INDEPENDENT EVALUATION DIVISION
OFFICE OF EVALUATION AND INTERNAL OVERSIGHT

INDEPENDENT TERMINAL EVALUATION

Sri Lanka

INDEPENDENT TERMINAL EVALUATION OF THE PROJECT "BAMBOO PROCESSING FOR SRI LANKA"

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Abbreviations and acronyms

Abbreviation	Definition
COVID-19	Coronavirus Disease 2019
GEF	Global Environment Facility
GHG	Greenhouse Gas
MASL	Mahaweli Authority of Sri Lanka
M&E	Monitoring and Evaluation
MTR	Mid-Term Review
ODG/EIO/IED	The UNIDO Independent Evaluation Division
PDO-PMO	Policy Development Office of the Prime Minister's Office
PEB	Project Executive Body
PIR	Project Implementation Report
PSC	Project Steering Committee
TE	Terminal Evaluation
ToC	Theory of Change
TOR	Terms of Reference
UNDP	United Nations Development Program
UNIDO	United Nations Industrial Development Organization

Glossary of evaluation-related terms

Term	Definition
Baseline	The situation, before an intervention, against which progress can be assessed.
Effect	Intended or unintended change due directly or indirectly to an intervention.
Effectiveness	The extent to which the development intervention's objectives were achieved or are expected to be achieved.
Efficiency	A measure of how resources/inputs (funds, expertise, time, etc.) are converted to results.
Impact	Positive and negative, intended and non-intended, directly and indirectly, long term effects produced by a development intervention.
Indicator	Quantitative or qualitative factors that provide a means to measure the changes caused by an intervention.
Lessons learned	Generalizations based on evaluation experiences that abstract from the specific circumstances to broader situations.
Logframe (logical framework approach)	A management tool used to facilitate the planning, implementation, and evaluation of an intervention. It involves identifying strategic elements (activities, outputs, outcome, impact) and their causal relationships, indicators, and assumptions that may affect success or failure. Based on RBM (results-based management) principles.
Outcome	The likely or achieved (short-term and medium-term) effects of an intervention's outputs.
Outputs	The products, capital goods, and services which result from an intervention; may also include changes resulting from the intervention which are relevant to the achievement of outcomes.
Relevance	The extent to which the objectives of intervention are consistent with beneficiaries' requirements, country needs, global priorities, and partners' and donor's policies.
Risks	Factors, generally outside the scope of an intervention, which may affect the achievement of an intervention's objectives.
Sustainability	The continuation of benefits from an intervention, after the development assistance, has been completed.
Target groups	The specific individuals or organizations for whose benefit an intervention is undertaken.
Theory of Change	A set of hypotheses on how and why an initiative works.

Executive Summary

Evaluation purpose and methodology

This evaluation independently assesses the performance of the project 'Bamboo processing for Sri Lanka' funded by the Global Environment Facility (GEF) and implemented by the United Nations Industrial Development Organization (UNIDO). The evaluation assesses relevance, efficiency, effectiveness, sustainability, gender mainstreaming and coherence of the Project as well as the effectiveness of monitoring and evaluation and results-based management mechanisms and the performance of partners. The assessment is designed to improve performance and results of ongoing and future programmes and projects at UNIDO and to serve accountability purposes for all stakeholders. The evaluation covers the whole duration of the project from its starting date in August 2012 to the completion date in March 31, 2021.

To complete this assessment the evaluation team, consisting of an international evaluator and a national evaluator, undertook the flowing activities: i) desk and literature review of project design and progress reports, other project material and relevant correspondence, ii) consulted a total of 41 key stakeholders including project, UNIDO and GEF national focal point, beneficiaries and government stakeholders, iii) field visits to project sites, iv) analysis of the project logframe, validation and triangulation of evidence, and assessment of causal pathways for impact.

Key findings

Effectiveness. Overall project progress was weak and most of the targets set have not been achieved. Progress has been achieved towards several outputs but very few project results have been delivered to the levels expected at design. Development and adoption of a new supportive policy framework was planned. While pre-existing policies were reviewed, no substantial policy changes were achieved. Of the nine species of bamboo expected to be introduced on a commercial basis, seeds for two species have been imported but were not successfully germinated or distributed. Demand for bamboo seedlings was low, even though imported seedings were offered free of charge at some point.

A total of 10,000 hectares of bamboo plantations were targeted but at completion a maximum of 89 hectares of total plantation was reported. Sub-industries such as bamboo culm and bamboo shoots have not been established. Production of bamboo flooring material was targeted at 120,000m^2 but there has been no reported increase in pre-project production capacities. This is partly due to a private sector project partner (Touchwood PLC) that specialised on these products becoming bankrupt early in the project duration. The Project aimed to support five major producers to increase capacity for production of bamboo products through training and equipment. While some training activities were undertaken, these were at a small scale. Similarly, equipment was provided to small and medium sized enterprises but by project closure no major producers emerged. Consequently, low levels of achievement of outcomes are evident.

Impact. Limited project progress at the output and outcome level has severely inhibited the Project's ability to contribute to impact. The Project targeted an annual reduction of 182,300 tonnes of CO_2 equivalent each year, but there is no evidence of any reduction attributable to project interventions. The emphasis at design on targeting environmental outcomes was not sufficiently embedded into implementation and thus there was a diluted focus on bamboo as a fuelwood to contribute to greenhouse gas (GHG) emissions. Only one

of six high level verifiable indicators for project impact was partially achieved; with the other five not registering any achievement.

Design. Project design was over-ambitious and did not reflect the required chain of events for achievement of project objectives. The project design that targeted policy, supply and market-related outcomes did not identify the potential for bottlenecks to progress from non-achievement of one component. The timeframe of the project was not sufficient for the ambitious level of action required and the prolonged and intensive engagement required for policy change. The activities and targets included at design were also over-ambitious and did not acknowledge the practical implementation constraints. Some gaps were evident in the Project logframe with a disconnect between output indicators and intended outcomes.

Relevance. The Project was initially relevant but limited progress undermined continuing relevance. The relevance of the Project waned over time with differing levels of interest from national stakeholders, also affected by a change in government. At design the Project was rated as relevant by the scientific and technical advisory panel (STAP) of GEF, though some concerns were noted. The Project had the potential to respond to the priorities of both GEF and UNIDO but the potential was not realized. The Project was aligned with UNIDO's mandate of facilitating sustainable industrial development through the focus on value chains and with GEF's priorities as a potential contributor to decreased GHG emissions. The ambitious and transformative nature of the project approach was also aligned with GEF's POZNAN Strategic Programme calling for disruptive solutions to technology transfer and climate change. However, the constrained progress undermined this initial relevance. Engagement of national stakeholders was low and efforts made to work with national partners were not adequately supported or sustained during the implementation period.

Efficiency. The Project disbursed all available funds but produced few demonstrable results leading to a rating of inefficient. Project expenditure totalled USD 2,373,081 of a total budget of USD 2,370,300 but with limited Project results or impact. Project expenditure was not aligned with specific budget line allocations at design which contributed to poor performance and missed opportunities. In particular, the Project spent USD 1,502,373 on international staff and consultants, significantly more than the budgeted USD 384,000 at design. Expenditure (USD 255,627) on national staff and consultants was less than allocated (USD 424,800). Over-expenditure of international staff and consultants and under-expenditure on national staff and consultant impeded opportunities for capacity transfer and productive in-country engagement. Contributions promised as in cash (e.g., from private sector partners in the wood processing industries) or as in-kind (e.g. from governmental agencies) did not materialize as expected.

Sustainability of benefits. Given the small-scale and delayed and isolated nature of the limited project results sustainability is unlikely. Results have only been generated in the last two to three years of the Project and as such have not matured or developed sustainability mechanisms. The lack of sustainability mechanisms in the Project were raised as a concern during the STAP review but were not adequately addressed in implementation. An over-reliance on external consultants undermined the relationship building and capacity strengthening potential of the project.

Coherence. Implementation and coordination mechanisms outlined at design were not established, resulting in a fragmented and disjointed project approach. Insufficient internal coherence hindered opportunities for adaption in response to non-achievement of one component impacting on the results of other components. There was also insufficient focus on the coherence between technical and market aspects of the Project which is reflected in staffing decisions to employ technical experts as opposed to in-country personnel. Coordination has improved in the latter years, but overall coherence was poor.

Gender mainstreaming. The Project was effectively gender blind as no specific efforts were made for gender equality in any activities. The Project was designed prior to the 2015 UNIDO gender policy but did not demonstrate any consideration of gender during design or implementation. The implementation mechanisms employed and the lack of interest in the bamboo sector favoured pre-existing market stakeholders, who were predominantly male.

Performance of partners. All partners did not adequately respond to poor progress but as the implementing agency UNIDO was ultimately responsible. UNIDO's performance is rated as unsatisfactorily due to missed opportunities to improve project performance and insufficient organizational support or oversight. National counterparts did not provide pledged co-financing and did not participate as fully as possible in Project coordination and implementation mechanisms. The Project expected to receive USD18,797,000 from various government entities during implementation but this support was not received. GEF delivered funds in a timely manner but did not actively engage or maintain oversight of the Project despite encouraging the ambitious design as part of the POZNAN programme.

Monitoring and evaluation. Outputs produced from monitoring and evaluation activities did not adequately reflect the limited progress of the Project or the challenges and delays being experienced. In addition, some monitoring and evaluation outputs were delayed hindering opportunities for results-based management.

Results-based management. No adaptive action was taken to address poor performance, high rates of expenditure or deviation from the approved approach. While challenges and delays were under-reported there was evidence of poor project progress with high levels of budget expenditure reported. However, no corrective action was taken by any stakeholders to address the impediments to success or restructure the Project to address bottlenecks, despite the midterm review and the 2015 Sri Lanka Country Program Evaluation noting the lack of progress.

In 2018, the project changed its strategy, abandoning the intention to create a loan for private sector in favour of reverting to use of the funds to support other project activities. This change came too late to be able to produce substantial outputs and outcomes. There is also no evidence of action taken to correct the differences between approved Project design and actual implementation such as the delayed establishment of the national Project Management Office. Given the ambitious nature of the Project's as a POZNAN project more stringent follow-up actions should have been pursued.

Project ratings

#	Evaluation criteria	Rating	
A	**Progress to Impact**	**2**	**Unsatisfactory**
B	**Project design**	**3**	**Moderately Unsatisfactory**
1	Overall design	3	Moderately Unsatisfactory
2	Logframe	3	Moderately Unsatisfactory
C	**Project performance**	**2**	**Unsatisfactory**
1	Relevance	4	Moderately Satisfactory
2	Effectiveness	2	Unsatisfactory
3	Efficiency	2	Unsatisfactory
4	Sustainability of benefits	2	Unlikely

#	Evaluation criteria	Rating	
*	Coherence	2	Unsatisfactory
D	**Cross-cutting performance criteria**	**2**	
1	Gender mainstreaming	2	Unsatisfactory
2	Monitoring and Evaluation (M&E): *-M&E design* *-M&E implementation*	3 *3* *3*	Moderately Unsatisfactory *Moderately Unsatisfactory* *Moderately Unsatisfactory*
3	Results-based Management (RBM)	2	Unsatisfactory
E	**Performance of partners**	**3**	**Moderately Unsatisfactory**
1	UNIDO	2	Unsatisfactory
2	National counterparts	3	Moderately Unsatisfactory
3	Donor	3	Moderately Unsatisfactory
F	**Overall assessment**	**2**	**Unsatisfactory**

Tabular overview of key findings – conclusions – recommendations

Conclusion	Recommendation/s
1. Project substantially underperformed, particularly in the first 5 years of implementation with some recent improvements particularly in relation to knowledge products.	1) Build upon and safeguard the results that have been achieved 1a) The manuals and training materials generated through the project should be updated based on feedback from participants to improve use and wider dissemination. *Responsibility: IDB* 1b) Follow-up by UNIDO, with selected grantees is required for recently installed equipment to ensure that it is functional and operational. *Responsibility: UNIDO*
2. Investment in sourcing international expertise rather than building national capacity has been counterproductive and has resulted in inefficient investment.	2) Encourage combination spending on international and national staff and experts. 2a) A system for tracking expenditure against budget line allocations in line with project document or in agreement with the donor, as relevant, should be established. *Responsibility: UNIDO* 2b) The benefits of engaging a balance of national and international staff and experts should be promoted within UNIDO. *Responsibility: UNIDO*
3. Oversight and results-based management	3) Portfolio review and Monitoring and Evaluation system for identifying and addressing project at risk should be established.

Conclusion	Recommendation/s
activities were insufficient and contributed to continuous, prolonged and poor project performance.	3a) A project-at-risk system should be set up to identify projects at risk and address corrective actions earlier in implementation than the terminal evaluation stage. *Responsibility: UNIDO* 3b) A portfolio-review system at division and department levels should be set up to identify and address major project implementation issues during implementation. *Responsibility: UNIDO* 3c) The systems should ensure compliance with GEF´s rules and regulations. *Responsibility: UNIDO*

1. Introduction

1.1. Evaluation objectives and scope

This document reports the findings of an independent terminal evaluation of the Bamboo Processing for Sri Lanka project funded by the Global Environment Facility (GEF) and implemented by the United Nations Industrial Development Organisation (UNIDO). The purpose of the evaluation is to independently assess the project's performance and results and to help UNIDO and GEF improve performance and results of ongoing and future programmes and projects and to serve accountability purposes for all stakeholders.

The evaluation covers the whole duration of the project from its starting date in August 2012 to the completion date in March 31, 2021.

1.2. Overview of the project context

Sri Lanka is an island in the Indian Ocean, separated from south-east India (Tamil Nadu state) by the Palk Strait. The population of the Democratic Republic is about 21 million. This project has been implemented at a national level, with a range of activities occurring in different locations across the country.

Project Rationale

Sri Lanka's closed canopy forest cover has been steadily declining with the project design document estimating a cover of 17% of the total country in 2020 (down from 27% in 1992 and 44% in 1956). The decline in forest cover is primarily due to rapid population growth. Depletion of forest cover is due to high demand for timber and demand for land for settlements and agriculture with the increasing population.[1]

This project focused on bamboo due to several key reasons. Bamboo varieties are fast growing, contribute improvements to soil quality and decrease in soil erosion as well as are adaptable to various environmental conditions.[2] Bamboo can act as an alternative to trees that are becoming increasingly scarce given the decreasing canopy cover.

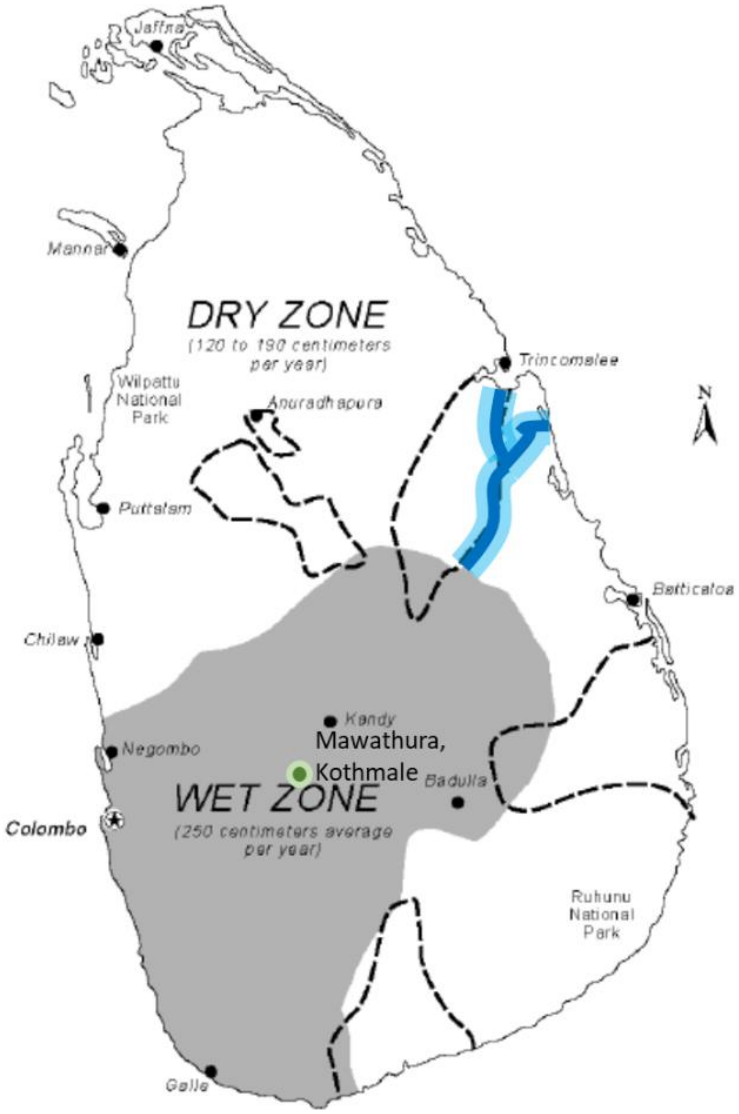
In Sri Lanka, the industrial uses of bamboo are varied, creating an additional argument for bamboo as an alternative to other trees. Bamboo is used as an industrial feedstock for engineered wood products because of favourable mechanical and physical properties, including a high growth rate.[3] About 40% of the global supply of bamboo is used for fuel wood and charcoal with additional amounts used for construction, flooring, fodder and food. There is also a bamboo crafts and utensils industry which operates based on traditional knowledge in areas with raw materials availability. From an environmental perspective bamboo can be used for industrial wood applications or as an energy crop (for wood pellets or in gasifier, or fuelwood).

Conditions in Sri Lanka are favourable for bamboo with bamboo growing naturally in all three major climatic zones (See Figure 1). However, in 2012, at the time of project design, there was only 2,500 ha of bamboo plantations nationally. Bamboo was similarly under-utilised in the local context with uses mainly related to fuel and low-quality construction, despite an established wood plantation and processing industry.[4] A main barrier to the marketing of

[1] GEF, 2012, *Request for CEO Endorsement/Approval. Note: current estimates (unconfirmed) of the GoSL is approximately 29%.*
[2] UNIDO, 2019, *Progress Report 01 July 2018 – 30 June 2019*
[3] Ibid
[4] ibid

bamboo and bamboo products was its classification as timber thereby imposing restriction on harvesting and transport.

Figure 1 Map of agro-climatic zones in Sri Lanka.



Source: Project Design Document

1.3. Overview of the Project

Project Objective. The overall project objective was "to develop a bamboo supply chain and product industry in Sri Lanka, leading to reduced global environmental impact from GHG emissions and a sustainable industry base." The goal was to develop an economically viable agro-forestry-industrial chain based on bamboo to contribute to a reduction of GHG emissions and deforestation and a sustainable and diversified industry base.[5] Project design documents noted the potential for increases in the quality and value of bamboo production from a shift towards processed and engineered wood products. It was envisioned that such a shift would subsequently add value and profitability to the sector towards long-term viability.[6]

[5] Ibid.
[6] GEF, 2012, *Request for CEO Endorsement/Approval.*

Key Project Dates. The project received UNIDO approval on September 24, 2011 and later GEF CEO Endorsement and Approval on the April 18, 2012. The Project began on August 1, 2012 and was originally expected to be completed on May 31, 2019. The Mid-Term Review (MTR) report was submitted on November 30, 2016 and finalised in August 2017. The expected completion date was extended to May 2020. Delays to the project have been recorded as a result of changes in Government and successive elections and the Easter bombing attack in April 2019. The project was then further extended to December 31, 2020 to allow the completion of the project activities. Due to the COVID-19 pandemic that resulted in a nation-wide lockdown, the project completion date was extended until March 31, 2021 for last remaining activities.

The project design involved a range of studies (Non-grant instruments – their use in UNIDO's Energy and Climate Change Program[7], Study on Sri Lanka Forest Wood & Paper (incl. Bamboo) Product Sector and Industrial Opportunities[8]. The studies concluded that there are three major requirements to successfully develop a bamboo sector, namely:[9]

- an enabling policy framework
- feasibility of bamboo plantations
- an appropriate and extensive supply for market demand that would need to be created for raw material in a range of bamboo-based products

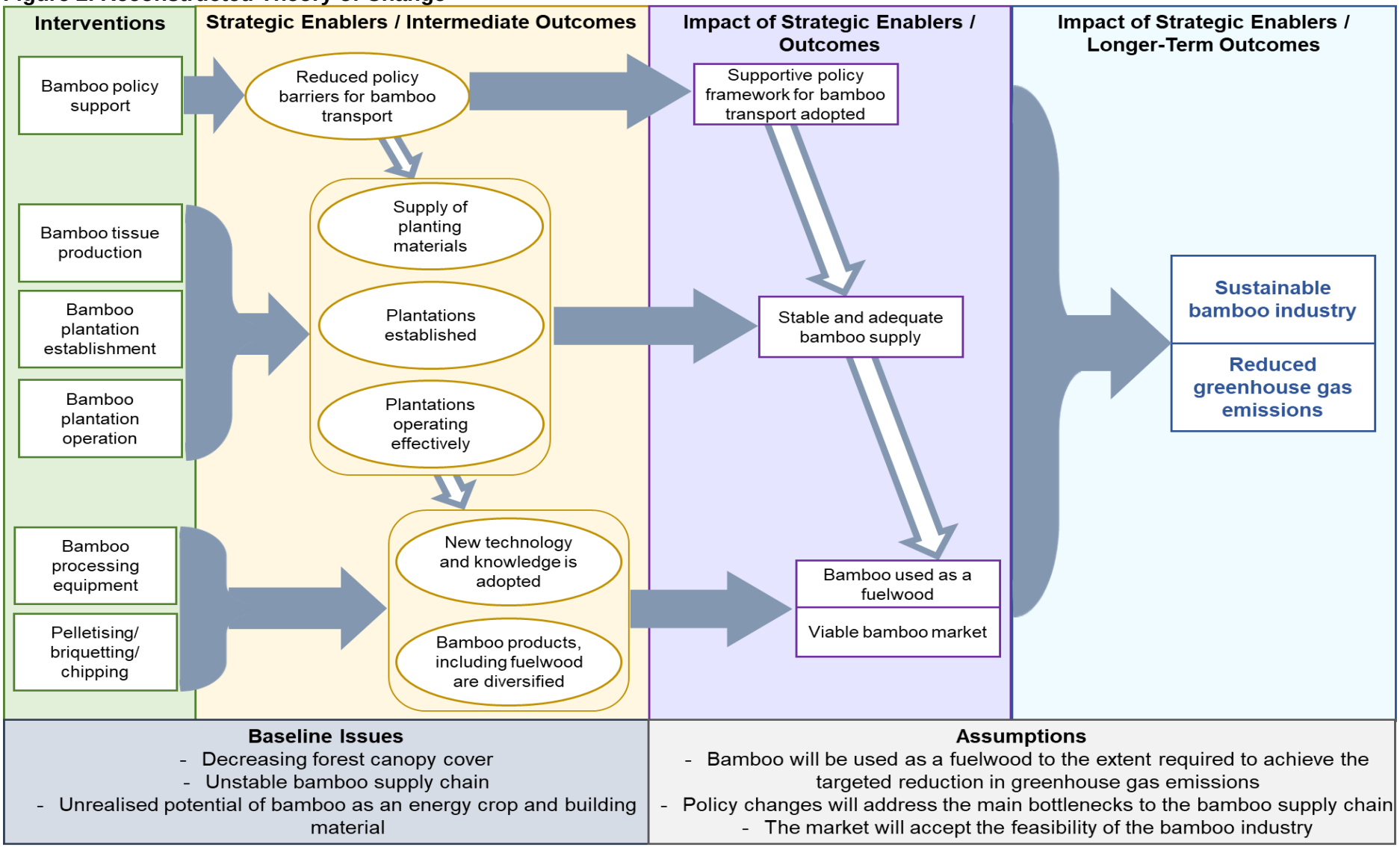
Design features. The project design relied on phased implementation of strengthening the enabling environment, establishing operational bamboo plantations and then supporting bamboo industry development, leading to a sustainable bamboo industry and the expected environmental benefits through GHG reduction. As part of the evaluation process, a Project Theory of Change was developed to assist in analysis. (See Figure 2 Theory of Change). This demonstrates the main issues that the project was designed to address, a three phased approach working initially on barriers in the policy context, then establishing plantations to ensure a raw material supply for the value chain, and then strengthening commercial production and product diversity, including use of bamboo as a fuel wood to contribute towards reduced greenhouse gas emissions.

Design Assumptions. This process relied on three major assumptions. Firstly, that bamboo could and would be used as fuel wood for energy production in Sri Lanka and hence result in a reduction of greenhouse gas emissions (GHG). In total, the incremental direct emissions reductions from the project were expected to be 182,300 tonnes CO_2 eq per year, with renewable energy generated equivalent to 311,800 MWh per year. This would raise awareness and acceptability of the feasibility of bamboo as a fuel wood.

Secondly, there was an assumption that the current policy barriers to transportation of bamboo would be adequately addressed. Without this being addressed, the viability of establishing plantations would be significantly at risk because an adequate supply chain for bamboo product diversification and use would not be possible. The third aspects relate to market and engagement of local industry producers and processors to ensure a sustainable bamboo industry. At the time of design, bamboo production, processing and marketing was minimal and largely at a localized, micro level. For the project to achieve major market activation through a full value chain approach would require market acceptance of the feasibility of the bamboo industry.

[7] Kleitsas, S, 2012, *Non-grant instruments – their use in UNIDO's Energy and Climate Change Program*
[8] Gunasekara, P, no date, *Study on Sri Lanka Forest Wood & Paper (incl. Bamboo) Product Sector and Industrial Opportunities*
[9] GEF, 2012, *Request for CEO Endorsement/Approval.*

Figure 2. Reconstructed Theory of Change



Source: Evaluation team (2021)

Design review and risks identified. **The project design was supported through the GEF *Poznan Strategic Program on Technology Transfer*[10] with a focus on a pilot long term transformational change that would generate substantial environmental benefits through improving sustainable energy access and reversing land degradation. As part of the design process for the project, there was detailed review by GEF Scientific and Technical Advisory Panel (STAP), as well as UNIDO and Government considerations. In pursuing the POZNAN objectives, the STAP feedback and then UNIDO's response were incorporated into the Project Design Document main design concerns related to the assumption that bamboo alone could generate the expected benefits in terms of expected global environmental benefits. In this respect the STAP recommended the consideration of other short rotation woody plantations. Other concerns included establishment of plantations in the face of competing land uses, and the challenges of engaging entrepreneurs in a currently fledgling industry. The response of national stakeholders to the design was mixed with an overall interest in developing a bamboo industry but with major concerns regarding viability and markets. See Annexes**

Annex 1 for more detailed responses to the technical project concept.

Project Components. The project design comprised six components, the first that addressed the policy framework, the second, third and fourth focussed on support to effective establishment of bamboo plantations. The fifth and sixth components incorporated actions to help industry development. The components worked towards six key outcomes:[12]

Component 1: Policy Framework. *(Budget: USD 0.34 million)* Component 1 of the project focussed on addressing the policy barriers to the full functioning of the biomass market – especially for bamboo.

Outcome 1: Assessment of existing framework and shortcomings and a supportive framework adopted
Output 1.1: National strategy developed for the development of the bamboo industry
Output 1.2: National policy adjustments supported
Output 1.3: Land use policy adjustments
Output 1.4: Supportive policies and regulations on a local and regional level
Output 1.5: Information on the project activities disseminated to the public and decision-makers

Component 2: Bamboo Tissue Production. *(Budget: USD 1.9 million)* Component 2 was considered important for the introduction of bamboo tissue production for species that are a part of Component 3 (Plantation establishment) by developing the production methods and providing planting material on a large scale of the five species that were identified for large-scale propagation in Sri Lanka. The activities within this component focussed on activities to integrate the five species into the current national propagation program.

Outcome 2: Bamboo reproduction technology transfer - National capacity to provide bamboo planting material on a large scale
Output 2.1: Acquisition and installation of laboratory equipment for appropriate species
Output 2.2: Functional laboratory and availability of high-quality planting material for appropriate species

[10] https://www.thegef.org/sites/default/files/publications/GEF_PoznanTT_lowres_final_2.pdf
[11] GEF, 2012, *Request for CEO Endorsement/Approval*
[12] GEF Project Document 2011

Component 3: Plantation establishment. *(Budget: USD 5.2 million)* This component was to involve moving the plant material out of the lab and establishing bamboo plantations, initially targeted to extend to 10,000 hectares. For species that have already been established in the marginal lands, Technical Assistance was to be provided to support identifying methods to improve distribution and economic/financial sustainability of the plantations.

Outcome 3: Plantations established to provide feedstock for bamboo industry
Output 3.1: Bamboo plantations established in unused lands in the dry zone and wet zone.

Component 4: Plantation operation. *(Budget: USD 3.3. million)* Component 4 of the project was to build directly on Component 3 (the establishment of plantations) to provide Technical Assistance to ensure that the plantations established are successful both in terms of production and finances.

Outcome 4: National know-how for maintaining bamboo plantations
Output 4.1: Economically sustainable, functional bamboo plantations running in currently unused dry zone lands (5,000 ha) and wet zone (5,000 ha)

Component 5. Bamboo processing equipment. *(Budget: USD 3.3. million)*

Outcome 5: Bamboo processing technology transfer to Sri Lanka
Output 5.1: Bamboo processing machinery for industrial use bought and installed
Output 5.2: Establishment of bamboo flooring production capacity
Output 5.3: Establishment of bamboo shoots industry

Component 6. Pelletizing/briquetting/chipping. *(Budget: USD 0.76 million)* Component 6 was to focus on pelletizing, briquette production and/or chips of bamboo resources – both for the domestic and international market.
Outcome 6: Biomass pelletizing/briquetting/chipping technology transfer and development
Output 6.1: Pelletizing/briquetting/chipping machinery bought and installed for bamboo
Output 6.2: Production of biomass pellets, briquettes or chips

The total budget for the Project, excluding support costs and PPG, was USD 23,652,000. Of this amount, USD 2,355,00 was financed through a GEF grant, USD 100,000 co-financing from UNIDO and USD 21,297,000 co-financing in cash and in kind from other sources. The project budget also included USD 550,000 for project management costs.

1.4. Evaluation methodology

The Terminal Evaluation was conducted in accordance with the UNIDO Evaluation Policy and the UNIDO Guidelines for the Technical Cooperation Project and Project Cycle. In addition, the GEF Guidelines for GEF Agencies in Conducting Terminal Evaluations, the GEF Monitoring and Evaluation Policy and the GEF Minimum Fiduciary Standards for GEF Implementing and Executing Agencies were applied.

The evaluation was carried out as an independent in-depth evaluation using a participatory approach whereby all key parties associated with the project were informed and consulted throughout the evaluation. The evaluation team leader liaised with the UNIDO Independent Evaluation Division (ODG/EIO/IED) on the conduct of the evaluation and methodological issues.

The evaluation used a theory of change approach and mixed methods to collect data and information from a range of sources and informants. Attention was paid to triangulating the data and information collected before forming its assessment. This is essential to ensure an evidence-based and credible evaluation, with robust analytical underpinning.

The evaluation purpose and objectives, theory of change, and UNIDO's evaluative requirements all provide the basis for the evaluation framework, which in turn underpins and guides the whole approach. The framework was structured against the standard OECD-DAC criteria agreed for the evaluation (relevance, efficiency, effectiveness, sustainability and coherence).

