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REPORT ON COMPLETED PROJECTS AND PRE-PROJECTS

IN THE FIELD OF REFORESTATION AND FOREST MANAGEMENT

REPORT ON COMPLETED PROJECTS AND PRE-PROJECTS IN THE FIELD OF REFORESTATION AND FOREST MANAGEMENT

A) COMPLETED PROJECTS

(1) PD 419/06 Rev.3 (F) EXT-TICAD5 Rev.1 **Forest Seeds Management and Conservation: Project for Rehabilitation and Restoration of Degraded Forests in Côte d'Ivoire with the Involvement of Local Communities (Refugees, Internally Displaced People and Local Populations)** (Côte d'Ivoire)

Budget and Funding Sources:

Total Budget:		US$	2,318,280
ITTO Budget:		US$	1,800,000
Government of Japan (JICA):	US$ 1,800,000		
Agency/GOC:		US$	518,280

Implementing Agency:	Société de Développement des Forêts (SODEFOR)
Period of Approval:	Spring 2013
Starting Date and Duration:	October 2013 / 48 months
Approved Revised Date of Project Completion:	First extension: April 2018 [NOLF.17-0115 & JICA(6R) 10-16001] Second extension: July 2018 [NOLF.18-0041 & JICA(6R) 4-24003]

I. Introduction

This project was approved under the Spring 2013 Project Cycle through the electronic time-bound approval system, and the financing was made at the same Project Cycle under the framework of the Fifth Tokyo International Conference for African Development (TICAD V). The Agreement regulating the implementation of the project was signed on 2 June 2013, during the TICAD V meeting in Yokohama, Japan, by the Minister of Foreign Affairs of Côte d'Ivoire, Executive Director of ITTO and the Managing Director of SODEFOR. The first disbursement of ITTO funds was made on 16 October 2013. The ITTO budget of this project was not impacted by the financial impairment due to its special status (non-regular project cycle).

Two project extensions were granted until July 2018, without additional ITTO funds, by the ITTO Secretariat, based on official requests including proper justification with appropriate detailed work plan and budget. However, as an acceptable version of the project completion report was received in August 2018, the project operation period had lasted 59 months instead of 48 initially designed by the implementing agency (SODEFOR). The project final financial audit report was submitted in September 2018 by the implementing agency, allowing this project to be documented for the completion and closure procedures.

II. Project Objective

The project contributed to the sustainable management of gazetted forests in Côte d'Ivoire. Specifically, the goal of this project was to have degraded forest lands rehabilitated by displaced populations and refugees. A special meeting was held in August 2013, for the preparation of a smooth transition between PD 419/06 Rev.3 (F) and PD 419/06 Rev.3 (F) EXT-TICAD5 Rev.1, in order to ensure that the main outputs, outcomes and results of the first project could efficiently feed the second for its implementation.

III. Project Achievements and Outputs

It could be important to recall that the implementation of most project activities had been disturbed and delayed due to the suspension of the disbursement of funds from June to November 2016 because of the financial impairment crisis. The project implementation strategy had been based on an integrated approach for the implementation of activities dealing with forest rehabilitation with the involvement of local communities living around the Scio and Duekoue Gazetted Forests. The project implementation strategy was based on the use of the findings and results of the past ITTO projects implemented by SODEFOR in Cote d'Ivoire: PD 22/98 Rev.2 (F), PD 377/05 Rev.2 (F) and PD 419/06 Rev.3 (F).

This project had been associating environment-related aspects, regarding the rehabilitation/restoration of degraded forest lands, with humanitarian-like actions for the benefit of local communities (refugees, internally displaced people and local populations) that were involved in the project implementation in and around the gazetted forests of Scio and Duekoue, in Cote d'Ivoire. The project strategy reconciled the daily subsistence needs of the communities and the rehabilitation goals for the degraded forest areas by using the taungya agroforestry systems.

The main project achievements and outputs, in relation to the project implementation strategy, can be summarized as follows:

- High quality seeds and forest seedlings (Teactona grandis and Gmelina arborea as exotic species, Khaya ivorensis, Terminalia spp, Ricinodendron africanum, Irvingia spp, Mansonia spp, and Tieghemela heckelii as indigenous species) were used for the forest rehabilitation activities, with the involvement of local communities (internally displaced people, refugees and/or local populations), in and around the Duékoué and Scio gazetted forests, located in the western part of Côte d'Ivoire. More than 2 million forest seedlings (1.7 million seedling of exotic species and 0.6 million seedlings of indigenous species) were produced in four nurseries established near these gazette forests and operated by trained local community members, under the supervision of SODEFOR's technicians;
- The use of the taungya agroforestry system, for the forest rehabilitation activities of degraded lands in the Duekoué and Scio gazetted forests, had contributed to increasing the production of food crops (mainly maize rice and cassava) associated with trees, for the benefit of local communities (internally displaced people, refugees and/or local populations) involved in the project implementation. For the aim of ensuring food security for these local communities, ten warehouses were built, in order to safely shelter small food crops processing machines and safely stock the processed food crops for local community members involved in the project implementation. These small food crops processing machines had been considered as element/factor giving rise to the opportunity to improving the daily life of women by being gradually relieved in their hard tasks regarding the manual processing of food crops for the production of corn/cassava flour for family consumption, as well as for sale;
- Nine cooperatives (gathering more than seven thousand members) had been established in nine villages (Niambli, Bedy-Gazon, Tien-Oula, Zeaglo, Guezon, Ladjikro, Samuelkro, Sokoura and Nanandi) for the management of the warehouses and small food crops processing machineries installed in each warehouse, while selected members of cooperatives were trained on how to manage cooperatives; and
- More than five thousand hectares (around 2,000 ha of forest lands rehabilitated through the use of taungya agroforestry system and around 3,500 hectares had been subject to forest enrichment and special protection measures facilitating the natural regeneration of indigenous species in the Duekoué and Scio gazette forests.

The seeds for food crops were provided by the Agence Nationale d'Appui au Développement Rural (ANADER), under its core mission of agricultural extension work, in order to be associated with trees planted in degraded forest lands that had been rehabilitated, through the taungya agroforestry system, with the involvement of local communities.

IV. Outcomes and Impacts

By project completion, the main project outcomes and impacts, in relation to the expected outputs and associated activities, can be summarized as follows:

- For a post-conflict country like Cote d'Ivoire, the implementation of this project contributed to reinforce the reconciliation and social integration of local communities which were not willing to work together after several years of distrust due to the violence they endured during the civil war in Cote d'Ivoire. The project implementation brought them to work together for the rehabilitation of the Scio and Duekoue gazetted forests that they contributed to degrade during the civil was for their basic needs (mainly food and wood energy);
- Local communities had been trained on the establishment and management of nurseries for the production of forest seedlings used for the rehabilitation of degraded forest lands in and around the Duékoué and Scio gazetted forests;
- Change in the living standard thanks to small food products processing machines provided to local communities involved in the project implementation, in order to create added value to food products (by generating additional income for livelihood) and improve / facilitate the daily lives of women (by

reducing the drudgery of their daily food products processing work), as well as to contribute ensuring food security (through a longer conservation of processed food products as opposed to raw food products); and

- Cooperatives established and managed by local communities as structures supervising the warehouses and small food crops processing machines contributing to the improvement of the livelihood of local communities involved in the project implementation in priority.

V. Lessons Learnt and Sustainability

The beginning of the project implementation was slow as there was a need to bring together local communities that were not trusting each other due to the violence they endured during the civil war in Cote d'Ivoire (2002-2010). Sensitization campaigns were carried out by the project implementing team, with the involvement of selected local leaders, in order to address that problem of trust, as it was a pre-requisite for the smooth implementation of this project.

After the project funding period, SODEFOR made the commitment to take over and continue the maintenance work together with silvicultural treatments over the established agroforestry plantations, as well as the monitoring of areas subject to the enrichment process and to special protection measures for natural regeneration. SODEFOR's Provincial Centre based in Man and SODEFOR Forest Management Units, which are in charge of the management of these two gazetted forests, should add the maintenance and monitoring tasks of project achievements in their normal work programmes.

It is important to highlight that the achievements, outputs, outcomes and impacts of this project contributed to the selection of the Scio and Duekoue gazetted forests as key sites for the implementation of the 2018-2022 Forest Investment Programme (FIP) funded by the World Bank. This FIP intends to consolidate the project achievements in and around the Scio and Duekoue gazetted forests and replicate the implementation approach and methods in other gazetted forests to be selected in Cote d'Ivoire.

The sustainability of the main project achievements and outcomes could be ensured and consolidated by the second phase of this project which is being prepared by SODEFOR. In a bottom-up process, SODEFOR informed the ITTO Secretariat about their preliminary discussion with the representatives of JICA Office and the Embassy of Japan in Cote d'Ivoire in order to express the interest for a second phase of this project, as the continuation of a partnership involving the Government of Cote d'Ivoire, SODEFOR, JICA and ITTO Secretariat. For the consideration of a second phase of the project PD 419/06 Rev.3 (F)-EXT-TICAD5, the project executing agency (SODEFOR) prepared a concept note for the second phase and submitted it to the JICA Office and Embassy of Japan in Cote d'Ivoire, for preliminary discussion. The ITTO Secretariat will keep in touch with the Government of Cote d'Ivoire, SODEFOR and JICA in order to be informed about the findings of this preliminary discussion on the consideration of a second phase of this project, in order to provide its inputs in due time.

