women and vulnerable groups), or is this still to be completed? Please describe.	The project has worked with rightsholders and representatives of local communities and indigenous peoples to understand local decision-making processes and timelines. This has been ensured through Participatory Rural Appraisal (PRA) exercises, Focused Group Discussions (FGDs), and Free, Prior and Informed Consent (FPIC) meetings conducted at the community level. These processes enabled inclusive participation, ensured representation of women and vulnerable groups, and supported informed, transparent decision-making aligned with local governance practices.	OK

	Has the project sought consent from communities to 'consider the proposed Project', and if so, where is this in principle consent documented? Please describe.	Since the project is planned in private land of communities, the in-principal consent of the people has been taken.	<i>OK - a copy of project agreements with communities is required in the PDD.</i> Provided in Annex 12
Grievance Mechanism	Does the project already have a Grievance Mechanism, or is this still to be established? Please describe.	The project has a Grievance Redressal Mechanism in place as part of the Coordinator Organization. Any lapses in the implementation brought to the notice of the Executive working at the ground level will be notified to the Team Leader and then to the Executive Director and Program Director based on the severity of the issue.	<i>OK - a description of this mechanism is required in the PDD.</i> Provided in Section 3.17
	For projects with a GRM, is this accessible to project affected people? Please describe.	Yes, it is accessible to the project affected people since the SHGs and the WLCs will be the drivers of the project. They will be in touch with the Executive of FIT Climate working at the ground.	<i>OK</i>
E&S reviewer conclusions for safeguard provisions Are the project Safeguard Provisions adequately addressed, or to be adequately addressed during the project design phase? Reviewer conclusions What additional actions need to be conducted during the project design phase? Reviewer conclusions Any other comments: Reviewer conclusions			
SECTION D: SCREENING REPORT (E&S REVIEWER TO COMPLETE)			
Name of E&S reviewer	Amelia Evans		
Date of E&S screening:	13/03/24		
Project risk rating:	<i>Low - project is well-equipped to manage the risks identified.</i>		
Principle risks and impacts	<i>Key risk areas in this project are social risks to vulnerable groups, and specifically indigenous peoples, as a result of the project changing the socioeconomic landscape of the area and introducing more formal governance systems and project activities.</i> <i>The project has sufficient mechanisms in place to reduce the risk of marginalising or excluding these groups throughout the project design and implementation process. Required grievance, feedback and stakeholder engagement/FPIC mechanisms are required at PDD to bolster these safeguarding provisions and ensure the continued engagement and benefit to vulnerable groups, particularly indigenous peoples.</i>		

	E&S topic/ risk area	Likelihood (1-5)	Magnitude (1-5)	Significance (low, moderate, severe, high)
	Vulnerable Groups	2	3	Moderate
	Gender equality	1	3	Low
	Human Rights	1	3	Low
	Community, Health, Safety & Security	1	2	Low
	Labour and working conditions	1	1	Low
	Resource efficiency, pollution, wastes, chemicals and GHG emissions	1	1	Low
	Access restrictions and livelihoods	1	2	Low
	Cultural heritage	1	1	Low
	Indigenous Peoples	3	3	Moderate
	Biodiversity and sustainable use of natural resources	1	1	Low
	Land tenure conflicts	1	3	Low
	Risk of not accounting for climate change	2	2	Low
	Other - e.g. cumulative impacts	1	1	Low
E&S assessment required	<i>The project developers should conduct a field-based E&S risk assessment alongside the development of the PDD and overall project design. Focus should be on the risks assigned as 'moderate' in the above table. Primary focus on:</i> - <i>Maintaining the rights and access to project mechanisms of vulnerable groups as the project develops;</i> - <i>Remaining aware of power structures which could develop within or around vulnerable groups which could negatively impact on others (e.g. elite capture, access to grievance mechanism, etc.);</i> - <i>Maintaining and upholding the rights of all the different indigenous groups in the project and ensuring their access to community consultation and engagement sessions to impact on project design and access the project's feedback mechanisms;</i> <i>Any land or access conflicts which could emerge as land-use changes as a result of project activities.</i>			
Likely safeguard plans required	<i>The following safeguard measures should be included in the PDD:</i> - <i>Stakeholder engagement plan (focus on indigenous groups)</i> - <i>Grievance mechanism</i> <i>FPIC process and plans for continuous community consultation</i>			

Annex 10 - Environmental and Social Assessment Report

1. Introduction

● Purpose and objectives of the assessment

The Environmental and Social (E&S) risk and impact assessment was carried out to identify and analyse potential risks associated with the project's activities and to ensure that the project aligns with relevant national regulations as well as international environmental and social standards. The overall purpose of this Environment and Social Assessment is to ensure that the project contributes to positive environmental outcomes and supports community wellbeing while avoiding or minimising any adverse impacts. The ESA provides a structured basis for designing safeguards, strengthening participatory project planning and ensuring compliance with the Plan Vivo requirements. The project area spans tribal- dominated regions of Birbhum (West Bengal) and Dumka (Jharkhand) characterized by degraded uplands, low agricultural productivity, and high socio-economic vulnerability.

The objectives of assessment are:

- Identify and assess environmental and social risks associated with agroforestry, INRM and plantation activities including risks highlighted during screening.
- Ensure that project activities adhere to best practices in community safety, biodiversity protection, gender inclusion and indigenous people's rights.
- Identify appropriate mitigation and management strategies to be incorporated into the Environmental and Social Management Plan.

2. Scope of the assessment

● Aims and objectives of the assessment

The scope of the assessment covers all project activities implemented across the five project blocks: Rajnagar and Dubrajpur in Birbhum, West Bengal and Jama, Jarmundi and Masalia in Dumka, Jharkhand. It includes a thorough review of environmental risks such as land-use change, biodiversity impacts, , environmental issues and resource utilization. The assessment additionally examines social risks for vulnerable groups, indigenous communities, women and smallholder farmers as well as hazards to livelihoods, labor conditions, land tenure and overall project management.

The assessment aims to understand the project's environmental and social baseline conditions, determine whether any planned actions may pose risks to communities or ecosystems, and identify any additional risks that were not identified during the initial screening. It also offers guidance on implementing appropriate mitigation measures and structuring the ESMP. Throughout the process, the assessment supports significant involvement of women, vulnerable households, and tribal communities.

● E&S risks and impacts assessed

Risk Area	Potential Risks	Likelihood (1-5)	Magnitude (1-5)	Significance (low, moderate, severe, high)

Vulnerable Groups	There are vulnerable groups within the project area, including tribal households and socio-economically marginalised families who have limited coping capacity against livelihood shocks. The project has been intentionally designed to strengthen their resilience by improving natural resource management, supporting restoration of degraded uplands, and promoting tree-based livelihood options that offer both short-term and long-term economic benefits. From the design phase onward, the project team has held continuous discussions with these vulnerable groups regarding plantation models, land development activities, and institutional arrangements for implementation. Their inputs have shaped the intervention strategies, ensuring that the project reflects their priorities and practical needs. As a result, the project activities do not pose a disproportionate risk to vulnerable groups; instead, they are expected to improve income stability, reduce exposure to climate-related risks, and enhance livelihood security. Similarly, there is no risk of discrimination in access to project benefits, services, or decision-making. The project actively engages vulnerable groups, particularly tribal women and marginalised households in planning, implementation, and local governance structures such as SHGs, WLCs, and farmer groups. Project information, benefits, and participation opportunities are communicated clearly and consistently to all stakeholder groups, ensuring transparent and equitable access. Yes, there are vulnerable groups in the project area who are less able to cope with livelihood shocks and the	2	3	Moderate
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	proposed project is designed to make them more resilient through improving their livelihoods and enabling them to manage their resources in a better manner. The district Birbhum and Dumka, falls under the plateau dominated by the central Indian tribals. The project area is dominated by the tribal population. The projects work with tribes that still have very primitive ways of living. They have some very distinctive features which set them apart from the regular tribal communities. They still rely on hunting and gathering, are generally very shy and little interaction with groups outside their own community, live in very remote areas and have extremely low levels of food nutrition security. The project also works with economically and socially marginalised tribal communities and their focus within the communities is strongly on women who are further marginalised.			
Gender Equality	The project does not pose any risk of disproportionately affecting or discriminating against vulnerable groups. The project area includes tribal and marginalized communities with limited livelihood options, and the intervention is specifically designed to strengthen their resilience by improving natural resources, enhancing income opportunities, and reducing forced migration. Women are a key focus, and the project aims to reduce gender inequalities by increasing their social and economic participation.	1	3	Low

	The design of the project includes plantation models and land treatment plans that has been developed through direct consultations with these groups to ensure their needs are reflected. All project benefits and services are equally accessible, and have strong safeguarding systems (including PSEA policies) to protect against any form of exclusion, harassment, or abuse. Since the project is focussed on women, it seeks to reduce gender-related inequalities through empowering them socially, politically, and economically.			
Human Rights	The project does not prevent people from fulfilling their economic and social right, rather it works towards improving their livelihoods and in turn their health, standard of living etc. By including them in community institutions and enhancing their capacities, they will be empowered and enabled to exercise their social rights.	1	3	Low
Community, Health, Safety & Security	The project by design will ensure that at any time health safety and security of community members will not be compromised. All interventions being undertaken as part of the project ensure this aspect. While work on the field areas will be supervised by community leaders and ensure any untoward incidents are avoided. All necessary precautions for safety and security as well shall be ensured.	1	2	Low
Labour and Working Conditions	The project is aligned with the payment terms to men and women as per the government norms and hence there are clear employment terms in the design of the project itself. There are no foreseen occupational health and safety risks for the project beneficiaries. The work is in their own farmlands and the community sees it as a great advantage to have the support of all the village working on	1	1	Low

	their farmlands. That is how it is planned.			
Resource Efficiency, Pollution, Wastes, Chemicals and GHG emissions	The plantation activities primarily involve tree planting and basic land preparation using manual labour and locally available materials. The project does not involve intensive use of energy, water, or raw materials. Water use is limited to occasional irrigation during early plant establishment.	1	1	Low
Access Restrictions and Livelihoods	There would be no access restrictions as the project activities will be taken up on private lands of the communities that would help in improving their livelihoods and resources on a sustainable basis.	1	2	Low
Cultural Heritage	There is no cultural heritage attached to the project area.	1	1	Low
Indigenous Peoples	The project will involve tribals and other communities. However, no Particular Vulnerable Tribal Groups (PVTG) are present within the project area. The project area belongs to the tribal communities, and they will have the carbon rights, and all associated co benefits. The project will in no way negatively affect indigenous people through economic displacement or affect any of their legal or customary rights.	3	3	Moderate
Biodiversity and Sustainable Use of Natural Resources	The project includes 4000 ha of plantation in barren uplands of individual farmers that will help in improving the biodiversity of the area, in addition to providing sustainable livelihoods options to the beneficiaries in terms of sericulture, horticulture, timber etc.	1	1	Low
Land Tenure Conflicts	Since the project activities will be taken up in private and leased land, there would be no land tenure conflicts.	1	3	Low
Risk of Not Accounting	Since the communities involved in the project depend on climate sensitive	2	2	Low

for Climate Change	sectors like agriculture, horticulture, erratic rainfall and occasional drought might influence the effectiveness of project activities.			
Other - e.g. Cumulative Impacts	No other negative impacts	1	1	Low

● Geography of the assessment

The assessment covers two distinct agro-ecological landscapes located across Birbhum district in West Bengal and Dumka district in Jharkhand.

Birbhum District: It is the northernmost district of the Burdwan Division. It lies between 23° 32' 30" and 24° 35' 0" north latitude and 88° 1' 40" and 87° 5' 25" east longitude. Birbhum district falls under lower gangetic plain region as per Agro-Climatic classification with the majority of soils being red laterite with low alluvium and/or clay content. It is a part of the Rarh region; high land to the West is located on the hard nonporous crystalline rocks, while the rest is made up of the Gondwana sediments, the laterites and the alluvium. The general trend of the district is from north-west to south-east. At the western boundary the high ridges are capped by laterites and are separated by valleys. But at the southeastern part these ridges disappear gradually, and valleys become shallow and gradually mixed with the alluvium of indo-gangetic plains¹³⁹.

Dumka District- It lies between 23° 45' to 24° 38' (North) Latitude and 86° 20' to 87° 75' (East) Longitude. The district is situated in the Northern Plain of India and eastern plateau and hill region. The Dumka District is surrounded by Sahibganj, Godda and Banka of Bihar in the north, by Pakur (Jharkhand) and Birbhum (West Bengal) in the east, by Jamtara (Jharkhand) and Burdwan (West Bengal) in the south and by Deoghar in the west. The district is situated in the Northern Plain of India and eastern plateau and hill region. The climate of Dumka district is semitropical with hot & dry in summer and cold in winter throughout the district. The temperature varies from 44° C maximum in summer to 8° C minimum in winter. The height of the district above sea level is 175 mts. The annual rainfall varies from 110cm to 130cm. The soil of the district is more or less fertile and mixture of red clays and sandy soil. The water holding capacity of the soil is poor but suitable for agriculture and crops production. Black soil is also found in some areas of the district. The soil is rich in quartz, feldspar, stone and other minerals¹⁴⁰.

● Reference framework

National legislation and International Standards

Policy, Law or Regulation	Relevance	Compliance Measures
National Agroforestry Policy	The Policy aims to improve productivity, employment, income and livelihoods of rural	The project also aims for the said objectives through its plantation project with small and marginal farmers of West

¹³⁹ https://environmentclearance.nic.in/writereaddata/Online/EDS/0_0_26_Oct_2019_1901184331Annexure-DSR.pdf

¹⁴⁰ <https://dcmsme.gov.in/dips/DIPS%20Dumka.pdf>

	households, especially the small holder farmers. Protect and stabilize ecosystems and promote resilient cropping and farming systems to minimize the risk during extreme climatic events. Supplement the availability of agroforestry products (AFPs), such as fuelwood, fodder, non-timber forest produces and small timber of the rural and tribal populations, thereby reducing the pressure on existing forests. Complement achieving the target of increasing forest/tree cover to promote ecological stability, especially in the vulnerable regions.	Bengal and Jharkhand. In addition to the plantation, soil moisture conservation will also be done thus impacting the entire ecosystem and also improving biodiversity. The farmers will get additional income from the sale of horticulture products, small timber of Sonajhuri and tasar products.
Indian Forest Act, 1927	The Indian Forest Act was adopted in 1927. It was an act to consolidate the law relating specifically relating to forests, the transit of forest-produce and the duty leviable on timber or other forest-produce	The project activity has not been implemented on state or central Government owned lands. The project activity has been implemented on privately owned fallow agricultural lands. Therefore, the project activity is outside the purview of The India Forest Act, 1927
The Forest (Conservation) Act, 1980	This Act was adopted to protect and conserve forests.	The Act restricts the powers of the state in respect of de-reservation of forests and use of forestland for non-forest purposes (the term 'non-forest purpose' includes clearing any forestland for cultivation of cash crops, plantation crops, horticulture or any purpose other than re-afforestation). Therefore, the project activity is outside the purview of the act.
National Forest Policy, 1988	On the date 12-May-1952, the Central Government of India enacted the	As per section 3.2 of The National Forest Policy, diversion of good and

	National Forest Policy to be followed in the management of State Forests in India.	productive agricultural lands to forestry is discouraged in view of the need for increased food production. In The National Forest Policy, there is also no mandate or enforcement conditions for tree plantation on the fallow agricultural lands as well. Therefore, the project activity is outside the purview of The National Forest Policy, 1988
United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP)	The proposed carbon project deals with indigenous communities of West Bengal and Jharkhand and hence the said declaration aligns with their universal right to self-determination. FPIC allows Indigenous Peoples to provide or withhold/ withdraw consent, at any point, regarding projects impacting their territories. FPIC allows Indigenous Peoples to engage in negotiations to shape the design, implementation, monitoring, and evaluation of projects.	The project ensures participation of the indigenous communities of the project area in each and every step starting from planning to implementation and monitoring. They are being informed about the project well in advance and their consent is sought for any authorization or commencement of activities. The participatory methods of planning being done at the village level helps in collective decision making of the rights holders with their consent which is without any coercion, expectations or timelines that are externally imposed.
The International Labour Organization Convention 169 (ILO 169), and the Convention on Biological Diversity (CBD)- The International Labour Organization Convention 169 (ILO 169) is a treaty that protects the rights of indigenous and tribal peoples¹. It was adopted in 1989 and has been ratified by 23 countries¹. It is the only international law that recognizes the collective rights of these groups.	Since the project participants are indigenous and tribal communities, this law is relevant to the project. Some of the main provisions of ILO 169 include: • The right to self-identification and consultation on matters affecting them. • The right to participate in decision-making and development processes. • The right to land, territories and natural resources.	The project ensures raising awareness about the conditions in which indigenous peoples live, the development challenges they face and their aspirations for the future through visioning exercises that provide the groundwork for project planning. The project facilitates the inclusion of representatives of indigenous peoples in its consultations and programming cycles. The project facilitates the capacity development for indigenous peoples to offset

	• The right to education, health, social security and cultural diversity¹³.	their vulnerabilities and increase their food and livelihood security The project also recognizes their rights to land, territories and natural resources and ensures the FPIC process and facilitates the signing of carbon waiver agreement with the land owners.
Convention on Biological Diversity (CBD)- The Convention on Biological Diversity (CBD), known informally as the Biodiversity Convention, is a multilateral treaty. The Convention has three main goals: the conservation of biological diversity (or biodiversity); the sustainable use of its components; and the fair and equitable sharing of benefits arising from genetic resources.	Since the project is restoration of barren uplands in Birbhum and Dumka districts of West Bengal and Jharkhand together with soil and moisture conservation measures in the uplands owned by the indigenous and tribal communities, the CBD is relevant for the project.	The project will ensure plantation of trees (horticulture/ tasar host trees/ timber varieties) on barren uplands thus contributing for biodiversity conservation of the area. The project also includes land treatment to check erosion, soil-moisture conservation measures, creation of irrigation infrastructure- all of which will help in the sustainable use of the land resource. The project ensures equitable sharing of benefits arising from waiving off the carbon credits owned by the farmers.
West Bengal Trees (Protection and Conservation in Non-Forest Areas) Act, 2006	The Act provides for protection, conservation and regulation of trees in non-forest areas of West Bengal.	The project activities includes plantation of trees on private lands. Hence, the project is out of the purview of the act
Jharkhand Forest Produce (Regulation of Trade) Act, 2002	The Act regulates trade and transit of specified forest produce in Jharkhand.	The rule applies to timber and other forest produce when harvested from forest land under state control. The project includes private lands for the implementation of the project activity and out of the purview of the act.
Biological Diversity Act, 2002	The Biological Diversity Act was adopted by the Government. It is an Act to provide for conservation of biological diversity, sustainable use of its components and fair and equitable sharing of the	There is no provision of tree plantation on agriculture fallow land in the Biological Diversity Act. Therefore, the project activity is outside the purview of Biological Diversity Act, 2002.

	benefits arising out of the use of biological resources, knowledge and for matters connected therewith or incidental thereto	
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3. Project Background

The project is implemented across two districts, Dumka of Jharkhand and Birbhum of West Bengal. The landscape consists of degraded uplands, undulating terrain, and socio-economically vulnerable communities, particularly tribal households. The project's primary objective is to restore degraded uplands through ecologically diverse plantation models. Refer to section 1.1 and 1.2.1 for detailed description of project interventions and project area.

The project will be implemented over a 30-year period. The financial structure supporting these interventions is detailed in Annex 16 (Financial Plan). FCF India is the project proponent responsible for project development and technical details, while FIT Climate Foundation serves as the implementation partner, leading field execution and community engagement for the project.

Social & Environmental Context

Social: The project villages in Birbhum (West Bengal) and Dumka (Jharkhand) belong to a significant percentage of Santhal Adivasis, one of central India's major tribal populations. The majority of homes here depend primarily on agricultural and forest goods to survive, however the farming system is vulnerable. Around 80% of people depend on subsistence farming and NTFP gathering, and due to limited land and water resources, many households can only grow one crop season (mostly Kharif). Due to poor soil quality and erratic rainfall, agricultural yields are low, causing many men to migrate seasonally to nearby districts such as Burdwan and Birbhum for agricultural or brick-kiln work, increasing the workload on women who need to manage farming, household duties, and income generation.

A survey of 250 households by FIT Climate Foundation shows that 83% of women are part of SHGs, 82% of households engage in mainly Kharif agriculture, and farming provides very low returns (₹6,482 per household against a cultivation cost of ₹3,949). Wage labour is the primary livelihood for 92% of families, with agricultural labour offering around ₹13,349 per person annually, while brick-kiln work yields higher earnings of about ₹33,514. Daily wages average ₹197 locally and ₹218-250 during migration. Around 40% of households have at least one migrating member, and 30% depend on forest products like sal leaves, which contribute 14% of household income. Overall, most families face high livelihood insecurity and rely on a mix of agriculture, wage labour, forest products, and migration, with women carrying a disproportionate burden due to male out-migration. Refer to section 3.3 for detailed description for social context in the project area.

