



# COMPLETION REPORT OF THE ITTO PROJECT

PD 600/11 Rev.1 (I)  
Model Capacity Building for Efficient and  
Sustainable Utilization of Bamboo Resources  
in Indonesia

**Ministry of Environment and Forestry  
Republic of Indonesia**

Center of Social Economy Policy and Climate  
Change Research and Development, FOERDIA



PD 600/11 Rev.1 (I):

## **MODEL CAPACITY BUILDING FOR EFFICIENT AND SUSTAINABLE UTILIZATION OF BAMBOO RESOURCES IN INDONESIA**

BOGOR, August 2017

Center for Socio Economic Policy and Climate Change Research & Development  
Forestry Environment Research Development and Innovation Agency (FOERDIA)  
Ministry of Environment and Forestry, Republic of Indonesia  
JL. Gunung Batu 5, Bogor 16810, WEST JAVA, INDONESIA.

Front cover : Community Bamboo Forest, Ngada District, East Nusa Tenggara

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## ITTO PROJECT COMPLETION REPORT

Cooperation between

Government of Indonesia (GoI) – International Tropical Timber  
Organization (ITTO)

on Promoting Bamboo Industry through

**Model Capacity Building for Efficient and Sustainable  
Utilization of Bamboo Resources in Indonesia**

Ministry of Environment and Forestry (MoEF),  
Republic of Indonesia

International Tropical Timber Organization (ITTO)

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Project Coordinator of  
ITTO PD 600/11 Rev.1 (I)



# Table of Contents

Acknowledgements .....	iii
Table of Contents .....	v
List of Figures .....	vi
List of Tables .....	vii
Lists of Acronyms .....	viii
<b>1 PROJECT IDENTIFICATION .....</b>	<b>1</b>
1.1 Context .....	1
1.2 Origin and Problems .....	5
<b>2 PROJECT OBJECTIVES AND IMPLEMENTATION STRATEGY .....</b>	<b>7</b>
2.1 Project Objectives .....	7
2.2 Project Implementation Strategy .....	8
2.3 Assumptions and Risks .....	9
<b>3 PROJECT PERFORMANCE .....</b>	<b>11</b>
3.1 Planned versus realized project performance.....	11
3.2 Project schedule and duration .....	14
3.3 Project budget and input applied .....	14
<b>4 PROJECT OUTCOME AND TARGET BENEFICIARIES INVOLVEMENT .....</b>	<b>21</b>
4.1 Project output and contribution to the achievement of objective .....	21
4.2 Existing situation at project completion compare versus pre-project .....	28
4.3 Involvement of project beneficiaries and related stakeholders .....	39
4.4 Project sustainability .....	41
<b>5 ASSESSMENT AND ANALYSIS.....</b>	<b>43</b>
5.1 Project rationale and identification process .....	43
5.2 The problems addressed, project design and implementation strategy .....	43
5.3 Critical differences between planned and actual implementation .....	44
5.4 Adequacy of project inputs .....	44
5.5 External influences.....	45
5.6 Project beneficiaries.....	45
5.7 Project sustainability .....	46
5.8 The Institution Involved in Project Implementation .....	46
<b>6 LESSONS LEARNED .....</b>	<b>47</b>
6.1 Project Identification and Design.....	47
6.2 Project Implementation.....	47
6.3 Project Monitoring.....	48
6.4 6.4 Project Reporting.....	48
<b>7 CONCLUSIONS AND RECOMMENDATIONS .....</b>	<b>49</b>
7.1 Conclusions .....	49
7.2 Recommendations .....	49
References .....	51



## List of Figures

1. Clump of <i>Dendrocalamus asper</i> .....	1	11. Campaigning on National TV Programm about “A Thousand Bamboo Villages in Indonesia” .....	10
2. Bamboo’s Culture in Bali.....	1	12. Project’s plan of work and activities conducted in every year .....	11
3. Bamboo’s Culture ini Flores .....	2	13. Series of bamboo processing machines for incense stick: 1) cutting machines, 2) bamboo splitting, star blade, 3) bamboo thinner, 4) bamboo stick slicer, 5) polish and 6) incense machine.....	19
4. Map of Indonesia, Bali and Flores as Project Locations (red circle mark) and Map of Bangli District, Bali Province.....	2	14. Coding system applied at community bamboo clumps under SBF mechanism.....	21
5. Map of Ngada District, Flores Island, East Nusa Tenggara Province as additional project location for national campaign activity. ....	3	15. National Workshop on Bamboo Industry Development in Indonesia .....	24
6. Bamboo planting for land rehabilitation (Picture: EBF).....	4	16. Figure 16. Web Data Base of Bamboo in Indonesia under FOERDIA Website.....	25
7. Community Bamboo Forest in Golewa Subdistrict, Ngada District, East Nusa Tenggara.....	5	17. Website of A Thousand Bamboo Villages Movement .....	26
8. Communities as main actor and beneficiaries on improved bamboo management for sustainable use and benefit. (Picture: EBF).....	7	18. A Declaration of Bamboo Villages in Ngada District. ....	27
9. The scope of work and activities conducted in project ITTO PD 600/11 Rev.1 (I).....	8	19. SME of bamboo incense sticks run by community groups .....	28
10. Training for community on bamboo clump management .....	9		



## List of Tables

1. Project activities completion status.....	12	9. National seminars, workshops, meetings attended and participated by project .....	31
2. The scheduled and realized performance of each activity.....	12	10. International events attended and participated by project.....	33
3. Status of expenditures of ITTO Contribution to project activity (ending period on July 2017). .....	14	11. Trainings and workshops held and supported by project.....	35
4. Status of Expenditures of Gol Contribution up to July 2017 .....	15	12. Publications, papers, books, posters, manual guides and website published by project. ....	35
5. Project financial statement (in US Dollar) GOI Contribution .....	16	13. News and articles related to projects activities. ....	38
6. List of Capital Items (US\$) .....	17	14. Monitoring Meeting Conducted During Project Implementation.....	48
7. Project's objectives and output achievement .....	29	15. Field Activities Monitoring and Stakeholders Coordination .....	48
8. Workshops, Meetings, FGDs and Events Organized by Project.....	31		



## Lists of Acronyms

4P	: People Public Private Partnership	ITTO	: International Tropical Timber Organization
ACIAR	: Australian Center for International Agroforestry Research	ITTC	: International Tropical Timber Council
AFOCo	: ASEAN Forest Cooperation	KEHATI	: Keanekaragaman Hayati
CA	: Cooperation Agreement	MOF	: Ministry of Forestry
CAF	: China Academy of Forestry	MOEF	: Ministry of Environment and Forestry
CBRC	: China Bamboo Research Center	MOI	: Ministry of Industry
CIFOR	: Center for International Forestry Research	MOU	: Memorandum of Understanding
COP	: Convention of Parties	NGO	: Non-Governmental Organization
CSE	: Community Small Enterprise	NOL	: No Objection Letter
CSEPCC	: Center for Socio Economy Policy and Climate Change	NTFP	: Non Timber Forest Product
DG	: Director General	OLMS	: Online Monitoring System
DGWMSF	: Directorate General of Watershed Management and Social Forestry	PD	: Project Document
DGSMI	: Directorate General Small Medium Industry	PMU	: Project Management Unit
EA	: Executing Agency	PRC	: People Republic of China
EBF	: Environmental Bamboo Foundation	PSC	: Project Steering Committee
FOERDIA	: Forestry and Environment Research Development and Innovation Agency	PTC	: Project Technical Committee
FORDA	: Forestry Research and Development Agency	R&D	: Research and Development
GOI	: Government of Indonesia	SBF	: Sustainable Bamboo Forestry
HBL	: Hutan Bambu Lestari	SWB	: Strand Woven Bamboo
ICRAF	: The World Agroforestry Center	SME	: Small Medium Enterprises
INBAR	: International Network for Bamboo and Rattan	TNC	: The Nature Conservancy
IPB	: Institut Pertanian Bogor	UNFCCC	: United Nation Framework Convention on Climate Change
		WBO	: World Bamboo Organization
		WBC	: World Bamboo Congress
		WBF	: World Bamboo Fair
		WWF	: World Wildlife Fund
		YBL	: Yayasan Bambu Lestari

# 1 PROJECT IDENTIFICATION

## 1.1 Context

### 1.1.1 Economic Aspects

Bamboo is one of Indonesia's non-timber forest product (NTFPs) which has not yet reached an optimal attention in its development and utilization. Bamboo has not been widely valued as a versatile commodity within its use. Its value-added use is only being utilized in a limited capacity for scaffolding in construction or traditional small scale use by local communities. Basic knowledge of bamboo utilization will provide more benefits and increase community welfare through modern utilization. Modern utilization on a community industry scale will create higher value added opportunities for bamboo as well as increasing community income.

The Indonesian bamboo industry trails far behind the People Republic of China (PRC). China can be used as an example of success for the revival of a community-based bamboo industry. This has been achieved primarily by developing a cooperative system between the village and market. A symbiotic-mutualistic system amongst bamboo farmers and industrial players or private company is critical to this models success.

Although for Indonesia, the development of bamboo should be based upon the inherent socio-cultural, economic and geographic conditions that exist throughout the Island nation.

### 1.1.2 Environmental Aspects



Figure 1. Bamboo Clump of *Dendrocalamus asper*



Figure 2. Bamboo's Culture in Bali



Figure 3. Bamboo's Culture ini Flores

Bamboo can also provide a solution for environmental threats and climate change impacts. Bamboo plays a critical role in land restoration through a sustainable landscape and ecosystem approach. Bamboo clumps could protect topsoil which in turn creates a microclimate. In an agroforestry ecosystem grown together along with other species such as trees and other shrubs, one mature bamboo clump with its strong rooting structure and system can hold 5000 liter of water. A bamboo forest could absorb 50 ton of carbon dioxide (CO<sup>2</sup>) per hectare every year. Thus, with 2 million hectares of bamboo forest developed by a community-based bamboo industry in Indonesia could absorb up to 100 megatons CO<sup>2</sup> per year.

### 1.1.3 Social Aspects

Bamboo-based traditional practices exist throughout the Indonesian archipelago. These traditions have been passed on generationally hence communities have a basic knowledge on bamboo and its use. This inherent knowledge is particularly with regards to its practical utilization for their daily life and to fulfil any socio-cultural ceremonies. The challenge needing to overcoming is how can we engage communities within increasing the economic value of bamboo through simple processing to create value added opportunities.

### 1.1.4 Project Location

The project is located in the Bangli District in the Province of Bali. In 2010, **Bangli District** was designated as a “bamboo development cluster” by Ministry of Forestry. In the second year during project implementation, a national campaign of “A Thousand Bamboo Villages” movement was launched on the community-based bamboo industry. Consequently, an additional location was added to the project portfolio of **Ngada District**, Flores, East Nusa Tenggara Province. At this site, a partnership was formed with the Environmental Bamboo Foundation/EBF (*Yayasan Bambu Lestari*) for the establishment of a “community-based bamboo industry”. The project outcomes were to be used within a national campaign for strengthening the bamboo industry in Indonesia. The campaign at national level keep continue and support by stakeholders involved.



Figure 4. Map of Indonesia, Bali and Flores as Project Locations (red circle mark) and Map of Bangli District, Bali Province.

## 1.1.5 Relevant National and Regional Policies and Programme

### 1.1.5.1 National and Regional Policies

In 2010, the Ministry of Forestry (now Ministry of Environment and Forestry) launched eight priority programs on National Forestry Development for the 2010 - 2014 period. These are as follows:

1. Consolidation of permanent forest estate,
2. Forest rehabilitation and improvement of watershed carrying capacity,
3. Forest security and control of forest fires,
4. Biodiversity conservation,
5. Revitalization of forest utilization and forest industries,
6. Empowerment of forest local communities,
7. Mitigation and adaptation of climate change,
8. Strengthening of forestry institutions.

### East Nusa Tenggara Province



### Flores Island



### Ngada District

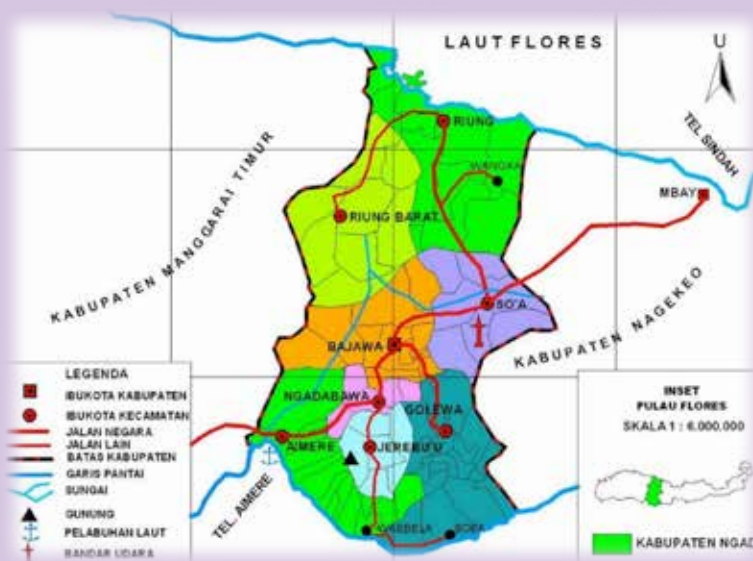


Figure 5. Map of Ngada District, Flores Island, East Nusa Tenggara Province as additional project location for national campaign activity.



Figure 6. Bamboo planting for land rehabilitation (Picture: EBF)

This project primarily supported two priority programs being forest rehabilitation and improvement of watershed carrying capacity as bamboo was planted in degraded landscapes. Whilst other priority program agendas targeted within this project included; revitalization of forest utilization and forest industries, empowerment of forest local communities, mitigation and adaptation climate change and strengthening of forestry institution.

In 2014, Ministry of Environment and Ministry of Forestry merged as the Ministry of Environment and Forestry. Based on the objectives of Indonesian National Development known as “nine goals” or “*nawa cita*”, among the nine there are three goals as the main roles of the Ministry of Environment and Forestry for year 2015-2019 to be carried out include:

1. Maintaining environmental quality that provides support of pollution control, watershed management, biodiversity and climate change control;
2. Maintaining the extent and function of forests to sustain life, providing forests for social forestry, community’s economy, and conserve number and types of flora and fauna and endangered species;
3. Maintaining the quality of the environment, conserve and protect the forests and maintaining the balance of ecosystems and forest resources.

Project aims were to develop and utilize bamboo resources through execution of various activities to deliver desirable outputs and achieve intended objectives. Project activities included a pilot plant plot of high-value species on degraded land, directly supporting the above program of “**forest rehabilitation and improvement of watershed carrying capacity**” and “**mitigation and adaptation of climate change**”. Through training activities, local communities were empowered to participate in bamboo resource development and utilization and augment their income. This in turn reduced forest resource dependency. Furthermore aligned with contributing toward the National Policy of “**revitalization of forest utilization and forest industries**” and “**empowerment of forest local communities**”. Promotion of investment and capacity building for value adding and utilization techniques are evidently aligned with

the above programs. Whilst, the development of a bamboo management regime, formation of stakeholder consortium forum and coordination amongst authorities of different sectors are in fact activities all relevant within the National Policy Agenda too.

The Ministry of Forestry through its decree No. P.35/2007 has identified 557 non-timber forest products (NTFPs) comprising flora and fauna species or their derivatives that fall under its management; 46 species of bamboo are specified by the decree. Furthermore, Ministerial Decrees No. P.19 of 2009 and P.21 have declared that bamboo is the prime commodity for development at the national level and that the development of bamboo resources are to be undertaken in a cluster protocol.

In the downstream sector which is within the domain of the Ministry of Industry, there are several supporting policies related to the development and strengthening of a community-based bamboo industry in Indonesia. The following are policies of the Ministry of Industry that support the development of a community-based bamboo industry such as the Affirmative Policy of Small and Medium Industry, Strategic Program of Small Medium Industry in Indonesia of 2011-2016 and Development Strategy Plan of Small Medium Bamboo Industry of 2017-2019.

### 1.1.5.2 National and Regional Programme

Several programs and operational activities at the national level under the Ministry of Environment and Forestry programs, and supporting project activities in the development and sustainable use of bamboo in Indonesia are as follows:

1. Declaration of bamboo as one of potential Non-Timber Forest Products (NTFPs) to develop in Indonesia;
2. Declaration of 12.7 million hectares of social forestry and community forest by the President of the Republic of Indonesia;
3. Program of bamboo planting in degraded land, protected area and river banks area;
4. Program of community bamboo agroforestry with other commodities
5. Program of social forestry development and partnership through planting and utilization Non-Timber Forest Products (NTFPs), with bamboo.
6. National program on bamboo planting and cultivation, started in South Sulawesi Province by planting 10 million Bamboo clumps.

Programs and Operational Activities under the Ministry of Industry:

1. Development of new entrepreneurship;
2. Revitalization and Development of Technical Services Units;
3. Restructuring machinery equipment of small and medium industry;
4. The small and medium industries with the product of the nation’s heritage can only be owned by Indonesian citizens;

5. The role of small and medium industry is enhanced in the supply chain Industry priorities
6. Provision of facilities and institutional strengthening for small and medium Industries

## 1.2 Origin and Problems

During the last two decades, bamboo has developed as an exceptionally valuable substitute for wood. Bamboo may replace wood in many industrial applications and thereby contribute to alleviating deforestation and in turn encourage the restoration of tropical forests. Bamboo is a major construction material in Indonesia particularly in rural areas. It can be used for almost all parts of houses, including posts, roofs, walls, floors, beams, trusses and fences. For decades, communities have also been utilizing bamboo to produce mats, baskets, tools, handles, hats, toys, musical instruments and furniture. In the food sector, bamboo shoots are becoming a more popular delicacy. Indeed, bamboo has tremendous 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. Reliable data on the extent, growing stock and distribution of bamboo forests are not available. The estimate made by the Ministry of Forestry in 2005 indicated 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). The figures may still picture well today as the actual area within the deforestation process and illegal logging is primarily within the forest resource. Utilization rate of bamboo has remained low although most existing bamboo species are fast growing.

Despite the potential of bamboo for socio-economic development, bamboo is currently not being utilized optimally as a community-based commodity. Total export value of bamboo products were only an approximate of USD 94 million in 2007, less than 4 percent of the world trade value and only 20 percent of the total export value of rattan based products (DGWMSF, 2010).

Several factors contributing to the gap within bamboo utilization and the development of the bamboo industry in Indonesia have been identified. Three main causes of the key problem were identified namely as firstly lack of investment. Secondly, weak institutional framework, and thirdly, limited skillful people for the development of a bamboo industry. The lack of investment was attributed to five forces as follows:

1. Lack of reliable information on bamboo growing stock which has discouraged business to invest in bamboo resource development and utilization. Reliability of culm supply in terms of sufficiency, quality and continuity is prerequisite to making long-term business investment;
2. Information on market demand and processing technologies is not widely known by potential investors. Whilst needed information might be available at different sources, it has not reached potential investors thus does not help in investment decision-making;
3. Lack of information on financial feasibility of bamboo business; this is the kind of information that is normally needed in investment decision making;
4. Lack of support by financial institutions which is due mainly to the lack of information on economic viability of bamboo business; and
5. Poor economic structure has also discouraged investment for reason of reliability of raw material supply or high transport cost.



**Figure 7.** Community Bamboo Forest in Golewa Subdistrict, Ngada District, East Nusa Tenggara.



The project PD 600/11 Rev. 1 (I) entitled “Model capacity building for efficient and sustainable utilization of bamboo resources in Indonesia” was proposed by MoF, Republic of Indonesia submitted to ITTO in 2010 and approved by the International Tropical Timber Council (ITTC) in 2011. Initially the executing agency was in the Directorate General of Watershed Management and Social Forestry (DGWMSF) however, this was shifted into the Forestry Research and Development Agency (FORDA). This caused a delay in project implementation with the project officially commenced in November 6th 2013.

The project agreement was signed in June, 2013 by the Executive Director of ITTO and Secretary General, Ministry of Forestry. The total budget of the project was US\$ 872,032.00 with ITTO fund contributing US\$ 537,095.00 and GOI contributing US\$ 334,937.00. The actual project cost was US\$ 755,560.00 in total, with ITTO and GOI fund comprising US\$ 464,310.00 and US\$ 291,250.00 respectively.

The project plan was implemented for a total of 36 months beginning from November 6, 2013 and ending on October 31, 2016. Although, the realized implementation resulted in 45 months with an additional 9 month extension without any budget revisions. The project timeframe required an extension due to ITTO internal administration issues. The decision to continue ongoing ITTO projects all over the world was made after the ITTC session in Yokohama in November 2016. After nine months’ time extension the project officially ended on July 31, 2017 without any additional cost involved. Total expenditures up until March 2018 amounted to US\$ 459,739.00 from a total installment received of US\$ 459,739.00.



## 2 PROJECT OBJECTIVES AND IMPLEMENTATION STRATEGY

The overall development objective of the project was to improve the management utilization of bamboo resources for their sustainable use and benefits to local communities.

### 2.1 Project Objectives

The development objectives: to “**improve the management of bamboo resources for their sustainable use and benefits to local communities**”, while the specific objectives: to “**initiate enhancement of capacity among stakeholders to develop and utilize bamboo resources in an efficient and sustainable manner**”.

Project’s activities were conducted during periods to achieve three outputs, as follows:

6. Investment in bamboo industry development promoted;
7. Institutional framework for bamboo industry development enhanced;
8. Participation of local communities in bamboo industry development increased.

At the end of the project expected that two outcomes can be achieved, which are the establishment of an integrated bamboo management and utilization model from upstream to downstream and the establishment of a bamboo processing business unit (community small enterprise/CSE) to be managed by community groups.



**Figure 8.** Communities as main actor and beneficiaries on improved bamboo management for sustainable use and benefit. (Picture: EBF)

## 2.2 Project Implementation Strategy

In accordance with the title of the project PD 600/11 Rev.1 (I) “Model of capacity building for efficient and sustainable utilization of bamboo resources in Indonesia”, the **scope of project** activities were **covered starting from onsite/locus level until regional and national levels**. In addition the project also opened a network and **support from international organizations** related to bamboo specifically for strengthening the bamboo industry in Indonesia (Figure 9).

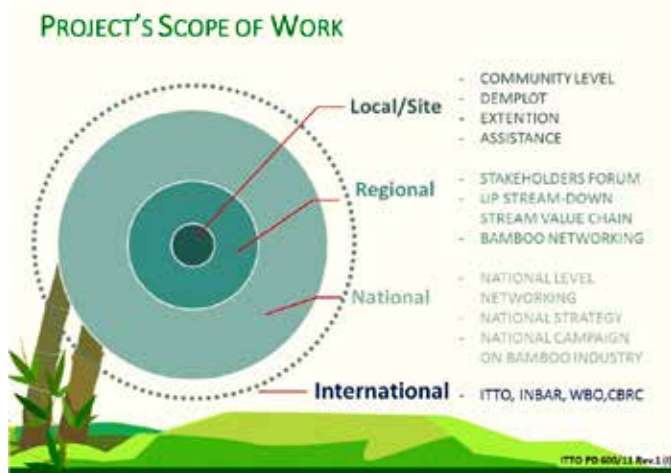


Figure 9. The scope of work and activities conducted in project ITTO PD 600/11 Rev.1 (I).

Activities undertaken by the project received notification and support from several international bamboo organizations including; International Network for Bamboo and Rattan (INBAR), World Bamboo Organization (WBO) and China Bamboo Research Center (CBRC) which will be described in more detail in the next section of this report.

The implementation strategy incorporated the key problems that are inhibiting the development of the bamboo industry (see section Origin and Problems) in Indonesia. Therefore, an implementation strategy was undertaken to “**promote investment**” and “**increase participation of local community**” within bamboo as a commodity. Production process and value chain from upstream until downstream were indeed influenced by the private sector and included government policies, hence “**enhanced institutional framework**” became an important concern in the implementation of project activities.

This project undertook a **participatory action approach**, working directly in the project site and facilitated constraints experienced in the field. All activities executed and implemented in consultation, cooperation and collaboration with project partners, stakeholders as **project’s work network** and of course **local community as the main beneficiaries**.

The following steps have highlighted this participatory approach carried out in regards to collaborating with stakeholders and the projects network:

### 1. Dissemination of quality information

To promote investment or “capital” in bamboo industry development (Output 1), to enhance decision making and policy formulation (Output 2) and to increase “labor” participation (Output 3), quality information’s were made available and disseminated to main stakeholders of the industry. **Generation and dissemination of information involved consultants and experts, government authorities, local communities, bamboo society and NGOs** since there was a general lack of stakeholders’ interest in bamboo industry development. To promote participation of stakeholders, project launched an **effective national campaign** using the right various media tools e.g. television, printed materials, video and social media to disseminate information on bamboo resources and their development **nationwide and international wide**.

### 2. Training on bamboo industry development

Scope of the training covers **management of community’s bamboo clumps, development of bamboo plantation, production of planting materials, efficient processing techniques and business development**. Training participants included local communities (job hungrys due to poverty), practitioners/young generation (job seekers for better life) and civil servants (decision makers). Training program and modules developed with the assistance of professionals in close consultation with practitioners, and implemented in cooperation with universities, NGOs and local authorities.

### 3. Establishment of coordinating forum

The forum established at the provincial and level where stakeholders can exchange information, experience and ideas. **The coordinating forum meeting** between the parties in bamboo development was not only in **Bali, as the main location of the project activity**, but the project also helped and initiated several communication and coordinating forum meetings in other provinces such as in **East Nusa Tenggara Province** in cooperation with CIFOR and WWF Kupang. Additionally, in **South Sulawesi Province** in cooperation with the Indonesian Partnership (*Kemitraan*) and the last initiative of the project was conducted in **West Nusa Tenggara** in collaboration with *Yayasan Bambu Lestari*, WWF Lombok and West Nusa Tenggara Provincial Forestry and Environment Office.

### 4. Enhancement of institutional framework

Institutional frameworks were enhanced and strengthened in parallel to the establishment of a coordination forum. This included the designation of roles for provincial government officials and staff to support the development of a community-based



Figure 10. Training for community on bamboo clump management

bamboo industry. The enhancement of the institutional framework as well as strengthened coordination amongst stakeholders shall lead to enhanced capacity in planning, monitoring, decision making and **policy formulation to support bamboo resources management and utilization.**

## 5. Security and sustainability of the project

To secure the project area and project outcomes in the long-run, especially toward the movement of a “community bamboo industry” in Indonesia this needs to develop as a national campaign. **A network mechanism was established purposefully to continue the support for programs, results and outcomes** generated by the project. This established network ensures security and sustainability of project outcomes. These outcomes consisted of government support both from central and local government, non-governmental organizations (NGO’s) and private sector.

The second year of project implementation we included collaborative work with the Environmental Bamboo Foundation (*Yayasan Bambu Lestari*) located in Bali. The EBF is an Indonesian non-profit organization founded by environmentalist designer Linda Garland in

1993. Currently we work with Arief Rabik as the Director of EBF, who continue the works and networks of her mother Linda Garland as her legacy after she passed away in 4th January 2016. Started in mid of 2015, this foundation became a main project partner to continue and assist the demonstration plots, farmer groups and **continuing the project’s campaign on “community bamboo industry” for “a thousand (1000) bamboo villages” in Indonesia.**

## 2.3 Assumptions and Risks

The vertical logic of the project was that full execution of planned activities will be delivered the project outputs; **if the outputs delivered, the specific objective will be achieved** which in turn **contribute to achievement of the development objective.** The assumptions made in regard to outputs were basically conditions that must prevail to facilitate the delivery of outputs, namely availability of land for demonstration plots and processing plant in time and continue support by government authorities as well as stakeholders.

At the specific objective level, the conditions that must prevail for its achievement were based upon **the interest of stakeholders, especially business sector, government**



Figure 11. Campaigning on National TV Programm about "A Thousand Bamboo Villages in Indonesia"

**authorities and local communities within the bamboo industry development.** The conditions must also prevail in order to sustain impacts of the project which were the continued use of project outputs by primary beneficiaries, availability of bamboo products as substitutes for wood products, and increased income of local communities.

It is worth emphasizing that bamboo industry development would never progress without participation of stakeholders, mainly local communities, business sector and local governments. Therefore, it was imperative **to build up communication with stakeholders** from the early stage of project implementation, through various channels and **establishing a reliable network.**

A **monitoring plan was developed** prior to implementing the project. In such a plan, monitoring of risk were carried out through a validity assessment based

upon the assumptions made. Every once a year the project manager visited Indonesia and conducted field activities and joined ongoing implementation activities. **Monitoring visits** made by projects managers also **reduced risks whilst alleviating other potential risks to arise** by implementing activities in the field.

During project implementation, there had been a **risk of delays in project activities** due to internal management issues within ITTO. **The risks that occurred in the second year affected the time plan of project implementation.** While the project document did not mention the assumption regarding this situation. ITTO's internal conditions made the **project activities temporarily suspended.** However, the unexpected situation that occurred was **resolved,** allowing for project activities to be resumed whilst achieving **targeted outputs.**

# 3 PROJECT PERFORMANCE



Figure 12. Project's plan of work and activities conducted in every year

In this project PD 600/11 Rev.1 (I) there are 19 activities implemented to achieve 3 outputs. Generally, overall activities were carried out thoroughly, although some activities were delayed due to the suspension of the project in May 2016.

### 3.1 Planned versus realized project performance

It can be seen from table 1 that all project activities were completed, but certain activities were not realized on schedule (due to external factors) in accordance with the planned timeline in the project document, as shown in Table 2.



**Table 1.** Project activities completion status

Objectives	Outputs	Activities	Completion Status/Remarks
<p><b>Development objective</b> Improved the management of bamboo resources for their sustainable use and benefits to local communities.</p> <p><b>Specific objective</b> Initiate enhancement of capacity amongst stakeholders to develop and utilize bamboo resources in an efficient and suitable manner.</p>	<p><b>Output 1.</b> Investment in bamboo industry promoted</p>	1.1. Collect, publish and disseminate reliable information on Bali's bamboo growing stock	Completed. Technical Report Available
		1.2. Collect, publish and disseminate updated information on market demand for bamboo products and processing technologies	Completed. Technical Report Available
		1.3. Conduct feasibility study on bamboo development project in Bali	Completed. Technical Report Available
		1.4. Assess adequacy of economic infrastructure and discuss findings with Bali governments	Completed. Technical Report Available
		1.5. Organize one national workshop on bamboo industry development.	Completed. Proceeding of Workshop Available
	<p><b>Output 2.</b> Institutional framework enhanced</p>	2.1. Identify and officially designate zone area for bamboo industry development in Bali.	Completed. Technical Report Available
		2.2. Install and operate a publicly accessible bamboo information system.	Completed. Indonesia Bamboo Web data based publicly accessible.
		2.3. Establish a stakeholder consultation forum for bamboo industry development.	Completed, stakeholder forum for bamboo industry in Provinces Level established such as in; Bali, NTT, NTB, South Sulawesi and Yogyakarta.
		2.4. Review existing policies and define bamboo management regime to guide the conduct of efficient bamboo resource development and utilization.	Completed. The Final Draft of National Strategy of Community Bamboo Industry composed, two policy brief were published
		2.5. Launch a national campaign on promotion of bamboo industry development.	Completed. National Campaign on Community Bamboo Industry Through A Thousand Bamboo Villages well known and implemented by stakeholders and supported in National and International level
	<p><b>Output 3.</b> Participation of local communities in bamboo industry development increased</p>	3.1. Identify and officially designate zone area for bamboo industry development in Bali.	Completed, Technical Report and Map Available
		3.2. Establish 12 Ha of demonstration plantation of 4 bamboo species having high commercial value in 4 sites under different treatments	Completed, the demonstration plot in farmer land established.
		3.3. Identify and develop appropriate technologies for producing quality planting materials to support bamboo plantation development	Completed, Technical Report and Guide Book for Producing Planting materials published.
		3.4. Identify appropriate bamboo processing technologies for a small-scale processing plant	Completed. Technical Report available and gave recommendation the appropriate bamboo processing technologies
		3.5. Procure and install selected technologies, and operate the processing plant	Completed. Inense Stick Machinery Installed and delivered to three group of community business group.
		3.6. Conduct a series of training on production of planting materials, plantation establishment, natural bamboo management techniques and efficient processing techniques	Completed. Project Conducted 9 series of training with different theme and around 300 people has been trained.
		3.7. Publish and disseminate technical manuals on natural bamboo management, production of quality planting materials, establishment of bamboo plantation and efficient processing techniques	Completed, several book, booklet, guide book and flyer has been published.
		3.8. Establish 2 CSEs or cooperatives on bamboo business to be run by local communities using revolving funds from GOI	Completed, There were three group of CSE run by local community.
		3.9. Organize a national workshop on dissemination of project results nation wide	Completed and project result has been disseminated to stakeholders especially in Bali Province.

**Table 2.** The scheduled and realized performance of each activity

Related activities	National Consultants/Sub Contractors/Experts	Schedule	
		Planned	Realized
<b>Output 1. Investment in bamboo industry promoted</b>			
1.1. Collect, publish and disseminate reliable information on Bali's bamboo growing stock	Dr. Ir. Pande Ketut Diah Kencana, MS Udayana University, Bali (Bamboo Research Center)	January – March 2014	April – Sept 2014
1.2. Collect, publish and disseminate updated information on market demand for bamboo products and processing technologies	Forest Industry Revitalization Agency (Badan Revitalisasi Industri Kehutanan (BRIK), Jakarta) Mr. Zulfikar Adil	May – August 2014	May - October 2014
1.3. Conduct feasibility study on bamboo development project in Bali	Ms. Irma Yeny - Researcher on Socio Economic and Community Development. Forest Research and Development Agency (FORDA) (Center for Forest Productivity Research and Development.	April – Sept 2014	Oct 2014 – May 2015
1.4. Assess adequacy of economic infrastructure and discuss findings with Bali governments	Mr. Lutfy Abdulah – Researcher on Spatial and Statistical Data Forest Research and Development Agency (FORDA) (Center for Forest Productivity Research and Development)	April – Sept 2014	June - Dec 2015

Related activities	National Consultants/Sub Contractors/Experts	Schedule	
		Planned	Realized
1.5. Organize one national workshop on bamboo industry development.	Mr. Didik Purwito Head of Sub Direktorat for Research Data Information and Dissemination Forest Research and Development Agency (FORDA)	December 2014	January 2015
<b>Output 2. Institutional framework enhanced</b>			
1.1. Identify and officially designate zone area for bamboo industry development in Bali.	Mr. Priyanto (Forest Inventory and Spatial Data Expert) Faculty of Forestry, Bogor Agricultural University	February – May 2014	April – July 2014
1.2. Install and operate a publicly accessible bamboo information system.	Mr. Rakhmat Permana (PT Alus Tech, Bogor) Website Developer and Maintenance Consultant	2nd Quarter of Year 2014	September 2014 - September 2016
1.3. Establish a stakeholder consultation forum for bamboo industry development.	Project Coordinator	Year 2 Planned	Started from year 1 until the end of project
1.4. Review existing policies and define bamboo management regime to guide the conduct of efficient bamboo resource development and utilization.	Forest Policy Expert Dr. Sulistya Ekawati (Center for Socio Economic Policy Research and Development)	Year 3 Planned	June – July 2017
1.5. Launch a national campaign on promotion of bamboo industry development.	1. Bandung Institute of Technology Mr. Budi Isdianto (Head of Center for Product of Community Social Culture) 2. Environmental Bamboo Foundation (EBF) Mr. Arief Amir Rabik (Director EBF) 3. Production House and Consultant for movie and graphic designer	December 2014 - Oktober 2016	December 2014 – July 2017
<b>Output 2. Participation of local communities in bamboo industry development increased</b>			
3.1. Identify and officially designate zone area for bamboo industry development in Bali.	Mr. Sutiyo Forest Research and Development Agency (FORDA) (Center for Forest Productivity Research and Development)	May 2014 - September 2016	May 2014 - September 2016
3.2. Establish 12 Ha of demonstration plantation of 4 bamboo species having high commercial value in 4 sites under different treatments	1. I Nyoman Conto (Kelompok Tani Dwi Panca Kerti, Bangli, Bali) 2. Dr. Anto Rimbawanto (Balai Besar Penelitian Bioteknologi dan Pemuliaan Tanaman Hutan, Yogyakarta)	July 2014 – Oktober 2016 July 2014 – Oktober 2016	September 2014 - Oktober 2016 September 2014 - Oktober 2016
3.3. Identify and develop appropriate technologies for producing quality planting materials to support bamboo plantation development	Dr. Anto Rimbawanto (Balai Besar Penelitian Bioteknologi dan Pemuliaan Tanaman Hutan, Yogyakarta)	May - October 2014	October 2014
3.4. Identify appropriate bamboo processing technologies for a small-scale processing plant	Dr. Krisdianto (Puslitbang Hasil Hutan, Bogor)	February- July 2014	July 2014
3.1. Procure and install selected technologies, and operate the processing plant	Mr. Arief Amir Rabik (PT. Indobamboo, Bali)	April 2015–Nov 2016	June – July 2017
3.2. Conduct a series of training on production of planting materials, plantation establishment, natural bamboo management techniques and efficient processing techniques	Collaborator Institution on training activities - Environmental Bamboo Foundation - KEHATI Foundation - Directorate of NTFPs and Environmental Services Utilization - Bandung Institute of Technology (Product Design Improvement and Innovation) - Community Business Consultant : Bina Mitra Usaha - CV. Jalu Teknik - CV. Indobamboo Lestari - Indonesia Archipelago Bamboo Community (Komunitas Bambu Nusantara) - Archipelago Bamboo Academy	April 2015–Nov 2016	Sept 2014 – April 2017
3.3. Publish and disseminate technical manuals on natural bamboo management, production of quality planting materials, establishment of bamboo plantation and efficient processing techniques	Dr. Deden Djaenudin (Center for Socio Economic Policy and Climate Change Research and Development)	March – April 2017	June – July 2017
3.4. Establish 2 CSEs or cooperatives on bamboo business to be run by local communities using revolving funds from GOI	- CV. Indobamboo Lestari Flores. Mr. Iqromi Rabik (Technical Manager) - Community Business Consultant : Bina Mitra Usaha	February – June 2017	May – June 2017
3.5. Organize a national workshop on dissemination of project results nation wide	Sub Directorate of Research Cooperation and Dissemination Mr. Gatot Ristanto Center for Socio Economic Policy and Climate Change Research and Development	June – July 2017	20 July 2017

## 3.2 Project schedule and duration

The ITTO Project PD 600/11 Rev.1 (I) officially started at November 6, 2013 the date of the first budget installment received by EA. Based on the project document and project agreement, project duration was 36 months or three year period, while the realized project duration was 45 months with an additional 9 (nine) months extension. The project extension was conducted without any additional budget from ITTO. The extension of project duration was due to project suspension based upon ITTO internal administration issues. This situation caused some activities to be delayed in the second year of project implementation. Consequently, certain activities were delayed in their implementation. The decision to continue ongoing ITTO projects throughout the world was made after the ITTC session in Yokohama in November 2016. Therefore, the project officially ended on July 31, 2017 without any further cost involved.

## 3.3 Project budget and input applied

The total budget of the project was US\$ 755,560.00, among US\$ 464,310.00 was ITTO's contribution and US\$

291,250.00 was Government of Indonesia's contribution. From total budget amount based on project document was US\$ 464,310.00, the Executing Agency was received US\$ 459,739.00, after shortfall funds as amount US\$ 4,571.00. Total expenditure of the project up to July 2017 with accrued budget included was US\$ 446,608.17. Accrued budget had been expended by executing agency for publication, distribution and audit fee.

There was an unspent budget as cash on hand amount US\$ 66,14 from other revenue which was bank interest. ITTO gave approval to project to utilize the remaining budget for continuing several activities including coordination with related stakeholders after project completion. The financial report had been audited by an independent auditor for ended period on July 2017 and had been submitted to ITTO secretariat.

The project financial statement and cash flow statement of ITTO can be seen in detail in Annex 1 and Annex 2. The status expenditure of GOI contribution up to July 2018 and the financial statement as shown in following Table 3 and Table 5. By the end of the project period, the contribution or activity funded by EA was totaled at USD 291,250.00 as seen at following Table 4.

**Table 3.** Status of expenditures of ITTO Contribution to project activity (ending period on July 2017).

Component	Approved Total		Up-to-date Committed by E.A but not spent	Up-to-date Spent	Spent + committed in period	Remaining Values	Explanation of Remaining Values				
	Original amount	Modified Amount*)									
		(A)						(B)	(C)	(D)	(A) - (B+ C)
										(B+ C)	
10	Project Personnel	117,760.00	117,370.00	0.00	117,370.00	117,370.00	0.00				
20	Sub-Contract	94,400.00	94,400.00	0.00	94,400.00	94,400.00	0.00				
30	Duty Travel	61,400.00	72,370.00	0.00	72,370.00	72,370.00	0.00				
40	Capital Items	89,000.00	75,529.00	0.00	75,529.00	75,529.00	0.00				
50	Consumable Items	47,200.00	45,200.00	5,587.46	39,612.54	45,200.00	0.00				
60	Miscellaneous	54,550.00	54,870.00	7,543.41	47,326.59	54,870.00	0.00				
70	Executing Agency Management Costs			0.00		0.00	0.00				
80	ITTO Adm. Mon. & Evaluation			0.00		0.00	0.00				
90											
<b>100</b>	<b>Grand Total</b>	<b>464,310.00</b>	<b>459,739.00</b>	<b>13,130.87</b>	<b>446,608.13</b>	<b>459,739.00</b>	<b>0.00</b>				
Note *)	Revised 2017										
	after shortfall of funds										



Table 4. Status of Expenditures of Gol Contribution up to July 2017

Component		Approved Total	Up-to-date Committed by E.A but not spent	Up-to-date Spent	Spent + committed in period	Remaining Values	Explanation of Remaining Values
		(A)	(B)	( C )	(D) = (B+ C)	(A) - (B+ C)	
10	Project Personnel	72,000.00	0.00	72,000.00	72,000.00	0.00	
20	Sub-Contract	44,000.00	0.00	44,000.00	44,000.00	0.00	
30	Duty Travel	12,600.00	0.00	12,600.00	12,600.00	0.00	
40	Capital Items	62,500.00	0.00	62,500.00	62,500.00	0.00	
50	Consumable Items	42,900.00	0.00	42,900.00	42,900.00	0.00	
60	Miscellaneous	57,250.00	0.00	57,250.00	57,250.00	0.00	
70	Executing Agency Management Costs	43,687.50	0.00	0.00	0.00	43,687.50	
80	ITTO Adm. Mon. & Evaluation	0.00	0.00		0.00	0.00	
90							
<b>100</b>	<b>Grand Total</b>	<b>334,937.50</b>	<b>0.00</b>	<b>291,250.00</b>	<b>291,250.00</b>	<b>43,687.50</b>	



Table 5. Project financial statement (in US Dollar) GOI Contribution

Project No. PD 600/11 Rev. 1 (I)			Period ending on : July 2017			
Project Title: Model Capacity Building for Efficient and Sustainable Utilization of Bamboo Resources in Indonesia						
Component	Original		Expenditures To-date		Available	
	Amount (A)	Accrued (B)	Expended ( C )	Total (D) (B+C)	Funds (E) (A-D)	
<b>1. Funds managed by Executing Agency</b>						
<b>10. Project Personnel</b>						
	11	Project Coordinator	9,000.00	9,500.00	9,500.00	-500.00
	12	Secretary	0.00	0.00	0.00	0.00
	13	Technicians	37,800.00	37,800.00	37,800.00	0.00
	14	Laborers	18,000.00	17,500.00	17,500.00	500.00
	15	International Consultants	0.00	0.00	0.00	0.00
	16	Other Professionals	0.00	0.00	0.00	0.00
	17	Field Supervisor	7,200.00	7,200.00	7,200.00	0.00
	<b>19</b>	<b>Component Total :</b>	<b>72,000.00</b>	<b>72,000.00</b>	<b>72,000.00</b>	<b>0.00</b>
<b>20. Sub-contracts</b>						
	21	Bamboo growing stock	4,000.00	4,000.00	4,000.00	0.00
	22	Feasibility study on bamboo	0.00	0.00	0.00	0.00
	23	PEO for national Workshop	9,000.00	9,000.00	9,000.00	0.00
	24	Establishment of bamboo	0.00	0.00	0.00	0.00
	25	Establishment of bamboo	6,000.00	6,000.00	6,000.00	0.00
	26	Demonstration of	16,000.00	16,000.00	16,000.00	0.00
	27	NGO for technical	0.00	0.00	0.00	0.00
	28	PEO for national Workshop	9,000.00	9,000.00	9,000.00	0.00
	29	National Consultants	0.00	0.00	0.00	0.00
	<b>29</b>	<b>Component Total :</b>	<b>44,000.00</b>	<b>44,000.00</b>	<b>44,000.00</b>	<b>0.00</b>
<b>30. Travel</b>						
	31	Daily Subsistence Allowance (D	6,300.00	6,300.00	6,300.00	0.00
	32	Local Transport, domestic	6,300.00	6,300.00	6,300.00	0.00
	33	International air tickets	0.00	0.00	0.00	0.00
	34	Local Transport, overseas	0.00	0.00	0.00	0.00
	35	DSA International	0.00	0.00	0.00	0.00
	36	Domestic airtickets	0.00	0.00	0.00	0.00
	<b>39</b>	<b>Component Total :</b>	<b>12,600.00</b>	<b>12,600.00</b>	<b>12,600.00</b>	<b>0.00</b>
<b>40. Capital Items</b>						
	41	PC, Equipment and facilities	2,500.00	2,500.00	2,500.00	0.00
	42	Harvesting equipment and fa	0.00	0.00	0.00	0.00
	43	Building	30,000.00	30,000.00	30,000.00	0.00
	44	Office facilities	9,000.00	9,000.00	9,000.00	0.00
	45	Processing machines, equipm	21,000.00	21,000.00	21,000.00	0.00
	<b>49</b>	<b>Component Total :</b>	<b>62,500.00</b>	<b>62,500.00</b>	<b>62,500.00</b>	<b>0.00</b>
<b>50. Consumable items</b>						
	51	Consumables (plot)	0.00	0.00	0.00	0.00
	52	Utilities	18,000.00	18,000.00	18,000.00	0.00
	53	Consumables (materials)	0.00	0.00	0.00	0.00
	54	Stationery	9,000.00	9,000.00	9,000.00	0.00
	55	Miscellaneous consumables	8,400.00	8,400.00	8,400.00	0.00
	56	Printed Materials	7,500.00	7,500.00	7,500.00	0.00
	<b>59</b>	<b>Component Total :</b>	<b>42,900.00</b>	<b>42,900.00</b>	<b>42,900.00</b>	<b>0.00</b>
<b>60. Miscellaneous</b>						
	61	Publication and distribution	11,000.00	11,000.00	11,000.00	0.00
	62	Miscellaneous meetings	10,750.00	10,750.00	10,750.00	0.00
	63	Web provider rental	3,000.00	3,000.00	3,000.00	0.00
	64	Financial auditing	1,500.00	1,500.00	1,500.00	0.00
	65	Revolving funds	10,000.00	10,000.00	10,000.00	0.00
	66	Office space	18,000.00	18,000.00	18,000.00	0.00
	67	PSC meetings	3,000.00	3,000.00	3,000.00	0.00
	68	Sundry	0.00	0.00	0.00	0.00
	<b>69</b>	<b>Component Total :</b>	<b>57,250.00</b>	<b>57,250.00</b>	<b>57,250.00</b>	<b>0.00</b>
<b>70. National Management Costs</b>						
	71	Executing Agency Managemen	43,687.50	43,687.50	43,687.50	0.00
	72	Focal Point Monitoring				
	<b>79</b>	<b>Component Total :</b>	<b>43,687.50</b>	<b>43,687.50</b>	<b>43,687.50</b>	<b>0.00</b>
<b>80. Project monitoring and administration</b>						
	81	ITTO monitoring and review	0.00			
	82	ITTO mid-term evaluation	0.00			
	83	ITTO final evaluation	0.00			
	84	ITTO ex-post evaluation	0.00			
		<b>Sub Total (11-84)</b>	<b>334,937.50</b>			
	85	ITTO Programme Support (8%)				
Sub-Total:				334,937.50	334,937.50	0.00
<b>100. GRAND TOTAL</b>			<b>334,937.50</b>	<b>0.00</b>	<b>291,250.00</b>	<b>291,250.00</b>

During project implementation, certain purchased goods, equipment, machinery and buildings were used to support the achievement of project's targets and goals. Purchased equipment supported administrative work of the project management unit as well as for reporting and documentation purposes such as personal computer, printer, camera etc.

Through activity 3.5. The procurement and installation of selected technologies and operations of the processing plant, the project also purchased equipment and machines of bamboo processing into incense sticks for three community groups in Bangli District, Bali Province. This purchase of machinery and technologies were based on the recommendation and results of the conducted activity 3.4.

Identify appropriate bamboo processing technologies for a small-scale processing plant.

Project activities also installed and established a bamboo smoke preservation workshop in Ngada District, East Nusa Tenggara Province. Bamboo smoke preservation installation and workshop were established in order to support the center of excellence of community based bamboo industry in Ngada District. The workshop also became the pilot project of a semi-finished bamboo processing unit conducted by local community and partnered by a private company. List of equipment and machines that have been purchased by the project in detail with their specification as shown in following Table 6.

**Table 6.** List of Capital Items (US\$)

No	Item	Specification	Unit	Price	Year	Remarks
	<b>Laptop HP AIO Pavilion 20-a210d PC</b>	Model: HP AIO Pavilion 20-a210d PC Processor: Intel® Core™ i3-3240 (3.4 GHz, 3 MB cache, 2 cores) Chipset: Intel® H61 PCH Chipset Video Card: Intel HD Graphics Memory: 2GB DDR3-1600 SODIMM (1x2GB) Monitor: Integrated 20" TFT Panel & Web Cam Hard Drive: 500 GB SATA7200RPM Optical Drive: Slim Tray Super Multi DVD Burner Ports: 2 Hi-Speed USB 3.0, Microphone and Headphone, 4 USB 2.0, Line-out, LAN Operating System: Microsoft Windows® 8(OEM) 64-Bit Network Controller: 10/100/1000Mbps Fast Ethernet Wireless: 802.11 b/g/n Dimensi: 8.1 x 50.6 x 39.9 cm (Unit) Weight: 6kg Warranty: 1 Year Limited warranty (1 -1 - 0)	3	USD 1,799.79 (total)	2014	NOL ITTO Ref. No. F.14-0208 Dated 1 December 2014  Good.  Located in Bogor
	<b>Printer HP LaserJet Pro P1102</b>	Model : HP LaserJet Pro P1102 Function: Printing (mono) Speed: Up to 19 ppm Duty cycle: 5000/month Toner: 85A Black Support OS: XP, Vista, win 7, win 8	2	USD 182.52 (total)	2014	NOL ITTO Ref. No. F.14-0208 Dated 1 December 2014 Good. Located in Bogor and Bali
	<b>Netbook HP Pavilion X2 Detachable</b>	Model: HP Pavilion X2 Detachable Processor: Intel Atom Z3637 (1.33 GHz, 2M Cache) Kartu Grafis: Intel HD Graphics Memory: 2 GB 1333 MHz DDR3L SDRAM (onboard) Hard Drive: 32 GB eMMC Tipe Layar: 25.7 cm (10.1") diagonal HD WXGA WLED-backlit (1280 x 800) Port: 1x USB 3.0, 2x USB 2.0, HDMI, RJ-45, Headphone-out/Microphone-in Combo Jack OS: Windows 8.1 with Bing 32 Special features: Detachable moonstone gray soft cover keyboard Free: Office 365 Personal 1-year Output: True vision HD Webcam, wi-fi, Bluetooth	1	USD 390.19	2014	NOL ITTO Ref. No. F.14-0208 Dated 1 December 2014  Good.  Located in Bogor.
	<b>Notebook HP 14-D012TU</b>	Model: HP 14-D012TU Processor: Intel Core i3-3110M (2.4 GHz, 3M L3 cache) Kartu Grafis: Intel HD Graphics 4000 Memory: 2 GB DDR3 Hard Drive: 500 GB Serial ATA 5400 RPM Tipe Layar: 14" diagonal HD LED - Backlit Display (1366 x 768) Output: Truevision HD Webcam, wifi, bluetooth Optical Drive: DVD RW Multi Burner Port: 1x USB 3.0, 2x USB 2.0, HDMI, VGA, LAN, Microphone-in Combo Jack OS: Genuine Window 8.1 (64 bit) Weight: 1.8 Kg Color: Pearl Black	1	USD 498.21	2014	NOL ITTO Ref. No. F.14-0208 Dated 1 December 2014.  Good.  Located in Bali.
	<b>External HD Toshiba Canvio Connect HDD - 1TB</b>	Model: Toshiba Canvio Connect HDD - 1TB Serial number: CAF071711 Warna: Putih	1		2014	Good. Located in Bogor.

No	Item	Specification	Unit	Price	Year	Remarks
	<b>Printer HP Laser P2055dn</b>	Model: HP LaserJet P2055DN Max Printing Resolution: Up to 1200 x 1200 dpi Max Resolution: 1200 Print Speed Black: 33 ppm Processor: 600 MHz Monthly Usage Volume: 750 to 3000 Recommended monthly page volume Print Technology: HP ProRes 1200, HP FastRes 1200 Memory: 128 MB Print Languages: HP PCL 5c, HP PCL 6, HP Postscript level 3 emulation with automatic language switching Media Sizes Supported: Tray 1: A4, A5, A6, B5, envelopes (C5, B5, DL); Tray 2: A4, A5, A6; Media Types: Paper (bond, light, heavy, plain, recycled, rough), envelopes, labels, cardstock, transparencies, heavy media Paper Handling Input: 50 sheets multipurpose, 250 sheets Power Consumption: 570 watts (active/printing), 8 watts (ready/sleep), 0.4 watts (off); Typical Electricity Consumption (TEC): 2.233 kWhr/week Operating System: Microsoft® Windows® 2000, XP Home, XP Professional, Server 2003; Windows Vista®, Mac OS X v10.3, v10.4, v10.5; UNIX®, Linux Connectivity: USB Dimensions: 365 x 268 x 368 mm Weight: 10.7 kg	1	USD 414.12	2014	NOL ITTO Ref. No. F.14-0208 Dated 1 December 2014.  Good.  Bogor
	<b>Digital Camera</b>	Canon IXUS 160-20 MP 8x Optical Zoom	1	USD 81.79	2015	Good. Bali
	<b>Package of Machine for making incense sticks.</b>	- 1 unit of Bamboo slicer machine/Mesin Potong Bambu, - 1 unit of Pisau Matahari (untuk belah bambu) - 1 unit of Mesin Irat Bambu - 1 unit of Mesin Serut Bambu - 1 unit of Stick slicer machine/Mesin Potong Lidi - 1 unit of Stick polish machine/Mesin Polish Lidi - 1 unit of Mesin Asah Pisau - 1 set of Paket Mesin Dupa dan Bahan	1	USD 8,390.14 (total)	2016	NOL Ref. No. F. 16-0139. Date: 4 October 2016  Good  Bali
	<b>Laptop Apple MacBook Air 12" 2016 MMGL2</b>	1 unit of MMGL2 (Intel Core M3, 1.1 Ghz, Wifi, DDR3 8 GB, SSD 256 GB Sata, Vga Intel, Camera, LCD 12", Mac OS) Gold (Ready Stock) 1 unit of Extension connector for macbook 1 unit of Microsoft Wireless Mouse	1	USD 1,625.18	2016/ 2017	NOL Ref. No. F. 16-0145 Date: 1 December 2016 Good. Bogor
	<b>Package of Incense Machine (auto machines and materials)</b>	Package machine for: 1. 3 units for Farmer Group of Munduk Barong (1 Wayan Jepang) 2. 3 units for Local Community Group of Jarak Bank (1 Wayan Suardana) 3. 2 units for Farmer Group of Hidup Rukun (1 Nyoman Conto) 4. 1 unit for Farmer Group in Lengkong (Nengah Mandiasa) 5. Electricity and utilities 6. Starter Materials (bamboo sticks and flour of RK4) and other equipment 7. Maintenance 8. Groups assistance and operational costs	1	USD 40,669 (in total)	2017	NOL Ref. No. in. 17-0079. Date: 6 July 2017  Good.  Bali.
	<b>Equipment and Facilities for Bamboo Processing</b>	Shigemetsu Air Compressor Model : RW-2.0, Power (KW,HP) : 15,20, 380 V, Cylinder : 120 x 3, Pressure (Psi, Bar) : 115,8, Net Weight : 540 Kg, Dimension: 1880x820x1390	1	USD 5,000.00 (in total)	2017	Located in Ngada, Flores, NTT.
	<b>Bamboo Smoke Preservation Installation and Preservation workshop building</b>	Purchasing on materials as follows: - Soil excavation 16 m3 - Sand 1 m3 - Bamboo and ropes - Gravel 4 m3 - Grit 3 m3 - Cement 40 kg 28 sacks - Water - Mal board 6x0,4 10 pcs - Mal board 2x0,4 10 pcs - Pole mal 6m 15 pcs - Pole mal 2m 15 pcs - Iron Q10 34 pcs - Wire 3 kgs, etc... Purchasing equipment as follows: - Hoe 2 pcs - Shovel 2 pcs - Pikwel 2 pcs - Cement spoon 4 pcs - Renting molen car 3 days - Saw 2 pcs - Hammer 2 pcs, etc.... Payment on hiring worker (day work) - Land clearing and preparation - Building instalation - Preservation instalation Monitoring and technical assistance	1	USD 16,529.00 (in total)	2017	Located in Ngada, Flores, NTT.



Figure 13. Series of bamboo processing machines for incense stick: 1) cutting machines, 2) bamboo splitting, star blade, 3) bamboo thinner, 4) bamboo stick slicer, 5) polish and 6) incense machine.



## 4 PROJECT OUTCOME AND TARGET BENEFICIARIES INVOLVEMENT



Figure 14. Coding system applied at community bamboo clumps under SBF mechanism.

### 4.1 Project output and contribution to the achievement of objective

The project **development objective** noted an improvement regarding the sustainable management and utilization of bamboo resources and the benefits experienced by local communities. This development objective was primarily supported by Output 3. Participation of local communities in bamboo industry development increased. This project produced and published a technical manual, field manual and flyer to be used by local communities to improve the management of their own bamboo resources. In collaboration with Environmental Bamboo Foundation, the project developed a community bamboo resource management initiative under “*Hutan Bambu Lestari (HBL)*” or “**Sustainable Bamboo Forestry (SBF)**”.

The sustainable bamboo forest (SBF) mechanism can be utilized as a system to ensure the sustainability of community owned bamboo resources. The SBF system is carried out by **maintaining clumps to improve productivity** with the important element including a **coding system on each bamboo stem**. The coding number system labeled on the stem of each bamboo refers to its year for harvest plus an initial for the bamboo owner and the number of bamboo clumps owned by community (Figure 14). The coding system ensures that bamboo is harvested only after the bamboo is four years old when it is most suitable as raw material for industry use. This system can be also used as a reference for quality control of community bamboo resources. This mechanism was developed in order to link community bamboo resources to market, particularly to

meet the concerns of the bamboo industry regarding quality of the products and sustainable supply materials.

Based on the project document, **specific objectives** to be achieved at the end of project periods included the **enhancement of capacity amongst stakeholders** to develop and **utilize bamboo resources in an efficient and sustainable manner**. The indicator of this objective were investors interested in entering the bamboo industry, awareness and knowledge of local government on bamboo utilization increased and primary stakeholders interested through participation in training programs. These specific objectives were primarily supported by Output 1: Investment in bamboo industry development promoted and Output 2: Institutional framework for bamboo industry development enhanced.

Project objectives were met by specific activities related to Output 2 such as the **establishment of a stakeholder's forum** on bamboo industry development, an **established national strategy and policy** on bamboo industry in Indonesia and the launch of a **national campaign** on the promotion of bamboo industry development.

Project participation and support within the bamboo stakeholders' forum included the District level such as in **Bangli District** and **Ngada District**. Whilst, Province level initiatives included the facilitation of a meeting for the stakeholders bamboo forum in **Bali Province, Special Region of Yogyakarta, East Nusa Tenggara Province, West Nusa Tenggara Province** and **South Sulawesi Province**. Main stakeholders of this forum were Provincial and District Government officials. Each province committed to **develop a strategic plan or roadmap** on a community-based bamboo industry development. The meetings, discussions and facilitation that have been undertaken by the project in each District and Provincial areas above will be described further in the next section of this report.

There were three outputs that have been achieved by this project to realize its specific objectives. The three outputs were achieved through 19 activities that were conducted and interrelated. The achievement of project outputs related to the activities that have been completed will be explained in following section below.

#### 4.1.1 Output 1. Investment in bamboo industry promoted

Five activities have been carried out in the achievement of Output 1 to address the condition of a lack of investment in bamboo resource development and utilization. The following activities were carried out to encourage and promote investment in bamboo processing industry:

##### 4.1.1.1 Activity 1.1. Collect, publish and disseminate reliable information on Bali's bamboo growing stock

This activity was conducted by the Bamboo Research Center of Udayana University, Bali. This study used two approaches to indicate the distribution and information

on bamboo growing stock in Bali Province. From these methods it developed a scientific and practical methodology for bamboo growing stock survey; and also indicate bamboo resources on state forest and community lands. The purpose of using these two methods was to complement and support the integrated results.

Outstanding results include: In Bali, bamboo populations distributed with the highest population of bamboo growing stocks are present in Bangli District and Gianyar District. The medium populations of bamboo were spread out in Tabanan District and the low population was scattering in Buleleng District and the five remaining districts have the lowest population of bamboo growing stock. This activity produced an indication map of bamboo distribution in Bali Province and also a map of specific bamboo distribution in Bangli District.

##### 4.1.1.2 Activity 1.2. Collect, publish and disseminate updated information on market demand for bamboo products and processing technologies

Results from this study included the collation of information related to the market for bamboo products focused on large and emerging markets from primary and secondary sources as well as bamboo processing technologies. This study also provided recommendations for the local stakeholders of existing bamboo industry entrepreneurs in Bangli District through relaying information on market opportunities for bamboo products and commodities. This study used methods of literature data and data analysis such as:

9. Data and information on the bamboo market, based upon the COMTRADE/Common Format for Transient Data Exchange database which is managed by the United Nations and INBAR database.
10. Data and information related to bamboo technology, based upon various publications sourced in India, China, Japan and INBAR, in addition to other competent research institutes.
11. The bamboo industry development strategy for Indonesia.

This strategy was formulated by taking into account three major factors, namely; 1) The main market for trading bamboo products since 2010, 2) the availability of processing technology and 3) the availability of domestic raw materials. From the global market, data showed that export of bamboo products provides a considerable potential for international trading. This implies a strong opportunity for Indonesia to boost and increase their local bamboo industry. The steps and plan to increase Indonesia's bamboo competitiveness was used as the basis for the drafting of a national strategy for bamboo industry development (Activity 2.4).



#### 4.1.1.3 Activity 1.3. Conduct feasibility study on bamboo development project in Bali

A feasibility study was conducted to determine the viability of bamboo industry development in Bangli Regency, Bali. The bamboo industry consists of four business units: 1. Bamboo cultivation which is limited to species of *bambu petung* (*Dendrocalamus asper*) and *bambu tali* (*Gigantochloa atter*), 2. Laminated bamboo processing business 3. Bamboo handicraft business with sokasi product (bamboo woven box) 4. Bamboo shoots processing as the food source. The methodology included a Market Analysis and Development (MA&D) approach developed by Lecup et al. (1999), a feasibility assessment method that has been adapted for forest-based companies. The appraisal assessed five aspects: market and marketing aspect, technical and technological aspect, ecological and environmental aspect, socio-cultural-institutional aspect, and financial aspect.

The results of the feasibility analysis were valid under the assumptions made during the study and on the conditions (political, environmental, economical, etc.) remaining relatively stable within the enterprises operating environment. If either the assumptions or the operating environment were to differ substantially from actual circumstances, the actual feasibility of the enterprises in this study could differ from the current result.

#### 4.1.1.4 Activity 1.4. Assess adequacy of economic infrastructure and discuss findings with Bali Governments

This activity was to enable support within the development of the economic infrastructure for the bamboo industry. Economic infrastructure is related to the “Internal facilities of a country that make business activity possible, such as communication, transportation and distribution networks, financial institutions and market, and energy supply system” (Business Dictionary). The aim of this study was (1) to identify the needs of the economic infrastructure for the development of the bamboo industry, (2) to assess adequacy of the current condition of the economic infrastructure, and (3) to analyze the policy implications related to the economics infrastructure to support the development of bamboo industry in Bali. The economic infrastructure assessed in this study included five aspects: (1) the telecommunication and information infrastructure, (2) the road and transport infrastructure, (3) the banking infrastructure, (4) the market infrastructure, and (5) the electrical energy infrastructure.

Recommendations from this study: (1) improvement of human resources in mastering technology, (2) equitable distribution of infrastructure facilities in all regions, (3) integration of road and transportation infrastructures in connecting the centers of economic activity, (4) improvement the public transportation services, (5) socialization and mentoring banking schemes to small and medium industries, (6) special market/trade center for products made from bamboo to be the trademark of Bamboo Bali.

#### 4.1.1.5 Activity 1.5. Organize one national workshop on bamboo industry development

The workshop was held in Yogyakarta in cooperation with the Ministry of Industry, through the Center for Crafts and Batik. This workshop was held also to establish and build cooperation between the upstream sector of the Ministry of Forestry and downstream sector of the Ministry of Industry. The cross ministerial cooperation that has been built has become the basis of cooperation within the implementation of project activities.

This workshop was attended by Mrs. Euis Saedah, the Director General of Small and Medium Industry, Ministry of Industry whom was very concerned about the development of community-based bamboo industry. The Head of Sleman District, Special Region of Yogyakarta Mr. Sri Purnomo, also attended whom has a bamboo development program for Sleman District. About 100 participants attended this workshop including central and local government counterparts, universities, industry players, communities and community groups.

### 4.1.2 Output 2. Institutional framework enhanced

The establishment of support in a community-based bamboo industry included engagement from all tiers such as the community level, local government (district and provincial government) and also national levels. The national campaign material of a “community bamboo industry” was used as a guideline to establish institutional and stakeholder framework in each province. At the national level, the project also facilitate a draft of the National Strategy of Bamboo Industry Development in Indonesia, through Community Bamboo Industry Mechanism. This achievement was pursued with various activities conducted as follows:

#### 4.1.2.1 Activity 2.1. Identify and officially designate zone area for bamboo industry development in Bali

This activity determined the official designation of the land area in Bangli District for bamboo industry development. Activities included field surveying and household interviews. Field data and measurement in the field were analyzed using spatial modeling processes. Data analysis and interpretation were used to determine several results to support the designation of zones for bamboo industry development, such as;

1. Mapping the potential and existing bamboo distribution in Bangli District. More than 30% of Bangli District area is covered by bamboo. Whilst, the Bangli District land area includes an additional 38% of ideal prospective locations for the expansion of the bamboo industry.
2. Site for demonstration plot for bamboo maintenance. This is based upon the physical characteristics of the land either soil type, rainfall or topography according to the result estimation. After using several factors, the demonstration plot for clump maintenance and



Figure 15. National Workshop on Bamboo Industry Development in Indonesia

silviculture technique was designated at the traditional farm land group in Penglipuran Village.

3. Site for demonstration plot for intensive bamboo plantation. The most suitable location chosen for bamboo planting area of 12 ha is at Bubung Kelambu Village, Kintamani Sub district. Clustering and indication site of bamboo industry (mainly handicraft). This study also indicated that 38% of Bangli District area includes 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.

#### 4.1.2.2 Activity 2.2. Install and operate a publicly accessible bamboo information system

A bamboo web database was established by the project in September 2014 and data and information is constantly updated until now. The modification and improvement on the menu of the web-database is also conducted periodically. It will be continuously updated with new data and information.

The consultant provided the SOP (Standard Operating System) on the operational system of web database for Indonesian Bamboo. It contains the manual on operating the web-database. The Standard Operating System is available

in Bahasa Indonesia and included on the web-database as well.

Additional output also produced from this activity, where the project built up website information related to the National Campaign of “A Thousand Bamboo Villages” through a Community Bamboo Industry. This is a collaborative partnership between Bamboo Project (ITTO PD600/11 Rev. 1 (I)) and The Environmental Bamboo Foundation (EBF).

#### 4.1.2.3 Activity 2.3. Establish a stakeholder consultation forum for bamboo industry development

This activity was carried out directly under coordination of the project coordinator undertaken by related parties and stakeholders in several regions. The purpose of this activity was how to build a common vision in each region in developing bamboo industry in accordance with the conditions and potential resources that existed site specifically. This was based upon two factors which included the establishment of an institutional framework and policies development to become the foundational base in the development and improvement of a bamboo industry in Indonesia. Therefore, activity 2.3 is very closely related to activity 2.5 national campaign to promote bamboo industry development. Several meetings, workshops, focus group



Figure 16. Figure 16. Web Data Base of Bamboo in Indonesia under FOERDIA Website.

discussion and also informal meetings conducted under this activity in various tiers including sub districts, district, provincial and national levels as shown in Annex 3.

#### 4.1.2.4 Activity 2.4. Review existing policies and define bamboo management regime to guide the conduct of efficient bamboo resource development and utilization

This activity utilized data collection and desk literature on existing policies related to bamboo development in Indonesia, focus group discussion, public consultation and workshops. The team made a review of existing policies and prepared guidelines on sustainable bamboo resource development and utilization. Two policy briefs were produced as a recommendation to Ministry of Environment and Forestry, as well as the draft of National Strategy on Bamboo Industry Development: “Community Bamboo Industry” in Indonesia.

#### 4.1.2.5 Activity 2.5. Launch national campaign to promote bamboo industry development

A National campaign was launched in order to promote the development of a community-based bamboo industry. The campaign of a “Thousand Villages Bamboo” was launched first time in the event of COP 21, Paris placed in the Indonesian Pavilion. The main campaign of this program is how to enhance the bamboo industry through a community based approach. Bamboo as a green and renewable material could be a solution for environmental issues and problems such as restoration for degraded land, water catchment, carbon dioxide (CO<sub>2</sub>) absorption and so on. Therefore, bamboo could alleviate environmental threats whilst also providing economic development through industry utilization. The project launched an effective national campaign using the right various media tools e.g. television, printed materials, video and social media to disseminate information on bamboo resources and their development nation and international wide. In this campaign, a collaboration with the Environmental Bamboo Foundation was formed with the support of other government institutions; Ministry of Industry, Ministry of Village and Transmigration and also the private sector as a main market and industry player.

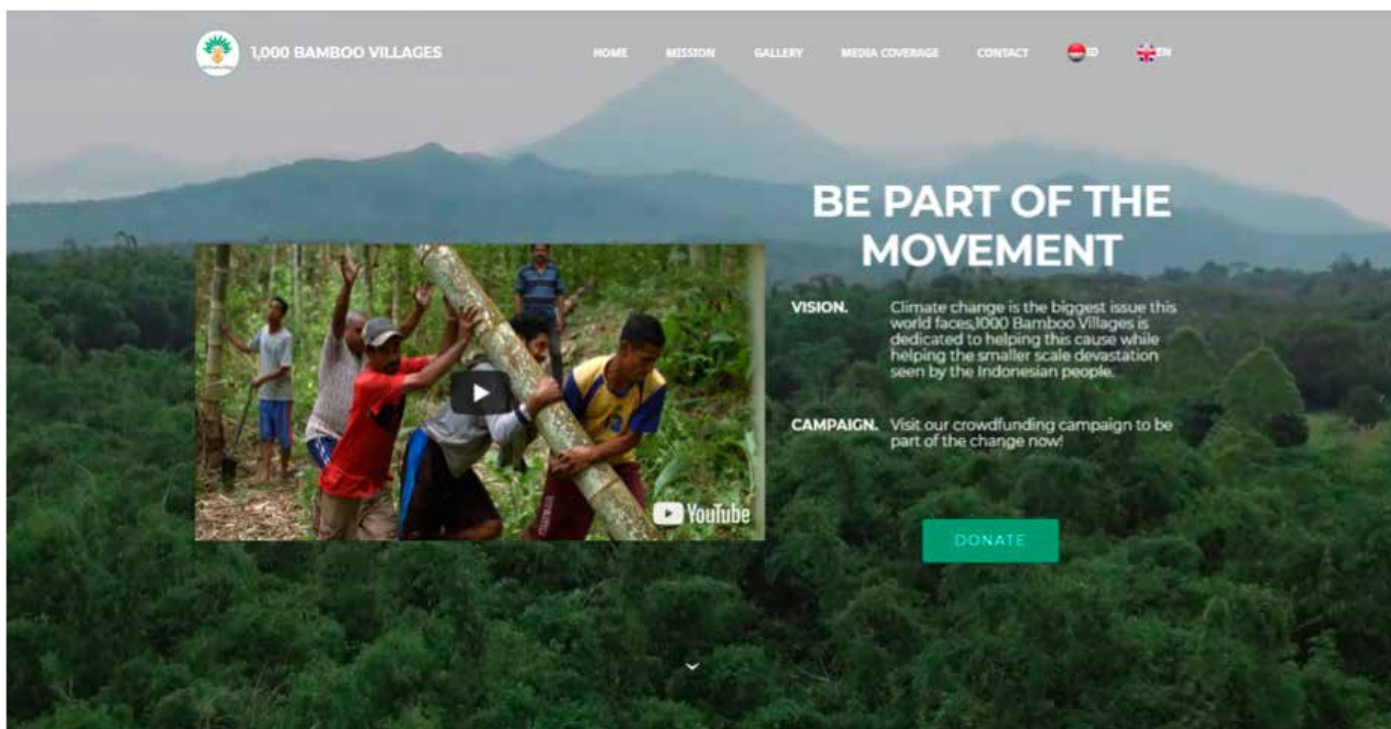


Figure 17. Website of A Thousand Bamboo Villages Movement

### 4.1.3 Output 3. Participation of local communities in bamboo industry development increased

This output was simultaneously achieved through efforts of Output 2 and the launch of a national framework for developing a bamboo industry through community-based bamboo. This process involved multi-stakeholders therefore, increasing the participation of local communities within bamboo utilization. Furthermore, there has been a noted increase in demand and interest of community groups to join our mechanism of community based bamboo industry of: “bamboo villages”. The achievement of Output 3 played an important role in this project, given that the community was the main beneficiary of all project efforts. This output required the most activities in comparison to output 1 and 2, such as:

#### 4.1.3.1 Activity 3.1. Allocate 6 Ha of natural bamboo forest in 4 sites as demonstration plots of silviculture techniques

Silviculture techniques in bamboo clump management is very important in order to increase clump productivity, simplify harvesting techniques whilst maintaining the sustainability of existing bamboo clumps. This activity was completed in partnership with the Environmental Bamboo Foundation, whom built a community bamboo management system through “Sustainable Bamboo Forestry”. The system of clump management applied in community bamboo forest in Bali and Flores were used at the demonstration plot to exemplify bamboo clump maintenance for community members.

In Bangli District at the demonstration plot, clump management was established in Penglipuran Village, the traditional village which is surrounded by bamboo forest. In this area *Gigantocloa atter* or *bambu tali* is commonly grown as materials for woven handicraft. During a three-year observation, it showed that bamboo clumps with maintenance of silviculture technique produced more shoots and improved in productivity.

In Ngada District also in collaboration with EBF, bamboo clump management for *Dendrocalamus asper* or *bambu petung* was carried out. *Bambu petung* is bigger from *bambu tali* and is predominantly used for bamboo construction and materials of strand woven bamboo. Bamboo clump management applied in Ngada using “HBL Hutan Bambu Lestari” system, with 6 steps of integrated clump maintenance consists of 1) revitalize the defective clumps, 2) mounding, 3) planting intercrops, 4) control pests and diseases, 5) protect the clumps by wisdom (*Waja* and *Ri'i*) and 6) sustainable harvesting.

#### 4.1.3.2 Activity 3.2. Establish 12 Ha of demonstration plantation of 4 bamboo species having high commercial value in 4 sites under different treatments

Bamboo species of high economic value were planted. In collaboration with the community farmer bamboo group, we have planted more than 2000 bamboo seedlings in Kintamani area. We also developed collaboration with Bali Re-Green Program to extend and add more bamboo seedlings planted in this area. The source of bamboo seedlings came from conventional seeds purchased from local breeders and tissue culture seedlings purchased from seed providers in Yogyakarta. A portion of bamboo seedlings planted in this activity were provided from Activity 3.3.



**Figure 18.** A Declaration of Bamboo Villages in Ngada District.

#### *4.1.3.3 Activity 3.3. Identify and develop appropriate technologies for producing quality planting materials to support bamboo plantation development*

Activities undertaken during this activity were to produce bamboo seeding techniques that can be implemented by the community in Bangli Regency, which was also one of our community supported group. Mr. Wayan Jepang leader of this group is a bamboo seedling grower who owned bamboo nursery that supply bamboo seedling for bamboo rehabilitation and planting program in all over Bali. Related to the previous activity, bamboo seedlings were provided from activity 3.2. The project invited bamboo nursery expert Dr. Anto Rimbawanto from Center for Biotechnology and Tree Breeding Research and Development, Yogyakarta. This activity also produced a guide book on how to cultivate bamboo seeds for the community.

This activity also included a collaboration with EBF to conduct a bamboo breeding demonstration plot with a cocoon system in Ngada District, NTT Province. A bamboo nursery with a cocoon system aimed to obtain bamboo seedlings that have a high growth possibility when planted in the field and accelerate the harvest. This nursery system also become part on developing bamboo villages under the thousand bamboo villages' movement and campaign.

#### *4.1.3.4 Activity 3.4. Identify appropriate bamboo processing technologies for a small-scale processing plant*

This activity included a study and assessment about bamboo processing industry suitable for community use and is related to activity 3.5. The study has made recommendations that the appropriate type of industry for the community in Bangli Regency was the processing

of incense sticks. Incense sticks used by the people of Bali currently come from Malang, East Java and in certain cases they are even imported from abroad. Therefore, a gap in the market was identified to produce local incense sticks.

#### *4.1.3.5 Activity 3.5. Procure and install selected technologies, and operate the processing plant*

Related to this activity and based on the NOL of Ref. No. F. 16-0139 dated 4 October 2016, the project has procured certain capital item units (bamboo machinery for processing and incense stick production) from CV. Jalu Teknik, Malang, East Java. The machines for the implementation of the project activity 3.5. are as follows: (1) Bamboo cutting machine, (2) Bamboo splitter blade, (3) Bamboo slicing machine, (4) Bamboo shaving machine, (5) Stick cutting machine, (6) Stick polish machine, (7) Knife sharpener machine and (8) Incense making machine, as shown in Figure 13.

As administrative process within Ministry of Environment and Forestry of Republic of Indonesia, The Director of Center for Social, Economy, Policy and Climate Change Research and Development, FOERDIA as the Executing Agency of ITTO PD 600/11 Rev. 1 (I) has completed the handover process on all machines and equipment to the Farmer group of Hidup Rukun in Bangli, Bali Province. The ceremony was held on 20 December 2016 and the event was organized by the PMU of ITTO PD 600/11 Rev. 1 (I), attended by the Bangli Regent, local government of Bangli and members of community groups.

Furthermore related to this activity and in collaboration with CV. Indobamboo Lestari located in Ngada District, Flores, NTT, we established a bamboo smoke preservation installation. The facilities also supported the establishment of Ngada District as the "Center of Excellence of Community

Bamboo Industry”. This installation built is to assist the community to preserve their half-finished bamboo products as part of the supply chain of local bamboo industry to mid-size industry.

**4.1.3.6 Activity 3.6. Conduct a series of training on production of planting materials, plantation establishment, natural bamboo management techniques and efficient processing techniques.**

A series of nine of trainings was conducted during the project periods of year 2014 – 2017. As listed in following table 11. Training and Capacity Building Activities Conducted and Supported by Project. Title and themes of conducted trainings were varying from training on bamboo propagule of planting materials, silviculture techniques on bamboo clump management, bamboo cocoon nursery, bamboo processing, improving bamboo handicraft design, business plan development and community institutional strengthened. From nine trainings, more than 300 participants of communities participated from 10 Provinces of Indonesia. (Banten, Jakarta, West Java, Central Java, Yogyakarta, East Java, Bali, NTT, NTB and South Sulawesi).

**4.1.3.7 Activity 3.7. Publish and disseminate technical manuals on natural bamboo management, production of quality planting materials, establishment of bamboo plantation and efficient processing techniques**

This activity included the production, publication and dissemination of information through of books, guidelines, booklet, flyer and brochures. The publication included various topics and themes to target community and general audiences. More detail of publication produced from this project as shown at list in table 12. Publications and Printing Materials of Project Activities.

**4.1.3.8 Activity 3.8. Establish 2 CSEs or cooperatives on bamboo business to be run by local communities using revolving funds from GOI**

There were three groups of Community Small Enterprises (CSE) run by local community established and assisted from this project. All the community groups located in Bangli District. The CSE established an incense stick bamboo processing initiative. This type of industry was based upon a recommendation from a study and feasibility assessment conducted in activity 3.4. The community group are producing incense stick regularly and ready for local market as shown in figure 19. A cooperation existed between EBF to assist in the continuation of monitoring and support for community groups that have been established during the project timeframe.

**4.1.3.9 Activity 3.9. Organize a national workshop on dissemination of project results nationwide**

A workshop on dissemination of project results was conducted on July 20 2017 in the Center for Development

and Control of Region Bali and Nusa Tenggara, Ministry of Environment and Forestry, Denpasar, Bali. In this workshop, we invited resource persons from Ministry of Environment and Forestry, Ministry of Industry and Ministry of Rural Development and Transmigration. In the second session, the project coordinator presented the project results whilst community groups also presented their activity assisted by the project. More than 60 participants joined this workshop from government, community, NGO and private sector.



Figure 19. SME of bamboo incense sticks run by community groups

**4.2 Existing situation at project completion compare versus pre-project**

The achievement of project realization compare to the existing situation before project’s implementation as shown and explain at the following table 7.

**Table 7.** Project's objectives and output achievement

Objectives, Outputs and Related Activities	Indicators/outcomes (Project Document)	Achievement (Project Realization)
<p><b>Development objective</b> Improved the management of bamboo resources for their sustainable use and benefits to local communities</p>	<ul style="list-style-type: none"> <li>- Increased participation of primary beneficiaries</li> <li>- Consistent policies on bamboo industry development</li> </ul>	<p>Mechanism and system on "community based bamboo industry" had been established.</p> <ul style="list-style-type: none"> <li>- An integrated bamboo development platform connected from upstream and downstream sector established.</li> <li>- Coordination and network to support community based bamboo industry established through people public private partnership 4P.</li> </ul>
<p><b>Specific objective</b> Initiate enhancement of capacity amongst stakeholders to develop and utilize bamboo resources in an efficient and sustainable manner</p>	<ul style="list-style-type: none"> <li>- At least 3 proposals on investment submitted by private sector</li> <li>- Investors interested in entering the bamboo industry.</li> <li>- 90 persons trained on various aspects of bamboo industry development</li> </ul>	<ul style="list-style-type: none"> <li>- In the end of project periods, project had been contacted by two private companies which were interested to established bamboo investment for bamboo lamination and bamboo sticks.</li> <li>- There is also one foreign company approach to project to discuss and look opportunity on investment for bamboo biomass, and the process still keep on progressing event ITTO bamboo project had been finished.</li> <li>- At the end of project more than 200 persons trained on bamboo development.</li> </ul>
<b>Output 1. Investment in bamboo industry promoted</b>		
<p>1.1. Collect, publish and disseminate reliable information on Bali's bamboo growing stock</p>	<p>Reliable information bamboo growing stock in Bali available</p>	<p>An indication map of bamboo distribution in Bali Province and also a map of specific bamboo distribution in Bangli District were produced.</p>
<p>1.2. Collect, publish and disseminate updated information on market demand for bamboo products and processing technologies</p>	<p>Information on market and technologies disseminated</p>	<p>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.</p>
<p>1.3. Conduct feasibility study on bamboo development project in Bali</p>	<p>Feasibility study on bamboo project completed</p>	<p>The feasibility study for four bamboo business were available:</p> <ol style="list-style-type: none"> <li>1. Bamboo cultivation which is limited to species of bambu petung (<i>Dendrocalamus asper</i>) and bambu tali (<i>Gigantochloa atter</i>),</li> <li>2. Laminated bamboo processing business</li> <li>3. Bamboo handicraft business with <i>sokasi</i> product (bamboo woven box)</li> <li>4. Bamboo shoots processing as the food source.</li> </ol>
<p>1.4. Assess adequacy of economic infrastructure and discuss findings with Bali governments</p>	<p>Assessment report of economic infrastructure and discuss findings with local governments completed.</p>	<p>Identification factors and recommendation of assess adequacy of economic infrastructure to support bamboo industry development in Bangli District and Bali Province were available.</p>
<p>1.5. Organize one national workshop on bamboo industry development.</p>	<p>3 national workshop on bamboo industry development conducted</p>	<p>There were at least five seminars and workshop conducted during project period of implementation from 2014 – 2017 as listed in Table 8.</p>
<b>Output 2. Institutional framework enhanced</b>		
<p>1.1. Identify and officially designate zone area for bamboo industry development in Bali.</p>	<p>Bamboo management regime defined</p>	<p>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.</p>
<p>1.2. Install and operate a publicly accessible bamboo information system.</p>	<p>A bamboo information system operational</p>	<p>A bamboo web database was established by the project in September 2014 and data and information is constantly updated until now.</p>
<p>1.3. Establish a stakeholder consultation forum for bamboo industry development.</p>	<p>Awareness and knowledge of local government on bamboo utilization increased</p>	<ul style="list-style-type: none"> <li>- Stakeholder forum formed in several area in district and province level.</li> <li>- Provinces Level; West Java, Central Java, Yogyakarta, Bali, West Nusa Tenggara, East Nusa Tenggara and South Sulawesi.</li> <li>- District Level; Bangli, Gianyar, Lombok Tengah, Ngada, Ende,</li> </ul>
<p>1.4. Review existing policies and define bamboo management regime to guide the conduct of efficient bamboo resource development and utilization.</p>	<p>Document of bamboo management regime finalized and types of strategic industry defined</p>	<ul style="list-style-type: none"> <li>- Two ministerial policy brief on bamboo resource management and utilization published.</li> <li>- The draft of national strategy on community bamboo industry through "A thousand bamboo villages" platform published</li> <li>- Project and EBF 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.</li> </ul>
<p>1.5. Launch a national campaign on promotion of bamboo industry development.</p>	<p>A national campaign on promoting bamboo industry in Indonesia developed.</p>	<ul style="list-style-type: none"> <li>- Established the platform on community bamboo industry through campaigning "a thousand bamboo villages" in Indonesia partnered with EBF.</li> <li>- This platform also written in the draft of National Strategy on Bamboo Industry Development in Indonesia.</li> <li>- The campaign conducted in national level to get support and to realize the bamboo villages in Indonesia.</li> <li>- International campaign also conducted to share Indonesian strategy on community bamboo development.</li> </ul>

Objectives, Outputs and Related Activities	Indicators/outcomes (Project Document)	Achievement (Project Realization)
<b>Output 3. Participation of local communities in bamboo industry development increased</b>		
3.1. Allocate 6 Ha of natural bamboo forest in 4 sites as demonstration plots for management practices	6 ha of demo plots for natural bamboo established on 4 sites	Demonstration plots for management practice conducted in two location in Bangli, Bali and in Ngada, Flores. - In Bali demplots located in Penglipuran Villages Bamboo Forest owned by Mr. Wayan Lanus. The method used selecting same age structures within a bamboo clump. The observation on bamboo shoot productivity conducted for two years. - In Ngada demplots for management practice conduct in collaboration with EBF. The management practice called SBF Sustainable Bamboo Forestry or <i>Hutan Bambu Lestari</i> HBL. This mechanism and demplot maintenance still running.
3.2. Establish 12 Ha of demonstration plantation of 4 bamboo species having high commercial value in 4 sites under different treatments	Four bamboo species planted on 12Ha of land on 4 sites for demonstration	About hectares of bamboo planting demonstration plots planted in the area of Hidup Rukun farmer group in Bubung Klambu Village, Kintamani. In total planted 1850 bamboo seedling in 6 hectares, consist of; - 700 seedlings of <i>petung hijau</i> , 100 seedlings of <i>petung variant A</i> and 100 seedlings of <i>petung variant B</i> , all from tissue culture propagation. - 160 seedlings of <i>petung hijau</i> , 67 seedlings of <i>petung hitam</i> , 243 seedlings of <i>bambu jajang</i> and 480 seedlings of <i>bambu tali</i> all of the seedlings from branch cutting with konvensional propagation methods. Project also make collaboration to extend bamboo planting area and number of seedlings planted. In collaboration with "Bali Re-Green" organized by civil society living in Bali. Together we planted another 500 bamboo seedlings in this area.
3.3. Identify and develop appropriate technologies for producing quality planting materials to support bamboo plantation development	Appropriate technologies for producing quality planting materials for community.	- Appropriate methods for producing bamboo planting materials for community level still conventional bamboo propagation methods, which are from bamboo branch cutting and rhizome. Most common and more easy to apply is branch cutting propagation. - Project promote the new methods on bamboo nursery system called "bamboo cocoon nursery" in collaboration with EBF to support 1000 bamboo villages' movement.
3.4. Identify appropriate bamboo processing technologies for a small-scale processing plant	Appropriate bamboo processing technologies for a small-scale for community enterprises.	The study has made recommendations that the appropriate type of industry for the community in Bangli Regency was the processing of incense sticks.
3.5. Procure and install selected technologies, and operate the processing plant	2 small-scale processing plant installed and operational	- 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.
3.6. Conduct a series of training on production of planting materials, plantation establishment, natural bamboo management techniques and efficient processing techniques	- 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. - The primary stakeholders interested in the training programs - local government officials and staffs well informed of the training programs and facilities	- During project implementation, more than 300 participants of communities and stakeholders participated in the training. The participants covered from 10 Provinces of Indonesia. (Banten, Jakarta, West Java, Central Java, Yogyakarta, East Java, Bali, NTT, NTB and South Sulawesi). - The topic of training and number of participants as listed in table 11. - Number of province well informed and interested to join thousand bamboo villages programs are 18 province in Indonesia; Jambi, Bengkulu, South Sumatera, Lampung, Banten, West Java, Central Java, Yogyakarta, East Java, Bali, NTB, NTT, South Sulawesi, Gorontalo, West Kalimantan, Central Kalimantan, East Kalimantan and South Kalimantan.
3.7. Publish and disseminate technical manuals on natural bamboo management, production of quality planting materials, establishment of bamboo plantation and efficient processing techniques	- Guidelines and technical manuals widely used in Bali - Increased participation of primary beneficiaries	Publication materials produces and printed by project has been distributed and disseminated through events held in nation and international wide As listed in table 12.
3.8. Establish 2 CSEs or cooperatives on bamboo business to be run by local communities using revolving funds from GOI	Two CSEs or cooperatives established and piloted implemented.	There are 3 (three) pioneer of CSE of incense stick production established in Bangli Regency, Bali Province. They produced the incense stick for local market.
3.9. Organize a national workshop on dissemination of project results nation wide	A national workshop on dissemination of project results conducted.	A workshop on dissemination of project results was conducted on July 20 2017 in the Center for Development and Control of Region Bali and Nusa Tenggara, Ministry of Environment and Forestry, Denpasar, Bali.

#### 4.2.1 Seminars, workshops, meetings held and supported by project

The project organized and established collaborative efforts within seminars, workshops and meetings at National and International Levels including the presentation of project activities and campaigns listed in following table 8.

#### 4.2.2 National seminars, workshops, meetings attended and participated by project

The project team attended several conference, seminar, workshop and meetings at National and International Levels and presented project activities and campaigns as listed in following table 9.



**Table 8.** Workshops, Meetings, FGDs and Events Organized by Project.

NO	TITLE OF EVENTS	LOCATION, TIME	REMARKS
	<b>National Workshop on Bamboo Industry Development in Indonesia.</b>	Ministry of Industry, Yogyakarta. 20 - 21 January 2015	To increase the synergy of developing industry based on bamboo among multi stakeholders Attended by Director General of Small Medium Industry, Ministry of Industry Head of Sleman District, Special Region of Yogyakarta. Participated more than 100 participants.
	Bamboo Stakeholders Meeting in Bandung West Java	Dago Panyawangan Restaurant, Bandung. Second week of June 2015.	To discussed and made coordination with bamboo practitioners in West Java. Attended by bamboo craftsmen, architects, and bamboo community. Approximately 25 participants.
	Meeting between Government and Farmer Group, Local Government and Cooperation.	Argo Tiing, Kintamani, Bangli District, Bali, 27 August 2015	To discussed about bamboo development based on community in Bangli District Attended DG FOERDIA and Chairman of the People's Legislative Assembly of Bangli District Participated about 50 person.
	Focus Group Discussion (FGD) on Program 1000 Desa Bambu (1000 Bamboo Villages)	Manggala Wanabakti, Jakarta, 28 March 2016	Discussed about Program of Thousand Bamboo Villages to support National Strategy of Bamboo Development in Indonesia. Attended by Mr. Sarwono Kusumatmadja, and participants from Ministry of Environmental and Forestry, Ministry of Industry, NGOs, Private Sector and etc. Participated about 35 persons
	<b>Declaration on Ngada Bamboo Villages, as a Model of Program 1000 Desa Bambu (A Thousand Bamboo Villages)</b>	Wogo Olo Traditional Village, Ngada Regency. 8 April 2016	To declare "Bamboo Village" by Community of Golewa Sub District as a Model of Community Based Bamboo Industry Attended DG FOERDIA, Ministry of Environment and Forestry, DG Small Medium Industry, Ministry of Industry, Directors Participated about 150 person.
	<b>Workshop on "Sustainable Management of Community Based Bamboo Forestry to support the Program of 1000 Bamboo Villages"</b>	Ngada District, Flores, East Nusa Tenggara Province. 9 May 2016	To prepare Ngada Regency become Center of Excellence of Bamboo Village in Indonesia and built synergy among central government, local government, NGOs and private sector to support community based bamboo industry. Attended Vice Head of Ngada District. Participated by around 100 persons
	<b>Seminar and Workshop of Indonesian Bamboo Community (Collaboration Event)</b>	Manggala Wanabakti, Jakarta, 7 December 2016.	To sharing and updating information related on bamboo development activities among bamboo stakeholders from government, universities, society groups, practitioners and private sectors Attended by Director General Social Forestry and Environment Partnership Participated by 100 participant
	Ceremony of Handed Over Bamboo Machinery for Processing and Incentive Stick Production" Procure and Install Selected Technologies, and Operate The Processing Plant	Argo Tiing, Kintamani, Bangli District, Bali Province Kintamani, Bangli - Bali. 4 October 2016	To handed over all machines equipment to the community groups assisted by project. Attended by Head of Bangli District, Director of Center for Social Ekonomi Policy and Climate Change. Participated by 40 person
	Coordination Meeting on Community Bamboo Development in South Sulawesi Province.	P3E Sulawesi dan Maluku, Makassar, South Sulawesi. 12-13 April 2017	Facilitate the Local Government of South Sulawesi established Bamboo Development Plan Participated by 63 persons
	Coordination Meeting on Community Bamboo Industry Development; A Thousand Bamboo Villages" with Bamboo Stakeholders in Special Region Yogyakarta Province	Toe'an Watiman Restaurant, Yogyakarta. 9 May 2017	Shared and discussed on challenge and opportunity established Bamboo Villages in Yogyakarta Special Region. Participated by 30 persons.
	<b>National Workshop of Dissemination on Bamboo Industry Development in Indonesia</b>	P3E Bali Nusa Tenggara, Office, Bali. 20 July 2017	Workshop on dissemination project's results Participated by more than 50 participants.

**Table 9.** National seminars, workshops, meetings attended and participated by project

NO	EVENTS	LOCATION, TIME	PROJECT'S ROLE
	Bamboo Community Forum Meeting Held by Ministry of Environment.	Jakarta, 26 November 2013	Invited as participant
	National Bamboo Congress ( <i>Kongres Bambu Nasional</i> ) Held by Ministry of Forestry and Indonesian Bamboo Community	Yogyakarta Special Region, 28 - 30 November 2013	Invited as participant
	Annual Meeting of ACIAR-ICRAF-FORDA Project on Development of Timber and Non Timber Forest Products Production and Market Strategies for Improvement of Small Holders Livelihood in Indonesia [KANOPPI PROJECT] Held by ACIAR	Kupang, East Nusa Tenggara, 12 - 15 August 2014	Invited as participant
	Coordination Meeting on Bamboo Development of Special Allocation Budget ( <i>Dana Alokasi Khusus</i> ) Resources. Held by Directorate Land Rehabilitation, Directorate General of Watershed Management and Social Forestry	Harris Hotel & Residences Sunset Road, Kuta - Bali, 10 September 2014	Invited as presenter (resources person).
	Coordination meeting on Bamboo Development in Indonesia Held by Directorate of Social Forestry, Directorate General of Watershed Management and Social Forestry	Bandung, West Java 1 - 2 October 2014	Invited as participant

NO	EVENTS	LOCATION, TIME	PROJECT'S ROLE
	Monitoring and Coordination Meeting on ITTO Projects under FORDA Held by FORDA Secretariat	Manggala Wanabakti, 21 October 2014	Invited and presented project's progress DG FORDA, FORDA Managements, ITTO Projects Coordinators,
	Coordination Meeting of KANOPPI Project on Development of Timber and Non Timber Forest Products Production and Market Strategies for Improvement of Small Holders Livelihood in Indonesia. Held by FORDA - ICRAF	Yogyakarta Special Region, 14 - 17 April 2015	Invited as participant and visited Bamboo Demonstration Plot in Gunung Kidul, Yogyakarta
	Meeting of Clearing House ITTO Projects Proposal Held by Foreign Cooperation Bureau, Ministry of Forestry	Ibis Hotel Jakarta 21 May 2015	Invited as proposal's reviewers
	Meeting of preparation on World Bamboo Exhibition in Damyang, South Korea. Held by Indonesian Institutes of Science (LIPI) office in Cibinong	LIPI, Cibinong 12 June 2015	Invited as participant
	Workshop on Bamboo Development: Challenge for ASEAN Economic Community [MEA]. Held by Directorate General of Social Forestry and Environmental Partnership.	Bannana Inn, Bandung, 24-25 November 2015	Invited as moderator
	Training and Workshop of Bamboo Utilization. Organized by <i>Komunitas Bambu Nusantara</i> (Indonesian Archipelago Bamboo Community)	Akademi Bambu Nusantara (Archi- pelago Bamboo Academic), South Tangerang 12 Januari 2016	Invited as speaker. Presented about A Thousand Bamboo Village.
	Invited to be interviewed on the talk show program "Halo Indonesia" at National Television, DAAI TV,	DAAI TV Studio, 10 February 2016	Invited to be interviewed, and presented about "A Thou- sand Bamboo Villages" Movement.
	Invited to attend "The Cooking Class of "Bambu Tabah". Organized by Bamboo Research Center, Udayana University and KEHATI Founda- tion.	Taro Village, Gianyar District. 22 January 2016	Invited as participants, attended the event together by Hidup Rukun Farmer Group, Kintamani, Bangli District.
	National Workshop on Accelerating Action for Forest and Nature Landscape Restoration in Indonesia; "Challenge and Opportunities for Enhancing Resilience of Ecological and Livelihood" Organized by World Resources Institute (WRI) and Ministry of Environment and Forestry	Manggala Wanabakti, 19-20 April 2016	Invited as participant and together with EBF also presented the "Thousand Bamboo Villages" as model of land resto- ration with community.
	Meeting on Green Investment. Organized by Ministry of Rural, Rural Development and Transmigration.	Kalibata, South Jakarta, 16 May 2016.	Invited together with EBF, presented the community based bamboo industry.
	Coordination Meeting on Rural Development in Eastern Provinces of Indonesia. Organized by Ministry of Rural, Rural Development and Transmigration.	Seminyak, Bali Province 18-19 May 2016	Invited together with EBF, presented the community based bamboo industry and opportunities for rural development in Eastern Provinces of Indonesia.
	Meeting and Discussion on NTFPs Development and Utilization with Local Parlia- ment of Toraja District, South Sulawesi. Organized by Directorate of NTFPs, Ministry of Environment and Forestry.	Manggala Wanabakti, Jakarta, 30 May 2016	Invited and presented about bamboo community develop- ment, trough community bamboo industry.
	Meeting and Discussion related on ITTO Project financial situation Organized by Foreign Cooperation Bureau, Ministry of Environment and Forestry	Manggala Wanabakti, Jakarta, 17 Juni 2016	Discussion partners.
	Meeting and Discussion on ITTO's decision made without council meeting and preparation on teleconference materials with ITTO Headquarters Organized by Foreign Cooperation Bureau, Ministry of Environment and Forestry	Manggala Wanabakti, Jakarta, 21 Juni 2016	Discussion partners.
	Invited on the meeting in CIFOR and ICRAF Office on establishment Project Coop- eration on "Developing and Promoting NTFPs Market Based Agroforestry Option and Integrated Landscape Management for Smallholder Forestry in Indonesia" Organized by ICRAF	CIFOR-ICRAF Office, Bogor 14 July, 2016	Discussed on research cooperation projects especially on community bamboo development in Ngada District, Flores. This was as part of project sustainability and exit strategy
	Multi-stakeholder Meeting to Establish NTFPs Management and Integrated Policy in East Nusa Tenggara Province. Organized by WWF East Nusa Tenggara and CIFOR under KANOPPI Project.	Kupang, East Nusa Tenggara Provinve 19 - 20 July 2016	Invited as participant and together with EBF, we presented our activity on community based bamboo industry in Ngada District.
	Invited to discuss with the founder of Environmental Bamboo Foundation ( <i>Yayasan Bambu Lestari</i> ), Mrs. Linda Garland	Ketewel, Gianyar, Bali. 12 August 2016	Discussed on project cooperation with EBF
	Invited and meeting with the CEO of <i>Yayasan Wadah Titian</i> (Wadah Foundation) Ibu Ani Djoyohadikusumo	Jimbaran, Bali. August 19th, 2016	Discussed on possibility cooperation on "A Thousand Bamboo Villages"
	Invited to attend the event on "A Bamboo Revolution" Organized by Archipelago Bamboo Academy.	South Tangerang, Province of Banten. August 22nd, 2016	Invited as participant
	Invited on a meeting with Center for Coordinating on Development of Ecoregion of Kalimantan ( <i>Pusat Pengendalian Pembangunan Ekoregion Wilayah Kalimantan</i> )	Ministry of Environment and Forestry in Balikpapan, East Kalimantan, 14 September 2016	Presented and Discussed on possibility cooperation on "A Thousand Bamboo Villages"
	Invited and Presented Community Bamboo Based Industry for Thousand Bamboo Villages in Indonesia	Samarinda, East Kalimantan, 15 September 2016.	Challenges and Opportunity of Bamboo Industry Develop- ment in the Areal of KPHP (Forest Management Unit)
	Invited and Presented Community Bamboo Based Industry for Thousand Bamboo Villages in Indonesia	Palangkaraya, Central Kalimantan, 26 September 2016.	Challenges and Opportunity of Bamboo Industry Devel- opment in the Area of KPH(Forest Management Unit)

NO	EVENTS	LOCATION, TIME	PROJECT'S ROLE
	Invited and participated on Plenary Meeting of Delegation Republic of Indonesia (DELRI) for COP 22 UNFCCC, Marrakech, Morocco	Mangala Wanabakti, 26 October 2016	Participated as participant
	ITTO PD 600 supported CIFOR agenda on Journalist workshop "Forestry for sustainable future: the role of integrated landscape approach"	Bali, 15-16 November 2016"	Project facilitated and supported field visit for the journalist.
	Invited and participated on the launching of bamboo policy brief released by LIPI Indonesia Institute of Science at LIPI Building	LIPI Headquarter, Gatot Subroto, Jakarta, 23 November 2016	Invited as participant
	Invited and as presenter in National Seminar of "Towards Modern Bamboo Construction" Organized by Center of Human Settlement	Bandung, West Java, 9 December 2016	Invited as Presenter and Delivered presentation on community bamboo industry.
	Invited by Kemitraan (Partneship) surveyed and discussed on Bamboo Industry Development in South Sulawesi	Makassar, South Sulawesi 6 - 8 February 2017	Together with EBF presented community based bamboo industry through a thousand bamboo villages' movement.
	Meeting on possibilities of TLFF supported for movement of a thousand bamboo villages in Indonesia.	TLFF Office, MH Thamrin Jakarta, 23 February 2017	Together with EBF presented community based bamboo industry through a thousand bamboo villages' movement.
	Invited on Inception Meeting of KANOPPI Project Phase 2	Yogyakarta, 8-10 May 2017	Participated by researchers from FOERDIA, ICRAF, CIFOR and other NGO and related stakeholders
	Meeting on Discussion of Proposal INBAR Regional Office in Indonesia	Ministry of Foreign Affairs, Jakarta, 9 June 2017	Attended by disposition from Director.

### 4.2.3 International events attended and participated by project

During project implementation, project coordinator attended several conference, seminar, workshop and

meetings related on bamboo at international level and presented projects activities and campaigning the community bamboo industry in Indonesia as listed in table 10.

**Table 10.** International events attended and participated by project

NO	EVENTS	LOCATION, TIME	PROJECT'S ROLES
	Ministerial Seminar on Forestry Industry Among ITTO Members Countries year of 2014 Organized by China Bamboo Research Center (CBRC) and China Academy of Forestry (CAF)	Zhejiang Province, People Republic of China November 1 <sup>st</sup> - 7 <sup>th</sup> 2014	Participant
	ASEAN-KOREA, ASEAN Forest Cooperation Organization (AFoCo) Coordination Meeting Organized by AFoCo and FORDA	Denpasar, 21-24 April 2015	Hosted the Field Visit of Delegations at 24 April 2015. Project facilitated the bamboo planting ceremony in Bamboo Forest of Penglipuran Traditional Villages
	The 10 <sup>th</sup> World Bamboo Congress (WBC), "Bamboo for a Greener Future" Organized by World Bamboo Organization	Damyang, Korea on September 17 <sup>th</sup> - 22 <sup>nd</sup> 2015	Participant and Delivered Oral Presentation
	The World Bamboo Fair (WBF) Organized by Government of Damyang City, South Korea	Damyang, Korea on September 23 <sup>rd</sup> - 30 <sup>th</sup> 2015	In this event, the projects PD 600/11 shared exhibition booth with the Indonesian Bamboo Community.
	The 51 <sup>st</sup> International Tropical Timber Council (ITTC) Organized by ITTO Secretariat	Kuala Lumpur, Malaysia on November 15 <sup>th</sup> - 22 <sup>nd</sup> 2015	As GOI Delegation. Part of member of Committee on Reforestation and Forest Management.
	UNFCCC COP 21 (United Nation Framework Conferen Convention on Climate Change, Conference of Parties)	Paris, France on December 3 - 11, 2015	Participated as member of DELRI on the UNFCCC 2015, COP 21. Promoted bamboo as an ecological and economical solution for climate change issue and established networking to support project activities and campaign.
	Global Landscape Forum, Organized by CIFOR	Palais des Congres in Paris, December 5 <sup>th</sup> - 6 <sup>th</sup> 2015	As participants and participated on ITTO Side Event
	ITTO Side Event at Global Landscape Forum Organized by ITTO Secretariat	Palais des Congres in Paris, December 6 <sup>th</sup> 2015	Participated at side event and discussed with ITTO's Vice Director Dr. Goto and Projects Manager Dr. Han Owk Ma

NO	EVENTS	LOCATION, TIME	PROJECT'S ROLES
	China Pavilion, COP 21 Session: "Bamboo for Climate Change Action" Organized by State Forestry Administration, INBAR and ICBR.	China Pavilion, Paris Le Bourget on December 7 <sup>th</sup> 2015	Invited as Participant
	Meeting with the CEO and the President of World Bamboo Organization. Mrs. Susanne Lucas (CEO of WBO) and Mr. Michele Abadie (President of WBO)	Palais de Royale, Paris December 8, 2015	Shared presentation of Thousand Bamboo Villages in Indonesia and asked support from World Bamboo Organization.
	INBAR side event program. Theme: The Global Assessment of Bamboo and Rattan (GABAR) Program: A New Green Growth Initiative. Organized by INBAR and Jamaica-INBAR Council Chair	Observer Room 4, Hall 4, Paris Le Bourget, December 9, 2015	Invited as Participant
	ITTO Booth at UNFCCC COP 21 Organized by ITTO Secretariat	Green Zone of Paris Le Bourget on 4- 10, 2015	Displayed Project Materials
	UNFCCC Indonesia Pavilion, COP 21 Organized by Ministry of Environment and Forestry	Indonesia Pavilion, Paris Le Bourget, December 10 <sup>th</sup> , 2015	Presented and campaigned through a session: A Bamboo Climate Change Resilience Strategy for Indonesia: Through Supporting 1000 Bamboo Villages.
	Belgium Economic Seminar, Organized by Belgium Embassy in Indonesia.	Bogor, West Java, March 16, 2016	Invited as Participant. One of Belgium Company in Indonesia "Bamboo Nusa Verde" (Bamboo Tissue Culture) signed MOU to support bamboo development in Indonesia.
	IUFRO International and Multi-disciplinary Scientific Conference Organized by IPB and University of Goettingen	IPB International Conference Center, 4 - 7 October 2016	Participated and 6 abstracts from project study results accepted. One oral presentation and five poster presentation.
	The 52th International Tropical Timber Council (ITTC) Meeting Organized by ITTO Secretariat	Yokohama, Japan 4 - 11 November 2016	Participated as DELRI for 52th International Tropical Timber Council (ITTC) Meeting
	UNFCCC, COP 22, Marrakech, Morocco	Marrakech, Morocco November 13 <sup>rd</sup> - 19 <sup>th</sup> 2016	Participated as member of DELRI Delegation of Republic of Indonesia on the UNFCCC 2016, COP 22
	UNFCCC Indonesia Pavilion Session of Climate Resilience for Rural Communities In Indonesia Through Community Based Bamboo Industry.	Pavilion In Indonesia, Bab Aghli, Marrakech, Morocco, 15 November 2016	This session held on collaboration with EBF. Invited INBAR, EBF Ghana and Clean Power Indonesia.
	Side event Biomass Energy to Meet NDSs and SDGs in Developing Countries for "Sustainable Bioenergy" Organized by ICRAF the World Agroforestry Center and INBAR	Marrakech, Morocco Tuesday, 15 November 2016	Participated as participant Witnessed MOU signed between DG ICRAF, Dr. Tony Simons and DG INBAR, Dr. Hans Friederich
	Courtesy Meeting INBAR with Minister of Environment and Forestry, Pavilion Indonesia, COP 22.	Marrakech, Morocco, 16 November 2016	Project joined the courtesy meeting with Madame Minister of Environment and Forestry of Indonesia
	Participated on 2016 Global Landscape Forum: Climate Action for Sustainable Development,	Marrakech, Morocco, 16 November 2016	Participated as participant
	Participated on INBAR's side event, "Bamboo for Climate Change Action a Ministerial Statement for South to South and Trilateral Collaboration to Implement.	Marrakech, Moro, 16 November 2016	Participated as participant
	International Conference on Sustainable Mangrove Ecosystems. Organized by ITTO, MoEF of Indonesia and the International Society for Mangrove Ecosystems (ISME)	Sanur, Bali Province 17 - 20 April 2017	Participated as participant and join exhibition during event in collaboration with EBF and PT. Indobamboo
	IUFRO INAFOR International Join Conference	Alena Hotel, Yogyakarta. 23-26 July 2017	Participated as organizer committee.
	UNFCCC, COP 23, Bonn, German.	Bonn, German, November 6 <sup>th</sup> - 18 <sup>th</sup> 2017	Participated as member of DELRI Delegation of Republic of Indonesia on the COP 23, UNFCCC 2017,
	UNFCCC Indonesia Pavilion Session "Attracting Industrial Buyers to Bamboo Resources in Indonesia"	Indonesia Pavilion, Bonn Zone, Bonn, German, Tuesday, 7 November 2017, 15.30 - 17.00.	This session held and presented by ITTO Bamboo Project in collaboration with EBF and MOSO Bamboo Products, Netherland.
	UNFCCC Fiji Pavilion, INBAR side event program: Bamboo for Climate Change Action in Small Island Developing States (SIDS)	Fiji Pavilion, Bonn, Zone, Bonn, German, Saturday, 11 November 2017	ITTO Bamboo Project and EBF presented on Community Bamboo Industry through 1000 Bamboo Villages Movement in Indonesia. Organizer: INBAR and Government of Fiji
	The 52th International Tropical Timber Council (ITTC) Meeting, Miraflores, Lima, Peru. Organized by ITTO Secretariat collaboration with Peru Government.	27 Nov - 2 Dec 2017 Jose Antonio Deluxe Hotel, Calle Bellavista 133, Miraflores District, Lima, Peru.	Participated as member of Delegation of Indonesia (DELRI) for 53th International Tropical Timber Council (ITTC) Meeting
	Report's Presentation of ITTO Biennial Work Programme 2013-2014 Activity No. 2 (PP-A/49-287) conducted by Indonesia's Natural Resources Development Center-NRDC	29 November 2017 Jose Antonio Deluxe Hotel, Miraflores District, Lima, Peru.	Presented the report with title of "Demonstration and Adoption of Credit Schemes for Small Medium Forest Enterprises (SMFEs) in Indonesia", on behalf of Indonesia's Natural Resources Development Center
	Side event at the 53th ITTC, in the session "Livelihoods and trade of timber and non-timber forest products for local community Organized by Civil Society Advisory Group (CSAG).	1 December 2017 Jose Antonio Deluxe Hotel, Miraflores District, Lima, Peru.	Delivered the presentation of "Community Bamboo Industry in Indonesia" as a result of ITTO PD 600/11 Rev.1

#### 4.2.4 Training and workshops held and supported by project

Several trainings and workshops related on bamboo development and management which were covered the subjects; bamboo propagation, cultivation, clump management, sustainable harvesting, bamboo processing, bamboo handicraft, design improvement and business plan had been conducted held by project and also organized in collaboration with other stakeholders. The conducted trainings and workshops as listed in following table 11.

#### 4.2.5 Publication, papers, books and other materials published by project

Several publications were produced from the activities and studies conducted by the project, national consultants and partners, include technical reports, books, brochures, poster, flyers and other materials in English and Bahasa Indonesia, as listed in following table 12.

**Table 11.** Trainings and workshops held and supported by project.

NO	TITLE OF TRAINING	LOCATION	TIME	PARTICIPANTS
1.	Training of Producing Quality Bamboo Planting Materials	Landih Village, Bangli District, Bali Province.	9 <sup>th</sup> September 2014	20 farmers from local village
2.	Training of Bamboo Clump Management: Community Bamboo Rangers	Bangli District, Bali Province.	November, 3 <sup>rd</sup> – 5 <sup>th</sup> 2015	39 persons
3.	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	50 persons Local community from Kuru Sare Village which are living in the area of Community Forest Plantation
4.	Workshop Trip on “Processing Techniques on Bamboo Industry: Bamboo Incense Stick”	Malang District, East Java Province.	28 – 30 April 2016	20 persons
5.	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	34 persons
6.	Training of Capacity Building on Bamboo Business Model Development for Bamboo Farmers	Kintamani Sub Regency, Bangli District, Bali Province.	27 May 2016	35 persons
7.	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	50 person Local community from Kuru Sare Village which are living in the area of Community Forest Plantation
8.	Participatory Action Workshop on Community Sustainable Bamboo Forestry in Were Villages	Were Villages, Golewa Sub-District, Ngada District.	3 – 5 Februari 2017	30 person from Were Village, Golewa Sub-District, Ngada District.
9.	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	40 person

**Table 12.** Publications, papers, books, posters, manual guides and website published by project.

No	TITTLE	YEAR	AUTHOR/EDITOR	TYPE
	Model Capacity Building for Efficient and Sustainable Utilization of Bamboo Resources in Indonesia (English)	2013	PMU PD 600/11 Rev.1 (I)	Brochure General Information
	Model Peningkatan Kapasitas Pemanfaatan Bambu yang Efisien dan Berkelanjutan di Indonesia (Bahasa Indonesia)	2013	PMU PD 600/11 Rev.1 (I)	Brochure General Information
	Koleksi Jenis Bambu Haurbentes (Bahasa Indonesia)	2013	Desy Ekawati, Sutiyono dan Heri Kusriyanto,	Guide Book
	Studi Permintaan Pasar untuk Produk-produk Bambu dan Penilaian tentang Teknologi-teknologi Memproses Bambu, (Bahasa Indonesia)	2014	Zulfikar Adil, Dr. Hiras Sidabutar, Chandra Susilo dan Annisa Justisia,	Technical Report
	Identifikasi dan Zonasi Kawasan untuk Pengembangan Industri Bambu di Bali, (Bahasa Indonesia)	2014	Priyanto dan Lutfy Abdulah	Technical Report
	Identifikasi Teknologi Pengolahan Bambu yang Tepat untuk Usaha Kecil Menengah, (Bahasa Indonesia)	2014	Krisdianto Sugiyanto, Ph.D	Technical Report

No	TITTLE	YEAR	AUTHOR/EDITOR	TYPE
	Identification of Appropriate Bamboo Processing Technology for Small Medium Industry (English)	2014	Krisdianto Sugiyanto, Ph.D	Technical Report
	<i>Studi Kelayakan Pengembangan Industri Bambu di Kabupaten Bangli, Bali, (Bahasa Indonesia)</i>	2015	<i>Irma Yeni, Dhany Yuniati, Husnul Khotimah dan Retno Agustarini</i>	Technical Report
	<i>Penilaian terhadap Kecukupan Infrastruktur Ekonomi di Bali, (Bahasa Indonesia)</i>	2015	<i>Lutfy Abdulah, Mira Yulianti dan Husnul Khotimah,</i>	Technical Report
	<i>Prosiding Lokakarya Nasional "Tantangan dan Peluang Industri Berbasis Bambu Indonesia" Bamboo Industry for Prosperity, D.I Yogyakarta, 20-21 Januari 2015, (Bahasa Indonesia)</i>	2015	PMU PD 600/11 Rev.1 (I) & Tim Pusprohut	Proceeding
	<i>Laporan Pelatihan Sekolah Lapangan Pengelolaan Hutan Bambu Rakyat Lestari "Community Bamboo Rangers" for Resilient Bamboo Forest Management, (Bahasa Indonesia)</i>	2015	PMU PD 600/11 Rev.1 (I)	Technical Report
	<i>Standar Operasional Prosedur Input Data, Data Digital Bambu Indonesia. Website: www.forda-mof.org/itto. Desember 2016. (Bahasa Indonesia)</i>	2015	PMU PD 600/11 Rev.1 (I)	Guide line
	"Model Capacity Building for Efficient and Utilization of Bamboo Resources in Bangli District, Bali, Indonesia" (English) Presented as oral presentation at 10th World Bamboo Congress to be held in September 17-22, 2015 at Damyang, Korea	2015	Desy Ekawati and Hiras Sidabutar	Paper accepted <a href="http://www.worldbamboo.net/proceedings/wbcx">http://www.worldbamboo.net/proceedings/wbcx</a>
	"Bamboo and Balinese in Bangli: The local wisdoms of Balinese in managing bamboo for sustainable bamboo forest and rural economic development". (English)	2015	Irma Yeni, Husnul Khotimah and Dhany Yuniati	Paper accepted. Accepted at 10th World Bamboo Congress to be held in September 17-22, 2015 at Damyang, Korea <a href="http://www.worldbamboo.net/proceedings/wbcx">http://www.worldbamboo.net/proceedings/wbcx</a>
	A spatial modelling approach with logistic binary regression for bamboo forest distribution mapping. (English)	2015	Lutfy Abdulah	
	<i>Kelayakan Usaha Pengolahan Rebung Bambu Tabah (Gigantochloa Nigrocl- iata Buse-Kurz) (Bahasa Indonesia)</i>	2016	Irma Yeni, Husnul Khotimah and Dhany Yuniati and Tim PMU PD 600	Flyer
	<i>Kelayakan Usaha kerajinan anyaman Bambu di Bali (Bahasa Indonesia)</i>	2016	Irma Yeni, Husnul Khotimah and Dhany Yuniati and Tim PMU PD 600	Flyer
	<i>Analisis Kelayakan Usaha Pembuatan Bambu Lamina (Bahasa Indonesia)</i>	2016	Irma Yeni, Husnul Khotimah and Dhany Yuniati and Tim PMU PD 600	Flyer
	<i>Kelayakan Hutan Tanaman Bambu Pada Hutan Masyarakat di Bali (Bahasa Indonesia)</i>	2016	Irma Yeni, Husnul Khotimah and Dhany Yuniati and Tim PMU PD 600	Flyer
	A Thousand Bamboo Villages; as an Enabler for a Community Based Bamboo Industry in Indonesia (English)	2016	Arief Rabik and Desy Ekawati	Oral Presentation. Presented at IUFRO International and Multi-disciplinary Scientific Conference, October 4 - 7, 2016 at Bogor, West Java, Indonesia
	Bamboo industrial plantation forest: Challenges and Opportunities for Indonesia. (English)	2016	Dhany Yuniati and Husnul Khotimah	
	Bamboo Rangers: A Model of Participatory on Community Bamboo Forestry Management (English)	2016	Desy Ekawati and Arief Rabik	
	Analysis of Value Adding on Bamboo Products in Kintamani Sub-District, Bali: A Study Case in Hidup Rukun Farmer Group. (English)	2016	Desy Ekawati and Krisdianto Sugiyanto	Poster Presentation. Presented at IUFRO International and Multi-disciplinary Scientific Conference, October 4 - 7, 2016 at Bogor, West Java, Indonesia
	Technical and Financial Analysis of Home Based Bamboo Incense Stick Industry at Bangli Regency. (English)	2016	Krisdianto Sugiyanto and Desy Ekawati	
	Socio-economic factors of woven bamboo enterprises and bamboo farmers in utilizing bamboo as determinant of sustainable bamboo forest management in Bangli district, Bali. (English)	2016	Husnul Khotimah and Dhany Yuniati	

No	TITTLE	YEAR	AUTHOR/EDITOR	TYPE
	<i>Program 1000 Desa Bambu. (Bahasa Indonesia)</i>	2016	ITTO Bamboo Project and EBF	Leaflet
	"One Thousand Bamboo Villages Community Based Integrated Bamboo Industry (English)	2016	ITTO Bamboo Project and EBF	Booklet
	<i>Membangun Masyarakat dengan Bambu untuk Restorasi Lansekap dan Peningkatan Ekonomi (Bahasa Indonesia)</i>	2017	ITTO Bamboo Project and EBF	Flyer
	Building A Community Bamboo Restoration for Livelihood, Economy and Landscapes in Indonesia (English)	2017	ITTO Bamboo Project and EBF	Flyer
	<i>Poster Ilustrasi 12 Tahapan "Mewujudkan Hutan Bambu Lestari [HBL]" (Bahasa Indonesia)</i>	2017	ITTO Bamboo Project and EBF	Poster
	<i>Petunjuk Teknis Pembuatan Bibit Bambu. (Bahasa Indonesia)</i>	2017	Dr. Anto Rimbawanto	Manual Book
	<i>Anatomi Bambu Indonesia. (Bahasa Indonesia)</i>	2017	Dr. Ratih Damayanti, Dr. Krisdianto, et all.	Manual Book
	<i>Teknik Silvikutur Bambu Indonesia Bernilai Ekonomi Tinggi (Bahasa Indonesia)</i>	2017	Sutiyono	Book
	Panduan Sekolah Lapang Bambu Bamboo Field School Curriculum (Bahasa Indonesia)	2017	ITTO Bamboo Project and EBF	Module
	Strategi Nasional Pengelolaan Hutan Bambu Berkelanjutan Berbasis Industri Bambu Rakyat (Bahasa Indonesia)	2017	P3SEKPI dan EBF	Book
	<i>Data Digital Bambu Indonesia www.forda-mof.org/itto. (Bahasa Indonesia)</i>	2014	ITTO Bamboo Project	Website
	<i>Seribu Desa Bambu http://apps.alus.co/app.seribudesabambu/ (Bahasa Indonesia)</i>	2017	ITTO Bamboo Project and EBF	Website
	Indonesia, the 1000 bamboo villages project video (English)	2017	ITTO Bamboo Project and EBF	Film/Video
	Infographic.: ITTO PD 600/11 Rev.1 (Bahasa Indonesia)	2017	ITTO Bamboo Project and EBF	Film/Video
	Infographic.: 12 Langkah Hutan Bambu Lestari, (Bahasa Indonesia)	2017	ITTO Bamboo Project and EBF	Film/Video

## 4.2.6 News and article of project activities coverage

Some of activities and events participated and organized by project were covered by media and the news, articles and links as listed in following table 13.

**Table 13.** News and articles related to projects activities.

NO.	ACTIVITY/TITLE	WEB LINK
	<b>Pengembangan Industri Berbasis Bambu</b> Homepage: Dinas Kehutanan Provinsi Jawa Barat	<a href="http://dishut.jabarprov.go.id/?mod=detilBerita&amp;idMenuKiri=&amp;idBerita=4398">http://dishut.jabarprov.go.id/?mod=detilBerita&amp;idMenuKiri=&amp;idBerita=4398</a>
	<b>Revitalization project aims to boost bamboo's image</b> Homepage: The Jakarta Post, Bangli, Bali   Tue, November 18, 2014   08:46 am	<a href="http://www.thejakartapost.com/news/2014/11/18/revitalization-project-aims-boost-bamboo-s-image.html">http://www.thejakartapost.com/news/2014/11/18/revitalization-project-aims-boost-bamboo-s-image.html</a>
	<b>FOERDIA - ITTO PD 600/11 Bamboo Project participated in the 10th World Bamboo Congress</b> <b>September 17 – 22 September 2015, Damyang, Korea</b> Homepage: World Bamboo Congress	<a href="http://www.worldbamboocongress.org/program">http://www.worldbamboocongress.org/program</a> <a href="http://www.worldbamboo.net/10th-world-bamboo-congress">http://www.worldbamboo.net/10th-world-bamboo-congress</a>
	<b>Festival PARARA, 2015.</b> <b>Festival Panen Raya Nusantara, 2015.</b>	<a href="http://www.jitunews.com/read/15189/festival-panen-rama-2015-akan-digelar-di-lapangan-banteng#ixzz3cixXP5zy">http://www.jitunews.com/read/15189/festival-panen-rama-2015-akan-digelar-di-lapangan-banteng#ixzz3cixXP5zy</a>
	<b>“Bamboo Rangers” - Spearhead Sustainable Management</b> Homepage: The Jakarta Post	<a href="http://www.thejakartapost.com/news/2016/03/29/bamboo-rangers-spearhead-sustainable-management.html">http://www.thejakartapost.com/news/2016/03/29/bamboo-rangers-spearhead-sustainable-management.html</a>
	<b>PeSoNa 2016</b> <b>Festival Rakyat Perhutanan Sosial Nusantara (PeSoNa) 2016</b> Homepage: Kementerian Lingkungan Hidup dan Kehutanan	<a href="https://drive.google.com/file/d/0B0BlwboOaq30RzZveFU4OS1FWXM/view">https://drive.google.com/file/d/0B0BlwboOaq30RzZveFU4OS1FWXM/view</a>
	<b>Deklarasi Program 1000 Desa Bambu (1000 Bamboo Villages)</b> Homepage: FOERDIA, Ministry of Environment and Forestry	<a href="http://www.forda-mof.org/berita/post/2672">http://www.forda-mof.org/berita/post/2672</a>
	<b>Gerakan 1.000 Desa Bambu untuk Lingkungan dan Kesejahteraan</b> Homepage: FOERDIA, Ministry of Environment and Forestry	<a href="http://www.forda-mof.org/berita/post/3850">http://www.forda-mof.org/berita/post/3850</a>
	<b>Progam 1000 Desa Bambu, BLI Berperan Mengembangkan Bambu dari Hulu-Hilir</b> Homepage: FOERDIA, Ministry of Environment and Forestry, Agustus 2017	<a href="http://www.forda-mof.org/berita/post/2614">http://www.forda-mof.org/berita/post/2614</a>
	<b>UNFCCC COP 21 Paris, France</b> Homepage: Indonesia UNFCCC – Indonesia Pavilion	<a href="http://indonesiaunfccc.com/cop-21-cmp-11-paris-france-2015/">http://indonesiaunfccc.com/cop-21-cmp-11-paris-france-2015/</a>
	<b>UNFCCC COP 21 Paris, France</b> <b>ITTO Bamboo Project at the Indonesian Pavilion in UNFCCC COP 21 – Smart cities and green industry session</b> Homepage: ITTO.int	<a href="http://www.itto.int/workshop_detail/id=4616">http://www.itto.int/workshop_detail/id=4616</a>
	<b>1000 Bamboo Villages Can Indonesia's Model Inspire Other Bamboo Resource Countries?</b> Homepage: INBAR International Network on Bamboo and Rattan	<a href="http://www.inbar.int/1000-bamboo-villages-can-indonesias-model-inspire-other-bamboo-resource-countries/">http://www.inbar.int/1000-bamboo-villages-can-indonesias-model-inspire-other-bamboo-resource-countries/</a>
	<b>Enam Desa di Ngada Kembangkan Hutan Bambu Lestari</b> Homepage: Kupang Post	<a href="http://kupang.tribunnews.com/2016/04/08/enam-des-a-di-ngada-kembangkan-hutan-bambu-lestari">http://kupang.tribunnews.com/2016/04/08/enam-des-a-di-ngada-kembangkan-hutan-bambu-lestari</a>
	<b>Pemerintah Pusat Siap Bangun Desa Mandiri Berbasis Bambu</b> Homepage: Zona Linenews.com	<a href="http://www.zonalinenews.com/2016/04/pemerintah-pusat-siap-bangun-des-a-mandiri-berbasis-bambu/">http://www.zonalinenews.com/2016/04/pemerintah-pusat-siap-bangun-des-a-mandiri-berbasis-bambu/</a>
	<b>UNFCCC COP 22 Marrakech, Marrocco.</b> Homepage: Indonesia UNFCCC - Indonesia Pavilion	<a href="http://indonesiaunfccc.com/climate-resilience-for-rural-communities-in-indonesia-through-community-based-bamboo-industry-and-bamboo-biomassa-gassification-speakers/">http://indonesiaunfccc.com/climate-resilience-for-rural-communities-in-indonesia-through-community-based-bamboo-industry-and-bamboo-biomassa-gassification-speakers/</a>
	<b>Dengan Hasil Penelitian, BP2LHK Makassar Dukung Program 10 Juta Rumpun Bambu di Sulawesi Selatan</b> Homepage: FOERDIA, Ministry of Environment and Forestry	<a href="http://www.forda-mof.org/index.php/berita/post/3612">http://www.forda-mof.org/index.php/berita/post/3612</a>
	<b>Workshop Inisiasi Pengembangan dan Pengelolaan HHBK Bambu Lestari</b> Homepage: Dinas Lingkungan Hidup Kehutanan, Provinsi NTB	<a href="https://dislhk.ntbprov.go.id/2017/08/25/workshop-inisiasi-pengembangan-dan-pengelolaan-hhbk-bambu-lestari/">https://dislhk.ntbprov.go.id/2017/08/25/workshop-inisiasi-pengembangan-dan-pengelolaan-hhbk-bambu-lestari/</a>
	<b>TV Program of Halo Indonesia Live at DAAI TV, 10 February 2016 “Perbincangan mengenai Program 1000 Desa Bambu”</b> Homepage: DAAI TV Channel	<a href="https://www.youtube.com/results?search_query=daai+tv+halo+indonesia+program+1000+desa+bambu">https://www.youtube.com/results?search_query=daai+tv+halo+indonesia+program+1000+desa+bambu</a>
	<b>NATIONAL CAMPAIGN ON COMMUNITY BAMBOO INDUSTRY</b> Homepage: SFM ITTO, Youtube Channel	<a href="https://www.youtube.com/watch?v=pqF8FkiHLoQ">https://www.youtube.com/watch?v=pqF8FkiHLoQ</a>
	<b>Graphic Info on ITTO PD 600/activity Bamboo</b> Homepage: ITTO Bamboo Project Youtube Channel	<a href="https://www.youtube.com/watch?v=gKiytsrfmCo">https://www.youtube.com/watch?v=gKiytsrfmCo</a>
	<b>Industri Bambu Rakyat “Gerakan Seribu Desa Bambu di Indonesia”</b> Forest Digest Magazine, 04 Mei – Juli 2017 Homepage: Faculty of Forestry, IPB	<a href="http://www.fahutanipb.com/forest-digest-majalah-profesional-kehutanan/">http://www.fahutanipb.com/forest-digest-majalah-profesional-kehutanan/</a>



NO.	ACTIVITY/TITLE	WEB LINK
	<b>Workshop Inisiasi Pengembangan dan Pengelolaan HHBK Bambu Lestari</b> Homepage: Dinas Lingkungan Hidup dan Kehutanan, Provinsi NTB, 25 Agustus 2017	<a href="https://dislkh.ntbprov.go.id/2017/08/25/workshop-inisiasi-pengembangan-dan-pengelolaan-hhbkb-bambu-lestari/">https://dislkh.ntbprov.go.id/2017/08/25/workshop-inisiasi-pengembangan-dan-pengelolaan-hhbkb-bambu-lestari/</a>
	<b>Attracting Industrial Buyers to Bamboo Resources in Indonesia</b> A session by Environmental Bamboo Foundation (EBF), ITTO Bamboo Project, Ministry of Environment and Forestry	<a href="http://indonesiaunfccc.com/attracting-industrial-buyers-to-bamboo-resources-in-indonesia/">http://indonesiaunfccc.com/attracting-industrial-buyers-to-bamboo-resources-in-indonesia/</a>
	<b>Bamboo for Climate Change Action in Small Island Developing States (SIDS)</b> INBAR Side Event at Pavilion Fiji, Bonn Zone, COP 23 Sat 11th November @ 13:20 - 14:20	<a href="https://cop23.com.fj/events/bamboo-climate-change-action-small-island-developing-states-sids/">https://cop23.com.fj/events/bamboo-climate-change-action-small-island-developing-states-sids/</a> <a href="https://cop23.com.fj/wp-content/uploads/2017/11/UNFCCC-COP-23-Fiji-Pavilion-SMALL-Side-Event-Agenda.pdf">https://cop23.com.fj/wp-content/uploads/2017/11/UNFCCC-COP-23-Fiji-Pavilion-SMALL-Side-Event-Agenda.pdf</a> <a href="https://cop23.unfccc.int/sites/default/files/resource/INBAR%20Fiji%20event_press%20%28FINAL%29.pdf">https://cop23.unfccc.int/sites/default/files/resource/INBAR%20Fiji%20event_press%20%28FINAL%29.pdf</a>
	<b>Indonesia plants bamboo to fight climate change</b> Moses Ompusunggu, The Jakarta Post Jakarta   Fri, November 10, 2017   06:47 pm	<a href="http://www.thejakartapost.com/news/2017/11/10/indonesia-plants-bamboo-to-fight-climate-change.html">http://www.thejakartapost.com/news/2017/11/10/indonesia-plants-bamboo-to-fight-climate-change.html</a>
	<b>Indonesia plants bamboo to fight climate change</b> ICLEI-Local Governments for Sustainability Posted on January, 11, 2018	<a href="http://icleiseas.org/index.php/2018/01/11/indonesia-plants-bamboo-to-fight-climate-change/">http://icleiseas.org/index.php/2018/01/11/indonesia-plants-bamboo-to-fight-climate-change/</a>
	<b>Pemanfaatan Bambu Bisa Jadi Solusi Perubahan Iklim</b> SIARAN PERS, Nomor : SP. 339 /HUMAS/PP/ HMS.3/ 11/2017	<a href="http://ppid.menlhk.go.id/siaran_pers/browse/864">http://ppid.menlhk.go.id/siaran_pers/browse/864</a>
	<b>Pemanfaatan Bambu Bisa Jadi Solusi Perubahan Iklim</b> Berita Satu, Rabu, 8 November 2017   21:08 WIB	<a href="http://www.beritasatu.com/kesra/462611-pemanfaatan-bambu-bisa-jadi-solusi-perubahan-iklim.html">http://www.beritasatu.com/kesra/462611-pemanfaatan-bambu-bisa-jadi-solusi-perubahan-iklim.html</a>
	<b>COP23: BAMBU DAPAT TEKAN LAJU PERUBAHAN IKLIM</b> Media Lingkungan, Published in Informasi & Teknologi Kamis, 09 November 2017 14:30	<a href="http://medialingkungan.com/index.php/news/informasi-teknologi/cop23-bambu-dapat-tekan-laju-perubahan-iklim">http://medialingkungan.com/index.php/news/informasi-teknologi/cop23-bambu-dapat-tekan-laju-perubahan-iklim</a>
	<b>Committee on Economics, Statistics and Markets and the Committee on Forest Industry (CEM-CFI)</b>	<a href="http://enb.iisd.org/forestry/itto/ittc53/29nov.html">http://enb.iisd.org/forestry/itto/ittc53/29nov.html</a>

### 4.3 Involvement of project beneficiaries and related stakeholders

In the first year of project implementation and based upon project document, the collaborating agency for this project for implementing activities especially at Bangli District level was Bangli District Forestry Agency. However, according to the Law No.23 year 2014 regarding Local Government and its implementation, certain authorities in the district government were taken over by the provincial government, one of which was the management of the forestry sector. The process of implementation of the Law No.23 was started at year 2015, therefore, the project decided to take a strategic step which included and established coordination with the provincial government to support project activities. This approach in line with the policy of Ministry of Environment and Forestry, where the forest management and utilization should be referred to as Forest Management Units (or KPH, *Kesatuan Pemangkuan Hutan*). The project site in Kintamani area of Bangli Regency is located near the KPH unit for East Bali.

Another strategic step decided by the project was to establish a collaboration and partnership with an NGO located in Bali as the main project site is in Bali. The collaboration and partnership with Environmental Bamboo Foundation Bali begun in August 2015 and has continued until now. The Environmental Bamboo Foundation (EBF) is an Indonesian non-profit organization founded by environmentalist designer Ms. Linda Garland in 1993. The EBF has a focus upon international development,

through consulting and education, preservation research, agro forestry projects, watershed reclamation, plantation development and policy development. Although collaboration and partnership between the project and EBF/YBL commenced in mid-2015, the official Memorandum of Understanding (MOU) between FOERDIA and EBF, and Cooperation Agreement (CA) between CSEPCC and EBF was signed on January 2017. This MOU and CA forms the basis of the collaborative work under project activities.

Additional stakeholders related to bamboo industry development were sought after for collaboration and partnership during implementation of program activities. Government institutions mainly support three main sectors, upstream, middle sector and downstream sectors, where in charge of bamboo forest management, rural area development and bamboo processing industry from community level until primary industry. The corresponding government institutions are related to the project program:

- 1. Directorate General of Small and Medium Industries, Ministry of Industry.**

Ministry of Industry through the Directorate General of Small and Medium Industries have a close relationship and coordination with the Executing Agency in the implementation of the bamboo industry development project. Since year one, we have built collaboration and cooperation in certain activities of Non Timber Forest Products (NTFPs), especially bamboo industry development.

- 2. Directorate General of Social Forestry and**

### **Environmental Partnership, Ministry of Environment and Forestry.**

Formerly Directorate General of Watershed Management and Social Forestry (DGWMSF), Ministry of Environment Forestry, which has a regional branch located in Denpasar Bali. This branch office covers the watershed area of Unda River and Anyar River in Bali, which includes Bangli District. In 2014, DGWMSF had a program on bamboo planting which covered 48 districts in Java with each district for 10 hectares planting area.

### **3. Directorate General of Production Forest Sustainable Management, Ministry of Environment and Forestry.**

This Department was formerly known as the Directorate General of Forestry Enterprises, Ministry of Forestry. The project established collaborative activities with Directorate of Non Timber Forest Products and Environmental Services such as action workshops on bamboo management and utilization. Other collaboration and coordination developed also included bamboo development as a business model of KPMP (Production Forest Management Unit).

### **4. Directorate General of Climate Change, Ministry of Environment and Forestry.**

Project established coordination with this new institution beginning in November 2015, where the project and Environmental Bamboo Foundation as partners initiated and participated in UNFCCC COP 21, Paris and COP 22, Morocco. We presented a paper on how bamboo offers a solution for climate adaptation and mitigation, in collaboration with Environmental Bamboo Foundation, INBAR and ITTO Secretariat.

### **5. Directorate Rural Area Development, Ministry of Rural, Remote Area and Transmigration.**

Ministry of Rural, Remote Area and Transmigration supported the project campaign of "A Thousand Bamboo Villages" through a community-based bamboo industry. This ministry has several programs on Rural Development and Rural Community capacity building, that could be matched and support project campaigns.

## **4.3.1 INVOLVED ORGANIZATION, STAKEHOLDERS AND COMMUNITIES**

### **4.3.1.1 Universities**

Three universities have been involved in implementing certain activities of this bamboo project. The universities involved are University of Udayana, Bogor Agricultural University and Bandung Institute of Technology. University of Udayana located in Bali has been involved in studies on natural resource development; its department of dry-land resource development is particularly known as a strong institution in terms of expertise. Whilst the Faculty of Forestry, Bogor Agricultural University was involved in

surveying the identification of zoning bamboo industry development. Bandung Institute of Technology through the Center of Cultural and Environmental Products will conduct the bamboo national campaign which will be linked to other activities in the project.

### **4.3.1.2 Local NGOs and bamboo activists**

Bamboo development movement in Indonesia cannot be separated from the role of bamboo activist and NGO. Their agendas are based on the local climate and culture. The project established a collaboration with NGOs and activist which in turn was effective for achieving projects objectives. The local NGO and community bamboo groups which the project collaborated with are as follows: *Komunitas Bambu Nusantara* (Archipelago Bamboo Community), *Akademi Bambu Nusantara* (Archipelago Bamboo Academy), Bali Re Green Community, East Bali Poverty Project etc.

### **4.3.1.3 R&D Institution**

The Center for Forest Productivity Research and Development as the Executing Agency also has the task on the research and development of Non Timber Forest Products (NTFPs), therefore researchers from this institution also considered as the executive of the project activity. The Center for Biotechnology and Tree Breeding in Yogyakarta also considered as an executive on bamboo planting materials and design of demonstration plot of bamboo planting with the local farmer group.

## **4.3.2 STAKEHOLDERS AND COMMUNITIES**

### **4.3.2.1 Community bamboo nursery and farmer groups**

For the activity of demonstration planting on bamboo plantation we have collaboration with the local farmer group in Kintamani Sub District. The farmer group has a great vision which is to develop a bamboo forest with the concept of agro-tourism and based on their local wisdom knowledge, therefore hence as the resources of bamboo raw materials the area also will bring other benefit to the farmers. Utilizing this local knowledge will be most beneficial for achieving the desired project objectives. Since the beginning of the project we worked together with bamboo nursery and farmer groups as follows: *Hidup Rukun* Farmer Group, *Munduk Barong* Farmer Group, *Eka Dwi Manunggal* Farmer Group, *Jarak Bang* Farmer Group, *Penglipuran* Farmer Group and Panca Kerti Cooperation.

### **4.3.2.2 Bamboo handicraftsman**

Involving this group of stakeholders is definitely important for the effective implementation of operations. Bangli district is famous for its bamboo handmade woven traditional baskets. From the activity conducted in the first year, we indicated the needs and request to increase their capacity building for handicrafts. Majority of

bamboo handicraftsman are comprised of home industry arrangements.

#### 4.3.2.3 Bamboo processing machine supplier company

The project developed networking and cooperation with bamboo machine supplier to support activities on developing SME on community-based bamboo processing products. Based on results of the study and assessment made in Bangli District, a potential community based bamboo industry includes incense sticks or dupa, therefore the project provided the community group with sets of bamboo incense stick machinery. The project developed a collaboration with CV. Jalu Teknik in Malang for procurement process including capacity building on how to process until end product as well as provided after sale maintenance and materials for the incense.

#### 4.3.2.4 Bamboo processing industry company

In Indonesia bamboo processing industry is mainly at the small and medium scale industry. One product for bamboo processing is laminated bamboo or glue laminated bamboo. There are several home industry makers producing this product. In Bangli district, there is one home industry of laminated glue bamboo. Bigger industry of laminated bamboo is strand woven bamboo lamination or SWB. The SWB is produced by mid-size industry operations and currently there are only two SWB Industries in Indonesia located in Bali and in Sukabumi, Java. The project established a network with SWB Company in Bali, PT. Indobamboo as a pioneer SWB company in Indonesia and also with its half processing industry in Flores namely CV. Indobamboo Lestari.

#### 4.3.2.5 Other professional

Other professionals including senior staffs of forestry agencies at the provincial and district levels and bamboo processors as well as traders are to be involved in the implementation of selected activities to make use of their experience and local knowledge.

#### 4.3.2.6 Media

Media is an important part within the national campaign activities. The project has established networks with media and journalists to publish and socialize project activities, such as the Jakarta Post and DAAI TV. Project also keep on as well as the public relation bureau within the Ministry of Environment and Forestry.

### 4.4 Project sustainability

In the implementation of the project, activities were carried out in collaboration with particular stakeholders. This became an important factor in building the foundation for an exit strategy after project completion. Exemplifying these efforts includes the **continuity of project campaign**

on **“A Thousand Bamboo Villages” in Indonesia** and also the support for **Ngada District as center of excellence of community bamboo industry’s model**. The following ministries are responsible in following up on the exit strategy through efforts such as:

1. **Ministry of Environment and Forestry’s (MoEF)** programs, in particular FOERDIA as the executing agency, will support research and development on bamboo, continue promoting the 1000 Bamboo Villages and **monitoring on the development of 1000 Bamboo Villages program**; also will allocate funds for bamboo research and development; and monitoring on development of 1000 Bamboo Villages program. **Ministry of Industry, Ministry of Rural Area Development and Transmigration** will continue some of programs and activities continuing the establishment of community bamboo industry in Indonesia.
2. The executing agency will keep continuing and collaboration with the **Environmental Bamboo Foundation (EBF) as main partner** on implementing National Campaign on “Community Bamboo Industry” and “A Thousand Bamboo Villages in Indonesia”. Project also will continue collaboration with EBF and **Local Government of Bali Province** to monitor and continuing activities in Bangli Regency, Bali Province.
3. **Kehati Foundation** will support on developing bamboo village in Ngada district as center of excellent in collaboration with Ministry of Environment and Environmental, EBF and other supporting parties. **Partnership (Kemitraan) Indonesia** will support the movement and establish bamboo villages as community bamboo industry and national campaign on bamboo industry in collaboration with EBF and MoEF in several locations such as South Sulawesi Province. **WWF Indonesia** will support the establishment of “bamboo villages” in Lombok and Sumbawa, West Nusa Tenggara.
4. The EBF in cooperation with executing agency has initiated the establishment of **a consortium of a thousand bamboo villages**. This consortium will become **a forum for communication and coordination** of committed stakeholders on realizing bamboo villages in several regions of Indonesia.
5. In general, after project the executing agency will **keep continue and maintaining good networking** and increase the collaboration with stakeholders to strengthen on local, national and International networks in supporting the project results, outcomes and milestones.





## 5 ASSESSMENT AND ANALYSIS

### 5.1 Project rationale and identification process

Ministry of Environment and Forestry had decided and listed bamboo as one of six national priority of non-timber forest products (NTFPs) in Indonesia. Management of bamboo resources is the domain and responsibility of the Ministry of Environment and Forestry (formerly; Ministry of Forestry). Therefore, the MoEF shall define management objectives and policies on bamboo resource development and utilization. In addition, MoEF who is responsible in upstream sector should work collaboratively and have good coordination with other sectors such as Ministry of Industry (MoI) which is responsible in downstream sector, also Ministry of Villages, Transmigration and Disadvantaged Areas (MoVTDA) which is responsible in the middle sector or villages area and their communities. The local government also involved and play role on developing bamboo utilization as well as responsible for leading local community on bamboo utilization. Community itself played important role as main actor on sustainability bamboo utilization and also as main beneficiaries. Most important also the role of private sector the private sector as a market that will become the locomotives for bamboo cultivation and utilization by community.

This projects addressed all involved stakeholders in bamboo utilization in one **frame work “community bamboo industry” as a national platform strategy** to bring sustainable utilization of bamboo resources into resilience bamboo industry in Indonesia which brought a strategy and vision on bamboo sustainable development and utilization in Indonesia. The biggest challenge faced during project implementation was to synergizing activities and programs started from site’s level where local community groups conduct their activities until to gain support from the central and local governments in the development of bamboo as a promising commodity for sustainable use.

### 5.2 The problems addressed, project design and implementation strategy

This project conducted to address three main causes of the key identified in the project document, namely lack of

investment, weak institutional framework and limited skillful people for bamboo industry development. The identified key problems were drawn in problem tree which summarized the consequences and the causes as well as sub-causes, was used as the basis for constructing a solution tree, the mirror of the problem tree, which was then we used as the basis for defining the project elements. Therefore, implementation strategies focused on i) how to promoted investment in bamboo resources utilization, ii) how to enhanced the institutional framework and iii) how to increased participation of local community.

The implementation strategy **“to promote investment in bamboo resource utilization”** in Indonesia conducted by provided data, study and information on bamboo resource distribution, market demand and opportunity, technology on bamboo processing availability, financial support availability and also assessment on economic infrastructure.

The fundamental aspect that inhibits the investment of bamboo industry is sustainability guarantee of raw material availability, where in the other hand bamboo farmer have difficulties to find market for their bamboo. It is like chicken and egg which one come first. Therefore, planting bamboo is a strategic step as community investment and capital to invite investor, while investor should support and ensure community as market for their bamboo commodities.

Ensure the mechanism and value chain of bamboo products the implementation strategy **“to enhanced institutional framework”** conducted through established a stakeholder’s consultation forum, to review existing policies and established integrated frame work as platform bamboo development in Indonesia which involved all elements and key stakeholders.

The main and important implementation strategy related with community as main actor and beneficiaries. Most activities in this project conducted on how to increased participation of local communities in bamboo industry, started from capacity building improvement, technical assistance, technical supported and linked up with the bamboo market which was the industry sector as off taker.

In general, from the implementation of project; the development and specific objectives planned in this project have been successfully realized and the main outputs of the project planned has been achieved with additional supplementary outcomes value-adding project objectives.

### 5.3 Critical differences between planned and actual implementation

During the project implementation there were several variation and adjustment made by certain justification. The circumstances happened because of some intentionally adjustment while others unintentionally, as listed:

6. In general, the project was implemented sufficiently although there were unexpected delays such as an internal ITTO issue which caused the suspension of certain activities. The situation also caused the extended period of the project implementation for nine months from predetermined time period.
7. The project made several modifications and adjustments in the second year of project implementation in the field and also after suspended periods in May 2016. These adjustments were made based on the results of the studies, progress that had been occur in the fields and they were undertaken after the discussion and received approval from Project Manager in ITTO Headquarters, Yokohama.
8. In the activity 3.5. “procure and install selected technologies and operate the processing plants”, bamboo incense stick and incense processing industry were selected for community groups in Bangli District. The selection was made based on studies conducted in activities 3.4. “identify appropriate bamboo processing technologies for a small-scale processing plants. Selected bamboo processing industry managed by this community group has been assessed based on the availability of bamboo raw materials, community readiness and market needs. The community groups developed the bamboo processing as a small-medium enterprises (SMEs) running by local community in Bangli District, Bali.
9. In the second year, the project established a collaboration partnership with Environmental Bamboo Foundation (EBF) located in Bali. Also in the same time, project developed a network with PT. Indobamboo as bamboo industrial player which is the first bamboo strand woven factory and industry in Indonesia.
10. The network with industrial partner has brought the project to understand bamboo industry value chain and its supply from community bamboo forest in Ngada District, Flores, East Nusa Tenggara as material resources until the factory located in Bali where half-finished bamboo products processed into high technology bamboo products for international market.
11. Based on these considerations, Ngada District in Flores, East Nusa Tenggara was added as an additional project location and used the location for the national campaign of “community-based bamboo industry”. Currently, we use Ngada District as Center of Excellence on the movement of “A Thousand Bamboo Villages” in Indonesia.
12. The building construction of bamboo smoke preservation facility was installed in Wogo Village,

Golewa Sub-district, Ngada District, Flores. This facility was included as an **integrated site-plan community learning center** in collaboration with EBF, Kehati Foundation and CV. Indobamboo Lestari. The building and facility in order to support Ngada District as the Center of Excellence of Model of Community Based Bamboo Industry in Indonesia.

13. Support and campaigns of project activities and outcomes not only conducted at national level but also in international level. We sounded and campaigned on “building a community bamboo restoration for livelihood, economy and landscape in Indonesia”, through an integrated platform of “A Thousand Bamboo Villages” in Indonesia.
14. Project proposed budget revisions during implementation. The adjustment made several components such as, allocation for international consultants was shifted to projects personnel’s on project extended periods, while international air tickets allocated for international consultants were shifted to activity project’s campaign and coordination in some international events in The United Nations Framework Convention on Climate Change, Conference of the Parties (UNFCCC-COPs) and International Tropical Timber Council (ITTC) Meetings of ITTO.
15. There were additional activities which were not included in the project proposal. The activities were established international networks in order to strengthen and support the national initiation of bamboo development in Indonesia. The project has succeeded in establishing coordination and communication with several international organizations specifically related to the development of bamboo, such as the World Bamboo Organization (WBO), International Bamboo and Rattan Network (INBAR) and China Bamboo Research Center (CBRC).

### 5.4 Adequacy of project inputs

The project inputs in terms of projects personnel to manage all activities were adequate. The national consultants and national experts appointed by project had been able to accomplish the assigned tasks satisfactory. In term of project funds, it was sufficient to finance all project activities and operational. There were six times budget disbursement received by executing agency and managed by project management unit and had been used in accordance the activities and operational of the project.

The total budget amount based on project document was US\$ 755,560.00 consist of US\$ 464,310.00 as ITTO’s contribution and US\$ 291,250.00 as Gol’s contribution. From the amount of ITTO’s contribution of US\$ 464,310.00, total budget received after shortfall funds was US\$ 459,739.00. Total expenditure of the project up to July 2017 was US\$ 446,608.13 with accrued expend budget included. There was an unspent budget US\$ 66,14 which was from bank interest as other revenue and ITTO approved project to utilize unspent budget for continuing several activities after

project completion. Appropriateness of expenditures had been audited by an independent, registered accountant and yearly reported to ITTO.

## 5.5 External influences

During project implementation several external factors have been influenced the process of execution strategy of field activities and coordination with stakeholders involved. Project officially commenced in November 2014, while on October 27, 2014, it has been established through a Presidential Decree that the Ministry of Forestry was merged with the Ministry of Environment to the Ministry of Environment and Forestry. This circumstances led to organizational changes and adjustments due to the merging of two technical ministries that are closely related to the development and management of bamboo in Indonesia. However, this has become a good news in the development of bamboo in Indonesia. Where two ministries that already have bamboo development programs are now on one roof of the organization.

In the project document mentioned that the potential of external risks that will occur in implementation was the availability of land for planting bamboo as demonstration plot. This assumptions of risk occurred were supported by new policy and regulation regarding on authority's of forestry affairs transferred from the district government to the provincial government based on Law No. 23 of 2014 on Local Government. Since the enactment of the law, effectively until the end of year 2015, the district government has no authority in land management and the forestry sector activity.

Therefore, project established cooperation directly with bamboo farmer group to established demonstration plot on bamboo planting. The Bangli district government remain involved in some project activities on local community empowerment and training activities conducted since it is still under their authority. Project also invited the Head of Bangli District in the ceremony of handed-over the incense machine processing equipment to three community groups located in Bangli District.

At the provincial level project built coordination with the Bali Provincial Forestry Office through Forest Management Units (FMU) or *Kesatuan Pengelolaan Hutan* (KPH). At the ending project's period, Environmental Bamboo Foundation as project's collaboration partner initiated bamboo nursery development in KPH Bali Timur or East Bali FMU, where the KPH area located in Bangli District.

At the national level the project has built good coordination with two ministries to strengthen integrated bamboo development. Ministry of Industry of the Directorate General of Small and Medium Industry (DGSMI) supported the activities on strengthening of small-scale bamboo industry managed by the community. Ministry of Village, Transmigration and Disadvantaged Areas in supporting village-based development, capacity building of village institutions and supporting facilities for village development.

Related to above situation and with involvement of

three central ministries in supporting the community-based bamboo industry through the development of a thousand bamboo villages in Indonesia, therefore it became a consideration in determining the institution that has authority as the coordinator for the national strategy has been prepared. In the second focus group discussion conducted recommended that the coordinator for national strategy should be the Coordinating Ministry for Economic Affairs or *Kementerian Koordinator Bidang Ekonomi* and perhaps even better under coordination of the president directly. Until the end period of project implementation, this situation could not be decided yet, therefore the draft of national strategy that has been prepared will continue to process on legalization by executing agency in collaboration with stakeholders involved.

At the international level the project has succeeded in communicating and coordinating with several international agencies, particularly those related to the development of bamboo. This has a positive impact on dissemination and distribution of project results in international level and also brought positive impacts to ITTO that has supported and gave contribution to the development of bamboo industry in Indonesia.

## 5.6 Project beneficiaries

The project implementation provided and gained benefits to the primary beneficiaries and stakeholders involved and in vice versa. Through the developed mechanism of "sustainable bamboo forestry" bamboo farmers in Bangli District and Ngada District are now aware of their bamboo forest as their asset and need to maintenance their bamboo clumps for higher productivity and ensure sustainability. Training conducted for farmers had equipped bamboo farmer with the skill needed on bamboo clumps managements, sustain harvesting and value added on utilization. The bamboo farmer groups in Bangli District, Bali also been provided by machines and tools to produce incense sticks to support them improved their ability on bamboo value-added processing.

The government institutions, local and central governments improved their framework on supporting bamboo development in their area through workshop, meetings and FGDs conducted by project. This will support the government authorities to be able develop policies and regulation on sustainable bamboo development and utilization. Bamboo industry player have gained attention and support related on sustainability of materials supply regulation and support on marketing products. The community bamboo society and non-government organizations also gain on clear framework of their roles to support community based bamboo industry in Indonesia.

The primary beneficiaries and stakeholders involved will continue gaining benefits from the project outputs and they will follow up and strengthened the framework and the platform that has been develop through a thousand bamboo village movement in Indonesia.

## 5.7 Project sustainability

This project generated a movement of integration actions on bamboo development and its utilization in Indonesia that involving many parties and stakeholders to make it realized. From this movement all parties also realize that an integration program was needed that involves all institutions from upstream to downstream sectors. The bamboo community groups in Bangli District continue their business on incense stick production, while bamboo farmers in Ngada districts continue and keep the system of sustainable bamboo forestry for their bamboo forests as part of the value chain of bamboo industry.

To ensure the sustainability of project, especially activity in Ngada District, East Nusa Tenggara, EA had been develop new project based on ITTO PD 600/11 Rev.1 (I) milestones on utilization of potential NTFP's through agroforestry and community development. A new project has been supported by ACIAR (Australian Center for International Agroforestry Research) with a title of **"FST/2016/141 Developing and promoting market-based agroforestry options and integrated landscape management for smallholder forestry in Indonesia"**. In this project, there are five objectives and CSEPCC Research and Development became a leader on objective 5 entitled **"Developing and Promoting Commercial Bamboo Agroforestry"** with the main location in Ngada District, Flores, East Nusa Tenggara. This ACIAR project is a multi-stakeholder project, and the project leader is ICRAF, the World Agroforestry Center and FOERDIA as main partner from the Government of Indonesia. Other institutions involved in this project are: CIFOR, WWF, The Thread of Life, Murdoch University, Mataram University and Working Group Community Timber Forest.

The institutional framework has been established to ensure the sustainability of bamboo village development programs and activities throughout Indonesia through the establishment of the 1000 Bamboo Village Consortium which was consisted of the support of three Ministry, non-governmental organizations and industrial players. The main objective of this consortium was to establish a forum for communication and coordination among institutions that already support and committed in developing bamboo villages and community base bamboo industry in Indonesia.

## 5.8 The Institution Involved in Project Implementation

As mentioned and explained in the previous section, the project has been running with support and coordination with relevant stakeholders who also continue to support the sustainability and follow-up of achievements that have been generated by the project. FORDA as EA and chairing the PSC play an important role in supervising the running of projects undertaken by the PMU and the contracted national consultants. The PSC meetings that have been held led by the Director General of FOERDIA show strong institutional support and commitment to project.

Other institutions of the PSC member also showed positive support for the project. Representatives of donor countries also attended several PSC meetings that have been held by project. Representatives of the Japan Government through the Japanese Forest Agency had attended the first PSC meeting. The next PSC meeting was attended by representatives from the Embassies of Switzerland and the Embassies of Japan, while the Australian Government representatives had conducted monitoring the project through reports and minutes of meeting sent through email.

In addition to the members of the PSC who had supervised and provided input during project's implementation, there were other institutions that also became key partners in project implementation. Started early in 2015, the project partnered with the Environmental Bamboo Location located in Bali. Together with the EBF, project undertook several activities at the national and international levels. We had been formulated and produced a suitable industrial bamboo development platform to implemented in Indonesia. The established platform has been formed other institutional and network support more widely, since it requires integrated support from upstream, middle and downstream sectors.

Integrated bamboo development movement from upstream, middle and downstream, called A Thousand Bamboo Villages in Indonesia at least has received support from three ministries, namely; Ministry of Environment and Forestry, Ministry of Industry and Ministry of Village, Transmigration and Disadvantaged Areas. Provincial Governments that are ready and committed to support provinces: Bali, East Nusa Tenggara, West Nusa Tenggara, South Sulawesi, East Kalimantan, Central Kalimantan, South Kalimantan, DI Yogyakarta, Central Java and West Java. In each area and province also supported by several non-governmental organizations such as; Kemitraan (Partnership), KEHATI Foundation, WWF and TNC. The international institution also gave support on this program such as INBAR, WBO and CBRC.



## 6 LESSONS LEARNED

Some of the achievements of the ongoing project are **a milestone in the rise toward a sustainable bamboo industry in Indonesia**. So far, the utilization of bamboo in Indonesia is still limited within a traditional use that has been scaled to home industry or small and medium enterprises. Through this project, a bamboo industry development concept has been integrated in Indonesia and is community-based. Therefore, lessons learned from this project and especially for the development, management and utilization of bamboo in Indonesia are as follows:

1. The process on how to establish an **integration model of community bamboo industry**.
2. The strategy in **building collaborative networking** amongst related stakeholders to establish community bamboo industry through a campaign toward a thousand bamboo villages in Indonesia.
3. The **community approach and stakeholder capacity building** on bamboo management and utilization to establish **Community Bamboo Industry in Indonesia**.
4. Establishment of the institutional framework and strengthened capacity amongst **4P (People, Public, Private Partnership) for a Bamboo Industry in Indonesia**.

### 6.1 Project Identification and Design

This project was design based on the need of non-timber forest products (NTFPs) especially bamboo development in Indonesia. The characteristics and key problems addressed by the project were identified through stakeholder analysis and consultative meetings conducted before project formulation proposal. The project has been designed to develop bamboo utilization model started from local site levels with communities to encourage sustainable bamboo utilization. At national level the project also has been designed to encourage national policy on sustainable bamboo utilization, which was became the triggers of a movement; “thousand bamboo villages”. This movement create a platform of community-based bamboo industry.

The adjustment and variations between planned and actual implementation had occurred due mainly to the internal situation of ITTO and budget suspend. Other matters happened because Project Coordinator concerned and worried about budget reduction of project funds after the crisis occurred therefore one activities to establish building facility in the field were delayed.

In the project proposal it has been designed that the sustainability of the project outcome is largely determined by the support of local communities as beneficiaries and the parties involved during project implementation. Started from the second year the project has been built network support programs and activities that have been implemented. The project built a flatform that have brought local communities as beneficiaries, both central and regional governments, non-governmental organizations as well as universities together in the same vision to build a sustainable bamboo industry in Indonesia.

### 6.2 Project Implementation

Project implementation was managed by the project management unit (PMU) under the coordination of a project coordinator that was assigned by the Director Center of Social Economy Policy and Climate Change Research and Development, FOERDIA, as the executing agency of the project. The PMU comprising four project key personnel; project coordinator, project secretary and financed, project field officer and IT technician paid with ITTO funds, also two supported local staff as GOI contribution. The PMU had main task to manage all administration and field activities with all national consultants, experts and other institution involved during project implementation.

The project steering committee (PSC) were established and appointed by the Secretary General of the Ministry of Environment and Forestry whose members were consist of the chair; Director General of FOERDIA, vice chair; Director of CSEPCC Research and Development, with members; 1) Secretary of FOERDIA, 2) Head of Foreign Cooperation Bureau, 3) Director of Social Forestry, 4) Head of Bangli Regency Forestry Office, 5) Head of Bangli Regency Industrial Office, 6) Representative of the ITTO Secretariat 7) Representative of the Embassy of Australian, 8) Representative of the Embassy of Japan and 9) Representatives of the Embassy of Switzerland.

The project had been successfully completed within the sanctioned financial and time budget due mainly to the adequate project design, supportive primary beneficiaries and partners, strong coordination with ITTO, other institutions and stakeholders involved as well as the cooperative and competent national consultants and national experts.

## 6.3 Project Monitoring

To ensure proper implementation of planned activities in extended project duration of activities, and progress of project impact required continuous monitoring. Internal monitoring conducted by the head of executing agency. The project coordinator monitored all activities involving consultants, partners and other institutions. Maintaining the established network, collaboration and commitment also conducted by the project coordinator. The ITTO Projects Manager monitored the overall project work and its progress reports, administration, as well as achievement on expected project outputs. ITTO headquarters also monitors the implementation of on-going projects conducted by projects managers through several field visits, meetings with project beneficiaries and involved stakeholders scheduled each year. The monitoring and evaluation of progress in implementation

had been performed through three PSC meetings, one PTC meetings, several coordination meetings between PMU with consultants, expert and involved institution; such meetings had greatly contributed to the smooth project operations, as shown at following table 14 and 15.

## 6.4 Project Reporting

The project was managed in full compliance with existing ITTO rules and procedures; all the documents required by ITTO including YPOs, bi-annual progress reports, financial audit reports and documents of particular had been timely submitted to ITTO and facilitated immediate issuance of any approvals requested by EA and PMU. Progress implementation and several highlight activities regularly submitted and uploaded through the ITTO Online Monitoring System (OLMS).

**Table 14.** Monitoring Meeting Conducted During Project Implementation

NO	EVENTS	LOCATION	TIME	CHAIRMAN & PARTICIPANTS
	Project Inception Meeting	IPB ICC – Bogor, West Java,	20 December 2013	Chaired by Dr. Bambang Tri Hartono (Director) - 18 persons
	Project Kick Off Meeting	Meeting room of Forestry Agency Office in Bangli District.	15 April 2014	Chaired by AA Mangku Samba (Head of Forestry Agency, Bangli District - 45 persons
	1 <sup>st</sup> PSC Meeting	Inna Grand Bali Beach Hotel, Bali.	4 June 2014	Chaired by Prof. Dr. San Afri Awang (Director General of FOERDIA) - 17 persons
	2 <sup>nd</sup> PSC Meeting	Grand Mirage Resort, Nusa Dua - Bali	28 August 2015	Chaired by Dr. Henry Bastaman (Director General of FOERDIA) - 27 persons
	Project Technical Meeting	Santika Hotel, Jakarta	13 December 2016	Chaired by Dr. Bambang Supriyanto (Director) - 12 persons
	3 <sup>rd</sup> PSC Meeting	Manggala Wanabakti, Jakarta	25 April 2017	Chaired by Dr. Syaiful Anwar (Director) - 21 persons

**Table 15.** Field Activities Monitoring and Stakeholders Coordination

NO	LOCATION	TIME	PURPOSE	PARTICIPANTS
	Bangli District, Bali Province.	2 - 3 June 2014	<ul style="list-style-type: none"> <li>- Project site preparation</li> <li>- Coordination meeting with Head of Bangli District Forestry Agency</li> <li>- Visited existing community bamboo industry in Bangli District</li> </ul>	<ul style="list-style-type: none"> <li>- ITTO Projects Manager</li> <li>- Forestry Agency, Ministry of Agriculture, Government of Japan.</li> </ul>
	Ngada District, Flores, NTT Province.	24 – 29 August 2015	<ul style="list-style-type: none"> <li>- Visited the model of community based bamboo forestry management in Ngada District, Flores, NTT.</li> <li>- Visited Kelimutu National Park</li> </ul>	<ul style="list-style-type: none"> <li>- Director of Social Economy, Policy and Climate Change</li> <li>- ITTO Projects Manager</li> <li>- Head of Forest Research Office in East Nusa Tenggara</li> </ul>
	Bangli District, Bali Province.	23 – 25 March 2016	<ul style="list-style-type: none"> <li>- Auditor checked activities conducted by project in the field</li> <li>- Checked and visited project sites: demonstration plot of bamboo planting , bamboo seedling and bamboo nursery.</li> </ul>	Audit independent on second year activity 2015
	Badung District and Bangli District, Bali Province	9 – 11 June 2016	<ul style="list-style-type: none"> <li>- Field visit and coordination with Head of Bangli Regency and local stakeholder on Bamboo Development.</li> <li>- Joined Sustainable Solution organized by Green School</li> </ul>	<ul style="list-style-type: none"> <li>- Director of Center for Socio Economic Policy</li> <li>- Head of Bangli District</li> </ul>
	Wagir Village, Malang, East Java.	14 – 15 December 2016	<ul style="list-style-type: none"> <li>- Field visit on incense stick's home industry, cluster of community bamboo industry</li> <li>- Visited incense stick machinery supplier</li> </ul>	Projects Manager and PMU PD 600/11 Rev.1
	Bangli District, Kintamani Area, Bali	15 – 17 April 2017	<ul style="list-style-type: none"> <li>- Field visit project sites</li> <li>- Visited bamboo strand-woven industry</li> <li>- Project activity documentation and field activities monitoring.</li> </ul>	Projects Manager, ITTO Secretariat Promotion, Tim PMU
	Golewa Sub District, Ngada District, Flores	20 – 21 May 2017	<ul style="list-style-type: none"> <li>- Coordination meeting with Head of Ngada District</li> <li>- Visited Community Group in Golewa Sub District</li> <li>- Prepared for Bamboo Treatment Facility</li> </ul>	Tim EBF, KEHATI, PC ITTO 600/11 Rev.1

# 7 CONCLUSIONS AND RECOMMENDATIONS

## 7.1 Conclusions

In general, most activities of the project were carried out sufficiently in accordance with the work plan and the guideline of the ITTO. The project was completed with all objectives have been achieved and delivered outputs and outcomes to support the sustainable utilization of bamboo resources in Indonesia. The conclusions from this project report are as follow:

1. The project was conducted to address a key problem of the stakeholders' weak capacity for the development and utilization of the bamboo resources, which also included the weak of the institutional framework. The project has successfully brought the solution to the key problem, and it greatly contributed in strengthening and delivering a **clear framework on sustainable bamboo utilization in Indonesia**. This framework became a strategy in **promoting and extending the sustainable utilization of bamboo resources through community based bamboo industry in Indonesia**.
2. The project has established a platform for the **"community-based bamboo industry"** through a national campaign of **"A Thousand Bamboo Villages"** movement in Indonesia that is supported by multi stakeholder which includes governments, NGOs, universities, industrial players and local community groups as the main beneficiaries and main actors.
3. The project has promoted the establishment of the institutional framework and has strengthened the capacity among **4P (People, Public, Private, Partnership) for a Bamboo Industry in Indonesia**. The project also has **established a forum for coordination and network** among stakeholders.
4. The project has composed a draft of **National Strategy of the Community-Based Bamboo Industry**, while the next process to proceed the draft as the long-term national strategy had been prepared as an exit strategy, and it will be continued by another project that will be supported by the stakeholders who involved in the project.
5. As a part of the national campaign, the project has supported the establishment of the **center of excellence for the community-based bamboo industry** in Ngada District, Flores, East Nusa Tenggara, in collaboration with the Environmental Bamboo Foundation (*Yayasan Bambu Lestari*).
6. **A new project supported by ACIAR and in collaboration with ICRAF, CIFOR and other partners** will continue both the national strategy of the community-based bamboo industry activities, also will strengthen the center of excellence and the community learning center for bamboo cultivation and utilization in Ngada District.
7. The **publications, manual books, website** and other materials that have produced by the project had contributed on **information dissemination of the community bamboo management and its utilization in Indonesia** at the national level and at several international events.
8. The project has provided the opportunity for **three community groups in Bangli Regency**, Bali Province, to establish the community's **small enterprises on bamboo processing for incense stick**, and at present time, they sell their products for the local markets. The project has also built the **bamboo preservation facility to support bamboo villages** in Ngada District, East Nusa Tenggara Province.
9. The total allocated budget based on the project document was US\$ 464,310.00, the total budget had received after shortfall funds was US\$ 459,739.00. The total expenditure of the project up to July 2017 was US\$ 446,608.13, and there is an unspent budget of US\$ 66,14. The ITTO gave approval to the project to utilize the remaining budget for continuing several activities including coordination with related stakeholders after the project completion.

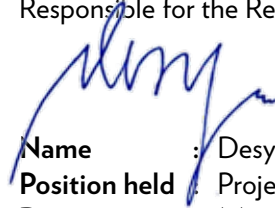
## 7.2 Recommendations

Based on the ongoing activities, field observations and the expectations of what to be needed to strengthen the development of the bamboo industry in Indonesia, the following recommendations should be considered as follows:

1. Recommendation related to the management of project implementation are:
2. The potential risk associated with project implementation should be defined correspond in the project document and agreement, in the case of internal issues happened in ITTO secretariat that effected to project execution in the field.
3. It is best to employ a small and qualified project management unit in order to minimize cost of personnel,

- ensure effectiveness of coordination internally with EA and among involved stakeholders.
4. Any collaboration in project implementation should be based on memorandum of understanding (MOU) and/or cooperation agreement (CA) that clearly defines roles and responsibilities of parties involved in order to support smooth and harmony on project implementation.
  5. The appropriate of strategy for implementation, as well as the re-organization and organizational changed are among the enabling conditions that are required to prevail to ensure a smooth implementation and successful completion of a project.
  6. During the selection of national consultants hired by project, the EA could give recommendation but the decision should be based on their capability and commitment in order to avoid lack of output achievement and disharmony relation during project implementation.
  7. The EA should maintain **the support and established network** from potential stakeholders such as governments, civil societies, NGOs and relevant international organizations or societies **to strengthen the national campaign** on community-based bamboo industry through the Thousand Bamboo Village program as a National Strategy for Bamboo Industry in Indonesia.
  8. It is strongly recommended the EA and its partners to follow up and continuing **to strengthen the Center of Excellence for “Desa Bambu” or Bamboo Villages** in Ngada District, Flores, East Nusa Tenggara Province, where the ITTO project has provided bamboo treatment facilities for the local community. The center of excellence will benefit the community and stakeholders from other regions in Indonesia who will learn and share about the development and utilization of the bamboo.
  9. It is recommended to develop a further comprehensive study and program regarding **the role of bamboo in environmental services** as well as **the role of bamboo in climate change adaptation and mitigation**, also regarding **the bamboo forests and products**. This is important in order to strengthen the role of bamboo for environmental and ecological aspects and to develop its opportunity as the potential commodity for **carbon funds** and renewable materials.

Responsible for the Report



**Name** : Desy Ekawati  
**Position held** : Project Coordinator  
**Date** : March, 2018

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## Annex 1. Project Financial Statement of ITTO

Project No. PD 600/11 Rev. 1 (I)			Period: up to July 2017				
Project Title: Model Capacity Building for Efficient and Sustainable Utilization of Bamboo Resources in Indonesia							
Component	Original	Modified	Expenditures			Available	
	Amount	Amount (A)	Accrued (B)	Expended upto July 2017 {C}	Total (D)	Funds (E)	
		*after shortfall funds			{B+C}	{A-D}	
<b>1. Funds managed by Executing Agency</b>							
<b>10. Project Personnel</b>							
11	Project Coordinator	63,000.00	72,500.00	0.00	72,500.00	72,500.00	0.00
12	Secretary	14,400.00	23,200.00	0.00	23,200.00	23,200.00	0.00
13	Technicians	0.00	1,800.00	0.00	1,800.00	1,800.00	0.00
14	Laborers	600.00	600.00	0.00	600.00	600.00	0.00
15	International Consultants	20,000.00	0.00	0.00	0.00	0.00	0.00
16	Other Professionals	5,360.00	4,870.00	0.00	4,866.87	4,866.87	3.13
17	Field Supervisor	14,400.00	14,400.00	0.00	14,400.00	14,400.00	0.00
19	Component Total :	117,760.00	117,370.00	0.00	117,366.87	117,366.87	3.13
<b>20. Sub-contracts</b>							
21	Bamboo growing stock survey	16,000.00	16,000.00	0.00	16,000.00	16,000.00	0.00
22	Feasibility study on bamboo utilization	4,000.00	4,000.00	0.00	4,000.00	4,000.00	0.00
23	PEO for National Workshop 1 on bamboo	9,000.00	9,000.00	0.00	9,000.00	9,000.00	0.00
24	Establishment of bamboo information sys	4,000.00	4,000.00	0.00	4,000.00	4,000.00	0.00
25	Establishment of bamboo plantation dem	12,000.00	12,000.00	0.00	12,000.00	12,000.00	0.00
26	Demonstration of technologies for produc	0.00	0.00	0.00	0.00	0.00	0.00
27	NGO for technical assistance on bamboo	6,400.00	6,400.00	0.00	6,400.00	6,400.00	0.00
28	PEO for National Workshop 2 on Project	10,000.00	10,000.00	0.00	10,000.00	10,000.00	0.00
29	National Consultant	33,000.00	33,000.00	0.00	33,000.00	33,000.00	0.00
29	Component Total :	94,400.00	94,400.00	0.00	94,400.00	94,400.00	0.00
<b>30. Travel</b>							
31	Daily Subsistence Allowance (DSA) Dome	33,000.00	32,400.00	0.00	32,400.00	32,400.00	0.00
32	Local Transport, domestic	5,400.00	14,000.00	0.00	13,999.99	13,999.99	0.01
33	International air tickets	3,000.00	3,050.00	0.00	3,046.12	3,046.12	3.88
34	Local Transport, overseas	0.00	0.00	0.00	0.00	0.00	0.00
35	DSA International	7,200.00	5,040.00	0.00	5,033.89	5,033.89	6.11
36	Domestic airtickets	12,800.00	17,880.00	0.00	17,880.00	17,880.00	0.00
39	Component Total :	61,400.00	72,370.00	0.00	72,360.00	72,360.00	10.00
<b>40. Capital Items</b>							
41	PC, Equipment and facilities	5,000.00	5,000.00	0.00	5,000.00	5,000.00	0.00
42	Harvesting equipment and facilities	5,000.00	5,000.00	0.00	5,000.00	5,000.00	0.00
43	Building	30,000.00	16,529.00	0.00	16,529.00	16,529.00	0.00
44	Office facilities	0.00	0.00	0.00	0.00	0.00	0.00
45	Processing machines, equipment and	49,000.00	49,000.00	0.00	49,000.00	49,000.00	0.00
49	Component Total :	89,000.00	75,529.00	0.00	75,529.00	75,529.00	0.00
<b>50. Consumable items</b>							
51	Consumables (plot)	3,600.00	12,200.00	0.00	12,200.01	12,200.01	-0.01
52	Utilities	18,000.00	5,000.00	0.00	5,000.01	5,000.01	-0.01
53	Consumables (materials)	7,200.00	2,000.00	0.00	2,000.00	2,000.00	0.00
54	Stationery	0.00	0.00	0.00	0.00	0.00	0.00
55	Miscellaneous consumables	8,400.00	12,000.00	0.00	12,013.14	12,013.14	-13.14
56	Printed Materials	10,000.00	14,000.00	0.00	14,000.00	14,000.00	0.00
59	Component Total :	47,200.00	45,200.00	0.00	45,213.16	45,213.16	-13.16
<b>60. Miscellaneous</b>							
61	Publication and distribution	36,000.00	24,770.00	0.00	24,770.01	24,770.01	-0.01
62	Miscellaneous meetings	3,750.00	14,000.00	0.00	14,000.00	14,000.00	0.00
63	Web provider rental	3,000.00	1,000.00	0.00	1,000.00	1,000.00	0.00
64	Financial auditing	3,000.00	5,000.00	0.00	5,000.00	5,000.00	0.00
65	Revolving funds	0.00	0.00	0.00	0.00	0.00	0.00
66	Office space	0.00	0.00	0.00	0.00	0.00	0.00
67	PSC/PTC meeting	3,000.00	6,100.00	0.00	6,100.00	6,100.00	0.00
68	Sundry	5,800.00	4,000.00	0.00	4,000.00	4,000.00	0.00
69	Component Total :	54,550.00	54,870.00	0.00	54,870.01	54,870.01	-0.01
<b>70. National Management Costs</b>							
71	Executing Agency Management Costs				0.00	0.00	0.00
72	Focal Point Monitoring				0.00	0.00	0.00
79	Component Total :				0.00	0.00	0.00
<b>Sub-Total:</b>							
<b>100. GRAND TOTAL</b>		<b>464,310.00</b>	<b>459,739.00</b>	<b>0.00</b>	<b>459,739.04</b>	<b>459,739.04</b>	<b>-0.04</b>

## Annex 2. Project Cash flow statement ITTO

Component	Reference	Date	Total Expenditures up to July 2017		
			Amount in US\$	Local Currency	
<b>A. Funds received from ITTO</b>					
1	First installment	G0133090136301	6-Nov-13	\$ 140,000.00	1,597,960,000.00
2	Second and Third installment	G0151040688601	14-Apr-15	\$ 171,000.00	2,219,409,000.00
3	Fourth installment	480-3783682	30-Jan-17	\$ 40,669.00	542,321,115.00
4	Fifth and Sixth installment	480-3789628	30-May-17	\$ 108,070.00	1,441,221,520.00
	Other Revenue			\$66.14	IDR 871,844.28
	Gain or (loses) on exchange rate				IDR 163,756,869.83
	<b>Total funds received</b>			\$ 459,805.14	IDR 5,965,540,349.11
<b>B. Expenditures by Executing Agency</b>					
<b>10. Project Personnel</b>					
11	Project Coordinator			\$ 72,500.00	IDR 931,408,286.00
12	Secretary			\$ 23,200.00	IDR 301,395,200.00
13	Technicians			\$ 1,800.00	IDR 23,861,700.00
14	Laborers			\$ 600.00	IDR 7,090,800.00
15	International Consultants			\$ -	IDR -
16	Other Professionals			\$ 4,866.86	IDR 63,844,000.00
17	Field Supervisor			\$ 14,400.00	IDR 183,529,648.50
19	<b>Component Total :</b>			\$ 117,366.86	IDR 1,511,129,634.50
<b>20. Sub-contracts</b>					
21	Bamboo growing stock survey			\$ 16,000.00	IDR 192,310,400.00
22	Feasibility study on bamboo utilization			\$ 4,000.00	IDR 49,484,000.00
23	PEO for National Workshop 1 on bamboo industry development			\$ 9,000.00	IDR 113,220,000.00
24	Establishment of bamboo information system			\$ 4,000.00	IDR 46,672,000.00
25	Establishment of bamboo plantation demonstration			\$ 12,000.00	IDR 145,482,000.00
26	Demonstration of technologies for production of bamboo planting materials			\$ -	IDR -
27	NGO for technical assistance on bamboo business			\$ 6,400.00	IDR 85,189,600.00
28	PEO for National Workshop 2 on Project results dissemination			\$ 10,000.00	IDR 133,100,000.00
29	National Expert			\$ 33,000.00	IDR 421,739,500.00
29	<b>Component Total :</b>			\$ 94,400.00	IDR 1,187,197,500.00
<b>30. Duty Travel</b>					
31	Daily Subsistence Allowance (DSA) Domestic			\$ 32,400.00	IDR 429,002,729.00
32	Local Transport, domestic			\$ 13,999.99	IDR 204,276,590.00
33	International air tickets			\$ 3,046.12	IDR 40,773,697.00
34	Local Transport, overseas			\$ -	IDR -
35	DSA International			\$ 5,033.89	IDR 68,358,840.00
36	Domestic airtickets			\$ 17,880.00	IDR 234,140,408.64
39	<b>Component Total :</b>			\$ 72,360.00	IDR 976,552,264.64
<b>40. Capital Items</b>					
41	PC, Equipment and facilities			\$ 5,000.00	IDR 62,553,400.00
42	Harvesting equipment and facilities			\$ 5,000.00	IDR 66,133,000.00
43	Building			\$ 16,529.00	IDR 218,496,600.00
44	Office facilities				
45	Processing machines, equipment and			\$ 49,000.00	IDR 647,160,550.00
49	<b>Component Total :</b>			\$ 75,529.00	IDR 994,343,550.00
<b>50. Consumable items</b>					
51	Consumables (plot)			\$ 12,200.01	IDR 160,101,100.00
52	Utilities			\$ 5,000.01	IDR 64,829,294.00
53	Consumables (materials)			\$ 2,000.00	IDR 26,537,750.00
54	Stationery				IDR -
55	Miscellaneous consumables			\$ 12,013.14	IDR 159,037,071.20
56	Printed Materials			\$ 14,000.00	IDR 187,141,813.58
59	<b>Component Total :</b>			\$ 45,213.16	IDR 597,647,028.78
<b>60. Miscellaneous</b>					
61	Publication and distribution			\$ 24,770.02	IDR 328,853,960.09
62	Miscellaneous meetings			\$ 14,000.00	IDR 170,040,508.00
63	Web provider rental			\$ 1,000.00	IDR 13,675,400.00
64	Financial auditing			\$ 5,000.00	IDR 66,219,000.00
65	Revolving funds			\$ -	IDR -
66	Office space			\$ -	IDR -
67	PSC meetings			\$ 6,100.00	IDR 79,441,300.00
68	Sundry			\$ 4,000.00	IDR 39,569,600.00
69	<b>Component Total :</b>			\$ 54,870.02	IDR 697,799,768.09
<b>Total expenditures to-date :</b>				\$ 459,739.04	IDR 5,964,669,746.01
<b>Remaining balance of funds (A-B) :</b>				\$ 66.10	\$ 870,603.10







## COMPLETION REPORT OF THE ITTO PROJECT

Ministry of Environment and Forestry, Republic of Indonesia

Forestry and Environment Research Development and Innovation Agency (FOERDIA)

Center for Socio Economic Policy and Climate Change Research & Development (CSEPCC R&D)

JL. Gunung Batu 5, Bogor 16810, WEST JAVA, INDONESIA.