



ITTO PD 600/11 REV. 1 (I)

MODEL CAPACITY BUILDING FOR EFFICIENT AND SUSTAINABLE UTILISATION OF
BAMBOO RESOURCES IN INDONESIA

20 JUNE 2023

Ex-Post Evaluation Report
Dr. Gan Kee Seng

List of Abbreviations

<u>Abbreviation</u>	<u>Full description</u>
BDFA	Bangli District Forestry Agency
BDIA	Bangli District Industry Agency
BDDT	Bangli District Trade Agency
CA	Collaborating Agency
CFPRD	Centre for Forest Productivity Research and Development
CSE	Community Small Enterprise
DGWMSF	Directorate General of Watershed Management and Social Forestry (formerly, DGLRSF: Directorate General of Land Rehabilitation and Social Forestry)
EA	Executing Agency
FAO	Food and Agriculture Organisation
FOERDIA	Forestry and Environment Research, Development and Innovation Agency
FORDA	Forestry Research and Development Agency of the Ministry of Forestry
ITTA	International Tropical Timber Agreement
ITTO	International Tropical Timber Organisation
MoEF	Ministry of Environment and Forestry
MOF	Ministry of Forestry
MoU	Memorandum of Understanding
NGO	Non-government Organizations
NWFP	Non-Wood Forest Product
PSC	Project Steering Committee

Acknowledgements

I wish to extend my sincere appreciation to Ms. Sheam Satkuru, Executive Director of ITTO, for assigning me to ex-post evaluate ITTO PD 600/11 Rev. 1 (I) "Model Capacity Building for Efficient and Sustainable Utilisation of Bamboo Resources in Indonesia" and to Dr. Steven E. Johnson, Director of ITTO-Trade and Industry Division, Dr. Gerhard Breulmann, Director of ITTO Operations Division, as well as Dr. Tetra Yanuariadi, Projects Manager of ITTO Forest Industry for making the necessary administrative and logical arrangements that made it possible to effectively accomplish the ex-post evaluation exercise.

I also would like to express my thanks to Dr. Dodi Simandi, Deputy Director for International Cooperation Facilitation, International Cooperation Bureau (Biro KLN), Ministry of Environment and Forestry (MoEF), Indonesia, for sparing his precious time to preside the entry meeting; and to Pak Sya'roni Agung Wibisono, Senior Policy Analyst, KLN for making the excellent arrangements for the meetings and visits to relevant stakeholders.

I should also convey my sincere appreciation to Ms Desy Ekawati, Project Coordinator for receiving me to discuss on the different aspects of the project and arrangement for field visit and meetings with the various project stakeholders.

Consultant

Executive Summary

Introduction

1. The Committee on Economic, Statistics and Markets and the Committee on Forest Industry, during their Forty-sixth Session in November 2022 decided that an ex-post evaluation of PD 600/11 Rev.1 (I) to be conducted in order to establish how well the Project served its purposes and to draw up recommendations for future action. The decision of the Committees was based on the Council Decision 3(XXVIII) of 30 May 2000 which specifies the criteria for selection of projects to be ex-post evaluated.
2. The ex-post evaluation was carried out approximately sixty-seven months after project completion. This report provides an in-depth diagnosis of the project, presents its successful and unsuccessful outcomes, the reasons for successes and failures, the sustainability of its effects and contributions toward the achievement of ITTO Objective 2000, and draw lessons that can be used to improve similar projects in the future.
3. The project Executing Agency was Forest Research & Development Agency (FORDA), the Ministry of Environment and Forestry, Indonesia. However, after the reorganization of Ministries in Indonesia, Forest Research & Development Agency (FORDA) under the former Ministry of Forestry (MoF), had changed into Forestry and Environment Research, Development and Innovation Agency (FOERDIA), Ministry of Environment and Forestry (MoEF). The Collaborating Agency was Bangli District Forestry Agency (BDFA) Bali Province.

Evaluation scope, focus and approach

4. A review of the project design, logical framework matrix, planned and reported outputs, and intended outcomes was conducted. This report provides an in-depth diagnosis of the project, identifying its successful and unsuccessful outcomes, the reasons for the successes and failures, the sustainability of the project's outcomes, and contribution towards the achievement of ITTA 2006 Objectives and ITTO Strategic Action Plan 2008-2011, and to draw lessons that can be used to improve similar projects in the future.

Project facts

5. Bamboo has undergone significant development in the past two decades and has the potential to replace wood in various industrial applications, contributing to the conservation of tropical forests. In rural areas of Indonesia, bamboo is widely used for construction, mats, baskets, tools, hats, toys, musical instruments, furniture, and popular bamboo shoots in the food sector. Despite Indonesia's abundant bamboo resources, they have not been fully utilized. Recognizing its potential for socio-economic development, the Ministry of Forestry has implemented strategic measures for bamboo industry development through ministerial decrees and executive decisions. These initiatives aim to prioritize non-wood forest products, including bamboo, and promote sustainable forest management. This project, initiated by the Directorate General of

Watershed Management and Social Forestry, aligns with the government's efforts to support sustainable bamboo development nationwide.

6. The project aimed to improve the management of bamboo resources for their sustainable use and benefits to local communities. The key problem to be addressed is the weak capacity of stakeholders to develop and utilize bamboo resources in an efficient and sustainable manner. The project specific objective of the project was: to initiate enhancement of capacity amongst stakeholders to develop and utilize bamboo resources in an efficient and sustainable manner.
7. Total budget approved for the project was USD 872,032 comprising of USD 537,095 from ITTO and USD 334,937 in-kind from Government of Indonesia. The total project duration was 44 months including project extension with no additional cost due to project suspension by ITTO due to their internal problem.

Findings and Lessons learned

8. The key problem addressed by the project was adequately defined and analysed. Main causes and sub-causes of the key problem addressed were diagnosed and identified with the cause-effect relationship established. Conceptually, the vertical logic was clear and the project interventions were appropriate to solve the problems at hand.
9. The three project outputs were achieved through the successful implementation of 19 project activities. The achievements specific objectives were verified using the indicators defined in the logical framework matrix. As the specific objectives had been achieved, they must have contributed to achieving the development objective: Improved the management of bamboo resources for their sustainable use and benefits to local communities.
10. In order to construct a conceptually and operationally sound project design, it is essential to perform an adequate problem analysis; relevance and effectiveness of project interventions to resolve the problems at hand are ensured only by knowing the consequence as well as direct and indirect causes of the key problem addressed by the project;
11. Formulation of this project was initiated through a series of consultative meetings involving the main stakeholders of bamboo resource at both the Ministry of Forestry and Bangli Forestry Agency levels. These had provided a strong basic understanding on the issue at hand and identification of the much-needed interventions and strategy for implementation.
12. This project demonstrated a strong major stakeholders' analysis conducted that had provided the necessary inputs for realistic interventions and the commitment and involvement of respective stakeholders in the planned activities with flexibility to include or invite other key players.