Environmental: Dumka district is marked by hilly terrain and naturally poor lateritic soils that cannot hold moisture. A significant portion of the land is deteriorated and difficult to cultivate. The area is part of the Damin-e-Koh forest belt, which includes trees such as sal, mahua, palash, kend, and bamboo.

Birbhum district is in the semi-arid zone. The terrain consists of lateritic uplands, alluvial plains, and tiny woodland patches. Soils are inherently low in fertility and rapidly lose moisture, making

cultivation challenging. Mango, bamboo, jackfruit, sal, arjun, dhau, kend, mahua, and other dryland grasses and shrubs can be found in the vegetation.

These villages continue to face water shortages due to rapid runoff from rainfall. Many households depend heavily on forests for fuel, fodder, and non-food plant products (NTFPs) like sal leaves; thus these limited sources of income contribute to continuous land degradation and poverty. Refer to section 3.4 for detailed description.

4. Assessment approach and methodology

Sampling Strategy:

A socio-economic survey for 100% of the population was carried out across all villages included in the project area to better understand the area's social, economic, and ecological conditions. This facilitated easy to gather data on livelihoods, income, land use, migration, and the difficulties that different groups experience. Villages were selected using a stratified random sampling technique to ensure that the evaluation represented the diversity across the landscape, including upland, lowland, tribal, and mixed settlements.

While doing the assessment, special care was taken to include the voices of vulnerable groups such as tribal families, women-headed households, landless workers, and small farmers. Their inputs helped identify issues like limited livelihood options, high migration, dependency on forests, and the heavy workload on women. Ensuring their participation made the assessment more accurate and inclusive.

Assessment Team

Role	Qualification	Year of experience	Relevant experience	Role
Project Director	MBA Power Management	16	Brings extensive experience in soil carbon, biochar, and nature-based solutions, with a strong track record in leading community-focused carbon asset programs across developing nations. Skilled in integrating climate change and agricultural practices to build resilience through carbon finance mechanisms. Has	Overall Management and Monitoring Location- Remote

			successfully delivered large-scale, multilateral projects aligned with SDGs 3, 5, 7, and 13 across Asia and Africa, including the design, management, and implementation of carbon market initiatives.	
E&S Safeguard Expert	M.Sc Environmental Sciences	18+	Climate and sustainable development professional with 18+ years' experience across India, Nepal, Bangladesh, Ethiopia, and Kenya, focused on Nature-based Solutions and carbon finance in voluntary and compliance markets.	Overall Management and Monitoring Location- Remote
Project lead-Development, Operations and GIS	M.Sc RS & GIS	10	Seasoned geospatial and carbon MRV specialist with 10+ years' experience across forestry, NbS, and land-use programs, leading GIS/remote sensing and spatial modelling from national datasets to multi-	Overall Management and Monitoring Location- Remote

			state field execution since 2015.	
Project Manager and Developer	B Sc Forestry	3	Forestry professional with three years of experience in Carbon project development. Lead multiple ARR and ALM projects across India, Nepal and Ethiopia.	Overall Management and Monitoring Location- Remote
Lead- Operations	B.E in Civil EGINEERING	10 years	Managed projects across agriculture, horticulture, and livestock development with a strong focus on community mobilization and forest conservation. Led key initiatives promoting government convergence, strengthening local democratic processes, and advancing climate change adaptation efforts in Jharkhand, India.	Field team Location- On-site
Project Manager- Operation	MCA	8 years	Led large-scale plantation and monitoring activities across multiple geographies in Jharkhand, coordinating field	Field team Location- On-site

			implementation and community participation. Oversaw species selection, survival monitoring, and maintenance processes to ensure project quality and impact. Worked closely with local institutions and farmers to strengthen restoration outcomes and sustainable land management.	
Project Manager-Finance	MBA Finance & Quality	15+	Seasoned finance professional with 15 years of experience overseeing project finances, budgeting, fund management, and statutory compliance across development and donor-funded programs. Skilled in financial planning, audit coordination, and establishing robust internal control systems to ensure transparency and accountability. Experienced in managing multi-stakeholder financial reporting, MIS	Overall Management and Monitoring Location- Remote

			development, and supporting project teams with timely financial analysis for decision-making.	
GIS Associate	M.Sc RS & GIS	2 years	Experienced GIS Associate with two years of hands-on work in land-use/land-cover (LULC) mapping, KML verification, and spatial data management. Proficient in Google Earth Pro, ArcGIS, and other geospatial analysis tools used for daily mapping, digitization, and accuracy checks. Skilled in producing clean spatial layers, validating field data, and supporting project teams with reliable geospatial insights.	Overall Management and Monitoring Location- Remote
Field Coordinators	Intermediate	5 years	Experience in coordinating plantation activities and field operations across multiple locations in Jharkhand. Supports farmer mobilization, plot	Field team Location- On-site

			verification, and routine monitoring to ensure timely execution of project activities. Skilled in working closely with communities and local institutions to facilitate smooth on-ground implementation	
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Mitigation Measures

- **Grievance Redress Mechanism:** A village-level grievance has been set up where people can report problems, and the team will record, review, and solve these issues in a fair and timely way.
- **Capacity Building:** To increase women's economic resilience and decision-making power, capacity building and training will be provided to local communities, especially for SHG members and targeted groups.

5. Supporting Documents

- **Plan Vivo E&S Screening Results Summary**
Refer to Annex 9 for the detailed screening outcomes conducted as part of the Plan Vivo Environmental and Social safeguard process.
- **Stakeholder Analysis Results**
The stakeholder analysis, categories, and roles are described in Table 2.1 of the PDD.
- **List of Stakeholder Consultations and Photos of Field Activities**
Documentation of village-level consultations, participation records, and field activity photos are provided in Annex 11 and 17.

Annex 11 - Land Management Plans

Making and evaluating land management plans

Creating a land management plan

- The name and location of the participant

The project “Restoration of barren uplands of vulnerable communities in West Bengal and Jharkhand” is being planned, implemented and monitored by FIT Climate Foundation with technical support from FCF India.

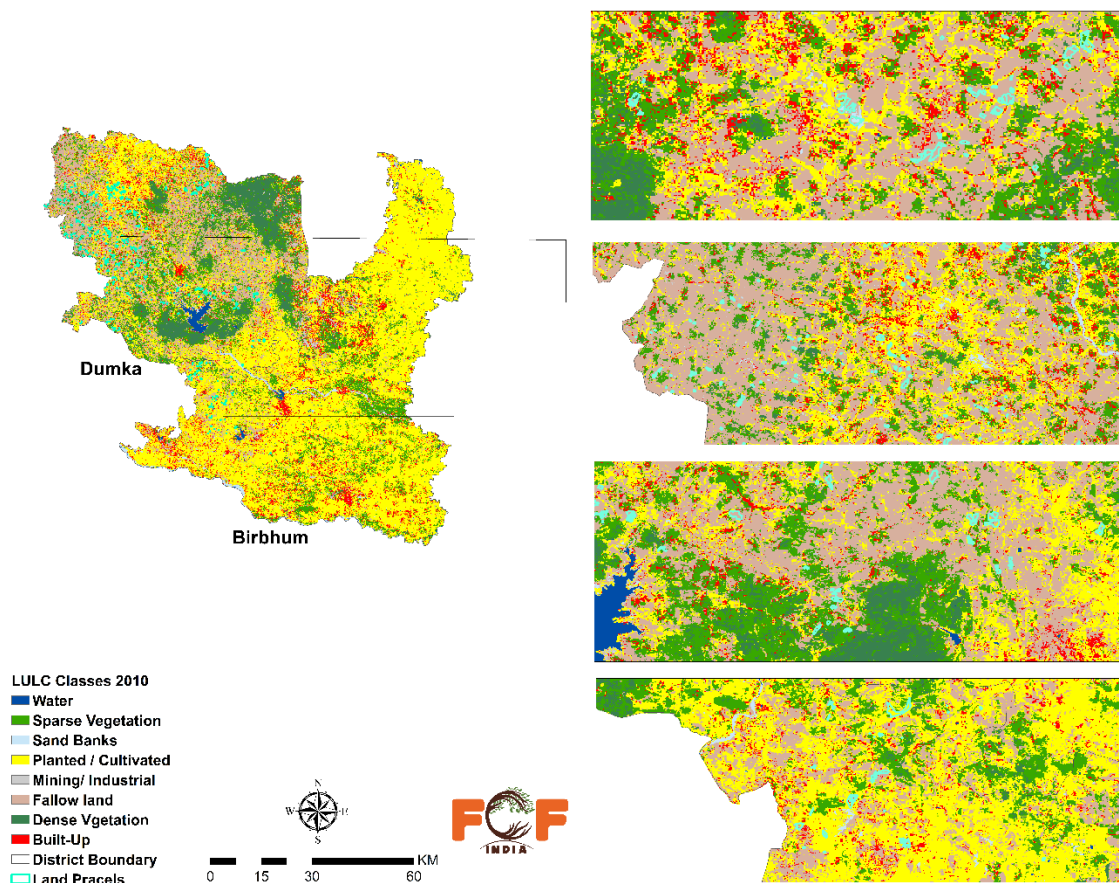
FCF India is the Carbon Project Developer and technical advisor.

- The total land-area and boundary

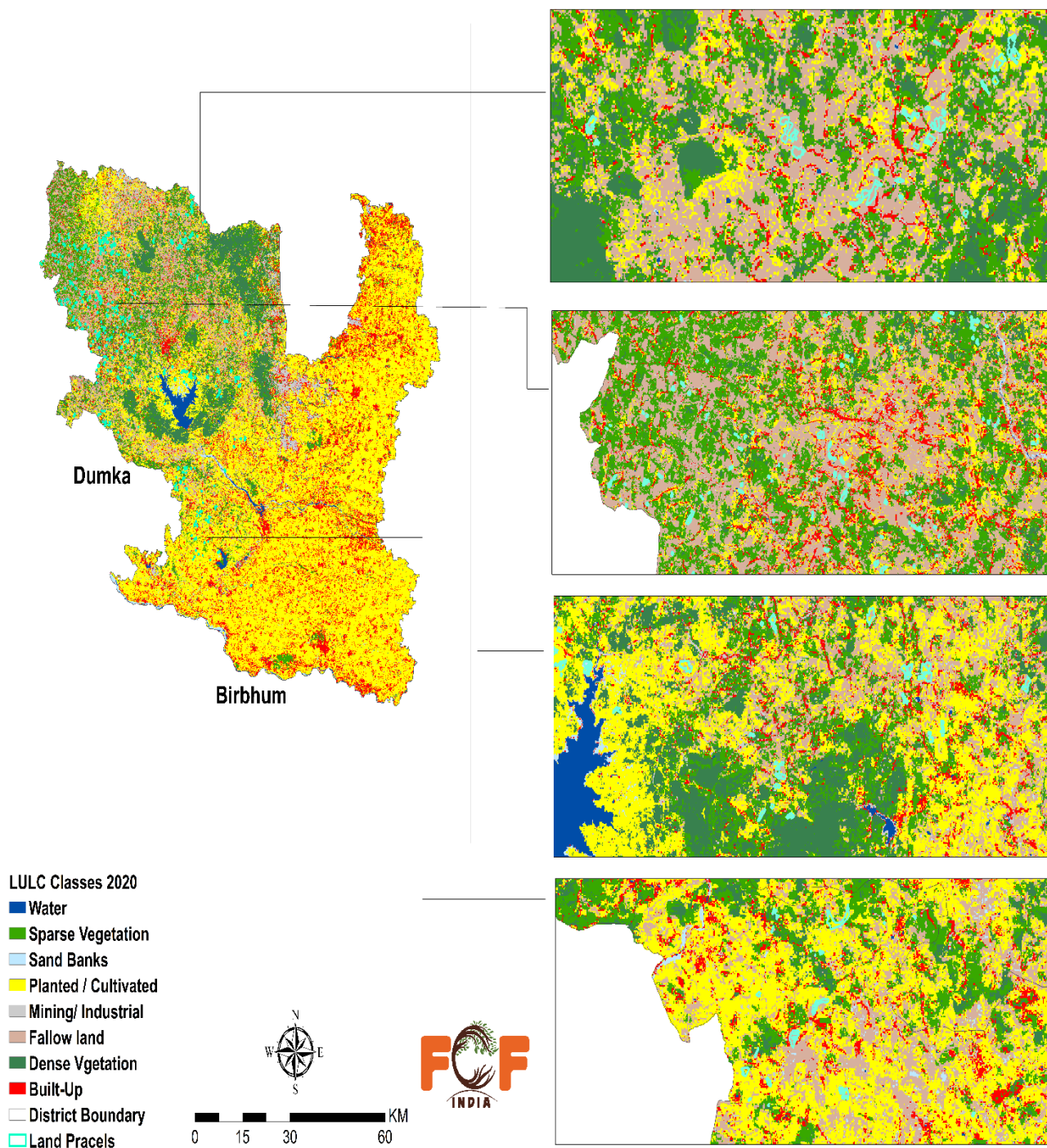
The project is being implemented in two eastern States of India- West Bengal and Jharkhand. In West Bengal, the project location includes Birbhum district of West Bengal and Dumka district of Jharkhand in the project. Around 8000 Families across the villages in Dumka of Jharkhand and Birbhum of West Bengal) will be covered through the project.

Total proposed project area (in hectares)- 4000 (Covering approximately 2700 ha in Dumka, Jharkhand and 1300 ha in Birbhum, West Bengal).

In the first instance of the project, PP is working on 841.61 Ha, out of which 720.091 ha is already implemented 121.51 ha will be implemented in the year 2026, across Dumka (Jharkhand) and Birbhum (West Bengal). Following is the LULC of the project area:



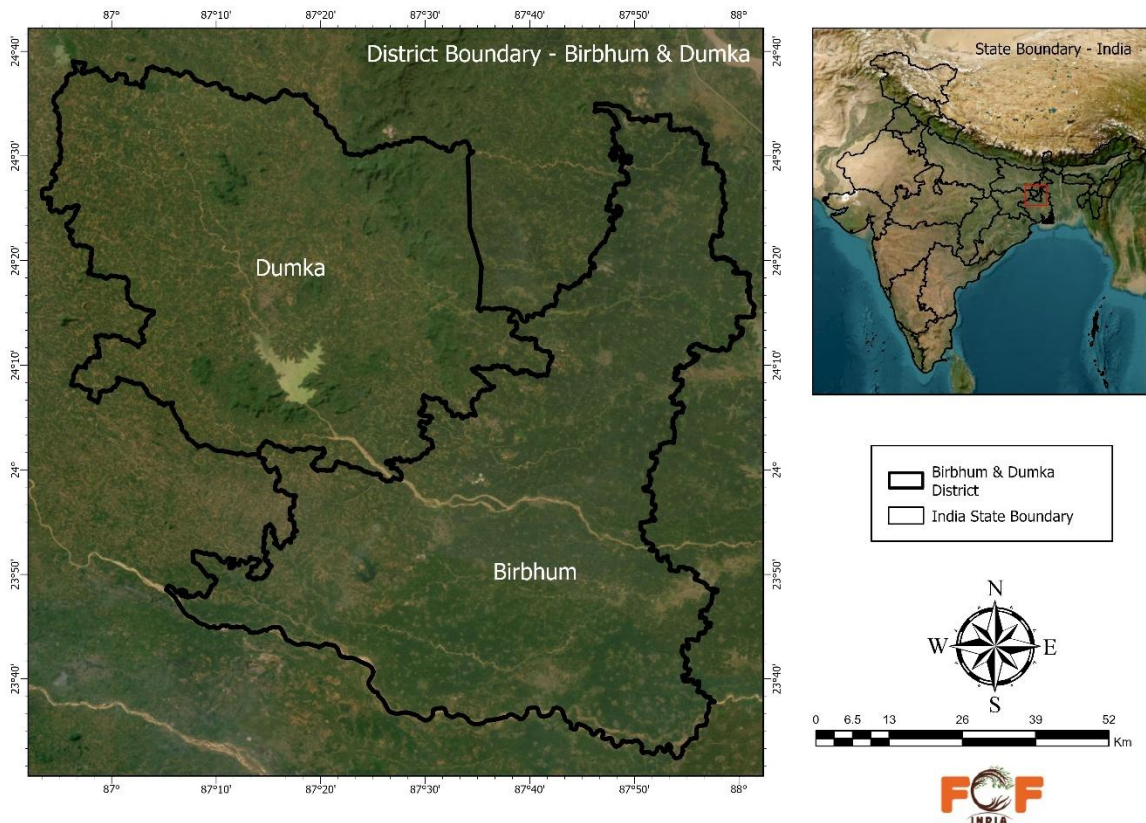
Map 1 LULC 2010



Map 2 LULC 2020

The location maps of the entire project location of project in the two states including the proposed project locations are also provided below:

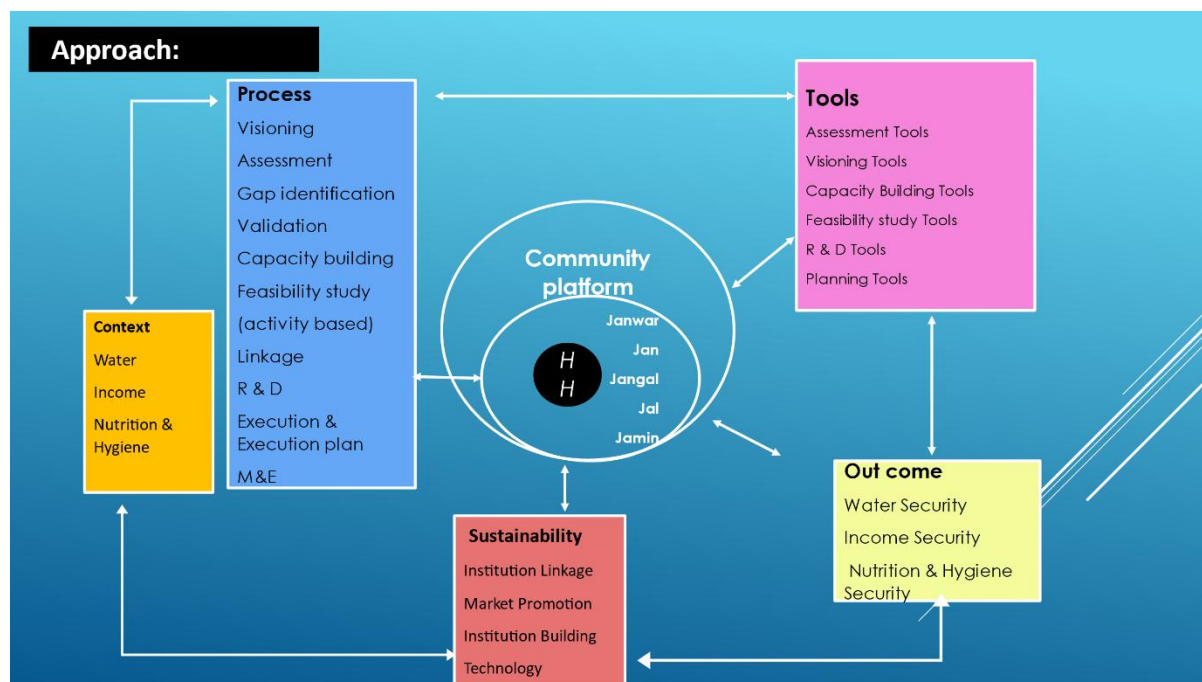
Project Boundary Map - Birbhum & Dumka



Map 3 Project Boundary Map

- Land-use activities - the approach:

FIT Climate Foundation and FCF India follow Participatory planning of the watershed activities with the communities, technical skill building of the community and the volunteers, management of Integrated Natural resource Management (INRM) and plantation activities and their linkages with carbon and livelihoods.

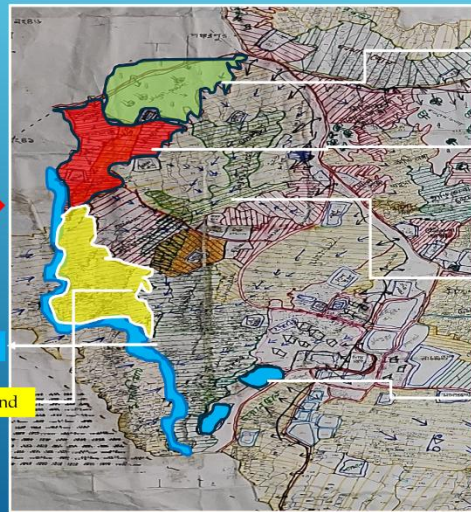


The community groups in the form of women Self Help Groups (SHGs)/ women livelihood committees (WLCs) are identified and their visioning exercise is taken up. It's a detailed exercise where the members are facilitated to do a lot of reflection on their current status, where they want to go, how they will reach there utilizing their existing resources optimally or even by augmenting it. The resources may be in the form of land, water, forest, animals or skill. Various participatory tools are used for planning purposes like resource mapping for identifying the various resources, social mapping and wealth ranking to identify the vulnerable households and to give priority to their needs in the planning.