VI. Concluding Remarks

As the ITTO Secretariat received the Project Completion Report, as well the Final Financial Audit Report, the Committee may wish to declare the Project PD 419/06 Rev.3 (F)-EXT-TICAD5 Rev.1 as completed. Soft copies of the project-related reports can be made available, upon request, by the Secretariat.

(2) PD 450/07 Rev.2 (F,I) Capacity Building for CDM Forestry in the Framework of SFM Emphasizing Community Forests and Poverty Alleviation in Ghana (Ghana)

Budget and Funding Sources:

Total Budget:			US$	666,255
ITTO Budget:			US$	402,516
Government of Japan:	US$	402,516		
Government of Ghana (in kind):			US$	110,039
Michigan Technological University:			US$	94,500
SAMARTEX (in kind):			US$	59,200

Implementing Agency: Forestry Research Institute of Ghana (FORIG)

Session of Approval: ITTC Session XLIV, November 2008, Yokohama

Starting Date and Duration: April 2011 / 36 months

Approved Revised Date of Project Completion: First extension: December 2014 (NOLF.14-0125)

I. Introduction

The Council approved the project at its Forty-fourth Session in Yokohama, Japan, in November 2008. Financing was not allocated at that time, but the Council authorized the Executive Director to start implementation as soon as earmarked funds for the total ITTO contribution became available in the Special Account. It was fully financed at the spring 2010 ITTO regular project cycle. The Agreement regulating the implementation of the project was signed on 21 December 2010. The first disbursement of ITTO funds was made on 26 April 2011. A project extension was granted until December 2014, without additional ITTO funds, by the ITTO Secretariat, based on an official request including proper justification with appropriate detailed work plan and budget. However, as an acceptable version of the project completion report was received in May 2018, the project operation period had lasted 85 months instead of 36 initially designed by the implementing agency (FORIG). The project final financial audit report was submitted in September 2018 by the implementing agency, allowing this project to be documented for the completion and closure procedures.

II. Project Objective

The project intended to build capacity in Ghana for forestry-related Clean Development Mechanisms (CDM-Forestry) via a community rehabilitation of degraded forests. It specifically contributed to improving the capacity for CDM-Forestry in Ghana, through community forestry, for poverty alleviation in conjunction with sustainable forest management (SFM) practices, and by involving the private sector and native communities.

III. Project Achievements and Outputs

By the project completion, the achievements and outputs, in correlation to the planned activities implemented by this project, can mainly be summarized as follows:

- Allometric equations for estimating carbon of indigenous species in mixture stands were developed to facilitate carbon content estimation of 19 tree species planted in the project area, including indigenous species (Ceiba pentandra, Entandrophragma angolense, Khaya anthotheca, Khaya grandifoliola, Kaya. ivorensis, Terminalia ivorensis, Terminalia superba, Triplochiton scleroxylon, Aningeria altissima, Milicia excelsa, Heritiera utili) and exotic species (Cedrela odorata and Tectona grandis) was done by analysing ground samples from cross-sectional cookies using a Carlo Erba NA 1500 NC elemental analyzer. Soil sampling was done to determine the soil carbon content in the project area;
- The sequestered carbon in the 450 ha forest plantations established in Oda-Kotoamso and 100ha in Pamu- Berekum was analyzed using allometric equations of the measured diameter and height of the trees. This provided information on the carbon production potential of these stands;

- Socio-economic surveys were conducted in the forest fringe communities to assess their knowledge on climate change issues and their willingness to plant trees on their farms as CDM approach, while socio-economic surveys involving the community farmers were undertaken to collate data on their social backgrounds, livelihood activities and the willingness to participate in the CDM plantation programme;
- The use of natural resources including the forest, non-timber forest products and ecological services was inventoried to assess the potential impacts on the project, as well as the expectation of the farmers on the tree planting, in relation to baseline studies;
- Complete enumeration of tree species was undertaken on the demarcated 450ha forest plots. The canopy cover within the forest stands of the 450 ha was determined using hemispherical photos taken with digital camera that was fitted with fisheye lens. Data analysis was undertaken for the preparation of the refined CDM methodologies successfully applied in these plantations;
- In addition to the participation in several international meetings (IUFRO, FAO, ITTO, etc.), the project coordinator participated in the UNFCCC COP-19 ITTO-JICA joint side event in Warsaw, Poland. He gave a presentation on 'Lessons learnt from Capacity building for local communities on CDM Forestry in Ghana' emphasizing efforts of ITTO in reforestation of degraded forest lands;
- Postgraduate training in wood density and carbon content determination at Michigan Technological University was successfully completed by a Ghanaian student. Five (5) masters' level students were accepted on the project and they utilize some aspect of the project results for their dissertations. Twelve(12) forestry technicians had the opportunity to study on the project; and
- Series of workshops and seminars were organized in the communities to sensitize the farmers and/or tree growers on CDM-Forestry issues.

IV. Outcomes and Impacts

The potential of forestry-related Clean Development Mechanisms (CDM-Forestry) and payment for environmental services in forestry in general in Ghana could be considered very significant as large areas of Ghana's forests had been degraded via over-aggressive, non-sustainable logging practices, slash-and-burn agricultural practices, and conversion of forests to alternative crops such as cocoa. Therefore, the relevance to develop the capacity to conduct CDM-Forestry projects, with a strong poverty alleviation component, could be very high. That's why the refined CDM methodologies were developed and disseminated by the project, for which the main outcomes and impacts could be summarized as follows:

- Small scale CDM forestry was actively promoted in Ghana using the model restoration of the degraded dry forest zone of Ghana based on the refined CDM methodologies successfully applied in the forest plantations established in Oda-Kotoamso;
- Capacity of community farmers, students and the project team were built in CDM-Forestry methodologies and Carbon content estimation of tropical tree species planted in the project target area;
- The project has increased strategies to restoring carbon stocks in degraded forest lands by serving as a model to supplement the national forest plantation programme and climate change mitigation initiatives in Ghana; and
- As the research findings were published to enhance the access and implementation of the strategies developed, the project had beneficiaries including the Forestry commission, fringe communities of the project target area, students and researchers, national, regional and international agencies interested in carbon credit and marketing.

V. Lessons Learnt and Sustainability

The main lesson learned, in relation to the implementation of this project, was dealing with the early involvement of community farmers of Oda-Kotoamso District and other partners, to ascertain the implementation of some project activities, on the basis of a memorandum of understanding signed with relevant stakeholders (Oda Kotoamso District Assembly, Michigan Technological University, SAMARTEX timber company) at the beginning of the project implementation. These stakeholders had already involved in the implementation of other ITTO projects [PD 105/01 Rev.3 (F) and PD 528/08 Rev.1 (F)].

The sustainability of main project outcomes and results could rely on the commitments made by the most relevant stakeholders involved in the project implementation:

- The District forest managers and their technical officers of the Forestry Commission of Ghana, will continue to work with the local communities in the project sites for the implementation of the strategies developed by this CDM-Forestry project;
- The assurance from the Forestry Commission of Ghana of getting the benefit sharing agreement, signed with local communities members, had raised the interest of more and more farmers in being involved in the rehabilitation of degraded forest lands and it could be the most important factor of motivation for local communities in sustaining the main project outcomes;
- The District Assembly/Authority of Oda-Kotoamso District, in collaboration with SAMARTEX timber company, made the commitment to offer local communities with support both financial and logistics for their activities contributing to the protection of established forest plantations; and
- The implementing agency (FORIG) will continue to use the project sites as a research sites for the selected mid-term and long-term studies on forest carbon estimation and accounting, to be documented for national use in Ghana.

VI. Concluding Remarks

As the ITTO Secretariat received the Project Completion Report, as well the Final Financial Audit Report, the Committee may wish to declare the Project PD 450/07 Rev.2 (F,I) as completed. Soft copies of the project-related reports can be made available, upon request, by the Secretariat.

(3) PD 454/07 Rev.3 (F) Community Forest Management: A Sustainable Alternative for the Maués State Forest, Amazonas State (Brazil)

Budget and Funding Sources:

Total Budget:			US$	650,332
ITTO Budget:			US$	513,527
Government of Japan:	US$	463,527		
Government of USA:	US$	50,000		
IBENS:			US$	136,805

Implementing Agency:	Institute of Amazonian Research and Development (IPDA) – New Executing Agency
Session of Approval:	ITTC Session XLVI, December 2010, Yokohama, Japan
Starting Date and Duration:	July 2012 / 36 months
Approved Revised Date of Project Completion:	Extension until December 2016 (NOLF.15-0136) Extension until January 2018 (NOLF.17-0027)

I. Introduction

The Council approved this project in Spring of 2008. The revised proposal of this project was approved by the Council at its Forty-sixth Session and fully financed at the same session. In February 2011, a draft of the Project Agreement was forwarded to the Government of Brazil to review it jointly with IBENS, the original executing agency that was to implement the project. However, in April 2011 the Government of Brazil informed the ITTO Secretariat that IBENS had moved to the State of Bahia and could no longer act as the Executing Agency that needed to implement project activities in the State of Amazonas. Therefore, the Government of Brazil searched for another suitable executing agency and requested the ITTO Secretariat to consider the Institute of Amazonian Research and Development (IPDA) as the new executing agency. In this light, the Government of Brazil further submitted to the Secretariat a formal request to change the Executing Agency. The ITTO Secretariat reviewed the documents and considered these to be justified, and IPDA was approved as the new Executing Agency at the Forty-fifth Session of the Committee in November 2011.

The Project Agreement regulating the implementation of the project was duly signed in January 2012. The Project commenced in May 2012 but it had faced administrative problems since its beginning. After hiring and terminating the first two project coordinators, the third project coordinator was recruited and approved by the ITTO Secretariat in November 2015. The new coordinator has been able to mobilize communities to participate in project activities in line with its objectives. The Executing Agency submitted a request for the release of the fourth installment of funds in May 2016. However, due to the suspension of all installments of funds to ITTO projects in June 2016, the requested installment could not be immediately released and project activities were suspended. The implementation of project activities was revitalized with receipt of the reduced fourth installment in Feb 2017. With the new project coordinator's active work, all project activities were completed in March 2018.

II. Project Objective

The project aimed to contribute towards the sustainable development of the Brazilian Amazon forest through the strengthening of community forestry and the specific objective was to promote the sustainable development of communities of the Maués State Forest, in Amazonas State, for the benefit of 17 traditional communities over a total area of 438,440 hectares. The main reason behind environmental degradation in the Maués region has been the lack of alternative sources of income for the local population. This project thus presented the possibility of establishing a sustainable forest management and production system that could become the foundation for sustainable economic development in that region.

III. Project Achievements and Outputs

In line with the project objectives, the project has carried out a series of activities aimed at strengthening community organizations, developing and implementing community forest management plans and enabling working groups to carry out an efficient administration of community enterprises. Main achievements of the project in connection with its three outputs, the following can be highlighted:

Output 1: Strengthening community organizations for community forest management

- Two meetings were organized in 2012 to discuss the legal status of the Maués State Forest; a series of meetings were organized to form associations, and leader development along with several training courses on organizational behavior, ethics and communication as well as environmental education;
- Two seminars on forest codes for the timber industry in Brazil were organized in December 2014 with participation of 70 participants; and
- Eight members of the Maués State Forest communities were trained in community forest management in August 2015.

Output 2: Forest Management Plan elaborated and approved

- Three working groups in forest management were formed in December 2015 based on their knowledge of the area and participatory maps were produced. These maps provide information on the boundary of the areas and species with market potential, easily accessible trails, rivers and other biotic components relevant for forest management;
- Three community forest management plans developed in the communities: São José do Cicantá, on the river Cicanta, Nova Maringá and Novo Paraiso, on the river Parauari. In addition to these, two new plans were developed in the communities of Liberdade and Santa Maria, both on the river Apocuitaua. Among the five plans, two plans were licensed, with the License of Operation in the hand of holders: 1) AlbedeGonçalves; 2) Antônio Augusto; 3) Maria Eliana; 4) Antônio Duck; and 5) Flavia; and
- Two exchanging visits took place between the timber working groups in March 2017 with the goal of training the group in the management of wood production. The covered topics include: i) crop blocks definition, (ii) opening of storage trails and yards, (iii) tree cutting, (iv) wood management, and (v) transportation.

Output 3: Working group prepared to effectively manage community forest enterprises

- Two courses on occupational safety were held during April 2017 with the purpose of presenting the importance of occupational use of safety devices, risks and how to avoid accidents in the forest. The following topics were delivered: i) risks in the lumber sector, (ii) preventive measures, (iii) corrective measures, and (iv) maintenance of devices;

- A seminar on forest certification was held in April 2017. It provided an opportunity to review the importance of the conservation and sustainable management of natural resources, providing fair working conditions and encouraging good relations with communities; and
- Three working groups participated in a business round-table meeting in March 2017 in the Boa Vista dos Ramos district which was carried out by the Agricultural and Forest Development of Amazonas Institute – IDAM. Two seminars on market challenges and opportunities for forest products were held in May 2017. Topics of the seminars included Brazilian timber markets, certification, value chain, added product value and credit.

IV. Outcomes and Impacts

The project has developed five community forest management plans in the communities of the Maués Forest in excess of the original target of the three Plans and established three working groups. These working groups facilitated information gathering, inventory, training and consolidating reports and they played a critical role in developing and submission forest management plans to the state government for review and approval.

The project has contributed to community-based management planning, and good forest management practices and development of community-based forest enterprises in the Maués Forest. During the implementation of the project, many communities have gained forest management knowledge and skills for the sustainable management of the Maués Forest through a series of training courses and capacity building workshops on forest management, community organizations, joint collaboration among community groups, environment education, and community enterprises. The innovation of this project demonstrated the collective efforts of key stakeholders can move away from unorganized community forest into sustainable community forest management systems in the Maués Forest as a productive forest management unit.

The project has also contributed to the progress of environment policies which have a major character of social movements. It has facilitated the work of Conservational Units which were created through public policies of the government of Amazon. In addition, the project has increased its cooperation with GTA (Amazon Working Group), CPT (Land Pastoral Commission of the Catholic Church), and STTR Maués (Union of Rural Workers of Maués) in advancing social movements of traditional people and communities in particular empowering women in forest management.

V. Lessons Learnt and Sustainability

The main lessons from learned from the implementation of the project include:

- Engagement of a qualified professional who has experience in coordinating and executing projects has been crucial to the efficient and effective implementation of the project. A long delay in project completion was partly due to the change of the first two project coordinators who prepared reports in an unsatisfactory manner with limited accountability and responsibility;
- During the preparation of forest management plans, the long-term engagement of a professional forest technician on the sites has been very productive. Many community members in the Maués Forest have recognized the importance of preserving and monitoring the maintenance of resources for future generations; and
- Strategic partnerships between IPAD and communities in the Maués Forest have been critical to leverage additional capacity and resources to increase the impact of the project's activities.

During the development of community forest management plans of Maués, IPDA developed a strategy of empowerment work with the state government and many stakeholders of the project. Therefore, the project beneficiaries in particular, local communities with Community Management Plans of Maués will play an important role in extending the work of the project with continued support of the state government in the future.

The project has brought sustainable forest management knowledge and skills with many data such as the list of timber and non-timber products of the region. IPDA is considering the possibility of preparing a second phase proposal based on the challenges including engaging young people and strengthening the monitoring system that has been developed by this project.

VI. Concluding Remarks

The project has contributed to the development of five community forest management plans and the application of good forest management practices among 19 local communities, living in the Maués State Forest, in the Brazilian Amazon. The project has also strengthened community organizations and initiated community forest enterprises development.

As the ITTO Secretariat has received the Final Financial Audit Report and several technical reports, this project can be reported as completed. Copies of the technical reports, including a project video entitled "Community forest management in the Brazilian Amazon" in Portuguese, are available from the Secretariat and can be downloaded on ITTO's website at http://www.itto.int/project_search/.

(4) PD 528/08 Rev.1 (F) Towards Sustainable Indigenous Mahogany Timber Production in Ghana: Phase II, Refining the Silvicultural "Tool Kit" and Practical Training for Industrial-Foresters and Community Farmers

Budget and Funding Sources:

Total Budget:			US$	775,114
ITTO Budget:			US$	465,264
Government of Japan:	US$	445,264		
Government of U.S.A.:	US$	20,000		
Government of Ghana:			US$	147,150
Michigan Technological University:			US$	101,500
SAMARTEX:			US$	61,200

Implementing Agency:	Forestry Research Institute of Ghana (FORIG)
Period of Approval:	Spring 2009
Starting Date and Duration:	April 2010 / 48 months
Approved Revised Date of Project Completion:	First extension: April 2015 (NOLF.14-0126)

I. Introduction

This project was approved under Spring 2009 Project Cycle through the electronic approval system put in place, as there was no longer a Council Session organized in spring, and it was fully financed at the Forty-fifth Session of the Council in Yokohama, in November 2009. The Agreement regulating the implementation of the project was signed on 5 April 2010. The first disbursement of ITTO funds was made on 8 April 2010. A project extension was granted until April 2015, without additional ITTO funds, by the ITTO Secretariat, based on an official request including proper justification with appropriate detailed work plan and budget. However, as an acceptable version of the project completion report was received in July 2016, the project operation period had lasted 75 months instead of 48 initially designed by the implementing agency (FORIG). The project final financial audit report was submitted in September 2018 by the Executing Agency, allowing this project to be documented for the completion and closure procedures.

II. Project Objective

The project intended to improve the sustainability of indigenous mahogany in Ghana by developing superior mahoganies that could be ecologically adapted and insect tolerant, and expanded the collaboration with industrial and community tree farmers. It specifically intended to refine the mahogany silvicultural "Tool Kit" in order to improve the ability to produce economically viable indigenous mahogany in mixed plantations and to transfer this technology to Ghana's key industrial partners and community trees growers via a practical *"How to Cultivate Indigenous Mahoganies in Plantations"* manual.

III. Project Achievements and Outputs

The problem of mahogany shoot borer (*Hypsipyla robusta*) had attracted a great deal of attention from foresters, ecologists, entomologists and plant breeders, but previous attempts at managing this important insect pest had largely been unsuccessful in tropical forests. Current efforts controlling the mahogany shoot borer in West Africa and elsewhere had increased markedly with integrated management approaches (selection of pest resistant planting stocks combined with biological, chemical and silvicultural control measures to minimize pest infestation). The project main goal was to improving shoot borer resistance and developing silvicultural systems, in order to maximize mahogany plantation successes.

The main project achievements, in relation to the expected outputs and associated activities, can be summarized as follows:

- A practical handbook for plantation development in the tropics has been developed to guide farmers and other stakeholders interested in establishing plantations with Mahogany species;
- Techniques and methods for establishing mixed indigenous mahogany plantations have been developed after appropriate field trials;
- Plantation stands of the indigenous mahogany in pure and mixtures with other important species have been established across the major ecological zones of Ghana as demonstration plots;
- Hypsipyla-tolerant genotypes have been identified and techniques of cloning them through vegetative propagation have been tested;
- Silviculture management techniques such as pruning, shade were applied in field trails, in order to evaluate the impact on reducing the pest incidence, while biological control measures were also adapted in the execution of the project (introduction of natural enemies of the pest such as pathogens, parasitoids and predators);
- Wood technological properties of mahogany have been documented into a handbook to promote policy making on species to be included in future Ghana reforestation programmes and also to arouse interest of investors;
- International conference on sustainable production and management of mahogany in plantations in Tropical Africa was organized in FORIG headquarters with participants from Ghana, Cote d'Ivoire, Nigeria, Benin, Togo, Malaysia, Thunen Institute of Forest Genetics (Germany), and Michigan Technological University (USA);
- Thirty undergraduate students had internship on the project and twelve undergraduate theses were developed from the technical data and information gathered through the project implementation;
- Five masters students, from Kwame Nkrumah University of Science and Technology of Kumasi (Ghana), were accepted on the project to facilitate their studies and research work;
- Three PhD students utilized some aspects of the project findings for their dissertation in collaboration with Michigan Technological University (USA); and
- Two technical reports and 11 technical papers (published in reputable scientific journals) were produced through the implementation of this project, while posters were presented in international meetings (Mahogany International Conference in Kumasi, Ghana; IUFRO Congress in Salt Lake City, USA; World Forestry Congress in Durban, South Africa; IUFRO-FORNESSA regional Congress in Nairobi, Kenya; 23rd USDA Research Forum in Annapolis, Maryland, USA; etc.). These technical reports and technical papers are available in http://www.itto.int/project_search/).

IV. Outcomes and Impacts

Mahogany species (Meliaceae: Swietenidae) had been threatened by overexploitation of natural forest reserves and the prevention of successful plantation culture by a single pest species, the shoot borer moth *Hypsipyla robusta*, that devastates young stands by killing main stems, causing excessive forking and branching, and, in worst cases, contributing to mortality. This project had demonstrated an integrated management strategy for plantation establishment incorporating a number of pest management measures based on sound experimental evaluation.

Thus, the concept underlying this project was to enhance the sustainability of mahogany timber through the development of an integrated pest management strategy for *Hypsipyla robusta,* in relation to the establishment of forest plantations of mahogany in Ghana. For that purpose, selected clones of superior mahoganies that had been ecologically adapted and insect-tolerant had been identified for seven indigenous mahoganies (*Khaya grandifoliola, Khaya ivorensis, Khaya anthotheca, Entandrophragma utile, Entandrophragma cylindricum, Entandrophragma angolense and Entandrophragma candollei*). These superior mahoganies had been subject to mass production of seedlings for distribution to all partners interested in the rehabilitation of degraded forest lands in the main ecological zones of Ghana.

The project has been contributing to reviving the interest of community farmers and other tree growers to engage in planting indigenous tree species like mahogany. Activities implemented by this project had proved that mahogany species could have an acceptable growth in forest plantations established for trial purpose by the project. The Forestry Commission of Ghana has expressed interest in the findings of this project regarding the utilization of mahogany species in forest rehabilitation activities, in Ghana.

The main beneficiaries of the project findings include: timber industries, communities organized under Osiem Saviour Church; Ghana Forestry Commission, private plantations investors, etc. To arouse interest of industrial partners and private investors, wood quality studies of plantation grown mahogany compared with natural ones was explored. Mahogany plantations had often been attacked at the early stages of their growth with the potential risk of deformation of trees. Determination of wood quality and lumber properties was very necessary as it provided facts on the value of mature plantation grown mahoganies compared to the trees in natural forest of the same age. In addition sawing characteristics of Hypsipyla robusta infested mature logs of mahogany from plantation and natural forest was examined. Anatomical and mechanical properties studies were also carried out on plantation and naturally grown mahoganies of similar sizes.

The implementation of the mahogany project has been effective and educative as valuable information has been provided for sustainable management of mahogany in plantations. The project built active community participation which has renewed the interest of other community farmers and tree growers to engage in future forest plantation development programs with selected indigenous species such as mahogany. Community farmers become interested to participate in any plantation programme that would improve their farming activities and livelihoods in the short term. The tree-crop interface had generated series of tangible and intangible benefits to enhance the overall productivity of the crops and trees. When trees had been mixed with crops in agroforestry system, the farm produce provides subsistence income for local communities as short term benefit. Awareness campaigns contributed to mobilize the farming communities for the establishment of mixed forest plantations with economically viable techniques tested during the project implementation. The project also contributed to the sectoral policies and programs on forest plantations by promoting of the development of plantations programs, in order to enhance sustainable supply of mahogany timber products to meet the current needs and future demands, in Ghana.

V. Lessons Learnt and Sustainability

The main lesson learned, in relation to the smooth implementation of this project, is dealing with the early involvement of community farmers and industrial partners/investors to ascertain the implementation of some project activities, on the basis of a memorandum of understanding signed with relevant stakeholders at the beginning of the project implementation. These stakeholders had already collaborated during the implementation of the first phase of this project [PD 105/01 Rev.3 (F)]. The need for an integrated approach to manage *Hypsipyla robusta* has been repeatedly identified by stakeholders as the most promising solution which could contribute to overcoming this pest problem, as damage by the shoot borer had been the overriding factor restricting the successful establishment of mahogany plantations. The achievement of the specific objective, as set by the project document, could be attributed to the full commitment and diligence of all the stakeholders involved in the implementation of an integrated pest management approach.

During the project implementation, famers were therefore introduced to sustainable livelihood activities and nursery management which they could apply to produce seedlings of cash crops like cocoa, coffee and cashew to generate income. Basic nursery equipment and materials were supplied to initiate the nursery work. With the help of the Forest Service Divisions of Ghana Forestry Commission, and the project team, plantation designs that incorporated much of farmers food crops were adapted in the farming. This avoided unnecessary demands by the farmers for funds which facilitated the progress of the project.

The executing agency signed an MOU with the industrial partners (SAMARTEX, ABTS and APSD) for smooth implementation of the project activities and also for continuity of the project after completion. The project team will therefore conduct assessment and maintenance of the stands annually with support from the industries till the trees reach a merchantable size for harvest. The community farmers involved in the project implementation had responsibilities of protecting the trees on their lands and regular monitoring will be conducted by the field team trained by the project. Established stands on research plots within the major ecological zones will be frequently monitored and maintained by the project team at FORIG headquarters.

The sustainability of the project after completion will also depend on the Forestry Commission of Ghana (FCG) which added mahogany species to the national plantation program, as FCG is the biggest stakeholder, in current and future forest plantation programs. Free seedlings of superior mahoganies,

selected during the implementation of this project, should be provided to the community farmers in order to sustain the rural farmer's interest in establishing mixed forest plantations.

VI. Concluding Remarks

As the ITTO Secretariat received the Project Completion Report, as well the Final Financial Audit Report, the Committee may wish to declare the Project PD 528/08 Rev.1 (F) as completed. Soft copies of the project-related reports can be made available, upon request, by the Secretariat.

(5) PD 530/08 Rev.3 (F) Phase II of ITTO Project [PD 30/97 Rev.6 (F)] Management of Forests Established through Rehabilitation of Degraded Forests by Local Communities in Ghana

Budget and Funding Sources:

Total Budget:			US$	642,534
ITTO Budget:			US$	569,665
Government of Japan:	US$	569,665		
Government of Ghana (in kind):			US$	72,869

Implementing Agency:	Forestry Research Institute of Ghana (FORIG)
Period of Approval:	Autumn 2010
Starting Date and Duration:	March 2012 / 36 months
Approved Revised Date of Project Completion:	First project extension: until March 2016 (NOLF.15-0137) Second project extension: until December 2016 (NOLF.16-0070)

I. Introduction

This project was approved under Autumn 2010 Project Cycle through the electronic approval system, and fully funded during the Forty-seventh Session of the Council held in December 2010, thanks to the generous contribution of the Government of Japan. The Project Agreement was signed by the parties in March 2012, and the project implementation started in March 2012 with the disbursement of the first installment of funds. A project extension was granted until March 2016, without additional ITTO funds, by the ITTO Secretariat, based on an official request including proper justification with appropriate yearly plan of operation and the associated budget. However, as an acceptable version of the project completion report was received in September 2017, the project operational period had lasted 66 months instead of 30 initially designed by the implementing agency (FORIG). The project final financial audit report was submitted in September 2018 by the Executing Agency, allowing this project to be documented for the completion and closure procedures.

The ex-post evaluation of the completed project PD 30/97 Rev.6 (F) "*Rehabilitating Degraded Forests through Collaboration with Local Communities (Ghana)*", commissioned by ITTO in November 2007, recommended the implementation of a second phase for the consolidation of the project achievements regarding the use of indigenous species for the rehabilitation and restoration of degraded and secondary tropical forests.

For information, the last installment of ITTO funds was not released because of the suspension of all installments of funds to ITTO projects in June 2016. In response to the suggestion from the ITTO Secretariat that every effort should be made to achieve the project objectives with the use of funds that had already been disbursed, the Executive Agency decided in June 2016 to reduce the budget by US$ 57,070 and complete the project without receiving last installment of ITTO funds (refer to ITTO letter L.16-0065). The budget modification was subsequently approved by the ITTO Secretariat to formalize that budget reduction.

II. Project Objective

The project objective was to contribute to rural livelihood by improving benefits from forests established by local communities through the rehabilitation of degraded Forests Reserves and by improving

landscapes. Specifically, it intended to develop adequate models and identify appropriate strategies and use them for the collaborative management of forests established by local communities through the rehabilitation of degraded forest lands, using the agroforestry modified taungya system (MTS). The aim was to enhance biodiversity conservation, while ensuring the provision of goods and services, in order to contribute to improving the livelihood of local communities.

III. Project Achievements and Outputs

The project's implementation strategy was based on the Knowledge-Empowerment-Governance approach which led to the following main achievements:

i) Management options, techniques, strategies and governance lessons for engaging local communities to restore degraded Forest Reserves have been developed. These have been achieved through capacity building of communities on seed collection; nursery establishment; tree planting; facilitating the inventory and registering the trees planted by farmers involved in the project implementation in the following sites:
- Ntabene, Twumkrom and Abonsrakrom in the Pamu Berekum Forest Reserve in Dormaa District;
- Nsugunsua in the Afrensu-Brohoma Forest Reserve, Offinso District; and
- Olantan and Ahenkwa in the Southern Scarp Forest Reserve in Begoro District.

ii) Over 180 farmers engaged in tree planting in the degraded Forest Reserves have their plots of forest plantation registered with Ghana Forestry Commission. Over 224 ha of pilot forest plantations have been established in project sites located in degraded Forest Reserves covered by this project. Over 47 different timber species and one exotic timber species have been used in the tree planting. Five different non-timber forest products (NTFP) species have been integrated in portions of the forest plantations in order to ensure some short-term livelihood to local communities involved in the project implementation.

iii) The benefit share agreements, for local community members involved in the project implementation, were prepared and handed over to the relevant authorities, including the Traditional Authority and Forestry Commission of Ghana (Forest Services Division, Plantation Development Office in Accra and the Plantation Office in Kumasi), for endorsement.

iv) The economic value of the ecosystem services in and around the established forest plantations in the project areas have been estimated. This has been done through a detailed study that has been packaged in a detailed technical report.

v) The main findings derived from the project implementation were presented in two international meetings held in 2015 (Sixth International Wildland Fire Conference held in South Korea and FAO Science Symposium on Climate held in Rome, Italy). In addition, these findings were described and explained in the following technical reports:
- Land cover change of plantation established with local communities in degraded forest reserves in three districts, Ghana
- Local knowledge on tree values and strategies for managing smallholder forest plantations in three reserves, Ghana
- Economic Valuation of Ecosystem Services of Community Plantations in Degraded Forest Reserves of Tropical High Forest Zone of Ghana
- Analysis of financial values of tree-level lumber in community forests plantation in two Forest Reserves of Ghana

IV. Outcomes and Impacts

Sustaining the diversity of the tree species and the value of natural forests is a matter of increasing concern not only for Ghana but for the entire West Africa region. Farmers contributed valuable suggestions on strategies to manage forest plantations established in selected Forest Reserves. The main project outcomes and impacts can be summarized in the following table:

Period	Key Actions / Activities / Interventions	Benefits / Outcomes / Impacts / Results
Short-term (less than 12 months)	Establishing a nursery to produce seedlings for reforestation activities with local communities Land preparation for agroforestry modified taungya system (MTS) mixing trees with food crops (maize, cassava, plantain banana, pepper, tomato, etc.).	Capacity building of local communities on establishing and managing a nursery for the production of forest seedlings. Temporary access to land in Forest Reserves facilitated for local community members involved in the project implementation. Food crops harvested by local communities for household consumption and as a contribution to their livelihood and food security.
Mid-term (1 – 5 years)	Land preparation for agroforestry modified taungya system (MTS) mixing trees with food crops (maize, cassava, plantain banana, pepper, tomato, etc.). Maintenance of agroforestry plots mixing food crops and forest trees, including bushfire prevention and management with key stakeholders, including local communities. Registration by the Forest Commission of Ghana of forest plots and local community members involved in establishing forest plots aiming to rehabilitate selected Forest Reserves in Ghana	Temporary access to land in Forest Reserves facilitated for local community members involved in the project implementation. Food crops harvested by local communities for household consumption and as a contribution to their livelihood and food security. Less bush fires in those parts of Forest Reserves where forest plots were established by local communities. Benefit sharing agreement endorsed/signed by the Forestry Commission of Ghana for community members involved in establishing forest plots contributing to rehabilitate Forest Reserves. Long-term benefit is secured by this agreement.
Long-term (5 years +)	Land preparation for agroforestry modified taungya system (MTS) mixing trees with food crops (maize, cassava, plantain banana, pepper, tomato, etc.). Maintenance of agroforestry plots mixing food crops and forest trees. Bushfire prevention and management with key stakeholders, including local communities, in addition to sylvicultural treatments of those forest plots established for the rehabilitation of selected Forest Reserves in Ghana. Continuation of the registration, by Ghana Forest Commission, of forest plots and local community members involved in establishing those forest plots aiming to rehabilitate selected Forest Reserves in Ghana	Temporary access to land in Forest Reserves facilitated for local community members involved in the project implementation. Food crops harvested by local communities for household consumption and as a contribution to their livelihood and food security. Less busfires, in those parts of Forest Reserves, where forest plots were established by local communities. Gradual increase of surface area rehabilitated in Forest Reserves with the involvement of local communities. Benefit sharing agreement endorsed/signed by the Forestry Commission of Ghana for community members involved in establishing forest plots contributing to rehabilitate Forest Reserves. Long-term benefit is secured by this agreement.

Based on the survey conducted by the project implementing team, the motivation of local communities for their involvement in the project implementation for the rehabilitation of selected Forest Reserves in Ghana was sustained by the following incentives:

- Temporary land access in Forest Reserves for rehabilitation activities in a country (Ghana) where access to land is not easy for poor farmers;
- Food crops production for household consumption and contributing to the livelihood of local communities;

- Benefit sharing agreement endorsed by Ghana Forestry Commission in order to ensure and formalize the current and future shares of tree ownership for local community members involved in the rehabilitation of selected Forest Reserves in Ghana.

The abovementioned incentives have been the reason why more and more local community members have expressed their interest to be part of rehabilitation activities implemented in Forest Reserves of Ghana under the supervision of Ghana Forestry Commission and Forestry Research Institute of Ghana (FORIG).

The registration of forest plantations established by local communities, for benefit sharing has been done. In doing this, the following activities have been carried out. i) Mobilization and sensitization of target farmers in the target communities; ii) Record data (bio-data, photos, plots sizes and species planted, year of planting) of target farmers in the six (communities) in the three Forest Reserves covered during the project implementation; iii) Production of maps of the twelve plots of plantations established by the farmers under the FORIG/ITTO Degraded Phase II project in soft and hard copies; and iv) Prepare a composite report/document involving the three outputs and submitted to the national plantation office in Accra with copies at FORIG/ITTO project office. Over 180 farmers engaged in the forest plantation establishment, on pilot basis, have been assisted to register their plots of forest plantations with the Ghana Forestry Commission.

V. Lessons Learnt and Sustainability

By virtue of proximity, communities depend on surrounding Forest Reserves for their livelihood. The partnership, between the local communities and Ghana Forestry Commission, was an appropriate arrangement in ensuring the gradual restoration and sustainable management of these degraded Forest Reserves, because local communities have been considered as part of the project identified problem.

The main lesson learned, in relation to the smooth project implementation, was dealing with the close collaboration with relevant stakeholders which led to realize most activities contributing to the following achievements: demarcation of plots in degraded Forest Reserves for farmers, seedlings production and distribution for tree planting, registration of the trees planted by farmers, and management options and capacity building of the local communities in the project area. The early consultation process ensuring a better understanding of the project objectives contributed to the smooth project implementation.

For the consolidation of main project outcomes, most relevant stakeholders involved in the project implementation made the following commitments:

i) The District forest managers and their technical officers of the Forestry Commission of Ghana, will continue to work with the local communities in the project pilot sites for the implementation of the strategies and management options identified for sustainable management of the established forest plantations, including the registration of local community members and their trees planted for the gradual rehabilitation of degraded Forest Reserves in Ghana. The assurance of getting the benefit sharing agreement has raised the interest of more and more farmers in being involved in the rehabilitation of degraded forest lands and it could be the most important factor of motivation for local communities in sustaining the main project outcomes.

ii) The District Assembly/Authority of project area is also to offer local communities with support both financial and logistics for their activities that include wildfire control, illegal timber harvest control and control of cattle grazing and destruction of the established forest plantation.

iii) The Forestry Commission of Ghana and the technical officers are also to continue to support the project farmers and other communities with the planting and maintenance of the trees on degraded Forest Reserves. This support is to be related to the release of portions of lands in degraded Forest Reserves for selected farmers, in order to ensure their involvement in establishing forest plantations while contributing to the rehabilitation of Forest Reserves.

iv) The executing agency (FORIG) will continue to use the project sites as a research site for long-term studies on forest carbon accounting; assessment and monitoring of land use changes, and forest resources modeling.

VI. Concluding Remarks

As the ITTO Secretariat received the Project Completion Report, as well the Final Financial Audit Report, the Committee may wish to declare the Project PD 530/08 Rev.3 (F) as completed. Soft copies of the project-related reports can be made available, upon request, by the Secretariat.

(6) PD 617/11 Rev.4 (F) Promoting Biodiversity Conservation in Betung Kerihun National Park (BKNP) as the Trans-boundary Ecosystem between Indonesia and State of Sarawak Malaysia - Phase III (Indonesia)

Budget and Funding Sources:

Total Budget:			US$	1,214,479
ITTO Budget:			US$	941,559
Government of Japan:	US$	84,661		
Government of Japan (MoFA)	US$	350,000		
Government of Switzerland	US$	503,486		
Government USA	US$	3,412		
Government of Indonesia			US$	272,920

Implementing Agency:	Betung Kerihun National (BKNP), Directorate General of Forest Protection and Nature Conservation (PHKA), Ministry of Forestry (MOF)
Session of Approval:	ITTC Session XLVII, Nov.2011, La Antigua, Guatemala,
Starting Date and Duration:	November 2013 / 48 months
Approved Revised Date of Project Completion:	Extension until 30 June 2018 (NOLF.18-0036).

I. Introduction

This project was approved under Autumn 2011 Project Cycle and was partially financed at ITTC 47 in November 2011 and fully financed at ITTC 48 in November 2012 under the ITTO/CBD Collaborative Initiative for Tropical Forest Biodiversity. The project agreement was duly signed in September 2013. After finalizing the yearly plans of operation and the inception report, the project became operational in October 2013. In July 2016, the execution of project activities was suspended for about six months due to ITTO internal financial issues. The first project coordinator provided her service until the end of 2016. The second project coordinator engaged from January 2017 revitalized the implementation of project activities with a reduced budget. All project activities reached their completion in June 2018.

II. Project Objective

The overall objective of the project was to contribute to the conservation of natural ecosystems of protected area in Indonesia through implementation of activities on biodiversity conservation and socio-economic development. Its specific objective was to strengthen sustainable conservation management of Betung Kerihun National Park (BKNP) as a transboundary ecosystem between West Kalimantan, Indonesia and Sarawak, Malaysia. The project's transboundary conservation cooperation has been focused with Lanjak Entimau Wildlife Sanctuary (LEWS) and Batang Ai National Park (BANP) in Sarawak which are adjacent to BKNP in West Kalimantan, Indonesia.

The Betung Kerihun National Park (BKNP) established in 1992 covering around 800,000 ha in extent, is one of the most important protected areas of Indonesia, not only its large area but also richness of its biodiversity. The Park is home to: more than 48 mammal species including the endangered great ape Orangutan (Pongo pygmaeus), more than 1,200 plant species (75 species are endemic species), and 112 fish species of which 14 species are endemic to Borneo.

III. Project Achievements and Outputs

The implementation strategy pursued was built on the lessons learned from completed ITTO transboundary projects in Indonesia and Malaysia (Sarawak) with collaborative efforts, exchanging of experience, information and insight and capacity building as the major elements. The main achievements of the project in relation to its four outputs include:

Output 1: Cooperation between Indonesia and Malaysia in the conservation of transboundary ecosystems of BKNP in Indonesia and BANP and LEWS in Sarawak sustained

- Letter of Intent (LoI) to cooperate in transboundary conservation area (TBCA) management between Betung Kerihun and Danau Sentarum National Parks (BKDSNP) and Forest Department Sarawak (FDS) on behalf of BANP and LEWS has been duly signed by respective authorized officials;
- Eight joint activities had been identified by BKDSNP and FDS in a collaborative manner: 3 activities dealt with study and exchange of experience and information and 5 activities concerned with capacity building;
- Joint activities on TBCA implemented include:
    - One study on Orangutan collaboratively implemented by BKDSNP and FDS experts.
    - One FGD on ecotourism development organized by BKDSNP in close consultation with FDS.
    - 4 FDS staff visited livelihood programs in Kapuas Hulu and 5 BKDSNP staff gained practical skills on protected area management in Sarawak through a field visit and discussion.
    - 4 community leaders, 2 BKDSNP staff and community of Bungan Jaya village trained by Sarawakian experts on fish raising under tagang system.
    - 75 community members in Ulu Mujok of Sarawak and Tanjung Lokang of Kapuas Hulu trained by Indonesian expert on gaharu commodity development.
- Asia-Pacific workshop on TBCA organized in March 2018 in Pontianak, Indonesia by BKDSNP Agency in collaboration with FDS, and other partners. It was attended by some 65 participants representing different groups of stakeholders including representatives of Malaysia, Cambodia, Lao PDR, India, Myanmar and Thailand. Proceedings of the Asia-Pacific workshop on TBCA have been produced.

Output 2: Management plan for biodiversity conservation in BKNP improved and implemented

- Data and information on biodiversity of about 25 percent of BKNP area were updated. Results of the survey include: Flora (227 flora species of 46 families, Dipterocarp species dominated the flora), Mammals and primates (17 species of 13 families), Aves (301 species under 36 families, 24 species endemic), Herpetofauna (33 species under 10 families, 1 VU (vulnerable) species (Notochelys platynota, 4 new species identified), Fish (22 species of 5 families) and Insect (82 species of 5 families)
- The management plan, however, has not been revised based on updated biodiversity data. The management plan under implementation is still based on old data. The existing management plan will be revised using the updated biodiversity data during its revision process; and
- Community Action Programs on local livelihood development to support biodiversity conservation have been developed by 16 partners of BKDSNP and are ready for execution subject to availability of funding.

Output 3: Sustainable livelihood of local communities living within and around BKNP improved

- Potential NTFPs have been identified. These include: bamboo, tengkawang, gaharu, bemban, pepper, vegetables, fish, etc. Main constraints identified include: lack of skills, sources of energy and capital, lack of market information, and poor infrastructure. Development of *tagang* system at 2 sites was provided and a training on bamboo shoot planting and processing was organized;
- Biogas production equipment and facilities installed at Sadap village in June 2015 had been revitalized since 2017 after solving operational and institutional problems over one year. They are currently running well with stable biogas supply. The biogas program was formally launched on 20 July 2017 and it was signified by Dayak customary ritual. Cooking equipment and facilities as well as water tower have been installed and operational at Sadap village;
- A Mid-term Action Plan for development of community-based ecotourism at Kedungkang village is now ready for implementation. Coordination meeting between local government, community and private sector carried out 3 times on village ecotourism development. Several documents and videos have been produced; and

- 5 times of campaign, 2 exhibitions and 3 meetings on awareness raising on conservation among local people in border areas conducted.

Output 4: Community-based carbon and conservation monitoring systems developed

- 10 times forest patrolling operations were organized through cost sharing between the project and the park;
- Trainings on forest monitoring had been implemented at two sites involving 15 Park Rangers and 59 community members; and
- A community patrolling unit in Eastern part of BKNP was formally established and it is in place with an important outcome after the organization of two community patrol trainings in Western (40 trainees) and Eastern (34 trainees) parts of BKNP. The project helped procure patrolling facilities (e.g., speedboat, life vest, etc.) to support mobilization of forest patrol squad.

IV. Outcomes and Impacts

The project has enhanced cooperation between Betung Kerihun and Danau Sentarum National Parks (BKDSNP) and Forest Department Sarawak (FDS) in transboundary conservation area (TBCA) management which will be sustained in the interest of future biodiversity conservation on TBCA. In addition, key outcomes generated during exaction of the project include the improved livelihoods of local communities living within and around BKNP and the establishment of a community-based forest monitoring system. Among the most tangible outcomes, the following can be highlighted:

- Proceedings of the FGD on promoting ecotourism in West Kalimantan and Sarawak and the regional workshop on TBCA management are now available for use by interested parties and individuals;
- Drafts technical report on research on Orangutan at BKNP and BANP are available for reference;
- Inoculated gaharu trees now growing at Ulu Mujok, Sarawak, and Tanjung Lokang (West Kalimantan) can be used as learning material on the effect of inoculation on gaharu resin production;
- Technical reports on survey biodiversity and assessment of wildlife species conservation status are now available for use by interested individuals and institutions;
- Technical report on potential NTFPs for development by local communities is available for use and follow-up action;
- A mid-term action plan for development of a community-based ecotourism industry is now ready for execution subject to funding availability;
- Technical manuals for making of food products of NTFPs are now available for use by interested local communities;
- Facilities for forest monitoring operations such as speedboat, life vest, etc. are now available for improved forest monitoring; and
- Guidelines for conducting forest monitoring operations are now available for use by interested parties or institutions.

Through implementation of different activities, the project has contributed to sectoral development in one form or another as highlighted below:

- The FGD on promoting ecotourism in West Kalimantan and Sarawak strongly signaled the need to enhance regional cooperation in cross-border ecotourism inescapably involving different sectors;
- The training on homestay and lodge operational management raised interest of tourism sector in capacity building for ecotourism development;
- The support of the project on the establishment of Kapuas Hulu biosphere reserve promoted attention of Kapuas Hulu district government to natural resource conservation;
- Community-based forest monitoring system has been developed in BKNP. Community members participated in the training sessions enthusiastically and had acquired the necessary knowledge and skills to enable them get involved in forest monitoring operations; and
- The Asia-Pacific regional workshop on TBCA management exemplified the relevance of TBCA Initiative to Nawacita's third development principle.

V. Lessons Learnt and Sustainability

There have been many lessons from the implementation of the project. Key lessons include the following:

- The key problem addressed by the project had a strong rationale as it was based on findings of the previous project and was affirmed by the primary stakeholders. It had facilitated construction of a relevant and sound project design;
- The clearly defined tasks and responsibilities of the project management team (PMT) leader and personnel had avoided confusion in institutional relationships between the PMT and the EA;
- Engagement of experienced professionals in the designing of field survey on biodiversity is crucial to ensure soundness of the methodology applied, reliability of data produced and cost-effectiveness of survey operation;
- Building partnerships between local communities and local NGOs have been productive for moving forward on local livelihood development. Poor technical skills of community leaders on livelihood management planning have been improved by competent NGOs in a cost-effective way;
- The district government of Kapuas Hulu was the "landlord" of the project site; continued communication and coordination with concerned district authorities had avoided unnecessary operational problems;
- The project indicators weakly defined in the project planning phase need updating during the operational phase to ensure their measurability and use in the final assessment of project achievements; and
- BKNP management and staff at different levels, from the headquarters to the field, had demonstrated honest support on project operations in one form or another since commencement of the project which had contributed considerably to the successful operations.

The sustainability of the project after its completion is expected to last through the prevailing conditions that had been developed under the project:

- Local peoples eager to continue livelihood activities that have been initiated under the project as a promising source of sustainable income. The growing interest of local communities in the utilization of NTFPs for which local peoples have been equipped with needed skills;
- Large number of women and girls had been trained on homestay and lodging business that will promote ecotourism development;
- Larger number of local people now opt to grow gaharu trees and apply inoculation technology to ascertain production of gaharu resin in terms of timing and volume compared to hunting natural gaharu in the forests; and
- The BKNP has indicated its intention to continue on the livelihood activities as an incentive for local communities to support conservation of the park and to extend TBCA cooperation with Forest Department Sarawak in the framework of the Heart of Borneo (HoB) Initiative.

VI. Concluding Remarks

Overall, the Project has made a significant contribution to the achievement of ITTO's strategic objectives and the ITTO/CBD Collaborative Initiative for Tropical Forest Biodiversity through enhanced cooperation between Betung Kerihun and Danau Sentarum National Parks (BKDSNP), West Kalimantan, Indonesia and Forest Department Sarawak (FDS), Malaysia in biodiversity conservation and improved sustainable livelihoods of local communities depending on BKDSNP.

As the ITTO Secretariat has received the Project Completion Report, several technical reports, including the proceedings of the Asia-Pacific regional workshop on TBCA management, and the Final Financial Audit Report, this project can be reported as completed. Copies of the Completion Report and technical reports are available from the Secretariat and can be downloaded on ITTO's website at http://www.itto.int/project_search/.

(7) PD 635/12 Rev.2 (F) Buffer Zone Management for Pulong Tau National Park with Involvement of Local Communities in Management, Sarawak, Malaysia

Budget and Funding Sources:

Total Budget:			US$	$1,421,925
ITTO Budget:			US$	517,450
Government of Japan:	US$	242,690		
JLIA	US$	50,000		
Government Switzerland	US$	224,760		
Government of Malaysia			US$	904,475

Implementing Agency:	Forest Department of Sarawak
Session of Approval:	ITTC Session XLVIII, Nov.2012, Yokohama, Japan
Starting Date and Duration:	August 2014 / 24 months
Approved Revised Date of Project Completion:	Extension until 31 October 2017 (NOLF.17-0089)

I. Introduction

This project was approved under Autumn 2012 Project Cycle and financed at the Forty-eighth Session of the ITTC held in November 2012. The draft project agreement was sent to the Ministry of Plantation Industries and Commodities of Malaysia in January 2013 and duly signed in August 2014. The Executing Agency submitted the Inception Report with the first Yearly Plan of Operation (YPO) and started the implementation of project activities in August 2014. The planned duration was 24 months, but due to unforeseen circumstances of ITTO internal financial issues in 2015-2016 and its duration was extended without additional funds. Delays in implementation were also due to non-availability of certain local experts, and road damage due to heavy rain. All project activities reached their completion in October 2017.

II. Project Objective

The Pulong Tau National Park (PTNP) is a national park in the Kelabit Highlands of Sarawak, Malaysia, on the island of Borneo. In Sarawak, almost all national parks are surrounded by timber licenses and human settlements, and PTNP is no exception. Three timber licenses and four Penan settlements are located along its north-western boundary, thus posing potential threats to the totally protected resources.

The development objective was to contribute to the integrated development of buffer zones for the environmental conservation and the uplifting livelihoods of indigenous communities in Sarawak, and the specific objective was to secure the buffer zone forest for use by indigenous communities and to strengthen protection of Pulong Tau National Park (PTNP).

III. Project Achievements and Outputs

The project objectives have been achieved by: establishing a 6,000-hectare buffer zone and its integrated management; securing its forest resource base to meet the needs of Penan communities; and providing the Penan communities with training to improve their livelihoods, with the active involvement of stakeholders. Among the main achievements of in relation to the project's three outputs, the following can be highlighted:

Output 1: Buffer zone for integrated management developed

- The roles that buffer zones can play in conservation and livelihood enhancement have been demonstrated;
- Guidelines for Establishment of Buffer Zones for Totally Protected Areas were developed to provide additional safeguard, especially national parks; and

- The proposed extensions of PTNP were named separately in Long Repun N.P. (8,367 ha), Batu Iran NP (1,128 ha) and Batu Buli NP (1,128 ha). However, progress had been hampered by delays to ascertain the land status and community objection to their constitution.

Output 2: Baseline surveys of buffer zone resources and impacts of logging carried out and results published

- Baseline studies on forest ecology, flora and NTFP had been conducted. The major ecosystems comprising logged-over mixed dipterocarp forest, kerangas forest, riparian forest and alluvial forest were described and all recorded plant species identified, totalling 328 species;
- Faunal surveys recorded 19 species of reptiles and amphibians, 35 species of birds, and more than 31 species of mammals. A total of 22 species of mammals and birds are protected under the Wild Life Protection Ordinance (1998);
- A technical report was published. It highlights: i) History of Kelabit and Penan settlements, ii) Flora: Forest ecosystems and NTFP; iii) Fauna: Mammals, birds, frogs and plant pests, iv) Community development activities, and v) Guidelines for establishment of buffer zones; and
- Study of the need for a communal forest for each of the Penan villages located inside the buffer zone was conducted. Three communal forests (CFs) were proposed after reviewing the resources and the people's needs. The CFs were for Ba' Medamot (296 ha), Long Lobang (133 ha located inside PTNP), and one to be shared by Ba' Tik A and B (355 ha). These proposed CFs are mostly un-logged and located within timber licenses.

Output 3: Training to develop livelihood improvement skills conducted

- Training on buffer zone management, farming, handicraft and ecotourism was fully completed. Management of buffer zone will be carried out by the responsibilities of Forest Department Sarawak, Sarawak Forestry Corporation and the new National Parks and Wildlife Department, with support from local Penan individuals with good local knowledge and leadership skill;
- For the development of NTFP resources, fruit trees and sago palm (Metroxylon sp.) were chosen by the communities for which 1,000 fruit seedlings and sago palm suckers were acquired and delivered to the four villages. On-farm training on planting and maintenance was conducted;
- For establishment and management of tagang, a study tour on tagang was organized to Long Lobang in Lawas in May 2015; and
- Assistance has been provided for the application of birth certificates for the Penan and other indigenous communities living in the area (60%). The total applicants were 61, but only 29 were successful, while the remaining 32 are waiting for a review by the National Registration Department (NRD).

IV. Outcomes and Impacts

The project has shown that buffer zones are endowed with rich flora and fauna and that they can serve as a resource base for local communities, and if need be, the resource base can be secured as communal forests by the government. One of the most significant outcomes is in securing a buffer zone to support local livelihood. In fact, under the National Parks and Nature Reserves Ordinance (1998), the government can grant special privileges to the local communities to use the Park's resources for domestic consumption, but this privilege was not granted by the previous administration. The buffer zone forest model is a useful tool to harmonize land use and resolve conflicts between the Penan, timber operators and the local government.

Another important outcome of the project is improving local livelihood with community-based activities, training and promoting self-reliance. The Penan have become more receptive to new challenges and are more willing to participate. Skill training on carpentry and house building organized at their request was reflection of their desire to be self-reliant. When the tagang fishery at Long Lobang begins to generate regular cash income from sale of the fish, other villagers want to follow suit.

At the pre-project stage, very little was known about the buffer zone environment and landscapes, except that it was occupied by Penan settlements and the forest was under license for commercial logging. After project completion, a significant amount of data on forest ecology, flora and fauna were collected, and their scientific and conservation values and uses established. Form the findings, FDS will be able to initiate the process to establish the PTNP buffer zone, and to have it replicated in other national parks and wildlife sanctuaries faced with similar problems. The project has created a new opportunity for government bodies and local communities to work together as co-partners in conservation management and sustainable

utilization. The project has also contributed to biodiversity conservation and research and community development in Sarawak since 1993, starting with Lanjak Entimau Wildlife Sanctuary projects.

V. Lessons Learnt and Sustainability

There have been several lessons from the implementation of the project. Key lessons can be summarized as follows:

- Buffer zone concept demonstrates as a tool to enhance conservation and assist in rural transformation, especially for communities living in the peripheries of national parks. The model is applicable to secure native customary right lands from logging and other commercial activities. It is also a way to avoid or resolve conflicts arising from land contest which is quite common in rural Sarawak;
- For the buffer zone management to be effective, the government must collaborate with local communities and private sector. The roles of the local communities are to provide information on issues related to resource management, sustainability and for law enforcement, while the private sector (timber operators) have an obligation to reduce environmental damage by adhering to SFM practices;
- To accomplish field surveys, local knowledge on the forest and uses of plant and animal species was critical. In this, project consultants were assisted by Penan field assistants and guides who knew the forest and resources well. In order to be effective, the buffer zone management committee must include them as local members; and
- Local project consultants and counterpart staff had to be able to endure the hardships of long and difficult travel and field-work. The project staff in Kuching used to spend 3 days to get to the villages with assistance of timber contractors who provided 4WD vehicles. The private sector and local communities played critical roles in the project's field operation.

The Forest Department Sarawak (FDS) is expected to hand over the duties of totally protected area management to the new National Parks and Wildlife Department, but FDS will definitely continue to be involved in community development and buffer zone management. Financial allocation of FDS on community development in 2018 continues to promote the work of ITTO in the buffer zone of PTNP. The Penan are also expected to make valuable contributions in safeguarding the buffer zone forests for themselves and the future generations, as they have no other resources to depend on. Through FDS annual programme, community development activities will be sustained and expanded.

VI. Concluding Remarks

Overall, the Project has made a significant contribution to the achievement of ITTO's strategic objectives and the ITTO/CBD Collaborative Initiative for Tropical Forest Biodiversity through establishment of a buffer zone for PTNP, adoption of the concept of buffer zones across Sarawak National Parks, and constitution of communal forests within the buffer zone forest for local use.

As the ITTO Secretariat has received the Project Completion Report, several technical reports, including a handbook entitled "Pulong Tau Buffer Zone: Ecosystem, Biodiversity and People", and the Final Financial Audit Report, this project can be reported as completed. Copies of the Completion Report and technical reports are available from the Secretariat and can be downloaded on ITTO's website at http://www.itto.int/project_search/.

(8) PD 725/13 Rev.2 (F) Rehabilitation of Degraded Forest Land in the Ahua Forest Reserve by the Women Members of Association Malebi in Compensation for the Forest Resources Removed to Meet the Need for Fuel Wood (Charcoal and Fire Wood) (Côte d'Ivoire)

Budget and Funding Sources:

Total Budget:		US$	216,162
ITTO Budget:		US$	149,408
Government of Japan:	US$ 46,504		
Government of USA:	US$ 102,904		
MALEBI / Gov't of Côte d'Ivoire (in kind):		US$	66,754

Implementing Agency: MALEBI Association

Period of Approval: Spring 2014

Starting Date and Duration: January 2016 / 24 months

Approved Revised Date of Project Completion: First extension: April 2018 (NOLF.17-0127)

I. Introduction

The 24-month gender-related project was approved under Spring 2014 Project Cycle through the electronic time-bound approval system, but it was fully funded during the 50th ITTC Session in November 2014, thanks to the generous contribution of the Governments of Japan and USA. The Project Agreement regulating the implementation of the project was signed on 28 December 2015 after nine months of bureaucratic process in Côte d'Ivoire. The first disbursement of ITTO funds was made on 7 January 2016 in order to start the project implementation. The ITTO budget of this project was reduced from US$149,408.00 to US$141,396.00 [referring to Decision 6(LII) of the 52nd Session of the Council and subsequent requirements], as it was impacted by the financial impairment.

The project extension was granted until April 2018, without additional ITTO funds, by the ITTO Secretariat, based on official requests including proper justification with appropriate detailed work plan and budget. However, as an acceptable version of the project completion report was received in August 2018, the project operation period had lasted 31 months instead of 24 initially designed by the implementing agency (MALEBI). The project final financial audit report was submitted in September 2018 by the Executing Agency, allowing this project to be documented for the completion and closure procedures.

II. Project Objective

The project intended to contribute to increasing the forest cover of the Ahua Forest Reserve through the involvement of local communities surrounding the forest. It specifically aimed at implementing the gradual rehabilitation of the Ahua Forest Reserve with women members of the MALEBI Association, in order to compensate for the wood they removed and used to produce charcoal.

III. Project Achievements and Outputs

The project strategy was to reconcile the short-term subsistence needs of the communities (mainly food and fuel wood) with the medium to long-term needs regarding the gradual rehabilitation of the Ahua Forest Reserve (AFR). This strategy was based on the use of the taungya agroforestry system mixing food crops with forest tree species. Such strategy has successfully led to pilot rehabilitation activities conducted by the Women's Association MALEBI in order to set an example to the local communities surrounding the Ahua Forest Reserve. The project achievements and outputs, which contributed to the gradual rehabilitation of the Ahua Forest Reserve, can be summarized in the following table:

Expected Outputs	Main Achievements and Results
Output 1 : One production and distribution structure for quality seeds and seedlings is operational	• A total number of 84 persons (among them two thirds were women) had been trained by experts from SODEFOR on the techniques regarding the establishment and management of nurseries for the production of forest seedlings, in the villages of Sokoradjan and Koffikro, in the District of Dimbokro. • Around 87 thousand seedlings forest seedlings (33 thousand seedlings of *Tectona grandis* and 54 thousand seedlings of *Cassia siamea*) had been produced and used for the rehabilitation activities implemented in the AFR, under the technical guidance of SODEFOR experts. The seedlings of *Triplochiton scleroxylon* were not produced due to the lack of seeds in the project area. • Groups of young men and women had been established in each village involved in the project implementation for the distribution of forest seedlings to local community members expressing interest to participate in the gradual rehabilitation work, in collaboration with the MALEBI Association.
Output 2: The 100-ha agroforestry plantation of *Cassia siamea*, *Technona grandis* and *Triplochiton scleroxylon,* mixed with food crops (rice, maize, yams and cassava) is established	• A structure for the coordination of the actions of the main stakeholders around the AFR, in order to improve the living conditions of local communities through the acquisition of small food crops processing machines, was not established because of the reduction of ITTO budget from USD149,408 to USD141,296 in accordance with the Council Decision 6(LII) on the financial impairment issue. • A total number of 108 persons, with a majority of women, attended workshops dealing with the establishment of agroforestry plantations, as well as with the maintenance and protection techniques of these agroforestry plantations. • 100 hectares had been established by using the taungya agroforestry system, as a contribution to the gradual rehabilitation of the Ahua Forest Reserve by the MALEBI Association, as well as by selected members of local communities involved in the project implementation. However, 20 hectares had been destroyed by bushfire. The trees of Teak and Cassia had been combined with food crops (mainly maize, cassava, tomato, bean, egg-plant and yam).

IV. Outcomes and Impacts

The main project outcomes and impacts, in and around the Ahua Forest Reserve (AFR), in relation to the expected outputs and associated activities, can be summarized as follows:

- Contribution to increasing the forest cover with the newly rehabilitated areas in the AFR;
- Improving food security for local communities depending on the AFR through increasing food crops production under the taungya agroforestry system; and
- Contribution to reducing poverty in the communities involved in the project implementation, with additional income derived from food crops harvested in agroforestry plantations established in the AFR.

With the implementation of this project the women members of the Association MALEBI shifted from the status of persons consuming raw wood for charcoal production to that of persons contributing to raise the supply of forest resources through rehabilitation activities in the Ahua Forest Reserve. Key project achievements had been summarized in videos which can be accessed in the ITTO website through the following link: https://www.youtube.com/user/ittosfm

V. Lessons Learnt and Sustainability

The institutional partnership and technical collaboration with SODEFOR, as collaborating agency, contributed to the smooth implementation of this project and led to the abovementioned project achievements and results. The sustainability of the main project achievements, outputs, outcomes and impacts could be consolidated, due to the selection of the MALEBI Association for the implementation of the gender-related component of the 2018-2022 Forest Investment Programme (FIP) funded by the World Bank.

VI. Concluding Remarks

As the ITTO Secretariat received the Project Completion Report, as well the Final Financial Audit Report, the Committee may wish to declare the Project PD 725/13 Rev.2 (F) as completed. Soft copies of project-related reports can be made available, as well as videos, upon request, by the Secretariat.

(B) COMPLETED PRE-PROJECTS

None.

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