ITTO PD 334/05 Rev. 2 (I)

Demonstration and application of production and utilization technologies for rattan sustainable development in the ASEAN member countries

(Philippines)

Prepared for ITTO

By

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Acronyms

ACB ASEAN	Centre for Biodiversity
APAFRI	Asia-Pacific Association of Forestry Research Institutions
ASEAN	Association of South East Asian Nations
BNP	Bicol Natural Park
CEM	Committee on Economic and Market Intelligence
CFI	Committee on Forest Industry
CPs	Contact Persons
DENR	Department of Environment and Natural Resources
DNP	Department of National Park, Wildlife and Plant Conservation
ERDB	Ecosystems Research and Development Bureau
FAO	Food and Agriculture Organization
FASPO	Foreign Assisted and Special Projects Office
FPRDI	Forest Products Research and Development Bureau
INBAR	International Network on Bamboo and Rattan
ITTA	International Tropical Timber Agreement
ITTC	International Tropical Timber Council
ITTO	International Tropical Timber Organization
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
NGOs	Non-Government Organizations
PAMB	Protected Area Management Board
PD	Project Document
PMT	Project Management Team
PO	People's Organization
PSC	Project Steering Committee
RPP	Research Project Philippines
RPI	Research Project Indonesia
RPM	Research Project Malaysia
RPV	Research Project Vietnam
RRGP	Rattan Research Grant Programme
UPLB-CFNR	University of Philippines Los Baños College of Forestry and Natural Resources
WWF	World Wildlife Fund
YPO	Yearly Plan of Operation

Part 1 EXECUTIVE SUMMARY

Introduction

At their Forty-sixth Session, in November 2012, the Committee on Economic and Market Intelligence and the Committee on Forest Industry (CEM-CFI) decided that an ex-post evaluation of PD 334/05 Rev.2 (I) should be carried out to establish how well the project had served its purpose and to make recommendations for future action.

The ex-post evaluation was conducted from the 1st – 7th July, 2013, roughly 33 months after the closure of the project. The evaluation aims to provide an in-depth analysis of the project, which identifies what were the successful and unsuccessful outcomes, the reasons for these successes and failures, and the contribution ITTO PD 334/05 Rev. 2 (I) made towards achieving ITTO's Objective 2000. Based on the evaluation, the author summarized the lessons learned from implementing the project, suggesting how these experiences could be used to improve the outcomes of similar projects in the future.

The Project

ITTO PD 334/05 Rev. 2 (I) "Demonstration and application of production and utilization technologies for rattan sustainable development in the ASEAN member countries" was approved during the 38th Session of the International Tropical Timber Council, held in Brazzaville, Congo, from the 18th-22nd June, 2005.

The project, which was implemented from April 2006 to November 2010 by the Ecosystems Research and Development Bureau (ERDB), based in Laguna, Philippines, aimed to strengthen ASEAN collaboration on sustainable management and utilization of the region's rattan resources. This was to be achieved through field-applied demonstration of rattan production and utilization technologies, with the goal of improving the socio-economic status of local rattan producer communities. The project specifically aimed to: (1) apply production and utilization technologies to set up and manage rattan demonstration plots at the village level, as well as promote rattan processing for the sustainable development of rattan in ASEAN member countries; and (2) establish relevant technologies on production, utilization and socio-economic aspects of rattan and disseminate them through a newly created ASEAN Rattan Centre..

The project was initially scheduled to last 48 months, with a total budget of USD899, 873, of which ITTO contributed USD629, 873, with the Government of the Philippines providing the rest of the funding. The final project lasted for 54 months, with one approved 6-month no-cost extension.

The main tangible project outputs were: (1) twenty trainings conducted on rattan production and utilization technologies in ASEAN member countries (Cambodia, Indonesia, Lao PDR, Myanmar, Philippines, Thailand and Vietnam), with 500 participants and five training modules prepared and distributed during the different workshops; (2) eight small research projects completed on topics and relevant results were presented in the Project Technical Reports and in a regional rattan conference; (3) 222 hectares of rattan plantation plots established and maintained (versus 200 hectares as originally planned); (4) seven Rattan Newsletter issues published; (5) a Regional Conference on production and utilization technologies for rattan (an additional output from the original proposal) held in the Philippines from the 29th August to 1st September, 2010, where two publications were launched entitled "A Field Guide to Philippine Rattans", and "The ASEAN Rattans"; and (6) a project website (www.aseanrattan.com) and database on rattans launched.

Findings

(1) In general, the evaluation found that the project's main success was attributable to good problem definition at the start of the project, as well as selection of relevant stakeholders, who were well consulted during formulation of the project design. The concept for this project was borne out of suggestions raised at an Experts' Consultation on Rattan Development held in Rome in December 2000, which emphasized the economic, socio-cultural and ecological importance of rattan. Based on this consultation, ERDB conducted a pre-project on rattan [Pre-project Document 51/02 Rev. 1 (I)] with funding from ITTO. As a result of this project, a Regional Conference on Sustainable Development of Rattan in Asia was held in Manila, Philippines in 2004, where representatives or contact persons (CPs) from each ASEAN member country identified their own countries technology gaps and needs with regards to rattan production, processing and utilization. Once gaps/issues had been identified, a project framework was formed. Furthermore, each participating country was able to select project beneficiaries based on this framework. Therefore, the formulation of the project ensured that it had legitimacy across the region, with clearly defined, achievable and mutually agreed objectives and management structures enabling for efficient project implementation.

This project aimed to strengthen ASEAN collaboration and reduce poverty at the community level by establishing a network that supports and prioritizes the urgent development needs and concerns of the rattan industry. To achieve the project's development objectives, five work components, namely training, pilot site demonstration, research, networking, and database development, were identified and included in the implementation framework.

(2) For the training component, although only twelve training sessions were included in the initial project design, a total of twenty trainings on production and utilization of rattan (nine on production technologies and eleven on utilization technologies respectively) were actually performed in six ASEAN countries (excluding Thailand and Malaysia). The trainings reached 500 participants composed of farmers, researchers, and manufacturers (Output 1.1). The success in exceeding the targeted number of trainings can be attributed to the strong networking linkages established by the project across the region, which were allied to an excellently organized Project Management Team (PMT). These training courses were performed by rattan experts from university and research institutes in the Philippines with extensive experience on rattan research and development. Five training modules and technology guides were prepared by these experts and presented in English or local languages to enhance dissemination (Output 1.2). The project also hosted a seven-day Regional Training Program on Rattan Taxonomy and Resource Inventory in Bangkok, Thailand from the 7^{th} - 13^{th} Sep, 2008, in collaboration with the ASEAN Centre for Biodiversity (ACB), the Asia Pacific Association of Forestry Research Institutions (APAFRI), and DNP. This training event, which was one of the major activities of the project, had an excellent attendance, with 17 participants coming from the eight (8) ASEAN member countries present.

(3) The project also established and maintained over 222 hectares (the planned area in the project document was 200 hectares) of rattan pilot plantations in seven ASEAN countries, Cambodia, Indonesia, Lao PDR, Myanmar, Philippines, Thailand and Vietnam (Output 1.3). The additionally 22 hectares were incorporated from a related research activity conducted in the Philippines. Importantly, local communities, whom were trained on production and utilization of rattan prior to plantation establishment, were directly involved in setting up the demonstration plots. Although the land ownership of these pilot plantations belongs to the governments of each participating country, the local communities, whom are responsible for their maintenance and management, have clearly defined tenure and access user rights to the plots. Therefore, it is

anticipated that communities will obtain direct and continuous incomes from the plots after plantations reach maturity.