Using the revenue maps, the women members do a detailed Integrated Natural Resource Management (INRM) Planning clearly laying down the activities to be taken up in different land parcels. These activities include construction/ renovation of water harvesting structures, soil moisture conservation activities like staggered trench, 30-40 model, field bunding etc., plantation in uplands etc. An example is provided below:

Participatory resource identification: the first step

Resource mapping on
Revenue map (16inch=1Mile)



Forest/Plantation area

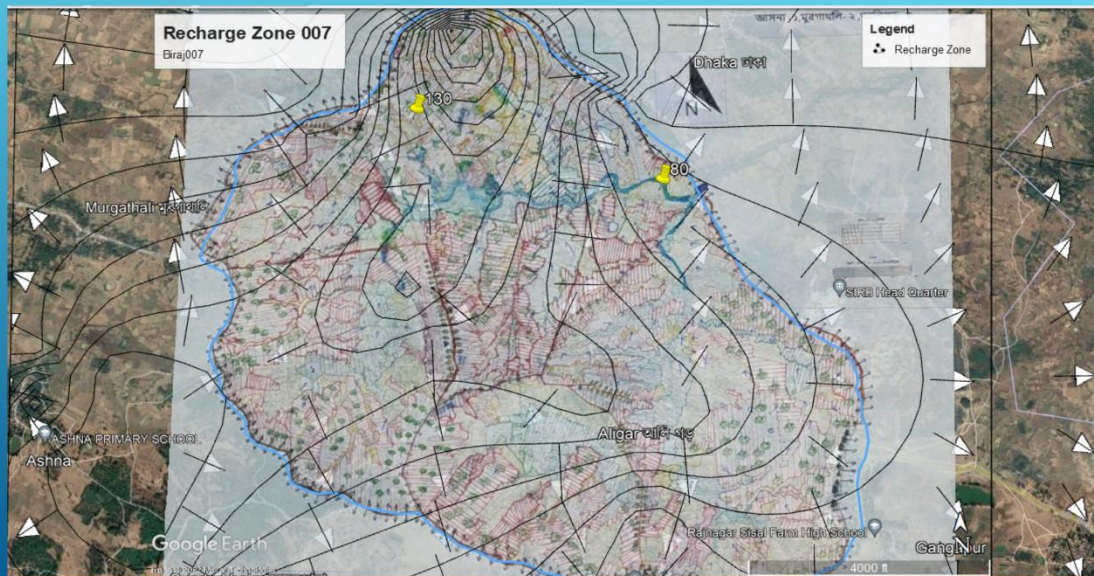
Upland

Low land

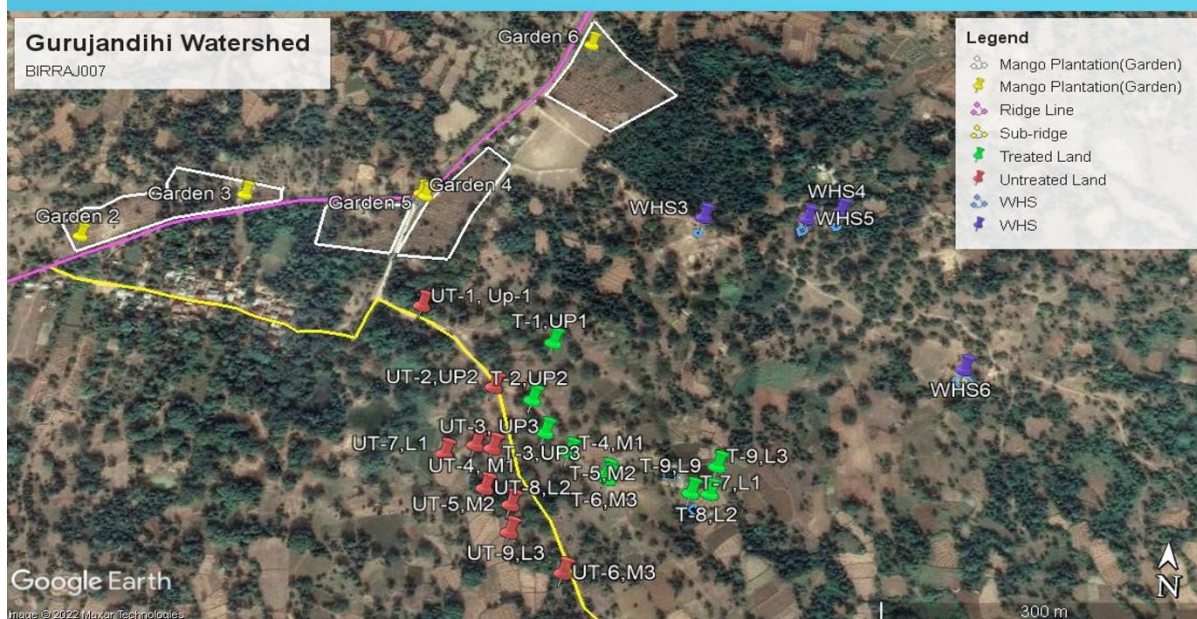
Medium Upland

Water Bodies

Identification of recharge zones through Surfer Software

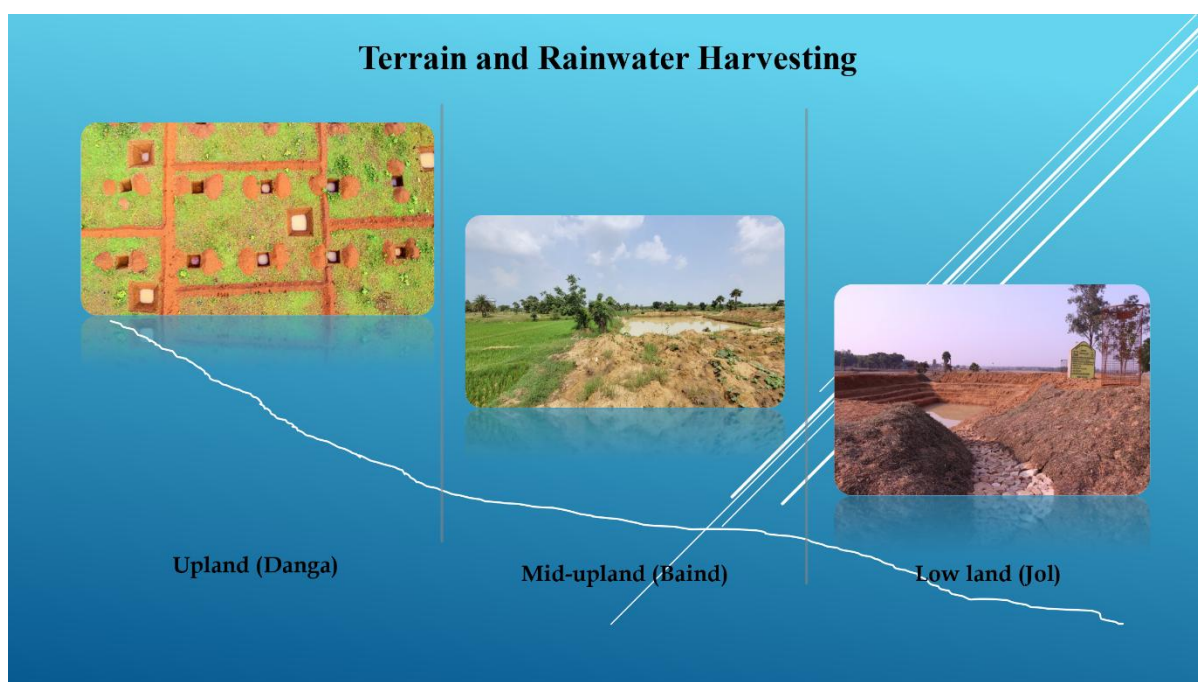


Grass cover Sampling (per sq.ft):



- Management objectives

The objective is integrated natural resource management rather than focussing only on the plantations for the carbon project as everything is interlinked. The ridge to valley treatment complements and supplements the various activities in the entire area.



- For planting activities: species and planting density

The following table gives the species and planting density included in the project:

Location	Tree Scientific Name	Type Of Plantation	Trees/ Ha
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Model 1	Mango - West Bengal	Main Field	190
Model 2	Mango - Jharkhand	Main Field	190
Model 3	Sonajhuri - West Bengal	Main Field	886
Model 4	Mango- Jharkhand	Main Field	250
Model 5	Sonajhuri - Jharkhand	Main Field	1000
Model 6	Teak- Jharkhand	Main Field	1400
	Arjuna- Jharkhand (2 rows)	Boundary	300
Model 7	Arjuna- Jharkhand	Main Field	1500
Model 8	Teak- Jharkhand (2 rows)	Boundary	300
	Mango- Jharkhand	Main Field	450
Model 9	Teak- Jharkhand	Boundary	120
	Mango- Jharkhand	Main Field	300
Model 10	Sonajhuri- Jharkhand	Main Field	1500

- Significant management activities including thinning or harvesting

The species included in the project is a mix of horticulture, timber and tasar host tree. The timber species- Sonajhuri, that grows well in the project areas will be harvested every 12 years with re-plantation and will be solely used for furniture and house construction.

The tasar host tree may be pruned if required to make it accessible for sericulture. The mango tree may also be pruned if required for growth of new branches and better fruiting.

Evaluating land management plans

The land management plan as developed with community participation are clearly assessed by the FCF India and FIT Climate Foundation team before entering into an agreement with the farmers to ensure that they are environmentally, economically and socially viable.

The details of the land parcels and the socio-economic aspects of the intended project beneficiaries are collected using Kobo Collect, a data collection tool, to collect and manage project-related information. It includes all the details of the farmer including the type of land, area, species to be planted, land right documents and GI tagging of farm boundaries. Each planting plot, and the tracks are downloaded and recorded as Google Earth kml file, as shapefile and an Excel file after checking for the land eligibility criterion such as no deforestation, clearance of woody vegetation, or significant soil disturbance within the 10 years prior to the initiation of the Project intervention (section 3.8, Project Requirements) , all project activity instances demonstrating clear ownership and rights of the land through land titles or other evidences.

The plantation model is also assessed to see if it meets the requirements of the said beneficiary. The plantations will only be taken up in barren uplands of individual farmers which otherwise lies fallow, it will not lead to displacement of activities and loss of carbon stocks in other areas (leakage).

Hence, in addition to the climate and biodiversity benefit, it will also become a sustainable productive asset for the family whereby they can earn additional income from Mango/ Sonajhuri or Sericulture or a combination of the species.

Designing Project Agreements

After a detailed FPIC process and community driven planning process, a carbon rights agreement is signed between FCF India and the Individual farmer/ group of farmers who is/ are the project beneficiary. It has details such as name of the farmer/ group of farmers, type of land, plot number, jamabandi number, identity proof of the farmer, details of the project and how the project participant can access the grievance mechanism, project period, benefit sharing mechanism, date of signing etc. It is done in the local language- Hindi for Jharkhand and Bangla for West Bengal.

- Sample images of the land parcels onboarded within the project.





Annex 12 - Project Agreements

After a detailed FPIC process and community driven planning process, a carbon rights agreement is signed between FCF India and the Individual farmer/ group of farmers who is/ are the project beneficiary. It has details such as name of the farmer/ group of farmers, type of land, plot number, jamabandi number, identity proof of the farmer, details of the project and how the project participant can access the grievance mechanism, project period, benefit sharing mechanism, date of signing etc. It is done in the local language- Hindi for Jharkhand and Bangla for West Bengal.

The agreement format is provided below:

AGREEMENT FOR THE PLAN VIVO CERTIFICATES FOR THE PROJECT RESTORATION OF BARREN UPLANDS OF VULNERABLE COMMUNITIES IN WEST BENGAL AND JHARKHAND, INDIA

'Plan Vivo Certificates' are environmental service certificates, independently issued by the Plan Vivo Foundation in accordance with the Plan Vivo Standard. Each Certificate represents the reduction or avoidance of one tonne of carbon dioxide (tCO₂) plus additional ecosystem and livelihood benefits.

The restoration of barren uplands of vulnerable communities in West Bengal and Jharkhand, India project is a sustainable land-use project coordinated by **Fair Climate Fund India**. The project generates Plan Vivo Certificates through community-led afforestation, reforestation and revegetation (ARR) activities.

THE PARTIES:

FCF India Private Limited, a private company registered in India, having its office at B1/H3, Mohan Cooperative Industrial Estate, New Delhi, Delhi 110044 (hereinafter referred to as the "**Carbon Project Developer**" or "**PD**" or "**FCF India**") And

FIT Climate Foundation company registered in Jharkhand, having its office at Murabahal, Asansol Kuruwa, Dumka (Urban), Jharkhand- 814119(hereinafter referred to as the "Producer Group") And

The FARMERS/Group of FARMERS. The FARMER/Group of FARMERS have legal rights on land as the land is legally transferred to the heirs (FARMERS) from the head of the family. The FARMERS/Group of FARMERS agree to transfer the carbon rights to FIT Climate Foundation (hereinafter referred to as the "**PARTY**") where,

The FARMERS/Group of FARMERS details are annexed in Annexure 1:

Name/s of farmers _____

Location ("Village") _____

Land Type (X) ☐ Community Owned

☐ Privately Owned

Leased

The objectives of the project comprise of:

1. Promotion of agroforestry plantation to improve soil health on degraded lands and improve livelihood through increased income opportunities. Providing long term sustainability and ecological resilience.
2. Promotion of livelihoods generated from the agroforestry plantation as well as sericulture activity that covers approximately 4000 hectares spread across 14 Blocks in the states of Jharkhand and West Bengal, impacting approximately 8000 households in the project area, with a holistic approach model.

WHEREAS, the project provides with an array of benefits to the farmers like the increase in green cover on their lands to sustain local biodiversity, access to produce from tree plantation, generate additional carbon sink to sequester greenhouse gases, creation of spaces for recreational activities for local communities and improve overall soil fertility. There are long term benefits like increase in generation of ecosystem services in the region.

WHEREAS the Farmers/Group of Farmers understand and agree to adhere to the Carbon Project requirements as discussed with **FCF India** for the entire duration of the project. The FARMER/Group of FARMERS also consent(s) to any such information including personal information being used and/or being transferred **FCF India** in consultation with FIT Climate Foundation to any other person for the purposes of this Agreement or the Project more generally, provided always that this is done in accordance with the applicable laws.

Where FCF India will monitor and fund the plantation project in the area and monitor the growth and carbon sink and trading of the Carbon credit generated in the Carbon Project

Grievance Mechanism:

FCF India shall appoint an appropriate point of contact for dealing with any grievances relating to the project that the FARMER may have during the term.

In the event the FARMER/Group of FARMERS have a grievance relating to the project, the FARMER/Group of FARMERS shall first raise the issue with **FCF India** through the aforesaid point of contact, who shall endeavour to resolve the FARMER's concern and document the grievance Formally through writing letter addressed to FCF India or contracting the Person In charge of FIT Climate foundation

There are long-term benefits like increase in the generation of ecosystem services in the region. The benefits including the amount accrued from the carbon project through sale of carbon credits will be shared in a minimum of 60:40 ratio with the community. The benefits accrued are not limited to but include

- Support farmers with requisite infrastructure, tools and technology etc. to implement, maintain and monitor plantations during the entire project duration
- Provide technical training & build the capacity of beneficiaries on plantation management and shift in agroforestry practices
- Promoting sustainable land management practices that can generate more carbon credits
- Direct payments to community institutions to be empowered and managed the project for long term.

The benefits shared with communities shall be decided upon by the project participants in regular community meetings and discussions

Role of the Parties:

- **FCF India** will support the Farmer group and individual farmer both technically and financially in plantation and orchard development activities in their land which is under contract for the project between two parties
- **FCF India** will only provide support in the Plantation and the growth of the Plants, the economic activities and harvest activities will be carried out by the farmers
- **Farmer or Farmer Group** will be sharing their documents and signing the carbon right agreement and produce evidence for the area of the land parcels
- **Farmers** will receive benefit from the sale of carbon credit after the 5th year of plantation. They will only receive the support in plantation activities and not any direct cash benefit up to 5 years in the project
- **Farmer group** will receive the benefit and financial support from FCF India and is liable for the benefit sharing of the Carbon credit
- **Farmer** will be liable for the safety and security of the Plantation, farmer and farmer groups will be liable for loss due to theft and fire
- **FCF India** will only support the farmer in the Plantation models that have been mentioned under the Plantation models and will not support any plantation outside its plantation area and plantation models
- **FCF India** will be engaged with the Farmer Group for capacity Building and all plantation activities will be handed over to Farmer group for maintenance
- **FCF India and Farmer group** can engage with local Stakeholders for input or technical support which will contribute in the development and implementation of the project and it may save the expense of the program planning
- **Farmer/ Group of Farmers** will implement the best management practices advised by FIT Climate Foundation and FCF India.
- The best management practices may include, but are not limited to, maintenance of and all due care for the trees, reporting of damage or pest attack to the trees, nutrient management and other soil health practices.
- **Farmer/ Group of Farmers**, agrees not to do the following on the plantation site,
 - i. Cutting of any plant/ trees,
 - ii. willfully or negligently allowing the plants/ trees to die and shall actively strive towards conserving the plants/trees/nature on the land.
- **Farmer/ and Farmer Groups** will ensure maintenance and permanence of the plantation with support from the FCF India for the initial period of 30 years and will be renewed for another 20 years by mutual consent.

By signing below, the parties enter into a sale and purchase agreement for the above volume and cost of Plan Vivo Certificates and on the following terms and conditions ('the Agreement').

SIGNED

On behalf of FCF India

On behalf of the Farmer Group

Signature: -----

Signature: -----

Print Name: -----

Position: -----

Address: -----

Date:

Print Name: -----

Position: -----

Address: -----

Date:

ANNEXURE 1

Signed on behalf of Farmers:

Details of FARMERS

[illegible]

1. DEFINITIONS:

In this agreement:

(a) The '**Plan Vivo Foundation**' is the organisation that issues Plan Vivo Certificates and oversees Plan Vivo projects.

(b) '**Plan Vivo Standard**' - The Standard used in Plan Vivo project design and implementation including the administrative and reporting practices that are in place.

2. TRANSFER OF TITLE

In lieu of the benefits mentioned, all rights and legal title to the Plan Vivo Certificates purchased under this Agreement will be transferred to **FCF India** by the FARMER. The transaction shall not imply the transfer of any rights of ownership over the land, timber or agricultural products where the project activities will take place. Farmer Group will transfer the rights of carbon credits to FCF India, where FCF India will have the exclusive rights to the carbon credits generated.

3. WARRANTIES

(a) FIT Climate Foundation warrants to FCF India that, as at the date of signing of the Agreement:

- i. The Certificates in this Agreement are not subject to any claim, encumbrance or action by any person or entity other than FCF India
- ii. The land use activities in the project used to produce the Plan Vivo Certificates will be afforestation, reforestation and revegetation

4. GENERAL:

(a) This Agreement may not be amended or altered unless agreed in writing by the Parties.

(d) The FARMER agrees that prior to a disposal of the Land, by way of sale / assignment / novation to a third party or howsoever arising, that it shall:

- (i) obtain the prior written consent of FCF India for the proposed disposal of the Land; and
notify the new Land owner / lessee / occupier of the terms of the Agreement and ensure that the new Land owner / lessee / occupier, agrees to adhere to the terms of Agreement, including continuing Project activities as discussed with FCF India and farmer Group

(b) The Farmer will maintain the plantations for a duration of 30 years and will agree to execute all other activities as discussed with FCF India and farmer Group. In case of Sonajhuri plantations, the farmer will harvest the trees on maturity and replant the same species and number of trees. All project activities will be closely monitored by FCF India

(c) Except as expressly stated to the contrary, all notices and other communications required or permitted to be given under this Agreement shall be in writing and shall be delivered or transmitted to the intended recipient's address as specified above or such other address as either party may notify to the other for this purpose from time to time.

(d) If any term of this Agreement is found to be illegal, invalid or unenforceable under any applicable law, such terms shall, insofar as it severable from the remaining terms be deemed omitted from this Agreement and shall in no way affect the legality, validity or enforceability of its remaining terms.

5. DURATION:

This agreement shall come into force upon the date of signature and shall continue in force until Plan Vivo Certificates are issued to FCF India.

6. AMENDMENTS:

This Agreement may be modified or amended by written mutual consent of the parties. Consent is not to be unreasonably withheld or delayed.

7. NON-DISCLOSURE:

The parties agree that the information contained herein is sensitive commercial information and that such information, including the existence of this Agreement, will not be imparted to a third party except upon the written mutual consent of both parties or as otherwise may be required by law. Consent is not to be unreasonably withheld or delayed.