The overall assessment follows the standard Project Evaluation Criteria for UNIDO as shown in Annex 2 (**Error! Reference source not found.**). Ratings based on the six-point scale used by UNIDO's Independent Evaluation Division where 6 is a rating of highly satisfactory and 1 is a rating of highly unsatisfactory (**Error! Reference source not found.**).

The evaluation assesses the likelihood of sustainability of the project results after the project completion. The assessment identifies key risks (e.g., in terms of financial, socio-political, institutional and environmental risks) and explains how these risks may affect the continuation of results after the project ends. **Error! Reference source not found.** below provides the key evaluation criteria to be assessed by the evaluation.

The evaluation framework identifies key evaluation questions, supported by guiding sub-questions (Annex 3). The framework was also informed by a set of indicative questions presented within the evaluation TOR: all those indicative questions have been incorporated accordingly.

The evaluation also assessed the following topics required for GEF-funded projects, for which ratings are not required:[13]

- **Need for follow-up:** e.g. in instances financial mismanagement, unintended negative impacts or risks;
- **Materialization of co-financing:** e.g. the extent to which the expected co-financing materialized, whether co-financing was administered by the project management or by some other organization; whether and how shortfall or excess in co-financing affected project results, and
- **Environmental and Social Safeguards[14]:** appropriate environmental and social safeguards were addressed in the project's design and implementation, e.g. preventive or mitigation measures for any foreseeable adverse effects and/or harm to environment or to any stakeholder.

To address the framework questions the evaluation draws on a series of tools. These include:

- **Desk and literature review** of documents related to the project, including but not limited to:
  1. The original project document, monitoring reports (such as progress and financial reports, mid-term review report, output reports, back-to-office mission report(s), end-of-contract report(s) and relevant correspondence.
  2. Notes from the meetings of committees involved in the project.

[13] UNIDO Evaluation Manual 2018

[14] Refer to Updated Policy on Environmental and Social Safeguards: available at: http://www.thegef.org/sites/default/files/council-meeting-documents/EN_GEF.C.55.07.Rev_.01_ES_Safeguards.pdf

3. Notes from the workshops and forums involved in the project.
4. Relevant government policies and regulations.
5. Bamboo industry guidelines.
6. Project promotional material
7. Project social media pages (project website, Facebook page, Instagram page)
8. Laboratory reports

- **Stakeholder consultations** were conducted through structured and semi-structured interviews. Key stakeholders interviewed are summarised below and a complete list is available in Annex 5.

Stakeholder Group	Number of people interviewed
UNIDO Personnel (including consultants)	10
Government stakeholders	16
Donor representatives	1
Other stakeholders[15]	7
Equipment recipients	4
Training participants	10
Total	**48**

- **Field visit to project sites in Sri Lanka.**
  a) On-site observation by the National Consultant of results achieved by the project, including interviews of actual and potential beneficiaries.
  b) Interviews with the relevant UNIDO Country Office(s) representative to the extent that he/she was involved in the project, and the project's management members and the various national authorities dealing with project activities as necessary.

- **Analysis**
  - Project logframe, validation of available progress documentation, ToC assessment, contribution analysis and assessment for UNIDO ratings.

1.5. Limitations of the Evaluation

Challenge/Limitation	Mitigation
COVID-19 travel restrictions meant that the team leader remotely attended in-country consultation and field trips by the national evaluator may be affected.	Where visits were not possible video/phone meetings were held to capture in-depth qualitative information.

[15] Academia, professional organisation and private company representatives and an independent expert

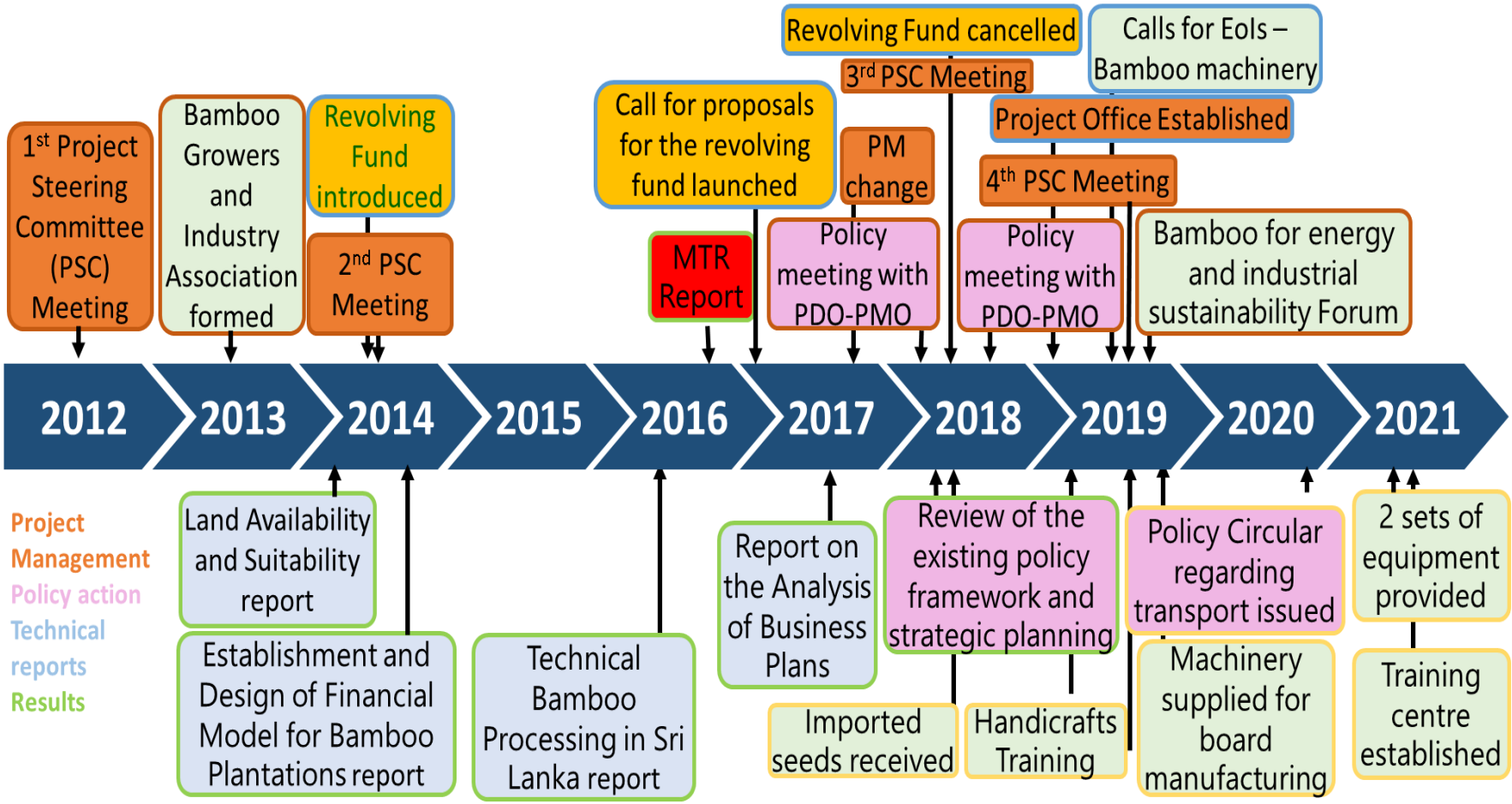
Challenge/Limitation	Mitigation
A lack of clear and detailed reporting against expected targets makes verification of data difficult.	Triangulation of data where possible between interviews with various stakeholders as well as official documents and reports.
Incomplete project records and no monitoring database prevented systematic assessment across the 6 components	Triangulation of information, using more than one data source, and cross-checking various available documents with respondent data.
Non-availability of key staff from the early years of the project. The ET was unable to speak with early Project Managers or the Coordinator for the main period.	The ET made efforts to speak with the previous coordinator, who would not engage with the evaluation. Consequently, the ET spent time reviewing detailed correspondence where available as key evidence.
Limited scope of activities and insufficient documentation precludes clear attribution of reported results to project activities, particularly in the early years of the project.	Evaluation team conducted a series of follow-up interviews to deepen evidence to contribute towards any evidence of attribution.

2. Project's contribution to Development Results - Effectiveness and Impact

2.1. Overview of project implementation

A summary of the project implementation demonstrates the long timeframe of the project and the key series of events (Figure 3). These events cover project management, policy action in line with Component 1, the development of a series of technical reports as key outputs across the components and key milestone events that contributed directly to results. Key points to note are over the nine years of the project, there were only four Project Steering Committee meetings, that the early years of the project largely contributed to the generation of technical reports and that project results occurred late in the project period. A more detailed timeline is available in Annex 8.

Figure 3. Project Timeline



Source: Evaluation team based on project documents (2021)

2.2. Project's achieved results and overall effectiveness

This section provides a brief description of project results by component and a concluding section relating to analysis of overall effectiveness. This section includes assessment of the main results achieved, including quantifiable results, as well as the gaps in achievement of expected outcomes and the reasons for the level of achievement. In addition, feedback from beneficiaries relating to project progress are presented here (See Annex 6. Results Framework for a complete list of reported progress for each indicator).

At project completion, few outputs have been delivered to the levels expected at design and most outcomes have not been achieved and are unlikely to be achieved. There was an increase in the delivery of expected outputs after mid-term but the lack of progress to this point constrained the potential for achievement of targets. The lack of progress on major industry enablers, such as an enabling policy environment, further constrained the potential for other results. The generation of technical information and training as well as practical methods has been a positive aspect of the project but were insufficient to facilitate the ambitious level of results expected. Project design underestimated the challenges and slow progress of policy influence activities driven by insufficient in-country momentum and the impact this limited progress would have on other project components.

Effectiveness rating: Unsatisfactory

Outcome 1: Assessment of existing framework and shortcomings and a supportive framework adopted

A framework review was completed and recommendation for policy amendments[16] were made but no new framework was developed or adopted. A review of the existing Bamboo Policy framework was completed in January 2018 and identified key recommendations to strengthen the policy environment for bamboo.[17] The initial groundwork for the review was undertaken in 2013 and 2014. Yet, the review was not produced until 2018 representing a significant delay, given that any policy change requires substantial time to process; leaving limited project time to implement the required recommendations and develop a supportive framework. As shown in Table 1, Forest Department Circular issued to Divisional Forest Offices in December 2020 to prioritise any applications for bamboo transport and the inclusion of bamboo in the plantation forestry programmes of the Policy Development Office (PDO) and the Ministry of Plantation Industries. PDO in the Prime Minister's Office (PDO-PMO) issued Guidelines for the Preparation of Five-Year Forest Management Plan[18] that outlined a process for approval of bamboo harvesting for market if a Plantation generates a five-year plan that incorporates that bamboo plantation harvesting.

Despite some policy amendments, there has been no significant increase in participation in the bamboo sector. It was envisioned that the Guidelines for the Preparation of Five-Year Forest Management Plan, with efforts from the PDO-PMO and Ministry of Plantation Industries, would encourage Regional Plantation Companies (RPCs) to include bamboo in energy plantations to increase biomass energy production and timber production in estate forest areas to meet the demand for timber and fuel wood. However, there has been a reluctance by plantation

[16] Relating to transport, land use and planting
[17] UNIDO, January 2018, *Review of the existing policy framework and strategic planning & Recommendations for the development of bamboo sector in Sri Lanka*
[18] PDO, 12 August 2018 (Guidelines for the Preparation of Five Year Forest Management Plan)

managers to change over from wood to bamboo, as a source of fuel wood and because of difficulties of transport. The Project aimed to establish demonstration plantations in estates to show the value of bamboo as a fuelwood to encourage RPCs to include bamboo in the estate planning. In addition, transport remained a challenge despite the circular issued. The transportation of bamboo along public road, some of which traverse estates requires approval which can take up to two weeks to gain and are only valid for 24 hours.

The Project has recently increased efforts to increase and broaden engagement. The project social media accounts were set up in 2019 and have provided updates in relation to the handicraft trainings, outputs, equipment installation and public events. [19] The Project held two public events; on 24 of October 2019 (the Energy Forum) and on 25 of January 2020 (a Forum for Planters). Discussions with representatives of the planting community show that there has been no evidence of results arising from the events or follow-up on the discussions at the Forum.

Policy amendments which have materialised and other activities undertaken have not been sufficient to support a bamboo sector. The Circular for prioritisation of bamboo transport applications and the guidelines for five-year forestry management plans are positive examples towards creating an enabling policy environment for a bamboo sector and addressed previously identified policy barriers. However, these examples are insufficient, delivered late in the project period, and without broader policy change are unlikely to generate the results required to demonstrate the viability of participation in the bamboo market. Therefore, the contribution of these outputs to the achievement of outcome is limited. As such, no outputs under component 1 are recorded as having achieved targets (Table 1).

Table 1. Progress and Achievements Towards Outcome 1

Target[20]	Key Achievements[21]	Met/Not Met
Output 1.1: National strategy developed for the development of the bamboo industry		
Development and adoption of a national bamboo strategy	• Empirical Supply Chain model developed (2013) • Sustainability and baseline monitoring prepared (2013) • National Bamboo Association established[22] (2015) • Review of existing policies and regulations completed[23] (2019)	Progress reported but target not met
Output 1.2: National policy adjustments supported **Output 1.3: Land use policy adjustments** **Output 1.4: Supportive policies and regulations on a local and regional level**		
Allows for and facilitates sustainable biomass resource development and exploitation -	• Policy guidance sub-committee formed (2013) • Policy review meetings with PDO/PMO[24] (2018)	Progress reported but target not met

[19] https://www.facebook.com/groups/lankaboo/ and an Instagram account: lankabooofficial
[20] GEF, 2012, *Request for CEO Endorsement/Approval.*
[21] Project Implementation Reports FY 2013 to FY 2020
[22] Ediriweera, A L, 2015, *Strengthening the Bamboo Sector in Sri Lanka Final Report presentation*
[23] UNIDO, January 2018, *Review of the existing policy framework and strategic planning & Recommendations for the development of bamboo sector in Sri Lanka*
[24] Policy Development Office, Prime Minister's Office Sri Lanka, 2018, *Minutes of the Meeting 28th January 2018* and Policy Development Office, Prime Minister's Office Sri Lanka, 2018, *Minutes of the Meeting 3rd July 2018*

Target[20]	Key Achievements[21]	Met/Not Met
especially bamboo - on degraded lands	• Guideline drafted for bamboo in plantations[25] (2018) • Circular issued by Forestry Department to prioritize consideration of transport applications for bamboo (2020)	
Output 1.5: Information on the project activities disseminated to the public and decision-makers		
20 activities to disseminate information conducted	• Project launch covered by national media[26] (2013) • National workshop held (2016) • Project brochure published and disseminated (2016) • Project website launched[27] (2017) • 3 newspaper articles[28] (2019) • Project social media accounts established[29] (2019) • Energy and planters' forums[30] (2020)	Partially met

Recommendations identified in the Policy Review and in subsequent consultation have not been sufficiently progressed or followed up and changes in government have decreased engagement. Recommendations identified in the Policy Review produced in 2018 included, in addition to several policy recommendations, research, capacity building, partner coordination, marketing and land use all featured in the recommendations.[31] The Project approached the PDO-PMO to assist in implementing the recommendations. The PDO identified additional actions required which have not been significantly undertaken, as summarized in Table 2.[32] In addition, one of the major recommendations from the review, to reclassify bamboo as a grass rather than as a wood, thus easing restriction to transport bamboo, has not progressed and remains a challenge to establishing a viable bamboo industry.[33] The Forest Department is currently finalising the revisions to the Forest Ordinance, but has not considered the question of re-classifying bamboo as a grass. Furthermore, the PDO-PMO was disbanded with the change of Government in the third quarter of 2019, and all bamboo related work handled by this office ceased. The staff that were involved with the project are no longer in service.

[25] Policy Development Office, Prime Minister's Office Sri Lanka, 2018, *Minutes of the Meeting 3rd July 2018*
[26] http://www.dailymirror.lk/print/features/developments-in-the-bamboo-industry/185-22413
[27] http://lankaboo.lk/
[28] http://www.dailynews.lk/2016/03/10/business/unido-gef-project-boost-bamboo-processing, https://lankainformation.lk/news/business-news/item/28527-unido-backed-sri-lanka-bamboo-initiative-phase-iii-takes-off, http://www.sundayobserver.lk/2019/06/16/business/sri-lanka-pioneers-bamboo-crafts-training-unido
[29] https://www.facebook.com/groups/lankaboo/ and an Instagram account: lankabooofficial
[30] Agenda available, and photographs available on social media accounts but no proceedings documented
[31] UNIDO, January 2018, *Review of the existing policy framework and strategic planning & Recommendations for the development of bamboo sector in Sri Lanka.*
[32] Policy Development Office, prime Minister's Office Sri Lanka, 2018, *Minutes of the Meeting 28th January 2018*
[33] UNIDO, 2020, *UNIDO-GEF Project August 2019-Jusy 2020 "Bamboo Processing for Sri Lanka"*

Table 2. Progress against suggested actions to implement policy recommendations

Recommended Policy-Related Actions	Progress on action
Actions from the Review of the Existing Policy Framework[34]	
Strengthen provisions in the regulatory framework to consider bamboo grown outside the protected areas as a 'grass'[35], to allow purposive cultivation, harvest, and transport of bamboo without restrictions.	Dialogue has occurred
Select land for bamboo cultivation[36] as a 'rehabilitation crop' for degraded lands in dry and intermediate zones; harvest for industry purposes.	Dialogue has occurred
Streamline issuance of permits to harvest and transport bamboo to facilitate use in industry[37] and devolve the authority for issuance of permits to the District Secretaries.	2020 Forestry Department Circular to prioritize the assessment of applications for bamboo transport
Actions from UNIDO-PDO-PMO meeting January 2018[38]	
Peradeniya University (UoP) to take stock of all types of bamboo grown in Sri Lanka and to map it by region with the help of UNIDO.	No significant progress
UNIDO to organize research symposiums for awareness and to promote the Bamboo industry in Sri Lanka	"Support the organization of a public forum" scheduled for the first quarter in 2020[39]
UNIDO to look at modern methods to regulate and monitor industry, such as online permits, transport and harvesting of Bamboo.	No significant progress

Outcome 2: Bamboo reproduction technology transfer – National capacity to provide bamboo planting material on a large scale

Planting material is available but at much lower levels than expected due to poor local uptake and limited contribution by the Project to improved capacity (Table 3)**.** Project Implementation Reports (PIRs) suggest that consultation was undertaken in 2015 which identified the equipment required for functioning laboratories under output 2.1 and that procurement was subsequently started.[40] However, in 2019 it was noted that a laboratory had been identified as having pre-existing capacity to fulfil project needs and so procurement was not necessary. Nonetheless, production was not achieved at the levels envisioned at design, partly as a result of underutilised opportunities for collaboration such as with the Mahaweli Authority of Sri Lanka

[34] UNIDO-GEF Project (January, 2018) Review of the existing policy framework and strategic planning & Recommendations for the development of bamboo sector in Sri Lanka.
[35] The Forest (Amendment) Act No. 65 of 2009 classifies Bamboo under the definition of 'tree' representing a major hurdle for industrial viability of bamboo
[36] avoiding arable land to minimize conflicts with the agriculture sector
[37] until such time the regulations are enacted
[38] Policy Development Office, Prime Minister's Office, 2018, *Minutes of the Meeting between PDO, UNIDO, and other Stakeholders on 29th of January, 2018*
[39] UNIDO, 2018, *GEFID#4144 – Project Workplan 2018-2020*
[40] UNIDO, 2015, *UNIDO Annual project Implementation Report Fiscal year 2015*

(MASL). The MASL indicated that as a commercial venture, it would engage in bamboo planting material production if the Project met the cost of seedlings. However, the Project did not provide direct support or guarantee and therefore the MASL pulled out of the project. Project needed to import seedlings to address a lack of naturally occurring diversity and experienced some delays for customs clearance arising from insufficient prior import approval arrangements. Seeds for two species were imported, germinated at Walpita Farm (property of the Department of Agriculture) and available to locals by 2019. This had increased to 3 species by 2020. However, local collection of the available species was less than expected and results in a large number of unclaimed seedlings. As such the target of 9 species available for sale has not been met.[41]

Table 3. Progress and Achievements towards outcome 2

Target[42]	Key Achievements[43]	Met/Not Met
Output 2.1: Acquisition and installation of laboratory equipment for appropriate species		
9 appropriate bamboo species with equipment acquired and installed by end of year 2 of the project	• Pre-existing equipment assessed to be adequate, so no laboratory equipment provision undertaken (2019) • Imported seeds of 2 species used to raise nursery plants (2019)	Minimal progress reported target not met – relevance questionable.
Output 2.2: Functional laboratory and availability of high quality planting material for appropriate species		
9 species for which there is appropriate, functioning laboratory equipment and available high-quality planting material by end of year 3 of the project	• Needs identified in consultation and procurement begun (2015) • Seeds for 2 two species imported[44] (2018) • Imported seeds germinated and available for distribution free of charge (2019)	Target not met; attribution of reported progress unclear.

Progress relating to this outcome has been minimal despite the interest of potential partners identified at design and opportunities for upscaling. The Project envisaged collaborating with the MASL to raise tissue-cultured seedlings for the planting programme given MASL's profile as the national leader in production of bamboo tissue cultured seedlings.[45] The PDO-PMO investigated the feasibility[46] of several bamboo species for commercialisation. The study recommended 10 species[47] for large scale planting and noted that the MASL Tissue Culture laboratory had the capacity and the desire to upscale and provide seedlings to the Project. MASL indicated a willingness and ability to supply an increased quantity of plants, provided the Project covered the costs of plants raised specifically for the Project. However, discussions with MASL indicated that the Project did not pursue the proposal of MASL, project support was not forthcoming and so the partnership was not pursued. Project engagement with MASL was limited

[41] GEF, 2012, *Request for CEO Endorsement/Approval.*
[42] GEF, 2012, *Request for CEO Endorsement/Approval.*
[43] Project Implementation Reports FY 2013 to FY 2020
[44] Purchase order available to demonstrate ordering of seeds UNIDO, 2018, *Purchase Order 3000059264* and UNIDO, 2018, *Purchase Order 3000060182*, germination is not evidenced.
[45] Brias, V, 2014, *Technical Report: Establishment and Design of Financial Model for bamboo Plantations*
[46] Ramanayake, S (undated but after March 2018) Species of bamboo with utility values for commercial cultivation in Sri Lanka; 7 pp.
[47] *Dendrocalamus giganteus, D. asper, D. latiflorus, D. strictus, D. hokerii, D. membranaceus, D. oldhami, Melocanna baccifera, Bambusa bambos, B. vulgaris, Ochlandra stridula* and *Davisea attenuata*

and resulted in MASL withdrawing from the PSC in 2018 due to a growing sense of frustration from the limited progress despite opportunities.[48] MASL has participated in the Project but at a much smaller scale than envisioned by hosting Project experts and providing transport to MASL plantations. The tissue culture laboratory of MASL at Kothmale does supply seedlings upon order but there was opportunity for increased quantities and diversity of species had a more productive partnership been formed.[49] Limited progress in relation to tissue culture impacted on progress of other project components, namely component 3 as drought tolerant species for growth in the dry zone were not developed as envisioned.[50]

Limited Project progress in other components has resulted in a lack of local interest in planting bamboo and a wastage of the outputs that have been produced under this component. The Project imported seeds twice to be germinated in-country. 5,000 seeds were imported and provided to be germinated at Walpita Farm (Department of Agriculture Property) for distribution to locals. However, evaluation consultation and field visits show that these seedlings were not distributed as expected, although offered free of charge (Table 4). More than 80% of the seeds germinated at Walpita farms were not collected by the public and have since died. This demonstrates a reluctance of locals to plant and use bamboo as envisioned by the Project. The second shipment of seeds were provided to the University of Ruhuna. The use of these seeds has been more successful but there has been insufficient time since the seeds were imported too late to demonstrate mature project results. A large proportion of the seeds have been used by the University for destructive sampling of nursery plants for research. These seeds have also been used for estate planting with 2.7ha being panted at Elpitya Plantation (Thalgaswela Estate) and a further 3,000 plants having been issued to other estates which have not yet been planted resulting in the loss of approximately 500 seedlings. The imported seeds have also been used to establish a 1ha trial plantation at Beverly Estate.[51]

Table 4. Status of imported seeds germinated at Walpita Farm

Imported seeds germinated at Walpita Farm[52]	
Cost	300,000 LKR
Seeds (Imported)	5,000
Seedlings (Collected)	975 total • Sankalana Creations (400) • Renewable Energy Developers Association (375) • BioChar (200)
Seedlings (Uncollected)	4,025 total
Cost of uncollected seedlings	241,500 LKR

Outcome 3: Plantations established to provide feedstock for bamboo plantations

[48] Minutes of the post-PSC meeting held on 31st July 2018. The meeting was in response to the 3rd PSC meeting in May 2018 where main management decision of revisions of project architecture from UNIDO side were proposed (e.g. to abandon the 'revolving fund' "Mr. The Additional Secretary (Industry Development) MoIC informed that the Ministry of Mahaweli and Environment Development is not at all happy with this project and that in the future they will not attend any meetings related the Bamboo Project."

[49] UNIDO, 2020, *Project implementation Report for the Fiscal Year 2020*

[50] Brias, V, 2014, *Technical Report: Establishment and Design of Financial Model for bamboo Plantations*

[51] Evaluation consultation December 2020 and April 2021

[52] Evaluation consultation December 2020 and April 2021

Progress under this component was marginal as a result of limited progress in other project components. The limited availability of sufficient quantities of various bamboo stocks, meant to be developed under component 2 of the Project severely impacted the project's ability to establish plantations.[53] This was exacerbated by the reluctance of private land holders and RPCs to establish bamboo plantations as mentioned under component 1, partly due to ongoing policy barriers decreasing feasibility. A maximum of 89ha of bamboo has been planted, including a 32ha demonstration area (Table 5).[54&55] These areas were planted in 2019 and 2020 despite land being identified by national stakeholders in 2012 and further investigated in 2014.[56 & 57] In addition to limited planting material available under component 2, several impediments to progress that were outside of the control of the Project were also experienced. These included limited interest from private and regional plantation companies associated with limited understanding of the uses of bamboo and difficulties in gaining permits for transporting bamboo.

Table 5. Progress and Achievements towards Outcome 3

Target[58]	Key Achievements[59]	Met/Not Met
Output 3.1: Bamboo plantations established in unused lands in the dry zone and wet zone		
5,000 hectares of bamboo established in unused lands in the dry zone	• Bamboo mapping conducted[60] (2013) • Revolving fund for pilot plantation created (2014) • Investment feasibility report for investment in bamboo plantation by the private sector completed[61] (2015) • Potential plantation areas visited, and suitable communities identified[62] (2016) • 32ha planted as a demonstration area (2019) • 57ha planted bamboo provided by the Project (2020)	Not Met
5,000 hectares of bamboo established in unused lands in the wet zone		Not met

Insufficient availability of planting materials (component 2) inhibited the potential for establishing plantations. Activities to be completed under component two were envisioned to provide a wider variety of bamboo species for planting which were suitable for various contexts. In particular, Project design envisaged bamboo plantations in the dry zone which required new species and importation of plants to supplement an inadequate in-country stock of drought tolerant species. A 2014 study to establish and design a financial model for bamboo plantations[63] recommended development of tissue-cultured plantlets of five drought-tolerant bamboo species of which three (Dendrocalamus strictus, Bambusa bambos, and Dendrocalamus cinctus) are

[53] Brias, V, 2014, *Technical Report: Establishment and Design of Financial Model for bamboo Plantations*
[54] UNIDO, 2019, *UNIDO Annual project Implementation Report Fiscal year 2019*
[55] UNIDO, 2020, *UNIDO Annual project Implementation Report Fiscal year 2020*
[56] Schulz, 2014, *Draft Report on land availability and suitability*
[57] Premadasa, R, Ministry of Plantation Industry, 2012, *Bamboo processing in Sri Lanka – Land Availability Letter*
[58] GEF, 2012, *Request for CEO Endorsement/Approval.*
[59] Project Implementation Reports FY 2013 to FY 2020
[60] Letters outlining land availability received from private companies and government entities in 2011 and 2012. See Annex 7 for details. Summarized in Appendix 2 (page 65-70) of the 2014 Draft Report on Land Availability and Suitability prepared by N Schulz.
[61] Project Report titled 'Establishment and Design of Financial model for Bamboo Plantations" produced in 2014.
[62] Field visits undertaken to a proposed project site as field work during the preparation of the report: Matilla, B, 2016, *technical follow-up bamboo processing in Sri Lanka.*
[63] UNIDO (Aug 2014) Establishment and Design of Financial Model for Bamboo Plantations; Victor Brias, International Consultant

found in Sri Lanka. The Project was advised to engage the Tissue Culture laboratory of MASL to produce plantlets, but as discussed under component 2 this collaboration was not pursued. However, even where planting material is available, there is a demonstrated lack of interest from local stakeholders to establish plantations.

Available planting material has not been used as expected by the Project resulting in limited plantation establishment. As discussed under component 2, some available planting materials have not been collected from the nurseries despite having been allocated to stakeholders. This indicates limited interest from local stakeholders to use bamboo for the purposes outlined by the Project. The Project sought to expand bamboo plantations for (a) use as a fuel wood, and (b) as a raw material for handicrafts and processed products (value addition) (e.g. laminated board, floor boards etc.). For this purpose, it approached RPCs, in particular tea estates where there is an energy need for drying green leaf, others dependent on fuel wood as a source of energy for their factories, and as a greening exercise. Some RPCs demonstrated an interest in planting bamboo for energy and as pilot activities, several RPCs have planted small extents of bamboo without project support. However, other stakeholders who initially showed interest in bamboo for energy or value addition have either not collected seedlings or have used seedlings for other uses such as planting in home gardens (Table 6). Given that there has been some interest following a concerted effort and distribution events by the Project, undertaking these actions earlier in the project could have produced larger scale results.

Table 6. Status of planting materials provided for plantation establishment

Stakeholder	Plantation purpose	Number of Plants/area	Project-Reported Progress	Evaluation Field visit and consultation observations
Braeside Estate/Gampola	Biomass	850	Planting yet to commence, delay due to COVID.	Stakeholder indicated that plants have not been collected from the nursery
Biochar FertZ/Malwana	Biomass	1,000	Planting in progress	As of January 2021, stakeholder indicated that 200 plants have been collected
Dishan valley Tea Factory/ Morawaka	Value addition/ biomass	1,000	Planting in progress	
Renewable energy Developers Association (REDA)/Ampara	Value addition/ biomass	1,250	Planting in progress	Stakeholder indicated in January 2021 that 375 plants have been collected and distributed to houses for gardens. Stakeholders does not intend to collect the remaining plants.
Induruwa Info.Exports /Matale	Bamboo charcoal	500	Planting yet to commence, delay due to COVID.	Visit on February 15th 2021 showed that plants have not yet been collected and consultation on April 1st indicated plants have still not been collected.