(4) Besides the training and demonstration components that are generally indispensable in an ITTO project, a small grant research program was also integrated as part of this project. A relatively fair and reasonable procedure for proposal selection, review and evaluation was designed by the PMT, based on which a call for research proposals was issued and opened to all potential applicants in ASEAN member countries. Twenty-eight research proposals from four ASEAN countries were reviewed and eight of them received funding. Although the selected research topics were highly relevant to the research gaps identified during the 2004 Regional Rattan Conference, their actual contribution to the sustainable development of the ASEAN rattan industries hard to evaluate as no full technical reports or formal publications in academic journals were available at the time of this evaluation. However, several significant results and outputs from the studies summarized in the Project Technical Reports suggest these research studies did yield important results for the sustainable development of the regional rattan sector.

(5) As this project involved eight countries, the networking component was also especially important for achieving the desired goals and objectives. The network was not only a vital link among the various project components, but also a bridge for coordination, communication and collaboration across the eight countries. A large number of wide-ranging network activities were successfully conducted during the project, both at the local, national and regional level. These included regular communication with ASEAN contact persons, annual project meetings, preparation and circulation of a project newsletter (RATTANewsletter), attendance at conference/symposia/meetings, organization of meetings and conferences, creation of an ITTO group discussion and project rattan museum, and conduct of study tours. Within the project period, networking activities helped to facilitate more collaborative cooperation on rattan production and utilization at the regional level.

(6) An innovative measure to ensure the sustainability of the network after completion of the project was the establishment of a data/information network on rattan in the ASEAN region (www.aseanrattan.org). This now allows network participants to gain access information, while providing a continuous means for future exchange at national, regional and international levels. The website features the main accomplishments of the project together with other important information on rattan, which is available for wider access and use by the public. Furthermore, an on-line database of rattans found in Southeast Asia was created and launched during the Regional Rattan Conference in 2010. The database includes information of 601 species of rattan, consisting of scientific names, local names in ASEAN countries, distinguishing characters, brief descriptions on habitat, elevation, distribution, characteristics of stem, leaves, inflorescence, fruits and seeds, uses, illustrations and pictures. From 2008-2010, a total of 126,331 web visitors accessed the website, with 12,612 pages requested according to the Project Technical Report. However, at present, this website is inaccessible. The international consultant has tried to visit the website dozens of times both in the Philippines and in China, but was always unsuccessful. The PMT attributed this problem to the terrible internet service in ERDB.

(7) At 33 months after project completion, the rattan demonstration plantation in the Philippines was found to be well maintained and managed. The rattans in the plantation located in Barangay San Jose, Lupi Camarines Sur, Bicol Natural Park (Protected Area) have grown very well. The villagers, who were interviewed still showed enthusiasm for rattan plantations and were starting to get incomes from selling rattan seedlings while they wait a further 5-8 years for canes to reach mature harvestable age. Due to the time limitation of this evaluation, the demonstration sites

located in the other six ASEAN countries were not visited. However, interviews were conducted with members of the PMT in ERDB, who all reported that the other rattan plantations were being well managed by local famers or government agencies.

(8) The sustainability of the project is evident from the following facts:

- Financial support in the amount of USD 2000/per year was provided by ERDB for monitoring the growth of rattan in the established plantations in Philippines. This activity should further improve the knowledge on rattan sustainable management and result in higher productivity;
- For the pilot demonstration in BNP, Philippines, a resolution regarding the mainstreaming of the pilot demonstration into the programs of PAMB was formulated during the Protected Area Management Board (PAMB) meeting in March 2010. This resolution has already been signed by the Regional Executive Director of DENR Region 5. With technical assistance for the PMT, Camarines Norte State College in the Philippines has now also established its own two hectare rattan research plantation for research purpose on forest land located within its campus. The rattan plantations located in other participating countries are also reported to be well managed as most of them are located in protected areas and, or, on the experimental forests plots of collaborating agencies.
- A follow-up project proposal for the continued industrial development and marketing of rattan has been submitted to ITTO by ERDB. This proposed project aims to developing rattan-based enterprises to efficiently utilize rattans for livelihood improvement at community level in ASEAN countries.
- The peoples' organization in the Barangay San Jose are now gaining its first income of 2000 USD by selling about 20000 rattan seedlings in 2013. More purchases from individuals or government agencies are expected as the Philippines government includes rattan species in the National Greening Program for the first time;
- The project website and rattan database containing project reports, books, proceedings and digital outputs are being maintained in ERDB indicating the continuity of information dissemination. ERDB are now becoming a center of knowledge for rattan propagation and extension services, with about 300 people from universities, government agencies and enterprises, visiting the institution over the last three years according to the records in a notebook for guest visiting.
- The expertise of several key project participants is improved. They will possibly grow to the leading figures in the rattan research and development field.

(9) The Project was extended from 31 March 2010 to November 1, 2010 under the approval of ITTO with no additional cost to give ample time to some participating countries to complete their end of project reports. An examination of the project documents and face-to-face interviews with the members of PMT revealed that the delays in completing the final project outputs were partly due to factors beyond the control of the ERDB. For example, political unrest in Myanmar and Thailand during the initial stage of the project resulted in the delay of funds being transferred to these countries. The weak financial institutions in Myanmar also contributed to the difficulty in processing financial assistance for project implementation. The inactive involvement of Cambodian CP at a later, critical period of the project also meant that no final report was submitted for Cambodia.

Lessons learned

- For a complicated project, which will involve several countries, face-to-face communication and discussion was necessary and highly important for correctly identifying key national and regional problems that needed to be addressed, as well as for selecting suitable implementing agencies in each participating country.
- A comprehensive project design must sufficiently define all internal and external risks to the project and identify contingencies to ensure that the outputs are achieved on time. This includes making sure to develop activities, outputs and expected outcomes that while being ambitious are also realistic and achievable with the resources available.
- The involvement of local communities in the project as active participants and direct beneficiaries plays a crucial role in the successful implementation of training and demonstration components of the project. This is also fundamental to ensuring long-term sustainability and subsequent impact after completion of the project.
- The project should be designed in such a way that minor modification or adjustment could be allowed, without affecting the overall framework and specific objectives.
- Linking with local and international agencies helps considerably to achieve a project's planned activities, while also supporting sustainability.
- Heads of implementing agencies should be required to have direct participation and active intervention in managing the project.
- A sustainability plan for the project must be prepared before the project ends, and ideally during the formulation process. This should include a satisfactory exit strategy that ensures targeted beneficiaries have the required capacity and resources to continue and up-scale project activities after the completion of funding. Furthermore, the plan must include not only one component of the project, but all components, covering all participating countries.
- The implementing agency in the participating countries should be given autonomy to select local beneficiaries of the project, using mutually agreed criteria developed during the project formulation process.

Conclusions

5.1 Conclusions

(1) The project PD 334/05 Rev. 2 (I) satisfactorily achieved its development objective and two specific objectives. Due to the adequate identification of the problem to be addressed and the relevant participating stakeholder, this project was well-designed with five interconnected components. Of the five components of the project, the training and demonstration components produced many more outputs than originally planned. The networking component also achieved its objective with an additional important output being the Regional Rattan Conference conducted in Makati City, Philippines in August 2010. This conference might form a strong basis for the formulation of a new ITTO project. The research component dealt with the research gaps that were identified during the 2004 Regional Rattan Conference, but its actual contributions to the sustainable development of rattan industry in ASEAN is hard to be evaluated as no full technical reports or formal publications in academic journals are currently available. Furthermore, eight research topics are too many for a demonstration and application project. The database component was designed to be part of an information center of rattan that can function at regionally and even internationally. As no such previous database was available this could potentially be very important for the sustainable development of rattan industry. However the

terrible accessibility of the website will seriously damage the reputation of this information platform if the internet service and database maintenance are not improved.

(2) The delays encountered by the project were due partly to reasons beyond the Executing Agency's control, such as the political disorders in Myanmar and Thailand and the weak financial institutions in Myanmar. The inactive involvement of the Cambodian CP at the later period of the project was the most important reason.