Conclusions

13. The project designed to address the sustainable management of bamboo resources has been successful in achieving its objectives and delivering the planned outputs. The project interventions were appropriate and well-targeted to solve the problems identified in the bamboo supply chain, and the vertical logic was clear. The achievement of the specific objectives is verifiable through the indicators defined in the logical framework matrix. The project has contributed to improving the management of bamboo resources for their sustainable use and benefits to local communities, which was the development objective.
14. Overall, the project has had a positive impact on the local communities, and the continuous development of bamboo after the project's completion has been demonstrated through the establishment of a bamboo nursery. The success of this project could serve as a model for similar interventions in other areas with bamboo resources.

Recommendations

15. In enhancing the economic returns to the farmers and local communities, the technology needs for the different locality may be customize based on the local culture and practices. For example, the upper pole/calms left in the bamboo forest/plantation after harvesting in Ngada areas may be used for carbonization and not incense making.
16. In speeding up the development of bamboo to replace timber for engineering applications such as building construction, technical data for design may be developed concurrently with demonstrative applications. It is strongly advisable to make use of the experience of timber utilization in order to convince designers and users to use the material confidently and such uses will increase the viability of bamboo plantations;
17. As local conditions in Indonesia may be vastly different, in developing the bamboo plantation, a few targeted bamboo products may be identified and processing facility developed to create the value for the bamboo in order to convince the farmers or local communities in this venture.
18. It is recommended that follow-up efforts be taken to strengthen the Bamboo Villages in Ngada District and other districts in East Nusatenggara (Nusa Tenggara Timur) Prtovince, where the project had provided bamboo treatment facilities for the local community. The center of excellence will benefit the local community and stakeholders from other regions in Indonesia who will learn and share about the development and utilization of the bamboo.
19. There is a need to develop a comprehensive study or program on the role of bamboo for environmental services as well as for climate change adaptation and mitigation. This could enhance the role of bamboo for environmental and ecological sustainability and may position bamboo as the potential commodity for carbon funds.

Table of Contents

List of abbreviations	i
Acknowledgements	ii
Executive Summary	iii
1. Introduction	1
1.1 Background and rationale of the ex-post evaluation	1
1.2 Project identification	1
1.3 Executing Agency and Collaborating Agency	1
1.4 ITTO context of the project	2
2. Evaluation Scope, Focus and Approach	3
2.1 Purpose	3
2.2 Terms of reference	3
2.3 Approach	4
3. Project Facts	4
3.1 Background and origin	4
3.2 Development objective	5
3.3 Problem addressed	5
3.4 Specific objective and outputs	5
3.5 Start date and project duration	5
3.6 Budget	5
4. Findings and Lessons Learned	6
4.1 Findings	6
4.1.1 Project design and contribution to achievements	6
4.1.2 Achievement of the outputs and objectives	6
4.1.3 Impact and relevance of the project	11
4.1.4 Effectiveness of technology transfer	12
4.1.5 Overall post-project situation	13
4.1.6 Unexpected effects and impacts	13
4.1.7 Effectiveness of the project implementation	14
4.1.8 Overall sustainability	14
4.1.9 Overall success/failure of the project	15
4.1.10 The overall cost of the project	15
4.2 Lessons learned	15
5. Conclusions and Recommendations	16
5.1 Conclusions	16
5.2 Recommendations	16
Annex 1. ITTO - Consultant agreed timelines	
Annex 2. Schedule of ex-post evaluation meeting and field visit in Indonesia	
Annex 3. Executing Agency's Views	

Main Text

1. Introduction

1.1 Background and rationale of the evaluation

The Committee on Economic, Statistics and Markets and the Committee on Forest Industry, during their Fifty-sixth Session in November 2022 decided that an ex-post evaluation of PD 600/11 Rev.1 (I) to be conducted in order to establish how well the Project served its purposes and to draw up recommendations for future action. The decision of the Committees was based on the Council Decision 3(XXVIII) of 30 May 2000 which specifies the criteria for selection of projects to be ex-post evaluated.

The ex-post evaluation was carried out on 3 and 8 – 10 March 2023, approximately sixty-seven months after project completion. This report provides an in-depth diagnosis of the project, presents its successful and unsuccessful outcomes, the reasons for successes and failures, the sustainability of its effects and contributions toward the achievement of ITTO Objective 2000, and draw lessons that can be used to improve similar projects in the future.

1.2 Project identification

Serial number: PD 600/11 Rev. 1 (I)

Title: Model Capacity Building for Efficient and Sustainable Utilisation of Bamboo Resources in Indonesia

1.3 Executing Agency and Collaborating Agency

Host Government: Republic of Indonesia

Executing Agency: Forest Research & Development Agency (FORDA), the Ministry of Environment and Forestry, Indonesia

Collaborating Agency: Bangli District Forestry Agency (BDFA) Bali Province

After the reorganisation of Ministries in Indonesia, based on Regulation of the Ministry of Environment and Forestry of the Republic of Indonesia Number P.18/MENLHK-II/2015 on Organization and Administration, Forest Research & Development Agency (FORDA) under the former Ministry of Forestry (MoF), had changed into Forestry and Environment Research, Development and Innovation Agency (FOERDIA), Ministry of Environment and Forestry (MoEF)

The Memorandum of Understanding (MoU) signed between Centre for Forest Productivity Research and Development (CFPRD) as Executing Agency and Bangli Forestry District Agency (BFDA) Province of Bali as Collaborating Agency was signed on 18 September 2013 at Bangli District.

1.4 ITTO context of the project

The objectives of the International Tropical Timber Agreement (ITTA) 2006 are to promote the expansion and diversification of international trade in tropical timber from sustainably managed and legally harvested forests, and to promote the sustainable management of tropical timber producing forests.

The ITTA 2006 sets out the Organization's longstanding aims of enhancing the capacity of members to export tropical timber from sustainably managed forests and to improve market transparency, forest-based enterprises and sustainable forest management. It also expands the scope of previous agreements to include objectives related to poverty alleviation, forest law enforcement, NTFPs and environmental services, voluntary market mechanisms such as certification, and the role of forest-dependent communities.

PD 600/11 Rev. 1 (I) is aligned with the ITTA 2006 objectives, specifically by:

- (c) contributing to sustainable development and to poverty alleviation; and
- (q) promoting better understanding of the contribution of NTFPs and environmental services to the sustainable management of tropical forests with the aim of enhancing the capacity of members to develop strategies to strengthen such contributions in the context of sustainable forest management, and cooperating with relevant institutions and processes to this end.

PD 600/11 Rev. 1 (I) is also aligned with the following specific actions and expected outcomes under the ITTO Action Plan 2008-2011:

Actions by the Committee on Forest Industry:

Expected outcome 1: Increased production and further processing of tropical timber and other forest products from sustainably managed and legally harvested sources.

- The project demonstrates on how to apply appropriate processing technologies to produce different kinds of bamboo products. Besides that, the project show case how to plant selected bamboo species having high commercial value in order to avoid depleting bamboo resources.
- The project provides training to local people on how to form and manage small business enterprises or cooperatives dealing with utilization and conservation of bamboo resources;
- The project establishes demonstration plots of bamboo plantation and bamboo processing unit where interested villagers, investors and civil servants were trained.

Cross-cutting actions

- The project deals with demonstration activities both in processing and bamboo planting as well as with exchange visits thus consistent with Item e of the "communication and outreach".
- The project will conduct local, national, regional and international training on bamboo resources utilization and development thus consistent with Item k of the "capacity building".

ITTO Biennial Work Programme for the years 2010-2011

- This project aimed to promote development and utilization of bamboo resources in Indonesia.
- This aim is consistent with Activity No. 38 of the existing ITTO Biennial Programme “promoting roles of non-timber forest products (NTFPs) and services for sustainable forest management and improved livelihood in tropical countries”.

2. Evaluation scope, focus and approach

2.1 Purpose

This report provides an in-depth diagnosis of the project, identifying its successful and unsuccessful outcomes, the reasons for the successes and failures, the sustainability of the project's outcomes, and contribution towards the achievement of ITTA 2006 Objectives and ITTO Strategic Action Plan 2008-2011, and to draw lessons that can be used to improve similar projects in the future.

2.2 Terms of reference

- Assess the project's design and contribution to the achievement of the project objectives.
- Assess the achievement of the project's outputs and specific objectives.
- Evaluate the impact and relevance of the project, detailing its impact on development and specific objectives as stated in the project documents.
- Determine the effectiveness of technology transfer to target groups if applicable.
- Assess the overall post-project situation for the projects, including the conditions of their intended direct or indirect beneficiaries.
- Define and assess unexpected effects and impacts, either harmful or beneficial, and present the reasons for their occurrences.
- Analyze and assess implementation efficiency, including the technical, financial and managerial aspects.
- Assess the overall sustainability of the project after completion, and include appropriate recommendations to safeguard the continuity of its positive impacts, and enhance utilization of the technologies (if applicable) and other results developed by the project.
- Taking into account the results of the evaluation, make an overall assessment of the projects' relative success or failure, to summarize the key lessons learnt; and identify any issues or problems that should be taken into account in designing and implementing similar projects in future.
- Assess the overall cost of the projects with original budget provisions, and their respective linkage with the overall results.
- Prepare the evaluation report in accordance with the references for the Project Evaluation Report, as contained in the ITTO Manual for Project Monitoring, Review and Evaluation, third edition and the ITTO Manual on Standard Operating Procedures 2009.
- Assess the project's contribution to the relevant ITTA objectives (1994 and 2006) and the relevant ITTO Action Plan.
- Prepare one or more articles for each project, for possible publication in the ITTO Tropical Forest Update (TFU), in consultation with the editor, containing an overview of the projects and summarizing the lessons learned from the evaluation work. Appropriate photographs should be provided.

2.3 Approach

A review of the project design, logical framework matrix, planned and reported outputs, and intended outcomes was conducted using the following reference documents provided by ITTO:

- Relevant ITTO Manuals
- Project documents
- Technical reports
- Project audit reports and
- Project completion reports
- Project Steering Committee (PSC) Meetings
- Yearly plan of operations
- Bi-annual progress reports

The Project Coordinator and Ministry of Environment and Forestry staff were briefed on the purpose and methodology of the ex-post evaluation during the opening meeting held in Jakarta on 3 March 2023.

Visit to project site was conducted on 3 and 7 to 10 March 2023. Discussions were held with participating community leader and partner, factory representative and local government official. The visit was well organized by the Executing Agency (EA) that all planned activities were fully and smoothly realized.

3. Project facts

3.1 Background and origin

Significant development of bamboo has taken place in the last two decades and bamboo may replace wood in many industrial applications, thereby contribute to the saving and restoration of tropical forests. In Indonesia, bamboo is a major construction material particularly in rural areas. It is traditionally used to produce mats, baskets, tools, handles, hats, toys, musical instruments and furniture by the locals. In the food sector, bamboo shoots are popular. Undeniably, bamboo has a great potential for socio-economic and environmental development, and international trade. Indonesia is blessed with a vast bamboo resource that occupies state and community lands all over the country. In 2005, the Ministry of Forestry estimated that the total area of bamboo forest was around 2.10 million Ha, 0.69 million Ha on state forest lands and 1.41 million Ha on private/community lands (in Global Forest Resources Assessment Update, FAO, 2005). Despite the potential of bamboo for socio-economic development, available bamboo resource has not been utilized optimally.

Realizing the potential of bamboo resource for rural development and poverty alleviation, the Ministry of Forestry has taken strategic steps for bamboo industry development through the issuance of three ministerial decrees and one executive decision. The first decree, No. P35 of 2007, specifies 557 species of flora and fauna comprising nine groups of non-wood forest products that fall under the Ministry's administration, one of which is bamboo group products; the second decree, No. P19 of 2009, defines the basic strategy for bamboo industry development to be pursued at the national level; the third decree, No. P21 of 2009, spells out the criteria and indicators for prioritizing NWFP species for development; and executive decision of DGWMSF No. SK22 of 2010 identifies bamboo as the prime commodity for development first in Bangli District of Bali and further nationwide.

This project initiated by DGWMSF was a follow up action to the executive decision No. SK 22 of 2010. It was also consistent with the recommendation of the ITTO Technical Mission to Indonesia (2001) that Indonesia needs to develop special measures for dealing with promotion of non-wood forest products to support sustainable forest management.

3.2 Development objective

The project aimed to improve the management of bamboo resources for their sustainable use and benefits to local communities.

3.3 Problem addressed

The key problem to be addressed is the weak capacity of stakeholders to develop and utilize bamboo resources in an efficient and sustainable manner. Bamboo can substitute wood in many industrial applications; any increase in the utilisation of bamboo will significantly reduce the dependency of local communities on forest, thus contributing meaningfully to sustainable forest management.

3.4 Specific objective and outputs

The project specific objective of the project was: to initiate enhancement of capacity amongst stakeholders to develop and utilize bamboo resources in an efficient and sustainable manner.

The expected outputs, as defined in the original project document, were:

Output 1: Investment in bamboo industry development promoted

Output 2: Institutional framework for bamboo industry development enhanced

Output 3: Participation of local communities in bamboo industry development increase

3.5 Start date and project duration

This project commenced on 6 Nov 2013 and was to be completed on 5 Nov 2016, a total project duration of 36 months. An extension of two months at no additional cost was granted on October 2018. However, between 9 June 2016 and 16 December 2016, ITTO suspended funding due to its internal problem. As a result, the project was granted on 12 January 2017 a further extension from January to June 2017 at no additional cost to complete all the uncompleted and uninitiated activities. The total project duration was 44 months including project suspension period.

3.6 Budget

Total budget approved for the project:

ITTO:	USD 537,095
Government of Indonesia (in-kind):	USD 334,937
TOTAL:	USD 872,032

Out of the total ITTO contribution, USD 73,784.80 was retained for project monitoring and review, ex-post evaluation, and programme support costs.

4. Findings and lessons learned

4.1 Findings

4.1.1 Project design and contribution to achievements

As presented in the project document, the key problem addressed was adequately defined and analysed. Main causes and sub-causes of the key problem addressed were diagnosed and identified with the cause-effect relationship established. Conceptually, the vertical logic was clear and the project interventions were appropriate to solve the problems at hand. It was a multi-pronged approach to address the sustainable upstream, mid-stream and downstream of whole bamboo supply chain to bring benefits to local communities.

4.1.2 Achievement of the outputs and objectives

a. The Outputs

Achievement of outputs was assessed using the indicators defined for each activity presented in the project document or its revision thereof as follows:

Output 1.1 Reliable information bamboo growing stock in Bali available

This output was achieved: An indication map of bamboo distribution in Bali Province and also a map of specific bamboo distribution in Bangli District were produced

Output 1.2 Information on market and technologies disseminated

This output was achieved: The recommendations for the local stakeholders of existing bamboo industry entrepreneurs in Bangli District through relaying information on market opportunities for bamboo products and commodities were produced.

Output 1.3 Feasibility study on bamboo project completed

This output was achieved: The feasibility study for four bamboo business were available:

- Bamboo cultivation which is limited to species of bambu petung (*Dendrocalamus asper*) and bambu tali (*Gigantochloa atter*),
- Laminated bamboo processing business
- Bamboo handicraft business with sokasi product (bamboo woven box)
- Bamboo shoots processing as the food source.

Output 1.4 Assessment report of economic infrastructure and discuss findings with local governments completed.

This output was achieved: Identification factors and recommendation of assess adequacy of economic infrastructure to support bamboo industry development in Bangli District and Bali Province were available.

Output 1.5. 3 national workshops on bamboo industry development conducted

This output was achieved: Four national workshops were conducted:

- National Workshop on Bamboo Industry Development in Indonesia. Ministry of Industry, Yogyakarta. 20 - 21 January 2015
- Workshop on “Sustainable Management of Community Based Bamboo Forestry to support the Program of 1000 Bamboo Villages”. Ngada District, Flores, East Nusa Tenggara Province. 9 May 2016
- Seminar and Workshop of Indonesian Bamboo Community (Collaboration Event) Manggala Wanabakti, Jakarta, 7 December 2016.
- National Workshop of Dissemination on Bamboo Industry Development in Indonesia P3E Bali Nusa Tenggara, Office, Bali. 20 July 2017

Output 2.1. Bamboo management regime defined

This output was achieved: Recommendation and indication that 38% of Bangli District area includes to prospective zones that could be developed as bamboo industry clusters. The most suitable location is Pengotan Village and there are also 42 villages from 72 villages in Bangli District which are suitable to develop bamboo industry with all the factors and enablers.

Output 2.2. A bamboo information system operational

This output was achieved: A bamboo web database was established by the project in September 2014 and data and information is constantly updated until now.

Output 2.3. Awareness and knowledge of local government on bamboo utilization increased

This output was achieved: Stakeholder forum formed in several area in district and province level.

- Provinces Level; West Java, Central Java, Yogyakarta, Bali, West Nusa Tenggara, East Nusa Tenggara and South Sulawesi.
- District Level; Bangli, Gianyar, Lombok Tengah, Ngada and Ende

Output 2.4. Document of bamboo management regime finalized and types of strategic industry defined

This output was achieved: Two ministerial policy brief on bamboo resource management and utilization published; The draft of national strategy on community bamboo industry through “A thousand bamboo villages” platform published; and Project and EBF gave input and recommendation for Director General of Water shed Management and Protection Forest Regulation on sustainable harvesting of bamboo in protection forest through selecting cutting.

Output 2.5. A national campaign on promoting bamboo industry in Indonesia developed.

This output was achieved: Establishment of platform on community bamboo industry through campaigning “a thousand bamboo villages” in Indonesia partnered with EBF.

- This platform was also written in the draft of National Strategy on Bamboo Industry Development in Indonesia.
- The campaign conducted in national level to get support and to realize the bamboo villages in Indonesia.
- International campaign also conducted to share Indonesian strategy on community bamboo development

Output 3.1. Demonstration plots for management practice conducted in two location in Bangli, Bali and in Ngada, Flores.

This output was achieved:

- In Bali demonstration plot located in Penglipuran Villages Bamboo Forest the method used selecting same age structures within a bamboo clump. The observation on bamboo shoot productivity conducted for two years.
- In Ngada demonstration plot, the management practice is called SBF Sustainable Bamboo Forestry or Hutan Bambu Lestari HBL.

Output 3.2. Four bamboo species planted on 12Ha of land on 4 sites for demonstration

This output was achieved: About 12 Ha of bamboo planting demonstration plots planted in the area of Hidup Rukun farmer group in Bubung Klambu Village, Kintamani. A total of 1850 bamboo seedling was planted.

The project also made collaboration to extend bamboo planting area and number of seedlings planted. In collaboration with “Bali Re-Green” organized by civil society living in Bali. Altogether 500 bamboo seedlings in under this collaboration.

Output 3.3. Appropriate technologies for producing quality planting materials for community.

This output was achieved: - Appropriate methods for producing bamboo planting materials for community level is still conventional bamboo propagation methods, which are from bamboo branch cutting and rhizome. Most common and easier to apply is branch cutting propagation. The project promoted the new method on bamboo nursery system called “bamboo cocoon nursery” in collaboration with EBF to support 1000 bamboo villages’ movement.

Output 3.4. Appropriate bamboo processing technologies for a small-scale for community enterprises.

This output was achieved: The study has made recommendations that the appropriate type of industry for the community in Bangli Regency was the processing of incense sticks.

Output 3.5. Two small-scale processing plant installed and operational

This output was achieved: - The project has procured certain capital item units of bamboo machinery for processing incense stick and incense production, delivered to 3 (three) small scale groups of community in Bangli District. The project also built a bamboo preservation building/workshop units in Ngada District to support community bamboo industry.

Output 3.6. At least 90 persons trained; 60 persons from Bali and 30 persons from 15 other provinces trained on the various aspects of bamboo industry development.

This output was achieved: During project implementation, nine training workshops were held and attended by more than 300 participants from communities and stakeholders. The participants covered from 10 Provinces of Indonesia. (Banten, Jakarta, West Java, Central Java, Yogyakarta, East Java, Bali, NTT, NTB and South Sulawesi).

Output 3.7. Guidelines and technical manuals widely used in Bali

This output was achieved: During the course of the project 40 publications in the form of flyer, booklets, leaflets, manual were delivered. Among the publications: Standar Operasional Prosedur Input Data, Data Digital Bambu Indonesia. (Bahasa Indonesia) (Guideline); Petunjuk Teknis Pembuatan Bibit Bambu.(Bahasa Indonesia) (Manual); and Teknik Silvikutur Bambu Indonesia Bernilai Ekonomi Tinggi (Bahasa Indonesia) (Book)

Output 3.8. Two Community Small Enterprises (CSE) or cooperatives established and piloted implemented.

This output was achieved: Three (3) pioneer of CSE of incense stick production established in Bangli Regency, Bali Province.

Output 3.9. A national workshop on dissemination of project results conducted.

This output was achieved: A workshop on dissemination of project results was conducted on 20 July 2017 in the Center for Development and Control of Region Bali and Nusa Tenggara, Ministry of Environment and Forestry, Denpasar, Bali.

b. Specific objectives

By definition, delivery of the outputs pertinent to each specific objective means that that particular specific objective has been achieved. The achievement is also verifiable using the indicators defined in the logical framework matrix as illustrated below:

Specific objective 1: Investment in bamboo industry promoted

Indicators: i) Bamboo growing stock survey completed and reported in year 1; ii) Information on market and technologies collected, analyzed and disseminated by end of year 1; iii) Feasibility study on bamboo industry development completed in year 1; iv) Economic infrastructure assessed in year 1; and v) National workshop on bamboo industry development conducted in year 1

This objective had been achieved by end of the project through the output of planned activities conducted: i) An indication map of bamboo distribution in Bali Province and also a map of specific bamboo distribution in Bangli District were produced; ii) The recommendations for the local stakeholders of existing bamboo industry entrepreneurs in Bangli District through relaying information on market opportunities for bamboo products and commodities were produced; iii) The feasibility study for four bamboo business were available (Bamboo cultivation which is limited to species of bambu petung (*Dendrocalamus asper*) and bambu tali (*Gigantocloa atter*), Laminated bamboo processing business, Bamboo handicraft business with sokasi product (bamboo woven box), and Bamboo shoots processing as the food source) iv) Identification factors and recommendation of assess adequacy of economic infrastructure to support bamboo industry development in Bangli District and Bali Province were available; and v) Four national workshops were conducted.

Specific objective 2: Institutional framework enhanced

Indicators: i) Land area for bamboo industry development identified and officially designated in year 1, ii) Bamboo information system installed and operational since year 1, iii) National campaign on bamboo industry development initiated in year 1

This objective had been realized by end of the project: 38% of Bangli District area that could be developed as bamboo industry clusters had been identified; A bamboo web database was

established in September 2014; and Establishment of platform on community bamboo industry through campaigning National campaign “A thousand bamboo villages” in Indonesia was established together with EBF.

Specific objective 3: Sufficient skilful people available for bamboo industry development

Indicators: i) 6 Ha of demo plots for natural bamboo developed and used since year 1, ii) 12 Ha of demo bamboo plantation developed in year 1, iii) Development of technologies for production of planting materials initiated in year 1, iv) Technologies for small-scale processing plant identified in year 1, and v) Processing equipment and facilities procured, installed and pilot tested in year 1

This objective had been realized by end of the project through the output of activities conducted: i) Demonstration plots located in Penglipuran Villages Bamboo Forest was established. The method used in selecting same age structures within a bamboo clump. The observation on bamboo shoot productivity conducted for two years. In Ngada, demonstration plots for management practice conduct in collaboration with EBF. The mechanism and demonstration plot maintenance still continue; ii) Bamboo plantation demonstration plots were established by Hidup Rukun farmer group in Bubung Klambu Village, Kintamani. In total planted 1850 bamboo seedling of various species and propagation types in 6 hectares site. The project also made collaboration to extend bamboo planting area and number of seedlings planted. In collaboration with “Bali Re-Green” organized by civil society living in Bali, another 500 bamboo seedlings were planted in this area; iii) Appropriate methods for producing bamboo planting materials for community level is still conventional bamboo propagation methods, which are from bamboo branch cutting and rhizome. The most common and easier method is branch cutting propagation. The project promote a new method on bamboo nursery system called “bamboo cocoon nursery” in collaboration with EBF to support 1000 bamboo villages’ movement; iv) On appropriate type of industry for the community in Bangli Regency, the project had recommended the processing of incense sticks; and v) The project had procured bamboo machinery for processing incense stick and incense production, and delivered to 3 (three) small scale groups of community in Bangli District. A bamboo preservation plant/workshop was built in Ngada District to support community bamboo industry.

c. Development objective

As the specific objectives had been achieved, they must have contributed to achieving the development objective: *Improved the management of bamboo resources for their sustainable use and benefits to local communities*. The contributions are evident by the increased bamboo activities in Ngada. Bamboo poles are being harvested, semi-process in a local factory and transported to Bali for finished product processing, such as laminated bamboo beams and boards. The local women groups in Ngada are actively involved in the propagating of bamboo seedling from bamboo root-branches in their home. These seedlings are then sold to the nursery; here the seedlings are planted for rhizome enlargement before planting in the field. The demonstrative use of bamboo building was highlighted in the bamboo pavilion built in conjunction with the 2022 G20 meeting in Bali. A new bamboo pavilion is currently being planned for the ASEAN Summit scheduled in November 2023. The local trading of bamboo has certainly increased but no exact figures are readily available to the consultant.

4.1.3 Impact and relevance of the project

Impact and relevance of the project

Below are the highlights of project impacts based on the information gathered during the visits to selected project beneficiaries:

Dr. Nicolaus Noywuli

Head of Division of Economic and Area Development of Ngada Regency, and Principal of Sekolah Tinggi Pertanian Flores Bajawa (STIPER-FB), Flores Bajawa Agricultural Academy.

At the Regency Government level importance of Bamboo to the local communities well beings and environmental issues, and watershed purposes are well recognized; tremendous efforts in terms planning, implementation of programs, and facilitation have been carried out to develop the Bamboo industries. They hope that if bamboo comes into the mind of the Honourable President, he will associate it with Ngada. The provincial government is aware of this project outputs and welcomes more efforts to further develop the bamboo industries, especially more value-adding processing of the resources.

Local communities involved in the project

Om Nimus Jawa, Chief of Sub-tribe (Sa'o) Neguwula, managed the about 10 ha communal bamboo plantation.

A local farmer engaged in the planting and harvesting bamboo, and maintaining the bamboo clumps for the bamboo industry supplies. In their bamboo area, they also support by researchers to conduct some research work on bamboo clumps treatments. According to him, prior to this project, the bamboo had no value. They used the bamboo only for household and domestic purposes (traditional roof, walls, livestock's cages, fire fuels, etc). Now he and his sub-tribe (Sa'o) supplying their communal-owned bamboo to a processing plant nearby. They use the money from selling the bamboo for their sub-tribe needs, such as built the traditional house, yearly ceremony etc. As he is also assisting with some research works, he is knowledgeable and able to contribute valuable traditional knowledge to the practice.

Bamboo processing factory

Pak Yuki Syailendra, factory manager

This factory is a subsidiary to another factory in Bali. This factory has a few basic bamboo processing equipment: cutting to length, splitting, treatment and drying. The factory is buying bamboo poles from the local communities and semi-processing them before sending the material to the main factory for value-adding processing such as laminated bamboo panel and beams. They are happy with the supply conditions.

Environmental Bamboo Foundation and the Bamboo Campus "Turetogo"

An NGO with office-cum-training building and preservation facility in Ngada. The building and furnishing on this site are made using bamboo. Various activities are conducted at this site to promote the many uses of bamboo. As a partner to this PD 600/11 Rev.1 (I), a bamboo treatment plant was set up on this site and launched on 22 November 2018. The treatment plant is still being use during the visit, and at the moment they are fulfilling the order to build a Bamboo pavilion for the coming ASEAN Summit, on 9th – 11th May 2023 in Labuan Bajo, Flores East Nusa Tenggara.

Pak Paskalis Lalu who is managing this site, is fully aware of the PD 600/11 Rev.1 (I) and is currently involved in applying for the sustainability certification for bamboo produced from the local communities under their charge. There is also a current initiative to promote bamboo as a building material for public housing. A model house is currently being built at the site made mainly from bamboo lamination and combined with some parts with other materials.

The bamboo campus also hosts university students and vocational high school students who want to learn about bamboo.

Bamboo Nursery

A bamboo nursery is set up by Environmental Bamboo Foundation to raise bamboo seedlings for big scale planting using the outputs from the project. This nursery involved several women groups, who prepare the seedling from root-branches bamboo into plastic polybags in their home yards. After, 6-8 months at the home nursery, the seedlings were transferred and planted in this area for rhizome enlargement. This nursery is sited on disused paddy field due to the high sulphur of the water. However, the bamboo seedlings are growing well. The nursery will produce more than hundreds of thousands of seedlings by splitting the rhizomes and new root-branches seedlings. This demonstrated the impact of the project and the continuous development of bamboo after the project's completion.

4.1.4 Effectiveness of technology transfer

Technology transfer had been performed through different means as follows:

i) Conduct of the workshop and training courses on various aspects of bamboo:

- Training of Producing Quality Bamboo Planting Materials. Landih Village, Bangli District, Bali Province. 9 September 2014
- Training of Bamboo Clump Management: Community Bamboo Rangers. Bangli District, Bali Province. 3 – 5 November, 2015
- Training of Introduction of Bamboo Management and Utilization for Farmer Groups of Community Plantation Forest (HTR). Kuru Villages, Ende District, East Nusa Tenggara Province. 11 – 12 April 2016
- Workshop Trip on “Processing Techniques on Bamboo Industry: Bamboo Incense Stick”. Malang District, East Java Province. 28 – 30 April 2016
- Training of Capacity Building on Design and Bamboo Handicraft Innovation and Business Institution for Bamboo Crafts. Susut Sub Regency, Bangli District, Bali Province. 25 – 26 May 2016
- Training of Capacity Building on Bamboo Business Model Development for Bamboo Farmers Kintamani Sub Regency, Bangli District, Bali Province. 27 May 2016
- Participatory Action Workshop on Bamboo Based Community and Bamboo Cocoon Nursery Kampong Wogo, Ratogesa Village, Golewa District, Regency of Ngada, East Nusa Tenggara 7 – 9 September 2016
- Participatory Action Workshop on Community Sustainable Bamboo Forestry in Were Villages. Golewa Sub-District, Ngada District. 3 – 5 Februari 2017
- Training of Community’s Business Plan for Small Medium Enterprises Bamboo Processing for Incense Stick. Agro Tiing Bali, Banjar Panelokan, Desa Batur Tengah, Kintamani, Bali. 31 Mar - 2 Apr 2017
- National Workshop on Bamboo Industry Development in Indonesia. Ministry of Industry, Yogyakarta. 20 - 21 January 2015
- Workshop on “Sustainable Management of Community Based Bamboo Forestry to support the Program of 1000 Bamboo Villages” Ngada District, Flores, East Nusa Tenggara Province. 9 May 2016
- Seminar and Workshop of Indonesian Bamboo Community (Collaboration Event) Manggala Wanabakti, Jakarta, 7 December 2016.
- National Workshop of Dissemination on Bamboo Industry Development in Indonesia. P3E Bali Nusa Tenggara, Office, Bali. 20 July 2017

These training courses, workshops and seminars were attended by more than 600 participants. The participants included farmer, local communities, scientists, industries, academicians, and government agencies.

ii) Wide dissemination of the publications produced under the project:

- Brochure – 2
- Guide book – 1
- Technical reports – 7
- Proceedings – 1
- Guide line – 1
- Journal paper – 2
- Flyer – 6
- Leaflet – 1
- Booklet – 1
- Manual book – 2
- Book – 2
- Module – 1
- Website – 2
- Film/video – 3

4.1.5 Overall post-project situation

The prevailing situation after project completion can be summarized as follows:

i) Raised awareness and capacities of target beneficiaries

An integrated bamboo development platform connecting both upstream and downstream sector has been established involving all the targeted beneficiaries. The target beneficiaries are trained on various aspects bamboo propagations and planting, skill in producing craft items, and are better aware of the potential economic benefits of bamboo through the basic and more advance value adding processing. Awareness raising was accomplished through wide distribution of the project publications, articles in webpages and video clips containing information on project activities and findings.

ii) Strengthening policies development of bamboo resources

A draft of national strategy on community bamboo industry through “A thousand bamboo villages” platform was published. The project and partners gave input and recommendation for Director General of Watershed Management and Protection Forest Regulation on sustainable harvesting of bamboo in protection forest through selecting cutting

iii) Physical environment

In terms of physical environment, the project had procured a few capital items of bamboo machinery for the processing of incense stick and delivered to 3 (three) small scale groups of community in Bangli District. The project also built a bamboo preservation workshop units in Ngada.

4.1.6 Unexpected effects and impacts

The interest of the farmers and local communities enquiring about technologies on fuller utilization of bamboo is unexpected during the visit by the consultant. Farmers are more aware of the great potential of using the waste to increase their incomes. The project team may look into appropriate technologies for the various groups of farmers where the local conditions may differ.

4.1.7 Effectiveness of the project implementation

Three yearly plans of operation (YPOs) had been submitted by the executing agency to and endorsed by ITTO as the guiding documents of project operations; seven bi-annual progress reports had been also submitted to ITTO; two PSC meetings were organized with proper documentation; and one final audited report were produced with the assistance of independent, certified public accountant and the reports were duly endorsed by ITTO; a completion report was submitted to ITTO, and; 27 printed materials in the form of technical reports, books, manual, journal papers, flyers and brochures were distributed to intended beneficiaries nation-wide.