Stakeholder	Plantation purpose	Number of Plants/area	Project-Reported Progress	Evaluation Field visit and consultation observations
Sankalana Creations/ Veyangoda	Value addition/ biomass	400	Planting in progress	Field visit on February 16th 2021 showed that plants have been collected and planted in home garden and surrounding areas.
Thiagoda Village	Feedstock	300		300 plants in home gardens for weaving materials
Mario&company	Feedstock	19ha (8ha planned)		Planted with volunteers not project support for biomass production
Elpitiya Plantation/Aitken Spence	Feedstock	9ha (30ha allocated)		Field visits indicate a planted area of 2.7ha for biomass for tea production
Maturata Plantation/ Beverly Estate	Edible shoots	2ha pilot site		The Estate is not pursuing edible bamboo cultivation due to marketing difficulties
University of Ruhuna, Agricultural faculty	Trial	2ha	trial of bamboo intercropping with energy plants and biochar for nutrient management	Planted at the University Farm

The Project did not effectively follow-up opportunities for establishing plantations. A feasibility study undertaken by the Project in 2010[64] identified 9,436 ha of land *'that could be utilised for energy forestry or cultivation of bamboo*'. About 75% of this land was categorised as Other State Forest (OSF) Lands.[65] The study also identified about 1,500 ha of land in the catchment areas of village reservoirs in one district, which are under the jurisdiction of the Department of Irrigation. The study further notes that whilst the Irrigation Department is in favour of planting bamboo, release of OSF land needs express approval of the Conservator General of Forest. The Project engaged an external consultant to identify potential land for plantations. The identified area totalled more than 16,000ha in 2014, adequate to achieve the 5,000ha target in the dry zone and in the wet zone.[66] Some concerns were raised at the time about the identified area which included more than 7,500ha of state forest land. Despite indication from the Forest Department that there was available land to be converted to bamboo plantations, evaluation interviews suggest that no formal requests or approaches were made to the Department to negotiate these areas. The Forest Department have engaged with the Project through the PSC

[64] UNIDO (2010) Study on land availability and identification of potential sites for energy plantations and bamboo cultivation

[65] Other State Forest Lands were under the jurisdiction of the Forest Department until 2019, when they have handed over to the Divisional Secretaries.

[66] Schulz, 2014, *Draft Report on land availability and suitability*

but while engagement has been dually focused on land availability and transport regulations, formal progress is only recorded in relation to transport regulations.[67]

Outcome 4: National Know-how to maintain bamboo plantations – Local knowledge available to sustain benefits after project end

There is no demonstrated progress in relation to the stated targets to increase bamboo harvest and develop sub-industries. Limited progress under other project activities has severely hindered the opportunity for success under this outcome. Poor availability of planting materials under component 2 combined with inadequate plantation areas under component 3 has resulted in no recorded data relating to the production of bamboo culm or shoots. While sites were identified and species tested, no plantations have been established and so no increase in harvest was possible (Table 7).

Table 7. Progress and Achievements towards Outcome 4

Target[68]	Key Achievements[69]	Met/Not Met
Output 4.1: Economically sustainable, functional bamboo plantations running in currently unused dry lands and wet lands		
150,000 tonnes of bamboo culm being harvested per year	• Sites identified and species tested (2017)	Not Met
250,000 tonnes of bamboo shoots by-product being harvested per year		Not met

There is a disconnect between the outputs and outcomes for this component which does not allow for adequate reflection of changes in knowledge levels. Reporting at the output level for this component focussed on production volume which is not reflective of the overall outcome of the component relating to sustainable knowledge and skills. As such, the development of a manual[70] by the University of Ruhuna and disseminated using national funds is not reflected in quantitative project reporting. Other manuals have also been developed by the Industrial Development Board (IDB) on *Bamboo Planting and Plantation management,*[71] *Bamboo Crafts Basic Training*[72] and *Advanced Bamboo Furniture Making Techniques*.[73] Some training activities have also been undertaken but these were small in scale and narrow in scope focussing largely on bamboo processing (discussed further in component 5).However, with the very limited scope of plantations established, the knowledge products developed and training provided by the Project have limited relevance. Nonetheless, the disconnect between reportable indicators at the output level and the associated outcome limits the opportunity for the Project to report these activities.

Outcome 5 – Bamboo processing technology transfer to Sri Lanka

[67] UNIDO, 2019, *Minutes 4th Project Steering Committee Meeting: Bamboo Processing for Sri Lanka*
[68] GEF, 2012, *Request for CEO Endorsement/Approval.*
[69] Project Implementation Reports FY 2013 to FY 2020
[70] I R Palihakkara (2021) Prospects of Bamboo Cultivation in Sri Lanka (personal publication)
[71] IDB, 'Bamboo Planting and Plantation Management.'
[72] IDB, 'Bamboo Crafts Basic Training'
[73] IDB, 'Advanced Bamboo Furniture Making Techniques.'

Bamboo processing equipment has been procured and provided to three producers but has experienced significant delays and challenges leading to lower-than-expected levels of results (Table 8)**.** Expressions of interest were sought from Sri Lankan businesses with the expertise and capacity to undertake a bamboo initiative in 2019.[74] A business plan and letter of intent were received in response.[75] A request for quote for the supply of nominated equipment was also distributed[76] and responses received in 2018 and 2019 through UNIDO's central procurement process. [77&78] Five responses to the request for quote were received[79] and the first round of equipment was delivered in 2019 for the production of glue coated bamboo boards.[80] Further equipment has been procured in 2020 for the production of bamboo straws[81] and to allow operation of a bamboo training centre by IDB.[82&83] However, delays and challenges in installing the IDB equipment were experienced whereby the supplier could not reach Sri Lanka due to the COVID-19 global pandemic. The provision of equipment as detailed in Annex 8 to three organisations is below expectations of five major bamboo product manufacturers set at design.

Table 8. Progress and Achievements towards outcome 5

Target[84]	Key Achievements[85]	Met/Not Met
Output 5.1: Bamboo processing machinery for industrial use bought and installed		
5 major producers of finished bamboo products with machinery bought and installed	• 2 public calls for proposals, three organizations selected (2019) • 2 bamboo basic handcraft techniques and product and furniture making workshops with 16 participants (2019) • Training on Basic Bamboo Preservation Techniques (4-day course conducted from 22 to 25 January 2019) • Training on Basic Bamboo Craft Techniques (10-day course conducted from 15 – 25 June 2019) • Training on Bamboo Product and Furniture Creation (10-day course conducted from 17 – 26 July 2019) • Training on Bamboo Product and Furniture Creation Technology (10-day course conducted from 16 – 26 October 2019) • Training on Bamboo Product and Souvenirs (8-day course conducted from 9 – 16 December 2019)[86] • Tools provided to 11 artisans who had received training to produce items (2019)	Partially met
Output 5.2: Establishment of bamboo flooring production capacity		

[74] UNIDO & GEF, 2019, *Call for Expression of Interest for Bamboo Processing* published in local newspaper.
[75] Mahindapala, R, 2021, *Notes from evaluation Consultation, Summary of Discussions dated 28/01/21*
[76] UNIDO, 2018, *Invitation to Bid (ITB) No. 7000003229*
[77] Banthia, A, 2019, *Email Correspondence Re: BAFO- UNIDO Invitation to bid. 7000003229 – Supply of bamboo*
[78] Bazoco, 2018, *Accompanying and Statements for RFx 70000032329*
[79] UNIDO, 2018, *Image of Procurement Dashboard for Responses to RFx No. 7000003229*
[80] IUNIDO, 2019, *Purchase Order 3000069959*
[81] Garnet Tools, 2020. *Commercial Invoice Garnet Tools to Kithsiri Cane*
[82] IDB, 2020, *Certificate of Acceptance signed 23/06/20*
[83] UNIDO, 2020, *Project Implementation Report Fiscal Year 2020*
[84] GEF, 2012, *Request for CEO Endorsement/Approval.*
[85] Project Implementation Reports FY 2013 to FY 2020
[86] Blue text indicates findings from evaluation consultation not findings from PIRs.

Target[84]	Key Achievements[85]	Met/Not Met
Production and sale of 120,000m^2 bamboo flooring material per year	• One pre-existing producer of bamboo flooring identified and supported (2013 & 2014) • Flooring deemed to not be competitive in Sri Lanka and Project support stopped (2018) • Market analysis conducted following bankruptcy of initial firm (2019)	Not met
Output 5.3: Establishment of bamboo shoots by-product industry		
Production and sale of 20,000 tonnes of bamboo shoots by-product per year	• Market study conducted and disseminated (2017) • Needs consultation undertaken with one company (2018)	Not met

The provision of training is below targeted levels, as is the production capacity of supported businesses. Training activities were significantly delayed with the first trainings being undertaken in 2019 (Table 9). Training was provided to support this output target but not at the levels expected and further delays have been experienced due to the COVID-19 situation. 11 handcrafters who participated in training activities have also received tools for the production of bamboo handcrafts.[87]Some training activities were to be delivered by DoWell Creations Display Systems, the same company to receive equipment under this component. The company contacted the Project on December 3rd 2020 with an offer to conduct training activities at the company premises for 16 participants.[88] No other proposals are documented. The proposal from DoWell was approved.[89] Invoices covering 80% of the total proposal amount were received on December 10th and 17th for payment.[90&91] However, due to the COVID-19 situation the training activities have been delayed and delivered at a small scale with only five participants attending training in February 2021.

Table 9. Training Conducted with Project Support

Date	Training
22-25 January 2019	Training on Basic Bamboo Preservation Techniques
15-25 June 2019[92]	Training on Basic Bamboo Craft Techniques
17-26 July 2019	Training on Bamboo Product and Furniture Creation
16-26 October 2019	Training on Bamboo Product and Furniture Creation Technology
9-16 December 2019	Training on Bamboo Product and Souvenirs

[87] UNIDO, 2019, *Project Implementation Report Fiscal Year 2019*
[88] Fernando, T, 2020, *Correspondence DoWell Creations Display Systems to UNIDO Vienna 2020.12.03*
[89] UNIDO, 2020, *Purchase Request to AGR procurement Team: Training from DoWell Creations*
[90] DoWell Creations Display Solutions, 2020, *Invoice for the initial 20% Payment 10/12/20.*
[91] DoWell Creations Display Solutions, 2020, *Invoice for the second 60% Payment 17/12/20*
[92] UNIDO, 2019, *Project Implementation Report Fiscal Year 2019*

Outcome 6: Biomass/pelletising/briquetting/chipping technology transfer and development

Progress on this component has been severely delayed and there are few demonstrable outcomes. The Project has supported a company to develop a business plan to prove eligibility for equipment provision and undertaken a market study to investigate the feasibility of the biomass industry (Table 10). Charcoal production equipment has been provided to one company in early 2021.[93]

Table 10. Progress and Achievements towards Outcome 6

Target[94]	Key Achievements[95]	Met/Not Met
Output 6.1: Pelletizing/briquetting/chipping machinery bought and installed for bamboo		
3 producers of biomass pellets/briquettes/chips with machinery installed for bamboo	• One company identified to receive charcoal making equipment (2020) • One company received support to establish a business plan (2020)	Not met 1 set of equipment supplied but not yet installed.
Output 6.2: Production of biomass pellets / briquettes or chips		
25,000 tonnes of dry weight biomass pellets produced per year	• Market study conducted to encourage private investment (2017) • "beneficiary equipped by the project will be able to produce 2500 Tons/year of bamboo brickets by 2021" (2020 PIR)	Not met

2.3. Progress towards impact

This section assesses the difference the Project has made, particularly in relation to UNIDO's three impact domains for behavioural change: i) advancing economic competitiveness, ii) safeguarding the environment, and iii) creating shared prosperity as well as the potential for broader adoption through i) mainstreaming, ii) replication, and iii) scaling up. This section includes an assessment of the extent to which the Project is contributing to conditions that may lead to long-term transformation.

Impact rating: Unsatisfactory

2.3.1. Behavioral change

Economically competitive – Advancing economic competitiveness

Some private companies and artisans have been equipped to increase and diversify production while other project aims in relation to economic competitiveness were noted to be ineffective. Production of bamboo boards and bamboo handicrafts can increase as a result of Project support to private companies and individual handcrafters. However, the scale of

[93] UNIDO, 2021, *Supplied equipment to produce bamboo charcoal.*
[94] GEF, 2012, *Request for CEO Endorsement/Approval.*
[95] Project Implementation Reports FY 2013 to FY 2020

activities envisioned at design was not undertaken (Table 11) and therefore no transformative changes in relation to economic competitiveness can be demonstrated.

Table 11. Progress towards objectively verifiable indicators outlined at design

Target	Achievement	
4 innovative technologies demonstrated or deployed	No specified technologies installed and demonstrated during the period of the project. Some training completed on known technologies such as glue laminated board processing equipment, straw and charcoal.	X
Technologies have been diffused widely with investment	Not achieved – requires introduction of technology.	X
Improved enabling policy environment created for national innovation and technology transfer policy	Policy environment improved partially but insufficient to support national bamboo value chain.	-
Enabling policy environment and sufficient capacity to bring bamboo to industrial scale of production and sale created through institutional and technical capacity building	Not achieved. Training completed and manuals available but insufficient for industrial scale.	X

The Project successfully identified a pathway to establish a competitive bamboo industry in Sri Lanka but did not sufficiently follow-up on suggested actions and recommendations. The Project employed external consultants to undertake technical reviews of various aspects of a potential bamboo industry in Sri Lanka. These aspects included developing a business model, identifying potential land as well as suggested policy amendments and actions. However, reported progress and stakeholder feedback indicates that very few of these suggestions have been actioned and this has severely hindered project success.

Environmentally sound – Safeguarding environment

Project design indicated an ability of the Project to contribute to improved environmental outcomes but this was not a sufficient focus of implementation to contribute to environmental impact. Environmental outcomes included in design and the level of achievement of these targets is available in

Table 12. However, the limited progress of the project and small number of activities undertaken has constrained the Project's ability to demonstrate progress towards envisioned environmental impact. The knowledge building activities conducted consisted of the availability of manuals and training on the production of bamboo products and handicrafts. These knowledge generation activities place insufficient focus of the use of bamboo as an environmentally beneficial fuelwood for reducing greenhouse gas emissions, the overall project objectives (Figure 2. Reconstructed Theory of Change).

Table 12. Progress towards objectively verifiable indicators outlined at design

Target	Achievement	
182,300T CO_{2eq} per year avoided (direct reductions)	Not achieved. No use of bamboo as fuel wood attributable to the project.	X
1,823,000T CO_{2eq} avoided over the lifetime of the measures introduced (direct reductions)		
311,180 MWh in electricity and heat per year generated using biomass energy	Not achieved. Biomass plant purchased in last year of project. Installation not yet complete.	X

Socially inclusive – Creating shared prosperity

The small scale of all Project activities undertaken undermines the Project's ability to create large scale behaviour change in relation to social inclusivity. The limited scope of Project activities which focussed on four small companies and had limited impact on policy led to very few social outcomes. The Project was unable to adequately address policy barriers and demonstrate the feasibility of large-scale plantations which may have contributed to large scale behaviour change.

2.3.1. Broader adoption

Mainstreaming

The Project was designed to support the mainstreaming of bamboo production, however, the lack of demonstrable progress undermines the Project's ability to mainstream activities. Mainstreaming of the bamboo sector was an important component of the Project's objectives and was necessary for the Project to have recordable impact. However, given that the Project provided support to four distinct companies and training to fewer individuals than expected, and had little demonstrated progress at the policy level, results were not sufficient to make a case for mainstreaming.

Replication

Poor demonstrable results inhibit the Project's ability to facilitate replication activities. The Project concept was sound and in theory could generate positive results that contribute to impact to provide evidence for replication. However, given the Project did not implement these activities or achieve targets as expected the potential for replication is significantly decreased.

Scaling-up

Similarly, to other assessments of impact, any potential for scaling up of Project activities is minimal due to the lack of progress towards intended outcomes. The Project could demonstrate some potential for scaling up based on the increased production of supported businesses. However, given the delays experienced in providing equipment and support, the results are small in scale and not yet mature enough to demonstrate a likelihood of sustainability. The challenges encountered by the project approach further limits the potential for scale up. As

such, with limited evidence of significant and sustainable results, combined with the inefficiency of Project expenditure (see section 3.3) it is unlikely that Project activities could be scaled up.

3. Project's quality and performance

3.1. Design

This section is informed by an assessment of the quality of project design and of the project logical framework. This includes consideration of the technical design in relation to the needs, capabilities, expertise and priorities of Sri Lanka, target groups and UNIDO, as well as the extent to which the project design was adequate, sound and appropriate to address the development challenges identified, and the extent to which the design remains valid and relevant. This section also includes assessment of the logical framework and the logic of the expected results chain from outputs to outcomes and impacts, the appropriateness and adequacy of indicators and the availability of sources of verification for results.

Project Design Rating: Moderately Unsatisfactory

The Project design was strategically sound but there were major technical shortcomings, and assumptions that did prevent achievement of results. The Project design was relevant to the context in general and was strategically appropriate to achieve the stated project objectives. However, the complex approach included in design was overambitious and did not sufficiently acknowledge the technical concerns expressed by the STAP or by national stakeholders at design. The required chain of events for progress towards impact was not followed. Similarly, the logical framework (logframe) did also not acknowledge the progression of activities resulting in overambitious targets that were not sufficiently relevant to context.

3.1.1. Overall Design

Overall Design Rating: Moderately Unsatisfactory

The Project concept was relevant to the development challenge and to achieve the outlined objectives. The Project design was appropriately aligned with the identified development challenges of deforestation and an unsustainable timber industry. The Project approach was designed to holistically address these challenges and comprehensively outlined activities in the private sector, at the policy level and related to value chains. In addition, the Project successfully identified an avenue for decreasing greenhouse gas emissions to respond to the priorities of the funding agency, GEF. The approach of identifying currently unused land was appropriate as was approaching current timber stakeholders.

However, the design was highly ambitious with regard to stated objectives and did not identify the required chain of activities to meet objectives. The Project's holistic approach to develop a bamboo sector was aligned with the transformative requirements of GEF's POZNAN strategic programme. The POZNAN programme aims to facilitate technology transfer to combat climate change. However, the complex approach adopted by the Project did not adequately address the sequence of achievements required to successfully achieve the Project objectives and included an accordingly short time frame for Project implementation. For example, the successful establishment of viable bamboo plantations under component 3 was reliant upon the availability of bamboo planting materials under component 2 and an enabling policy environment

under component 1. A more incremental approach which acknowledged the chain of achievements required may have been more effective.

3.1.2. Logframe

Logframe Rating: Moderately Unsatisfactory

The scope of activities and targets were not sufficiently relevant and did not acknowledge practical implementation constraints, yet the logframe is large and difficult to report against. The scope of activities included in design was broad and included substantial work at several levels to build a bamboo sector. Individual targets were realistic if all project activities had been undertaken as designed. However, given the broad range of activities envisioned, the logical framework was ambitious when viewed as a whole. The targets set did not adequately address the country context (including unrealistic land availability and the effort required for policy change) and the incremental level of achievements required. The large number of indicators and targets included in the logframe could have been consolidated for ease of reporting and to address some gaps.

There were some gaps present in the logic used to develop the Project logframe. Some output indicators did not accurately reflect the achievement of outputs and outputs do not have causal link to the stated outcome. In addition, some gaps existed that did not allow for the relevant reporting of some Project activities. As noted in section 2.1 in relation to component 4, the indicators for this component do not provide opportunity for quantitative reporting of training activities undertaken which contribute to outcome 4. Furthermore, the recording of the levels of production of bamboo culm and shoots does not indicate likelihood of "self-sustaining plantations" as indicated in the outcome level target for the component. Additionally, the reporting burden on the project was relatively high given the large number of outcomes, outputs and associated indicators for reporting.

3.2. Relevance

This section assesses the relevance of the project approach to Sri Lanka's development priorities, UNIDO's mandate and the needs of target groups. This section also assesses the extent to which the project approach was relevant to identified development challenges.

Relevance Rating: Moderately Satisfactory

The project approach was relevant, and the project rationale outlined at design is valid. The Project effectively responded to identified development challenges and developed a comprehensive approach to address this challenge. The Project identified several barriers to building a bamboo sector and designed a relevant approach to overcome these barriers. Identifying bamboo as a substitute to unsustainable timber production was appropriate to the context given that bamboo already grew wildly in some areas of the country. The review of the project concept by the GEF scientific and technical advisory panel (STAP) during project approval noted some concerns in relation to the proposal for uniform bamboo plantations and limited engagement to encourage sustainability. Overall, the STAP assessed the project design as relevant. Nonetheless, the approach was ambitious with a broad scope which hindered opportunities for deeper engagement and progress in relation to any single aspect of the bamboo value chain. Taking such a broad approach which focussed on all stages of the value chain,

without first creating an enabling policy environment, likely hindered project progress which was exacerbated by several other factors.

There was insufficient in country momentum for Project activities and the Project design did not adequately acknowledge these barriers. The Project design was relevant to the country context in terms of development challenges, and correctly identified government interest in bamboo. The project identified several policy barriers at design but did not investigate the level of Government support for activities relating to the bamboo sector.[96] In addition, the level of government commitments to bamboo initiatives decreased in the early years of the project. The Project underestimated the effort required for effective policy advocacy and change. As a result there was a lag in gaining support which delayed other project activities and contributed to the overall low level of progress of the project. This lag was exacerbated by a lack of engagement and adaptability on behalf of the project to ensure ongoing relevance, particularly in the context of a change in government. Latterly, there was enhanced interest in the project and a recent heightening of interest due to the COVID-pandemic as Sri Lanka seeks to focus on import substitution. This has led to a revival of interest in bamboo.

The Project was relevant for both the implementor and the donor but did not fulfil the potential for either party. The dual focus of the Project on environmental outcomes in terms of deforestation and greenhouse gas emission reductions is aligned with stated priorities of the GEF. The Project's ambitious design was also aligned with GEF's POZNAN approach which calls for disruptive and transformational development solutions.[97] Similarly, the focus on value chain establishment and strengthening is aligned with UNIDO's mandate for sustainable economic development. However, the Project also required a degree of agricultural and land management expertise that was not readily available within UNIDO. As such the project was less relevant to UNIDO than to GEF. The approach combining both of these priorities resulted in shared relevance for the donor and implementation and enabled the Project to access expertise and funds in relation to both aspects of its objectives. However, there was insufficient technical expertise in relation some aspects of the Project and this was adequately considered at deign or in assessment of the relevance to the organisations. Furthermore, the limited demonstrable results, caused in part by insufficient attention on critical industry bottlenecks and building national expertise, undermines the initial relevance to UNIDO and GEF. A further concern was that alternatives to bamboo as a fast-growing fuelwood (such as Gliricidia, Acacia, or Cassia) were being actively promoted by other development agencies including the World Bank, lessening the attention on the economic potential of bamboo.

[96] GEF, 2012, *Request for CEO Endorsement/Approval*
[97] GEF, 2012, *Request for CEO Endorsement/Approval*

The Project is rated as moderately relevant for the Mahaweli Authority and private companies. **The project concept was broadly relevant for the Mahaweli authority in terms of focussing on bamboo. However, the interest of the MASL in bamboo was for environmental benefits such as riverbank stabilisation as opposed to commercial harvesting. This somewhat contrasts with the project concept that aimed to go beyond such environmental benefits and add an economically viable bamboo sector to the intended benefits. This disconnect between priority areas undermined the overall effectiveness and potential of the partnership outlined at design. Similarly, the Project is assessed as being moderately relevant for Private Sector companies in that the potential for developing a strengthened sector to increase economic competitiveness was promising but that the feasibility of the sector was not clear and as such the economic rationale for participation was not clear (Annexes** Annex 1).

The Project was relevant for the tea industry and government stakeholders. The possibility of a new biofuel source was of interest to the tea industry as was the potential for the traditionally small parcels of unused land owned by these estates to grow bamboo. However, the pre-existing policy barriers which increased the challenges associated with transporting the bamboo decreased the feasibility of bamboo plantations for tea estates and therefore also reduced the overall relevance of the Project for these stakeholders. The Government had the clearest demonstrable relevance to the Project at the time of design. The Government was interested in developing bamboo as a sector and recognised a potential for increased bamboo growth for the country more broadly. As such the legislative aspects of project design were relevant and responsive to the context.

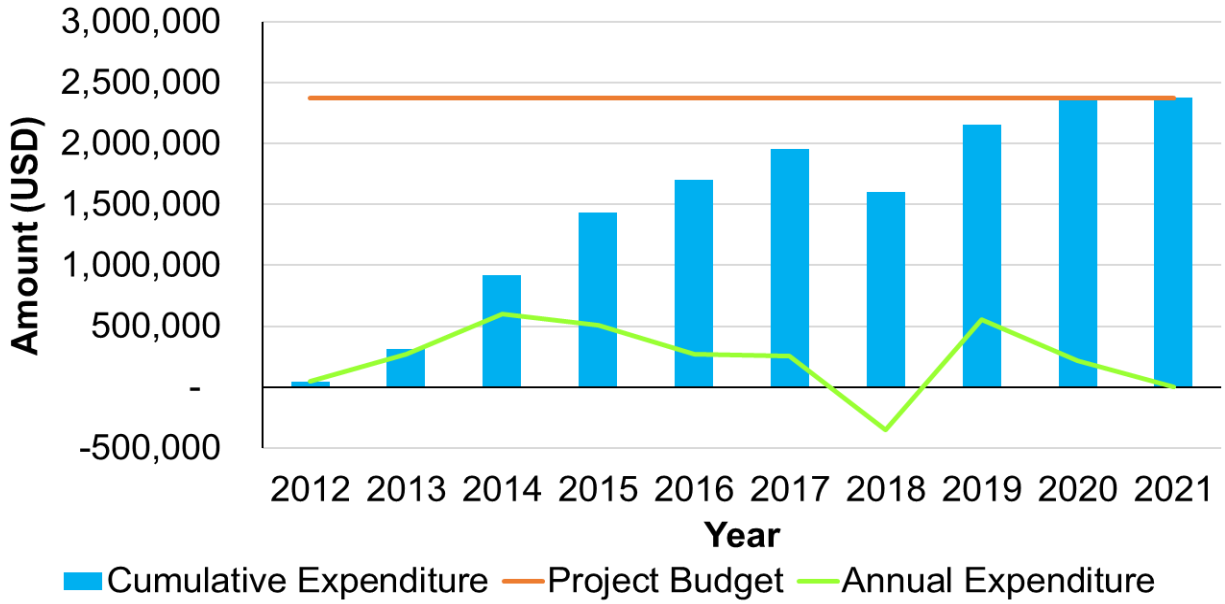
3.3. Efficiency

This section includes an assessment of how economically resources have been converted to results. This includes consideration of the extent to which results were delivered on schedule and within budget as outlined at design and in specific workplans as well as the extent to which measures identified at design to ensure efficiency of resource use were used.

Efficiency rating: Unsatisfactory

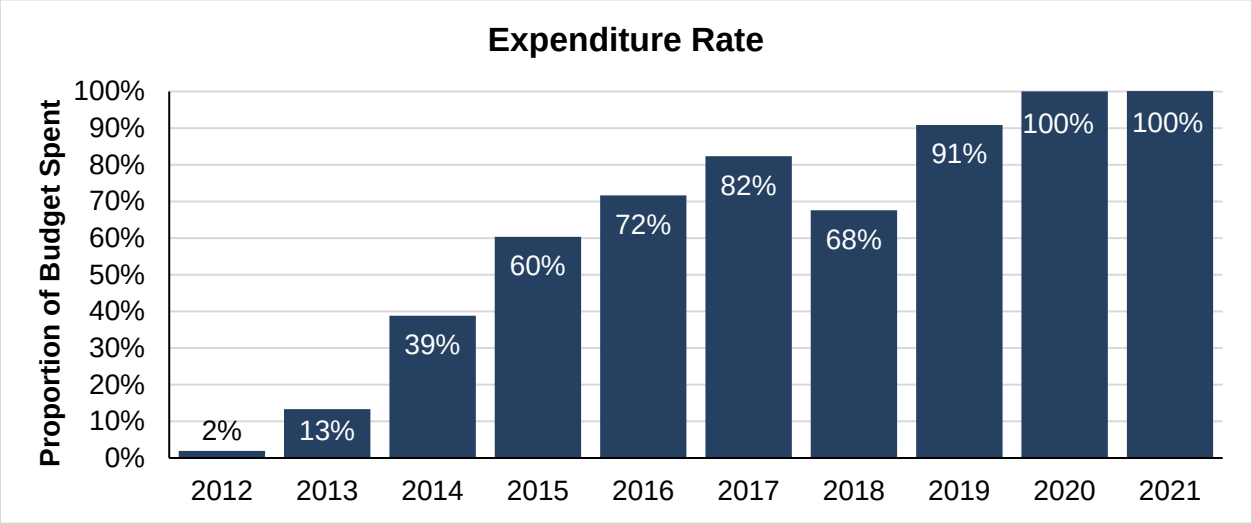
The expenditure rate of the project in general was acceptable, yet the project has few demonstrable results for the expenditure resulting in an unsatisfactory rating for efficiency. The Project utilised 100% of the available budget (Figure 4) but with limited results or impact. Expenditure initially increased at a steady rate between 2014 and 2017 which would likely have resulted in full disbursement by the Project's expected completion date in 2019 given that more than 80% of the total project budget had been disbursed by 2017 (Figure 5). However, the cancellation of the revolving fund, established in 2014 and 2015, in 2019 provided additional resources to continue Project activities to the revised closing date in 2021 (Figure 4). Further exacerbating limited resource availability was the delayed delivery of pledged co-financing funds. By 2017, the Project had expected to receive USD 21 million in co-financing. No records of co-financing were retained so exact amounts are unable to be assessed, however, but there was little partner and private sector engagement as expected so minimal contribution.

Figure 4. Total Project Budget and Expenditure



Source: UNIDO ERP information system as of 11 March 2021

Figure 5. Expenditure rate over Project Timeframe



Source: UNIDO ERP information system as of 11 March 2021

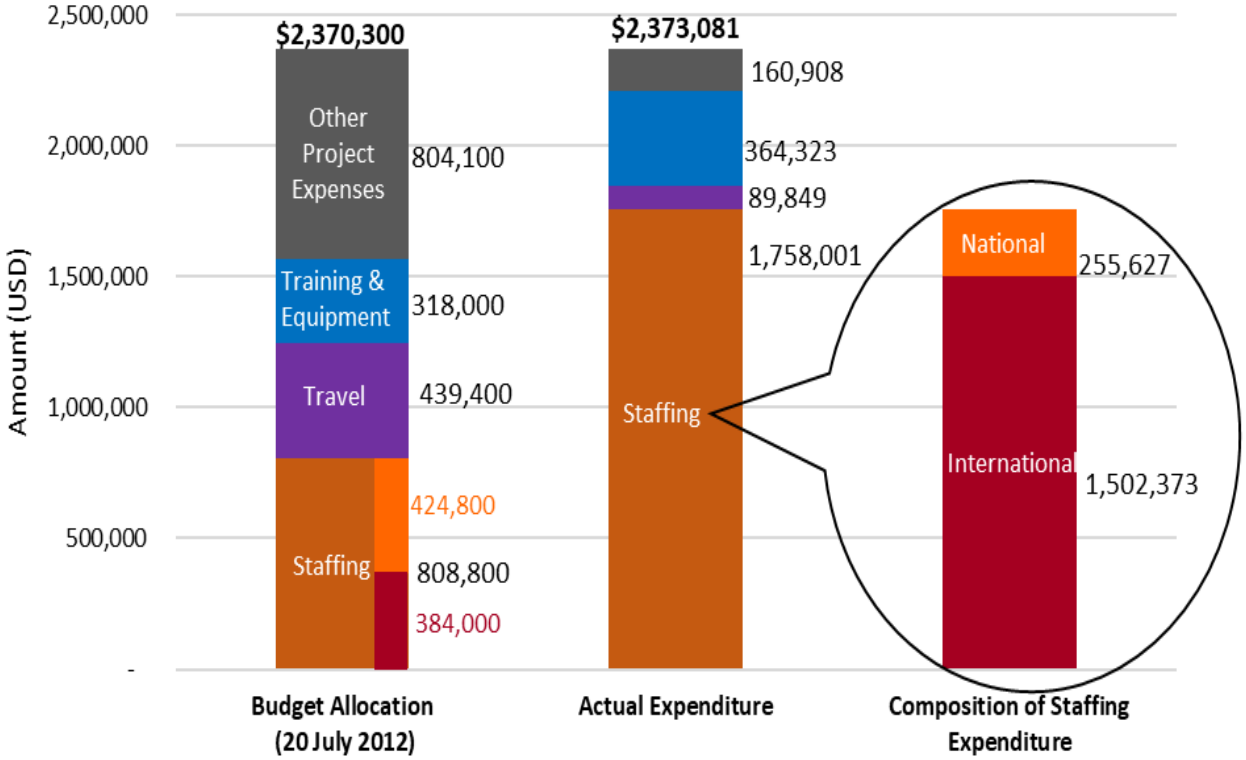
A revolving fund was established to fund bamboo-related sub-projects but was ineffective and the rationale for establishment is unclear. No revolving fund was envisioned at design.[98] However, the project design was cited as rationale for establishing the revolving fund. The fund concept was developed to "assist the low-income enterprises in growing and developing the bamboo plantations and thereafter moving it into the energy supply chain."[99] Regardless of the rationale for establishment, the revolving fund was unsuccessful with USD 600,000 being allocated to the Hatton National Bank. These funds were withdrawn from the project budget in two USD 300,000 instalments in 2014 and 2015. However, given the revolving fund sat idle after

[98] GEF, 2012, *Request for CEO Endorsement/Approval.*
[99] UNIDO, 2015, *Interoffice memorandum, Request and Approval*

the Project did not receive proposals, the fund was dissolved in 2018 to allow for the Project to fund other activities included in design. The dissolution of the revolving fund somewhat counteracted the over-expenditure prior to this period which left only 16% of the total budget available in 2017 (Figure 5).

Actual expenditure at project completion is very different from budget line allocation at design. At design (2012), a total amount of 808,800 USD was allocated for staffing costs, both national and international, accounting for 34% of expected expenditure (Figure 6). However, actual expenditure figures of March 2021 indicate that staffing accounted for 74% (1,758,001 USD) of total expenditure. Within staffing costs, actual expenditure was also very different to allocations. At design it was expected that national consultants and staff would account for approximately 53% (424,800 USD) of staffing expenditure and international staff and consultants would account for 47% (384,000 USD). However, final expenditure figures indicate that only 255,627 USD or 15% of total staffing costs were for national staff and consultants. In contrast, more than 1.5 million USD or 85% of total staffing costs was spent on international staff and consultants. This may reflect a combination of factors, including delays in project activities that required national staff and decreased resource availability for national staff in the context of high expenditure on international staff.

Figure 6. Staffing Budget Allocation and Actual Expenditures



Source: GEF, 2012, *Request for CEO Endorsement/Approval & UNIDO ERP information system as of 11 March 2021*

The work of international consultants was identified as minimal at design with a clear preference to engage local consultants. At design, there was only two international consultants noted to be required. These consultants were to fill the positions of 'international consultant – plantation expert' and 'international consultant – engineered bamboo applications' with a total

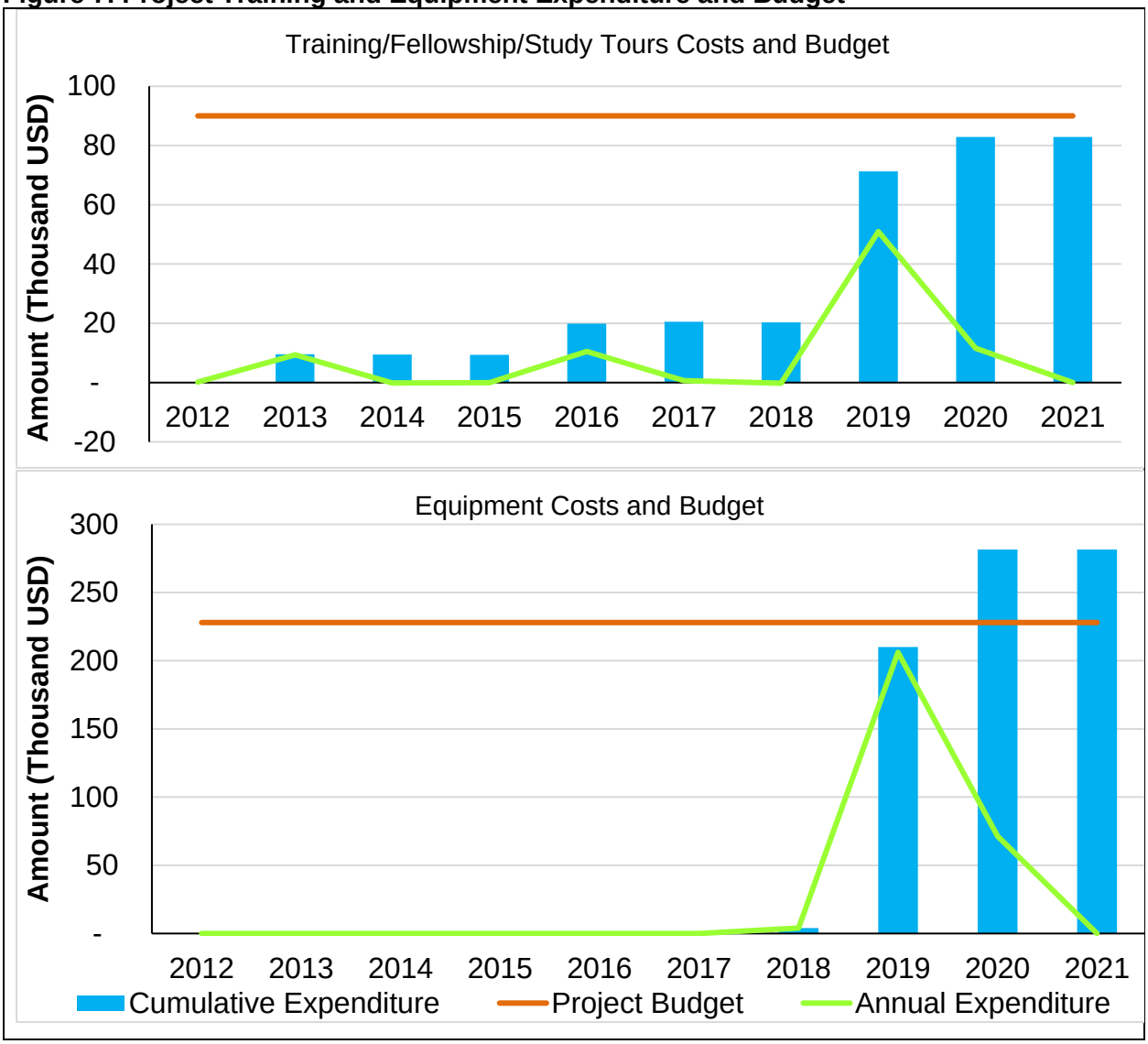
cost of USD 387,000.[100] All other consultant positions[101] were identified as local positions. However, the project actually engaged 12 international consultants including some of the roles earmarked for national consultants at design.[102] As such costs associated with international consultants have been significantly higher than expected and have decreased the budget available to engage national staff and consultants.[103]

The results generated from the work of international consultants have been significantly less than expected and has not been adequately followed up by the Project. Studies and reports prepared by external consultants were designed to create momentum for the establishment of a bamboo sector, to drive change in the enabling environment and to leverage co-financing. However, these outputs did not trigger the changes expected and thus represent a significant inefficiency for the Project given the high level of expenditure for limited demonstrable results. Furthermore, while the work of consultants did generate some useful information, the Project did not sufficiently follow-up on recommendations or findings to generate the required momentum for change. Lastly, the use of external consultants limited the opportunities for capacity strengthening and transfer in the local context. This was exacerbated by the largely siloed work of consultants with limited engagement with the project team.

Project expenditure patterns show increased equipment and training expenditure after 2019, reflecting delays experienced in implementation. Limited project progress is reported prior to 2018. In 2018, the policy review was completed and activities to identify suitable businesses for equipment and training support had been undertaken. This process is reflected in project expenditure rates for training and equipment (Figure 7) also indicating delayed progress in relation to component 2 whereby the bamboo available for processing was also slow to be developed. The Project's timeline (Figure 3), notes the delivery of technical reports by external consultants in and prior to 2017 with limited other progress. Substantive outputs related to planting material and the delivery of training are not evident until the first batch of imported seeds were received in 2018. As a result of these delays in substantive action, there was limited time remaining in the Project to undertake the envisioned activities to achieve the stated objectives. A more detailed version of the timeline is available in Annex 9.

[100] GEF, 2012, *Request for CEO Endorsement/Approval.*
[101] Technical coordinator, land expert, plantation expert, tissue culture expert, national expert on trainers, national expert on business development expert, national policy expert, national expert – biomass supply chain, and national expert – media advisor.
[102] UNUDO internal sats system
[103] Minutes of the post-PSC meeting held on 31st July 2018. "Mr. Rajabdeen (National Director, UNIDO Focal Point) said that the Project money has been spent on consultation fees and travelling and not on the project."

Figure 7. Project Training and Equipment Expenditure and Budget



Source: UNIDO ERP information system as of 11 March 2021

The project did experience several other external challenges which exacerbated an already inefficient project. Such challenges included the delayed receipt of co-financing funds as mentioned in section 3.3. The co-financing was expected to be received from both government and private sector sources but was not received from either. Of the co-financing outlined at design (Table 13), the Project only received the 100,000 USD pledged by UNIDO. There were several factors contributing to the non-receipt of co-financing including limited demonstrable progress undermining confidence of partners in the approach, insufficient engagement and communication of progress with partners[104] and the major private sector partner identified at design going bankrupt during the project.

[104] Minutes of the post-PSC meeting held on 31st July 2018.

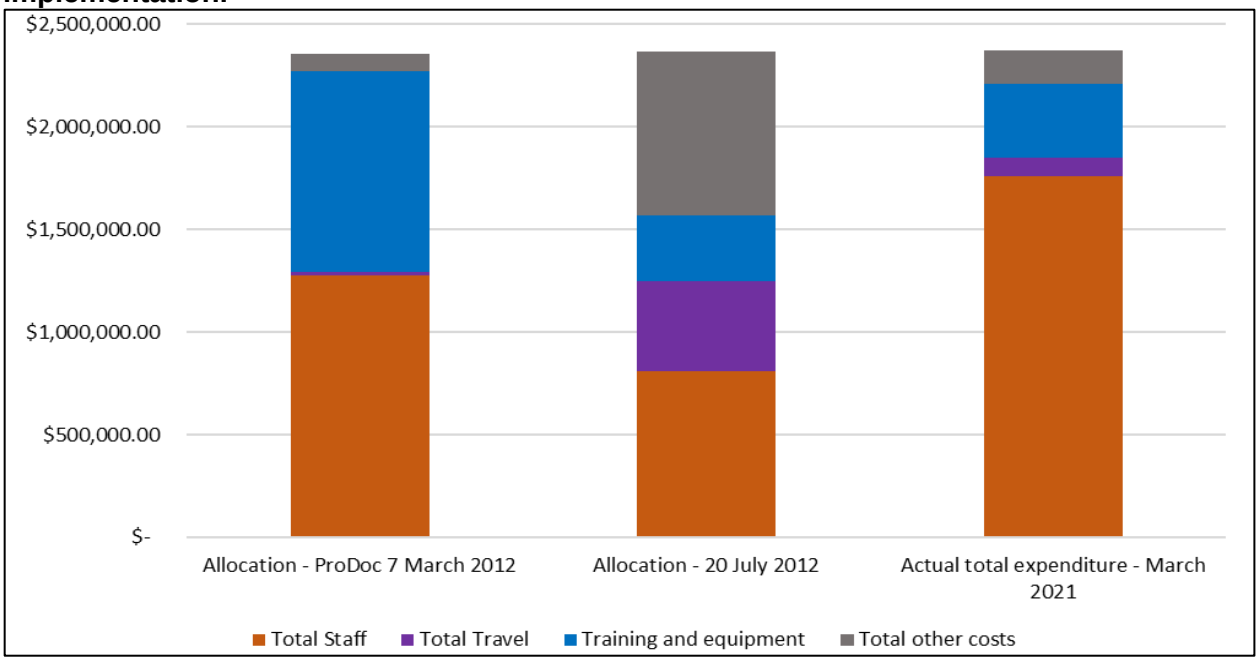
Table 13. Co-Financing Pledged at Design

Organization	In-Kind Support	Cash Support	Total Support	Support received
Mahaweli Authority of Sri Lanka	2,400,000	10,520,000	12,920,000	None
Ministry of Industry and Commerce		1,500,000	1,500,000	No data
Forest Department of Sri Lanka		4,377,000	4,377,000	No data
UNIDO	40,000	60,000	100,000	100,000
Touchwood Investments PLC		1,300,000	1,300,000	None
Bamboo Resources Development (Pvt) Ltd		1,100,000	1,100,000	None
Total	**2,440,000**	**18,857,000**	**21,297,000**	**Insufficient data but well below target**

Source: GEF, 2012, *Request for CEO Endorsement/Approval.*

However, the Project also made poor financial management decisions which exacerbated the effects of these external challenges. For example, the project has made forward payment of 80% of the total cost of training to be delivered despite ongoing delays to the activities. Due to the COVID-19 pandemic, training activities have been delayed with some now not scheduled to be delivered until December 2021, after Project completion. It is unclear if there are mechanisms in place to ensure that these pre-paid activities will be delivered to the expected standards. In addition, there was no clear rationale or process documented for the changes in budget allocation and use (See Figure 8). There is no documentation of GEF approval for major design and budget amendments, e.g. in relation to the revolving fund. Also, there was no tracking of the expected economic and financial benefits as targeted in the design or tracking of industry feasibility prior to training.

Figure 8 Amendment in budget allocations and actual expenditure during project implementation.



Source: UNIDO ERP information system as of 11 March 2021

3.4. Sustainability of benefits

This section assesses the likelihood that project benefits will continue beyond the end of project support. This assessment includes consideration of the mechanisms put in place to ensure sustainability such as an exit plan, the extent to which results have been institutionalised as well as the economic and socio-political risks posed to ongoing benefits.

Sustainability of benefits rating: Unlikely

The potential for sustainability of benefits from the Project has been undermined by an over-reliance on external consultants, implementation delays and limited project progress. The Project demonstrated a preference to engage external, generally international, consultants to conduct project activities and research, especially at the beginning of the Project. As a result, limited capacity transfer has occurred, or capacity built within Sri Lanka to continue project activities and benefits once project support ends. Furthermore, implementation delays that persisted until 2018 and limited project progress after this means that the project results that have been achieved have not had a chance to mature or develop sustainability mechanisms and are unlikely to be self-propelling. Nonetheless, the equipment provided is likely to continue to be used but any expansion of benefits or ongoing strengthening of the bamboo sector is expected to be minimal without ongoing efforts and support.

Despite sustainability being raised as a concern during project design, there was inadequate emphasis during implementation which exacerbated a lack of sustainability mechanisms being included in the project approach. The review by the STAP raised concerns about the likelihood of sustainability at design. “At the project preparation phase, STAP recommends exploring specific mechanisms of how to engage local communities and assure continuous income transfer. Without these mechanisms, sustainability of project impacts will be compromised.”[105] UNIDO outlined a plan in response that included using “an entrepreneurial mechanism to engage with local people and ensure sustainability.”[106] This included project participants having ownership of equipment and engaging community-based organisations and non-government organizations (NGOs) based on the activities of a previous project. However, in practice, the ownership of equipment has been questioned and there is no record of collaboration with community-based organisations or NGOs. Furthermore, UNIDO did not adequately address how to identify suitable participants or encourage application to the requests for proposals.

3.5. Coherence

This section assesses the extent to which the project was delivered in synergy with other UNIDO and GEF interventions and global frameworks as well as similar projects implemented by other organisations in Sri Lanka.

Coherence rating: Unsatisfactory

There was insufficient internal coherence which did not account for delayed progress in any component. The lack of progress in component one and two severely impacted the likelihood of success of the other project components. However, this did not trigger a project restructure. Similarly, changes in context such as shifts in the level of government support for bamboo did not prompt a restructure. This change in government support was not adequately reflecting in

[105] GEF, 2012, *Request for CEO Endorsement/Approval, page 48.*
[106] Ibid.

reporting undermining the potential for formal action and mitigation activities for improved implementation performance.

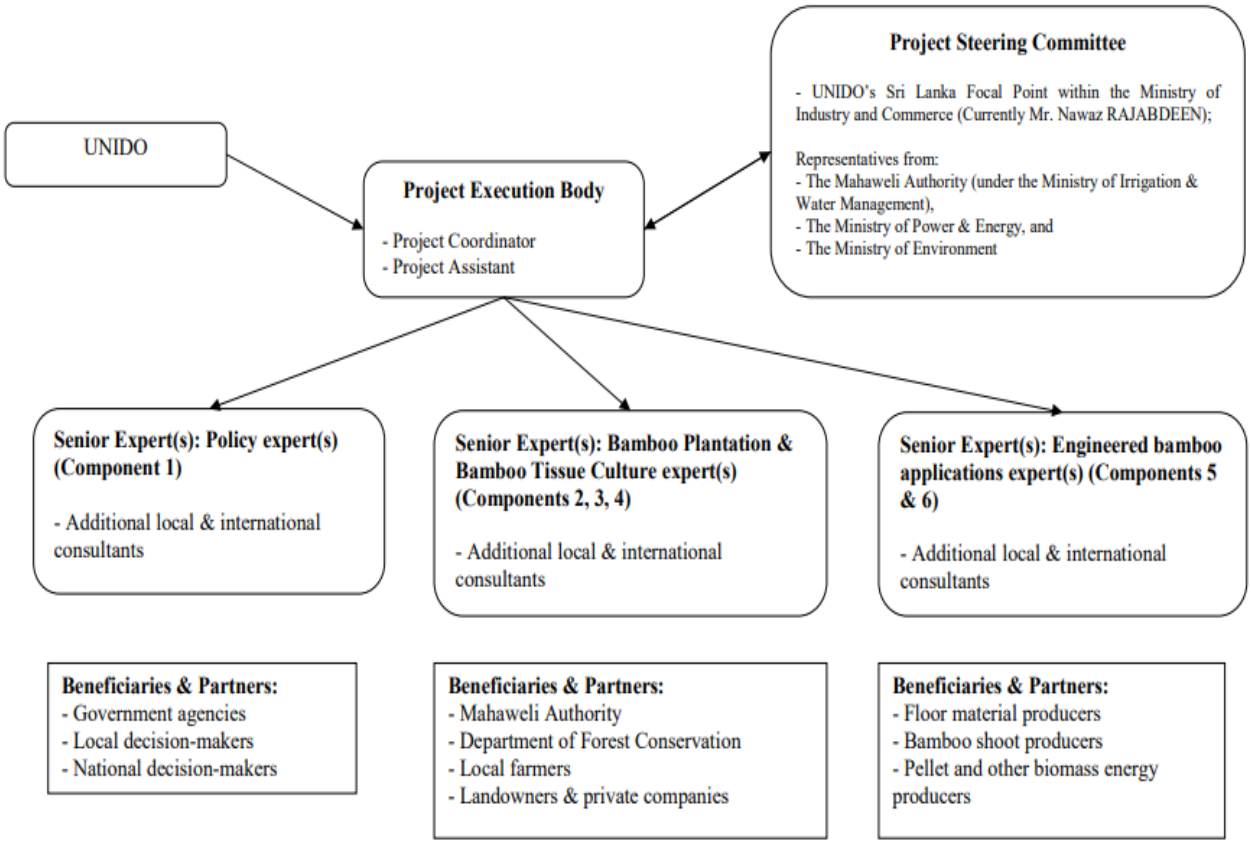
The implementation arrangements adopted by the Project did not adequately reflect project design contributing to insufficient follow-up and monitoring. The Country Project Management Office that was envisioned at design was not established until 2019[107], five months before the original project closing date[108]. The Office was identified as an integral part of project success at design, particularly in terms of coordination. Without the Project Office, the Project did not have a strong in-country presence and there was limited guidance available for implementation and insufficient follow up of actions, including those agreed between the government and the Project (Table 2) and those recommended in consultant-generated reports. In addition, without a strong in-country presence, the Project was less effectively able to build relationships with government, private sector or tea estate stakeholders. In particular, limited progress in relation to the legislative project component, which may have benefitted from more effective engagement with government stakeholders, restricted the potential for progress of other project components.

The proposed implementation arrangements for this project are less clear compared with other GEF projects and this contributed to a fragmented project approach. In most cases for GEF projects, the project being implemented falls under the portfolio of the ministry of the GEF focal point. In contrast, the GEF focal point of Sri Lanka is a member of the Ministry of Environment while the UNIDO focal point is in the Ministry of Industries (Industrial Development). The Project was implemented through the Ministry of Commerce with inputs from a range of other ministries. The diluted Project focal point and therefore engagement within the national government contributed to a fragmented approach which had inputs from at least four separate ministries.[109] Without the national project office to act as a central coordination mechanism as expected at design project activities were not implemented in a coherent manner.

Other coordination mechanisms envisioned to contribute to improved coherence such as the Project Steering Committee (PSC) were underutilised. At design it was stated that "The proposed project will establish the necessary communication and coordination mechanisms through a Project Execution Body and Project Steering Committee with other biomass related projects in Sri Lanka." However, the PSC met on four occasions over the eight-year duration of the Project (Figure 3). This resulted in PSC members feeling less than informed in relation to the Project and in some cases resulted in members leaving the group.110 A lack of utilisation of the PSC removed a large component of project implementation and coordination mechanisms outlined at design (
Figure 9) and the irregular nature of meetings contributed to an incoherent approach.

[107] UNIDO, 2019, *Report of activities – UNIDO-GEF Project "Bamboo processing for Sri Lanka" July – December 2019*
[108] GEF, 2012, *Request for CEO Endorsement/Approval*
[109] The nature of Project activities led to engagement with the Ministry of Agriculture and the Forestry Department in addition to the Ministry of Environment and Ministry of Commerce.
[110] Minutes of the post-PSC meeting held on 31st July 2018.

Figure 9. Project implementation and coordination mechanisms at design



Source: GEF, 2012, Request for CEO Endorsement/Approval

The Project identified similar initiatives at design but did not actively engage or seek coherence throughout implementation. The Project identified at design, three projects implemented by other agencies with some similarities to the proposed project.[111] These Projects included a joint United Nations Development Program and Food and Agriculture Organization Project which aimed to "address policy, guidelines and capacity barriers to the sustainable plantation management and the use of biomass."[112] The Ministry of Environment was identified as the avenue for coherence with this Project as a shared stakeholder. Another Project identified was the 'Transfer of Technology in Bamboo Shoot Production, Processing and Marketing from China to Bangladesh and Sri Lanka' which began as an emergency response project and had similar product diversification objectives. The last Project identified as similar at design was the World Bank project 'Renewable Energy for Rural Economic Development' which included general biomass activities but as a small part of the overall project. The ProDoc stipulates that "coordination with other initiatives in Sri Lanka will be facilitated by involvement of stakeholders from those initiatives in the PSC." However, beyond the discussion of these projects at design there is limited evidence of ongoing engagement for learning or ensuring coherence with other approaches and stakeholders from the other initiatives are not recorded as having participated in PSC meetings.

There is limited demonstration of the coherence with other partners of initiatives. For example, while the Project engaged with the Ministry of Agriculture to raise plants through Walpita

[111] GEF, 2012, *Request for CEO Endorsement/Approval*
[112] GEF, 2012, *Request for CEO Endorsement/Approval,* pg. 33

Farm, there is no evidence that supporting the establishment of bamboo plantations or a bamboo sector is aligned with the priorities of that Ministry. There is a similar lack of demonstration for the priorities of the Forestry department and Ministry of Environment, both of which are identified as important to the project approach.

There is an increasing focus on market demand, but this was not adequate in the technical support provided over the Project period. The technical support provided very much emphasised the technical aspects of the bamboo industry and did not acknowledge the realities of the market situation. This is reflective of the expenditure patterns of the project which over-spent on international technical consultants to deliver technical reports, particularly in the early years of the Project. Simultaneously the Project significantly underspent on national staff with further understanding of the local context. There was a shift in the more recent years of the project in line with articulated market demand. This has resulted in improved coherence with the pre-existing industry and has identified new industry directions.

3.6. Gender mainstreaming

Assessment of gender mainstreaming includes the extent of gender consideration at design, including gender assessments or baseline studies as well as the gender balance of project implementation mechanisms and the likelihood that results generated by the Project will benefit both men and women.

Gender Mainstreaming rating: Unsatisfactory

There were no gender mainstreaming objectives in the Project and implementation activities were effectively gender blind. The project design was not subject to Gender Policy of UNIDO (2015) and GEF and hence there was no specific compliance requirement or output or outcome targets, nonetheless, active efforts to consider gender were promoted by both UNIDO and GEF from 2015. Yet, there was no specific gender focus applied at any point of the Project. The mechanisms chosen for implementation largely favoured male beneficiaries. For example, the general call for project EOIs for equipment and planting material provision favoured male respondents given the gender balance in the existing bamboo industry. Similarly, participants in project training activities were mostly male and there were no specific initiatives undertaken to encourage female participation, except at the level of handcraft and design of bamboo products, where female participation was promoted actively. As a result, the outcomes from the project disproportionately favoured males and the Project was effectively gender blind.

4. Performance of Partners

4.1. UNIDO

Assessment of UNIDO as the implementing agency includes consideration of the mobilisation of relevant and adequate technical expertise, the role of UNIDO's in-country presence in supporting the Project, the effectiveness of implementation and coordination efforts and engagement in policy dialogues to encourage upscaling of benefits.

UNIDO Performance rating: Unsatisfactory

While other factors influenced the ability of the Project to meet objectives it was ultimately UNIDO's responsibility, yet UNIDO did not effectively fulfil coordination, support or management roles. At design it was stated that "the GEF Implementing Agency UNIDO holds the ultimate responsibility for the implementation of the project, the delivery of the planned outputs and the achievement of the expected outcomes."[113] Despite this role UNIDO demonstrated poor institutional supervision of project management, especially in the early years of implementation. Given the statement of UNIDO's responsibilities at design, the overall lack of demonstrable progress or achievement of targets reflect UNIDO's performance. The delayed establishment of project implementation mechanisms is also reflective of UNIDO's performance.

The limited establishment of expected project implementation mechanisms delayed project progress and hindered coordination. Project implementation mechanisms, including a local Project Management Office, were not established according to the timeline outlined at design.[114] This delayed establishment of the Office limited the time available for project activities to be completed before scheduled completion in May 2020. Limited in-country presence also affected the Project's its ability to forge relationships with national counterparts. Stakeholder feedback suggests that project engagement with national counterparts, particularly at the beginning of the Project was insufficient. This improved slightly towards the end of the Project, especially with the strategic engagement of higher level UNIDO personnel but overall is assessed as unsatisfactory. The Project Office was also envisioned to be an important coordination tool and without it the project approach became fragmented and incoherent.[115] Such a mechanism being established at an earlier stage in the Project may have assisted with contextualising project activities, strengthened relationships with government and other national counterparts and created a more robust feedback loop for adaptive management activities. Project steering committee meetings were not delivered as outlined in the ProDoc.

The reliance of the Project on external, international consultants rather than following the project design was counterproductive to national project progress. As noted in efficiency the over-use of international consultants led to an undue focus on the technical elements of the Project rather than on day-to-day achievement of tasks required. The project implementation approach deviated from the ProDoc with the result that there was little in-country follow up or sufficient transfer of expertise and knowledge to national counterparts. This disconnect with the national context was exacerbated by the irregular nature of PSC meetings.[116] Bi-annual PSC meetings, as stipulated at design, would have provided increased opportunity for feedback about Project progress, kept stakeholders engaged and informed regarding the project and assisted results-based management. Such meetings would have also assisted in grounding project activities in the needs and priorities of the national context, but the PSC met only four times over the nine years of the Project limiting potential for coordination and feedback.

Ineffective and inadequate reporting and adaptive management with regards to poor project performance contribute to an unsatisfactory rating for UNIDO's performance. UNIDO's reporting shows evidence of dissimulation whereby other Project stakeholders have reported challenges faced by the Project and evidence of very limited progress in the early years which have not been reflected in UNIDO's formal reporting. This not only undermines the effectiveness of reporting mechanisms but also inhibits opportunities for results-based

[113] GEF, 2012, *Request for CEO Endorsement/Approval*
[114] UNIDO, 2019, *Report of activities – UNIDO-GEF Project "Bamboo processing for Sri Lanka" July – December 2019*
[115] Minutes of the post-PSC meeting held on 31st July 2018. Mr. Balasubramaniam said that the Bamboo Project is a good Project which needs proper Coordination." "Mr. Balasubramaniam said that it was due to lack of coordination. (that not all Project stakeholders were aware of details)"
[116] Meetings held in 2012, 2014, 2018, and 2019 (PSC Meeting minutes)

management (See section 5.2 for more details in relation to results-based management). Such reporting was also evident in the updates the Project shared with the PSC which contributed to the overall less than effective nature of the group. For example, the progress updates shared with PSC members were limited in scope and focussed on narrow achievements. In the presentation made to the second PSC meeting, the Project shares only three items in relation to progress, the identification of land for plantations, the pilot project at Padukka village and the formation of the national bamboo association.[117] Without presenting a more comprehensive report of all Project activities, there was limited opportunity for discussion of challenges.[118]

Despite under-reporting of challenges, poor assessments of performance were recorded at the mid-term review, yet no steps were taken to address the lack of progress. Formal reports were produced which indicated slow project progress and a project at risk of non-achievement. Nonetheless, actions to improve project performance were consistently lacking by the end of the project. This signifies insufficient oversight by UNIDO of a clearly poorly performing project and a missed opportunity for corrective action to be taken in order to improve project outcomes. Despite a very poor assessment of performance in 2014/2015 by the Sri Lanka Country Programme Evaluation and at mid-term in 2016-2017, no restructure was recommended, and the challenges were not addressed or reported to the donor. There was a decision made by UNIDO to rescind the loan fund that had been established but this was decision did not involve documented prior approval from national stakeholders. Furthermore, despite the high levels of project expenditure compared with the results reported there was a systematic lack of corrective action by UNIDO. Performance has improved in recent years for industry-related project components but are inhibited by the lack of progress from earlier years and the possibility of achievement of outcomes was low as a result.

4.2. National counterparts

Assessment of the performance of national counterparts includes consideration of the level of ownership of the Project the timely provision of counterpart funding and effectiveness of engagement with UNIDO throughout the Project from design, through implementation and into sustainability planning.

National Counterparts Performance rating: Moderately unsatisfactory

National counterpart members of the PSC did not adequately fulfil their oversight roles or engage with Project coordination mechanisms. Some members of the PSC, and the GEF focal point, did raise concerns about the limited demonstrable progress of the project.[119] The committee also noted communication challenges in effectively reaching the project to discuss concerns.[120] However, the committee did not take all possible actions to encourage progress and

[117] Levissianos, A, 2014, *Bamboo Processing for Sri Lanka 2nd project Steering Committee Meeting Presentation*

[118] Minutes of the post-PSC meeting held on 31st July 2018. "The Bamboo Association was formed with the help of UNIDO, to facilitate the growers and industry…Since there were no progress the members of the association was not interested to continue with the association."

[119] Minutes of the post-PSC meeting held on 31st July 2018. Additional Secretary (Industry Development)-MoIC) informed that the Ministry of Mahaweli and Environment Development is not at all happy with this project and that in the future they will not attend any meetings related the Bamboo Project."

[120] Minutes of the post-PSC meeting held on 31st July 2018. Additional Secretary (Industry Development)-MoIC) said that the Bamboo Project is a good Project which needs proper Coordination. The Mahaweli Ministry can play a very important role in the plantation sector and the Ministry of industries can support the industrial sector. There is no proper project Office to follow the progress. The Project Coordinator works from home and cannot be contacted when required

could have applied further pressure to the project to encourage action. However, the national members of the PSC also demonstrated a lack of meaningful engagement with the Project. For example, at design it was expected that the PSC would be chaired by the Secretary of the Ministry of Industry and Commerce[121] but instead the meetings were chaired by the Additional Secretary.[122] The Secretary was not present.

Changes in government contributed to the difficulties in coordination and forging relationships faced by the Project. For example, the dissolution of the PDO-PMO during a change of government (in 2020) decreased the potential for action and partnership from the initial meetings. However, even prior to dissolution, the PDO-PMO could have played a stronger role in prompting action from the Project. For example, the lack of recorded or reported action in relation to the recommendations outlined in Table 2 were not followed up by national counterparts to encourage progress towards their stated objectives of a strengthened bamboo sector for the country. Furthermore, with the change in government there was also a change in the interest level of national counterparts. Despite initially expressing interest during project design in strengthening the bamboo sector, the new government did not share this interest.

Co-financing that was pledged at design was not delivered as envisioned and in the context of higher than expected rates of expenditure this further inhibited the Project's potential. At design, it was envisioned that the Project would receive 21,297,000USD in cofinancing (2,440,000 in-kind support and 18,857,000 in cash support). Of this amount, 18,797,000USD was expected to be received from various government entities.[123] However, these funds were not received.

4.3. Donor

Assessment of donor performance includes the timely disbursement of agreed funds, feedback provided to progress reports and the support of GEF's in-country focal point.

Donor Performance rating: Moderately unsatisfactory

The Donor's timely disbursement was satisfactory but follow-up and oversight to encourage project impact was not. Assessment of donor performance includes the timely disbursement of agreed funds, feedback provided to progress reports and the support of GEF's in-country focal point. All funds were delivered as planned and on time but the Donor demonstrated limited willingness to hold the project accountable for funding. Given that the budget for some budget line items had been spent by 2014 and there had been limited progress reported, GEF should have questioned these expenditure amounts with the project. A similar trend is evident at the mid-term where the MTR reports poor performance and yet the Project had spent almost three quarters of the budget. Despite there was little follow-up made by GEF with UNIDO management. Lastly, GEF tacitly acknowledged the establishment of the revolving fund through the PSC despite the clear stipulation at design that a revolving fund was not necessary or appropriate.

and there are no proper records regarding the progress of the Project etc. He is not happy about this project, and Secretary will submit a report to DG UNIDO."

[121] GEF, 2012, *Request for CEO Endorsement/Approval*

[122] PSC Meeting minutes 2nd Meeting (2014), 3rd Meeting (2018), 4th Meeting (2019)

[123] GEF, 2012, *Request for CEO Endorsement/Approval, page 75*

The GEF focal point attended the 3rd and 4th PSC, albeit two different officers due to staffing turn-over, and some concerns were raised. Based on the internal correspondence file of the Ministry of Environment concerns had been expressed about the lack of progress. The Ministry of Environment organised two meetings with the Project and the Ministry of Industries and corresponded to the Project Manager in January 2018[124] and September 2019[125] to discuss various issues relating to progress including not following protocol for fixing dates for PSC (with an indication that PSC should be chaired by the Ministry of Environment) rather than holding PSC meeting on an adhoc manner[126], short-comings in the Progress Reports, concern on the revolving fund transfer, and that it has been done without following the rules of the Sri Lankan government legislation and for not discussing with the Ministry; and deficiencies in the project coordination with key stakeholders. The Ministry also noted that PSC actions had not been adequately followed up and reported on and that the selection of beneficiaries for machinery was not sufficiently transparent.

Given the ambitious approaches prompted by the POZNAN approach GEF should have maintained a stronger oversight role. GEF should have been aware that the Project, as part of the POZNAN programme, faced increased risks and were less likely to succeed. As such it should have monitored progress more closely and could have provided learning from other POZNAN projects to assist with implementing such an ambitious project.

5. Factors facilitating or limiting the achievement of results.

5.1. Monitoring & evaluation

Assessment of Project monitoring and evaluation (M&E) includes consideration of the adequacy and usefulness of M&E outputs. Specifically, this includes the appropriateness of the M&E plan outlined at design, including budget allocation, the use of information generated by M&E during the Project, the timely completion of M&E outputs, and alignment with the stipulated logical framework and indicators.

Monitoring and Evaluation rating: Moderately unsatisfactory

Monitoring and evaluation was inadequate, without adequate reflection of project context, challenges and progress inhibiting opportunities for results-based management. Monitoring and evaluation difficulties were present from design where there were logic gaps present in the results framework between output indicators and expected outcomes, there was no baseline and no project database for monitoring was established. As such indicators were not adequate to measure project progress, to capture challenges or to inform recommendations. These difficulties continued where there was inadequate data available on results achieved and the reported data was not sufficiently verified, particularly in relation to outcomes. Challenges and delays were not sufficiently recorded hindering the potential for results-based management.

Given the limited progress of project activities towards demonstrable results, monitoring and evaluation activities and outputs were accordingly lacking but were not of sufficient quality or delivered on time. More regular and informal reporting such as the bi-annual reports

[124] Email dated 23 January 2018 of GEF OFP to UNIDO Project Manager
[125] Back-to-Office memo; 25 July 2019 of Director, International Relations, MoE
[126] Email dated 23 August 2019 of GEF OFP to Project Coordinator to request meeting to resolve issues.

to GEF and the PIRs were largely delivered on time but contained very specific accounts of results achieved that left limited opportunity to report on challenges and delays. However, the mid-term review is dated (November 2016) a year after stipulated in the design document (November 2015) and stakeholder feedback suggests that the MTR was not made available externally to UNIDO for almost another year (August 2017). In addition, monitoring and evaluation outputs not adequately reflect the challenges and delays facing the Project. For example, the MTR did reflect poor project performance it did not discuss all aspects of the limited progress and made no mention of the structure envisioned at design not having been implemented. This insufficient reporting of challenges combined with a delay in the delivery of the MTR undermined the potential for corrective action to be undertaken to improve project performance.

5.2. Results-Based Management

Assessment of results-based management incorporates three aspects: i) results-based work planning, (ii) results-based monitoring and evaluation and iii) results-based reporting. This includes consideration of the extent to which work plans and budgets are results-based, the use of the logical framework as a management tool, if the monitoring processes being used adequately track progress for informed decision making, and the extent to which adaptive management processes have been implemented.

Results-based Management rating: Unsatisfactory

Given the Project was at risk of underachievement as part of the ambitious POZNAN program and limited progress was continually reported, stronger adaptive management and oversight procedures should have been implemented. Despite the insufficient reporting of Project challenges discussed above, monitoring and evaluation reports did consistently report poor project progress while simultaneously reporting high rates of expenditure. However, there was no further follow-up by any project stakeholders nor UNIDO management as to the reasons behind these results nor was any action taken to improve project performance. For example, the significant delay in establishing the implementation mechanisms outlined at design, including the national project office, was not followed up nor queried by project stakeholders. While the lack of results-based management was facilitated by the limited availability of verifiable progress data and under-reporting of challenges, there was still insufficient follow-up to fill the gaps in data and understanding of progress which should have prompted corrective action. Furthermore, although the lack of overall project progress is symptomatic of the bottlenecks created by slow progress under components one and two, a restructure was not suggested which could have addressed these bottlenecks.

Recommendations that were made to improve project outcomes were not followed up or implemented by project management. Recommendations made to improve project performance in the MTR were not implemented and progress against these was not followed-up. These recommendations included improving coordination mechanisms and refreshing the PSC to encourage action. Neither of these actions were undertaken immediately after the MTR, although the PSC did reconvene in 2018. There is little evidence of systematic follow-up of MTR recommendations. Developing an updated implementation plan and budget was also recommended at the mid-term. Immediately after the MTR, a new workplan was developed but this was basic and did not include an updated budget. The progress of this plan was also not followed-up methodically. Similar poor assessments of achievement were presented in the

UNIDO Country Program Evaluation for Sri Lanka in 2015 but did not prompt further action by the project management. The project management improved after 2017 but this was too late to retrieve the effective implementation of the Project.

Insufficient results-based management is clear in relation to financial management and planning. The poor financial management of the project is clear in two ways. Firstly, the expected co-financing amounts were not received. This was particularly highlighted in the MTR. However, no corrective action was taken, either in the form of follow-up with the expected providers of the co-finance or in the form of a project restructure to reflect the reduced counterpart resource availability. Secondly, despite some budget lines having been overspent by as early as 2014 and by amounts exceeding 10% there was no intervention on the part of UNIDO or GEF. Overall, despite several identified risks to Project success and warning signs of underperformance no investigative activities to understand root causes or corrective action was undertaken.

5.3. Other factors

A major challenge for the Project was the level of interest of stakeholders in bamboo. The level of interest in planting bamboo as an energy source was significantly lower than required for project success. This was in part due to the policy barriers but also due to a lack of demonstrated feasibility and economic viability of bamboo in the private sector (Annexes

Annex 1). While the Project did work to overcome some of these challenges through policy work and knowledge generation the activities undertaken were not a sufficient scale to create interest. The level of interest of pre-existing bamboo stakeholders was overestimated at the time of design and the activities and timeframe included in design were not sufficient to reach the levels of interest required.

The Project experienced inconsistent engagement of Project stakeholders. This is most evident in the turnover of participants in the PSC meetings. Table 14 shows that of the four original government entities identified as PSC members at design, only two were still attending PSC meetings by 2019 and the number of representatives from these entities had decreased significantly. This may be reflective of a growing sense of frustration outlined by other project stakeholders due the lack of progress and limited engagement.

Table 14. Members of the PSC during Meetings[127, 128 & 129]

PSC Members at Design	Participants at the 2nd PSC Meeting (2014)	Participants at the 3rd PSC Meeting (2018)	Participants at the 4th PSC Meeting (2019)
Ministry of Industry and Commerce	Additional Secretary - Ministry of Industry and Commerce	Secretary, Ministry of Industry and Commerce (MOIC)	
		Additional Secretary (Industrial Development), MOIC	Chairman – Additional Secretary Ministry of Industry and Commerce
		Assistant Director (Industrial Development and Industrial Registration), MOIC	Assistant Director – Ministry of Industries and Commerce
		Director, Ministry of Industry and Commerce (MOIC)	
		Chairman, Industrial Development Board, MOIC	
		Director General, Industrial Development Board, MOIC	Industrial Development Board
		Director (Technical Services), Industrial Development Board, MOIC	
		Industrial Development Officer, Ministry of Industry & Commerce, MOIC	
		Management Assistant, Ministry of Industry & Commerce, MOIC	
MASL	Director Mahaweli Authority		
Ministry of Power & Energy	Engineer Sustainable Energy Authority		
Ministry of Environment	Director, Forest Department	Director, (Education, Training and Research), Ministry of Mahaweli Development and Environment (MMDE)	Director - Ministry of Mahaweli and Environment

[127] PSC, 2014, Minutes of the Bamboo Project Steering Committee Meeting 27th May 2014
[128] PSC, 2018, 3rd Project Steering Committee Meeting Bamboo Processing for Sri Lanka
[129] PSC, 2019, Minutes 4th Project Steering Committee Meeting Bamboo Processing for Sri Lanka

PSC Members at Design	Participants at the 2nd PSC Meeting (2014)	Participants at the 3rd PSC Meeting (2018)	Participants at the 4th PSC Meeting (2019)
(incl. Forest Department)		Additional Conservator General of Forest, (Research and Education), Forest Department, MMDE	Assistant forest conservator – Forest Department
			Director – Forest conservation – Forest Department
	Team Leader Sri Lanka Country Program		
	National Director, UNIDO Focal Point	National Director, Focal Point Office, UNIDO	National Director - UNIDO Focal Point
		Programme Secretary, Focal Point Office, UNIDO	Project Secretary UNIDO
		Senior Industrial Development Officer, PTE/AGR/FSN, (Project Manager, Bamboo Processing for Sri Lanka), UNIDO	Senior Industrial Development Officer, Project Manager of Bamboo Processing Sri Lanka - UNIDO
	International Consultant-Bamboo Project	Bamboo Expert, PTE/AGR/FSN, UNIDO	Energy expert UNIDO
		National Project Coordinator: Bamboo Processing for Sri Lanka, UNIDO	National Project Coordinator - UNIDO
			International Project Associate - UNIDO
	National Coordinator – UNIDO Country Program-SL		
	Director, Ministry of Plantation		Assistant Director Development – Ministry of Plantation Industries
		Director, Ministry of Land and Parliamentary Reforms	Deputy Director – Land use &policy planning Department
		Director, Department of Land use Policy Planning, Ministry of Lands and Parliamentary Reforms (MLPR)	Additional Secretary – Land ministry

PSC Members at Design	Participants at the 2nd PSC Meeting (2014)	Participants at the 3rd PSC Meeting (2018)	Participants at the 4th PSC Meeting (2019)
		Akash Group / Sustainable Green Energy Pvt Ltd	

5.4. Overall assessment and rating table

#	Evaluation criteria	Summary Assessment	Rating	
A	**Impact**	Limited project progress at the output and outcome level has severely hindered the Project's ability to contribute to impact. Only one of six high level verifiable indicators was partially achieved with all others not having been achieved.	**2**	**Unsatisfactory**
B	**Project design**	Project design was over-ambitious and did not reflect the required chain of events for achievement of project objectives.	**3**	**Moderately Unsatisfactory**
1	Overall design	The complex project design that targeted policy, supply and market-related outcomes did not identify the potential for bottlenecks to progress from non-achievement of one component. The timeframe of the project was not sufficient for the ambitious level of action required and the prolonged and intensive engagement required for policy change and for the establishment of the whole value chain of bamboo	3	Moderately Unsatisfactory
2	Logframe	The activities and targets included at design were over-ambitious and did not acknowledge the practical implementation constraints. Some gaps were also evident in the Project logframe with a disconnect between outputs and intended outcomes.	3	Moderately Unsatisfactory
C	**Project performance**			
1	Relevance	The Project was initially relevant but limited progress undermined continuing relevance. The relevance of the Project waned over time with differing levels of interest from national stakeholders. The Project had the potential to respond to the priorities of both GEF and UNIDO but the potential was not realized.	4	Moderately Satisfactory
2	Effectiveness	Limited progress has been made towards some outputs but overall progress is weak and targets have not been achieved. Very few project outputs have been delivered to the levels expected at design. Consequently, low levels of achievement of outcomes is evident.	2	Unsatisfactory
3	Efficiency	The Project disbursed all available funds but produced few demonstrable results leading to an inefficient rating. Project expenditure was not aligned with specific budget line allocations at design which contributed to poor performance and missed opportunities.	2	Unsatisfactory

#	Evaluation criteria	Summary Assessment	Rating	
4	Sustainability of benefits	Given the small-scale and delayed and isolated nature of the limited project results sustainability is unlikely.	2	Unlikely
*	Coherence	Implementation and coordination mechanisms outlined at design were not established and a fragmented and disjointed project approach resulted which hindered adaptation. There was insufficient focus on the coherence between technical and market aspects. Coordination has improved in the latter years but overall coherence was poor.	2	Unsatisfactory
D	**Cross-cutting performance criteria**			
1	Gender mainstreaming	The Project is considered to be effectively gender blind as no specific efforts were made for gender equality in any activities.	2	Unsatisfactory
2	**Monitoring and Evaluation (M&E):** -M&E design -M&E implementation	Outputs produced from monitoring and evaluation activities did not adequately reflect the limited progress of the Project or the challenges and delays being experienced. In addition, some monitoring and evaluation outputs were delayed hindering opportunities for results-based management.	3 3 3	**Moderately Unsatisfactory** Moderately Unsatisfactory Moderately Unsatisfactory
3	Results-based Management (RBM)	Adaptive actions were not taken to address poor performance, high rates of expenditure or deviation from the approved approach. While challenges and delays were under-reported there was evidence of poor project progress. Given the ambitious nature of the Project's as a POZNAN project more stringent follow-up actions should have been pursued.	2	Unsatisfactory
E	**Performance of partners**			
1	UNIDO	UNIDO's performance is rated as unsatisfactorily due to missed opportunities to improve project performance and inadequate organizational support or oversight despite overall responsibility as implementing partner.	2	Unsatisfactory
2	National counterparts	National counterparts did not provide pledged co-financing and did not participate as fully as possible in Project coordination and implementation mechanisms.	3	Moderately Unsatisfactory
3	Donor	GEF delivered funds in a timely manner but did not actively engage or maintain oversight of the Project despite encouraging the ambitious design as part of the POZNAN programme.	3	Moderately Unsatisfactory
F	**Overall assessment**		**2**	**Unsatisfactory**

6. Conclusions, recommendations and lessons learned

6.1. Conclusions

1. **Project design was over-ambitious resulting in minimal progress against stated targets and the Project was insufficiently established**. The ambitious nature of the project was in theory effective to respond to the development challenges and stated objectives. However, the design did not adequately reflect the local context and the required chain of actions for achievement of outcomes. Such an ambitious design required strong project management and implementation mechanisms, but these were not established as stipulated at design.

2. **Early delays and difficulties in policy reforms were major impediments to overall project progress; policy reforms are unlikely to occur**. Project design did not adequately acknowledge the bottleneck in project progress likely to be caused by non-achievement of policy related outcomes. Without an enabling policy environment, the project was unable to generate sufficient interest from industry with continuing policy barriers to feasibility. Given the limited progress in relation to policy actions to date it is unlikely that the stated policy reforms will occur once the project ends.

3. **Project substantially underperformed, particularly in the first 5 years of implementation with some recent improvements particularly in relation to knowledge products**. Very few project targets have been met and there is no evidence of contribution towards most stated outcomes and impact. Some progress has been made since mid-term, but the results are severely delayed, delivered in isolation and of too small of a scale to contribute to the achievement of project objectives. All equipment provided by the project has been delivered since 2018. Other positive project activities have been conducted in relation to knowledge generation through the development of manuals and training activities. However, the impact of these activities is minimized by the lack of progress of other project components.

4. **Investment in sourcing international expertise rather than building national capacity has been counterproductive and has resulted in inefficient investment**. The over-reliance on international, technical consultants presented several missed opportunities for the Project. Without stronger, in-country presence the Project was unable to productively engage with government stakeholders for large periods and were less receptive to in-country feedback and context. Higher than expected use of international, technical consultants that were largely removed from the in-country experience decreased the opportunities for capacity transfer to national staff. Recent capacity development has demonstrated the potential results of a more even national and international staff mix.

5. **Oversight and results-based management activities were insufficient and contributed to continuous poor project performance**. No follow-up or corrective action was taken despite poor progress and high expenditure being reported on several occasions, in particular the 2015 Sri Lanka UNIDO CPE and the MTR. These reflections of poor progress should have prompted further follow-up and potentially a project restructure.

6.2. Recommendations

1) **Build upon and safeguard the results that have been achieved**

1a) **The manuals and training materials generated through the project should be updated based on feedback from participants to improve use and wider dissemination.** These knowledge materials can play an important role in promoting wider use of bamboo. They will be most effective if they are reviewed and tailored to their intended audience and so gathering feedback from training participants to inform updates will be essential.
Responsibility: IDB

1b) **Follow-up by UNIDO, with selected grantees is required for recently installed equipment to ensure that it is functional and operational.** Given the delayed nature of equipment provision and the stipulation that beneficiaries own equipment, continued follow-up beyond the end of the Project to encourage ongoing use and benefits is important to safeguard the limited progress made.
Responsibility: UNIDO

2) **Encourage a balanced use of international and national experts and staff.**

2a) The benefits of a balanced use of national and international staff and experts should be promoted within UNIDO. The numerous benefits of engaging both national and international staff and experts including, opportunities for capacity transfer, strengthened in-country engagement and relationship building should be incorporated into project management.
Responsibility: UNIDO

2b) **A system for tracking expenditure against budget allocations approved at design by component and budget line should be established.** Systems should be in place to track project expenditure against specific budget allocations outlined at design and as a proportion of overall project expenditure. These systems should include mechanisms for flagging projects at risk of over expenditure to allow for corrective action throughout project implementation.
Responsibility: UNIDO

3) **New systems for identifying and addressing project at risk of non-achievement and inefficiency should be established.** The systems should ensure compliance with GEF´s rules and regulations (e.g., project budget revision and design amendments must be monitored against approval (ProDoc), reported in the Project Implementation Reviews, and major amendments that require GEF approval effectively tracked).

3a) **A project-at-risk system should be set up** to identify projects at risk so that managers at all levels (project, division, and department) could take corrective actions earlier during project implementation period.
Responsibility: UNIDO

3b) **A portfolio-review system at division and department levels at UNIDO should be set up to identify and address major project implementation issues. This will ensure that UNIDO has an institutional approach to ensure good performance and results, rather than leaving individual project managers to solve problems alone. Issues particularly related to under-performance and monitorinFIDg and reporting results can be used**

to enhance learning and continuous improvement. This will ensure that UNIDO has an institutional approach to ensure good performance and results, rather than leaving individual project managers to solve problems alone. Issues particularly related to under-performance and monitoring and reporting results can be used to enhance learning and continuous improvement.
Responsibility: UNIDO

6.3. Lessons learned

1. **Establishing a major national value chain from raw material supply to market requires more intensive, coordinated and prolonged support than could be delivered by one project.** The ambitious nature of this project was a contributing factor to poor progress against stated targets. The delays experienced in addressing policy barriers hindered progress in other project components and illustrates the need for prolonged, more focused and intensive engagement.

2. **The underlying challenges need to be addressed for industry development, particularly related to expected policy changes and where this does not occur a project re-design should be considered to maintain coherence with existing design and the context.** This project highlights the importance of understanding the chain of actions required to achieve impact based on causal relationships, especially in such an ambitious and complex project approach.

3. **Market opportunities need to be aligned with likelihood of product supply. Where monitoring data indicates that these are not aligned, re-design is required.** The comprehensive approach of this project that aimed at addressing policy barriers, product supply and facilitating market opportunities did not acknowledge the importance the availability of supply in market expansion. As such the limited achievement in the supply component severely impacted the potential for ongoing progress in other areas and the ability of the project to achieve the desired impact.

4. **A stepwise approach should be taken in bamboo industry development (product supply, government policy, knowledge generation) to overcome impediments to industry growth and stimulate further investment.** Project progress demonstrates that targeting all aspects of an industry value chain simultaneously is ineffective and inefficient. The project aspirations remain valid, and the bamboo sector remains a potential contributor to global environmental benefits. As such there is potential for investments which focus on a single barrier to the development of a bamboo sector, particularly for fuelwood use and reduced GHG emissions but demonstrating viability and adequate supply in a targeted manner before national scale up would be more effective.

5. **Steering Committees should meet regularly, and the actions agreed rigorously pursued and results documented to ensure proper accountability and effective coordination**. The potential of the PSC for this project was severely undermined by the irregularity of meetings and a lack of communication about project progress and challenges. It also did not adequately engage with stakeholders from both key Ministries and other key partners. There is a need for an active liaison with the GEF focal point to ensure good coordination, proper alignment with donor objectives and transparency in following protocols and procurement requirements.

Annexes

Annex 1. Stakeholder feedback on initial project concept. 2010[130]

Feedback for Project to proceed	Project to proceed with some changes	Project requires major adjustments before implementation	No comment presented in relation to project concept

Contact	Notes	Categorization
Project		
Mr. Antonios Levissianos, UNIDO Email: a.levissianos@unido.org		
Mr. Nawaz Rajabdeen National Director - Ministry of Industrial Development	• Meeting Date: 26/03/2010 • Stated that the GEF bamboo proposal was nearly "shelved" but was revived by Mr. A. Levissianos and himself. • He sees bamboo development as a long-term strategy to supply wood/energy for future generations • Suggested that bamboo may be developed using a one product – one district approach, with production concentrated in about 5 districts • He would like to have a feasibility study on 100 ha plantation in order to attract attention of investors. (IC remarked that it is first necessary to prepare the road map, identify lands and potential size of plantations).	Largely supportive but some changes to project concept suggested. Suggestions include: - Long-term engagement with emphasis on wood and energy - Differentiation of products produced based on region - Feasibility study to attract investors
Mr. Sarath Abeysundara National Program Coordinator & UNIDO Focal Point - Ministry of Industrial Development	• Facilitated the arrangement of all meetings and field trips and attended most meetings. • Called his personal contacts in the private sector and arranged meetings with large private sector companies (Arpico, Hayleys, CIC)	
Eng. V.R. Sena Peiris Director National Cleaner Production Centre (Member of UNIDO/UNEP Global Network of Cleaner Production Centres)	• Meeting Date: 26/03/2010 • Indicated that there is a big potential for bamboo and that big private sector companies could be interested in large plantations. • Said there is a sufficient land to plant bamboo and thinks large plantation estates can be established.	

[130] Technical Report: Bamboo Processing In Sri Lanka – Preparatory Assistance Road Map For Bamboo Development Reference: GF/SLR/09/002 May 11, 2010

Contact	Notes	Categorization
	• He estimates that 4 large plantations of 2500 ha can be established to meet the target of the GEF project.	
Government		
Mr. R.V.D. Piyatilake Secretary Ministry of Industrial Development	• Meeting Date: 25/03/2010 • One of his major concerns is that policy issues concerning bamboo need to be revised in order for a bamboo program to be implemented. • "No one will plant bamboo or invest in bamboo industries if the prohibitions on cutting and transporting bamboo are not lifted" • He needs supporting arguments and examples to strengthen the case for policy change on bamboo in Sri Lanka. • a sensitization or awareness program about bamboo is necessary • He wants to circulate a discussion paper on bamboo to other GoSL stakeholders in order to convince policy makers. • He thinks that the use of bamboo for scaffolding should be banned and that focus should be on high value-added products. • He wants bamboo to be promoted as an alternative timber that can lead to new industries and create jobs	Supportive of the concept but changes required Suggested changes include: - A more incremental approach that addresses policy barriers and increases demand prior to addressing supply side factors - More evidence required to stimulate interest in bamboo
Mr. Sirisena Amarasekara Secretary Ministry of Agricultural Development and Agrarian Services	• Meeting Date: 24/03/2010 • Is in favor of promoting bamboo on degraded lands. • Bamboo should be planted such that it does not encroach on lands used for cultivation of cash crops. • He would like to have a project concept paper in order to discuss There should be no conflict with other Thinks it will be difficult to have	Largely supportive with some additional considerations. Suggested considerations - Encroachment on farming land - Further details required
Mr. Ivan de Silva Secretary Ministry of Irrigation and Water Management	• Meeting Date: 26/03/2010 • Was formerly directly responsible for the bamboo initiatives of the Mahaweli River Authority and was actively involved when bamboo was planted along the banks of Deduru Oya River. • Acknowledges the potential benefits of bamboo but also says that bamboo has many drawbacks and risks, and has limited application for erosion control and stabilizing river banks.	Based on previous experience does not support the plantation of bamboo along rivers and requires additional details to support the project.

Contact	Notes	Categorization
	• One of the main problems of bamboo is maintenance; people lack knowledge about how to maintain, manage, and harvest bamboo. Knowledge about suitable species is also lacking. • In many rivers areas with high water current, bamboos have totally collapsed and blocked the river flow. So instead of supporting the bank, the problem was exacerbated. • Based on the local experiences with bamboo, he does not recommend planting bamboo on a large scale along river banks. In many flood prone areas other tree species are more suitable than bamboo for erosion control. • SWOT analysis of bamboo cultivation is needed to have an objective assessment of bamboo	
Mrs. L. Padmini Batuwitage Additional Secretary (Environment & Policy) Ministry of Environment & Natural Resources	• Meeting Date: 26/03/2010 • Prior to meeting the IC, she was unaware of the GEF bamboo project. (IC provided her with a soft copy of the GEF PIF document). • Very supportive of the bamboo initiative but wants to make sure that it fits in to the national environmental strategy • She would like to see the "road map" of the project before it is finalized and will provide guidance and suggestions so that the project can be properly implemented in line with Government priorities.	Supportive with some considerations Additional considerations include: - Alignment with national environment strategy - Clearer implementation guidelines
Mr. Anura Jayatilake Director & GEF Focal Point Ministry of Environment & Natural Resources - Air Resource Management & International Relations Division	• Meeting Dates: 19/03/2010 & 26/03/2010 • He called attention to the legislation concerning the prohibition of transporting bamboo without a permit. • He noted that there is a strong emphasis on dendro power from trees but bamboo is not prioritized	Somewhat supportive with some additional considerations. Suggestions: - Legislative barriers to be overcome - Bamboo is not considered when discussing dendropower
Mr. C. Ignatius Director (Promotion) Board of Investment of Sri Lanka	• Meeting Date: 26/03/2010 • Provided info factor costs for investment in Sri Lanka and other general info for investors. • Timber can be imported free of duties into the country to support the wood/ furniture/ building sectors.	Somewhat supportive of the concept but unsure of the feasibility of the scale proposed.

Contact	Notes	Categorization
	• There are no investments in bamboo in the country. There are a few investments in small (100ha) plantations of rubber and mahogany. • Previously the BOI could arrange for the allocation of lands for plantation investments, but this is now handled by the Forest Department and Ministry of the Environment.	
Mr. M.P. Sarath Fernando Conservator General of Forests Forest Department	• Meeting Date: 19/03/2010 • He indicated that bamboo is scattered around the Southwestern wet zone of the country. • He does not see large bamboo plantations as a realistic option in the wet zone, which is dedicated to production of agricultural cash crops. • Large estates can be established in the eastern "dry zone" in the districts of Ampara, Batticoloa, and Trincomalee, but these areas are more suitable to tree plantations than bamboo. • He can authorize land lease for up to 100 ha, but for larger areas he advised meeting with the Mahaweli River Authority and the Board of Investments. • 10000 ha of bamboo does not seem viable given the land use/cultivation priorities in Sri Lanka	Uncertain of the likelihood of success of the approach. Bamboo is unlikely to be able to compete with cash crops in the wet zone and trees in the dry zone. Also concerns around land allocation.
A.A. Munasinghe Director (Business Development & Revenue) Mahaweli Authority of Sri Lanka	• Meeting Date: 22/03/2010 • Large areas for bamboo cultivation are not available in the country • Only possible option for large bamboo plantations are in the dry zone of the country, particularly the area classified as System B of the Mahaweli Authority.	Uncertain of the feasibility of the concept, proposals to established plantations in the wet zone are unlikely to be successful.
Mrs Shanti Fernando Director Dept of Land Use Policy Planning	• Meeting Date: 22/03/2010 • She is supportive of the bamboo initiative and believes that bamboo has potential, but areas need to be very carefully assessed and selected in order to avoid land use conflicts. • Most suitable areas for bamboo are along river banks • She Instructed her staff to accompany the IC to the field and provide technical support	Showed support for the project concept and pledged technical assistance.
Mr. B.A. Jayananda Deputy Director Dept of Land Use Policy Planning Mr. H.D. Sisira	• Meeting Date: 22/03/2010 • Field Trip to Hanwella on 25/03/2010 • There are lands available for planting but an assessment is needed to determine areas.	Somewhat supportive of the proposal but additional studies required.

Contact	Notes	Categorization
District Land Use Planning Officer Dept of Land Use Policy Planning	• They have provided a proposal to do a rapid assessment of areas suitable for bamboo planting.	
R.B. Herath Director Riverine-Bamboo Project, Environment & Forest Conservation Division - Mahaweli Authority of Sri Lanka H.M. Jayarathne Environmental Officer (In charge of day to day project activities nursery, planting, etc.) Riverine-Bamboo Project, Environment & Forest Conservation Division - Mahaweli Authority of Sri Lanka	• Meeting Date: 23/03/2010 • The Mahaweli Authority of Sri Lanka has initiated a program for planting bamboo along river banks and they have established a Tissue culture lab which is fully operational. • 4 bamboo species are produced by TC: Dendrocalamus giganteus, Dendrocalamus hookeri; Bambusa atra, and Ochlandra stridula. • In addition the TC lab is producing (1) fruits: Banana (Musa sapientum), Pineapple (Ananas comosus), Pomegranate (Punica granatum) and (2) ornamental plants: Anthurium andreanum and Orchids (phalaenopsis). • Bamboo accounts for 99% of the production in the laboratory. • The laboratory is functional and plants look very health (both in the acclimatization chambers as well as in the nursery.) • 350000 bamboo plants have been planted in the last 2 years and this program is ongoing, but is somewhat struggling due to lack of funds. • They have targeted some areas for plantation in privately owned lands in the Mahaweli Catchment area, mainly abandoned tea plantations. • Difficultly in developing bamboo plantations is that farmers do not have incentives and there is no clear market. • Currently the main purpose of planting bamboo is environmental, i.e. to control erosion in the Mahaweli river and its tributaries.	Somewhat supportive of the concepts but identifies demand for the establishment of plantations and an emphasis on environmental uses of bamboo as barriers to be overcome.
R&E		
Dr. A. M. Mubarak Director/CEO Industrial Technology Institute (ITI) Dr. Jaanaki Gooneratne, Head, Food Technology Section/ Project Coordinator, Bamboo shoot Project Industrial Technology Institute	• Communication by phone and by email. • ITI coordinated CFC / INBAR Project on Bamboo Shoot Cultivation and Processing (2007-2009). • They have facilities for canning and vacuum packing of processed bamboo. • 7 ha of bamboo are cultivated with 3 Species: Dendrocalamus latiflorus, Dendrocalamus oldhamii, and Melocanna baccifera. • Bamboo plantation is 2 1/2 years old. Plantation is well managed and the plants grow well.	Supportive of the approach

Contact	Notes	Categorization
	• First harvest of bamboo shoots of D. latiflorus is on December 2010for the latiflorus • First harvest of M: baccifera is in 2012. • They want to do field trials at other locations and can supply the plants from nursery. • The nursery is 0.5 ha mainly of D. latiflorus and M. baccifera. • They can supply planting material and provide instructions on planting and maintenance of the plantations subject to payment agreement. • They claim to have worked out a feasibility study on cultivation which is also available on payment basis. (Price of the FS has been requested by the IC but has not been provided).	
Prof. Dr. C.B. Dissanayake Director Institute of Fundamental Studies Dr. Renuka K. Ratnayake Research Fellow Microbial Biotechnology Unit Institute of Fundamental Studies Prof. Dr. S.A. Kulasooriya Emeritus Professor of Botany, University of Peradeniya Visiting Professor Institute of Fundamental Studies	• Meeting Date: 23/03/2010 • They have the expertise to assist in the bamboo project. However, they do not consider bamboo a priority crop for Sri Lanka. • There are many land use issues that have to be taken into account before engaging in bamboo farming, especially in the southwestern zone of the country. It will be a very great challenge to set up a bamboo industry in the wet zone of the country. Other crops are much more profitable than bamboo, and markets are already developed. For bamboo there is no market and therefore developing bamboo would be a pioneering effort. Surely, bamboo can play an environmental role in some areas of river banks. Also, bamboo can be used in the handicraft sector, but there are a lot of barriers for starting bamboo industries that can be competitive. • They agree that there are unproductive lands in the wet zone – abandoned tea plantations, etc. But it would be more realistic to use those lands for crops that can be marketed. • Since the GEF project focuses on energy, they suggest that it is more practical to look at tree species which can grow in the dry zone of the country. Converting unproductive land in the eastern side of Sri Lanka into bioenergy forests is much more in line with the needs of the country and the priorities of the government.	Limited support for the project given several identified barriers and more viable alternatives.

Contact	Notes	Categorization
	• Prof. Kulasooriya provided a copy of his proposal (which has been sent by email to Mr. Dolf Gielen and Mr. Antonios Levissianos).	
Private Sector		
Mr. Waruna Madawanarachchi Director / CEO CIC Seeds (Pvt) Ltd	• Meeting Date: 24/03/2010 • CIC is one of the largest groups in Sri Lanka involved in agriculture, forestry, seed production, and supply of planting materials • 7 farms in Sri Lanka with total area of 4000 ha • Main crops are banana, papaya, pineapple, and mango. • Involved in Tea production. • They have an outgrower strategy and work with buyback agreement (i.e. farmers grow and they offer to buy back at a min. guaranteed price) • Supply rice, potato, and other seeds • They can supply seeds of forestry crops like Teak and Mahogany • Bamboo is not in their portfolio • Production of bamboo planting material does not interest them since it is not an annual crop • If the market and economics of edible bamboo shoots is feasible, they could consider an outgrower program. • They are not interested in engaging in speculative activities with bamboo. • Diversification towards bamboo needs to be economically justified, and so far there is no basis for this in Sri Lanka. • If there is a demand for teak, they can provide seedlings at the price of 15 Rs/plant.	Limited project interest as the economic rationale is not clear
Dr. Shantha Ramanayake Tissue Culture / Biotechnology Consultant	• Telephone conversation: 24/03/2010 • She is the scientist responsible for developing tissue culture protocols of bamboo for the Riverine Bamboo Project of the Mahaweli River Authority • Retired from Institute of Fundamental Studies • She provides consultancy services related to biotechnology and bamboo and is available to offer services for the project.	
Mr. Chandawa Dia Itip Bamboo Garden	• Meeting Date: 19/03/2010	Limited interest in the project as the scale proposed is too large for stakeholder needs.

Contact	Notes	Categorization
	• Follow up visit on 21/03/2010 and measurements of the D. giganteus clumps were taken by IC • He has a small farm with 2 large clumps of Dendrocalamus giganteus and a variety of other species including Ochlandra stridula (which is used for weaving baskets). • Lacks financial resources, and has applied for support from Ministry of Environment to carry out his cottage industry activities. • Mainly interested in producing handicrafts (basketry) • Lacks knowledge in cultivation, propagation, of bamboo • Outsources production of baskets to villagers • The source of raw materials is from private homesteads • This a very small scale cottage industry with very limited production and market coverage	
Mr. Niranjan F. Vithanage Managing Director Arpico Interior (Pvt) Ltd. (A Richard Pieris Company)	• Meeting Date: 26/03/2010 • He arranged meetings with Hayleys PLC and Mr. A. Wickramanayake (Master Divers) • ARPICO is a large conglomerate in Sri Lanka and is involved in many sectors including agriculture and wood processing. The group employs 35000 people in Sri Lanka. • He consulted with the CEO of ARPICO (by telephone) to verify if there could be interest in diversifying into bamboo. Before any investment, a market study/cost benefit analysis is needed. But there is no indication that bamboo is a viable business in Sri Lanka. • ARPICO is sourcing bamboo parquet products from China; they will not support local production if it is not competitive and will not invest in local bamboo industries unless they are proven to be very profitable. They are not interested in engaging in pioneering efforts in bamboo industrialization. • There are too many uncertainties with bamboo at present to make any positive commitment.	There are too many uncertainties and a lack of demonstrated viability for competitiveness to support the project.
Mr. A. Wickramanayake Director, CEO Master Divers Marine and Underwater Services	• Meeting Date: 26/03/2010 • (IC Note): Charismatic but eccentric businessman; apparently successful and prosperous. • Considers the GEF/UNIDO project to be a financially uninteresting. He is interested in mega projects. His monthly	Lack of demonstrated economic rationale

Contact	Notes	Categorization
	payroll is (allegedly) 25 M USD – so he cannot be bothered with such small projects like the GEF/UNIDO project. • His main business is shipping and salvaging operations. He is also involved in forestry and agriculture, and controls 12000 ha of sugar cane plantations in Sri Lanka. • He has rubber plantations but says that rubber wood itself it is not profitable. • He contends that bamboo is a "pest" to the environment; there are many businesses that offer much better returns than bamboo. • He is not interested in renewable energy; he claims that climate change is not a problem and renewable energy is not necessary. There is more than enough "fossil fuel". • If there were a market for bamboo, the farmers will plant it; but the market does not exist and it is very difficult to create the market. • If the public wants bamboo products they can easily import from China or other countries. • Sri Lanka is not competitive in bamboo	
Mr. Anil C. Wikramanayake Director/CEO Agri Products Sector Mr. Ruwan Rajapakse Head - International Marketing Agri Products Sector	• One of the leading private sector companies in Sri Lanka • Involved throughout the country in agriculture, in private lands and through outgrower programs. • Their grower network extends throughout the country. • They have nurseries and greenhouses, and their own TC lab for production of numerous crops. • They export TC plants to Australia (they have obtained AQIS accreditation), USA, Europe, and the Middle East. • They are willing to engage in bamboo cultivation <u>on the condition</u> that there is a buy back agreement with industries that will process the bamboo	Somewhat interested in the project on the condition that there is a buy back agreement with industries processing bamboo

Annex 2. Evaluation Terms of Reference

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

TERMS OF REFERENCE

Independent terminal evaluation of project
Bamboo processing for Sri Lanka

UNIDO Project ID: 100043

GEF Project ID: 4114

September 2020

Contents

I. Project background and context

1. Project factsheet[131][132]

Project title	Bamboo processing for Sri Lanka UNIDO ID: 100043GEF Project ID: 4114
UNIDO ID	[Status]
GEF Project ID	4114
Region	South Asia
Country(ies)	Sri Lanka
Project donor(s)	GEF
Project implementation start date	September 2012
Expected duration	90 months (ex ProDoc)
Expected implementation end date	December 2020
GEF Focal Areas and Operational Project	GEF 4- Climate Change/Technology Transfer
Implementing agency(ies)	UNIDO
Government coordinating agency	Sri Lanka's Ministry of Industry & Commerce
Donor funding	USD 2,355,000
Project GEF CEO endorsement / approval date	October 2011
UNIDO input (in kind, USD)	USD 100.000
Co-financing at CEO Endorsement, as applicable	USD 21,297,000
Total project cost (USD), excluding support costs and PPG	USD 23,652,000
Mid-term review date	November 2016
Planned terminal evaluation date	September – December 2020

(Source: Project document)

2. Project context

Sri Lanka is an island in the Indian Ocean, separated from south-east India (Tamil Nadu state) by the Palk Strait. The population of the democratic republic is roughly 21m inhabitants.

Sri Lanka's closed canopy forest cover has been dwindling rapidly and is projected to continue steadily to decline to about the 17% of the total country in 2020 (down from 27% in 1992 and 44% in 1956). The decline in forest cover is primarily due to rapid population growth and resulting land shortages and poverty. Depletion of forest cover continues due to high demand for timber, non-timber products and the land hunger for settlements and agriculture with the increasing population.

In this context, bamboo can serve as a substitute for trees (for industrial wood applications) and as an energy crop (for wood pellets). Bamboo is much faster growing than most trees, they help with soil quality and prevent erosion, and there are many different species that can adapt to numerous environmental circumstances. Currently bamboo crafts and utensils industry operates based on traditional knowledge in scattered areas with raw material availability. Globally, about 40% of bamboo is used for fuel wood and charcoal, but significant amount is also used for construction, flooring, fodder and food. For industry, bamboo is a good feedstock for engineered wood products because of its mechanical and physical properties. The fact that bamboo has a high growth rate increases its utility

[131] Data to be validated by the Consultant

as industrial feedstock. In Sri Lanka specifically, bamboos occur naturally in all three of its major climatic zones. Yet today, only 2500 ha of bamboo plantation exist in Sri Lanka, and the bamboo is mainly used locally as fuel and in low quality construction. Sri Lanka has an established wood plantation and wood processing industry, which could benefit from increased feedstock supply.

The project's objective is to develop a bamboo supply chain and product industry in Sri Lanka. A successful development of a bamboo sector in Sri Lanka requires the realization of three major needs: an awareness of the importance and feasibility of bamboo plantations, an enabling policy framework, and an appropriate and extensive supply for the demand that will be created for raw material in bamboo-based products.

3. Project objective and expected outcomes

The overall project's objective is to develop a bamboo supply chain and product industry in Sri Lanka, leading to reduced global environmental impact from GHG emissions and a sustainable industry base. The goal is to develop an economically viable agro-forestry-industrial chain based on bamboo, which should also result in a reduction of GHG emissions. Moving the industry to processed and engineered wood products will increase the quality and value of bamboo production in Sri Lanka, which in turn will increase the value added and the profitability of this industrial sector, both important for the long term viability of such agro-forestry-industrial complexes.

Component 1: Policy Framework Component 1 of the project will work to address the policy barriers to the full functioning of the biomass market – especially for bamboo.

Outcome 1: Assessment of existing framework and shortcomings and a supportive framework adopted

Output 1.1: National strategy developed for the development of the bamboo industry

Output 1.2: National policy adjustments supported

Output 1.3: Land use policy adjustments

Output 1.4: Supportive policies and regulations on a local and regional level

Output 1.5: Information on the project activities disseminated to the public and decision-makers

Component 2: Bamboo Tissue Production. Component 2 will be essential to the introduction of bamboo tissue production for species that are a part of Component 3 (Plantation establishment) by developing the production methods and providing planting material on a large scale of the five species which have been identified for large-scale propagation in Sri Lanka. The activities within this component will focus on integrating the five species into the propagation program of the RBP Tissue Culture lab.

Outcome 2: Bamboo reproduction technology transfer - National capacity to provide bamboo planting material on a large scale

Output 2.1: Acquisition and installation of laboratory equipment for appropriate species

Output 2.2: Functional laboratory and availability of high quality planting material for appropriate species

Component 3: Plantation establishment. PC3 of the project will involve moving the plant material out of the lab and establishing bamboo plantations. For species that have already been established in the marginal lands during RBP, Technical Assistance will support identifying methods to improve distribution and economic/financial sustainability of the plantations.

Outcome 3: Plantations established to provide feedstock for bamboo industry

Output 3.1: Bamboo plantations established in unused lands in the dry zone and wet zone

Component 4: Plantation operation Component 4 of the project will build directly on Component 3 (the establishment of plantations) to provide Technical Assistance to ensure that the plantations established are successful both in terms of production and finances.

Outcome 4: National know-how for maintaining bamboo plantations

Output 4.1: Economically sustainable, functional bamboo plantations running in currently unused dry lands and wet lands

Component 5. Bamboo processing equipment

Outcome 5: Bamboo processing technology transfer to Sri Lanka

Output 5.1: Bamboo processing machinery for industrial use bought and installed

Output 5.2: Establishment of bamboo flooring production capacity

Output 5.3: Establishment of bamboo shoots industry

Component 6. Pelletizing / briquetting / chipping. Component 6 will focus on pelletizing, briquette production and/or chips of bamboo resources – both for the domestic and international market. As noted in Section A.1, biomass use in Sri Lanka is currently unsustainable. At the same time, the use of other fuels – particularly furnace oil – is subsidised by approximately 50% of its actual cost. Partly because of the rising prices of furnace oil, these subsidies will be cut in the near future. This will lead to an even greater increase in pressure for biomass resources for heat and power. Already, domestic biomass use in industry is growing as a result of price increases in petroleum fuels. Therefore, there is a great opportunity to replace furnace oil fuel or unsustainable biomass locally with sustainable bamboo/biomass energy. At the same time there is great opportunity for export of this sustainable fuel source.

Outcome 6: Biomass pelletizing / briquetting / chipping technology transfer and development

Output 6.1: Pelletizing / briquetting / chipping machinery bought and installed for bamboo

Output 6.2: Production of biomass pellets, briquettes or chips

4. Project implementation arrangements

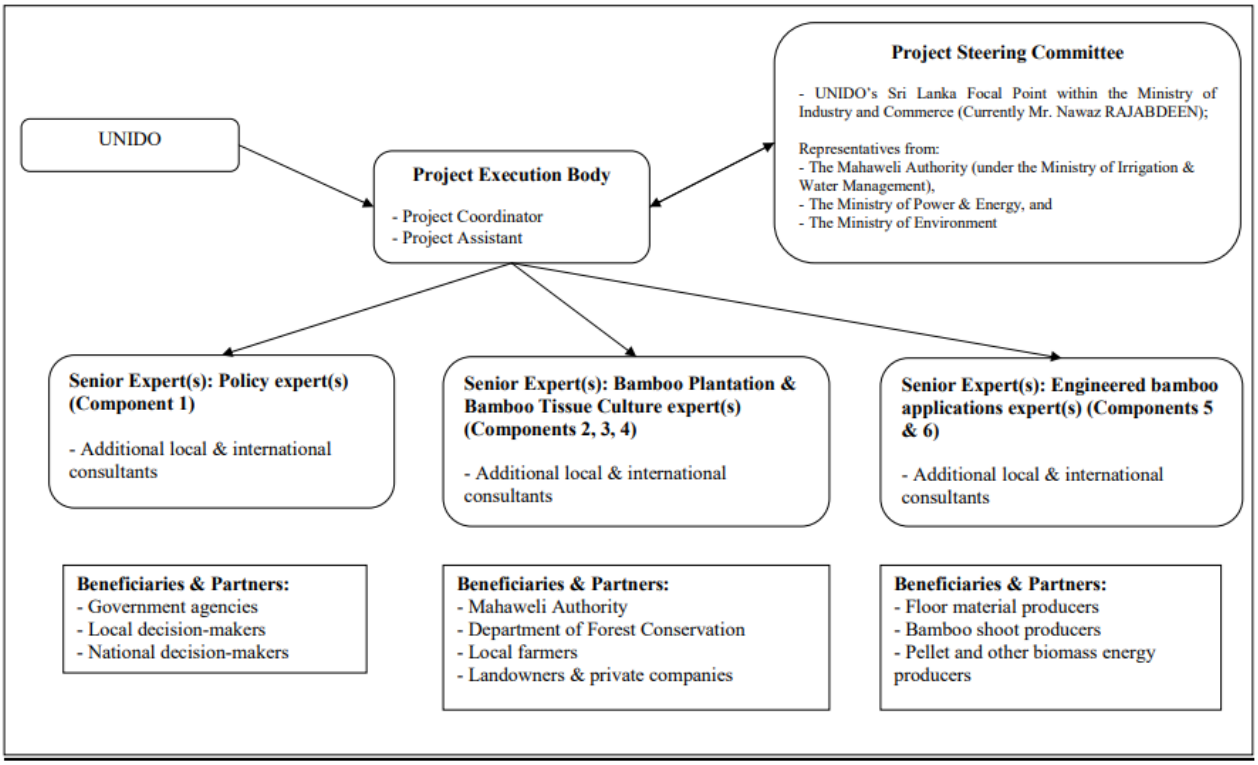
UNIDO is responsible for the general management and monitoring of the project, and reporting on the project performance to the GEF. UNIDO is also in charge of procuring the international and national expertise needed to deliver the outputs planned under the six project components. It also manages, supervises and monitors the work of the international and national teams and ensures that deliverables are technically sound and consistent with the requirements of the project.

A **Project Steering Committee (PSC**) was established by gathering the representatives of the main Government stakeholders and UNIDO. It is responsible for overall guidance and making policy decisions for the project. It reviews project plans, provides advice on strategic approaches and solutions to ensure that project objectives are achieved. It also ensures that required resources are committed; it arbitrates any conflicts within the project and negotiates a solution to any problems with external bodies.

The PSC is chaired by the Secretary of the Ministry of Industry & Commerce – Government of Sri Lanka -and it meets every 6 months. PSC includes representatives from the Ministry of Industry & Commerce, the Mahaweli Authority (under the Ministry of Irrigation & Water Management), the Ministry of Power & Energy, and the Ministry of Environment (including the Forest Department).

The **Project Execution Body (PEB)** consists of a Project Coordinator (PC), supported by a Project Assistant and an Administrative Assistant. The PC acts like the field extension of the UNIDO-PM and leads the PEB. He/she is responsible for executing the quarterly WP and the day-to-day management, monitoring and evaluation of project activities as per the approved AWP. The PEB is hosted at the Ministry of Industrial Development, Government of Sri Lanka. During the entire implementation period of the project, UNIDO provided the PEB with the necessary management and monitoring support. The PEB prepares progress reports, financial reports etc. which are to be submitted to UNIDO-HQ and the PSC. It also produces annual progress reports, at least two weeks before the annual meetings. At the end of the project, the PEB produces the terminal report, which is to be submitted to the Project Steering Committee at least two weeks before the Terminal meeting.

The project management structure as designed is provided in **Error! Reference source not found.**.



5. Main findings of the Mid-term review (MTR)

Following are the key findings of the MTR:

Project Implementation: The project had an excellent start with media coverage and enthusiasm from all stakeholders. The project Steering Committee, which is of advisory role to the project, had two meetings. The needed International consultants performed several missions to Sri Lanka to prepare studies on land ownership and availability, economic feasibility of bamboo uses in industrial products,
bamboo nurseries and plantations laboratories capabilities and needs, and others. A number of project activities, outputs and outcomes were partially done or have not started during the past two years, and outcomes were not achieved according to the planned time schedule. This was due to the nature of the project and of the expected outcomes and outputs which need a longer time than what was anticipated during the design phase of the project. The Political changes that took effect in the country, followed by a presidential election and a new government late in 2015 when a new Minister and a new Secretary were appointed at the Ministry of Industry and Commerce, may have had a little effect also.

The Project Executive Body (PEB) was only partially established. Different Project Coordinators were hired as needed, but the rest of the PEB personnel and resources were not provided. The project had a national coordinator since it start, except for the first nine months of 2015. The recently appointed project coordinator obviously needs time to become efficient and effective due to the learning curve. Improvement is needed in several areas of the project coordination functions such as follow-up with the stakeholders, follow-up on and actions concerning the results (especially findings and recommendations) of the international consultants as shown in their reports or studies. For example, one of the project planned activities included having occasional or regular communique to the public, but it was not implemented.
GHG Emissions, Soil Erosion, and Industrial Products: It is too early at the current stage of the project to discuss any such effects in Sri Lanka. These issues can only be fully measured or evaluated few years after the end of the project.

The MRT has the following recommendations.

Recommendations
1. Resuming the Steering Committee's work at an intense pace to ensure proper and timely execution of the remaining parts of the project, by actively involving the concerned stakeholders and by acting as a leader to the Project Execution Body. It is worth noting that although the role of the SC is only an advisory one, the members of this SC represent several ministries and departments that are players in this project. Therefore, not having SC meetings affects their enthusiasm, project communication, and coordination of activities.
2. Preparing an "Updated Project Implementation Plan" to reflect the visions of the current Steering Committee members and other stakeholders.
3. Improving the project coordination, internal communication and follow-up at the national level through the PSC and by reinforcing the Project Execution Body with the proper human technical resources including a technical Bamboo expert.
4. Establishing an effective information communication system or process for the project that can be managed and run by a Project Coordinator. The objective of the information system is to ensure easy access for the concerned people and parties for submitting their questions, queries and concerns and for obtaining answers thereon, and to propagate updates, plans, and experts' reports

amongst other information for those who need to know including the media. This system should include a depository of experts' technical reports and studies as well as a LOG of events and activities that are to be maintained and updated continuously.

6. Budget information

Table 1. Financing plan summary

USD	*Project Preparation*	*Project*	*Total (USD)*
Financing (GEF / others)	100,000	2,355,000	2,455,000
Co-financing (Cash and In-kind)	100,000	21,297,000	21,397,000
Total (USD)	**200,000**	**23,652,000**	**23,852,000**

Source: Project document / progress report

Table 2. Financing plan summary - Outcome breakdown[133]

Project components	**Donor (GEF/other) (USD)**	**Co-Financing (USD)**	**Total (USD)**
PC1- Policy framework	265,300	75,000	**340,300**
PC2- Bamboo Tissue Production	221,300	1,706,000	**1,927,300**
PC3- Plantation establishment	367,400	11,223,000	**11,590,400**
PC4- Plantation operation	233,050	4,968,000	**5,201,050**
PC5- Bamboo processing equipment	657,850	2,625,000	**3,282,850**
PC6- Pelletizing / briquetting / chipping	410,450	350,000	**760,450**
Project management	199,650	350,000	**549,650**
Total (USD)	**2,355,000**	**21,297,000**	**23,652,000**

Source: Project document / progress report

[133] Source: Project document.

Table 3. Co-Financing source breakdown

Name of Co-financier (source)	In-kind	Cash	Total Amount (USD)
Mahaweli Authority of Sri Lanka			
National Government	10,520,000	2,400,000	12,920,000
Ministry of Industry and Commerce *National Government*		1,500,000	1,500,000
Forest Department of Sri Lanka *National Government*		4,377,000	4,377,000
UNIDO *Implementing Agency*	40,000	60,000	100,000
Touchwood Investments PLC *Private sector*		1,300,000	1,300,000
Bamboo Resources Development (Pvt) Ltd *Private sector*		1,100,000	1,100,000
Total Co-financing (USD)	**10,560,000**	**10,737,000**	**21,297,000**

Source : Project document

Table 4. UNIDO budget execution (Grant 200000318)

Items of expenditure	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total expend.	%
Contractual Services		122.1	300,000	300,080.7	28,800	13,794.5	-599,596.4	44,124.6	-117.3	87,208.2	3,9
Equipment							4,003.9	206,084.3	3,859.2	213,947.4	9,7
Local travel	2,040.1	10,103.1	11,766.5	-4,465.1	87.1	317.9	909.9	12,691.6	-2,779.8	30,671.3	1,4
Nat. Consult./Staff	1,436.2	32,239.6	18,391.5	18,080.2	25,889.1	34,999	37,597.7	50,748.5	31,669.9	251,051.7	11,4
Other Direct Costs	7,014	104.3	49.4	1,700	327.1	1,751.1	7,516.6	14,017.4	8,457.7	40,937.6	1,8
Premises								22,990	-6,704	16,286	0,7
Staff & Intern Consultants	28,224.4	209,573.1	267,069.8	183,638.4	189,283.2	190,217.7	200,151.6	149,970	63,569.2	1,481,687.4	67,2
Train/Fellowship/Study	168.8	9,376.1	-108.2	-56.6	10,503.6	657.7	-216.8	50,965.8	12,900.7	84,191.1	3,9
Grand Total	**38,883.5**	**261,518.3**	**597,169**	**498,977.6**	**254,890.1**	**241,737.9**	**-349,633.5**	**551,592.2**	**110,855.6**	**2,205,990**	**100%**

Source: UNIDO Project Management database as of 20th August 2020

II. Scope and purpose of the evaluation

The purpose of the evaluation is to independently assess the project to help UNIDO improve performance and results of ongoing and future programmes and projects. The independent terminal evaluation (TE) will cover the whole duration of the project from its starting date in September 2012 to the estimated completion date in December 2020.

The evaluation has two specific objectives:

(i) Assess the project performance in terms of relevance, effectiveness, efficiency, sustainability and progress to impact; and
(ii) Develop a series of findings, lessons and recommendations for enhancing the design of new and implementation of ongoing projects by UNIDO.

III. Evaluation approach and methodology

The TE will be conducted in accordance with the UNIDO Evaluation Policy[134] and the UNIDO Guidelines for the Technical Cooperation Project and Project Cycle[135]. In addition, the GEF Guidelines for GEF Agencies in Conducting Terminal Evaluations, the GEF Monitoring and Evaluation Policy and the GEF Minimum Fiduciary Standards for GEF Implementing and Executing Agencies will be applied.

The evaluation will be carried out as an independent in-depth evaluation using a participatory approach whereby all key parties associated with the project will be informed and consulted throughout the evaluation. The evaluation team leader will liaise with the UNIDO Independent Evaluation Division (ODG/EIO/IED) on the conduct of the evaluation and methodological issues.

The evaluation will use a theory of change approach and mixed methods to collect data and information from a range of sources and informants. It will pay attention to triangulating the data and information collected before forming its assessment. This is essential to ensure an evidence-based and credible evaluation, with robust analytical underpinning.

The theory of change will identify causal and transformational pathways from the project outputs to outcomes and longer-term impacts, and drivers as well as barriers to achieve them. The learning from this analysis will be useful to feed into the design of the future projects so that the management team can effectively manage them based on results.

1. Data collection methods

Following are the main instruments for data collection:

(a) **Desk and literature review** of documents related to the project, including but not limited to:
- The original project document, monitoring reports (such as progress and financial reports, mid-term review report, output reports, back-to-office mission report(s), end-of-contract report(s) and relevant correspondence.
- Notes from the meetings of committees involved in the project.

(b) **Stakeholder consultations** will be conducted through structured and semi-structured interviews and focus group discussion. Key stakeholders to be interviewed include:
- UNIDO Management and staff involved in the project; and
- Representatives of donors, counterparts and stakeholders.

(c) **Field visit** to project sites in Sri Lanka.
- On-site observation of results achieved by the project, including interviews of actual and potential beneficiaries of improved technologies

[134] UNIDO. (2015). Director General's Bulletin: Evaluation Policy (UNIDO/DGB/(M).98/Rev.1)
[135] UNIDO. (2006). Director-General's Administrative Instruction No. 17/Rev.1: Guidelines for the Technical Cooperation Programme and Project Cycle (DGAI.17/Rev.1, 24 August 2006)

- Interviews with the relevant UNIDO Country Office(s) representative to the extent that he/she was involved in the project, and the project's management members and the various national [and sub-regional] authorities dealing with project activities as necessary.

2. Evaluation key questions and criteria

The key evaluation questions are the following:

(b) What are the key drivers and barriers to achieve the long term objectives? To what extent has the project helped put in place the conditions likely to address the drivers, overcome barriers and contribute to the long term objectives?

(c) How well has the project performed? Has the project done the right things? Has the project done things right, with good value for money?

(d) What have been the project's key results (outputs, outcome and impact)? To what extent have the expected results been achieved or are likely to be achieved? To what extent the achieved results will sustain after the completion of the project?

(e) What lessons can be drawn from the successful and unsuccessful practices in designing, implementing and managing the project?

The evaluation will assess the likelihood of sustainability of the project results after the project completion. The assessment will identify key risks (e.g. in terms of financial, socio-political, institutional and environmental risks) and explain how these risks may affect the continuation of results after the project ends. Table below provides the key evaluation criteria to be assessed by the evaluation. The details questions to assess each evaluation criterion are in annex 2.

Table 5. Project evaluation criteria

#	Evaluation criteria	Mandatory rating
A	**Impact**	**Yes**
B	**Project design**	**Yes**
1	• Overall design	Yes
2	• Logframe	Yes
C	**Project performance**	**Yes**
1	• Relevance	Yes
2	• Effectiveness	Yes
3	• Efficiency	Yes
4	• Sustainability of benefits	Yes
D	**Cross-cutting performance criteria**	
1	• Gender mainstreaming	Yes
2	• M&E: ✓ M&E design ✓ M&E implementation	Yes
3	• Results-based Management (RBM)	Yes
E	**Performance of partners**	
1	• UNIDO	Yes
2	• National counterparts	Yes
3	• Donor	Yes
F	**Overall assessment**	Yes

Performance of partners

The assessment of performance of partners will ***include*** the quality of implementation and execution of the GEF Agencies and project executing entities (EAs) in discharging their expected roles and responsibilities. The assessment will take into account the following:

- Quality of Implementation, e.g. the extent to which the agency delivered effectively, with focus on elements that were controllable from the given GEF Agency's perspective and how well risks were identified and managed.
- Quality of Execution, e.g. the appropriate use of funds, procurement and contracting of goods and services.

Other Assessments required by the GEF for GEF-funded projects:

The terminal evaluation will assess the following topics, for which ***ratings are not required***:

a. **Need for follow-up**: e.g. in instances financial mismanagement, unintended negative impacts or risks.
b. **Materialization of co-financing**: e.g. the extent to which the expected co-financing materialized, whether co-financing was administered by the project management or by some other organization; whether and how shortfall or excess in co-financing affected project results.
c. **Environmental and Social Safeguards**[136]: appropriate environmental and social safeguards were addressed in the project's design and implementation, e.g. preventive or mitigation measures for any foreseeable adverse effects and/or harm to environment or to any stakeholder.

3. Rating system

In line with the practice adopted by many development agencies, the UNIDO Independent Evaluation Division uses a six-point rating system, where 6 is the highest score (highly satisfactory) and 1 is the lowest (highly unsatisfactory) as per **Error! Reference source not found.**.

Table 6. Project rating criteria

Score		Definition	Category
6	Highly satisfactory	Level of achievement presents no shortcomings (90% - 100% achievement rate of planned expectations and targets).	SATISFACTORY
5	Satisfactory	Level of achievement presents minor shortcomings (70% - 89% achievement rate of planned expectations and targets).	
4	Moderately satisfactory	Level of achievement presents moderate shortcomings (50% - 69% achievement rate of planned expectations and targets).	
3	Moderately unsatisfactory	Level of achievement presents some significant shortcomings (30% - 49% achievement rate of planned expectations and targets).	UNSATISFACTORY
2	Unsatisfactory	Level of achievement presents major shortcomings (10% - 29% achievement rate of planned expectations and targets).	
1	Highly unsatisfactory	Level of achievement presents severe shortcomings (0% - 9% achievement rate of planned expectations and targets).	

[136] Refer to GEF/C.41/10/Rev.1 available at: http://www.thegef.org/sites/default/files/council-meetingdocuments/ C.41.10.Rev_1.Policy_on_Environmental_and_Social_Safeguards.Final%20of%20Nov%2018.pdf

IV. Evaluation process

The evaluation will be conducted from September to December 2020. The evaluation will be implemented in five phases which are not strictly sequential, but in many cases iterative, conducted in parallel and partly overlapping:

i. Inception phase: The evaluation team will prepare the inception report providing details on the methodology for the evaluation and include an evaluation matrix with specific issues for the evaluation; the specific site visits will be determined during the inception phase, taking into consideration the findings and recommendations of the mid-term review.
ii. Desk review and data analysis;
iii. Interviews, survey and literature review;
iv. Field visit;
v. Data analysis and report writing.

IED Final evaluation report issuance and distribution with the respective management response sheet and further follow-up, and publication of evaluation report in UNIDO intra/internet sites

V. Time schedule and deliverables

The evaluation is scheduled to take place from September to December 2020. The tentative timelines are provided in **Error! Reference source not found.**.

The evaluation team leader will give an online debriefing and presentation of the preliminary findings of the terminal evaluation to the relevant stakeholders. The draft TE report is to be shared with the UNIDO PM, UNIDO Independent Evaluation Division, the UNIDO GEF Coordinator and GEF OFP and other stakeholders for receipt of comments. The ET leader is expected to revise the draft TE report based on the comments received, edit the language and form and submit the final version of the TE report in accordance with UNIDO ODG/EIO/EID standards.

Table 7. Tentative timelines

Timelines	**Tasks**
September 2020	Recruitment of the evaluation team, Desk review
October 2020	Writing of inception report and briefing with UNIDO project manager and the project team based in Vienna through Skype
Beginning of Nov 2020	Field visit
December 2020	Preparation of first draft evaluation report Online debriefing Internal peer review of the report by UNIDO's Independent Evaluation Division and other stakeholder comments to draft evaluation report
January	Final evaluation report

VI. Evaluation team composition

The evaluation team will be composed of one international evaluation consultant acting as the team leader and one national evaluation consultant. The evaluation team members will possess relevant strong experience and skills on evaluation management and conduct together with expertise and experience in innovative clean energy technologies. Both consultants will be contracted by UNIDO.

The tasks of each team member are specified in the job descriptions annexed to these terms of reference. The ET is required to provide information relevant for follow-up studies, including terminal evaluation verification on request to the GEF partnership up to three years after completion of the terminal evaluation.

According to UNIDO Evaluation Policy, members of the evaluation team must not have been directly involved in the design and/or implementation of the project under evaluation.

The UNIDO Project Manager and the project team in Sri Lanka will support the evaluation team. The UNIDO GEF Coordinator and GEF OFP(s) will be briefed on the evaluation and provide support to its conduct. GEF OFP(s) will, where applicable and feasible, also be briefed and debriefed.

An evaluation manager from UNIDO Independent Evaluation Division will provide technical backstopping to the evaluation team and ensure the quality of the evaluation. The UNIDO Project Manager and national project teams will act as resourced persons and provide support to the evaluation team and the evaluation manager.

VII. Reporting

Inception report

This Terms of Reference (ToR) provides some information on the evaluation methodology, but this should not be regarded as exhaustive. After reviewing the project documentation and initial interviews with the project manager, the Team Leader will prepare, in collaboration with the national consultant, a short inception report that will operationalize the ToR relating to the evaluation questions and provide information on what type of and how the evidence will be collected (methodology). It will be discussed with and approved by the responsible UNIDO Evaluation Manager.

The Inception Report will focus on the following elements: preliminary project theory model(s); elaboration of evaluation methodology including quantitative and qualitative approaches through an evaluation framework ("evaluation matrix"); division of work between the International Evaluation Consultant and national consultant; people to be interviewed and possible surveys to be conducted and a debriefing and reporting timetable[137].

Evaluation report format and review procedures

The draft report will be delivered to UNIDO's Independent Evaluation Division (the suggested report outline is in Annex 4) and circulated to UNIDO staff and national stakeholders associated with the project for factual validation and comments. Any comments or responses, or feedback on any errors of fact to the draft report provided by the stakeholders will be sent to UNIDO's Independent Evaluation Division for collation and onward transmission to the project evaluation team who will be advised of any necessary revisions. On the basis of this feedback, and taking into consideration the comments received, the evaluation team will prepare the final version of the terminal evaluation report.

The ET will present its preliminary findings to the local stakeholders and take into account their feed-back in preparing the evaluation report. A presentation of preliminary findings will take place on a remote basis.

The TE report should be brief, to the point and easy to understand. It must explain the purpose of the evaluation, exactly what was evaluated, and the methods used. The report must highlight any methodological limitations, identify key concerns and present evidence-based findings, consequent conclusions, recommendations and lessons. The report should provide information on when the evaluation took place, the places visited, who was involved and be presented in a way that makes the information accessible and comprehensible. The report should include an executive summary that

[137] The evaluator will be provided with a Guide on how to prepare an evaluation inception report prepared by the UNIDO ODG/EVQ/IEV.

encapsulates the essence of the information contained in the report to facilitate dissemination and distillation of lessons.

Findings, conclusions and recommendations should be presented in a complete, logical and balanced manner. The evaluation report shall be written in English and follow the outline given in annex 4.

VII. Quality assurance

All UNIDO evaluations are subject to quality assessments by UNIDO Independent Evaluation Division. Quality assurance and control is exercised in different ways throughout the evaluation process (briefing of consultants on methodology and process of UNIDO Independent Evaluation Division, providing inputs regarding findings, lessons learned and recommendations from other UNIDO evaluations, review of inception report and evaluation report by UNIDO's Independent Evaluation Division).

The quality of the evaluation report will be assessed and rated against the criteria set forth in the Checklist on evaluation report quality, attached as Annex 5. The applied evaluation quality assessment criteria are used as a tool to provide structured feedback. UNIDO Independent Evaluation Division should ensure that the evaluation report is useful for UNIDO in terms of organizational learning (recommendations and lessons learned) and is compliant with UNIDO's evaluation policy and these terms of reference. The draft and final evaluation report are reviewed by UNIDO Independent Evaluation Division, which will submit the final report to the GEF Evaluation Office and circulate it within UNIDO together with a management response sheet.

Annex 1: Project Logical Framework

Strategy	Objectively verifiable indicators				Risks and Assumptions
	Indicator	Baseline	Incremental Targets End of Project	Source of verification	
Outcome 1: Assessment of existing framework and shortcomings and a supportive framework adopted	Changes in national and local policies and practices adopted	Changes have not been adopted	Changes (as per outputs below) have been adopted	Government policy documents	Assumes no radical shifts in Government priorities
Output 1.1: National strategy developed for the development of the bamboo industry	Existence of a national bamboo strategy by EOP	No strategy exists	Development and adoption of a national bamboo strategy	Government policy documents	Assumes no radical shifts in Government priorities
Output 1.2: National policy adjustments supported	Changes in the national forestry policy regarding bamboo development and exploitation by end of year 2 of the project	Forbids transport of bamboo and is not favourable for development and exploitation	Allows for and facilitates sustainable biomass resource development and exploitation - especially bamboo - on degraded lands	Government policy documents	Assumes no radical shifts in Government priorities
Output 1.3: Land use policy adjustments	Changes in land use policy adjustments allowing for bamboo/ biomass development on degraded lands by end of year 1 of the project	Does not allow bamboo - or other biomass - development on degraded lands	Allows for and facilitates sustainable biomass resource development and exploitation - especially bamboo - on degraded lands	Land-use approval documents and Government policy documents	Assumes no radical shifts in Government priorities
Output 1.4: Supportive policies and regulations on a local and regional level	Changes in local and regional policies supporting bamboo development and exploitation by EOP	Does not encourage bamboo - or other biomass - development on degraded lands	Allows for and facilitate sustainable biomass resource development and exploitation - especially bamboo - on degraded lands	Local and regional policy documents	Assumes no radical shifts in local Government interest
Output 1.5: Information on the project activities disseminated to the public and decision-makers	Number of stories about the project/bamboo development in national, international, and expert-oriented media outlets	0	20	Project reports from the media consultant	Assumes the ability to gain media attraction on the issues.

Outcome 2 Bamboo reproduction technology transfer - National capacity to provide bamboo planting material on a large scale	Full integration of five new bamboo species into the propagation program of the RBP Tissue Culture lab.	The five new species are not integrated into the programme of the RBP Tissue Culture lab	The five new species are integrated into the programme of the RBP Tissue Culture lab	Project reports	
Output 2.1: Acquisition and installation of laboratory equipment for appropriate species	Number of appropriate bamboo species for which there has been acquisition and installation of equipment by end of year 2 of the project	4	9	Project reports from the Riverine-Bamboo Project and Project Implementation Unit	Bamboo plantations don't fail due to climate problems. Local communities engaged in income generating activities.
Output 2.2: Functional laboratory and availability of high quality planting material for appropriate species	Number of species for which there is appropriate, functioning laboratory equipment and available high-quality planting material by end of year 3 of the project	4	9		
Outcome 3: Plantations established to provide feedstock for bamboo industry	Feedstock available from the bamboo plantations once established (t/yr)	0	200,000		
Output 3.1: Bamboo plantations established in unused lands in the dry zone and wet zone	Number of hectares of bamboo established in unused lands in the dry zone by EOP	0	5,000		
	Number of hectares of bamboo established in unused lands in the wet zone by EOP	3000	5000		
Outcome 4: National know-how for maintaining bamboo plantations	Local knowledge available to sustain benefits after project end	-	Self-sustaining plantations established		
Output 4.1: Economically sustainable, functional bamboo plantations running in currently unused dry lands and wet lands	Number of tonnes per year of bamboo culm being harvested by EOP	0	150,000		
	Number of tonnes per year of bamboo shoots by-product being harvested by EOP	0	250,000		

Outcome 5: Bamboo processing technology transfer to Sri Lanka					
Output 5.1: Bamboo processing machinery for industrial use bought and installed	Number of major producers of finished bamboo products with machinery bought and installed by EOP	0	5	Project reports from companies engaged and Project Implementation Unit	Bamboo plantations don't fail Interest among private companies continues and is engaged
Output 5.2: Establishment of bamboo flooring production capacity	Production and sale of bamboo flooring material per year by EOP (m2)	0	120,000		
Output 5.3: Establishment of bamboo shoots by-product industry	Production and sale of bamboo shoots by-product by EOP (tonnes/year)	0	20,000		
Outcome 6: Biomass pelletising technology transfer and development	Availability of local technology	Largely not available	Technology available via local agents		
Output 6.1: Pelletising / briquetting / chipping machinery bought and installed for bamboo	Number of producers of biomass pellets / briquettes / chips with machinery installed for bamboo by EOP	0	3	Project reports from companies engaged and Project Implementation Unit	Price of biomass pellets does not drop dramatically compared to other fuels Interest among private companies continues and is engaged
Output 6.2: Production of biomass pellets / briquettes / chips	Production of biomass pellets / briquettes / chips per year by EOP (tonnes/year dry weight)	0	25,000		

Annex 2: Detailed questions to assess evaluation criteria: See Annex 2 of the UNIDO Evaluation Manual

Annex 3: Job descriptions

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

TERMS OF REFERENCE FOR PERSONNEL UNDER INDIVIDUAL SERVICE AGREEMENT (ISA)

Title:	International evaluation consultant, team leader
Main Duty Station and Location:	Home-based
Start of Contract (EOD):	28 September 2020
End of Contract (COB):	31 December 2020
Number of Working Days:	33 days spread over the above-mentioned period

1. ORGANIZATIONAL CONTEXT

The UNIDO Independent Evaluation Division (ODG/EIO/IED) is responsible for the independent evaluation function of UNIDO. It supports learning, continuous improvement and accountability, and provides factual information about result and practices that feed into the programmatic and strategic decision-making processes. Independent evaluations provide evidence-based information that is credible, reliable and useful, enabling the timely incorporation of findings, recommendations and lessons learned into the decision-making processes at organization-wide, programme and project level. ODG/EIO/IED is guided by the UNIDO Evaluation Policy, which is aligned to the norms and standards for evaluation in the UN system.

2. PROJECT CONTEXT

Detailed background information of the project can be found the terms of reference (TOR) for the terminal evaluation.

MAIN DUTIES	Concrete/ Measurable Outputs to be achieved	Working Days	Location
1. Review project documentation and relevant country background information (national policies and strategies, UN strategies and general economic data); determine key data to collect in the field and adjust the key data collection instrument if needed; Define technical issues and questions to be addressed prior to the field visit. Determine key data to collect in the field and adjust the key data collection instrument if needed. In coordination with the project manager, the project management team and the technical	• Adjust table of evaluation questions, depending on country specific context; • Prepare a map of stakeholders to interview during the field missions;	3	Home-based

MAIN DUTIES	Concrete/ Measurable Outputs to be achieved	Working Days	Location
evaluators, determine the suitable sites to be visited and stakeholders to be interviewed.			
2. Briefing with the UNIDO Independent Evaluation Division, project managers and other key stakeholders to prepare for the evaluation inception workshop online. Prepare materials, tools and method to collect data in the field visits by the national consultant, detailed evaluation methodology confirmed, draft theory of change, and tentative agenda for field work. Provide training to national evaluator on the evaluation method to assess project impacts.	• The inception report. Submitted to evaluation manager. • Detailed evaluation schedule with tentative mission agenda (incl. list of stakeholders to interview and site visits); mission planning; • Division of evaluation tasks with the team members. • Online survey questionnaire	4	Home-based, online
3. Provide technical support to the evaluation team member while conducting field mission. Participate in interviews, as agreed with the team member online, when possible Take part as a resources person to answer questions and provide clarification to the stakeholder workshops/ focus group meetings on identifying conditions necessary for transformational changes to take place Review meeting and workshop notes prepared by the evaluation team member during field work; provide the team technical advice to collect appropriate data and information in a real time manner; and to keep abreast with feedback from the stakeholders from the field.	• Agreement with the team members on the structure and content of the evaluation report and the distribution of writing tasks;	6	Home-based
5. Prepare the evaluation report, with inputs from the team member, according to the TOR; Coordinate the inputs from the team member and combine with her/his own inputs into the draft evaluation report; Share the evaluation report with UNIDO HQ and national stakeholders for feedback and comments.	• Draft evaluation report.	16	Home-based
4. Prepare and present overall findings and recommendations to the stakeholders online.	• After field mission(s): Presentation slides, feedback from stakeholders obtained and discussed	2	Home-based, online
6. Revise the draft project evaluation report based on comments from UNIDO Independent Evaluation Division and stakeholders and edit the language and form of the final version according to UNIDO standards.	• Final evaluation report.	2	Home-based

REQUIRED COMPETENCIES

Core values:

1. Integrity
2. Professionalism
3. Respect for diversity

Core competencies:

1. Results orientation and accountability
2. Planning and organizing
3. Communication and trust
4. Team orientation
5. Client orientation
6. Organizational development and innovation

Managerial competencies (as applicable):

1. Strategy and direction
2. Managing people and performance
3. Judgement and decision making
4. Conflict resolution

MINIMUM ORGANIZATIONAL REQUIREMENTS

Education:

Advanced degree in business management, value-chain, environment, energy, engineering, development studies or related areas.

Technical and functional experience:

- Minimum of 15 years' experience in evaluation of development projects and programmes
- Good working knowledge in environmental management
- Knowledge about GEF operational programs and strategies and about relevant GEF policies such as those on project life cycle, M&E, incremental costs, and fiduciary standards
- Experience in the evaluation of GEF projects and knowledge of UNIDO activities an asset
- Knowledge about multilateral technical cooperation and the UN, international development priorities and frameworks
- Working experience in developing countries

Languages:

Fluency in written and spoken English is required.

All reports and related documents must be in English and presented in electronic format.

Absence of conflict of interest:

According to UNIDO rules, the consultant must not have been involved in the design and/or implementation, supervision and coordination of and/or have benefited from the programme/project (or theme) under evaluation. The consultant will be requested to sign a declaration that none of the above situations exists and that the consultants will not seek assignments with the manager/s in charge of the project before the completion of her/his contract with the UNIDO Independent Evaluation Division.

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

TERMS OF REFERENCE FOR PERSONNEL UNDER INDIVIDUAL SERVICE AGREEMENT (ISA)

Title:	National evaluation consultant
Main Duty Station and Location:	Home-based
Start of Contract:	28 September 2020
End of Contract:	31 December 2020
Number of Working Days:	33 days spread over the above-mentioned period

ORGANIZATIONAL CONTEXT

The UNIDO Independent Evaluation Division (ODG/EIO/IED) is responsible for the independent evaluation function of UNIDO. It supports learning, continuous improvement and accountability, and provides factual information about result and practices that feed into the programmatic and strategic decision-making processes. Independent evaluations provide evidence-based information that is credible, reliable and useful, enabling the timely incorporation of findings, recommendations and lessons learned into the decision-making processes at organization-wide, programme and project level. ODG/EIO/IED is guided by the UNIDO Evaluation Policy, which is aligned to the norms and standards for evaluation in the UN system.

PROJECT CONTEXT

The national evaluation consultant will evaluate the projects according to the terms of reference (TOR) under the leadership of the team leader (international evaluation consultant). S/he will perform the following tasks:

MAIN DUTIES	**Concrete/measurable outputs to be achieved**	**Expected duration**	**Location**
Desk review Review and analyze project documentation and relevant country background information; in cooperation with the team leader, determine key data to collect in the field and prepare key instruments in English (questionnaires, logic models); Adjust the evaluation framework and Theory of Change in order to ensure their understanding in the local context.	Evaluation questions, questionnaires/interview guide, logic models adjusted to ensure understanding in the national context; A stakeholder mapping, in coordination with the project team.	4 days	Home-based
Carry out preliminary analysis of pertaining technical issues determined with the Team Leader. In close coordination with the project staff team verify the extent of achievement of project outputs prior to field visits.	• Report addressing technical issues and question previously identified with the Team leader • Tables that present extent of achievement of project outputs • Brief analysis of conditions relevant to the project	5 days	Home-based

MAIN DUTIES	**Concrete/measurable outputs to be achieved**	**Expected duration**	**Location**
Develop a brief analysis of key contextual conditions relevant to the project			
Support the Team Leader in prepare materials, tools and method to collect data in the field. Coordinate the evaluation mission agenda, ensuring and setting up the required meetings with project partners and government counterparts, and organize and lead site visits, in close cooperation with project staff in the field.	• Key tools and materials • Detailed evaluation schedule. • List of stakeholders to interview during the field missions.	5 days	Home-based, online
Conduct the field mission to meet and discuss with project key-stakeholders and beneficiaries, to the extent possible these meetings should be organized so that the Team Leader could participate online. Consult with the Team Leader on the meeting/interview protocol and guide to collect data and information in the format agreed in advance with the team leader. Design, administer, and analyze open-ended interviews and focus groups to gather qualitative information Facilitate stakeholder workshops Prepare meeting notes and data based on the format requested by the team leader. Close exchange and discussion with the team leader on data and information collected from the field	• Agreement with the Team Leader on the structure and content of the evaluation report and the distribution of writing tasks. • Systematic data and information from the field	12 days (including travel days)	Sri Lanka (the sites to be identified later)
Follow up with stakeholders regarding additional information promised during interviews Prepare inputs to help fill in information and analysis gaps (mostly related to technical issues) and to prepare of tables to be included in the evaluation report as agreed with the Team Leader. Revise the draft project evaluation report based on comments from UNIDO Independent Evaluation Division and stakeholders and proof read the final version.	• Part of draft evaluation report prepared.	5 days	Home-based

REQUIRED COMPETENCIES

Core values:

1. Integrity
2. Professionalism
3. Respect for diversity

Core competencies:

1. Results orientation and accountability
2. Planning and organizing
3. Communication and trust
4. Team orientation
5. Client orientation
6. Organizational development and innovation

Managerial competencies (as applicable):

1. Strategy and direction
2. Managing people and performance
3. Judgement and decision making
4. Conflict resolution

MINIMUM ORGANIZATIONAL REQUIREMENTS

Education: Advanced university degree in agriculture, environmental science, engineering or other relevant discipline like developmental studies.

Technical and functional experience:

- Excellent knowledge and competency in the field of agriculture and environmental management.
- Evaluation experience, including evaluation of development cooperation in developing countries is an asset.
- Exposure to the needs, conditions and problems in developing countries.
- Familiarity with the institutional context of the project is desirable.

Languages: Fluency in written and spoken English and is required.

Absence of conflict of interest:

According to UNIDO rules, the consultant must not have been involved in the design and/or implementation, supervision and coordination of and/or have benefited from the programme/project (or theme) under evaluation. The consultant will be requested to sign a declaration that none of the above situations exists and that the consultants will not seek assignments with the manager/s in charge of the project before the completion of her/his contract with the UNIDO Independent Evaluation Division.

Annex 4- Outline of an in-depth project evaluation report

Executive summary (maximum 5 pages)

Evaluation purpose and methodology
Key findings
Conclusions and recommendations
Project ratings
Tabular overview of key findings – conclusions – recommendations

7. Introduction
- 7.1. Evaluation objectives and scope
- 7.2. Overview of the Project Context
- 7.3. Overview of the Project
- 7.4. Theory of Change
- 7.5. Evaluation Methodology
- 7.6. Limitations of the Evaluation

8. Project's contribution to Development Results - Effectiveness and Impact
- 8.1. Project's achieved results and overall effectiveness
- 8.2. Progress towards impact
  - 8.2.1. Behavioral change
    - 8.2.1.1. Economically competitive - Advancing economic competitiveness
    - 8.2.1.2. Environmentally sound – Safeguarding environment
    - 8.2.1.3. Socially inclusive – Creating shared prosperity
  - 8.2.2. Broader adoption
    - 8.2.2.1. Mainstreaming
    - 8.2.2.2. Replication
    - 8.2.2.3. Scaling-up

9. Project's quality and performance
- 9.1. Design
- 9.2. Relevance
- 9.3. Efficiency
- 9.4. Sustainability
- 9.5. Gender mainstreaming

10. Performance of Partners
- 10.1. UNIDO
- 10.2. National counterparts
- 10.3. Donor

11. Factors facilitating or limiting the achievement of results
- 11.1. Monitoring & evaluation
- 11.2. Results-Based Management
- 11.3. Other factors
- 11.4. Overarching assessment and rating table

12. **Conclusions, recommendations and lessons learned**
- 12.1. Conclusions
- 12.2. Recommendations
- 12.3. Lessons learned
- 12.4. Good practices

Annexes (to be put online separately later)
- Evaluation Terms of Reference
- Evaluation framework
- List of documentation reviewed
- List of stakeholders consulted

- Project logframe/Theory of Change
- Primary data collection instruments: evaluation survey/questionnaire
- Statistical data from evaluation survey/questionnaire analysis

Annex 5: Checklist on evaluation report quality

Project Title:

UNIDO ID:

Evaluation team:

Quality review done by: Date:

	Report quality criteria	UNIDO IEV assessment notes	Rating
a.	Was the report well-structured and properly written? (Clear language, correct grammar, clear and logical structure)		
b.	Was the evaluation objective clearly stated and the methodology appropriately defined?		
c.	Did the report present an assessment of relevant outcomes and achievement of project objectives?		
d.	Was the report consistent with the ToR and was the evidence complete and convincing?		
e.	Did the report present a sound assessment of sustainability of outcomes or did it explain why this is not (yet) possible? (Including assessment of assumptions, risks and impact drivers)		
f.	Did the evidence presented support the lessons and recommendations? Are these directly based on findings?		
g.	Did the report include the actual project costs (total, per activity, per source)?		
h.	Did the report include an assessment of the quality of both the M&E plan at entry and the system used during the implementation? Was the M&E sufficiently budgeted for during preparation and properly funded during implementation?		
i.	Quality of the lessons: were lessons readily applicable in other contexts? Did they suggest prescriptive action?		
j.	Quality of the recommendations: did recommendations specify the actions necessary to correct existing conditions or improve operations ('who?' 'what?' 'where?' 'when?'). Can these be immediately implemented with current resources?		
k.	Are the main cross-cutting issues, such as gender, human rights and environment, appropriately covered?		
l.	Was the report delivered in a timely manner? (Observance of deadlines)		

Rating system for quality of evaluation reports

A rating scale of 1-6 is used for each criterion: Highly satisfactory = 6, Satisfactory = 5, Moderately satisfactory = 4, Moderately unsatisfactory = 3, Unsatisfactory = 2, Highly unsatisfactory = 1, and unable to assess = 0.

Annex 6: Guidance on integrating gender in evaluations of UNIDO projects and Projects

A. Introduction

Gender equality is internationally recognized as a goal of development and is fundamental to sustainable growth and poverty reduction. The UNIDO Policy on gender equality and the empowerment of women and its addendum, issued respectively in April 2009 and May 2010 (UNIDO/DGB(M).110 and UNIDO/DGB(M).110/Add.1), provides the overall guidelines for establishing a gender mainstreaming strategy and action plans to guide the process of addressing gender issues in the Organization's industrial development interventions.

According to the UNIDO Policy on gender equality and the empowerment of women:

Gender equality refers to the equal rights, responsibilities and opportunities of women and men and girls and boys. Equality does not suggest that women and men become 'the same' but that women's and men's rights, responsibilities and opportunities do not depend on whether they are born male or female. Gender equality implies that the interests, needs and priorities of both women and men are taken into consideration, recognizing the diversity of different groups of women and men. It is therefore not a 'women's issues'. On the contrary, it concerns and should fully engage both men and women and is a precondition for, and an indicator of sustainable people-centered development.

Empowerment of women signifies women gaining power and control over their own lives. It involves awareness-raising, building of self-confidence, expansion of choices, increased access to and control over resources and actions to transform the structures and institutions which reinforce and perpetuate gender discriminations and inequality.

Gender parity signifies equal numbers of men and women at all levels of an institution or organization, particularly at senior and decision-making levels.

The UNIDO projects/projects can be divided into two categories: 1) those where promotion of gender equality is one of the key aspects of the project/project; and 2) those where there is limited or no attempted integration of gender. Evaluation managers/evaluators should select relevant questions depending on the type of interventions.

B. Gender responsive evaluation questions

The questions below will help evaluation managers/evaluators to mainstream gender issues in their evaluations.

B.1. Design

- Is the project/project in line with the UNIDO and national policies on gender equality and the empowerment of women?
- Were gender issues identified at the design stage?
- Did the project/project design adequately consider the gender dimensions in its interventions? If so, how?
- Were adequate resources (e.g., funds, staff time, methodology, experts) allocated to address gender concerns?
- To what extent were the needs and priorities of women, girls, boys and men reflected in the design?
- Was a gender analysis included in a baseline study or needs assessment (if any)?
- If the project/project is people-centered, were target beneficiaries clearly identified and disaggregated by sex, age, race, ethnicity and socio-economic group?

- If the project/project promotes gender equality and/or women's empowerment, was gender equality reflected in its objective/s? To what extent are output/outcome indicators gender disaggregated?

B.2. Implementation management

- Did project monitoring and self-evaluation collect and analyze gender disaggregated data?
- Were decisions and recommendations based on the analyses? If so, how?
- Were gender concerns reflected in the criteria to select beneficiaries? If so, how?
- How gender-balanced was the composition of the project management team, the Steering Committee, experts and consultants and the beneficiaries?
- If the project/project promotes gender equality and/or women's empowerment, did the project/project monitor, assess and report on its gender related objective/s?

B.3. Results

- Have women and men benefited equally from the project's interventions? Do the results affect women and men differently? If so, why and how? How are the results likely to affect gender relations (e.g., division of labour, decision making authority)?
- In the case of a project/project with gender related objective/s, to what extent has the project/project achieved the objective/s? To what extent has the project/project reduced gender disparities and enhanced women's empowerment?

Annex 3. Evaluation Framework

Key evaluation questions	Guiding sub-questions	Means of Measurement	Data Sources
RELEVANCE			
• How relevant was the project to UNIDO?	• Was the project a technically adequate solution to the development problem? • Did the project respond to the cause of the problem? • Did the project respond to UNIDO's comparative advantage?	• Training and capacity development activities (design, delivery and uptake) • Satisfaction with training and results of uptake • Review of assumptions & constraints.	• Document review • Project records on training, # of participants (by gender) and any feedback results • Stakeholder & participant Interviews
• To what extent was the project suited to the priorities and policies of the target group, recipient and donor?	• How did the project fulfil target group needs? • To what extent was the project aligned with the development priorities of Sri Lanka? • How did the project reflect donor policies and priorities? • Are the original project objectives still valid and pertinent for the target group?	• Strategic assessment of Sri Lanka, donor and UNIDO priorities. • Needs assessments and project response	• Strategic documents • Supervision mission & project reports • Government representative interviews • UNIDO staff and stakeholder interviews • Participant interviews & FGD
EFFICIENCY			
• How economically were resource inputs converted to results? • • Has the project done the right things, with good value for money?	• How economically were resources used to produce results? • To what extent were expected results achieved within the original budget? • What factors impacted the efficiency of achievement of results? • Did the project efficiently achieve results compared with alternative approaches? • What measures were taken during planning and implementation to ensure efficient use of resources? • Was there potential for greater results with the same resource inputs?	• Budget allocation and expenditure review • Comparison with other projects for approach and costs per participant. • Counterfactual analysis	• Project and UNIDO financial & workplan records • Project staff and stakeholder interviews

Key evaluation questions	Guiding sub-questions	Means of Measurement	Data Sources
	• Were expected inputs from UNIDO, GEF and counterparts provided as planned?		
• How timely was the delivery of expected results?	• To what extent were expected results achieved within the original timeframe? • What factors impacted the efficiency of achievement of results? • Were project activities in line with scheduling in work plans?	• Timeline review	• UNIDO documents • Project documents • Project staff interviews • Stakeholder interviews • KPI Table
EFFECTIVENESS			
• How well has the project performed? • Has the project done the right things?	• What is the quality of results? • How do stakeholders perceive results achieved? • Are results achieved attributable to the project? • Were intended target groups reached by project results? • Is there valid evidence of results achieved?	• Performance by component, activity & indicators • Stakeholder and participant perceptions on performance • Field level assessment of targeting • Stakeholder and participant perceptions on targeting	• Project documents • Progress reports & project database • Relevant government policies • Laboratory documents • Bamboo industry documents • Stakeholder interviews • Participant interviews and FGDs
• To what extent have the expected resulted been achieved or are likely to be achieved? • • What have been the project's key results (outputs, outcome and impact)?	• For each project component were targets achieved? • What are the main results of the project at the output and outcome level? • What are the quantifiable results of the project? • Were different results achieved in different areas? What are the reasons for any variance?	• Performance by component, activity & indicators • Project staff, stakeholder and participant feedback on results	• Project documents • Progress reports & project database • Relevant government policies • Laboratory documents • Bamboo industry documents • Promotional materials • Project social media • Evaluator observation at project sites • Staff and stakeholder interviews

Key evaluation questions	Guiding sub-questions	Means of Measurement	Data Sources
• What are the key drivers and barriers to achieve the long-term objectives?	• What factors have affected the achievement of expected results? • What factors have assisted towards the achievement of expected results?	• Project staff, stakeholder and participant feedback on results	• Project documents • Progress reports & project database • Bamboo industry documents • Evaluator observation at project sites • Staff and stakeholder interviews
COHERENCE			
• To what extent was the project aligned with the global development agenda?	• To what extent was the project aligned with the goals and targets of the 2030 Agenda? • To what extent was the project aligned with the principles of the 2030 Agenda? • Has the extent of alignment with global agendas changed over time?	• Document review • Interviews with project staff	• Project design documents • Staff and stakeholder interviews
• To what extent does the project avoid duplication with other similar interventions?	• To what extent did the project design acknowledge the work of other development actors in the sector? • To what extent did project implementation address gaps in other interventions?	• Document review\Interviews with project staff	• Project design documents • Staff and stakeholder interviews
PROGRESS TO IMPACT			
• Are there opportunities for broader impact from project results?	• To what extent are lessons and results from the project incorporated into broader stakeholder mandates and initiatives? • Has institutional change resulted from the project? • To what extent are the project's results replicable?	• Strategic review of context • Institutional assessment	• Document review • Relevant government policies • Staff and stakeholder interviews

Key evaluation questions	Guiding sub-questions	Means of Measurement	Data Sources
	• To what extent could the project's approach and results be implemented at a larger scale?		
• What long term effects have been produced by the project?	• What difference has the project made for beneficiaries? • To what extent are changes attributable to project activities? • What are the social, economic and environmental effects, either short-, medium- or long-term, on a macro and micro level?	• Project outcome indicator performance • Strategic analysis of context for contribution to impact	• Document review • Staff and stakeholder interviews • Participant interviews and FGDs
• What effects from the project were intended and unintended, both positive and negative?	• What environmental safeguard effects resulted from the project? • What economic performance effects resulted from the project? • What social inclusiveness effects resulted from the project? • Were any results transformational? What was the key change and causes? • Were project assumptions valid?	• Contribution analysis from Theory of Change	• Project documents • Staff and stakeholder interviews • Participant interviews and FGDs
• To what extent has the project helped put in place the conditions likely to address the drivers, overcome barriers and contribute to the long-term objectives?	• To what extent has the project contributed to reduced policy barriers? • To what extent has the project contributed to the application of new bamboo knowledge? • To what extent has the project contributed to diversified bamboo products? • To what extent has the project contributed to the increased availability of new technology and infrastructure?	• Contribution analysis from Theory of Change	• Project documents • Staff and stakeholder interviews • Participant interviews and FGDs • Government stakeholder interviews
SUSTAINABILITY			

Key evaluation questions	Guiding sub-questions	Means of Measurement	Data Sources
• To what extent are the achieved results likely to sustain after the completion of the project? • To what extent has the project helped put in place the conditions likely to address the drivers, overcome barriers and contribute to the long term objectives? • What are the key drivers and barriers to achieve the long term objectives? •	• Will project results be sustained after the end of donor funding? • Does the project have an exit strategy? How likely is it this strategy will succeed? • To what extent have results and outputs been institutionalized? • What is the rate of uptake of new instruments and technologies? Will these rates be sustained/ improved? • Have improved systems been incorporated into state budgets? • Is adequate staffing and support being applied to continue processes? • What progress was made towards the conditions needed to address the long-term objectives?	• Institutional assessment • Stakeholder feedback on sustainability initiatives • Project outcome indicator performance • Institutional assessment • Stakeholder feedback and documentation on budget allocations • Contribution analysis from Theory of Change	• Project documents • Stakeholder and participant interviews/FGDs • Project documents • Document review • Stakeholder interviews • Synthesis of data sources
• How resilient to risk are project benefits?	• What is the likelihood of financial and economic resources not being available beyond the end of the project? • Are there any social or political risks that may jeopardize the sustainability of project outcomes? • Is the level of stakeholder ownership sufficient to allow for the continuation of project benefits and outcomes? • Are stakeholders aware of the potential of continuing project benefits? • Is there sufficient public and stakeholder awareness of project activities and benefits to support the project's long-term project objectives?	• Risk analysis • Contribution analysis • Stakeholder and participant feedback on ownerships and risks	• Synthesis of data sources • Stakeholder and participant interviews and FGDs.

Key evaluation questions	Guiding sub-questions	Means of Measurement	Data Sources
	• Have risk management plans been established, including monitoring actions?		
PERFORMANCE OF PARTNERS			
• What was the quality of implementation?	• To what extent did project executing entities deliver effectively? • To what extent did project executing entities focus on elements that were within their control as a GEF implementing agency? • How well did the project executing entities identify and manage risks?	• Feedback from project staff and donor representatives • Document review	• Project documents • Interviews with project staff • Interviews with donor representatives
• What was the quality of execution?	• Were funds used appropriately? • How successful was the procurement and contracting of goods and services?	• Feedback from project staff and donor representatives • Document review	• Project documents • Interviews with project staff • Interviews with donor representatives
LESSONS LEARNED			
• What lessons can be drawn from the successful and unsuccessful practices in designing, implementing and managing the project?	• Has UNIDO and its partners documented and addressed the lessons in potential follow-on activities? • Have lessons learned identified during the mid-term review been actioned?	• Performance by component, activity & indicators • Staff and stakeholder feedback on implementation lessons • Project staff, stakeholder and participant feedback on results	• Document review • Project staff and stakeholder interviews • Synthesis of data sources

Annex 4. List of documentation reviewed

List of documentation reviewed
Ansermet, L, Letter to the PSC Chair, UNIDO and GEF Focal Points
Study on land availability and identification of potential sites for energy plantations
Industrial Development Board, Bamboo Planting and Plantation management Manual (English)
Industrial Development Board, Bamboo crafts basic training Manual (English)
Industrial Development Board, Advanced Bamboo Furniture Making Techniques Manual (English)
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Industrial Development Board, Bamboo crafts basic training Manual (Sinhala)
Industrial Development Board, Bamboo Planting and Plantation management Manual (Sinhala)
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UNIDO, Perennial benefits: Developing a bamboo supply chain and industrial base in Sri Lanka
UNIDO, Market Study: Bamboo Sector in Sri Lanka
Gunasekara, P, Study on Sri Lanka Forest Wood & Paper (incl. Bamboo) Product Sector and Industrial Opportunities
Bamboo Processing for Sri Lanka: A UNIDO-GEF Project Document
Service Summary Sheet for GEF Projects
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Evergreen Sri Lanka, Forum on Bamboo for Energy and Industrial Sustainability Brochure
Questionnaire - Biomass Usage in Sri Lanka for Energy
Newsletter: Bamboo is to replace timber in Sri Lanka
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DoWell Creations Display Systems, Estimate List of Participants
Project Team, UNIDO GEF Project 4144 "Bamboo Processing for Sri Lanka" List of Project Stakeholders
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Project Team, Project Workplan August 2019-May 2020
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Project Team, GEF#4114 - Project Workplan 2018-2020
Project Team, Project Workplan - Q2 2017 - Q2 2019
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Report of last 6 months of agreement
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UNIDO, Annexes to the Mid-Term Review
UNIDO, Mid-Term Review Report to GEF
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UNIDO, Job Description: Bamboo Expert 2016
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UNIDO, Selection of Bamboo Processing Equipment Job Description Bamboo Processing Equipment Expert
UNIDO, Terms of Reference for Financial Schemes Development Experts, 2017
UNIDO, Terms of Reference for finance Instrument Expert (2018)
UNIDO, Job Description for Bamboo Management and Plantation Expert (2016)
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UNIDO, Strengthening the Bamboo sector in Sri Lanka Job Description NPC for Bamboo Programme (2016-2017)
UNIDO, Strengthening the Bamboo sector in Sri Lanka Job Description NPC for Bamboo Programme (2017)
UNIDO, Strengthening the Bamboo sector in Sri Lanka Job Description NPC for Bamboo Programme (2018)
UNIDO, Guidelines for Preparation of Terms of Reference for Contracts for Services and Work
UNIDO, Marketing Research Study - Strengthening Bamboo Sector in Sri Lanka Terms of Reference
Contract between UNIDO and Stax Inc Colombo
Stax, 2016, Proposal for Market Research
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UNIDO, 2013, Annual Project Implementation Report FY 2013
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Stamm, J, 2015, Technical Mission Report Sri Lanka 178-28.8.2015
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UNIDO, 2015, Interoffice Memorandum Technical Evaluation: Project 100043 / ITB 7000001103 Establishment and administration of a revolving fund
Stax, 2016, Market Study Focused on Strengthening the Bamboo Sector in Sri Lanka: A Stax Research Report
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Annex 5. List of stakeholders consulted

UNIDO
1. Ansermet, Lorence (Ms), Senior Industrial Development Officer, Project Manager of Bamboo Processing Sri Lanka - UNIDO
2. Clara, Michéle (Mr), UNIDO Vienna
3. Gasperetti, Sabrina (Ms), International Project Associate - UNIDO
4. Guarnizo, Javier (Mr), Independent Evaluation Office, UNIDO, Vienna
5. Hierold, Juergen (Mr), UNIDO, Vienna
6. Kumaraswamy, Ravishankar (Mr), Energy Expert, UNIDO Sri Lanka
7. Pieris, Niroshini (Ms), Project Secretary, UNIDO Sri Lanka
8. Rajabdeen, Nawaz (Mr), National Director (UNIDO Focal Point in Sri Lanka)
9. Tezera, Dejene (Mr), UNIDO, Vienna
10. van Berkel, René (Mr), UNIDO Representative, UNIDO Regional Office, India
STAKEHOLDERS
1. Amunugoda, Neville (Dr), Principal Research Scientist & INBAR Country Focal Point, Food Technology Section, Industrial Technology Institute (ITI)
2. Attanayake, A M K B (Mr), Director, Forestry and Environment, Mahaweli Authority of Sri Lanka
3. Gunasekera, Anagi (Mr), former Superintendent, Beverly Estate, Deniyaya
4. Gunasinghe, Mohan (Mr), Director, Industrial Development Board, Moratuwa
5. Gunawardene, Priya (Mr), Representative, Planters Association of Sri Lanka
6. Hapurachchi, Sisira (Mr), Director, Land Use Policy Planning Department, Ministry of Lands
7. Izzadeen, M I (Mr), Director, Elpitiya Plantation Ltd
8. Jayasinghe, Parakrama (Mr), Energy Expert (Independent Expert)
9. Kumara, S H Asoka (Mr), Director, Wood Sector, Ministry of Industries
10. Kumarasiri, D H S (Mr), Conservator (Legal), Department of Forestry
11. Marambe, Buddhi (Professor), Faculty of Agriculture, University of Peradeniya (and Project's Consultant on Policy)
12. Molagoda, Nandaka (Dr), formerly in the Policy Development Office of the Prime Minister's Office
13. Naseer, S L (Mr), Additional Secretary, Industrial Policy & Sector Development, Ministry of Industries
14. Palihakkara, Indika (Dr), Senior Lecturer, Dept. of Agriculture, University of Ruhuna
15. Ratnamalala, Priyanka L U (Mr), General Manager, Industrial Development Board
16. Ratwatte, J Charitha (Mr), formerly Head, Policy Development Office of the Prime Minister's Office
17. Rekogama, Bandara (Mr), Head of Refinance Schemes & Special Lending Products, Hatton National Bank

18. Rushandan, Rajalingam (Mr), Director, Plantation Management & Monitoring Division, Ministry of Plantation Industries
19. Senaratne, T R P Priyankara, (Mr), Conservator, Department of Forestry
20. Somasinghe, Nadeeka (Ms), Officer, Walpita Farm, Department of Agriculture
21. Wadood, Rifa (Mr), Director (International Relations) · Ministry of Environment
22. Weerasinghe, Mr Buddhika, Assistant Director, Plantation Management & Monitoring Division, Ministry of Plantation Industries
23. Wijekoon. W M R (Mr), Director, Sector Development Division 4, Ministry of Industries
24. Wijesinghe, Gamini (Mr), Additional Secretary, Ministry of Environment and GEF Focal Point

BENEFICIARIES INTERVIEWED
Machinery and Equipment
1. Baddegamage, Indika (Mr), Induwara Exports (Bio char Production)
2. Fernando, Tyronne, Dathri Dowell Ltd, Kimbulapitiya
3. Kithsiri, M A D P (Mr), Silpa Craft Centre (Bamboo Straw and equipment Kit) (also a trainee)
4. Sivarajan, N (Mr), Enterprise Promotion Officer, Industrial Development Board
Training and Small Equipment Kit
1. Costa, D S Jude Jayantha, Negombo
2. Gajaweera, D S R (Mr), Buttala
3. Jayasekara, Wasantha (Mr), Buttala
4. Madushanka, Rasika, (Mr) Veyangoda
5. Mendis, Ashley (Mr) Batuwaththa
6. Nadeeshan, S M (Mr), Panirendawa
7. Premarathna, D M (Mr), Melsiripura
8. Thilina, Sandaruwan (Mr), Horana
9. Wimal, Ranjith (Mr), Bulathsinhala
10. Withanage, Amitha (Ms), Ginimellagaha

Annex 6. Results Framework

Outcomes by Project Component	Indicator(s)[138]	Target Level[139]	Achievements[140]	Met/Not met
Component 1: Policy Framework				
Outcome: Assessment of existing framework and shortcomings and a supportive framework adopted	Changes in national and local policies and practices adopted	Changes (as per outputs below) have been adopted		**Progress made but target not met**
Output 1.1: National strategy developed for the development of the bamboo industry	Existence of a national Bamboo Strategy	Development and adoption of a national bamboo strategy	• Empirical Supply Chain model developed (2013) • Sustainability and baseline monitoring prepared (2013) • Prospective site identification completed (2014) • National Bamboo Association established (2015) • Policy expert hired (2017) • Review of existing policies and regulations completed (2019)	**Progress made but target not met**
Output 1.2: National policy adjustments supported	Changes in the national forestry policy regarding bamboo development and exploitation by end of year 4 of the project	Allows for and facilitates sustainable biomass resource development and exploitation - especially bamboo - on degraded lands	• Guideline drafted for forest plantations (2018) • Policy amendments proposed (2019) • Circular issued by Forestry Department to transport bamboo (2020)	**Progress made but target not met**
Output 1.3: Land use policy adjustments	Changes in land use policy adjustments allowing for bamboo/ biomass development on degraded lands by end of year 1 of the project		• Exceptions to transport rules granted for bamboo grown on degraded land (2020)	**Not met**
Output 1.4: Supportive policies and regulations on a local and regional level	Changes in local and regional policies supporting bamboo development and exploitation		• Two working groups supported to review national regulations and land use plans (2018)	**Not met**
Outputs 1.2 – 1.4	Changes to policies		• Policy guidance sub-committee formed (2013)	**Not met**

[138] GEF, 2012, *Request for CEO Endorsement/Approval.*
[139] Ibid.
[140] Project Implementation Reports FY 2013 to FY 2020

Outcomes by Project Component	Indicator(s)[138]	Target Level[139]	Achievements[140]	Met/Not met
			• National Bamboo Association formed (2014) • Policy issues discussed during national workshop (2016) • Expert hired to follow-up policy issues (2017) • Reviews of some land use plans conducted (2018) • Policy review meetings with PDO/PMO (2018)	
Output 1.5: Information on the project activities disseminated to the public and decision-makers	Number of stories about the project/bamboo development in national, international, and expert-oriented media outlets	20	• Project launch covered by national media (2013) • National workshop held (2016) • Project brochure published and disseminated (2016) • Project website launched (2017) • 3 newspaper articles (2019) • Project social media accounts established (2019) • Energy and planters' forums (2020)	**Not met**
Component 2: Bamboo Tissue Production				
Outcome: Bamboo reproduction technology transfer - National capacity to provide bamboo planting material on a large scale	Full integration of five new bamboo species into the propagation program of the RBP Tissue Culture lab.	The five new species are integrated into the programme of the RBP Tissue Culture lab		**Progress made but target not met**
Output 2.1: Acquisition and installation of laboratory equipment for appropriate species	Number of appropriate bamboo species for which there has been acquisition and installation of equipment by end of year 2 of the project	9	• Pre-existing equipment assessed to be adequate, so no laboratory equipment provision undertaken (2019) • Imported seeds of 2 species germinated (2019)	**Progress made but target not met**
Output 2.2: Functional laboratory and availability of high-quality planting material for appropriate species	Number of species for which there is appropriate, functioning laboratory equipment and available high-quality planting material by end of year 3 of the project	9	• Needs identified in consultation and procurement begun (2015) • Seeds for 2 two species imported (2018) • Imported seeds germinated and available for sale (2019) • 3 species available for purchase (2020)	**Progress made but target not met**

Outcomes by Project Component	Indicator(s)[138]	Target Level[139]	Achievements[140]	Met/Not met
Component 3: Plantation establishment				
Outcome: Plantations established to provide feedstock for bamboo plantations	Feedstock available from the bamboo plantations once established (t/yr)	200,000		**Not met**
Output 3.1: Bamboo plantations established in unused lands in the dry zone and wet zone	Number of hectares of bamboo established in unused lands in the dry zone	5,000	• Bamboo mapping conducted (2013) • Revolving fund for pilot plantation created (2014) • Investment feasibility report completed (2015) • Potential plantation areas visited, and suitable communities identified (2016) • Additional mapping conducted (2018) • 32ha planted as a demonstration area (2019) • 57ha planted bamboo provided by the Project (2020)	**Not met**
	Number of hectares of bamboo established in unused lands in the wet zone	5,000		
Component 4: Plantation operation				
Outcome: National know-how to maintain bamboo plantations	Local knowledge available to sustain benefits after project end	Self-sustaining plantations established	• Manual on planting and management developed and available (2020)	**Not met**
Output 4.1: Economically sustainable, functional bamboo plantations running in currently unused dry lands and wet lands	Number of tonnes per year of bamboo culm being harvested	150,000	• Sites identified and species tested (2017)	**Not met**
	Number of tonnes per year of bamboo shoots by-product being harvested	250,000		
Component 5: Bamboo processing equipment				
Outcome: Bamboo processing technology transfer to Sri Lanka			•	**Not met**
Output 5.1: Bamboo processing machinery for industrial use bought and installed	Number of major producers of finished bamboo products with machinery bought and installed	5	• Small pilot project established (2013) • Site visits undertaken to identify sites and equipment needs (2016) • Consultation with IDB and private entrepreneurs to identify needs (2018) • 2 public calls for proposals, three organizations selected (2019) • Training of trainers in bamboo preservation and handcraft skills (2019)	**Not met**

Outcomes by Project Component	Indicator(s)[138]	Target Level[139]	Achievements[140]	Met/Not met
			• 2 bamboo basic handcraft techniques and product and furniture making workshops with 16 participants (2019) • *Training on Basic Bamboo Preservation Techniques (4-day course conducted from 22 to 25 January 2019)* • *Training on Basic Bamboo Craft Techniques (10-day course conducted from 15 – 25 June 2019)* • *Training on Bamboo Product and Furniture Creation (10-day course conducted from 17 – 26 July 2019)* • *Training on Bamboo Product and Furniture Creation Technology (10-day course conducted from 16 – 26 October 2019)* • *Training on Bamboo Product and Souvenirs (8-day course conducted from 9 – 16 December 2019)*[141] • Tools provided to 11 artisans who had received training to produce items (2019) • Equipment provided to Dathri/Dowell Creations Systems to process bamboo laminate boards (2020) • An additional company selected to receive equipment (2020)	
Output 5.2: Establishment of bamboo flooring production capacity	Production and sale of bamboo flooring material per year (m2)	120,000	• One pre-existing producer of bamboo flooring identified and supported (2013 & 2014) • Flooring deemed to not be competitive in Sri Lanka and Project support stopped (2018) • Market analysis conducted following bankruptcy of initial firm (2019)	**Not met**

[141] Findings from evaluation consultation

Outcomes by Project Component	Indicator(s)[138]	Target Level[139]	Achievements[140]	Met/Not met
Output 5.3: Establishment of bamboo shoots by-product industry	Production and sale of bamboo shoots by-product (tonnes/year)	20,000	• Market study conducted and disseminated (2017) • Needs consultation undertaken with one company (2018) • Plants and support to establish compost facility provided to Beverley Estate (2020)	**Not met**
Component 6: Pelletizing / briquetting / chipping				
Outcome: Biomass/pelletizing/ briquetting/chipping technology transfer and development	Availability of local technology	Technology available via local agents		**Not met**
Output 6.1: Pelletizing/briquetting /chipping machinery bought and installed for bamboo	Number of producers of biomass pellets / briquettes / chips with machinery installed for bamboo	3	• One company identified to receive equipment (2020) • One company received support to establish a business plan (2020)	**Not met**
Output 6.2: Production of biomass pellets / briquettes or chips	Production of biomass pellets per year (tones/year dry weight)	25,000	• Market study conducted to encourage private investment (2017) • "beneficiary equipped by the project will be able to produce 2500 Tons/year of bamboo briquettes by 2021"	**Not met**

Annex 7. Letters received in support of land allocation prior to 2013

Organization	Date of letter outlining allocation	Available land in hectares
Ministry of Plantation Industries,	February 2012	7000ha
Malwatte valley plantations PLC,	12 June 2012	40.5ha
Maskeliya Plantations PLC,	6 June 2012	2000ha
Madulsima Plantations PLC	19 June 2012	37.05ha
Elpitiya Plantations PLC	16 June 2012	22.25ha
Finlays indicating	22 June 2012	30ha
Sri lanka state Plantation Corporation	9 October 2012	More than 404ha
Maturata plantations Limited	25 June 2012	100ha
Forest Department	August 2011	359.1ha

Source: Schuls, N, 2014, Draft Report on land availability and suitability

Annex 8. Bamboo Processing Equipment Supplied by the Project

Receiver	Equipment	Value	Date
Dowell Creations Display Systems[142]	- 2x bamboo Pole Cross Cutter - 1x External knot Remover - 1x Parallel Splitter Machine - 1x Elementary/Two-Side Bamboo Skin Remover - 1x Bamboo Strip Dryer/Seasoning Plant - 1x four-side planer - 1x Glue Coater - 1x Hot Hydraulic Board Press - 1x Wide Belt Sander or Double Drum Sander - 2x tiltable saw machine - 2x Oscillating Sander - 6x Dust removers - Installation, transportation, insurance and taxation costs	USD 101,130.00	PO signed 01/06/2019
Silpa Craft Center[143]	- 1x Bamboo pole cross cutter - 1x Bamboo strip dryer/seasoning plant - 2x Dust removers - 1x Disc sander - 1x Drill press - 1x Air compressor - 1x Scroll saw - 2x Orbital sander - 1x Air orbital sander - 1x Air belt sander - 1x Industrial orbital finger sander	USD 12,700.00	Invoice supplied 24/09/20
Industrial Development Board of Ceylon (IDB)	- 2x Bamboo pole cutter - 1x External knot remover - 1x Double circular saw cutting machine - 1x Two side bamboo skin remover - 1x Bamboo strip dryer/seasoning plant - 1x Four side planer - 1x Glue coater - 1x Hot hydraulic board press - 1x Wide belt sander - 2x Tiltable saw machine - 2x Oscillating sander - 6x Dust remover		Equipment delivered 23/06/20 Equipment installed 17/09/20

[142] UNIDO, June 2019, *Purchase Order 3000069959*
[143] Garnet Tools, 2020, *Commercial Invoice Garnet Tools to Kithsiri Cane*

Annex 9. Timelines/milestones of important events

Date/Period	Details	Remarks
2010	**Report** Study on land availability and identification of potential sites for energy plantations and bamboo cultivation	Pre-project activity
30 Sept 2011	Proposal submission to GEF	
Oct 2011	Agency approval	
7 March 2012	Proposal re-submitted	
19 Sept 2012	Project start date	
29 Nov 2012	1st Steering Committee meeting	
14 December 2012	Proposal re-submission	
Dec., 2012	UNIDO core team for the project execution in place	Notes of 1st SC
7 Dec 2012	**Report**: Non - grant instruments – Their use in UNIDO's Energy and Climate Change Program	
24 Dec 2013	Establishment of the Association for the Bamboo Growers & Industry (President: Mr Nawaz Rajabdeen, UNIDO Focal Point)	
April, 2014	Seethawaka Initiative (plant bamboo with community) launched	Notes of 2nd SC
19 May 2014	**Report**: Land availability and suitability	
27 May 2014	2nd Steering Committee meeting	Notes of 2nd SC
27 Aug 2014	**Report**: Establishment and Design of Financial Model for Bamboo Plantations	
12 April 2016	**Report**: Technical Follow-Up Bamboo Processing in Sri Lanka	
9 March 2016	Stakeholder meeting	
Nov 2016	Mid-term Evaluation of the Project	
Undated (but likely 2017)	**Report** on establishing a Revolving Fund of the UNIDO-GEF project	
31 Aug 2017	**Report** on the analysis of business plans (Dr Schulz) (including Dathri/Dowell)	
Dec 2017	UNIDO had launched a call for proposals for a revolving fund (to receive loan up to USD 50'000 without interest) and 15 proposals received	
Jan 2018	**Report** Review of the existing policy framework and strategic planning	Prof. Marambe
29 Jan 2018	Meeting with Policy Development Office, Prime Minister's Office re policy aspects	
2 April 2018	SC decided to cancel the Revolving Fund	
2 April 2018	3rd Steering Committee meeting	
31 July 2018	Internal meeting including Dr Niels Schulz held to discuss matters arising from the 3rd SC	
July 2018	Visit of Mr. Spyridon to Sri Lanka and identification of private sector individuals to give machinery not on loan but on grant [Objections to the procedure by the Ministry]	Notes of the internal meeting on 31 July 2018
31 July 2018	Nine companies/NGOs identified as 'potential partners for implementation of the Project	*Ibid* See Note 1 for details

Date/Period	Details	Remarks
31 July 2018	Decided to engage the Walpita Farm of the Dept. of Agriculture to raise seedlings	*ibid*
31 July 2018	Decided that "… *In this respect the UNIDO rules and regulations have to be applied and UNIDO is not in the position to delegate the selection of the suppliers and beneficiaries to the government*	*ibid*
31 July 2018	Chair of the SC informs that the *Ministry of Mahaweli and Environment Development is not at all happy with this project and that in the future they will not attend any meetings related the Bamboo Project*	*ibid*
31 July 2018	Chair of the SC directs " *Until such time do not proceed further anything or give any grants without consulting us Ministry of Industry & Commerce. UNIDO cannot hold discussions alone*.	*ibid*
8 Aug 2018	Meeting with Policy Development office (Prime Minister's Office) (policy aspects)	Notes
27 Sept., 2018	Walpita Farm receives seed imported from China	Interview
Oct, 2018	University of Ruhuna received 1 kg of seed imported from China	Interview
1 Jan 2019	Setting up the Project Office at the World Food Programme premises (in Colombo)	Progress Report 2018
January 2019	4-module training on handicrafts held at IDB for craftsmen	
June 2019	Newspaper calls for Expressions of Interest for bamboo machinery	
25 July 2019	4th Steering Committee Meeting	
25 July 2019	SC decided that "*UNIDO should meet the relevant authorities of the Ministry and make the decision with them. Hence for the 3 proposals received for bamboo processing, they will be assessed by representatives of the Ministry of Industry, Ministry of Mahaweli and Environment, as well as by Mr. Nawaz Rajabdeen, against the review sheet drafted by UNIDO*"	4th SC meeting Minutes
Mid-2019	Elpitiya Plantation (Thalgaswela Estate) plants about 2 ha of bamboo from seedlings raised at the University of Ruhuna (seeds imported from China)	Visited mid-February
Oct., 2019	Dathri/Dowell receives machinery for laminated board	Visited mid-February
25 Oct 2019	Forum – Bamboo for energy and industrial sustainability	
14 Jan 2020	Cabinet of Ministers decide to close the Policy Development Office in the Prime Minister's Office (involved in bamboo policy development)	No further developments in Policy matters
23 Sept., 2020	Walpita Farm writes to UNIDO indicating about the non-removal of about 4,000 over-grown seedlings and the difficulties Farm is facing	Letter
22 Dec 2020	Forest Department issues an internal circular (H3/10/04/2020) for its field staff to "*give priority to applications fort bamboo transport*"	Internal circular
Feb, 2021	Induwara Export Ltd (Mr Baddegamage) received charcoal-making machinery, and has transported them to Matara for installation	Visited mid-February; installation pending on environmental authority approval.

Date/Period	Details	Remarks
Feb, 2021	Silpa Craft (Mr Kithsiri) informs the Evaluation Team that the straw-making machinery has arrived in the Port of Colombo.	Visited mid-February
20/21 Feb 2021	Dathri/Dowell conducts a two-day training for bamboo industrialists and others at its site.	Interview

Note 1: Companies/NGOs identified.

- Silvermill Group
- Sauru Kala Centre
- Lighthouse Sustainability Solutions
- Industrial Development Board (revised proposal)
- WTSS community organization (Wanasarana Thurulatha Swechcha Society)
- Dowell Creations Display Systems
- Beverley estate (Browns Plantation Group/ Maturata)
- Arunalu Community Development Centre
- Mid-Country Farmer's planning unit
- AMCO in Batticaloa