(3) At 33 months after project closure, the sustainability of project outcomes and emerging impacts were evidenced by several indicators. Firstly, ERDB are providing continued financial support of USD 2000/per year to for monitoring and evaluation of the growth of rattan in the established pilot plantations in Philippines. Secondly local communities in some pilot sites, notably in the Philippines, are now starting to earn additional income from selling of rattan seedlings. Thirdly, the project website and rattan database containing project reports, books, proceedings and digital outputs are being maintained in ERDB indicating the continuity of information dissemination. ERDB is now becoming a recognized center of knowledge for rattan propagation and extension service provision, with roughly 300 rattan-related stakeholders from universities, government agencies and enterprises visiting the institution within the last three years. Finally, a follow-up project to commercialize and market rattan across the region has be developed and submitted to ITTO by ERDB, which aims to develop rattan-based enterprises that utilize raw materials from the established rattan plantations.

(4) In the future, it is vital that ERDB continues to strengthen collaboration with the project's implementing agencies from other participating countries, as well as with international organizations such as INBAR, FAO and WWF. Such an approach could help to contribute towards a global strategy for sustainable rattan sector development as part of an integrated approach to sustainable forest management.

5.2 Recommendations

For the Executing Agency

- Secure funding to further improve the quality of project-developed training manuals and conduct regular follow-up trainings in the participating countries to ensure beneficiaries gain from the most recent state of the art technologies on rattan production and utilization;
- Continue to monitor the growth and management of the established rattan plantations and provide trainings on harvesting technologies that could improve the quality of rattan canes and ensure the economic sustainability of these plantations. Furthermore, ERDB should also publish results on the pilot sites in academic and open access publications to promote wider dissemination and uptake of best practices;
- Maintain and even strengthen the communication with collaborating agencies across the network to promote the sustainability of the established rattan demonstration plantations in each participating country;
- Consult with relevant government agencies to advocate for and promote supportive policies, which could promote the sustainability of rattan resources in the Philippines. In addition, examples of successful policies should be shared across the network;
- Formulate a grading regulation or standard for rattan poles and by-products applicable to all ASEAN member countries;
- Enhance financial and human resource support to research and development of rattan production and utilization within ERDB;
- The project network of various international and local institutions, government agencies, and rattan manufacturers should be maintained and, if possible, expanded;

- The quality of the rattan database and the accessibility of project website should be significantly improved. Furthermore, more effort should be made to make sure information is of a practical nature, relevant for commercial utilization of rattan resources;
- The project website and database should be linked to ITTTO's website to get more access.
- The management framework and experience of this project should be extended to other similar international projects.

For ITTO

- In future demonstration and applied research projects, research activities, especially basic research, should be minimized so as to increase the availability of funds for demonstration, training and transfer of technology activities;
- Including a visiting scholar program as part of demonstration and capacity building activities, could help to strengthen networks and improve the sustainability of future projects;
- To improve management of complex multi-country projects, it is suggested that project steering committee meetings should take place twice rather than once per year;
- More considerations should be given to the political stability of the executing and collaborating agencies during the formulation of a project. The agencies, including the collaborating agencies which are responsible for the project delay should be more strictly examined if they want to apply projects from ITTO.
- The evaluated project actually mainly focused on the demonstration and application of rattan production, which will contribute to an improved supply of rattan raw materials in the participating countries. Therefore, a follow-up project on the demonstration and application of rattan utilization that has been submitted to ITTO by ERDB should be under full consideration by ITTO.

Part 2 MAIN TEXT

Introduction

1.1 Background and Rationale for the Evaluation

At their Forty-sixth Session, in November 2012, the Committee on Economic and Market Intelligence and the Committee on Forest Industry (CEM-CFI) decided that an ex-post evaluation of PD 334/05 Rev.2 (I) should be carried out to establish how well the project had served its purpose and to make recommendations for future action.

The ex-post evaluation was conducted from the 1st – 7th July, 2013, about 33 months after the project closed. The evaluation aimed to provide an in-depth diagnosis of the Project in order to point out the successful and unsuccessful outcomes, the reasons for successes and failures, and the contribution of ITTO PD 334/05 Rev. 2 (I) toward the achievement of ITTO's Objective 2000. Finally, the evaluation draws lessons that can be used to improve similar projects in the future.

1.2 Project Identification

Serial number: PD 334/05 Rev.2 (I)

Title: Demonstration and application of production and utilization technologies for rattan sustainable development in the ASEAN member countries

Host Government: Philippines

Executing Agency: Ecosystems Research and Development Bureau (ERDB)

1.3 Project Context

This project aimed to strengthen ASEAN collaboration that would promote the sustainability of rattan resources through demonstration and application of rattan production and utilization technologies to uplift the socio-economic status of local communities. The project specifically aimed to: (1). Apply the production and utilization technologies in the establishment and management of rattan demonstration plots at the village level and rattan processing in the ASEAN member countries for rattan sustainable development. (2). Generate relevant technologies on production, utilization and socioeconomic aspects of rattan and disseminate them through the ASEAN Rattan Centre.

The project's objective is aligned with Objectives c and f of ITTA 1994, the ITTO Action Plan 1998-2001 (Libreville Action Plan) and ITTO Action Plan 2002-2006 (Yokohama Action Plan) as outlined below:

<u>ITTA 1994</u>

Objective (c) - To contribute to the process of sustainable development; and

Objective (f) - To promote and support research and development with a view to improving forest management and efficiency of wood utilization, as well as increasing the capacity to conserve and enhance other forest values in timber producing tropical forests;

<u>Libreville Action Plan</u>

Reforestation and Management

Goal 3: Enhance technical, financial and human capacities to manage the topical timber resource base

Action 1: Promote access to, and transfer of, technologies and encourage technical cooperation for sustainable forest management; forest restoration and reforestation;

Action 3: Design and conduct regional training events to enhance technical and human capabilities to manage the resource base.

The Yokohama Action Plan

Reforestation and Management

Goal 1: Support activities to secure the tropical timber resource base

Action 5: Assess opportunities for, and promote development of, non-timber forest products and forest services that can improve the economic attractiveness of maintaining the forest resource base.

Goal 2: Promote sustainable management of tropical forest resources

Action 5: Encourage members and assist them, where appropriate, to Improve the productive capacity of natural forests, where appropriate, through intensified silvicultural practices, better utilization of lesser-used species, the promotion of non-timber forest products, guided natural regeneration, enrichment planting and reforestation.

The project's objective is also relevant to the objectives of ITTA 2006 and ITTO's Action Plan 2008-2011, outlined as follows:

ITTA 2006

Objective (q*)* - Promoting better understanding of the contribution of non-timber forest products and environmental services to the sustainable management of tropical forests with the aim of enhancing the capacity of members to develop strategies to strengthen such contributions in the context of sustainable forest management, and cooperating with relevant institutions and processes to this end.

ITTO Action Plan 2008-2011

Actions F and f2 under Expected Outcome 6: Tropical forest resource sustainably managed, i.e.,

Action by ITTO	Action by Member
F - Provide guidance on improving the sustainable yield of timber and non-timber products and services by intensifying the silvicultural management of natural tropical production forests and by restoring degraded forests	f2 - Promote and support research into forest dynamics (growth and yield studies) in different forest types and under various management schemes

2 Evaluation Scope, Focus and Approach

2.1 Scope and Focus

The primary purpose of this ex-post evaluation is to provide an in-depth diagnosis of the Project, identifying its successful and unsuccessful outcomes, the reasons for its successes and failures, and the contribution of the project towards the achievement of ITTO's Objective 2000. Finally the evaluation draws lessons that can be used to improve similar projects in the future.

The consultant assessed all aspects of PD 334/05 Rev.2 (I) from its inception to the situation after its completion, covering administrative and financial matters, organization, communication, consultation and cooperation, technical matters, effectiveness and impact, and relevance to ITTO.

The specific Terms of Reference for the evaluation are as follows:

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

2.2 Approach of Evaluation

This ex-post evaluation was carried out approximately 33 months after project closure. The approaches of evaluation included:

- Conducted an extensive literature review of project proposal, project completion reports, project technical reports, training reports, mission reports, progress reports, minutes of the Project Steering Committee, yearly plan of operation and other relevant documents;
- Interviewed with leader of the executing agency, deputy project director, project consultant and project key staffs in ERDB office building;
- Made a field visit to the rattan pilot plantation in Philippines, and interviewed with the officials of local government agency and the head of the local community directly involved in the project.
- In order to assess the potential effect of the project on the rattan industry, the consultant also visited a big rattan processing enterprise located in Angeles City, despite the fact that it was not an original beneficiary of the project.
- A questionnaire was also designed and sent to the respective Cps in the participating countries by email to assess the implementation of this project in these countries.

The itinerary of travel for this evaluation was shown in Appendix A. Two rattan pilot demonstration plantations were established in the Philippines as part of the project. The one located in Barangay San Jose, Lupi Camarines Sur, Bicol Natural Park (Protected Area) is a newly set up rattan plantation, located 7-8 hours from ERDB's offices by car. The other is an older plantation, which was enhanced and expanded. This plantation is located in Kidapawan, North Cotabato. Since the newly established rattan plantation adopted all training modules and technologies promoted by the project, the author choose to inspect Barangay as part of the field study for this project.

Appendix B shows a list of project staff and stakeholders who participated in discussion groups or interview with the consultant. Discussions were guided by questions formulated specifically for project staff, national experts, Cps in the participating countries and project beneficiaries, based on the checklist provided in the ITTO Manual for Project Monitoring, Review and Evaluation (Third Edition, 2009).

3. Project Facts

3.1 Background and Origin

The Experts' Consultation on Rattan Development held in Rome on December 5-7, 2000 emphasized the economic, socio-cultural and ecological importance of rattan. This called for a concerted effort of governments, private sectors, NGOs and relevant international agencies like ITTO to develop the rattan sector. In response to this, a rattan project entitled "Application of Production and Utilization Technologies for Rattan Sustainable Development in the ASEAN Member Countries" [Pre-project Document 51/02 Rev. 1 (I)] was implemented by ERDB with funding from ITTO. One of the major activities of the abovementioned project was the 2004 Regional Conference on Sustainable Development of Rattan in Asia that was held in Manila, Philippines. This regional conference highlighted the need for ASEAN collaboration on rattan research and development to alleviate poverty at the community-level. Results and output of the two-day conference formed the basis for formulation of the current evaluated project.

3.2 Development Objective

The Development Objective of the project was to strengthen ASEAN collaboration and promote the sustainability of rattan resources through demonstration and application of rattan production and utilization technologies to uplift the socio-economic status of local communities.

3.3 Problem Addressed

The problems and needs identified and prioritized in this project proposal were as follows: poverty among rattan producing communities; limited access to information on production; lack of locally available processing and utilization technologies; limited information on the available rattan resources in the region; limited information on socio-economic aspects of rattan production and utilization; and weak regional networks.

3.4 Objectives and Outputs

The specific objectives of the project were to:

1. Apply production and utilization technologies to set up and manage rattan demonstration plots at the village level, as well as promote rattan processing for the sustainable development of rattan in ASEAN member countries; and
2. Establish relevant technologies on production, utilization and socio-economic aspects of rattan and disseminate them through a newly created ASEAN Rattan Centre.

The expected outputs were as follows:

Output 1.1 Training on production and utilization technologies including enhancement of skills and capacity building conducted

Output 1.2 Training modules prepared

Output 1.3 Rattan demonstration plots established (20 hectares/country)

Output 1.4 Rattan production and utilization technologies adopted, documented and assessed

Output 1.5 Manuals on rattan production and utilization technologies produced

Output 1.6 Regional meetings/conferences conducted

Output 1.7 Impact assessment of specific interventions

Output 2.1 Research conducted on relevant technologies and information generated

Output 2.2 Technical papers/articles from the result/outputs of the studies produced and published

Output 2.3 Rattan Field Guides

Output 2.4 ASEAN Rattan Centre, including a database and webpage, established

3.5 Starting Date and Duration

ITTO PD 334/05 Rev. 2 was approved during the 38th Session of the International Tropical Timber Council in Brazzaville from June 18th - 22nd, 2005 and was financed in November 2005 in Yokohama, Japan. The project commenced in April 2006 (upon ITTO approval of the agreement) and had a planned duration of 48 months. However, this was officially extended to 54 months at no additional cost to the budget.

3.6 Budget

	Approved, USD	Actual, USD
ITTO	629,873	629,873
Government of Phillines	270,000	270,000
Total	899,873	899,873

4 Findings and Lessons Learned

4.1 Findings

4.1.1 Achievement of the Project

(i) Actual versus Planned Outputs, and Achievement of Objective

The following section gives a comparison of target and actual outputs achieved for specific objectives 1 and 2.

Objective 1: Apply the production and utilization technologies in the establishment and management of rattan demonstration plots at the village level and rattan processing in the ASEAN member countries for rattan sustainable development.

Table 1 Target and actual outputs for Specific Objective 1

Target outputs	Actual outputs
Output 1.1: Conduct 12 training programs on rattan production and utilization (1 production and 1 utilization technology training per country)	20 Training programs were completed (Nine on production and eleven on utilization technologies respectively). Ten trainings, where held across five ASEAN countries, with a further 10 trainings help in the Philippines)
Output 1.2: Preparation of five rattan technology guides and training modules **Output 1.5**: Manuals on rattan production and utilization technologies produced	Five (5) technology guides and training modules prepared on: a) Nursery and planting stock production technologies b) Plantation establishment and management c) Control methods against insects and fungi d) Kiln drying e) Bleaching and finishing technologies **Note: Output 1.5 was merged with Output 1.2**
Output 1.3: Establishment and maintenance of 200 hectares of rattan demonstration plots (20 hectares/country) **Output 1.4** Rattan production and utilization technologies adopted, documented and assessed	220 hectares of rattan demonstration plots were established and maintained -Cambodia – 20 -Indonesia – 25 -Lao PDR – 40 -Myanmar – 25 -Philippines – 40 -Vietnam – 25 -Thailand – 25 -Additional 20 hectares for research purpose **Note: Output 1.4 was merged to Output 1.3**
Output 1.6: Conduct of regional meetings/ conferences -3 PSC Meetings -1 Inception Meeting -48 Regular Project Management Team Meetings	Conducted: -3 PSC Meetings -1 Inception Meeting -50 Regular PMT Meetings -7 issues of RATTANewsletter published -A Rattan Project Museum set up in>>>>>>>. -3 study tours conducted -Training Program on Rattan Taxonomy and

	Resource Inventory in Bangkok, Thailand on 7-13 Sep 2008 -Regional Rattan Conference in Makati City, Philippines on 29 Aug to 1 Sept 2010
Output 1.7: Formulation of 4 customized impact evaluation survey questionnaires. -Conduct of impact evaluation on technology application and demonstration.	4 customized impact evaluation survey questionnaires formulated. -Data retrieved, collated, tabulated and analyzed for a baseline and post-implementation impact assessment.

The project consists of five components, namely training, pilot demonstration, research, networking and database development. The training, pilot demonstration and networking components were arranged to achieve specific objective 1. Table 1 shows the target and actual outputs for specific objective 1. It can be found all the outputs for the specific objective 1 were satisfactorily completed, with target numbers mostly exceeded.

(1) For the training component (output 1.1, 1.2 and 1.5), although only 12 training programs were required in the project document, 20 training programs on the production and utilization of rattan (9 for production and 11 for utilization technologies) were actually performed in Cambodia, Indonesia, Lao PDR, Myanmar, Philippines and Vietnam with a total of 500 participants from farming, research, and industry backgrounds benefiting (Output 1.1). The additional accomplishment in the training component is attributed to the very strong networking and linkages of the Project Management Team (PMT). These training courses were performed by rattan experts from university and research institutes in the Philippines with good reputations for rattan research and development. Five training modules and technology guides were prepared by these experts and presented in English or local languages for better distribution (Output 1.2). The topics include: (a) Rattan Nursery and Planting Stock Production; (b) Rattan Plantation Establishment and Management; (c) Control Methods Against Insects and Fungi; (d) Kiln Drying; and (e) Bleaching and Finishing of Rattan. It should be noted Malaysia and Thailand didn't hold any training program. Malaysia joined in the project just to provide the resource person for the Rattan Taxonomy and Inventory Training held in Thailand in 2008. Thailand didn't need a training program because an earlier ITTO project executed in Thailand had provided similar training courses already. These modifications were discussed and approved in the inception meeting of the project.

(2) The project established and maintained over 222 hectares (the planned area in the project document is 200 hectares) of rattan pilot plantations in seven ASEAN countries, namely Cambodia, Indonesia, Lao PDR, Myanmar, Philippines, Thailand and Vietnam (Output 1.3). Malaysia didn't join the pilot demonstration component. Although there was a delay in the establishment of pilot demonstration in Myanmar and Thailand due to the unforeseen political disorder, both of the countries were able to catch up with the implementation of the project activities before the project was closed. The additionally 22 hectares, above the original planned target, was achieved through a related research component conducted in Philippines. A good implementation strategy was designed for the pilot demonstration component. The CPs of the participating countries were given the right to select the sites of the rattan plantations to be established according to a set of

criteria, including: (a) accessibility; (b) suitability of the biophysical conditions; (c) receptivity of the community and/or social acceptability; (d) acceptance, cooperation and support of the concerned authorities; and (e) relevance of rattan to the uplifting the socio-economic conditions of the targeted community. Meanwhile, the CPs could also decide the area they wanted to establish and the corresponding budget. The rationale behind it was that the costs of labor and materials varied from one country to the other due to differences in standard of living. What is more, the local communities, whom had been trained on the production and utilization of rattan in advance of establishing plots, were directly involved in the establishment of plantations, including participating in planning workshop, nursery establishment (seed collection, germination, transplanting and maintenance); and plantation establishment (demarcation/ mapping, holing, outplanting, weeding and maintenance). Although the land ownership of these pilot plantations belongs to the participating governments, the families of the communities are responsible for plot maintenance and management and have access tenure rights, which will enable them to benefit economically from the project. 33 months after project completion, the rattan demonstration plantation in Philippines was found to be well maintained and managed. The rattans in the plantation located in Barangay San Jose, Lupi Camarines Sur, Bicol Natural Park (Protected Area) have grown very well. The villages who were interviewed still showed enthusiasm for rattan plantations and had started to get incomes from selling rattan seedlings. It is anticipated that these incomes will expand and grow in 5-8 year's time as canes reach maturity and can be harvested. The peoples' organization in the Barangay San Jose has already earned 2000 USD from selling about 20000 rattan seedlings in 2013. Purchases of seedlings from individuals and, or, government agencies are expected to increase as the Philippines government had included rattan species in the National Greening Program for the first time. Due to the time and fund limitation, the demonstration sites located in other six ASEAN countries were not visited. However, a questionnaire was sent to the contact persons of the participating countries for comments on the project, although only the contact person from Vietnam responded. It was confirmed the rattan plantation in Vietnam was under good management. However, from the interview with the members of the PMT in ERDB it was claimed that all the other rattan plantations were also being well managed by local famers or government agencies. Selection of sites that were either located in protected areas and, or, on the experimental forests of cooperating agencies ensured their sustainable management. Revisions were made to the expected outputs during implementation as shown in Table 1. For example, Output 1.5 was merged to Output 1.2 and Output 1.4 was merged to Output 1.3. These modifications made the project activities more effective in achieving the expected outputs and were approved by ITTO through the approved YPO.

(3) Besides the training and demonstration components, which are generally indispensable in an ITTO project, the networking component had special importance here because so many countries were involved in the project. It was not only a vital link among the various project components, but also a conduit or bridge for coordination, communication and collaboration of activities among the eight countries. Besides the regular project meetings (one Inception meeting, three PSC meetings, 50 regular PMT meetings) (Output 1.6) and preparation of Impact assessment as project (Output 1.7) required by ITTO, a large number of additional networking activities were also conducted at local, national and regional levels. For example, seven rattan project newsletters were prepared and distributed to the different partner agencies, ASEAN embassies, academic institutions and other local and international institutions. Project staff also attended or participated in a total of ten conferences/seminars/symposia, with 12 technical papers and 2 posters being prepared and presented for these events. Furthermore, an ITTO discussion group and a project rattan museum were also set up during the project. The project also hosted a seven-day Regional Training Program on Rattan Taxonomy and Resource Inventory in Bangkok, Thailand

from the 7th – 13th September, 2008 in collaboration with the ASEAN Centre for Biodiversity (ACB), the Asia Pacific Association of Forestry Research Institutions (APAFRI) and DNP. This training was one of the major activities of the project, having excellent attendance with 17 participants coming from the eight (8) ASEAN member countries. Finally, a Regional Rattan Conference was conducted from the 29th August to 1st September, 2010 at the Dusit Thani Hotel, Ayala Centre, Makati City, in the Philippines. It was organized by ERDB in collaboration with FPRDI and the UPLBCFNR. Moreover, this activity was co-sponsored by ITTO, the Foreign Assisted and Special Projects Office of the Department of Environment and Natural Resources (DENR-FASPO), INBAR and APAFRI. The regional conference was the culminating activity of the project. It aimed to provide a venue for sharing successful strategies, especially on pilot demonstration establishment involving communities, villages and government agencies. The meeting also presented and discussed the outputs from 8 research studies, funded by the project, as well as the remaining research gaps on rattan production and utilization technologies. Moreover, it provided an opportunity to present the strengths and weaknesses in the project implementation, as well as participants' insights and experiences.

Objective 2: Generate relevant technologies on production, utilization and socioeconomic aspects of rattan and disseminate them through the ASEAN Rattan Centre.

Table 2 Target and actual outputs for Specific Objective 2

Target outputs	**Actual outputs**
Output 2.1: Researches conducted on relevant technologies and information generated Output 2.2: Technical papers/articles from the result/outputs of the studies produced and published	Eight research studies from 4 participating countries were conducted: 1. Isozyme analysis of Palasan (*Calamus merrillii* Becc). 2. Application of plant-derived preservatives to improve durability of rattan and rattan-based products 3. Harmonized ASEAN Grading rules for rattan poles and By-products 4. Rattan Pilot Demonstration Establishment in Amas, Kidapawan City 5. Dragon's blood extraction at various seed maturities level and their physico-chemical properties 6. Growth performance of Calamus subinermis in Sabah, Malaysia" 7. Publication of Rattan Field Guide for the Philippines 8. Analysis of the roles of gender in planting rattans for forest enrichment in Doan Ket hamlet, Phuc Tien Commune, Ky Son District, Hoa Binh Province The research summaries of these studies were

	presented both in the Project Technical Reports and Proceedings of Regional Rattan Conference in 2010. **Note: Output 2.2 was merged to Output 2.1**
Output 2.3 Rattan Field Guides	"A Field Guide to Philippines Rattan" was published;
Output 2.4 ASEAN Rattan Centre/ Project Office establishment -Coordination of project activities -Creation and maintenance of webpage	An ITTO Rattan Project Management Office was housed at ERDB. -Effective coordination was done through the provision of open line of communications between and among the cooperators. -Webpage established and created for sharing the technologies generated and information on rattan sustainable management.

The specific objective 2 of the project was to generate relevant technologies on production, utilization and socioeconomic aspects of rattan and disseminate them through the ASEAN Rattan Centre. The research studies and database components were combined to achieve the objective. Table 2 shows the target and actual outputs for specific objective 2. It can be found all the outputs related to specific objective 2 were completed.

(1) The purpose of designing a research component in the project was to address gaps that were identified during the 2004 Regional Rattan Conference. Therefore, a small grant research program was incorporated into the project and the relevant procedure for proposal selection, review and evaluation was designed by the PMT. Based on this, a call for research proposals was issued and opened to the potential applicants in ASEAN member countries. Twenty-eight research proposals from four ASEAN countries were reviewed and eight of them were funded and completed (Output 2.1). The significant results of these studies were included in the Project Technical Report and also presented at the aforementioned Regional Rattan Conference in 2010 (Output 2.2). However, several comments or suggestions were proposed for the research components as follows:

1) The academic standard of these studies and their actual contributions to the sustainable development of rattan industry in ASEAN countries could not be clearly determined because the full technical reports of these studies were not provided except for the proposal "Production of a Rattan Field Guide" that published an important book ""A Field Guide to Philippines Rattan""(Output 2.3).

2) Eight research topics are too many for a demonstration and application project. Therefore, each proposal had a very limited budget for research. It is well known that small research funds normally fail to produce significant or applicable results. For example, the basic research "Isozyme analysis of Palasan (*Calamus merrillii* Becc)" didn't publish papers in an international academic journal. The applied researches "Application of plant-derived preservatives to improve durability of rattan and rattan-based products" and "Dragon's blood extraction at various seed maturities level and their physico-chemical properties" didn't develop mature technologies which can be demonstrated or applied in the project. The research proposal "Community-based rattan plantation establishment and management" could be integrated into the demonstration component as it is was closely related to the establishment activity of rattan demonstration plot in Kidapawan City in the Philippines

3) However, the proposal "Harmonized ASEAN Grading rules for rattan poles and By-products" dealt with a very important issue, which could benefit the rattan industry across the entire ASEAN region. This research should be further funded and strengthened to formulate a grading regulation or standards applicable to the ASEAN region.

(2) The suitability of a demonstration project is one of the most important issues of ITTO. An innovative measure that promoted sustainability in this project was the establishment of a data/information network on rattan in the ASEAN region (www.aseanrattan.org) (Output 2.4). According to the Project Completion Report and Project Technical Report, this data/information network consists of a project website and a rattan database, which facilitate information access for all stakeholders and provides a means for continuous exchange of information on rattan at the national, regional and international level. The website features significant accomplishments of the project together with other important information on rattan for wider access and use by the public. Furthermore, an on-line database of rattans found in Southeast Asia was created and launched during the Regional Rattan Conference in 2010. The database includes information on 601 species of rattan, which covers scientific names, local names of rattan species in ASEAN countries, distinguishing characteristics, brief descriptions on habitat, elevation, distribution, characteristics of stem, leaves, inflorescence, fruits and seeds, uses, illustrations and pictures. Therefore, the present database only contains information useful for a taxonomist. It should provide useful information for economic exploitation in the future. According to the Project Technical Report, from 2008-2010, a total of 126,331 web visitors accessed the website and 12,612 pages were requested. However, since April 2013, the consultant found this website to be inaccessible, when he tried to view the site on many occasions while in the Philippines and upon his return to China. Even in the ERBD office building where the interview was connected, the consultant also couldn't visit the website and the database. The PMT attributed this problem to the terrible internet service in ERDB. Since the consultant could not personally experience the function and content of the website and database, how well this database component serves its purpose cannot be concluded. It is recommended that ERDB improve its internet accessibility and also take measures to improve the quality of the rattan website and database.

(ii) Impacts and Effects

The implementation of this project will result in significant impacts and effects on the whole rattan industry in all the involved countries. During the visit to Calfurn Manufacturing Philippines, Inc, a major rattan based product producer located Angeles City, it was confirmed that the rattan raw materials from plantations contribute much to the rattan industry in Philippines. The established 222 hectares rattan plantations in seven countries will serve as demo sites on rattan plantation development and eventually promote the sustainability of rattan resources in the ASEAN region. The pressure on forests for timber will be correspondingly reduced.

More than 500 participants composed of farmers, officials even researchers were trained on the technologies of production, processing and utilization of rattan. Many of the trained farmers directly attended all the activities related to the establishment of rattan demonstration plantations. They finally became the managers of these rattan plantations and, in some cases, have even begun to earn profits from selling seedlings or rattan shoots (In Thailand). These incomes are expected to grow further when rattan canes reach harvestable age in 5-8 years time. The success of these farmers will act as a model for other farmers, which will lead to the gradual enlargement of rattan plantation areas. Trained government officials now also recognize that rattan can alleviate poverty at community level while also facilitating the sustainable use of forest

resources. This has the potential to influence future policy decisions, which may begin to incorporate rattan into national development programs.

The research component of the project not only produced several new technologies on rattan production and utilization, which could significantly improve the quality and value of rattan-based products, but also fostered some professionals on rattan research and development.

This project created a project website and rattan database, which will serve as a rattan information center for individuals, governments and enterprises who are interested in the sustainable development of rattan. Meanwhile, ERDB, the executing agency of this project is becoming a center for knowledge on rattan propagation and extension. An examination of the guest book for the rattan museum for the past three years showed that there were about 300 visitors to ERDB from universities, government agencies and enterprises, who came to discuss rattan development issues with members of the PMT.

(iii) Sustainability

The sustainability of the project is evident from the following facts:

- Financial support in the amount of USD 2000/per year was provided by ERDB for monitoring the growth of rattan in the established plantations in Philippines. This activity should further improve the knowledge on rattan sustainable management and result in higher productivity;
- For the pilot demonstration in BNP, Philippines, a resolution regarding the mainstreaming of the pilot demonstration into the programs of PAMB was formulated during the Protected Area Management Board (PAMB) meeting in March 2010. This resolution has already been signed by the Regional Executive Director of DENR Region 5. With technical assistance for the PMT, Camarines Norte State College in the Philippines has now also established its own two hectare rattan research plantation for research purpose on forest land located within its campus. The rattan plantations located in other participating countries are also reported to be well managed as most of them are located in protected areas and, or, on the experimental forests plots of collaborating agencies.
- A follow-up project proposal for the continued industrial development and marketing of rattan has been submitted to ITTO by ERDB. This proposed project aims to developing rattan-based enterprises to efficiently utilize rattans for livelihood improvement at community level in ASEAN countries.
- The peoples' organization in the Barangay San Jose are now gaining its first income of 2000 USD by selling about 20000 rattan seedlings in 2013. More purchases from individuals or government agencies are expected as the Philippines government includes rattan species in the National Greening Program for the first time;
- The project website and rattan database containing project reports, books, proceedings and digital outputs are being maintained in ERDB indicating the continuity of information dissemination. ERDB are now becoming a center of knowledge for rattan propagation and extension services, with about 300 people from universities, government agencies and enterprises, visiting the institution over the last three years according to the records in a notebook for guest visiting.
- The expertise of several key project participants is improved. They will possibly grow to the leading figures in the rattan research and development field.

4.1.2 Project formulation and implementation

(i) Stakeholder involvement during the identification and during the implementation of the Project

For a complicated international project involving several countries, the proper selection of stakeholders during the formulation of the project was the starting point for success. This project was a follow-up to the completed pre-project PD 51/02 Rev.1(I) on rattan sustainable development in ASEAN countries. During the implementation of this pre-project, an extensive consultation with government agencies and professional institutions had been carried out and used as the basis for formulating the currently evaluated project.

In the project, ERDB, also the executing agency of the rattan pre-project was naturally responsible for the conception and proposal preparation in collaboration with FPRDI, UPLBCFNR, and the collaborating institutions of the participating countries. ERDB, FPRDI and UPLBCFNR are the premiere institutions in rattan production and utilization research and development in the Philippines. They have also pioneered implementation of earlier projects on rattan production and utilization and have developed a pool of rattan experts, as well as related technologies. The collaborating institutions in the participating countries are mainly national level forestry research institutes or administrations, which have strong nationwide implementation capacity. The responsibilities of each institutions involved were clearly indicated in the project's YPOs, which was also approved by ITTO.

During the implementation of the project, the CPs from different participating country agencies were given the right to select local project beneficiaries (local communities and technical training participants) using mutually formulated criteria, which related to the identified needs and objectives..

(ii) Appropriateness of the Project design

In general, the evaluation found that the project's main success was attributable to good problem definition at the start of the project, as well as selection of relevant stakeholders, who were well consulted during formulation of the project design. The concept for this project was borne out of suggestions raised at an Experts' Consultation on Rattan Development held in Rome in December 2000, which emphasized the economic, socio-cultural and ecological importance of rattan. Based on this consultation, ERDB conducted a pre-project on rattan [Pre-project Document 51/02 Rev. 1 (I)] with funding from ITTO. As a result of this project, a Regional Conference on Sustainable Development of Rattan in Asia was held in Manila, Philippines in 2004, where representatives or contact persons (CPs) from each ASEAN member country identified their own countries technology gaps and needs with regards to rattan production, processing and utilization. Once gaps/issues had been identified, a project framework was formed. Furthermore, each participating country was able to select project beneficiaries based on this framework. Therefore, the formulation of the project ensured that it had legitimacy across the region, with clearly defined, achievable and mutually agreed objectives and management structures enabling for efficient project implementation.

The project consists of five components, namely training, pilot demonstration, research, networking and database development. It was designed in such a way that all targeted objectives through the project components were achieved. Pilot demonstration and networking components were arranged to achieve specific objective 1, while the other two components related to specific objective 2.

(iii) Efficiency and operational aspects

The executing agency developed a highly efficient system to ensure the smooth implementation of this project. A clear and simple organizational structure was established to avoid complications. The head of the executing agency acted as the project director, who was also the leader of the Project Steering Committee and overall supervisor for the project. A project Management Team (PMT) was also set up, which consisted of a Deputy Project Director, who is also a senior rattan scientist, and five component leaders responsible for directing, monitoring and evaluating related activities. The CPs of the participating countries were responsible for coordination and monitoring of all activities related to the establishment and management of nursery and pilot demonstration. Furthermore, a Site Coordinator (SC) was designated as the focal person at each site to oversee local management.

The SC worked in tandem with People's Organizations (PO) and other respective collaborating agencies. Criteria for selection were also developed for the pilot demo and research studies.

Regular meetings with PMT and annual PSC meetings were conducted to determine if target activities were accomplished. These meetings also addressed potential issues and concerns related to project implementation. All deviations from the original project activities were approved by the PSC.

A total of 3 PSC meetings, 1 Inception Meeting and 50 regular PMT meetings were held from 2006 -2010. Project progress reports and YPOs were also promptly submitted to ITTO. Decisions made during the PSCs were faithfully implemented. 20 training programs on the production and utilization of rattan were performed, much more the 12 training programs required in the project document. Over 222 hectares (the planned area was just 200 hectares) of rattan pilot plantations were established and maintained in seven ASEAN countries.

From reviewing the project documents and conducting face-to-face interview PMT members, the author was also able to ascertain that many delays in completing project outputs were due in large part to factors beyond the direct control of the Executing Agency. For example, the political unrest in Myanmar and Thailand during the initial stage of the project resulted in the delay of funds being processed to these two countries. The weak financial institutions in Myanmar also contributed to delays in processing financial assistance for national project implementation. The non-cooperation of Cambodian CP towards the end of the project also meant that no final report was submitted for Cambodia.

(iv) Effectiveness

The formulation of this project was based on a very scientific and reasonable process, which determined the most important project objectives and devised an efficiency project implementation system. The problems addressed were highly relevant as they were in response to conclusions from the Rattan Region Conference attended by the representatives from the ASEAN countries in 2004. The choice of stakeholders was also appropriate as it was based on a rattan pre-project, which identified external factors critical to the success of the project. This achievement also reflects the large pool of expert knowledge among key project staff and consultants, who have often spent several years or more working in the rattan sector. The active participation of the collaborating institutions' decision makers was also critical to achieving expected outputs and outcomes. The direct involvement of local communities in establishing, maintaining and managing rattan demonstration plantations has also ensured the success and sustainability of this project.

4.1.3 The Project proposal appraisal process

This project is a follow-up to a pre-project PD 51/02 Rev.1(I) on for rattan sustainable development in the ASEAN countries finished in 2004. After revision according to the recommendations of the 29th Technical Panel of ITTO, the project was approved during the 38th Session of the International Tropical Timber Council (ITTC) in Brazzaville, Republic of Congo from June 18th - 22nd, 2005 and received financing at the 39th Session of the ITTC in Yokohama, Japan from November 7th-12th, 2005. The Project Agreement between ITTO and DENR-ERDB was signed on 9th February, 2006. The First Yearly Plan of Operation (2006) including a workplan was prepared and approved. Officially, the Project started on 1st April, 2006 for a period of 48 months or 4 years. An extension of 6 months was approved by ITTO, making its final duration 54 months.

4.2 Lessons learned

- For a complicated project, which will involve several countries, face-to-face communication and discussion was necessary and highly important for correctly identifying key national and regional problems that needed to be addressed, as well as for selecting suitable implementing agencies in each participating country.
- A comprehensive project design must sufficiently define all internal and external risks to the project and identify contingencies to ensure that the outputs are achieved on time. This includes making sure to develop activities, outputs and expected outcomes that while being ambitious are also realistic and achievable with the resources available.
- The involvement of local communities in the project as active participants and direct beneficiaries plays a crucial role in the successful implementation of training and demonstration components of the project. This is also fundamental to ensuring long-term sustainability and subsequent impact after completion of the project.
- The project should be designed in such a way that minor modification or adjustment could be allowed, without affecting the overall framework and specific objectives.
- Linking with local and international agencies helps considerably to achieve a project's planned activities, while also supporting sustainability.
- Heads of implementing agencies should be required to have direct participation and active intervention in managing the project.
- A sustainability plan for the project must be prepared before the project ends, and ideally during the formulation process. This should include a satisfactory exit strategy that ensures targeted beneficiaries have the required capacity and resources to continue and up-scale project activities after the completion of funding. Furthermore, the plan must include not only one component of the project, but all components, covering all participating countries.
- The implementing agency in the participating countries should be given autonomy to select local beneficiaries of the project, using mutually agreed criteria developed during the project formulation process.

5 Conclusions and Recommendations

5.1 Conclusions

The project PD 334/05 Rev. 2 (I) satisfactorily achieved its development objective and two specific objectives. Due to the adequate identification of the problem to be addressed and the relevant participating stakeholder, this project was well-designed with five interconnected components. Of the five components of the project, the training and demonstration components produced many more outputs than originally planned. The networking component also achieved its objective with an additional important output being the Regional Rattan Conference conducted in Makati City,

Philippines in August 2010. This conference might form a strong basis for the formulation of a new ITTO project. The research component dealt with the research gaps that were identified during the 2004 Regional Rattan Conference, but its actual contributions to the sustainable development of rattan industry in ASEAN is hard to be evaluated as no full technical reports or formal publications in academic journals are currently available. Furthermore, eight research topics are too many for a demonstration and application project. The database component was designed to be part of an information center of rattan that can function at regionally and even internationally. As no such previous database was available this could potentially be very important for the sustainable development of rattan industry. However the terrible accessibility of the website will seriously damage the reputation of this information platform if the internet service and database maintenance are not improved.

The delays encountered by the project were due partly to reasons beyond the Executing Agency's control, such as the political disorders in Myanmar and Thailand and the weak financial institutions in Myanmar. The inactive involvement of the Cambodian CP at the later period of the project was the most important reason.

At 33 months after project closure, the sustainability of project outcomes and emerging impacts were evidenced by several indicators. Firstly, ERDB are providing continued financial support of USD 2000/per year to for monitoring and evaluation of the growth of rattan in the established pilot plantations in Philippines. Secondly local communities in some pilot sites, notably in the Philippines, are now starting to earn additional income from selling of rattan seedlings. Thirdly, the project website and rattan database containing project reports, books, proceedings and digital outputs are being maintained in ERDB indicating the continuity of information dissemination. ERDB is now becoming a recognized center of knowledge for rattan propagation and extension service provision, with roughly 300 rattan-related stakeholders from universities, government agencies and enterprises visiting the institution within the last three years. Finally, a follow-up project to commercialize and market rattan across the region has be developed and submitted to ITTO by ERDB, which aims to develop rattan-based enterprises that utilize raw materials from the established rattan plantations.

In the future, it is vital that ERDB continues to strengthen collaboration with the project's implementing agencies from other participating countries, as well as with international organizations such as INBAR, FAO and WWF. Such an approach could help to contribute towards a global strategy for sustainable rattan sector development as part of an integrated approach to sustainable forest management.

5.2 Recommendations

For the Executing Agency

- Secure funding to further improve the quality of project-developed training manuals and conduct regular follow-up trainings in the participating countries to ensure beneficiaries gain from the most recent state of the art technologies on rattan production and utilization;
- Continue to monitor the growth and management of the established rattan plantations and provide trainings on harvesting technologies that could improve the quality of rattan canes and ensure the economic sustainability of these plantations. Furthermore, ERDB should also publish results on the pilot sites in academic and open access publications to promote wider dissemination and uptake of best practices;
- Maintain and even strengthen the communication with collaborating agencies across the network to promote the sustainability of the established rattan demonstration plantations in each participating country;

- Consult with relevant government agencies to advocate for and promote supportive policies, which could promote the sustainability of rattan resources in the Philippines. In addition, examples of successful policies should be shared across the network;
- Formulate a grading regulation or standard for rattan poles and by-products applicable to all ASEAN member countries;
- Enhance financial and human resource support to research and development of rattan production and utilization within ERDB;
- The project network of various international and local institutions, government agencies, and rattan manufacturers should be maintained and, if possible, expanded;
- The quality of the rattan database and the accessibility of project website should be significantly improved. Furthermore, more effort should be made to make sure information is of a practical nature, relevant for commercial utilization of rattan resources;
- The project website and database should be linked to ITTTO's website to get more access.
- The management framework and experience of this project should be extended to other similar international projects.

For ITTO

- In future demonstration and applied research projects, research activities, especially basic research, should be minimized so as to increase the availability of funds for demonstration, training and transfer of technology activities;
- Including a visiting scholar program as part of demonstration and capacity building activities, could help to strengthen networks and improve the sustainability of future projects;
- To improve management of complex multi-country projects, it is suggested that project steering committee meetings should take place twice rather than once per year;
- More considerations should be given to the political stability of the executing and collaborating agencies during the formulation of a project. The agencies, including the collaborating agencies which are responsible for the project delay should be more strictly examined if they want to apply projects from ITTO.
- The evaluated project actually mainly focused on the demonstration and application of rattan production, which will contribute to an improved supply of rattan raw materials in the participating countries. Therefore, a follow-up project on the demonstration and application of rattan utilization that has been submitted to ITTO by ERDB should be under full consideration by ITTO.

ANNEX 1: The Management Response

The Ecosystems Research and Development Bureau (ERDB) is truly grateful to ITTO for funding this project, which has helped to strengthen ASEAN collaboration on the promotion of sustainable rattan resource management. Through demonstration and application of rattan production and utilization technologies, the project has the potential to improve and enhance the socio-economic status of poor, rattan producing communities across the region. ERDB also acknowledges all the stakeholders involved in the project. Their cooperation and contributions have been fundamental to the success of this project.

ERDB is in agreement with the findings and conclusions drawn from this ex-post evaluation, and sincerely appreciates the shared lessons and recommendations.

Based on the lessons learned from the implementation of the project, ERDB will further improve the quality of its training manuals developed during the project and try our best to conduct more training in participating countries to update our stakeholders on the most recent state of the art technologies related to rattan production and utilization.

ERDB will continue to monitor the growth and management of the established rattan plantations and provide trainings on the harvesting technologies that could improve the quality of rattan canes, thus ensuring the economic sustainability of the sites.

ERDB will also consult with relevant government agencies to promote new policies, which could improve the sustainability of rattan resources in the Philippines.

Furthermore, as soon as possible, ERDB will formulate a grading regulation or standard for rattan poles and by-products, which could be applied to all ASEAN member countries

The quality of the rattan database and the accessibility of the project website will be maintained and improved by ERDB to make it the most valuable information center for all the individuals, agencies and enterprises, who are interested in the development of the rattan industry.

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Ecosystems Research and Development Bureau (ERDB)

Appendix A: Actual Schedule of Ex-post Evaluation Activities

Date	Time	Program	Place	Notes
July1,2013, Monday	12:55 pm -17:45 pm	Flight by PR359 from Beijing to Manila; from Manila to Laguna by car	ERDB, Laguna	
July2,2013, Tuesday	8:30 am to 17:30	Ex-post evaluation meeting 1. Meeting at ERDB, presentations by ERDB of the project implementation, outputs, impacts and sustainability, etc. 2. Discussion with Project Management team, government official and project expert on how well this project served its purposes, its effectiveness and efficiency; 3. Discussion and arrangement of the field visits and revision of the working schedule;	ERDB, Laguna	
July3-4,2013,Wednesday	Full day	Field visits to rattan plantation demonstration plots: 1. Field visit to 30 ha new rattan plantation 2. Interview with the representative of the local community and local government officials involved in the project	Barangay San Jose, Lupi Camarines Sur, Bicol Natural Park	
July5,2013,Friday	Full day	Field visit to a large rattan products enterprise- Calfurn Manufactring Philippines Inc	Angeles City	
July 6,2013, Saturday	8:30 am to 16:30	Analyze the evaluation data	ERDB	
July 6-7,2013, Saturday-Sunday	20:55 pm to 1:30 am+1	Flight by PR398 from Manila to Beijing	Beijing	

Appendix B: List of plantation sites and organizations visited, and ex-post evaluation interviewees

2 July, 2013 (Tuesday)

ERDB office building, Laguna

Dr. Portia G. Lapitan, OIC-Director of ERDB

Dr. Aida B. Lapis, Deputy Project Director

Dr. Florentino O. Tesoro, Project Consultant

Dr. Armando M. Palijon, Demonstration Component Leader

Mr For. Gregorio E. Santos, JrMs. Site Coordinator-Pilot Demo Philippines

Mrs For. Kharina G. Bueser, Science Research Specialist I

3 and 4 July 2013 (Wednesday and Thursday)

Barangay San Jose, Lupi Camarines Sur, Bicol Natural Park

Dr. Armando M. Palijon, Demonstration Component Leader

Mr For. Gregorio E. Santos, JrMs. Site Coordinator-Pilot Demo Philippines

Mr. Forester Elpidio Orata, Provincial Environment and Natural Resources Office

Mr. Arnel Budoy, the President of the People's Organization involved in the establishment of rattan plantation

5 July 2013 (Friday)

Calfurn Manufacturing Philippines, Inc, Angeles CIty

Dr . Aida B. Lapis, Deputy Project Director

Ms. Norma R. Pablo, Head, Support Staff

Mrs Cieline De Guzman, Marketing Executive

6 July 2013 (Saturday)

ERDB, Laguna

Dr. Aida B. Lapis, Deputy Project Director