**পশ্চিমবঙ্গ এবং ঝাড়খণ্ডের ঝুঁকিপূর্ণ সম্প্রদায়ের বর্জ্যভূমি
পুনরুদ্ধার প্রকল্পের জন্য প্ল্যান ভিভো সার্টিফিকেটের জন্য চুক্তি**

* প্ল্যান ভিভো সার্টিফিকেট হল পরিবেশগত পরিষেবা সার্টিফিকেট, যা প্ল্যান ভিভো স্ট্যান্ডার্ড অনুসারে প্ল্যান ভিভো ফাউন্ডেশন দ্বারা স্বাধীনভাবে জারি করা হয়। প্রতিটি সার্টিফিকেট এক টন কার্বন ডাই অক্সাইড (CO₂) হ্রাস বা পরিহারের পাশাপাশি অতিরিক্ত বাস্তুতন্ত্র এবং জীবিকা নির্বাহের সুবিধার প্রতিনিধিত্ব করে। ভারতের পশ্চিমবঙ্গ এবং ঝাড়খণ্ডের দুর্বল সম্প্রদায়ের অবক্ষয়িত উঁচুভূমি পুনরুদ্ধার প্রকল্প, ফেমার ক্লাইমেট ফান্ড ইন্ডিয়া দ্বারা সমন্বিত একটি টেকসই ভূমি-ব্যবহার প্রকল্প। এই প্রকল্পটি সম্প্রদায়-নেতৃত্বাধীন বনায়ন, পুনঃবনায়ন এবং পুনঃবনায়ন (এআরআর) কার্যক্রমের মাধ্যমে প্ল্যান ভিভো সার্টিফিকেট তৈরি করে।

* প্ল্যান ভিভো সার্টিফিকেট হল পরিবেশগত পরিষেবা সার্টিফিকেট, যা প্ল্যান ভিভো স্ট্যান্ডার্ড অনুসারে প্ল্যান ভিভো ফাউন্ডেশন দ্বারা স্বাধীনভাবে জারি করা হয়। প্রতিটি সার্টিফিকেট এক টন কার্বন ডাই অক্সাইড (CO₂) হ্রাস বা পরিহারের পাশাপাশি অতিরিক্ত বাস্তুতন্ত্র এবং জীবিকা নির্বাহের সুবিধার প্রতিনিধিত্ব করে। ভারতের পশ্চিমবঙ্গ এবং ঝাড়খণ্ডের দুর্বল সম্প্রদায়ের অবক্ষয়িত উঁচুভূমি পুনরুদ্ধার প্রকল্প, ফেমার ক্লাইমেট ফান্ড ইন্ডিয়া দ্বারা সমন্বিত একটি টেকসই ভূমি-ব্যবহার প্রকল্প। এই প্রকল্পটি সম্প্রদায়-নেতৃত্বাধীন বনায়ন, পুনঃবনায়ন এবং পুনঃবনায়ন (এআরআর) কার্যক্রমের মাধ্যমে প্ল্যান ভিভো সার্টিফিকেট তৈরি করে।

দলগুলি :-

এফসিএফ ইন্ডিয়া প্রাইভেট লিমিটেড, ভারতে নিবন্ধিত একটি বেসরকারি কোম্পানি, যার অফিস বি ১/ এইচ ও, মোহন কোঅপারেটিভ ইন্ডাস্ট্রিয়াল এস্টেট, নয়াদিল্লি, পিন ১১০০৪৪ (এখন থেকে "কার্বন প্রজেক্ট ডেভেলপার" বা "পিডি" বা "এফসিএফ ইন্ডিয়া" হিসাবে উল্লেখ করা হয়েছে) এবং

, একটি ঝাড়খণ্ড নিবন্ধিত কোম্পানি যার অফিস মুরাবাহাল, আসানসোল, কুরুয়া, দুমকা (শহরে), ঝাড়খণ্ড - ৮১৪১১৯ (এরপর থেকে "নির্মাণ গ্রুপ" হিসাবে উল্লেখ করা হয়েছে) এবং কৃষক/কৃষকদের দল।

কৃষক/কৃষক গোষ্ঠীর জমির উপর আইনি অধিকার রয়েছে কারণ জমি আইনত পরিবারের প্রধানের কাছ থেকে উত্তরাধিকারীদের (কৃষকদের) কাছে হস্তান্তর করা হয়। কৃষক/কৃষক গোষ্ঠী পক্ষগুলিকে (এখন থেকে "পক্ষ" হিসাবে উল্লেখ করা হয়েছে) কার্বন অধিকার হস্তান্তর করতে সম্মত হয়, যেখানে, কৃষক/কৃষক গোষ্ঠীর বিবরণ পরিশিষ্ট ১-এ সংযুক্ত করা হয়েছে:

কৃষকদের নাম(গুলি) স্ব. প্রসাদ কুমার

অবস্থান ("গ্রাম") নতুন

Figure 17: Sample Project Agreement of one participant in local language (Bengali)

The project gives preference to vulnerable households and the planning process ensures that there is no further discrimination or marginalization of landless farmers. During the community planning exercise, the members are well aware of the landless households and hence during the implementation of activities like land development, soil-moisture conservation, creation of water harvesting structures, plantation activities etc. they are involved to in getting income.

Annex 13 - Monitoring Plan

FIT Climate Foundation and FCF India have laid out an extensive monitoring plan to measure and follow up results (in terms of project progress, carbon, socio-economic condition and biodiversity) as summarized in Figure 1. Certificates will be issued based on the expected change in carbon stocks, and monitoring data will be used to validate and revise the estimates. Annual progress reports will not only present the annual monitoring results of the project (see below) but will also be used to add new instances in the project and to estimate the number of certificates these new instances will be eligible to receive.

Figure 1:

Progress	Carbon	Socio-economic	Biodiversity
Community participation	Area Coverage under agroforestry	Income of project participants	Tree cover and tree species richness
Capacity Building	Growth of trees for carbon sequestration potential	Access to high value horticulture and agriculture	Fauna richness
Agroforestry			
Maintenance of plantation			

FIT Climate Foundation and FCF India staff will involve the communities as much as possible in the planning and monitoring activities. Local people are trained for ensuring community participation in planning and monitoring activities. They also participate in the interviews on flora and fauna as part of Biodiversity baseline assessment, as well as in the socioeconomic baseline surveys. After every monitoring round and data analysis, a meeting with the participating communities will be organized to communicate the results.

Progress Monitoring

Progress Indicators	Frequency of Assessment
% of project participants part of any community institutions (SHGs/ WLCs/FPOs)	Annual- The progress indicators will be monitored by the FIT Climate Foundation and FCF India team. The progress indicators apply to the entire project.
Number meetings held	
Number of households participating in the planning exercises	
Number of capacity building programs held	
Number of participants attending the capacity building programs	
Number of households in the village engaged in tree planting activity	

Hectares of land treated with soil-moisture conservation measures	
Number of pits dug	
Number of irrigation structures constructed	
Hectares of land with fencing/CPT done	
Hectares of land covered with application of manure	
Number of trees planted	
Area in hectares under existing plantation	
Area in hectares under new plantation	
Hectares of land where maintenance activities done	
% of total work in convergence with the Government	
Components of community plan included in GDP	
Number of Community Nurseries established	
Number of workshops done	

Socio-economic/Livelihoods Indicators

Progress Indicators	Sampling Approach	Duration and Frequency of Assessment
% increase in disposable income of households as a result of project interventions	For the calculation of the sample size, stratified random sampling approach will be adopted, making sure that it represents different categories of people, area, species selected, land-holding size etc.	Every 5 years
Increased access to high value horticulture and agriculture produces		
Increase in value of Sonajhuri from 10 th year onwards		Annually

Biodiversity Monitoring

Progress Indicators	Duration and Frequency of Assessment
Tree Species Richness in Numbers	Every 5 years

Tree Cover in %	
Fauna Species Richness in number per sampling day	

A Rapid Biodiversity Assessment (RBA) was conducted at the project sites to prepare a baseline of the existing biodiversity of the plantation sites under the restoration program. A detailed report is available and will be shared on request.

RBA provides detailed information about the flora and fauna species in the project implementing area, their geographical importance, and threatening factors to the ecosystem and communities. Identification of the species level of flora and fauna and comparison of the same with the existing data and literature provides an excellent management plan for sustainable development (Biodiversity Assessment Report, 2020). The project areas were visited to conduct the RBA from December 2023 to January 2024.

Individuals responsible for monitoring:

Position	Competency	Responsibility
Project Director	Postgraduate in Environmental Sciences with more than 18 years of experience in the development sector.	Oversee the entire project in the two districts i.e., Dumka of Jharkhand and Birbhum of West Bengal
Project Manager and Developer	Forestry graduate with three years of experience in carbon project development across standards	Leads the overall development and guides the operations on the timely completion of the activities
Lead- Operations	Civil Engineer graduate with 10+ years of experience in the development sector	Leads the overall activities related to ground
Project Manager-Operation	Postgraduate with 8 years of experience in the development sector. Led large-scale plantation and monitoring activities across multiple geographies in Jharkhand	Manages the ground activities, team and the communities
GIS Associate	Experienced GIS Associate with two years of hands-on work in land-use/land-cover (LULC) mapping, KML verification, and spatial data management with two years of working experience.	Responsible for GIS related activities
Field Coordinators	Intermediate/Graduate/Diploma in Agriculture with 3 Years of experience in implementation of Agri - Allied projects.	Coordinates and facilitates community engagement and mobilization efforts, ensure CRPs work smoothly and scheduled activities are implemented timely and of requisite quality.
MIS Coordinator	IT graduate with 3 years of working experience	Manages Project Data and updates management regarding project progress.

Accountant	B.com/M.com with 5 years of relevant experience	Maintains the financial data and monitors expenses versus planned, Prepares financial reports
Community Resource Person	He/she must be a good farmer, physically fit and have mobility and basic writing and arithmetic skills.	Motivate and Mobilize farmers, Regular plot visit, collect data and ensure scheduled activities for each farmer.

Resource and Capacity Requirements

The detailed financial plan including full costing of the activities listed in Table 3.5 including plantation activities, capacity building, benefit sharing commitments and also monitoring and verification activities is provided separately.

Annex 14 - Project Database

Database in Kobo Collect:

The details of the land parcels and the socio-economic aspects of the intended project participants are collected using Kobo Collect, a data collection tool, to collect and manage project-related information. It includes all the details of the farmer including the type of land, area, species to be planted, land right documents and GI tagging of farm boundaries, carbon rights agreement signed between FIT Climate and Project Participant.

All the socio-economic data of the project participants and the land details can be downloaded and stored as excel files. The data may be used for analysing the baseline scenario of the project participants.

The other documents like the land right document, the carbon rights document etc. may be downloaded in PDF and stored in drive.

Geotagging of farm boundaries

Each planting plot, and the tracks are downloaded and recorded as Google Earth kml file, as shapefile and an Excel file after checking for the land eligibility criterion such as non-clearing of native species in the past ten years, presence of not more than 10% of woody biomass, all project activity instances demonstrating clear ownership and rights of the land through land titles or other evidence.

All project related documents including the PDD, ERR, Operational Plan, Biodiversity Baseline Report, Socio-economic survey report, LSC report, Land Right Documents, Carbon Rights Agreements, Project Agreements, Project related pictures, Communication materials, presentations etc. are stored in a folder in the name of the project in the drive by FCF India.

The grievance redressal is done in fortnightly block level meetings/ monthly district level meetings based on the complaints received via the CRPs/ email/ letters through posts. Many of the grievance also get resolved by the CRPs at the village level in consultation with the FIT Climate team and if not resolved, is escalated to the block and district level meetings. Kobo is not used for grievance redressal, communication through WhatsApp or mobile is done by the CRPs.

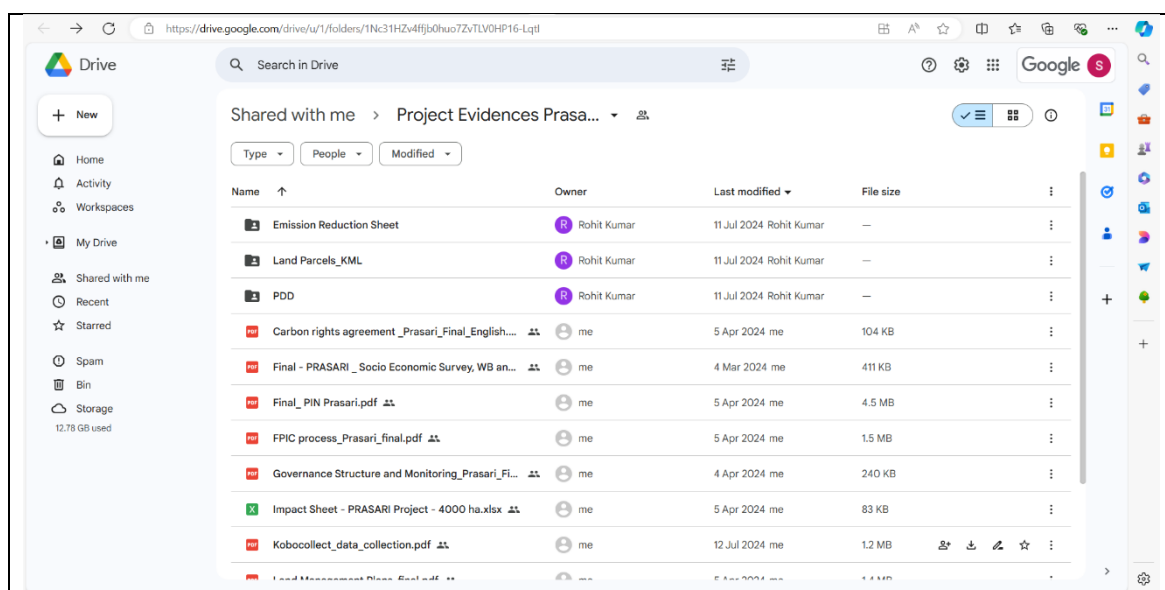


Figure 18: Screenshot showing database where project docs are stored

Annex 15 - Authority Engagement and Approvals

The project activities are implemented exclusively on privately owned land parcels. As described in Table 5.3 of Section 5.3 of the PDD, applicable laws do not contain any provision or restriction related to undertaking plantation or land-use activities on private lands. Since the entire project area is owned and managed by individual farmers, no part of the land falls under state or forest ownership.

Because the project does not involve government-owned land and does not trigger any regulatory requirement for government approval, the local, regional, or national authorities do not issue Letters of Approval for such private land-based activities. This is fully aligned with existing legal provisions governing plantation activities on private lands.

However, to ensure transparency, maintain effective coordination with the local administration, and formally acknowledge the relevant government authorities, the project has communicated with and acknowledged the respective Block Development Officers (BDOs) for each project block where activities are being implemented. Documentary evidence of these acknowledgements is attached as supporting evidence.



To,
Block Development Officer
Rajnagar, Birbhum, West Bengal
PIN- 731126

Date: 29/06/2026

Subject: Request for support and acknowledgement for the project: Restoration of barren uplands in the Rajnagar block of Birbhum District in West Bengal

Dear Sir,

We are pleased to share that Fair Climate Fund India (FCF India), a leading carbon project developer headquartered in New Delhi, India, is undertaking a Carbon Project in Jharkhand and West Bengal. FCF India is engaged in designing and implementing climate change mitigation and sustainable development projects across the country, with a primary focus on afforestation, ecosystem restoration, carbon sequestration, and sustainable livelihood enhancement for rural communities.

As part of our long-term commitment towards ecological restoration and community development, FCF India is currently implementing a carbon restoration initiative titled: "Restoration of Barren Uplands of Vulnerable Communities in West Bengal and Jharkhand."

The project is being implemented across the districts of Dumka (Jharkhand) and Birbhum (West Bengal) and aims to regenerate and improve degraded lands of small holder farmers across 4,000 hectares.

The restoration intervention is being undertaken exclusively on the privately owned lands of participating farmers through voluntary participation. Through careful discussion with farmers and communities indigenous tree species beneficial for their livelihood have been adopted for plantation activities.

The project commenced in 2020 and is planned for implementation and long-term monitoring until 2050, ensuring continuous technical support, plantation maintenance, and carbon monitoring in accordance with internationally accepted standards.

Project Objectives

The project has been designed with the following key objectives:

- Restoration of degraded and barren uplands through sustainable plantation practices.
- Improvement of livelihood opportunities and long-term income generation for participating farming households.
- Enhancement of biodiversity and ecological resilience.
- Improvement of soil fertility, moisture conservation, and overall land productivity.
- Promotion of climate change mitigation through long-term carbon sequestration.

 admin@fcfindia.in
 www.fcfindia.in
 U74994HR2022PTC100429
 B1/H3, Mohan Cooperative Industrial Estate New Delhi-110044

 03/07/2026
 Received without verification
 For B. D. O., Rajnagar



Fair Climate Fund India Private Limited

- Strengthening environmental sustainability and community participation in natural resource management.

This is also to state that FCF India will comply with relevant National and International climate change and environmental sustainability regulations. It will be ensured that all activities will adhere to various protection and conservation norms and laws and not be in contravention to any established social or traditional norms or practice.

FCF India believes that the successful implementation of this initiative requires support and guidance from the local administration. We therefore look forward to receiving your valuable support and feedback throughout the implementation of the project. To improve the livelihood of small holder farmers in the block.

Thank you in advance for your kind cooperation.

Kind regards,

Jasmeet Singh
Founder & Director
Fair Climate Fund (FCF) India

 admin@fcfindia.in
 www.fcfindia.in
 U74994HR2022PTC100429
 B1/H3, Mohan Cooperative Industrial Estate New Delhi-110044



Rajarhat PRASARI

E-mail : prasarikolkata@gmail.com

Head Office : 662/2, Balshnabghata (2nd Floor, Flat-2B) Patuli, Baghajatin, Kolkata – 700 086

To,
Block Development Officer
Dubrajpur, Birbhum, West Bengal
PIN - 731126

Date: 21/08/2023

Subject: Request for support and acknowledgement for the project restoration of barren uplands in the Dubrajpur block of Birbhum District in West Bengal

Dear Sir,

Rajarhat Prasari is a not-for-profit organization, registered under West Bengal Societies Registration Act, 1961. The organization was established in 2007 and led by professionals to work with and for the rural families towards their secured and sustainable livelihoods and wellbeing. PRASARI has been working with over 60000 rural families across variety of agro-climatic regions in West Bengal, India, through its field-based teams of Professionals. HUCWARM (Human-Climate-Water -Management Pvt. Ltd.) is a Private Limited company promoted by Prasari in July 2022.

We are implementing a carbon project titled **"Restoration of barren uplands of vulnerable communities in West Bengal and Jharkhand"**. The proposed blocks are Rajnagar and Dubrajpur in Birbhum District of West Bengal and Jama, Jarmundi & Masalia blocks of Dumka District in Jharkhand. The goal is to restore the barren and degraded uplands through soil and water conservation activities and plantations that will provide sustainable income earning opportunity to the farmers. The project also aims at reducing carbon emissions from the plantations as one of the components of the project.

To start with, we will be restoring the uplands and carry out maintenance of Mango and Sonajhuri plantations of 850 ha. in the proposed project area.

The Project is being registered under the Plan Vivo Standard. It will be implemented by HUCWARM and Prasari with the support of Fair Climate Fund India Private limited.

This is also to state that HUCWARM and Prasari will comply with relevant National and International climate change and environmental sustainability regulations. It will be ensured that all activities will adhere to various protection and conservation norms and laws and not be in contravention to any established social or traditional norms or practice.

We would be very happy to seek your cooperation while carving out a roadmap for the project to move ahead. If you can let us know a date and time for the meeting, we will be happy to receive inputs from you.

Thank you in advance for your kind cooperation

Kind regards,
Ranjit Sethi,
Block Development Officer
PRASARI, BIRBHUM



info/veg
21/08/23

Block Development Officer
Dubrajpur Development

Registered under The West Bengal Societies Registration Act, (W.B. Act, XXVI of 1961)



Subject: Regarding the Introduction of FCF India and Implementation of Carbon Restoration Project in Jharkhand and West Bengal

Respected Sir/Madam,

Greetings from **Fair Climate Fund India (FCF India)**.

We are pleased to share that **Fair Climate Fund India (FCF India)**, a leading carbon project developer headquartered in **New Delhi, India** is **undertaking a Carbon Project in Jharkhand and West Bengal**. FCF India is engaged in designing and implementing climate change mitigation and sustainable development projects across the country, with a primary focus on afforestation, ecosystem restoration, carbon sequestration, and sustainable livelihood enhancement for rural communities.

As part of our long-term commitment towards ecological restoration and community development, FCF India is currently implementing a carbon restoration initiative titled: **"Restoration of Barren Uplands of Vulnerable Communities in West Bengal and Jharkhand."**

The project is being implemented across the districts of **Dumka (Jharkhand)** and **Birbhum (West Bengal)** and aims to regenerate and improve degraded lands of small holder farmers across **4,000 hectares**. The project area also include Dumka (Sadar) Block.

The restoration intervention is being undertaken exclusively on the privately owned lands of participating farmers through voluntary participation. Through careful discussion with farmers and communities indigenous tree species beneficial for their livelihood have been adopted for plantation activities.

The project commenced in **2020** and is planned for implementation and long-term monitoring until **2050**, ensuring continuous technical support, plantation maintenance, and carbon monitoring in accordance with internationally accepted standards.

Project Objectives

The project has been designed with the following key objectives:

- Restoration of degraded and barren uplands through sustainable plantation practices.
- Improvement of livelihood opportunities and long-term income generation for participating farming households.
- Enhancement of biodiversity and ecological resilience.
- Improvement of soil fertility, moisture conservation, and overall land productivity.
- Promotion of climate change mitigation through long-term carbon sequestration.
- Strengthening environmental sustainability and community participation in natural resource management.



 jasmeetsingh.bajaj@gmail.com
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 U74994HR2022PTC100429
 H. No. A-601, Kasnishka Tower Sector-34, Faridabad, Haryana, 121003 India



FCF India believes that the successful implementation of this initiative requires support and guidance from the local administration. We therefore look forward to receiving your valuable support and feedback throughout the implementation of the project. To improve the livelihood of small holder farmers in the block.

Thank you for your kind support and cooperation.

Yours faithfully,

Jasmeet Singh
Fair Climate Fund India (FCF India)
New Delhi

- jasmeetsingh.bajaj@gmail.com
- www.fcfindia.in
- U74994HR2022PTC100429
- H. No. A-601, Kasnishka Tower Sector-34, Faridabad, Haryana, 121003 India



FCF India <admin@fcfindia.in>

Regarding the Introduction of FCF India and Implementation of Carbon Restoration Project in Jharkhand and West Bengal

FCF India <admin@fcfindia.in>

29 June 2026 at 12:37

To: bdosadar-dumka@jharkhandmail.gov.in

Bcc: Jasmeet Singh <jsingh@fcfindia.in>, smohanty@fcfindia.in, Shaika Rakshi <srakshi@fcfindia.in>, rraj@fcfindia.in

Respected Sir/Madam,

Greetings from Fair Climate Fund India (FCF India).

We are pleased to share that **Fair Climate Fund India (FCF India)**, a leading carbon project developer headquartered in **New Delhi, India** is **undertaking a Carbon Project in Jharkhand and West Bengal**. FCF India is engaged in designing and implementing climate change mitigation and sustainable development projects across the country, with a primary focus on afforestation, ecosystem restoration, carbon sequestration, and sustainable livelihood enhancement for rural communities.

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- Strengthening environmental sustainability and community participation in natural resource management.

FCF India believes that the successful implementation of this initiative requires support and guidance from the local administration. We therefore look forward to receiving your valuable support and feedback throughout the implementation of the project. To improve the livelihood of smallholder farmers in the block.

Thank you for your kind support and cooperation.

Yours faithfully,

Jasmeet Singh

Founder & Director | 

+91 9560018494



FCF India:  



FCF India <admin@fcfindia.in>

Regarding the Introduction of FCF India and Implementation of Carbon Restoration Project in Jharkhand and West Bengal

FCF India <admin@fcfindia.in>

29 June 2026 at 12:42

To: bdogopikandar-dumka@jharkhandmail.gov.in

Bcc: smohanty@fcfindia.in, Shaika Rakshi <sarakshi@fcfindia.in>, rraj@fcfindia.in, Jasmeet Singh <jsingh@fcfindia.in>

Respected Sir/Madam,

Greetings from Fair Climate Fund India (FCF India).

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As part of our long-term commitment towards ecological restoration and community development, FCF India is currently implementing a carbon restoration initiative titled: "**Restoration of Barren Uplands of Vulnerable Communities in West Bengal and Jharkhand**."

The project is being implemented across the districts of **Dumka (Jharkhand)** and **Birbhum (West Bengal)** and aims to regenerate and improve degraded lands of smallholder farmers across **4,000 hectares**. The project area also include **Gopikandar Block**.

The restoration intervention is being undertaken exclusively on the privately owned lands of participating farmers through voluntary participation. Through careful discussion with farmers and communities indigenous tree species beneficial for their livelihood have been adopted for plantation activities.

The project commenced in **2020** and is planned for implementation and long-term monitoring until **2050**, ensuring continuous technical support, plantation maintenance, and carbon monitoring in accordance with internationally accepted standards.

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- Strengthening environmental sustainability and community participation in natural resource management.

FCF India believes that the successful implementation of this initiative requires support and guidance from the local administration. We therefore look forward to receiving your valuable support and feedback throughout the implementation of the project. To improve the livelihood of smallholder farmers in the block.

Thank you for your kind support and cooperation.

Yours faithfully,

Jasmeet Singh

Founder & Director | 

+91 9560018494



FCF India:  



FCF India <admin@fcfindia.in>

Regarding the Introduction of FCF India and Implementation of Carbon Restoration Project in Jharkhand and West Bengal

FCF India <admin@fcfindia.in>

29 June 2026 at 12:58

To: bdojama-dumka@jharkhandmail.gov.in

Cc: smohanty@fcfindia.in, Shaika Rakshi <srakshi@fcfindia.in>, rraj@fcfindia.in, Jasmeet Singh <jsingh@fcfindia.in>

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29 June 2026 at 13:01

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The project is being implemented across the districts of **Dumka (Jharkhand)** and **Birbhum (West Bengal)** and aims to regenerate and improve degraded lands of smallholder farmers across **4,000 hectares**. The project area also include Kathikund **Block**.

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29 June 2026 at 13:04

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Regarding the Introduction of FCF India and Implementation of Carbon Restoration Project in Jharkhand and West Bengal

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29 June 2026 at 13:06

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29 June 2026 at 13:16

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Bcc: smohanty@fcfindia.in, Shaika Rakshi <sarakshi@fcfindia.in>, rraj@fcfindia.in, Jasmeet Singh <jsingh@fcfindia.in>

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29 June 2026 at 13:18

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FCF India <admin@fcfindia.in>

29 June 2026 at 13:19

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Bcc: smohanty@fcfindia.in, Shaika Rakshi <sarakshi@fcfindia.in>, rraj@fcfindia.in, Jasmeet Singh <jsingh@fcfindia.in>

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FCF India:  

Annex 16 - Financial Plan

For the detailed financial explanation, please refer to section 5.4 of the PDD.

Annex 17 - AI Tool use Disclosure

Declaration of AI Tool use

1. Have AI tools been used in the creation or presentation of information within this PDD? ☒ Yes ☐ No
2. If 'Yes' (to Question 1), please specify how these tools were used and in which sections of this document:

Section	Purpose of AI Tool Use	AI-Tools Used
Section 1 - Project Description	Drafting and structuring	AI tools were used to refine language, improve clarity, and structure the project description based on existing project data
Section 2 - Stakeholder Engagement	Summarization and structuring	Assisted in organizing and presenting stakeholder consultation processes and institutional arrangements
Section 3 - Project Activities	Drafting and formatting	Used to structure activity descriptions, timelines, and implementation details
Section 4 - Livelihood Indicators & Risk Tables	Table structuring and language refinement	Assisted in formatting tables and refining descriptions of indicators, risks, and mitigation measures
Section 5 - Environmental & Social Risk Assessment	Drafting and summarization	Used to organize risk narratives and mitigation strategies
Annexes (General)	Editing and formatting	Used for grammar correction, formatting consistency, and improving readability

Annex 18 - Local Stakeholder Consultations

Background

Apart from the regular consultations with the farmers, women members of the community institutions, village leaders, youth etc. during the design phase of the project, a more formal and centralized consultation is held in every operational block of West Bengal and Jharkhand to inform all the stakeholders about the project and also to seek their opinion/ feedback/ any specific comments regarding the project activities, geographical reach, partnership opportunities and incorporate it into the project design.

It not only involves the community members but also other stakeholders like representatives of Panchayat, and SHGsetc. The stakeholders are informed about the consultation much in advance through an invitation letter along with a non-technical summary.

The Local Stakeholder Consultations are planned as part of the Plan Vivo-certified methodology. The consultation meetings are part of the certification procedure according to the criteria of the Plan Vivo, which certifies projects to generate carbon credits for the reduction of Greenhouse Gases.

Process followed in conducting the LSC

While the stakeholders and the location are different in each consultation, a specific pattern is followed in each. The ground work of finalizing the date and venue of the LSC, list of stakeholders, extending invitation and informing them about the consultation in advance and mobilizing them to participate in the event is done by the implementing organization (FIT Climate in this case) and the facilitation of the consultation including the support for invitation letter, non-technical summary, other communication materials like banners, feedback form, registration form etc. is done by Fair Climate Fund (FCF) India along with the implementing organization which supports with the local language as and when required.

A detailed Power Point Presentation is also prepared by FCF India including the following details:

- Purpose of the LSC Meeting
- Project Summary
- Introduction to Stakeholders
- Technical Details
- Plan Vivo Project Cycle
- Risks-Potential Negative Impacts
- Potential Positive Impacts
- Sustainability Monitoring
- Continuous Input and Grievance Mechanism
- Q&A/ Clarifications

Initiation of the Meeting

The meeting is initiated by a welcome address by the team. The representative from FIT Climate welcomes the stakeholders and briefs them about the objectives of the meeting and gives a brief introduction to the organisation and the kind of work they are doing in the rural pockets of Jharkhand and West Bengal to improve the quality of life of the people.

Thereafter, the representatives of Fair Climate Fund (FCF) India, give a brief introduction about the company and also an overview of the Local Stakeholder Consultation. They give an overview of the LSC, saying that it is being conducted to discuss the following:

- Rationale of the carbon project
- **Role of different entities including FIT Climate& Fair Climate Fund India**
- Importance of plantation of indigenous tree species under the project
- Projects activities and implementation approach
- Feedback and suggestions from local stakeholders for including in the design of the project if required

Details of the participants are taken in a registration form including their name, address, gender, the community institution/ government department/ any other institution they belong to and their signature.

The Registration Forms of all the three LSCs conducted so far are enclosed in Annexure 1

Details of the LSC Conducted so far

Date	State	Block	Participants			Stakeholders	Overall Feedback on the Project by the stakeholders
			Male	Female	Total		
18 th October, 2023	Jharkhand	Jarmundi	5	18	23	Block Development Officer (BDO), Panchayat Representatives, members of Self-Help Groups (SHGs) and Community Resource Persons (CRPs)	The project will help in reducing air pollution, provide additional income, improve the health and well-being of the people, improve the soil quality and ground water level, improve the biodiversity of the area, and reverse climate change impacts in the long run. Sonajhuri is the preferred species as it will give additional income Provision for irrigation to be included in the project Few people also showed interest in Sheesham (<i>Dalbergia Sissoo</i>), Gamhar (<i>Gmelina Arborea</i>) and Guava.
30 th November, 2023	West Bengal	Dubrajpur	13	45	58		
27 th December, 2023	West Bengal	Rajnagar	21	64	85		
15 th November 2025	Jharkhand	Raneshwar	48	60	108		
28 th November 2025	Jharkhand	Jarmundi	50	65	115		

Proceedings of the Local Stakeholder Consultation

In all the locations, a detailed presentation and discussion were done including the project context, impacts of climate change, project objectives, project summary and activities, project stakeholders, carbon project cycle, contribution to SDGs etc. were discussed in detail and their feedback was taken.

Pictures of the LSCs are enclosed in Annexure 2.

The representatives of FCF India initiated the discussion by talking about climate anomaly and uncertainty due to climate crises and global warming. They also took the opinion of the participants on the impacts of climate change that they have witnessed in the past one decade or so. They said

that nowadays there are untimely rains, Drought/Frequent flood, loss of vegetation cover, many species of birds, animals and insects becoming extinct, productivity of crops have declined due to erosion of topsoil and soil quality deteriorating due to the use of chemical fertilizer etc. This interaction paved the way for context setting for the rationale of the carbon project. The FCF India representatives also gave some statistics of Jharkhand regarding the frequent incidents of drought and land degradation due to water runoff during the monsoon season.

After setting the project context, FCF team re-iterated the objectives of the project as follows:

- Establish carbon sinks to sequester Green House Gases
- Improve soil quality through the adoption of soil and moisture conservation practices
- Develop additional sources of livelihoods through promotion of intercropping and fruit-bearing trees

The area where the project will be taken up was then shared along with the map, clearly stating the project boundary. Dumka district in Jharkhand and Birbhum and Rajnagar in West Bengal was shown through maps to the participants.

Thereafter, a brief summary of the project was given, and project activities were discussed with the participants.

Brief Summary of the Project:

Project Title:	Restoration of barren uplands of vulnerable communities in West Bengal and Jharkhand.
Location:	Country- India States- West Bengal and Jharkhand Districts- Birbhum and Dumka.
Project Intervention(s):	Restoration of barren uplands by undertaking intensive plantations to improve the socio-economic conditions of the tribal communities.
Project Participants:	8000 Families across the villages of Dumka in Jharkhand and Birbhum in West Bengal. These are small holder farmers belonging to the marginalized tribal communities, often migrating to neighbouring cities for daily-wage labour.
Project Area:	Total proposed project area (in hectares)- 4000 (Covering approximately 2700 ha in Dumka, Jharkhand and 1300 ha in Birbhum, West Bengal)
Project Period:	Start date: 6/6/2020, End date: 31/05/2040
Expected Carbon Benefit:	The project is proposed to remove 1,563,007 tCO ₂ from the atmosphere over the course of 20 years.

The FCF Team also explained the expected ecosystem and livelihoods benefits from the project.

Expected Ecosystem Benefit

The expected ecosystem benefits under the project will be achieved through plantation activities implemented under an intensive agroforestry model using native species. The establishment of tree-based systems in upland areas will contribute to reduction of soil erosion and improvement of soil moisture conditions through vegetation cover and root systems, thereby supporting gradual improvement of site conditions and surrounding agricultural landscapes. The plantation of native tree and crop species will enhance local biodiversity, improve habitat quality and contribute to ecosystem restoration at the landscape level, while also creating livelihood opportunities for the community. Biodiversity components, including flora and fauna, groundwater quality, soil type, soil quality and soil carbon, will be mapped and monitored to assess the ecosystem and biodiversity benefits generated by the plantation-based interventions.

Expected Livelihoods Benefit

,. They will also benefit from consumption and selling of mangoes in the short term and Arjuna trees being the host plant for sericulture will ensure a sustainable source of income for the farmers planting Arjun. Arjun plantation is currently implemented only in 10 ha of the project area in first instance as pilot scale and expansion will be done in suitable areas in the future by collaborating with the TDF farmers as per site suitability. Approximately 1000 families in the project will earn an additional annual income of INR 80000 from the practice of silk. The households adopting Sonajhuri will also get additional income from the sale of the timber that grows well in the project areas and will be harvested every 12 years with re-plantation and will be solely used for furniture and house construction. Teak trees will also contribute to long-term financial benefits, as they will be harvested after around 25 years and sold as valuable timber, with farmers receiving direct economic returns. Revenue from carbon will be an additional income for the participating households.

Thereafter the FCF team explained the project activities

- Promotion of strong community institutions like SHGs, WLCs, FPOs etc. and their capacity building- regular meetings, understanding their needs and aspirations, participatory planning
- Promotion of Community Resource Persons as resource pool for sustainability of the project- their capacity building to monitor the soil moisture conservation and plantation work
- Restoration of 4000 hectares (ha) of upland through plantation of trees supporting livelihoods of participating households in the short term as well as long-term including:
- Pre-plantation activities like land preparation, fencing, CPT, pit digging, composting and termite treatment etc.
- Planting activities including sourcing of saplings from Nursery, planting of saplings
- Post plantation activities for new as well as existing plantations including watering, watch and ward, maintenance work such as weeding, hoeing, application of manure, pruning etc.
- Training programmes for input support related to agroforestry including:
 - a) Community plan incorporation into the Gram Panchayat Development Plan for leveraging support from the Government.
 - b) Facilitation and awareness of the beneficiaries for any agricultural related workshops conducted by local departments.

A detailed discussion was held on the carbon sequestration and the amount of credit that will be generated from the project as a whole and also average per year per hectare. They were explained on how the amount of credit that will be generated is calculated for each year based on the species and for the entire life of the project. They were also told about the monitoring and verification process for issuance of credit and the benefit sharing mechanism.

After a tea break, the FCF India team shared the life cycle of a carbon project including choosing a methodology and standard, listing the project, validation and registration, verifying emission reductions and issue of Plan Vivo Certificates (PVCs).

After this, the participants were asked if they see any negative impacts from the project. Also, the positive impacts from the project that they foresee. Most of them said that they see no negative impacts from the project. In fact, there are many positive impacts from the project like improvement in biodiversity of the area, increase in their income from the horticulture, sericulture and timber and also enhancement in the amount of oxygen and sequestration of carbon from the environment.

Taking this to the SDGs, each of the goals were explained to the participants and they were asked if they could see any contribution from the project to these SDGs. They could relate to the goals and also explain how the project will contribute to some of them as follows:

Goal 1- No Poverty

The participants said that there will be additional income for them from the sale of produce from horticulture, sericulture and timber that has been included in the project. Apart from that they will also earn from the intercropping that will be taken up in the same field where the plantation will be done. Hence it will definitely help in reducing poverty.

Goal 5- Gender Equality

The project interventions are built around the leadership of local communities, especially the women. Women Livelihoods Committees (WLCs) at the village level constituting tribal women will be the drivers of the project. They will be capacitated to enable them to ensure community participation and participation of women in all the phases of the project including planning and implementation. Thus, it contributes to Goal 5 on Gender Equality.

Goal 13- Climate Action

The plantations taken up under the project shall sequester Greenhouse gases like CO₂, methane to regulate climate. Moreover, it will also check the surface run-off, reducing soil erosion and recharging ground water during the life of the project and even beyond that.

Goal 15- Life on Land

The local biodiversity will be positively impacted as a result of the project. It will help in sustaining and rejuvenating the flora and fauna and also conserve soil moisture.

Last but not the least, the participants were told about the Grievance Redressal mechanism. Who they will approach in case of difficulty and how. The project has a Grievance Redressal Mechanism in place. Any lapses in the implementation brought to the notice of the Executive working at the ground level will be notified to the Program Leader based on the severity of the issue. The input and grievance expression will be reflected via telephone, WhatsApp, email or writing on grievance book.

The contact details of Mr. Rewant Raj were announced to the stakeholders for approaching him in case of any difficulty.

Contact Person: Rewant Raj

Phone No: +91 7033890377

Email: rewanraj222@gmail.com

In addition to the comments/ suggestions provided by the participants during the interactive sessions, a formal Feedback was also taken from them in a feedback form having the following details:

- Name
- Gender
- What is your impression of the LSC Meeting?
- What are the benefits that you see from the project?
- What are your concerns about this project?
- Signature

A sample feedback form of one participant is enclosed in Annexure 3.

At the end, the FCF India team and FIT Climate team thanked the participants for their valuable time and requested them for their *full-fledged* participation in the implementation and monitoring of the project.

A sample Minutes of the meeting as captured by the field team is enclosed in Annexure-4
In addition, detailed report of all the three LSCs have also been developed by FCF India.

Annexure 1- Registration Form for LSC conducted Jarmundi, Jharkhand in 2023

S.No.	Name of the beneficiary	Mobile Number	Email Address	Gender	Signature
1	सुखदेव	9250223025		Male	[Signature]
2	सुखदेव	7601890000		Male	[Signature]
3	सुखदेव	9937060000		Male	[Signature]
4	सुखदेव	6200383000		Male	[Signature]
5	सुखदेव	9937060000		Male	[Signature]
6	सुखदेव	9937060000		Male	[Signature]
7	सुखदेव	9937060000		Male	[Signature]
8	सुखदेव	9937060000		Male	[Signature]
9	सुखदेव	9937060000		Male	[Signature]
10	सुखदेव	9937060000		Male	[Signature]





Local Stakeholder Attendance Sheet (स्थानीय हितधारक उपस्थिति पत्रक)
 "RESTORATION OF BARREN UPLANDS OF VULNERABLE COMMUNITIES IN WEST BENGAL & JHARKHAND"
 "पश्चिम बंगाल और झारखंड में कमजोर समुदायों की बंजर उपभूमियों का पुनरुद्धार"

कार्यक्रम का स्थान: बाला-जमुनी, बिल दुमका, झारखंड
 तिथि: 18th October 2023

S.No.	Department or Organization or Individual विभाग/संस्था/व्यक्ति	Name of the office नाम	Male / Female पुरुष/स्त्री	Phone Number फोन नंबर	E-mail ID ईमेल आईडी	Address पता	Signature हस्ताक्षर
	Block	Abhimanyu	Male	713273518	Kumarabhai	Badrakunda	
	Block	SADIKH Hossain	Male	9546291487	8003287-001		
					Sanjay Kumar (09820000000)	Dumka	
		Jyoti Kumar	Male	7703409581		जयपुर	
		Jyoti Kumar	Male	9093023130	9093023130 (09820000000)	Jyoti	
		Ramkrishna	Male	9154688654		जयपुर	
		कुलकर्णी		9801400674			
		Shyamsunder		7488764367		जयपुर	
		अनिल कुमार				जयपुर	





Registration Form for LSC conducted in Dubrajpur, West Bengal





Local Stakeholder Attendance Sheet
"RESTORATION OF BARREN UPLANDS OF VULNERABLE COMMUNITIES IN WEST BENGAL & JHARKHAND"
"পশ্চিমবঙ্গ ও ঝাড়খণ্ডের ঝুঁকিপূর্ণ সম্প্রদায়ের অনুর্বর ভূমি পুনরুদ্ধার"

Venue: Dubrajpur block Date: 10th November 2023

S.No.	Department or Organization or Individual বিভাগ/সংস্থা/ব্যক্তি	Name of the holder নাম	Male / Female পুরুষ/মহিলা	Phone Number ফোন নম্বর	E-mail ID ই-মেইল আইডি	Address ঠিকানা	Signature স্বাক্ষর
1	S.H.G.	Shub Chakrabarty	F	7679245203	-	Balrampur Kulshakar	Shub Chakrabarty
2	S.H.G.	mitali J Pradhan	F	8327636997		mitnal	mitali J Pradhan
3	S.H.G.	Tumlin Das	F	8388856354		chinpal	Tumlin Das
4	S.H.G.	Mona Bera	F	6297712388		Chinpal	Mona Bera
5	S.H.G.	Tumlin Das	F	6897931703		chinpal	Tumlin Das
6	S.H.G.	Aruna Bera	F	6296738931		chinpal	Aruna Bera
7	S.H.G.	Asha Bera	F	8513830470		Jashpur	Asha Bera
8	Dubrajpur Block Development Committee	Ranajit Mondal	M	882123329		chinpal	Ranajit Mondal
9	Dubrajpur Block Development Committee	Jyoti Singh	M	973438812		Balrampur Kulshakar	Jyoti Singh
10	Farmer	Ranajit Mondal	M	7064329326	ranajitmondal@gmail.com	chinpal	Ranajit Mondal





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"RESTORATION OF BARREN UPLANDS OF VULNERABLE COMMUNITIES IN WEST BENGAL & JHARKHAND"
"পশ্চিমবঙ্গ ও ঝাড়খণ্ডের ঝুঁকিপূর্ণ সম্প্রদায়ের অনুর্বর ভূমি পুনরুদ্ধার"

Venue: Dubrajpur block Date: 30th November 2023

S.No.	Department or Organization or Individual বিভাগ/সংস্থা/ব্যক্তি	Name of the holder নাম	Male / Female পুরুষ/মহিলা	Phone Number ফোন নম্বর	E-mail ID ই-মেইল আইডি	Address ঠিকানা	Signature স্বাক্ষর
1	Dubrajpur Block	Mr. Subal Chakrabarty	Male	7998009051	-	Dubrajpur	Subal Chakrabarty
2	Do	Mr. HETANJIT GHOSH	Male	9560402253	-	Dubrajpur	Hetanjit Ghosh
3	Atma Samajik Mahasabha	Mr. Rina Bhaui	F	9332269682		Sahapur	Rina Bhaui
4	FCF India	Mr. K. K. Kumar	M	9716675463	rkumar@fcfindia.org	Sahapur	K. K. Kumar
5	PRASARI	Mr. Bera	M	9436315710		Sahapur	Bera
6	PRASARI	Jyoti Singh	M	8609091746		Sahapur	Jyoti Singh
7	HUCUBAM	ARUP CHAND WATGORTA	M	7011011073		Sahapur	Arup Chand Watgorta
8	HUCUBAM	ABOUL KAFAR	M	8001041111		Sahapur	Aboul Kafar
9	HUCUBAM	Ranik Bhaui	M	8910458926		Sahapur	Ranik Bhaui





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Venue: Dubrajpur block Date: 30th November 2023

S.N.	Organization/Institution or Individual সংস্থা/সংস্থা/ব্যক্তি	Name of the Contact Person নাম	Male/Female পুরুষ/মহিলা	Phone Number ফোন নম্বর	E-mail ID ই-মেইল আইডি	Address ঠিকানা	Signature স্বাক্ষর
1	SHG	মাসুমী মাসুমী	F	9663552319		মাসুমী মাসুমী	মাসুমী মাসুমী
2	SHG	MATI MEMORAM	F	6296491018	matimemoram@gmail.com	Matimemoram	Matimemoram
3	SHG	KHADIJA KHATUN	F	82560955	khadija.khatun@gmail.com	khadija.khatun	khadija.khatun
4	SHG	SAMIRAH KHATUN	F	82560955	82560955	Samirah.khatun	Samirah.khatun
5	SHG	Imroshin Begum	F	87583274		Imroshin Begum	Imroshin Begum
6	SHG	Charita Rishi	F	967788993		Charita Rishi	Charita Rishi
7	SHG	Rinku Begum	F	740792881		Rinku Begum	Rinku Begum
8	SHG	Rudana Khatoon	F	9382307752	Rudana Khatoon	Rudana Khatoon	Rudana Khatoon
9	SHG	Rita Ghosh	F	960962008		Rita Ghosh	Rita Ghosh
10	SHG	Rita Ghosh	F	6255826230		Rita Ghosh	Rita Ghosh





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Venue: Dubrajpur block Date: 30th November 2023

S.N.	Organization/Institution or Individual সংস্থা/সংস্থা/ব্যক্তি	Name of the Contact Person নাম	Male/Female পুরুষ/মহিলা	Phone Number ফোন নম্বর	E-mail ID ই-মেইল আইডি	Address ঠিকানা	Signature স্বাক্ষর
1	Farmer	Ajith Kumar Bisoi	M	8153559933		Ajith Kumar Bisoi	Ajith Kumar Bisoi
2	Mithuncharan Bisoi of SCW	Mithuncharan Bisoi	M	70184082		Mithuncharan Bisoi	Mithuncharan Bisoi
3	C.D.V	Mithuncharan Bisoi	M	8153559933		Mithuncharan Bisoi	Mithuncharan Bisoi
4	C.D.V	Md. Kalam	M	6295849977		Md. Kalam	Md. Kalam
5	C.D.V	Md. Sabirul	M	7799058683		Md. Sabirul	Md. Sabirul
6	C.D.V	Mithuncharan Bisoi	M	70184082		Mithuncharan Bisoi	Mithuncharan Bisoi
7	C.R.P	ASMITA KHATUN	F	7601801188		ASMITA KHATUN	ASMITA KHATUN
8	C.R.P	RITA SARKAR	F	960962008		RITA SARKAR	RITA SARKAR
10		ASMITA KHATUN	F	960962008		ASMITA KHATUN	ASMITA KHATUN





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Venue: Dubrajpur block Date: 30th November 2023

S.No.	Department or Organization (সংস্থা/সংগঠন/ব্যক্তি)	Name of the leader নাম	Sex / Gender পুরুষ/মহিলা	Phone Number ফোন নম্বর	E-mail ID ই-মেইল আইডি	Address ঠিকানা	Signature স্বাক্ষর
1	S.H.G	Rupa Kumar, (Karmakura)	Female	8509978942		Methla	Rupa Kumar, (Karmakura)
2	S.H.G	P.D. Dutta	Female	9699619211		Bhadrachar	P.D. Dutta
3	S.H.G	Tapali Mondal	Female	8170011716		Lakshimpur	Tapali Mondal
4	S.H.G	Hari Mondal	Female	9609657300		Thaprihata	Hari Mondal
5	S.H.G	Sikha Mondal	Female	8617332289	sinomonald22@gmail.com	Thaprihata	Sikha Mondal
6	S.H.G	Rakhi Kumar	Male	9064587600		Khatkhat	Rakhi Kumar
7	Department	Aditya Kumar		928244305			
8	Chandipur Jona Sahaj FPC	BARINA SAHA	M	9880056719		Khatkhat	BARINA SAHA
9	Gumphajon Sahaj FPC	Souvik Choudhury	M	9276021710		L.N.P.K. GP	Souvik Choudhury
10	L.N.P.K. Gum Panchayat	Sani Prasad Saha	M	9777161002		L.N.P.K. GP	Sani Prasad Saha





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Venue: Dubrajpur block Date: 30th November 2023

S.No.	Department or Organization (সংস্থা/সংগঠন/ব্যক্তি)	Name of the leader নাম	Sex / Gender পুরুষ/মহিলা	Phone Number ফোন নম্বর	E-mail ID ই-মেইল আইডি	Address ঠিকানা	Signature স্বাক্ষর
1	S.H.G	Tapali Choudhury	Female	9818318507		Kar Kazi	Tapali Choudhury
2	S.H.G	Masumamondal	Female	9801710422		Saha puri	Masumamondal
3	S.H.G	Somali Ravi Das	Female	9897468590		Kar Kazi	Somali Ravi Das
4	S.H.G	Bijay Kumar	Female	9158073460		Khatkhat	Bijay Kumar
5	S.H.G	Banumamondal	Female	9609999966		Ka.Pa. Saha	Banumamondal
6	S.H.G	Nagima Khatoon	Female	9830780205		Ka.Pa. Saha	Nagima Khatoon
7	S.H.G	Kamal Ravi Das	Female	981142134		Kar Kazi	Kamal Ravi Das
8	S.H.G	Lakshmi Das	Female	9691498132		Kar Kazi	Lakshmi Das
9	S.H.G	Somali Ravi Das	Female	9476644088		Kar Kazi	Somali Ravi Das
10	S.H.G	Somali Mondal	Female	6235663236		Methla	Somali Mondal





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Venue: Dubrajpur block Date: 10th November 2023

S.No.	Department or Organization or Individual	Name of the member	Male / Female	Phone Number	E-mail ID	Address	Signature
1.	S.H.G	Sushama Mondal	Female	8979713752		Metela	Sushama Mondal
2.	S.H.G	Piyali Bhowmik	Female	8918241219		Metela	Piyali Bhowmik
3.	S.H.G	Koushika Ghose	Female	9872263234		Metela	Koushika Ghose
4.	S.H.G	Sarmila Karmali	Female	9864032908		Metela	Sarmila Karmali
5.	S.H.G	Mitun Dasgupta	Female	9432844329		Metela	Mitun Dasgupta
6.	S.H.G	Rinkti Das	Female	9933186909		Metela	Rinkti Das
7.	S.H.G	Rakha Chatterjee	Female	6206225904		Metela	Rakha Chatterjee
8.	S.H.G	S	Female	9609045933		Metela	S
9.	S.H.G	Lakshmi Samant	Female	908368262		Metela	Lakshmi Samant
10.	S.H.G	Laxmi Roy	Female	8614814477		Metela	Laxmi Roy

Registration form of LSC held in Rajnagar, West Bengal





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Venue : Rajnagar Block Date : 27th December 2023

S.No.	Department or Organization or Individual	Name of the member	Male / Female	Phone Number	E-mail ID	Address	Signature
1.	S.H.G	সুনীল গোস্বামী	M			কল্যাণপুর গ্রাম	সুনীল গোস্বামী
2.	S.H.G	সম্পদা গোস্বামী	F			কল্যাণপুর গ্রাম	সম্পদা গোস্বামী
3.	S.H.G	সুজাতা গোস্বামী	F			কল্যাণপুর গ্রাম	সুজাতা গোস্বামী
4.	S.H.G	সুজাতা গোস্বামী	F			কল্যাণপুর গ্রাম	সুজাতা গোস্বামী
5.	S.H.G	সুজাতা গোস্বামী	F	979294036		কল্যাণপুর গ্রাম	সুজাতা গোস্বামী
6.	S.H.G	সুজাতা গোস্বামী	F			কল্যাণপুর গ্রাম	সুজাতা গোস্বামী
7.	S.H.G	সুজাতা গোস্বামী	F	979294036		কল্যাণপুর গ্রাম	সুজাতা গোস্বামী
8.	S.H.G	সুজাতা গোস্বামী	F	6495903089		কল্যাণপুর গ্রাম	সুজাতা গোস্বামী
9.	S.H.G	সুজাতা গোস্বামী	F			কল্যাণপুর গ্রাম	সুজাতা গোস্বামী





Local Stakeholder Attendance Sheet
"RESTORATION OF BARREN UPLANDS OF VULNERABLE COMMUNITIES IN WEST BENGAL & JHARKHAND"
"পশ্চিমবঙ্গ এবং ঝাড়খণ্ডের ঝুঁকিপূর্ণ সম্প্রদায়ের অনুর্বর
Venue : Rajnagar Block Date : 27th December 2023

S.No.	Department or Organization or Individual বিভাগ/সংস্থা/ব্যক্তি	Name of the invitee নাম	Male / Female পুরুষ/মহিলা	Phone Number ফোন নম্বর	E-mail ID ই-মেইল আইডি	Address ঠিকানা	Signature স্বাক্ষর
10.		শ্রীকান্ত দাস	F	823567447		কলিকাতা	শ্রীকান্ত দাস
11.		শ্রীমতী সিন্ধু	F			কলিকাতা	শ্রীমতী সিন্ধু
12.	S.H.G.	Talab Sathia	F	892613492		কলিকাতা	Talab Sathia
13.		Rakha Mahanta	F	902965786		কলিকাতা	Rakha Mahanta
14.	S.H.G.	NUSI Mahanta	F	809892430		কলিকাতা	NUSI Mahanta
15.	S.H.G.	অমলিনী সিন্ধু	F			কলিকাতা	অমলিনী সিন্ধু
16.		শ্রীমতী সিন্ধু	F			কলিকাতা	শ্রীমতী সিন্ধু
17.		পার্বতী সিন্ধু	F	979914249		কলিকাতা	পার্বতী সিন্ধু
18.		স্বপ্না সিন্ধু	F	823567447		কলিকাতা	স্বপ্না সিন্ধু





Local Stakeholder Attendance Sheet
"RESTORATION OF BARREN UPLANDS OF VULNERABLE COMMUNITIES IN WEST BENGAL & JHARKHAND"
"পশ্চিমবঙ্গ এবং ঝাড়খণ্ডের ঝুঁকিপূর্ণ সম্প্রদায়ের অনুর্বর
Venue : Rajnagar Block Date : 27th December 2023

S.No.	Department or Organization or Individual বিভাগ/সংস্থা/ব্যক্তি	Name of the invitee নাম	Male / Female পুরুষ/মহিলা	Phone Number ফোন নম্বর	E-mail ID ই-মেইল আইডি	Address ঠিকানা	Signature স্বাক্ষর
19.	S.H.G.	অমলিনী সিন্ধু	F			কলিকাতা	অমলিনী সিন্ধু
20.		অমলিনী সিন্ধু	F			কলিকাতা	অমলিনী সিন্ধু
21.	S.H.G.	অমলিনী সিন্ধু	F	956992026		কলিকাতা	অমলিনী সিন্ধু
22.	S.H.G.	অমলিনী সিন্ধু	F			কলিকাতা	অমলিনী সিন্ধু
23.	S.H.G.	অমলিনী সিন্ধু	F			কলিকাতা	অমলিনী সিন্ধু
24.	S.H.G.	অমলিনী সিন্ধু	F			কলিকাতা	অমলিনী সিন্ধু
25.	S.H.G.	অমলিনী সিন্ধু	F			কলিকাতা	অমলিনী সিন্ধু
26.		অমলিনী সিন্ধু	F			কলিকাতা	অমলিনী সিন্ধু
27.	S.H.G.	অমলিনী সিন্ধু	F			কলিকাতা	অমলিনী সিন্ধু



Local Stakeholder Attendance Sheet
"RESTORATION OF BARREN UPLANDS OF VULNERABLE COMMUNITIES IN WEST BENGAL & JHARKHAND"
"পশ্চিমবঙ্গ এবং ঝাড়খণ্ডের ঝুঁকিপূর্ণ সম্প্রদায়ের অনুর্বর

Venue : Rajnagar Block

Date : 27th December 2023

S.No.	Department or Organization or Individual বিভাগ/সংস্থা/ব্যক্তি	Name of the invitee নাম	Male / Female পুরুষ/মহিলা	Phone Number ফোন নম্বর	E-mail ID ই-মেইল আইডি	Address ঠিকানা	Signature স্বাক্ষর
28	Sageen	Karachi Karan	F	964781344		Baranagar	Karachi Karan
29	S.H.O.	সহকারী পুলিশ	F			Baranagar	
30	সহকারী পুলিশ		F			Baranagar	
31	সহকারী পুলিশ	সহকারী পুলিশ	F	9001067540		Baranagar	
32	সহকারী পুলিশ	সহকারী পুলিশ	F	839185734		Baranagar	
33	সহকারী পুলিশ	সহকারী পুলিশ	F	8116755873		Baranagar	
34	সহকারী পুলিশ	সহকারী পুলিশ	F	6294851564		Baranagar	
35	সহকারী পুলিশ					Baranagar	
36	সহকারী পুলিশ					Baranagar	



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"RESTORATION OF BARREN UPLANDS OF VULNERABLE COMMUNITIES IN WEST BENGAL & JHARKHAND"
"পশ্চিমবঙ্গ এবং ঝাড়খণ্ডের ঝুঁকিপূর্ণ সম্প্রদায়ের অনুর্বর

Venue : Rajnagar Block

Date : 27th December 2023

S.No.	Department or Organization or Individual বিভাগ/সংস্থা/ব্যক্তি	Name of the invitee নাম	Male / Female পুরুষ/মহিলা	Phone Number ফোন নম্বর	E-mail ID ই-মেইল আইডি	Address ঠিকানা	Signature স্বাক্ষর
37	G.P. Choudhary	Ramesh Das	M	9732046366	Ramesh.Das@gmail.com	Chandrapur	
38	PRASAD	Jagannath Nayak	M	8609096246	jagannathnayak@gmail.com	Rajnagar	
39	Office of the A.O. Rajnagar	Abul Kalam Khan					
40	PRASAD	Abul Kalam Khan	M	9436315419		Rajnagar	
41	MCUWARM	Abdul Gaffar	M	8001041221		Rajnagar	
42	MCUWARM	Abdul Gaffar	F			Rajnagar	
43	MCUWARM	Abdul Gaffar	F			Rajnagar	
44	MCUWARM	Abdul Gaffar	F			Rajnagar	
45	MCUWARM	Abdul Gaffar	F			Rajnagar	

Raneshwar 2025, Dumka

S. No	Name of the Participant	Designation/ Profession	Village	Gram Panchayat/ Block	District	Signature
1.	Tesim Ph	Farmer	Burubing	Dakhinjal	Dumka	Tesim Ph
2.	Aravind	"	"	Dakhinjal	Dumka	Aravind
3.	Aravind	"	"	"	"	Aravind
4.	Sunil Shukla	"	Jankand	Palasi, Shikaripara	Dumka	Sunil Shukla
5.	Rajendra Ray	"	Banwar	Dakhinjal	Dumka	Rajendra Ray
6.	Amit K. Banerjee	"	Tangla	Saltola	Dumka	Amit K. Banerjee
7.	Kishori Mondal	"	Asanbani	Asanbani	Dumka	Kishori Mondal
8.	Rajendra Ray	"	Chopabhat	Dakhinjal	Dumka	Rajendra Ray
9.	Rajendra Ray	"	Ajara	Talchajal	Dumka	Rajendra Ray
10.	Hari Mondal	"	Kushpahari	Kushpahari	Dumka	Hari Mondal
11.	Elia Mondal	"	Kushpahari	Kushpahari	Dumka	Elia Mondal
12.	Chota Ray	"	Phajilpur	Dakhinjal	Dumka	Chota Ray
13.	Purnan Ray	"	Phajilpur	Dakhinjal	Dumka	Purnan Ray

S. No	Name of the Participant	Designation/ Profession	Village	Gram Panchayat/ Block	District	Signature
14.	Aravind (Mishra)	Farmer	Aravind	"	Dumka	Aravind (Mishra)
15.	Rajendra Ray	"	Rajendra	"	Dumka	Rajendra Ray
16.	Aravind Mondal	"	Aravind	"	Dumka	Aravind Mondal
17.	Aravind Mondal	"	"	"	Dumka	Aravind Mondal
18.	Aravind Mondal	"	"	"	"	Aravind Mondal
19.	Aravind Mondal	"	Aravind	Rajendra	Dumka	Aravind Mondal
20.	Aravind Mondal	Farmer	"	"	"	Aravind Mondal
21.	Aravind Mondal	Farmer	"	"	"	Aravind Mondal
22.	Aravind Mondal	"	Aravind	Kushpahari	Dumka	Aravind Mondal
23.	SUNIL SINHA	"	Durgapur	Barmasia- Shikaripara	"	SUNIL SINHA
24.	Aravind Mondal	"	"	"	"	Aravind Mondal
25.	Sekhar Mondal	"	"	"	"	Sekhar Mondal
26.	Aravind Mondal	"	"	"	"	Aravind Mondal

No	Name of the Participant	Designation/ Profession	Village	Gram Panchayat/ Block	District	Signature
27	बनी मशर	किसान	बौराडगांव	रंगलिया	दुमका	बनी मशर
28	मुंडिया देवी	"	बौराडगांव	रंगलिया	दुमका	मुंडिया देवी
29	बांलना सिंह	"	बौराडगांव	रंगलिया	दुमका	बांलना सिंह
30	Shamla Mondal	"	बौराडगांव	रंगलिया	दुमका	Shamla Mondal
31	मिम कुसु	"	रंगलिया	रंगलिया	दुमका	मिम कुसु
32	पुष्पा दास	"	रंगलिया	रंगलिया	दुमका	पुष्पा दास
33	बीबी बां	"	मुगीवी	रंगलिया	दुमका	बीबी बां
34	शत्रुघ्न मंडल	"	बौराडगांव	रंगलिया	दुमका	शत्रुघ्न मंडल
35	वर्धन मंडल	"	मुगीवी	"	दुमका	वर्धन मंडल
36	जमाल मिश्र	"	लकड़ाधार	"	दुमका	जमाल मिश्र
37	सरस्वती पट्ट	"	बौराडगांव	रंगलिया	दुमका	सरस्वती पट्ट
38	सिद्धि कुमर	"	"	"	"	सिद्धि कुमर
39	पुनम कुमर	"	"	"	"	पुनम कुमर

No	Name of the Participant	Designation/ Profession	Village	Gram Panchayat/ Block	District	Signature
40	Subrata Gorain	Farmer	Kuchradali	Rangliya	Dumka	Subrata Gorain
41	Manik Gorain	"	Kuchradali	Rangliya	Dumka	Manik Gorain
42	Ratan Gorain	"	Kuchradali	Rangliya	Dumka	Ratan Gorain
43	Musliyahar	"	Lakradhar	"	Dumka	Musliyahar
44	बनारस	"	बौराडगांव	रंगलिया	दुमका	बनारस
45	Munmun Choudhary	"	"	"	"	Munmun Choudhary
46	शशि सक्सेना	"	"	"	"	शशि सक्सेना
47	किरा सक्सेना	"	"	"	दुमका	किरा सक्सेना
48	Silali Hembram	"	"	"	"	Silali Hembram
49	Sumita Soren	"	"	"	"	Sumita Soren
50	Asha Tudu	"	बांलना	"	दुमका	Asha Tudu
51	धनंजय	"	"	"	"	धनंजय
52	अनिल मिश्र	"	"	"	"	अनिल मिश्र

No	Name of the Participant	Designation/ Profession	Village	Gram Panchayat/ Block	District	Signature
53	बनोनी कुमारी	किसान	ओरसमाल	रंगालिया	दुमका	बनोनी कुमारी
54	बनोनी कुमारी	"	"	"	"	बनोनी कुमारी
55	बनोनी कुमारी	"	"	"	"	बनोनी कुमारी
56	लीलु बाली	किसान	प्रायपट्टी	"	"	लीलु बाली
57	आनंद	किसान	"	"	"	आनंद
58	बनोनी कुमारी	"	रंगालिया	रंगालिया	दुमका	बनोनी कुमारी
59	LAKHAN MURMU	"	"	"	"	LAKHAN MURMU
60	PRIM BASKEY	"	"	"	"	PRIM BASKEY

Jarmundi 2025, Dumka

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"Local Stakeholder Consultation- Restoration of barren uplands of vulnerable communities in West Bengal and Jharkhand"

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S. No	Name of the Participant	Designation/ Profession	Village	Gram Panchayat/ Block	District	Signature
1.	आशा कुमारी	अधीकारी	पुनलोडावा	पुनलोडावा	दुमका	आशा कुमारी
2.	दुर्गा देवी	अधीकारी	पुनलोडावा	पुनलोडावा	दुमका	दुर्गा देवी
3.	रवी देवी	"	पुनलोडावा	पुनलोडावा	दुमका	रवी देवी
4.	ललीता देवी	"	पुनलोडावा	पुनलोडावा	दुमका	ललीता देवी
5.	गीता देवी	"	पुनलोडावा	पुनलोडावा	दुमका	गीता देवी
6.	गीता देवी	"	पुनलोडावा	पुनलोडावा	दुमका	गीता देवी
7.	पानवती देवी	"	पुनलोडावा	पुनलोडावा	दुमका	पानवती देवी
8.	पानवती देवी	"	पुनलोडावा	पुनलोडावा	दुमका	पानवती देवी

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Date: 28/11/25

Attendance Sheet

S. No	Name of the Participant	Designation/ Profession	Village	Gram Panchayat/ Block	District	Signature
9.	প্রেম প্রকাশ	NGO	Puti Lalbar	Puti Lalbar	Dumka	Pranab
10.	Veekand	Block Co-ordinator, Jamsil	Kendur	Kendur	Dumka	Ar
11.	রবিকান্ত মিশ্র	গ্রাম প্রধান	ডুমুরিয়া	ডুমুরিয়া	ডুমকা	রবিকান্ত মিশ্র
12.	সোমেশ্বর শর্মা	গ্রাম প্রধান	ডুমুরিয়া	ডুমুরিয়া	ডুমকা	সোমেশ্বর শর্মা
13.	অরুণ কান্ত	অরুণ কান্ত	অরুণ কান্ত	অরুণ কান্ত	অরুণ কান্ত	অরুণ কান্ত
14.	হরিলাল শর্মা	গ্রাম প্রধান	ডুমুরিয়া	ডুমুরিয়া	ডুমকা	হরিলাল শর্মা
15.	রাজু শর্মা	কৃষক	ডুমুরিয়া	ডুমুরিয়া	ডুমকা	রাজু শর্মা
16.	Santosh Ray	Farmer	Puti Lalbar	Puti Lalbar	Dumka	Santosh Ray

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S. No	Name of the Participant	Designation/ Profession	Village	Gram Panchayat/ Block	District	Signature
17.	সুসীলা দেবী	অর্থনৈতিক	ডুমুরিয়া	ডুমুরিয়া	ডুমকা	সুসীলা দেবী
18.	মন্মথ শর্মা		ডুমুরিয়া	ডুমুরিয়া	"	মন্মথ শর্মা
19.	পারসমিত দেবী		ডুমুরিয়া	ডুমুরিয়া	"	পারসমিত দেবী
20.	জিলাল দেবী		ডুমুরিয়া	ডুমুরিয়া	"	জিলাল দেবী
21.	জিলাল দেবী		ডুমুরিয়া	ডুমুরিয়া	"	জিলাল দেবী
22.	পনিয়া দেবী		ডুমুরিয়া	ডুমুরিয়া	"	পনিয়া দেবী
23.	পানবী দেবী		ডুমুরিয়া	ডুমুরিয়া	"	পানবী দেবী
24.	সুসীলা দেবী		ডুমুরিয়া	ডুমুরিয়া	"	সুসীলা দেবী

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Attendance Sheet

S. No	Name of the Participant	Designation/ Profession	Village	Gram Panchayat/ Block	District	Signature
33.	संगीता देवी	किसान	पुतलीडाबर	पुतलीडाबर	डुमका	संगीता देवी
34.	आमावती देवी	किसान	पुतलीडाबर	पुतलीडाबर	डुमका	आमावती देवी
35.	समस्वती देवी	किसान	पुतलीडाबर	पुतलीडाबर	डुमका	समस्वती देवी
36.	मोतिषा देवी	किसान				
37.	रश्मि मंडल	C.R.P	गामट	गामट	डुमका	Rakshi Mandal
38.	सिनेडा मणिलक	C.R.P	गामट	गामट	डुमका	Sineda Manilak
39.	Soumitra Ray	किसान	पिपरा	Karudih	डुमका	Soumitra Ray
40.	Sumitray Ray	C.R.P	Pipad	Karudih	Dumka	Sumitray Ray

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Attendance Sheet

S. No	Name of the Participant	Designation/ Profession	Village	Gram Panchayat/ Block	District	Signature
41.	शोमि देवी	महिला सहायक	मंडल ग्रीह	पुतलीडाबर	डुमका	शोमि देवी
42.	मोतिषा देवी	"	मंडल ग्रीह	पुतलीडाबर	डुमका	मोतिषा देवी
43.	उषा देवी	"	"	"	"	उषा देवी
44.	रश्मि देवी	"	"	"	"	रश्मि देवी
45.	मालती देवी	"	"	"	"	मालती देवी
46.	मालती देवी	"	"	"	"	मालती देवी
47.	कमल देवी	"	"	"	"	कमल देवी
48.	उषा देवी	"	"	"	"	उषा देवी

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S. No	Name of the Participant	Designation/ Profession	Village	Gram Panchayat/ Block	District	Signature
57.	शिवम कुमार	किसान	"	पुतलीडाबर	डुमका	शिवम कुमार
58.	शिवम कुमार	किसान	पुतलीडाबर	"	"	शिवम कुमार
59.	शिवम कुमार	किसान	पुतलीडाबर	"	"	शिवम कुमार
60.	मिनी देवी	किसान	पुतलीडाबर	"	"	मिनी देवी
61.	रामवती देवी	किसान	पुतलीडाबर	"	"	रामवती देवी
62.	पार्वती देवी	किसान	"	"	"	पार्वती देवी
63.	कुसुमी देवी	किसान	"	"	"	कुसुमी देवी
64.	लोणी देवी	किसान	"	"	"	लोणी देवी

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S. No	Name of the Participant	Designation/ Profession	Village	Gram Panchayat/ Block	District	Signature
65.	रिनी कुमारी	Farmer	पुतलीडाक	पुतलीडाक	दुमका	रिनी कुमारी
66.	पानवती देवी	महिला देवी	"	"	"	पानवती देवी
67.	अमर देवी	"	"	"	"	अमर देवी
68.	चम्पा देवी	"	"	"	"	चम्पा देवी
69.	संगीता कुमारी	"	"	"	"	Sangita Kumari
70.	शुभा देवी	"	दुमरीग	पुतलीडाक	"	शुभा देवी
71.	Sunaj Kumar	Farmer	"	"	"	Sunaj Kumar
72.	शशि सेखर	"	"	"	"	शशि सेखर

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S. No	Name of the Participant	Designation/ Profession	Village	Gram Panchayat/ Block	District	Signature
73.	सुकमा देवी	अजीविका देवी	पुतली डाक	पुतली डाक	दुमका	सुकमा देवी
74.	अशोका देवी	"	"	"	"	अशोका देवी
75.	मुनी देवी	"	"	"	"	मुनी देवी
76.	कलानती देवी	"	"	"	"	कलानती देवी
77.	चरमी देवी	"	"	"	"	चरमी देवी
78.	काजल कुमारी	"	"	"	"	Kajal Kumari
79.	शकुन्ती कुमारी	"	"	"	"	शकुन्ती कुमारी
80.	सुनीता देवी	"	"	"	"	सुनीता देवी

Annexure 2- Photographs from the Consultations-
LSC at Jarmundi, 2023, Jharkhand



LSC at Dubrajpur 2023, West Bengal



LSC at Rajnagar 2023, West Bengal



LSC at Jharmundi 2025, Dumka



LSC Raneshwar 2025, Dumka





Annexure 3- Sample Feedback Form of One Participant from LSC at Jarmundi, Jharkhand

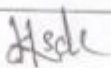




Local Stakeholder Feedback Form
स्थानीय हितधारक फीडबैक फॉर्म

"पश्चिम बंगाल और झारखंड में कमजोर समुदायों की बंजर उपभूमियों का पुनरुद्धार"

Venue: ब्लॉक- जरमुण्डी, जिला- दुमका, झारखण्ड
Date (दिनांक): 18th October, 2023

Name (नाम)	कुमुदिनी हंसदा
Gender- Male/Female (पुरुष/स्त्री)	स्त्री
What is your impression of the LSC meeting? परामर्श बैठक के बारे में आपकी क्या राय है?	बन बैठक में हमारी राय है कि गाँव पंचायतों में ऐसे पॉपुलेशन-आधारित समूहों को चुनना चाहिए जिनमें कमजोर समुदायों के लोग शामिल हों।
What are the benefits that you see from this project?? आप इस परियोजना से क्या लाभ देखते हैं?	इस परियोजना में बहुत लाभ देखते हैं। जैसे कि इस परियोजना से जमीनी पुर होनी, किसानों को बहुत आयदा मिलेगा।
What are your concerns about this project? इस परियोजना के बारे में आपकी चिंताएँ क्या हैं?	इस परियोजना के बारे में हमारी कोई चिंता नहीं है। परियोजना बहुत अच्छा है।
Signature हस्ताक्षर	

The feedback form was filled out by Kumudini Hansda, a female participant from the Birbhum (West Bengal) and Dumka (Jharkhand) region.

1. Impression of the LSC Meeting:

- The participant found the meeting informative and useful, as it provided clarity on the project's objectives and interventions.
- She appreciated the discussion and the opportunity to learn about the project in detail.

2. Perceived Benefits of the Project:

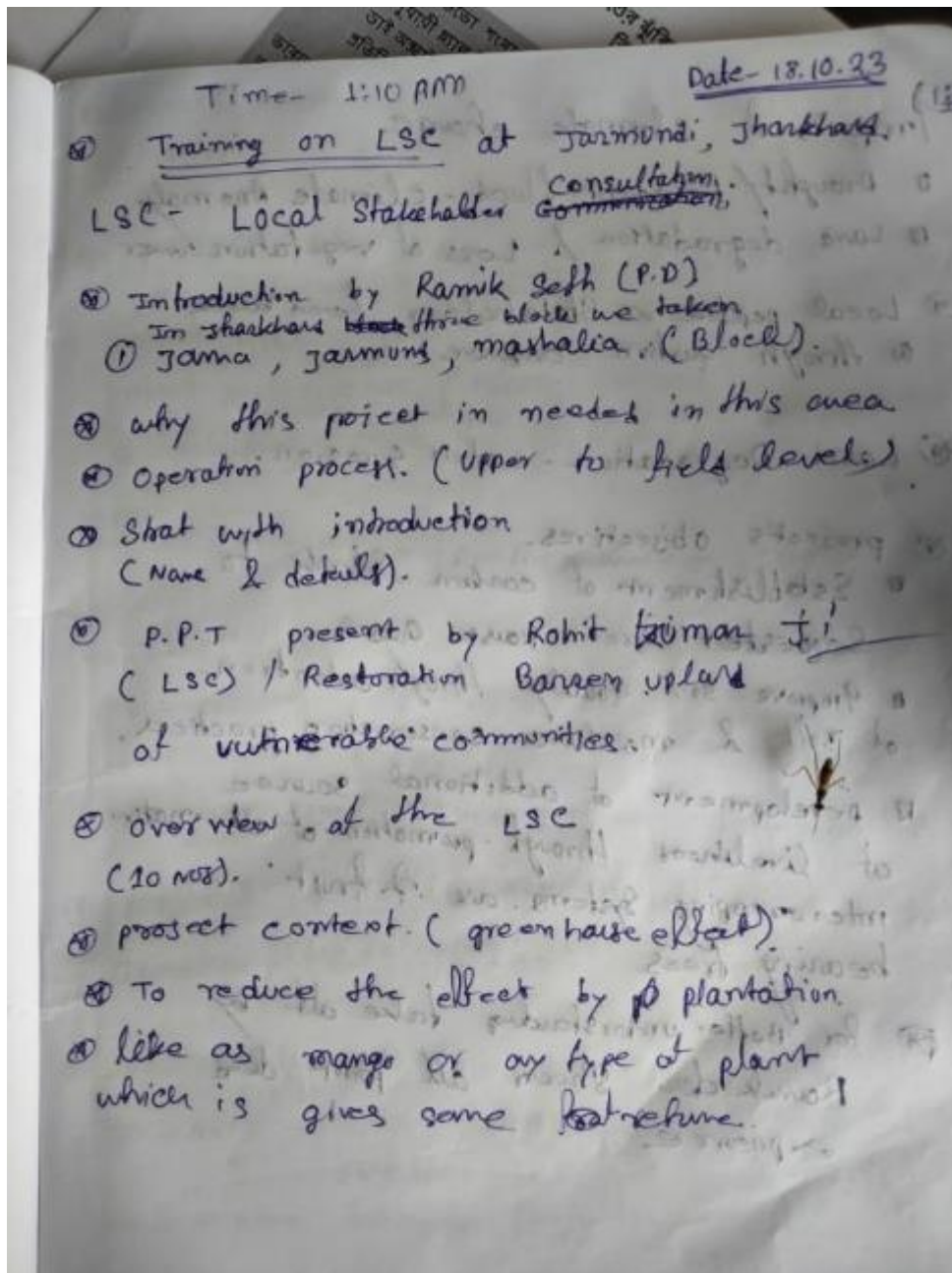
- The participant believes that the project will improve the local environment and enhance soil fertility.

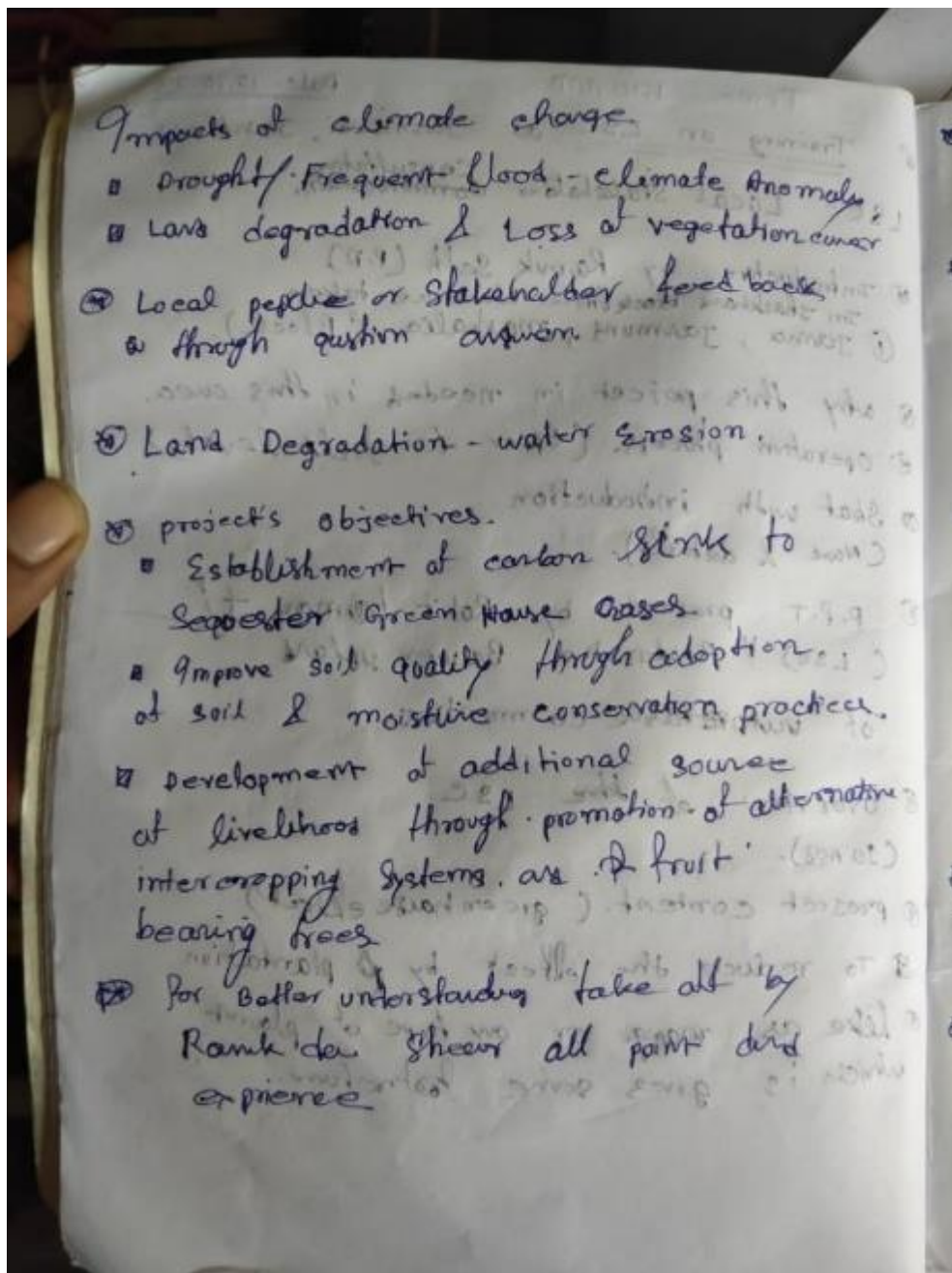
- She acknowledges that women will particularly benefit through increased involvement in sustainable agricultural practices and enhanced livelihood opportunities.
- 3. Suggestions for Improvement:
 - She suggests continuing such meetings to ensure that the community remains informed and engaged.
 - She emphasizes the need for support in agricultural activities to maximize the benefits for women and the broader community.

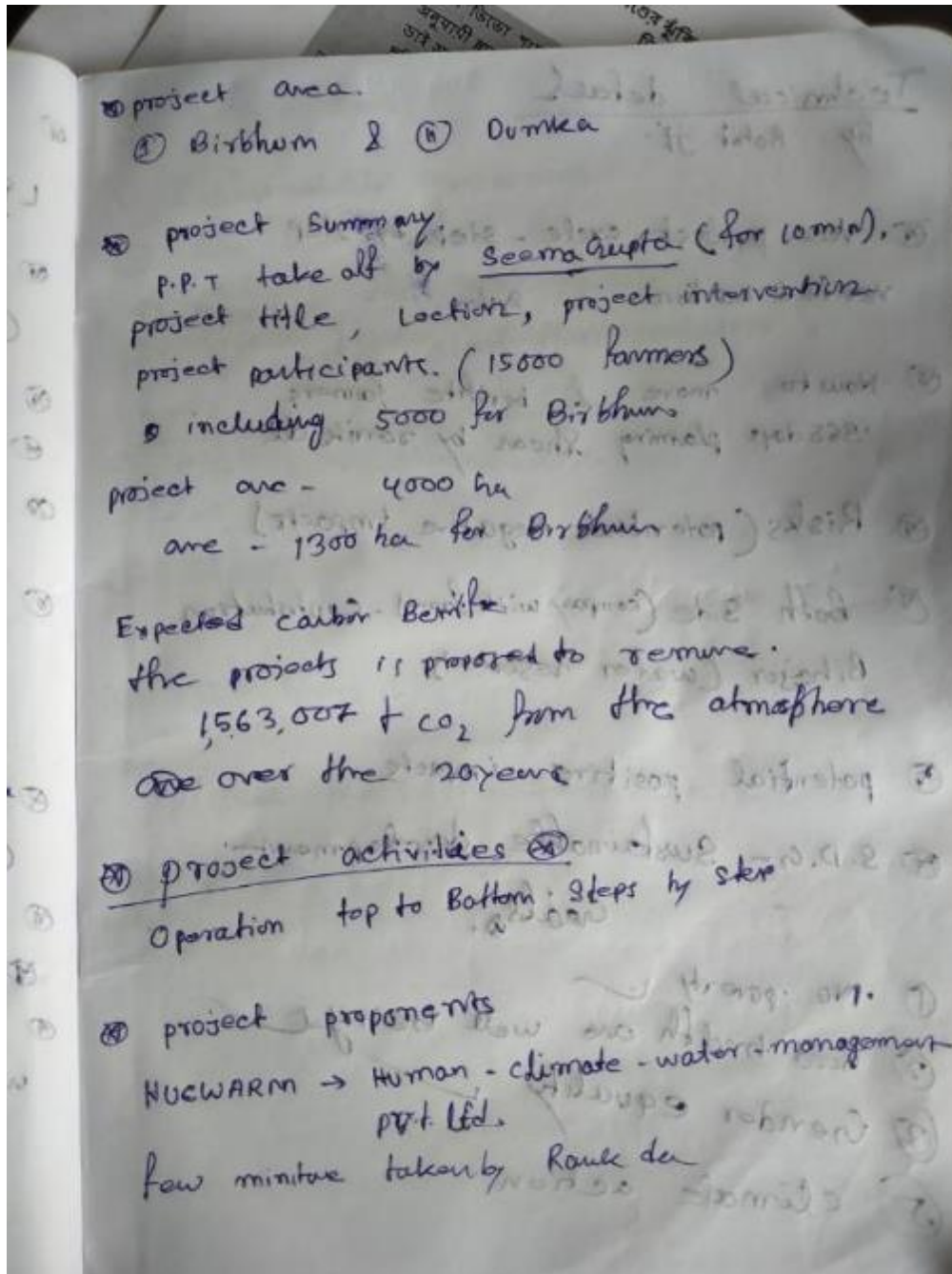
The overall response reflects a positive perception of the project, with a strong emphasis on environmental sustainability, women's empowerment, and continued engagement with the community.

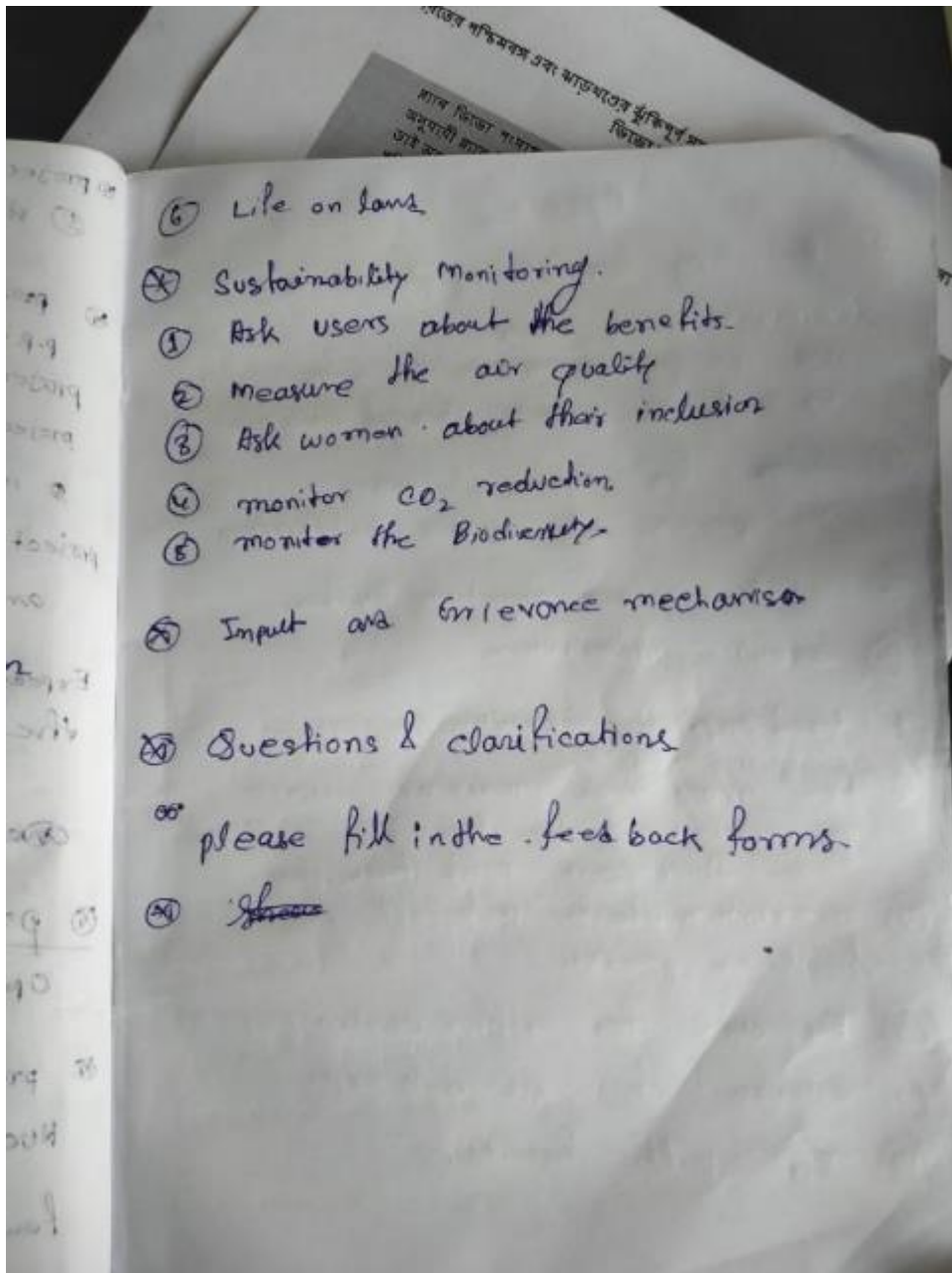
Annexure 4- Sample Minutes of the Meeting from LSC at Jarmundi, Jharkhand

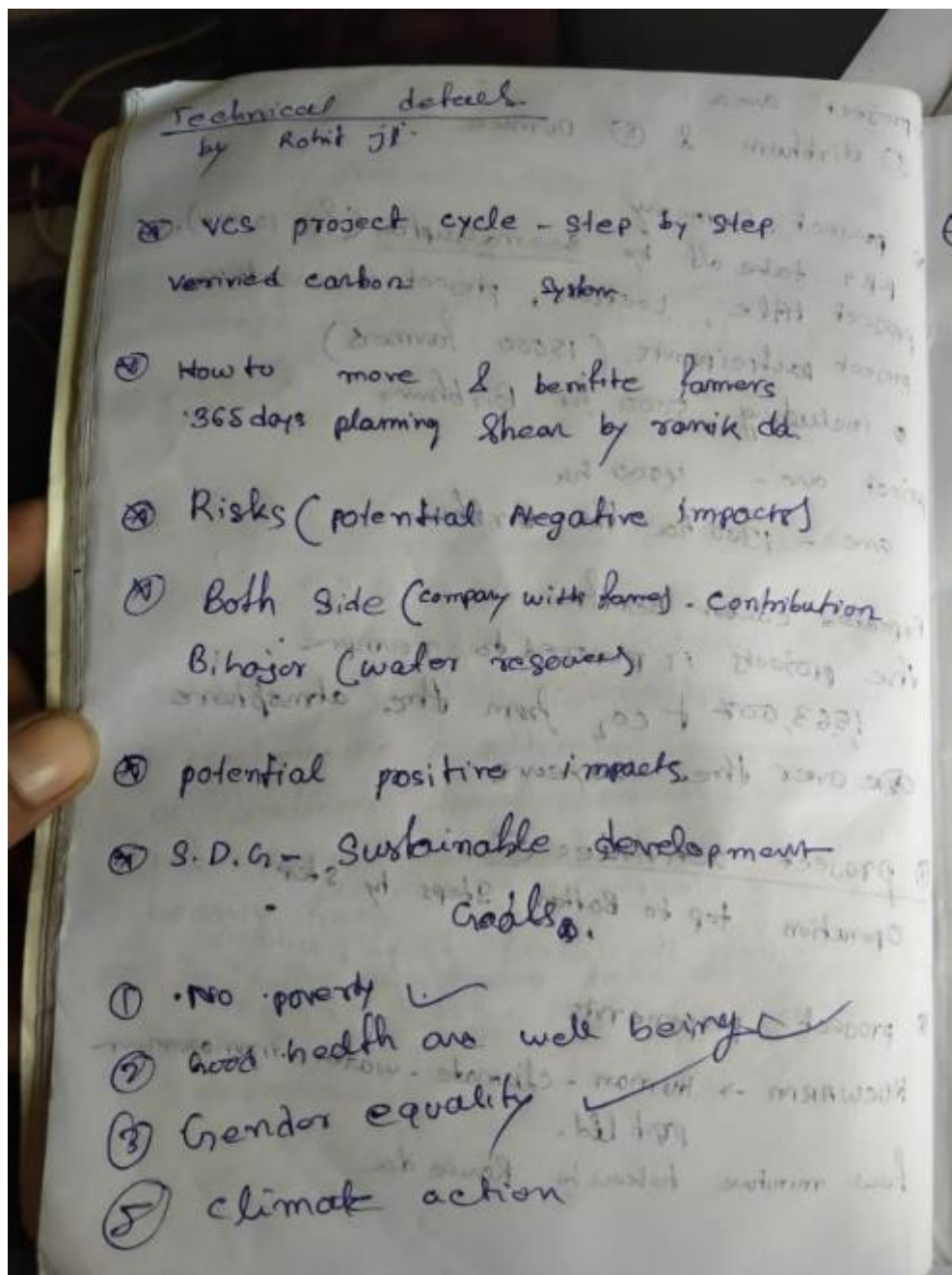
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Annex 19 - MoU between FCF and Fit Climate

MEMORANDUM OF UNDERSTANDING (MoU)

Between FCF India Pvt. Ltd.
and
Fit India Eco Foundation

This Memorandum of Understanding ("MoU") is entered into by and between:

FCF India Pvt. Ltd., having its registered office at **A 601, Kanishka Towers, Sector 34, Faridabad – 121003**, hereinafter referred to as **"FCF India"**,

AND

Fit India Eco Foundation, having its registered address at **H. No. 001, C/O Dinesh Kumar Mallik, Murabahal, Asansol, Kurwa, Dumka (Urban), 814119, Jharkhand**, hereinafter referred to as **"Fit India"**.

FCF India and Fit India shall individually be referred to as a **"Party"** and collectively as the **"Parties."**

1. PURPOSE OF THE MoU

The purpose of this MoU is to establish mutual understanding and collaboration between FCF India Pvt. Ltd. and Fit India Eco Foundation for the successful development and implementation of the "Plan Vivo Plantation Project in Dumka."

The MoU aims to:

- Facilitate collaboration in promoting sustainable plantation activities in alignment with the Plan Vivo Standard;
- Outline the respective roles and responsibilities of the parties, with FCF India serving as the technical expertise and carbon project development partner and Fit India serving as the project implementation and community engagement partner;
- Support knowledge sharing, capacity building, training, monitoring, and reporting for improved environmental and socio-economic outcomes in the project region;
- Establish long-term cooperation towards the creation of community-based sustainable livelihoods and climate resilience in Dumka district.
- This MoU serves as an umbrella understanding under which operational plans, technical methodologies, capacity-building schedules, and reporting frameworks may be developed jointly over the course of the project.
- The MoU serves as an evidence that the incentive from the planned sale of CERs are seriously considered in the decision to proceed with the project activity .

2. NATURE OF THIS MoU

This Memorandum of Understanding (MoU) sets out the general terms of collaboration between **FCF India Pvt. Ltd.** and **Fit India Eco Foundation** for the implementation of the "Plan Vivo Plantation Project in Dumka."

This MoU is **non-financial and non-binding in nature** and does **not create any legal partnership, joint venture, agency, or employment relationship** between the parties. The MoU is intended solely to establish a framework for cooperation, coordination, and complementary roles between both organisations.

Each organisation shall operate in its **separate and independent legal capacity**, retaining full responsibility for its own staff, activities, finances, liabilities, and obligations. Nothing in this MoU shall compel either organisation to commit or disburse financial resources unless mutually agreed in writing through a separate agreement.

3. ROLES AND RESPONSIBILITIES

4.1 Responsibilities of FCF India Pvt. Ltd.

FCF India shall:

- a) Serve as the **Carbon Project Developer** for the Plan Vivo Plantation Project.
- b) Provide all necessary **technical expertise**, including but not limited to:
 - Project design and methodology development
 - Training of project teams and community members
 - Carbon modeling, validation and verification support
 - Monitoring, evaluation and reporting framework
- c) Define documentation protocols and reporting templates in line with **Plan Vivo requirements**.
- d) Undertake periodic review of progress and performance of activities on the ground.

3.2 Responsibilities of Fit India Eco Foundation

Fit India shall:

- a) Act as the **Implementing Agency** for ground-level execution.
- b) Carry out field-based activities, including but not limited to:
 - Identification of land and enrollment of farmers/landholders
 - Plantation activities and long-term maintenance
 - Field data collection and reporting
 - Community engagement, grievance management and mobilization
- c) Facilitate access to field sites for monitoring and verification teams.
- d) Implement project activities in compliance with the technical framework developed by FCF India.

4. INTELLECTUAL PROPERTY, DATA AND CARBON RIGHTS

All intellectual property (IP), project data, technical documents, training materials, manuals, methodologies, carbon quantification models, monitoring tools, and reporting formats developed or

provided by FCF India Pvt. Ltd. before or during the collaboration shall remain the exclusive property of FCF India Pvt. Ltd.

All datasets generated from the Plan Vivo Plantation Project in Dumka, including but not limited to:

- Land and farmer data
- Geo-coordinates and maps
- Biomass and growth measurements
- Socio-economic data
- Plantation survival and monitoring data
- Satellite and field photographs

Field activity reports shall be jointly collected by the parties but will remain the exclusive ownership of FCF India Pvt. Ltd.

FCF India Pvt. Ltd. shall have the exclusive rights to:

- Use the above data for carbon certification and project registration
- Prepare monitoring and verification reports
- Manage carbon credit issuance under Plan Vivo or other relevant standards
- Sell, retire, or transfer carbon credits generated by the project

Fit India Eco Foundation may use project data for internal reporting, advocacy, community outreach, and visibility, only with prior written approval from FCF India Pvt. Ltd., and must always acknowledge FCF India Pvt. Ltd. as the carbon project developer and technical partner.

All project branding, carbon credit documentation, certification reports, carbon registry accounts, and trade documentation will be prepared and managed solely by FCF India Pvt. Ltd.

Neither party shall share, publish, transfer, or commercialize any project-related data, carbon-credit information, farmer data, or training materials with any third party without the prior written consent of FCF India Pvt. Ltd. Any unauthorized dissemination shall constitute a material breach of this MoU.

In cases where Fit India Eco Foundation develops any new materials (photos, brochures, awareness materials, project videos, etc.) under the project, the material shall be co-branded (Fit India Eco Foundation + FCF India Pvt. Ltd.) and a copy shall be shared with FCF India Pvt. Ltd., who retains full commercial usage rights for carbon project and promotional purposes.

5. COMMUNICATIONS, BRANDING & REPRESENTATION

- a) Any public communication, media release, awareness material, presentation, or use of logos must be **approved in writing by both Parties**.
- b) Neither Party shall represent the other Party in public forums, government engagement or institutional partnerships without written authorization.

6. CONFIDENTIALITY

Both Parties agree to maintain strict confidentiality of any shared non-public or sensitive information received under this MoU. Each Party undertakes that it shall take all reasonable precautions to maintain confidentiality of the other Party's Confidential Information and protect it from unauthorised

access, use and disclosure. Each Party undertakes that it shall not use the other Party's Confidential Information for any purpose other than for exercising rights and satisfying obligations in connection with this Agreement. Each Party undertakes that it shall not disclose the other Party's Confidential Information to any person except:

- a. if required for the purpose of satisfying obligations under the Applicable Laws or in connection with this Agreement;
- b. to its affiliates, employees, contractors and professional advisors for the purpose of obtaining advice in connection with this Agreement or the Project;
- c. with the other Party's prior written consent; or
- d. if it is in the public domain without a breach of this Agreement by the first Party.

7. DURATION & TERMINATION

- a) This MoU shall remain in force **until mutually terminated** by either Party.
- b) Either Party may terminate this MoU by providing **60 days' written notice** to the other Party.
- c) Upon termination:

- Intellectual property and data clauses shall continue to remain valid
- Carbon rights shall continue to rest exclusively with FCF India

8. DISPUTE RESOLUTION

a) In the event of any dispute, difference or claim arising out of or in connection with this MoU, including its interpretation, performance, obligations or termination ("Dispute"), the Parties shall first attempt to resolve such Dispute amicably through good-faith discussions and negotiations.

b) If the Dispute is not resolved within 30 (thirty) days of written notice by either Party requesting negotiation, the Dispute shall be escalated to the chief functionaries / authorized signatories of both Parties, who shall make best efforts to settle the Dispute within an additional 30 (thirty) days.

c) If the Dispute remains unresolved after the escalation period, the Parties agree that the Dispute shall be referred to arbitration in accordance with the Arbitration and Conciliation Act, 1996, and any amendments thereto.

d) The arbitration shall be conducted as follows:

- Number of arbitrators: One (mutually appointed by both Parties)
- Seat and venue of arbitration: Ranchi, Jharkhand
- Language of arbitration: English
- Governing law: Laws of India

e) The arbitral award shall be final and binding on both Parties.

f) Notwithstanding any ongoing dispute or arbitration, the Parties shall ensure continuity of essential obligations that are necessary for safeguarding project integrity, project data and stakeholder/community interest.

g) Courts at Ranchi, Jharkhand shall have exclusive jurisdiction for any legal proceedings arising out of this MoU.

9. AMENDMENTS

a) No amendment, modification, supplementary agreement or waiver of any provision of this MoU shall be valid unless made in writing and signed by authorized signatories of both Parties.

b) Any discussion, draft proposal, email communication or verbal understanding shall not constitute an amendment, unless formally executed as described above.

c) Amendments proposed by either Party must be:

- Communicated in writing, with justification; and
- Allowed a minimum review period of 20 (twenty) days by the other Party.

d) Any amendment shall not adversely impact existing data, carbon rights, confidentiality obligations, or project ownership clauses, unless expressly agreed upon in writing by both Parties.

e) All lawful amendments, once executed, shall become an integral part of the MoU and shall supersede only the conflicting sections of the original agreement.

10. FORCE MAJEURE

If a party ("Non-Performing Party") is unable to perform an obligation under this Agreement due to the occurrence of a Force Majeure Event, such non-performance:

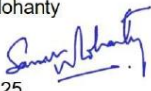
- will be permitted during the time and to the extent that performance is prevented, wholly or in part by the Force Majeure Event; subject to the Non-Performing Party promptly informing the Performing Party regarding such Force Majeure Event in writing within 2 days of such Force Majeure Event and making best efforts to resume performance of its obligations; and
- will not give rise to any liability to the other party ("Performing Party") for any losses or damages arising out of, or in any way connected with such non-performance.
 - a. No party will be relieved by Force Majeure from any obligation to give any notice which may be required to be given, pursuant to this Agreement.
 - b. The Non-Performing Party take reasonable steps to remove or mitigate the relevant effects of the Force Majeure Event.
 - c. If by reason of a Force Majeure Event the non-performance continues for a period of 90 days after the notice of Force Majeure, the Non-Performing Party and the Performing Party must meet and negotiate in good faith to determine what steps may be taken by them to carry out the intentions of this Agreement.
 - d. If the parties are unable to reach a mutually acceptable course of action within 30 days of starting the negotiations the Performing Party may terminate the Agreement by written notice to Non-Performing Party with immediate effect.

FOR FCF INDIA PVT. LTD.

Name : Jasmeet Singh
 Designation : Director
 Signature : 
 Date : 02-12-2025



FOR FIT INDIA ECO FOUNDATION

Name : Sourav Mohanty
 Designation : Director
 Signature : 
 Date : 02-12-2025

WITNESSES

Witness

Name: Ashutosh Jaiswal

Address: Greater Noida West, UP

Signature:



Witness

Name: Umesh Das

Address: Dumka, Ranchi, Jharkhand

Signature:

