



RFD



# **Completion Report**

**Project PD 372/05 Rev. 1 (F)**

## ***Contribution to Forest Rehabilitation in Thailand's Areas Affected by the Tsunami Disaster***

**Implemented by**

**Royal Forest Department (RFD)  
and  
Thailand Environment Institute (TEI)**

**THAILAND**

**Supported by**

**International Tropical Timber Organization (ITTO)**

**May 2014**

**Title:** Contribution to Forest Rehabilitation in Thailand's Areas Affected by the Tsunami Disaster

**Project Number:** PD 372/05 Rev. 1 (F)

**Executing Agency:** Royal Forest Department

**Host Government:** Thailand

**Starting Date:** September 2008

**Duration of the Project:** 65 months

**Project Costs:** USD. 1,133,640

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## PART I: EXECUTIVE SUMMARY

On 26 December 2004, the provinces of Ranong and Phang Nga in Thailand were severely hit by the Tsunami. A collaborative and cautious approach to rehabilitating coastal resources is needed. Aiming to longer-term recovery and rehabilitation, The Royal Forest Department incorporation with TEI and ITTO had established a three-year project entitled *Contribution to Forest Rehabilitation in Thailand's Area Affected by the Tsunami Disaster* to support the coastal forest rehabilitation, and promote forest management approaches which enhance ecological security, disaster preparedness and mitigation.

*The project development objective* was to contribute to the long-term rehabilitation of the coastal forest resources and the livelihood of local communities following the Tsunami disaster of the 26 December 2004. The project specific objectives were to initiate a process of developing a community-based coastal resource management to enhance the contribution of forests to ecological security (CBM-SLES) and to promote bamboo utilization in tsunami affected areas in order to meet medium and long term needs for rural house construction in rural areas. The project implemented with total budget of USD. 1,133,640 for which USD. 343,620 was by ITTO's contribution and USD. 790,020 from The government of Thailand.

*The project strategies* included the cooperation of diverse key stakeholders, forest management plan, and promotion of bamboo planting and bamboo utilization to support community livelihood. During the entire course of the project, 5 years and 5 months, the project can generate more outputs than its original targets.

*Key outputs* of the project are as follows.

- Project coordination established
- The 751.72 ha of devastated and degraded coastal forests rehabilitated
- Two training courses for operating staff and community leaders conducted
- Awareness raising activities implemented
- Two Pilot CBM-SLES plans developed and endorsed by key stakeholders
- Capacity building and networking for coastal resources management organized
- Research and Monitoring programs developed
- The 100 ha of bamboo plantations established
- Capacity and technology of bamboo house construction strengthened
- Technology for bamboo house construction disseminated

Consequently, people have gained more knowledge and experience on coastal forest rehabilitation to secure the ecosystem and benefit from increasing mangrove areas and fishery resources. The villagers and local stakeholders are proud of the results of coastal rehabilitation they have participated.

At the same time they grow more bamboo for household utilization and generate income. Some of them who attended the training course gained more knowledge and experiences on bamboo propagation, planting and utilization especially on bamboo furniture making and bamboo house construction which can be disseminated to communities and create job opportunity by using bamboo as raw material and help expand bamboo planting area throughout southern Thailand. After trained, a cooperative group of bamboo furniture production and bamboo house construction was established and continue operating at Tambon Maenang-Kao, Phang Nga province.

The project also conducted the monitoring on progress of activities and prepared the technical report, manual and complete report for disseminating the project success and lesson learned. Moreover, a number of publications were produced such as Secure coastal ecosystems, secure communities in the Tsunami affected areas; Training needs assessment report and development of a training program; Community-based, Forest Rehabilitation in the tsunami affected areas; Physical and Mechanical Properties of Some Thai Bamboos for House Construction; Bamboo Planting, Propagation, and Management; proceedings of the training and workshop on bamboo promotion.

After the project completion, *achieved outcomes* in terms of environmental, social and economic aspects can be summarized as follows.

- Community paid more attention to mangrove and bamboo through collaborative conservation for sustainable uses,
- Increase of bamboo area for community use instead of harvesting from natural forest and decrease forest degradation which lead to better environment,
- Income generation from seedling production, furniture making and house construction.

Local communities who are the target beneficiaries in the Tsunami affected area got benefit from the coastal ecosystems rehabilitation in terms of food security, occupational and wind and wave reduction. Community leaders in the area understand the process and tools for the local coastal area management, including opportunity to work closer to the government agencies. They also knew how to manage bamboo plantation for better shoot and pole production as well as the way of bamboo utilization. A cooperative group of bamboo furniture production and bamboo house construction was established and had opportunity to earn more incomes from the new business.

As project realized on the *sustainability after project completion*, the activities on raising awareness raising and capacity building for local community were continuously devoted along with the supportive tools were set up such as community revolving fund, integrated coastal resources management plan, cooperation with local administration and government agencies, and school curriculum on natural resources.

In terms of the sustainable bamboo utilization, source of bamboo material in the area, including a new job opportunity created more income for the villagers through bamboo furniture making and bamboo house construction as well as delivery of equipment and machineries to the furniture group substantially benefit to them. Moreover, RFD has a number of research projects on bamboo utilization such as tea from bamboo leaves, bamboo charcoal and bamboo vinegar, the results of which may be disseminated to the people in the project areas.

Key findings on *project assessment and lesson learned* can be summarized as follows.

- Even though, some activities did not succeed in the beginning, as local people prefer to spend their time for rubber plantation and buy or find bamboo in the natural forest. However, they later realized the benefits from bamboo planting and accepted bamboo as alternative crop to generate more income in addition to that from rubber plantation.
- To promote bamboo cultivation, the study on proper planting site and climate for particular species should be conducted and knowledge on planting, management, and maintenance disseminated to ensure the success with good quality bamboo.
- Sustainable forest rehabilitation requires integrated local and academic knowledge on defining the purpose of rehabilitation, selection of appropriate species, planting site and community needs. The rehabilitation plan and activities must be in accordance with the community way of life.

- Unexpected severe climate conditions such as drought, heavy rain and flood caused the delay in organizing project activities, and the project completion.
- Close cooperation among implementing agencies and partners, including local administration and communities is a key to success.

### *Recommendations*

Firstly, the awareness raising should continuously operate since the project started in conjunction with other activities which had been designed for each target groups. The integrated coastal resources management should deal with the integration from upstream to downstream and among related agency's plans. Consequently, the benefit value of integrated coastal management planning is not come from only a plan, but also from learning and activities.

For promotion of bamboo cultivation, it is strongly recommended that it should study the factors affected in proper species and planting site be determined. In addition, dissemination of the knowledge on planting, and management of bamboo plantation is very important to the success of bamboo production. Intercropping of bamboo with other crops will provide the farmers with an alternative income generation. Advance technology of bamboo utilization such as bamboo board and bamboo flooring should be introduced for local people can create value-added to their products.

The project have a serious concern about the follow-up activities for both mangrove management and bamboo development after the completion of project as well as possibility for extension with the next support from ITTO. The project should be continued in the next phase to follow-up and develop the product design for value-added and to promote bamboo plantation, establishment bamboo business and market, as well as to extend the project activities to other regions.

## **PART II: MAIN REPORT**

### **1. PROJECT IDENTIFICATION**

#### **1.1 Context**

The December 26, 2004 tsunami caused a vast destruction of human life, property and economic infrastructure and environmental assets in the southern provinces along the Andaman coastline. By mid-February 2005, the impact figures reached 5,395 dead, 8,457 injured and 3,001 missing, while 12,068 households with a population of 54,672 inhabitants were considered to have been directly affected by this natural phenomenon. Over 3,600 houses were demolished and nearly 3,200 houses partially damaged, the most impacted areas being in Phang Nga and Ranong provinces.

#### **1.2 Origin and problem**

The Tsunami disaster has therefore dramatically shown the high vulnerability of the coastal areas to natural hazards that have immense impact on human lives and economic infrastructure. It has also demonstrated the role coastal forests can play as a buffer and speed breakers to enhance coastal security. It comprises also the mangroves which are the nurseries of many coastal and oceanic species, and are therefore very important for the livelihoods of communities and for commercial fisheries of the country.

With emergency relief, the operations in the affected areas are over. However, the medium and long term implementations on livelihood and forest rehabilitation activities are in serious concern. Aiming to longer-term recovery and rehabilitation, the Royal Forest Department incorporation with TEI and ITTO had initiated a three-year project entitled *Contribution to Forest Rehabilitation in Thailand's Area Affected by the Tsunami Disaster*.

The major focus of the proposed project is to contribute to Thailand's longer-term recovery and rehabilitation efforts. It will provide support to rehabilitation of coastal forests, and promote forest management approaches which enhance ecological security, disaster preparedness and mitigation. It will also promote the use of bamboo in house construction and furniture making aiming to reducing pressure on natural forests.

### **2. PROJECT OBJECTIVES AND IMPLEMENTATION STRATEGY**

*The project development objective* was to contribute to the long-term rehabilitation of the coastal forest resources and the livelihood of local communities following the Tsunami disaster of the 26 December 2004.

*The project specific objectives* were to initiate a process of developing a community-based coastal resource management to enhance the contribution of forests to ecological security (CBM-SLES) and to promote bamboo utilization in tsunami affected areas in order to meet medium and long term needs in rural house construction.

*The project strategy* involved the following steps:

- 1) The project established the cooperation of key stakeholders, coastal communities, sectoral administrations, research and educational institutions, NGOs, private sector to enhance local participation in the rehabilitation of the tsunami-damaged forests and their management, as well as to contribute to strengthening the capacities of the natural resources and environment services.
- 2) The project developed a plan for integrated forest management for environmental security with social, cultural, and economic values for sustainable livelihood and ecological security.

- 3) The project promoted bamboo planting and bamboo utilization in house construction and furniture making aiming to reducing pressure on natural forests in the medium term, in order to support community livelihood recovery.

The project started on 1 August 2008 with original project implementation work plan as presented in Table 1.

**Table 1. Original Project Work Plan**

Output/ Activity	Responsible Party	Year 1 Quarter				Year 2 Quarter				Year 3 Quarter				
		1	2	3	4	1	2	3	4	1	2	3	4	
<i>Output 1.1</i>	Project coordination established													
A1.1.1	Executing Agency	■												
A1.1.2	Project coordinator	■												
A1.1.3	Project coordinator	■	■	■	■	■	■	■	■	■	■	■	■	■
<i>Output 1.2</i>	250 km of destroyed coastal forests (750 ha) rehabilitated													
A1.2.1	PC, Senior silviculturist	■												
A1.2.2	Consultant		■											
A1.2.3	Consultant			■										
A1.2.4	PC, Provincial services				■	■	■	■	■	■	■	■		
<i>Output 1.3</i>	100 ha of bamboo plantations established in tsunami affected areas													
A1.3.1	BMS	■	■											
A1.3.2	BMS	■	■											
A1.3.3	BMS					■	■	■	■	■	■	■		
A1.3.4	BMS		■	■	■	■	■	■	■	■	■	■		
A1.3.5	BMS		■	■	■	■	■	■	■	■	■	■		
<i>Output 1.4</i>	Awareness raising activities implemented													
A1.4.1	PC				■									
A1.4.2	PC					■	■	■	■	■	■	■		
<i>Output 1.5</i>	Two Pilot CBM-SLES plans developed and endorsed by major stakeholders													
A1.5.1	Partner institution									■	■	■	■	
A1.5.2	TEI												■	■
A1.5.3	TEI													■
<i>Output 1.6</i>	Research and Monitoring program developed													
A1.6.1	Partner institution												■	■
A1.6.2	Partner institution												■	■
A1.6.3	PC													■
<i>Output 2.1</i>	Capacity in use of bamboo in house construction strengthened													
A2.1.1	BMS			■										
A2.1.2	BMS				■									
A2.1.3	BMS					■	■	■	■	■	■	■	■	■
A2.1.4	BMS					■	■	■	■	■	■	■	■	■
<i>Output 2.2</i>	Technology for bamboo house construction in use													
A2.2.1	BUS	■	■	■	■									
A2.2.2	BUS	■	■	■	■									
A2.2.3	BUS			■	■	■	■	■	■	■	■	■		



The Project was extended for 2 years and 5 months from 1 August 2011 to 31 December 2013, the revised work plan being presented in Table 2.

**Table 2. Revised Project Work Plan**

Output/ Activity	YEAR 1				YEAR 2				YEAR 3				1.5 Extended YEAR				0.5 YEAR		5 month		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
<b>Specific Objective 1</b>																					
<b>Output 1.1</b> Project Coordination established																					
A1.1.1	█																				
A 1.1.2	█																				
A1.1.3	█																				
<b>Output 1.2</b> Two hundred and fifty km of destroyed coastal forests (750 ha) rehabilitated																					
A 1.2.1	█				█																
A1.2.2		█						█													
A 1.2.3			█						█												
A 1.2.4	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
A 1.2.5																					
A 1.2.6																					
<b>Output 1.3</b> One hundred ha of bamboo plantations established in tsunami affected areas																					
A 1.3.1	█																				
A 1.3.2	█																				
A 1.3.3																					
A 1.3.4																					
A 1.3.5																					
A 1.3.6																					
<b>Output 1.4</b> Awareness raising activities implemented																					
A 1.4.1																					
A 1.4.2																					
<b>Output 1.5</b> Two Pilot CBM-SLES plans developed and endorsed by major stakeholders																					
A 1.5.1																					
A 1.5.2																					
A 1.5.3																					
<b>Output 1.6</b> Research and Monitoring program developed																					
A 1.6.1																					
A 1.6.2																					
A 1.6.3																					
<b>Specific Objective 2</b>																					
<b>Output 2.1</b> Capacity in use of bamboo for house construction strengthened																					
A 2.1.1																					
A 2.1.2																					

Output/ Activity	YEAR 1				YEAR 2				YEAR 3				1.5 Extended YEAR				0.5 YEAR		5 month																			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2																
A 2.1.3																																						
A 2.1.4																																						
<b>Output 2.2</b> Technology for bamboo house construction in use																																						
A 2.2.1																																						
A 2.2.2																																						
A 2.2.3																																						
<b>Output 3.1</b> To complete and publish technical report, manual and complete report																																						
A 3.1.1																																						
A 3.1.2																																						
<b>Output 4</b> To promote the project activities and success																																						
Special activity																																						

Remark:  Activity not started  Activity in execution  Activity completed

### Assumptions and risks

The expected situation at project completion is as follows:

- An effort to create multiple use and multiple functions forests planted and managed as bio-buffers which will enhance human security against natural disasters will have started.
- Awareness of the general public and key stakeholders of the coastal forest management goals will be raised; special needs and expectations of local communities will be known.
- The capacity of provincial and sub-provincial services to rehabilitate and manage the damaged forests through integrated dimension of ecological security will be strengthened.
- The project will open new possibilities for public participation in the implementation of coastal forest management, as NGOs, local communities and scientists will provide inputs in its work.
- There will be an increased availability of baseline data on the role of coastal forests in the pilot areas.
- Knowledge on bamboo utilization to substitute timber in house construction will be disseminated and will be in use.

The strategy pursued by stakeholders' involvement and community participation requires a high political backing at different levels of administration. The development of partnerships with the NGOs and the scientific institutions also requires a positive responsive and a commitment as far as the objectives pursued are concerned. If these conditions were not met, the consequence would then be the loss of confidence in the project and the processes it supports. This risk is mitigated by the current national response to the needs of the people in the areas hit by the tsunami.

### 3. PROJECT PERFORMANCE

**Specific objective 1:** To initiate a process of developing a community-based coastal resource management to enhance the contribution of forests to ecological security (CBM-SLES).

Planned Performance	Realized Performance
<p><b><i>Output 1.1: Project coordination established</i></b></p> <p><i>A1.1.1</i> Designate project coordinator and establish project coordination.</p> <p><i>A1.1.2</i> Organize project inception workshop.</p> <p><i>A1.1.3</i> Organize regular project coordination meetings.</p>	<ul style="list-style-type: none"> <li>- An internal project organization structure had been set up within the Royal Forest Department to coordinate the project.</li> <li>- MOU between TEI and RFD had been signed to include TEI as the collaborating agency.</li> <li>- A Project Steering Committee (PSC) had been appointed according to the agreement.</li> </ul>
<p><b><i>Output 1.2: 250 km of destroyed coastal forests rehabilitated(750 ha)</i></b></p> <p><i>A1.2.1</i> Organize a Workshop for field officers and specialists to draw lessons learnt from tsunami impacts on coastal forests.</p> <p><i>A1.2.2</i> Identify training needs of government staff and other stakeholders and design training programs.</p> <p><i>A1.2.3</i> Develop practical manual for coastal forest management to enhance ecological security.</p> <p><i>A1.2.4</i> Organize plant production and carry out planting.</p> <p><i>A1.2.5 (New activity)</i> Building capacity and network on coastal resources.</p> <p><i>A1.2.6 (New activity)</i> Conduct two training courses for operating staff and community leaders.</p>	<ul style="list-style-type: none"> <li>- Workshop on “Collaboration toward the Integrity of Ecological System and Coastal Community” was organized in October 2009 with 97 participants attended. It found lesson learnt and ways forward to secure coastal ecosystem and community.</li> <li>- Stakeholder analysis was conducted together with need assessment among 52 persons. The output was a basis for designing 5 training programs to increase the knowledge, influence the attitudes and develop the skills.</li> <li>- The manual containing the knowledge and a guideline for coastal forest survey and rehabilitation and for developing the participatory management was produced for local government officers and community leaders.</li> <li>- The replacement planting was implemented by 118 items for terrestrial, beach and mangrove forest with 7,693 participants as 751.72 hectares of total area. Moreover, community forest management was promoted in 12 communities covering 3,688.2 ha of coastal forest, and 48,500 aquatic animals were released to the nature.</li> <li>- The community leaders’ and youth’s capacity were developed through various activities as sharing experience in the national seminar, study tour and training to learn the community forest management.</li> <li>- Two training workshops; 1) Understand–Access–Develop the Forest management and 2) Professional on Forest Resources Management were conducted with 82 participants who were community leaders and local government officers.</li> </ul>

Planned Performance	Realized Performance
<p><b>Output 1.3: 100 ha of bamboo plantations established in tsunami affected areas</b></p> <p><i>A1.3.1</i> Carry out a preliminary survey for planting species choice.</p> <p><i>A1.3.2</i> Identify farmers and negotiate contracts for bamboo demonstration plots.</p> <p><i>A1.3.3</i> Conduct 2 training courses for extensionists and farmers on bamboo silviculture.</p> <p><i>A1.3.4</i> Identify bamboo seedlings producers and negotiate seedling supply contracts.</p> <p><i>A1.3.5</i> Establish 100 ha of bamboo plantations.</p> <p><i>A1.3.6</i> (New activity) Follow up the progress of bamboo planting and propagation in the project areas.</p>	<ul style="list-style-type: none"> <li>- The project specialists conducted a survey to choose the species for bamboo plantation establishment.</li> <li>- Farmers were selected for the establishment of bamboo plantation management demonstration plots.</li> <li>- Two training courses on “Bamboo Planting and Utilization” were organized in February 2010 which 100 participants in Phang Nga and Ranong provinces attended. Thereafter, most of the participants paid more interested in planting bamboo with rubber tree and oil palm.</li> <li>- Two training courses on bamboo propagation were organized in May and June 2010 at Kanchanaburi and Krabi provinces. Farmers were selected for bamboo seedlings production. These seedling producers were able to supply the seedling to the others. However the supply contract could not be made due to time required to produce a first lot of bamboo seedlings.</li> <li>- The total amount of 51,900 bamboo seedlings were planted on 100 hectares. They were Pai Tong (<i>Dendrocalamus asper</i>), for shoot and pole production, Pai Ruak Dam (<i>Thyrsostachys oliveri</i>), Pai Sang Mon (<i>Dendrocalamus sericeus</i>) for pole production, and Pai Kim Sung (<i>Bambusa beecheyana</i>) for shoot production, distributed among villagers. Furthermore, the bamboos were used as school fence to draw the interest of the youth in the benefits of bamboo.</li> <li>- Two training workshops on Bamboo Propagation and Maintenance were organized in May 2013, in Phang Nga and Ranong provinces to provide knowledge and technique on bamboo propagation and maintenance for sustainable production shoot and culm.</li> </ul>
<p><b>Output 1.4: Awareness raising activities implemented</b></p> <p><i>A1.4.1</i> Develop public awareness raising material.</p> <p><i>A1.4.2</i> Design and implement a media public awareness program.</p>	<ul style="list-style-type: none"> <li>- The awareness raising was focused on adult people, youth beyond education system, and school students through various activities on coastal resources survey and valuation, knowledge exchange, and environmental study activities.</li> <li>- The brochures on benefits of Nipa palm and bamboo were produced. Moreover, signboards to campaign the natural resources conservation, community forest, also mangrove planting and protective species conservation were also distributed.</li> </ul>

Planned Performance	Realized Performance
<p><b><i>Output 1.5: Two Pilot CBM-SLES plans developed and endorsed by major Stakeholders</i></b></p> <p><i>A1.5.1</i> Validate with stakeholders forest cover within land use zoning in pilot areas of Phang Nga Province and Krabi Province.</p> <p><i>A1.5.2</i> To plan community-based coastal forest management integrating sustainable livelihoods and ecological security dimension.</p> <p><i>A1.5.3</i> To organize workshops to validate and build consensus on the plans.</p>	<ul style="list-style-type: none"> <li>- Selected two pilot sites for developing the coastal resources management plan were at Ao Kapur Bay, Kapur district in Ranong province and at Koh Kor Khao Island, Takua Pa district in Phang Nga province.</li> <li>- The process began with reviewing background information, conducting forum to address local problems and requirements in each community, consideration and analysis of capacities on coastal resources management. Afterwards, integrated coastal resources management plan was drafted and presented to community committee. The emphasis was placed on coastal resources rehabilitation and management, sustainability of coastal resources utilization, network and capacity development.</li> <li>- The revision of the plans were validated by 45 participants from Ao Kapur Bay and 65 from Koh Kor Khao Island at stakeholder meetings. Some activities of the revised plan were brought to action through local administrations and relevant local agencies' development plans such as watershed forest area protection and cultivation of artificial coral reef.</li> </ul>
<p><b><i>Output 1.6: Research and Monitoring program developed</i></b></p> <p><i>A1.6.1</i> Develop a CBM-SLES support research and development program.</p> <p><i>A1.6.2</i> Develop a community-based ecological monitoring system.</p> <p><i>A1.6.3</i> Organize a validation workshop for the research and monitoring system.</p>	<ul style="list-style-type: none"> <li>- The monitoring framework covered the social, economic and ecological systems. The activities included household survey using questionnaire, in-depth interview in order to examine the view on forest rehabilitation, as well as the observation of survey on survival rates and growth rate of trees planted in the rehabilitation areas.</li> <li>- The monitoring plots were set up with a size of 20x50 meters and grid-locked with GPS in four replacement planting areas. The results revealed the survival rate of 80-95 percent, and only 60 percent were found in some areas that fully surrounded with weeds before the replanting.</li> <li>- The workshop was organized in July 2013 with 45 participants who presented and discussed not only the rehabilitation and monitoring results, but also the networking development and ways to sustain the coastal resources.</li> </ul>

**Specific objective 2:** To promote bamboo use in tsunami affected areas in order to meet medium and long term needs in rural house construction.

Planned Performance	Realized Performance
<p><b><i>Output 2.1: Capacity in use of bamboo for house construction strengthened</i></b></p> <p>A2.1.1 Organize a study tour abroad for bamboo furniture and house makers.</p> <p>A2.1.2 Organize a workshop in bamboo utilization and furniture making.</p> <p>A2.1.3 Organize a workshop in bamboo house construction.</p> <p>A2.1.4 Conduct on-job training course on bamboo use for house construction in tsunami affected areas.</p>	<ul style="list-style-type: none"> <li>- The study tour with 10 participants was organized to visit China in May 2010. All participants gained the knowledge and experiences on bamboo utilization and innovative bamboo products.</li> <li>- The workshop on bamboo utilization and furniture making was held in November 2010 in Phang Nga province with 50 participants. Thereafter, a cooperative group of bamboo furniture production and bamboo house construction was established at Maenang-Khao sub-district.</li> <li>- The workshop in bamboo house construction was organized in February 2012, at Maenang-Khao sub-district, Phang Nga Province.</li> <li>- On-the-job training course on bamboo utilization for house construction was held in February 2012, where local people and the resort owners paid their high interest in bamboo house.</li> </ul>
<p><b><i>Output 2.2: Technology for bamboo house construction in use</i></b></p> <p>A2.2.1 Conduct tests of bamboo properties and design bamboo house prototypes.</p> <p>A2.2.2 Negotiate loan contracts for 2 bamboo houses (50 m<sup>2</sup> each) allocation and other bamboo uses in construction.</p> <p>A2.2.3 Conduct a training course on bamboo utilization and furniture design.</p>	<ul style="list-style-type: none"> <li>- The five bamboo species (<i>Bambusa bambos</i>, <i>B. longispata</i>, <i>Dendrocalamus hamiltonii</i>, <i>Thryostachys oliveri</i>, <i>T. siamensis</i>) were completely tested. Their physical properties are suitable for furniture and house construction and with a potential to be promoted in the tsunami affect areas.</li> <li>- The first bamboo house, a joint-venture with the resort owner at Kura Buri district, Phang Nga province, was constructed at on-the-job training in February 2012, whereas the second one was constructed in May 2013 with the resort owner at Koh Kor Kao island, Phang Nga province.</li> <li>- A bamboo shop for the trained group was constructed during July-November 2013.</li> <li>- The training course on bamboo utilization and furniture design was organized in December 2010 in conjunction with the workshop on bamboo utilization and furniture making at Chaipattana village, Phang Nga province. There were 20 villagers attended. <i>(The budget shared between activity 2.1.2 and 2.2.3 since the budget allocation in the project document was no logical which was reported to the 1<sup>st</sup> PSC meeting.)</i></li> </ul>

Planned Performance	Realized Performance
<p><b>Output 3.1:</b> (New output) <i>To complete and publish technical report, manual and complete report</i></p> <p>-To prepare and publish technical report, manual and complete report.</p> <p>-Engaging editor to edit technical report, manual and complete report.</p>	<p>- There were five proceedings of training courses and seminar, one report on study tour, and two technical reports and project completion report.</p> <p>- All documents were published and recorded on CD.</p>
<p><b>Output 4:</b> (New output) <i>To promote the project activities and success</i></p> <p>Organizing a seminar to promote project activities and to share the knowledge and experience gained from conducting the project to other organization, institution, and interested people.</p>	<p>- The seminar on “Contribution to Forest Rehabilitation in Thailand’s Areas Affected by the Tsunami Disaster” was taken place in September 2013 in Bangkok. The seminar made stakeholders understand on project implementation and its results, including the recognition of community involvement and participation.</p>

### Schedule

The effective starting date of the project was 1 August 2008.

The project duration and overall costs are given in Table 3. Note that the project planned duration was three years, but this was extended to five years and five months.

The project was allowed to extend due to incompleteness in some activities. The first extension period was 1.5 years from 1 August 2011 to 31 January 2013, the second extension for 0.5 year from 1 February to 31 July 2013, and the last extension was from 1 August to 31 December 2013 without additional budget.

**Table 3. Project duration and overall costs**

<b>DURATION</b>	<b>5 Years and five months.</b>	
<b>STARTING DATE</b>	<b>1 August 2008</b>	<b>USD.</b>
<b>OVERALL COSTS</b>	<i>Source of financing</i>	
	Government of Thailand	790,020
	ITTO	343,620
	Total	1,133,640

**Total amount of expenditures : USD. 1,133,640**

The project financial inputs were from the ITTO and Government of Thailand (GOT) (Table 4), the project human resources are shown in Table 5.

**Table 4. Project financial inputs**

Budget Components	Total (USD.)	
	ITTO	GOV. OF THAILAND
10. Project personnel	25,200	216,000
20. Subcontract	423,500	-
30. Duty travel	101,700	-
40. Capital item	57,700	68,400
50. Consumable	25,100	14,400
60. Miscellaneous	60,300	-
80. ITTO Admin. Monitoring and evaluation	96,520	44,820
<b>100. Grand Total</b>	<b>790,020</b>	<b>343,620</b>

**Table 5. Project human resources inputs**

Human Resources	Number
Project Director	1
Assistant project Director	1
Project Leader (Co-ordination)	1
Assistant project leader	1
Physical and mechanical properties staff	4
Head of Administration and Finance	RFD Staff 1
Senior Silviculturist	RFD Staff 2
Bamboo Management Specialist	RFD Staff 5
Bamboo Utilization Specialist	RFD Staff 5
Provincial Coordinator Officers	RFD Staff 2
Expert for bamboo furniture and bamboo houses	Contract Staff 1
Technical Assistant	Contract Staff 1
Specialist, Integrated coastal resources management	TEI Staff 1
Specialist, Silviculturist	TEI Staff 1
Specialist, Participation and community development	TEI Staff 1
Specialist, Geographic Information System	TEI Staff 1
Project Manager	TEI Staff 1
Project coordinator	TEI Staff 1
Field coordinator in Ranong and Phang Nga Province	TEI Staff 2
Assistant Field coordinator	TEI Staff 1
Researcher	TEI Staff 2



## **4. PROJECT OUTCOME, TARGET BENEFICIARIES INVOLVEMENT**

### **4.1 Specific Objectives Achieved**

#### **Specific objective 1**

**Achievement:** The people have more knowledge and experience on coastal forest management to secure the ecosystem and obtain benefit from increasing mangrove areas and aquatic animals. The villagers and local stakeholders know and agree upon the results of coastal rehabilitation for which they participated and supported.

#### **Specific objective 2**

- Achievement:**
1. The project created an incentive to the people to grow more bamboo for their utilization and generated additional income to that from rubber tree and oil palm.
  2. Villagers attending the courses gained more knowledge and experiences on bamboo propagation, planting and utilization especially on bamboo furniture making and bamboo house that could be disseminated to communities and create job opportunity by using bamboo as raw material and help extend bamboo planting throughout southern Thailand.
  3. A cooperative group of bamboo furniture production and bamboo house construction at Tambon Maenang-Kao has continued to operate.

Following report and guideline were published

- Secure coastal ecosystems, secure communities in the Tsunami-affected areas. (Thai-Eng.)
- Leaflet for data dissemination of bamboo and Nipa palm. (Thai)
- CBM-SLES plans of Kapur Bay and Kor Khao Island. (Thai)
- Training needs assessment report and development of a training program. (Thai-Eng.)
- Community-based, Forest Rehabilitation in the tsunami affected areas. (Thai-Eng.)
- Physical and Mechanical Properties of Some Thai Bamboos for House Construction. (Thai-Eng.)
- Bamboo Planting, Propagation, and Management (Thai)
- Proceedings of the Training Workshop on Bamboo Utilization and Furniture making. (Thai-Eng.)
- Proceedings of the Training Course on Propagation, Planting, and Management. (Thai-Eng.)
- Proceedings of the Training Course on Planting and Utilization of Bamboo. (Thai-Eng.)
- Proceeding of the Training Course on the Use of Bamboo House Construction. (Thai-Eng.)
- Proceedings of the Workshop and On-the-Job Training Course on Bamboo Used for House Construction. (Thai-Eng.)
- Proceedings of the Seminar on Achievement of the Project. (Thai-Eng.)
- Report on Bamboo study tour to China. (Thai-Eng.)

### *Outcome Achieved:*

- Environmental aspect:
  - Communities paid more attention on mangrove and bamboo by collaborating on conservation for sustainable utilization.
  - Increase of bamboo plantation area for community used in replacement of those harvested from natural forest and reducing forest degradation leading to better environmental quality.
- Economic and Social aspect: Income generation from seedling production, furniture making and house construction.

### ***4.2 Situation after Project completion***

- Awareness of the public and key stakeholders upon the goals of coastal forest management will be raised; special needs and expectation of local communities will be known.
- The capacity of provincial and local services to rehabilitate and manage damaged forests and integrated dimension of ecological security will be strengthened.
- The project provided opportunity for public, NGOs, local communities and scientists to participate in coastal forest management.
- There will be an increased availability of coastal forests' baseline data the pilot areas.
- Knowledge on bamboo utilization to substitute for timber in house construction was broadly disseminated.

### ***4.3 Target beneficiaries***

1. Coastal communities get benefit from the coastal ecosystem rehabilitation in terms of food security, reduction of wind velocity and wave severity. Community leaders in the area understand the process and tools for local coastal area management, and work closer with government agencies.
2. Communities around tsunami affected areas know how to manage bamboo plantation for better shoot and pole production as well as bamboo utilization. A cooperative group of bamboo furniture production and bamboo house construction was established and consequently more income generated.

### ***4.4 Sustainability after Project Completion***

As project realized the sustainability after project completion, the activities on awareness raising and capacity building for local community were continuously devoted along with the supportive factors/conditions were set up such as community revolving fund, integrated coastal resources management plan, cooperation with local government administration and government agencies, and school curriculum on local natural resources.

In terms of the sustainable bamboo utilization, source of bamboo material established in the area, including a new job opportunity created more income for the villagers through bamboo furniture making and bamboo house construction including the delivery of equipment and machineries to the furniture group can be of great benefit. Moreover, RFD has a number of research projects on bamboo utilization such as tea from bamboo leaves, bamboo charcoal and bamboo vinegar, the results of which may be disseminated to the people in the project areas.

## 5. ASSESSMENT AND ANALYSIS

### i) *Project rationale/Project identification*

- Good communication and collaboration between RFD and TEI. This led to the success of project implementation as TEI is the unit previously works in the project area and know well about environmental problem while RFD has knowledge on bamboo planting and utilization to support the rehabilitation of target areas in order to create the income for the community.
- The aid on fishing equipment was initially provided by the local agencies and NGOs much sooner than that from central government due to the delay of official process
- About 1,500 raia of the destroyed mangrove forest in the area of 40-meter distance along the coast were rehabilitated by the *Department of Marine and Coastal Resources (DMCR)*. However, some affected areas had not yet been rehabilitated.

### ii) *The adequacy of the results of the identification process: problems, objectives, implementation strategy*

- The initial stage of bamboo planting promotion was very difficult due to the lack of knowledge among local people and unavailability of incentive to grow bamboo. However, the number of local people participating in the project has been increasing due to RFD's continuous promotion for bamboo planting and with examples of successful bamboo farmers, while depletion of natural bamboo resources has been a driving force for growing bamboo.
- Inconsistency between the duration of seedling preparation and distribution for planting. Seedling preparation must be done in the rainy season. When seedlings were ready to be planted in the south, the weather at particular time was not suitable for planting, some seedlings were damaged from the drought.
- The knowledge and experience on bamboo propagation, cultivation and plantation management the participants gained from the visit to government and private facilities during the Training Course on Planting and Utilization of Bamboo enabled the participants to proceed with further practices in bamboo cultivation and management in their respective areas.
- Most of bamboo planted in the village areas are of mixed planting with major crops such as rubber tree and oil palm, and there will be no significant effects on the productivity the major crops which made the villagers more interesting in bamboo planting.
- Physical and mechanical properties of five bamboo species, i.e. Pai Hok (*Dendrocalamus hamiltonii*), Pai Lammalok (*D. longispathus*), Pai Pa (*Bambusa bambos*), Pai Ruak Dam (*Thyrsostachys oliveri*) and Pai Ruak Daeng (*T. siamensis*) are suitable for housing components compared to other building materials such as woods. This information ensure the user on durability and strength of bamboo as building material.
- Bamboo is a promising raw material to be used for wood substitute in house construction, for which well practices, experience and skills are required.
- Training Workshop on Bamboo Utilization and Furniture Making was a short training workshop aiming to promote efficient utilization of bamboo and how to make bamboo furniture to create an opportunity to earn more income. Prior to training, the Project conducted a workshop on bamboo utilization and furniture making for the people to have the knowledge and skills to work with

the tools and bamboo. Then, the project later organized the training on bamboo house construction.

- Two joint ventures have been established for the construction of bamboo houses and a bamboo shop in Phang Nga Province at Kura-Ruanthai Resort in Kuraburi District owned by Ms. Saengkhai Pankong, the other one being at Mr. Pracha Jarikan's estate on Khor-Khao Island in Takaupa District. The joint venture for bamboo shop is taken placed at Maenang-Kao Sub-district in Kuraburi District with the Kuraburi Bamboo Furniture Group, some members of which participated in the Project's training workshops. This activity made bamboo house become more interested by the people living in the target areas.
- The tools that handed out to the trained group encouraged them to continue their activities.

#### *iii) Critical differences*

- Organizing more training on bamboo propagation, planting and management is needed as bamboo plantation has not been well managed.
- There were many extension activities during the project duration.
- A cooperative group of bamboo furniture production and bamboo house construction was established at Tambon Maenang-Kao, Amphor Kuraburi, Phang Nga Province.

#### *iv) Time and Project inputs*

- Total extension period was two years and five months.
- Some activities had no direct budget. Therefore, the required budget was allocated from other activities.
- Project inputs were adequate.

#### *v) External influences*

- The obstacle of Bamboo Furniture and Bamboo House Construction working were unpredictable climatic conditions and some undesirable characteristics of bamboo such as curve and round culms that need particular skills and efforts to work with. Therefore, the course duration on bamboo house construction need to be extended to create more skill to the participants.
- Some bamboos planted in public area were left unattended or destroyed due to the change of provincial policy.
- Unexpected heavy rain and flood caused to postpone the organizing and timing of activities.

#### *vi) Project beneficiaries*

- Knowledge and experience gained from the training can be used for bamboo furniture making and bamboo house construction and also disseminated to other villagers in the community.

#### *vii) Sustainability*

- RFD has a number of research projects on bamboo utilization such as tea from bamboo leaves, bamboo charcoal and bamboo vinegar, the results of which may be disseminated to the people in the Project areas.

#### *viii) Institutions involved*

- Good cooperation among RFD, TEI, Schools, local administration and communities.

## 6. LESSONS LEARNED

### *Project identification and design matters;*

- The project had some delay and was extended several times resulting from planning of executing agency that tried to bring in the people the project needed or planned to do without a pre-survey of the real needs in the areas.
- Forest rehabilitation planning requires collaboration between local community and academic on defining the purpose of rehabilitation, selection of species appropriate to the area and relevant to the purposes and community needs. The rehabilitation plan and activities must be in accordance with the community way of life.
- Forest rehabilitation must be based on the conditions of the area. Some areas required weeding both before and after planting. It should be planned for methodology and budget suitable to each particular area.
- Unexpected heavy rain and flood caused postpone organizing the project activities and also cause extension of time.
- The Project Steering Committee (PSC) meeting was held once a year, five times in total. However, the representatives of donor agency did not attend the meeting due to time constraint. The RFD Director General was the PSC chairman that changed rather often due to administration reshuffle.

### *Operational matters:*

- The project had a project management team comprising of project director, project leader and technical staff. The project management team met regularly to plan and review the work and the progress. There was a good communication and collaboration between RFD and TEI leading to success of the project as TEI is the unit previously worked in the project area and know well about environmental problems while RFD has knowledge on bamboo planting and utilization to support the rehabilitation of target areas and create income for the community.
- The community-based forest rehabilitation/management requires a combination of local knowledge and technical knowledge, teamwork and responsibilities, diverse and flexible activities relevant to local culture and needs. Meanwhile local administration, mangrove resource development station, and other local agencies together with local community jointly developed coastal management plans at the beginning stage. It would be helpful to create their sense of belonging and opportunity to integrate the community plan with local development plan and other regular plans.
- A certain time was needed to adjust the attitude of people towards bamboo. Most of the people in the areas are fishermen or rubber plantation owners. Therefore, more time was needed to make the people perceive well about the project objectives especially on sustainable utilization of bamboo in middle term and long term. However, some activities such as bamboo planting promotion at the initial stage did not receive much attention from the people around the affected areas who used to harvesting bamboo from natural forest around the areas.
- For the 100 ha of bamboo plantation, the activities did not follow the schedule as planned due to the delay of bamboo planting. The seedlings were prepared in rainy season. When seedlings were transported to planting site in the south, the weather at a certain time was not suitable for planting. Some seedlings were damaged from the drought and those planted showed slowly (*Dendrocalamus asper*). However, in the suitable conditions, some grew very well.
- To promote any bamboo species, the survey on proper location and climate to the species should be conducted in advance. Moreover, knowledge on planting,

management, and maintenance should be disseminated in order to obtain quality bamboo. But most villagers did not want to propagate bamboo by themselves as they prefer to spend their time with rubber tree or oil palm. It was rather difficult to find the villagers who could successfully produce bamboo seedlings for the project.

- For the nearly extinct native bamboo species that frequently used to harvest from natural forest was scarcely found in the areas and seemed to be difficult to propagate. The research on propagation of such species was urgently needed.
- The bamboo house construction was delayed due to the heavy rain and flood for many months in particular area. It might not be easy for local people to gain skills and experience on bamboo house construction.

## **7. CONCLUSIONS AND RECOMMENDATIONS**

### ***Conclusion:***

- The villagers and local stakeholders know and agree upon the results of coastal rehabilitation for which they participated and supported.
- Results from the project implementation had changed the community attitude and finally realized the value and benefit of growing bamboo to generate additional income to that from rubber plantation.

### ***Recommendations:***

#### ***Identification and Design***

- The awareness raising should continuously operate since starting in conjunction with other activities designed for each target group.
- The project should include the follow up activities for each training workshop in order to encourage the participants to bring knowledge gained to practice.
- It should be up to policy level to make bamboo more acceptable and to seek for a chance to get more budgets to promote more activities.
- The project should not only monitor or access on social and environment aspects, but also economic point of view too.
- Further monitoring should be on the needs of local people and their interest and expectation they request for the policy.

#### ***Implementation***

- The output from coastal forest rehabilitation was beyond the target due to the support of communities and local agencies. The replanting activities which complied with local conditions and lifestyle had contributed to community acceptance and participation.
- The integrated coastal management concept should deal with the integration of upstream to downstream as well as an integration of the plans of relevant agencies. So, the benefit from integrated coastal management planning was not only a plan, but learning and sharing were so valuable.
- To promote any bamboo specie in the target areas, it was important to study the environmental factors in advance to determine the site suitability to particular bamboo species. In addition, the knowledge dissemination on planting, management and maintenance techniques should be conducted to obtain the quality bamboo as expected.
- Bamboo should be promoted more and more especially on how to integrate it with other cash crops.
- For bamboo house construction, good designs should seriously be concerned. Even the bamboo furniture should be developed for a variety of shapes and styles to increase the product values. For instance, to convert the use of whole bamboo pole into bamboo

board or bamboo floor that could easily be made for a variety of value added products to be promoted in the market.

- The project must concern about follow-up activities, both for mangrove and bamboo developments, after the project was completed and also possibility of continuing to the next phase or further support from ITTO.

#### *Organization and Management*

- More actions should be promoted for long term sustainability especially by the collaboration of RFD, DNP and relevant private sectors.
- All PSC members and government policy makers should be encouraged to visit the project site during the review of the mission.
- Integrated management should be incorporated in training, marketing and other issues concerned.
- The RFD, as an executing agency should make the budget available to maintain the activities and disseminated the project's results.

#### *Comment on the potential for replication and/or for scaling up*

- The project should be continued in order to proceed to development of the product design, as well as to promote bamboo plantation, business and market in the project areas and elsewhere.



**Responsible for the Report:**

**Name: Mr. Sapol Boonsermsuk**

**Position held: Project Leader**

**Date: May 2014**



# ANNEX I

## PROJECT FINANCIAL STATEMENT (in United State dollar)

Project No.: PD 372/05 Rev.1 (F)

Project Title: Contribution to Forest Rehabilitation In Thailand's Areas Affected  
by the Tsunami Disaster

Period ending on: January 2014

Component	Approved Amount (A)	Expenditure to-date			Unexpended Amount (E) (A-D)
		Committed (B)	Expended (C)	Total (D) (B+C)	
<b>I Funds managed by Executing Agency</b>					
<b>10 Personnel</b>					
10 Technical assistant	43,889.82		43,889.82		0.00
<b>19 S/Total</b>	<b>43,889.82</b>		<b>43,889.82</b>		<b>0.00</b>
<b>20 Sub-contracts</b>					
201 Consultant to organize Workshop	3,000.00		3,000.00		-
202 Consultant for training needs	3,000.00		3,000.00		-
203 Consultant for practical manual	3,000.00		3,000.00		-
204 Plant production and planting	275,000.00		275,000.00		-
205 Bamboo seedlings production	31,270.00		31,270.00		0.00
206 Public awareness material	6,500.00		6,500.00		-
207 Media program	4,000.00		4,000.00		-
208 Consultant for validation of forest cover	12,200.00		12,200.00		-
209 Planning CBM-SLES	16,000.00		16,000.00		-
210 Consultant for Research planning	3,000.00		3,000.00		-
211 Consultant for monitoring system	3,000.00		3,000.00		-
212 Lecturers bamboo workshops	2,000.00		2,000.00		-
213 Bamboo on-job training	1,800.00		1,800.00		-
214 Consultant bamboo houses	24,208.02		24,208.02		0.00
215 Build capacity and network	3,000.00		3,000.00		-
216 Training staff and community leader	3,000.00		3,000.00		-
217 Bamboo tests	2,000.00		2,000.00		-
218 Printing	3,200.00		3,200.00		-
<b>29 S/Total</b>	<b>399,178.02</b>		<b>399,178.02</b>		<b>-</b>
<b>30 Duty Travel</b>					
31 Air travel within Thailand	9,051.37		9,051.37		0.00
32 DSA, project coordination team	56,777.12		56,777.12	-	0.00
33 Project inception workshop DSA	430.11		430.11		0.00
34 Project coordination meetings	-		-		-
35 Workshop participants DSA+transport	11,100.00		11,100.00		-
36 Bamboo study tour abroad	16,386.80		16,386.80		0.00
37 Bamboo:survey and farmer identification	-		-		-
37 Bamboo: workshops transport cost	15,509.00		15,509.00		0.00
38 Bamboo plantation	3,000.00		3,000.00		0.00
<b>39 S/Total</b>	<b>112,254.40</b>		<b>112,254.40</b>		<b>-</b>
<b>40 Capital items</b>					
41 3 computers	5,386.61		5,386.61		-
42 Digital video	1,200.00		1,200.00		-
43 Bamboo houses	-		-		-
44 Equipment (Circular saw,etc.)	2,000.00		2,000.00		-
45 Equipment (Pressure treatment)	25,000.00		25,000.00		-
<b>49 S/Total</b>	<b>33,586.61</b>		<b>33,586.61</b>		<b>-</b>
<b>50 Consumables</b>					
51 Office supplies	5,729.47		5,729.47		0.00
52 Bamboo workshops	2,764.62		2,764.62		0.00
53 Bamboo tests	2,498.21		2,498.21		-
54 Printing	500.00		500.00		-
<b>59 S/Total</b>	<b>11,492.30</b>		<b>11,492.30</b>		<b>- 0.00</b>



Component	Approved Amount (A)	Expenditure to-date			Unexpended Amount (E) (A-D)
		Committed (B)	Expended (C)	Total (D)	
<b>60</b>	<b>Miscellaneous</b>				
601	Project Team capacity building	4,538.30		4,538.30	-
602	PSC meetings	1,761.16		1,761.16	0.00
603	Printings Proceedings and Guidelines	3,000.00		3,000.00	-
604	Awareness materials,outreach to schools	7,500.00		7,500.00	-
605	Consultation meetings plan CBM-SLES	4,000.00		4,000.00	-
606	Printing CBM-SLES reports and plans	4,000.00		4,000.00	-
607	Provincial workshops on plans	2,500.00		2,500.00	-
608	Printing Research and Monitoring system	2,000.00		2,000.00	-
609	Workshop validation of research	600.00		600.00	-
610	Bamboo: training courses Extension...	8,000.00		8,000.00	-
611	Bamboo: training for seedling producers	8,000.00		8,000.00	-
611	Publication of results of bamboo tests	-		-	-
612	Organize workshops bamboo house	4,849.98		4,849.98	-
613	Conduct on- Job bamboo use for house	8,199.97		8,199.97	0.00
614	Bamboo uses in construction	1,411.77		1,411.77	-
615	Build capacity and network	5,000.00		5,000.00	-
616	Training staff and community leader	5,000.00		5,000.00	-
617	Public awareness material	3,500.00		3,500.00	-
618	Media program	3,500.00		3,500.00	-
619	Technical Support (Editor)	1,600.00		1,600.00	-
620	Auditing	2,168.23		2,168.23	0.00
621	Bamboo tests	4.68		4.68	0.00
622	Bamboo plantation	1,000.00		1,000.00	-
623	sundry	10,964.76		10,964.76	-
<b>69</b>	<b>S/Total</b>	<b>93,098.85</b>		<b>93,098.85</b>	<b>0.00</b>
	<b>S/Total</b>	<b>693,500</b>		<b>693,500.00</b>	<b>0.00</b>
<b>100</b>	<b>Grand Total</b>	<b>693,500</b>		<b>693,500.00</b>	<b>0.00</b>

## ANNEX 2

### PROJECT CASHFLOW STATEMENT

Project No.: PD 372/05 Rev.1 (F)

Project Title: Contribution to Forest Rehabilitation In Thailand's Areas Affected  
by the Tsunami Disaster

Period ending on: January 2014

Item	Reference	Date	Amount	
			US\$	Local Currency (Baht)
<b>A</b>	<b>Funds received from ITTO:</b>			
1	First Installment_Total US\$ 175,000	16 JUL 2008	174,970.07	5,857,997.80
2	Second Installment_Total Us\$ 320,000	8 OCT 2010	319,968.29	9,576,650.05
3	Third Installment_Total US\$ 170,000	18 JUL 2012	169,968.97	5,303,032.00
4	Fourth Installment_Total US\$ 28,500	19 JUL 2013	28,450.63	885,383.50
<b>Total Funds Received (A) (Amount in US\$ and Local Currency (Baht) after deduction of Banking)</b>			<b>693,357.96</b>	<b>21,623,063.35</b>
<b>B</b>	<b>Expenditure By Executing Agency</b>			
<b>10</b>	<b>Personnel</b>			
10	Technical assistant		43,889.82	1,382,347.56
<b>19</b>	<b>S/Total</b>		<b>43,889.82</b>	<b>1,382,347.56</b>
<b>20</b>	<b>Sub-contracts</b>			
201	Consultant to organize Workshop		3,000.00	100,440.00
202	Consultant for training needs		3,000.00	100,440.00
203	Consultant for practical manual		3,000.00	100,440.00
204	Plant production and planting		275,000.00	8,537,005.00
205	Bamboo seedlings production		31,270.00	966,036.29
206	Public awareness material		6,500.00	214,200.00
207	Media program		4,000.00	119,720.00
208	Consultant for validation of forest cover		12,200.00	380,640.00
209	Planning CBM-SLES		16,000.00	499,200.00
210	Consultant for Research planning		3,000.00	93,600.00
211	Consultant for monitoring system		3,000.00	93,600.00
212	Lecturers bamboo workshops		2,000.00	59,860.00
213	Bamboo on-job training		1,800.00	53,874.00
214	Consultant bamboo houses		24,208.02	750,196.31
215	Build capacity and network		3,000.00	93,600.00
216	Training staff and community leader		3,000.00	93,600.00
217	Bamboo tests		2,000.00	59,860.00
218	Printing		3,200.00	99,584.00
<b>29</b>	<b>S/Total</b>		<b>399,178.02</b>	<b>12,415,895.60</b>
<b>30</b>	<b>Duty Travel</b>			
31	Air travel within Thailand		9,051.37	279,881.65
32	DSA, project coordination team		56,777.12	1,780,047.44
33	Project inception workshop DSA		430.11	14,400.00
34	Project coordination meetings		-	-
35	Workshop participants DSA+transport		11,100.00	371,628.00
36	Bamboo study tour abroad		16,386.80	490,457.00
37	Bamboo:survey and farmer identification		-	-
37	Bamboo: workshops transport cost		15,509.00	476,641.14
38	Bamboo plantation		3,000.00	93,599.85
<b>39</b>	<b>S/Total</b>		<b>112,254.40</b>	<b>3,506,655.08</b>
<b>40</b>	<b>Capital items</b>			
41	3 computers		5,386.61	180,343.84
42	Digital video		1,200.00	40,176.00
43	Bamboo houses		-	-
44	Equipment (Circular saw,etc.)		2,000.00	59,860.00
45	Equipment (Pressure treatment)		25,000.00	749,350.75
<b>49</b>	<b>S/Total</b>		<b>33,586.61</b>	<b>1,029,730.59</b>
<b>50</b>	<b>Consumables</b>			
51	Office supplies		5,729.47	179,553.51
52	Bamboo workshops		2,764.62	82,745.00
53	Bamboo tests		2,498.21	75,450.00
54	Printing		500.00	15,560.00
<b>59</b>	<b>S/Total</b>		<b>11,492.30</b>	<b>353,308.51</b>

Item		Reference	Date	Amount	
				US\$	Local Currency (Baht)
601	Project Team capacity building			4,538.30	135,831.46
602	PSC meetings			1,761.16	54,501.85
603	Printings Proceedings and Guidelines			3,000.00	100,440.00
604	Awareness materials,outreach to			7,500.00	251,100.00
605	Consultation meetings plan CBM-SLES			4,000.00	124,800.00
606	Printing CBM-SLES reports and plans			4,000.00	124,800.00
607	Provincial workshops on plans			2,500.00	78,000.00
608	Printing Research and Monitoring system			2,000.00	62,400.00
609	Workshop validation of research			600.00	18,720.00
610	Bamboo: training courses Extension...			8,000.00	267,840.00
611	Bamboo: training for seedling producers			8,000.00	267,840.00
611	Publication of results of bamboo tests			-	-
612	Organize workshops bamboo house			4,849.98	145,160.00
613	Conduct on- Job bamboo use for house			8,199.97	245,425.00
614	Bamboo uses in construction			1,411.77	42,254.30
615	Build capacity and network			5,000.00	156,000.00
616	Training staff and community leader			5,000.00	156,000.00
617	Public awareness material			3,500.00	109,200.00
618	Media program			3,500.00	109,200.00
619	Technical Support (Editor)			1,600.00	49,792.00
620	Auditing			2,168.23	66,731.26
621	Bamboo tests			4.68	140.00
622	Bamboo plantation			1,000.00	31,200.00
623	sundry			10,964.76	341,428.66
<b>69</b>	<b>S/Total</b>			<b>93,098.85</b>	<b>2,938,804.53</b>
<b>Total</b>				<b>693,500.00</b>	<b>21,626,741.87</b>
<b>Total expenditure to-date (B)</b>				<b>693,500.00</b>	<b>21,626,741.87</b>
<b>Remaining Balance of funds</b>				<b>-</b>	<b>-</b>