



Indus Tree Crafts Foundation

FSC® Forest Management Certification Project
Karnataka

PUBLIC SUMMARY OF THE MANAGEMENT PLAN

A. Introduction:

Indus Tree Crafts Foundation, a dedicated trust with extensive experience in sustainable development, will facilitate the project. Indus Tree Crafts Foundation's role encompasses comprehensive documentation, meticulous implementation management, targeted training, and capacity building. We are committed to ensuring full compliance with the Forest Stewardship Council® (FSC) Principles and Criteria, which set the global benchmark for responsible forest management. The FSC FM Group Certification Project is a pioneering initiative of the Indus Tree Crafts Foundation aimed at promoting sustainable forestry practices among smallholder farmers in Karnataka, India. This project involves 539 farmers managing a total of 67.9 hectares of land across three districts: Chikmagaluru, Shivamogga, and Hassan. The farmers are organized into five Mutual Benefit Trusts (MBTs), a strategic structure designed to enhance internal governance, ensure equitable decision-making, and improve the overall management of forestry resources.

B. Objectives of the Project:

The primary objective of this project is to promote sustainable bamboo cultivation across the participating farmers' lands in Chikmagaluru, Shivamogga, and Hassan districts. The project aims to restore and enhance degraded lands, improve local biodiversity, and contribute to the socio-economic well-being of the farmers and surrounding communities. The project aligns with FSC Principles and Criteria to ensure responsible forest management practices that balance environmental, social, and economic benefits. The list of objectives is as follows:

- **Environmental Conservation:** Restore degraded lands and enhance local biodiversity through sustainable bamboo cultivation and conservation of native ecosystems.
- **Social Development:** Improve the socio-economic conditions of participating small and marginalized landholding farmers by providing sustainable livelihood opportunities and ensuring gender equality.
- **Economic Viability:** Generate income for farmers through sustainable bamboo production and connected to markets contributing to long-term economic growth.
- **Compliance with FSC Standards:** Ensure all activities meet FSC certification standards, promoting responsible forest management.
- **Capacity Building:** Enhance the knowledge and skills of farmers through training programs on sustainable cultivation practices and FSC standards.
- **Monitoring and Continuous Improvement:** Implement robust monitoring systems to track progress, assess impacts, and make necessary adjustments for continuous improvement.

C. Description of the Forest:

The project area encompasses 67.9 hectares of privately owned lands located in the districts of Chikmagaluru, Shivamogga, and Hassan in Karnataka. The lands included in the project were primarily barren or degraded before the introduction of bamboo cultivation. These lands do not contain any natural or converted forest areas; instead, they are characterized by block and border plantations managed by the participating farmers. The bamboo plantations serve both environmental and economic purposes, offering a sustainable alternative to traditional land use while enhancing local biodiversity. The project does not encroach upon existing forest areas but is situated within a landscape where natural forests are present in the surrounding regions, providing crucial ecological connectivity. The project's focus on sustainable bamboo cultivation aligns with the broader environmental goals of land restoration and conservation, ensuring that no invasive species are introduced and that irrigation practices are managed to minimize environmental impact.

The number of Management Units distributed in Chikmagaluru, Hassan, and Shivamogga districts are as follows:

S. No	District	Number of Management Units	Area (in Ha.)
1	Chikmagaluru	156	14.2
2	Hassan	186	15.16
3	Shivamogga	197	38.54
Total		539	67.9

D. How Objectives Will Be Met During Management Activities to Ensure Sustainability:

The project's objectives will be achieved through a carefully designed set of management activities emphasizing sustainability at every stage, including plantation, harvesting, and agroforestry practices. The introduction of bamboo on previously barren or degraded lands is a crucial element, providing a sustainable land-use alternative that promotes environmental restoration and biodiversity enhancement. Bamboo, a fast-growing and renewable resource, will be cultivated using sustainable practices that avoid overexploitation and ensure the long-term viability of the plantations.

During the plantation phase, site preparation will be conducted with minimal soil disturbance to prevent erosion and maintain soil health. Native species and local variants of bamboo will be prioritized to maintain ecological balance and avoid introducing invasive species. Irrigation will be optimized to conserve water resources, focusing on minimal usage and rain-fed systems to reduce the environmental footprint.

Harvesting will be planned and executed to ensure continuous productivity and ecological balance. Selective harvesting techniques will be employed to prevent the depletion of resources and to allow for the natural regeneration of bamboo stands. Harvest schedules will be aligned with the growth cycles of the bamboo, ensuring that the crop is harvested at its peak without harming the overall plantation health.

Agroforestry practices will include regular monitoring and maintenance of the bamboo stands to promote healthy growth and prevent diseases or pest infestations. This will involve applying organic

treatments and pest control methods, aligning with the project's commitment to sustainability and environmental stewardship. Thinning and pruning will be carried out periodically to enhance the bamboo's growth and vigour while ensuring that the ecosystem functions effectively with minimal human intervention.

Overall, the project's management activities will be guided by the principles of sustainable forest management outlined by the FSC standards. This includes meeting the environmental objectives of restoring degraded lands and enhancing biodiversity and ensuring that the social and economic objectives of providing sustainable livelihoods and generating income for the farmers are achieved without compromising the long-term health and productivity of the bamboo plantations. Continuous monitoring and adaptive management will be integral to this approach, allowing for the refinement of practices and the incorporation of new knowledge to achieve the project's sustainability goals.

E. Sustainable Harvest Limits (Consistent with FSC Criteria 5.6)

The project will implement sustainable harvest limits to ensure that bamboo harvesting is conducted in a manner that does not compromise the long-term productivity and health of the plantation areas. In alignment with FSC Criteria 5.6, which emphasizes the maintenance of forest resources and ecosystem services, the harvest limits will be determined based on a detailed understanding of the growth rates, yield potential, and ecological dynamics of the cultivated bamboo species.

The harvest limits will be established through a combination of scientific assessments and traditional knowledge, taking into account factors such as the age and maturity of the bamboo stands, the specific growth patterns of the bamboo species, and the carrying capacity of the land. Regular monitoring of bamboo growth and biomass accumulation will inform adjustments to harvest quotas, ensuring that extraction rates do not exceed the natural regenerative capacity of the bamboo stands.

Harvesting will be carried out selectively, with a focus on removing mature culms while leaving younger shoots to continue growing, thus maintaining the structure and vitality of the bamboo clumps. This approach will prevent overharvesting, reduce the risk of soil degradation, and maintain the ecological functions of the plantation areas. The project will also implement a rotational harvesting system, where different sections/culms of the bamboo plantation are harvested at different times, allowing for continuous regeneration and minimizing the environmental impact.

Additionally, the harvest limits will be reviewed periodically as part of the project's adaptive management strategy. This review process will involve input from forestry experts, local stakeholders, and FSC auditors to ensure that the harvest practices remain sustainable and aligned with FSC standards. By adhering to these sustainable harvest limits, the project will meet the farmers' economic needs and contribute to the long-term sustainability of the bamboo resources and the surrounding environment.

F. Monitoring System of the Project:

The project's monitoring system is designed to ensure continuous monitoring and assessment of all activities related to bamboo cultivation, harvesting, and overall forest management. This system is crucial for verifying that the project's objectives are being met in alignment with FSC standards, particularly those concerning sustainability, environmental protection, and social benefits.

The monitoring system will involve regular data collection and analysis to track the performance of various management activities. Key indicators will be identified to monitor the health and growth of bamboo plantations, soil and water quality, biodiversity levels, and the socio-economic impact on the participating farmers. This data will be collected through a combination of field surveys, remote sensing technology, and community-based monitoring efforts enabled by technology, ensuring comprehensive coverage and accuracy.

The monitoring process will be divided into several key areas:

- **Environmental Monitoring:** This will focus on assessing the ecological impacts of the project, including monitoring biodiversity, soil health, and water usage. Regular environmental assessments will be conducted to ensure that the bamboo cultivation practices are not leading to negative impacts such as soil erosion, water depletion, or the loss of native species. The introduction of bamboo on previously barren lands will also be monitored to assess its role in land restoration and carbon sequestration.
- **Social Monitoring:** The social impact of the project on the local communities and participating farmers will be regularly assessed. This will include monitoring employment conditions, income generation, and the equitable distribution of benefits among the farmers. Feedback from the community will be actively sought through stakeholder consultations, ensuring that any social issues are promptly addressed.
- **Compliance Monitoring:** The project will also establish a system for monitoring compliance with all relevant laws, regulations, and FSC standards. This will involve periodic audits and inspections by both internal and external bodies to verify that all activities are being carried out in accordance with the legal and certification requirements.
- **Reporting and Adaptive Management:** The results of the monitoring activities will be documented and reviewed regularly. This information will be used to produce reports for stakeholders, including farmers, local authorities, and certification bodies. The project will use an adaptive management approach, where the monitoring data is analyzed to identify areas for improvement and management practices are adjusted accordingly to enhance the sustainability and effectiveness of the project.

G. Environmental and Social Impact of the Project:

The environmental and social impacts of the project are carefully assessed and managed to ensure that the activities align with the principles of sustainability and community well-being. The project, which involves the cultivation and management of bamboo across 67.9 hectares of previously barren land, has been designed to have a predominantly positive or neutral impact on the local environment and social fabric.

Environmental Impact:

The environmental impact of the project is primarily positive, given that bamboo is a highly sustainable crop known for its rapid growth and ability to restore degraded lands. The introduction of bamboo on previously barren or underutilized lands in Chikmagalur, Shivamogga, and Hassan districts contributes to soil stabilization, carbon sequestration, and increased biodiversity. Bamboo's extensive root system helps prevent soil erosion, improve soil health, and enhance water retention, which is particularly beneficial in areas prone to degradation.

No invasive species have been introduced through this project, ensuring that the native ecosystems remain undisturbed. Additionally, the irrigation requirements for bamboo are minimal, reducing the potential for water resource depletion. The project has been planned and implemented so that it does not encroach upon or negatively impact any natural or converted forest lands, as all cultivation occurs on private plantations.

Social Impact:

The social impact of the project is also significant, particularly in terms of economic benefits and community development. By engaging 539 farmers organized into Mutual Benefit Trusts (MBTs), the project provides a stable source of income for small and marginalized farmers from rural and marginalized communities through bamboo cultivation, which is both lucrative and sustainable. The formation of MBTs enhances internal governance, collective decision-making, and fair distribution of profits, ensuring that all participating farmers benefit equitably from the project.

In addition to economic gains, the project strongly focuses on capacity building and empowerment of local communities. Training programs are provided to farmers to enhance their skills in sustainable agriculture, forest management, and compliance with FSC standards. This improves the farmers' livelihoods and fosters a sense of ownership and responsibility towards sustainable land use and environmental stewardship.

H. Conservation of Rare Species and High Conservation Values:

The project strongly emphasizes the conservation of rare species and the protection of areas with high conservation values (HCVs). Although the project area itself primarily consists of private plantations and previously barren land, its proximity to ecologically significant regions within the Chikmagaluru, Shivamogga, and Hassan districts necessitates careful planning to ensure that no adverse impacts are inflicted on local biodiversity.

Conservation of Rare Species:

The project has been meticulously designed to avoid any negative impact on rare or endangered species in the surrounding ecosystems. During the initial environmental assessments, the presence of any rare species was carefully documented, and measures were put in place to ensure their habitats remained undisturbed. The bamboo cultivation areas, being previously barren or degraded lands, do not overlap with critical habitats of rare species, thereby minimizing the risk of habitat loss or fragmentation.

High Conservation Values (HCVs):

High conservation value areas, which may include regions with significant biodiversity, critical habitats, or areas important for local communities, are identified and protected within the broader landscape surrounding the project. A list of HCVs located within the FMUs is identified and recorded; the project acknowledges the importance of these areas and incorporates strategies to protect them indirectly. Buffer zones will be maintained around adjacent HCVs to prevent potential disturbances from project activities such as planting or harvesting.

Riparian Management Zone (RMZ):

No RMZ was found within the or nearby project boundaries.

I. Maps of the forest showing protected areas, planned management, and land ownership:

The Indus Tree Crafts Foundation collected documents like identity proof and the record of ownership (Land Patta, ID card, consent form) to prove that the land is owned by individual farmers and that it is not common land or forest land. Indus Tree Crafts Foundation is committed to keeping the land proof in our records for five years or as per the certification cycle. Indus Tree Crafts Foundation also draws digital maps of all the group members' land with the help of digital resources, along with the baseline details about the ecosystem and biodiversity of the area. As all the lands belong to individual farmers, no such protected area is found within the FMUs. All the maps of the plantation area are already plotted and given in the plan.

J. Description and Justification of Harvesting Techniques and Equipment:

The harvesting techniques and equipment selected for this project have been carefully chosen to ensure sustainability, efficiency, and minimal environmental impact in alignment with FSC standards and the project's overarching objectives.

Harvesting Techniques:

The primary harvesting technique employed in this project is selective cutting. This method involves the careful selection and cutting of mature bamboo culms, leaving the younger ones to continue growing. This technique is particularly suitable for bamboo cultivation, as it allows the plants to regenerate naturally, ensuring a continuous cycle of growth and harvest. Selective cutting not only sustains the productivity of the bamboo stands but also minimizes soil disturbance and prevents the degradation of the plantation area.

To further enhance sustainability, the project incorporates a staggered harvesting schedule. This approach spreads harvesting activities across different plots over time, reducing pressure on any single area and allowing for natural recovery. The rotation system is based on the bamboo species' growth cycle, ensuring that each plot is harvested only when the culms have reached optimal maturity.

Equipment:

The equipment will be selected for harvesting bamboo includes hand tools like machetes and pruning saws, as well as light mechanized tools where necessary. Hand tools will be used to minimize soil compaction, reduce fuel consumption, and prevent damage to surrounding vegetation. In areas where the use of mechanized tools is necessary due to the density or maturity of the bamboo, lightweight and low-impact machinery will be utilized. This ensures that the impact on the soil structure is minimized, preventing erosion and maintaining soil health.

Additionally, transport within the plantation areas is conducted using small, low-impact vehicles designed to navigate the terrain without causing significant soil compaction or damage to the bamboo stands. This careful equipment selection reflects the project's commitment to balancing operational efficiency with environmental responsibility.

K. Duration of the plan:

The management plan is for a duration of 5 years. We will review the management plan annually and take up necessary amendments/ changes based on implementing the FSC FM project year-to-year.

Name	Ms. Remya Devan
Designation	Project Manager
Contact Details	remya@industree.org.in +91 9746921288