In the implementation of the overall project, a Memorandum of Understanding was signed between FORDA and BFDA from the start, but collaborations and partnerships with several others were established to implement the planned activities. The official Memorandum of Understanding (MOU) between FOERDIA and EBF, and Cooperation Agreement (CA) between CSEPCC and EBF were also signed to formalise the undertaking of some activities. Government institutions supporting three main sectors, upstream, middle sector and downstream sectors of bamboo supply chain were fully engaged: Directorate General of Small and Medium Industries, Ministry of Industry; Directorate General of Social Forestry and Environmental Partnership; Directorate General of Production Forest Sustainable Management; and Directorate General of Climate Change, Ministry of Environment and Forestry.

Different levels of meetings were also held, with these collaborators, stakeholders and partners to address both technical and strategic issues faced from time to time. These included two PSC meetings, four formal stakeholders' meetings and numerous preparatory meetings with respective partners and collaborators to successfully implement the project activities.

All the project documents examined were prepared in conformity to the existing relevant ITTO manuals, both in terms of format and content, with distinct consecutive time coverage, and in compliance with the project agreement as well as established rules and procedures applying to ITTO projects.

Extension of the project implementation for eight months without additional ITTO funding was solely caused to the funding suspension by ITTO due to its internal problem and necessary to complete all the planned activities. The extension therefore was justifiable.

4.1.8 Overall sustainability

Generally, most the activities implemented in this project will be sustaining the contributions of the project to the development of bamboo sector for a long time. Highlights of several elements of the projects sustaining the contribution towards improving the management of bamboo resources for their sustainable use and benefits to local communities are

- The Bamboo Cocoon Nursery program involving local women folks (Mama Bambu) to raise seedlings from root-branchers in polybag for 6-8 months at their backyards. These seedlings were then further raised for rhizome enlargement in a proper nursery setup before actual planting in the field. The program is fully adopted and still practice till now in Ngada. This program will continue to bring some financial benefits to the local womenfolk.
- The project had had procured a few capital bamboo machinery for the processing of incense stick and delivered to 3 (three) small scale groups of community in Bangli District. The project also built a bamboo preservation workshop in Ngada. These processing units are still in operation.

Sustainability of the project is very much determined by its actual and potential contribution to intended primary beneficiaries, the bamboo industries and state governments. Awareness programs, technical trainings and applicability of the technologies identified and introduced through the planned activities are strong incentive for the beneficiaries to technically, and

politically support the continuation and expansion of the activities that were initiated under the project.

4.1.9 Overall success/failure of the project

Overall, the project can be rated as successful in delivering its outputs and achieving its planned specific objectives and that lead to realizing the intended development objective. Based on the indicators defined in the Logical Framework Matrix, all the planned outputs had been fully delivered and the specific objectives achieved. It is imperative that the outputs will need continuous improvement and adjustment with time to further accomplish the development objective.

4.1.10 The overall cost of the project

The sanctioned total amount of project budget was US \$ 1,446,001 comprising contributions of ITTO and GOI in the amounts of US\$ 499,867, and US\$ 166,000, respectively. The project had been awarded nine months extension in time without additional funding by ITTO; the extension was justifiable due to the delay in completion of particular activities, simply for the suspension of project fund by ITTO due to its internal problem.

4.2 Lessons learned

i. Project identification and design.

- In order to construct a conceptually and operationally sound project design, it is essential to perform an adequate problem analysis; relevance and effectiveness of project interventions to resolve the problems at hand are ensured only by knowing the consequence as well as direct and indirect causes of the key problem addressed by the project;
- Formulation of this project was initiated through a series of consultative meetings involving the main stakeholders of bamboo resource at both the Ministry of Forestry and Bangli Forestry Agency levels. These had provided a strong basic understanding on the issue at hand and identification of the much-needed interventions and strategy for implementation.
- This project demonstrated a strong major stakeholders' analysis conducted that had provided the necessary inputs for realistic interventions and the commitment and involvement of respective stakeholders in the planned activities with flexibility to include or invite other key players.

ii. Project implementation

- The project was managed by a small competent team in Project Management Unit, namely a Project Coordinator, Project Secretary, Field Supervisor, Finance Technician and IT Technician. All the activities were implemented through collaboration with project collaborator, partners and appointed local consultants or experts with the involvement of targeted local communities and farmers;
- The management and coordination by the PMU were brilliant to ensure all the planned activities were carried out successfully with the desired outputs reported. Any amendment or adjustment to the plan was efficiently communicated for approval by ITTO and reported. These were good practices so that any unforeseen circumstances or reasons for changes to the original plan were made known earlier by the project coordinator so that appropriate actions by members could be taken;

- Timely disbursement of fund is essential for the smooth running of any project; to this end, all parties involved in the project must be mindful of their responsibilities for smooth disbursement process. During the course of this project implementation, the suspension of project fund by ITTO due to its internal problem had affected the completion of several planned activities and resulted in the project extension;
- Members of the PSC may meet once a year and be kept informed of the progress in implementation that any delay could receive immediate and timely attention;
- Frequent meetings among collaborator, partners and participating farmers and local communities had facilitated updating of implementation and technical progress, and exchanging of views in addressing any technical obstacle faced and proved contributing meaningfully to the smooth project implementation.

5. Conclusions and Recommendations

5.1 Conclusions

In conclusion, the project designed to address the sustainable management of bamboo resources has been successful in achieving its objectives and delivering the planned outputs. The project interventions were appropriate and well-targeted to solve the problems identified in the bamboo supply chain, and the vertical logic was clear. The achievement of the specific objectives is verifiable through the indicators defined in the logical framework matrix. The project has contributed to improving the management of bamboo resources for their sustainable use and benefits to local communities, which was the development objective.

The importance of bamboo to the local communities' well-being and environmental issues, as well as watershed purposes, has been recognized by the Regency Government. The project has raised awareness among the local farmers about the potential economic benefits of bamboo, and they are now supplying their communal-owned bamboo to a processing plant. The bamboo processing factory is happy with the supply conditions, and an NGO with an office-cum-training building and preservation facility has been set up to promote the many uses of bamboo.

The project has also been effective in transferring technology through workshops and training courses, and the wide dissemination of publications produced under the project. The project has raised the capacities of the target beneficiaries, and an integrated bamboo development platform connecting both upstream and downstream sectors has been established.

Overall, the project has had a positive impact on the local communities, and the continuous development of bamboo after the project's completion has been demonstrated through the establishment of a bamboo nursery. The success of this project could serve as a model for similar interventions in other areas with bamboo resources.

5.2 Recommendations

a. For the Executing Agency

- In enhancing the economic returns to the farmers and local communities, the technology needs for the different locality may be customize based on the local culture and practices. For example, the upper pole/calms left in the bamboo forest/plantation after harvesting in Ngada areas may be used for carbonization and not incense making.
- In speeding up the development of bamboo to replace timber for engineering applications such as building construction, technical data for design may be developed concurrently with demonstrative applications. It is strongly advisable to make use of the experience of timber

utilization in order to convince designers and users to use the material confidently and such uses will increase the viability of bamboo plantations;

- As local conditions in Indonesia may be vastly different, in developing the bamboo plantation, a few targeted bamboo products may be identified and processing facility developed to create the value for the bamboo in order to convince the farmers or local communities in this venture.
- It is recommended that follow-up efforts be taken to strengthen the Bamboo Villages in Ngada District and other districts in East Nusatenggara (Nusa Tenggara Timur) Province, where the project had provided bamboo treatment facilities for the local community. The center of excellence will benefit the local community and stakeholders from other regions in Indonesia who will learn and share about the development and utilization of the bamboo.
- There is a need to develop a comprehensive study or program on the role of bamboo for environmental services as well as for climate change adaptation and mitigation. This could enhance the role of bamboo for environmental and ecological sustainability and may position bamboo as the potential commodity for carbon funds.

b. For ITTO

- On the project appraisal process, conduct more thorough evaluation of the project logical framework matrix presented in the project document, and the effectiveness of the work plan in the execution of the project as designed.

Annex 1 ITTO - Consultant agreed timelines

Proposed Work Schedule (2023)

Jan	Dispatch of the following documents supporting for the evaluation work: (i) ITTO Manual for Project Monitoring, Review and Evaluation (ii) Project documents (iii) Technical reports (iv) Project financial statements (audit report) and (v) Project completion reports
Feb/March	Trip to Indonesia. Meeting with the national authority (Ministry of Environment and Forestry), projects' executing agencies/collaborating agencies and former personnel of the project management units for briefing and comprehensive discussions on and analysis of projects implementation and results, as well as outlining the agenda for field visits. Discussions with relevant stakeholders involved in the projects works in Indonesia (the exact dates for visiting Indonesia will be determined in consultation with the Ministry of Environment and Forestry/Executing Agencies).
June	Submission of draft report and its executive summary to ITTO and the Ministry of Environment and Forestry/Executing Agencies
August	Submission of the final report, including an executive summary, and the article for TFU to ITTO.
November	Presentation of the report at the 59th Session of the ITTO

Annex 2 Schedule of ex-post evaluation meeting and field visit in Indonesia

Date	Place/Site	Organization	Remarks
3 March 2023, Friday	Jakarta	Biro KLN, MoEF	P.M.: Entry meeting with Project Representatives: EAs, CA and main stakeholders presided by Dr. Dodi Simandi, Deputy Director for International Cooperation Facilitation, International Cooperation Bureau.
7 March 2023, Tuesday	Medan/Jakarta/ Kupang/Bajawa		Transiting
8 March 2023, Wednesday	Bajawa	AM: Arriving Bajawa PM: Bamboo processing factory	Met with Pak Yuki Syailendra, factory manager of bamboo processing factory
9 March 2023, Thursday	Bajawa	Flores Bajawa Agricultural Academy (STIPER-FB) Bamboo plantation Bamboo Campus "Turetogo"	Met with Dr. Nicolaus Noywuli Head of Division of Economic and Area Development of Ngada Regency, and Principal (STIPER-FB) Met with Om Nimus Jawa, Chief of Sub-tribe (Sa'o) Neguwula. Local community involved in planting and managing bamboo stands Met with Pak Paskalis Lalu, manager Environmental Bamboo Foundation
10 March 2023, Friday	Bajawa/ Yogyakarta	AM: Bamboo Nursery PM: Trasiting to Yorjakarta	Met with Pak Paskalis Lalu, managing the bamboo nursery

Annex 3 Executing Agency's Views

Executing Agency's Views on ITTO Ex-Post Evaluation	
<p>Project Title: Model Capacity Building for Efficient and Sustainable Utilization of Bamboo Resources in Indonesia</p> <p>Project ID: PD 600/11 Rev. 1 (I)</p>	
Overall View on the Evaluation:	
<p><i>(Please insert your overall views on the evaluation report, e.g. structure, methodology, and its conclusions)</i></p> <p>The evaluation report provides complete information about the PD 600/11 Rev.1 (I) project with a clear and complete structure, methodology, and conclusions, based on project documents and field visit results.</p> <p>Consultants provide very valuable recommendations based on the results of discussions and the conditions on site after the project completion.</p> <p>Thank you for writing the evaluation report and the recommendations provided.</p>	
Evaluation Report Recommendations*	Response to recommendations (e.g. 'accept', 'partially accept' or 'reject' – please provide a brief explanation)
<p>Recommendation 1</p> <p>In enhancing the economic returns to the farmers and local communities, the technology needs for the different localities may be customized based on the local culture and practices. For example, the upper pole culms left in the bamboo forest/plantation after harvesting for engineered bamboo products in Ngada areas may be used for bio-char/charcoal, bamboo sticks products.</p>	<p>Accept</p>
<p>Recommendation 2</p> <p>In speeding up the development of bamboo to replace timber for engineering applications such as building construction, technical data for design may be developed concurrently with demonstrative applications. It is strongly advisable to make use of the experience of timber utilization in order to convince designers and users to use the material confidently and such uses will increase the viability of bamboo plantations.</p>	<p>Accept</p> <p>To complement, campaign as well as policy support on the use of engineered bamboo products will be added.</p>

<p>Recommendation 3</p> <p>As local conditions in Indonesia may be vastly different, in developing the bamboo plantation, a few targeted bamboo products may be identified and processing facilities developed to create value for the bamboo in order to convince the farmers or local communities in this venture.</p>	<p>Accept</p>
<p>Recommendation 4</p> <p>It is recommended that follow-up efforts be taken to strengthen the Bamboo Villages in Ngada District, where the project had provided bamboo treatment facilities for the local community. The center of excellence will benefit the local community, students and stakeholders from other regions in Indonesia who will learn and share about the development and utilization of the bamboo.</p>	<p>Accept</p>
<p>Recommendation 5</p> <p>There is a need to develop a comprehensive research actions or program on the role of bamboo for environmental services as well as for climate change adaptation and mitigation. This could enhance the role of bamboo in environmental and ecological sustainability and may position bamboo as a potential commodity for carbon funds.</p>	<p>Accept</p> <p>In Indonesia context, we acknowledge that bamboo development will support and contribute to Indonesia's NDCs target and the Forestry and other Land Uses (FoLU) NetSink 2030.</p>

Name, Title, and Institution of Respondent:

Desy Ekawati

(Technical Cooperation Analyst)

Center for Standardization of Disaster and Climate Change Instruments Ministry of Environment and Forestry (MoEF)

Jl. Gunung Batu 5 Bogor, 16118, Bogor, West Java, Indonesia

Date: 20 July 2023

Signature:

