

INTERNATIONAL TROPICAL TIMBER ORGANIZATION

ITTO

PROJECT PROPOSAL

TITLE	DEMONSTRATION AND APPLICATION OF PRODUCTION AND UTILIZATION TECHNOLOGIES FOR RATTAN SUSTAINABLE DEVELOPMENT IN THE ASEAN MEMBER COUNTRIES
SERIAL NUMBER	PD 334/05 (I)
COMMITTEE	FOREST INDUSTRY
SUBMITTED BY	GOVERNMENT OF THE PHILIPPINES
ORIGINAL	ENGLISH

SUMMARY

The project proposal aims to strengthen ASEAN collaboration to reduce poverty at the community level through a network that supports and prioritizes the urgent needs/concerns for the development of the rattan sector.

The project will address the prioritize needs/concerns raised during the Regional Conference of Rattan in Asia that will generate necessary information on the impacts of rattan production and utilization technologies particularly at the community level, conduct studies on different aspects of rattan development, conduct training to upgrade skills of various stakeholders, and establish data/information network on rattan in the ASEAN region.

Five components are included to meet the able objective. These are: (1) application of rattan production technology; (2) application of rattan utilization technology; (3) research; (4) capacity building, and ; (5) ASEAN Rattan Centre.

EXECUTING AGENCY

ECOSYSTEMS RESEARCH AND DEVELOPMENT
BUREAU (ERDB) –
DEPARTMENT OF ENVIRONMENT AND
NATURAL RESOURCES (DENR)

DURATION

48 MONTHS

APPROXIMATE STARTING DATE

UPON APPROVAL

PROPOSED BUDGET AND OTHER FUNDING SOURCES

Source	Contribution in US\$
ITTO	598,300
Gov't of the Philippines	270,000
TOTAL	868,300

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PART I: CONTEXT

1. Origin

The Experts' Consultation on Rattan Development held in Rome last December 5-7, 2000 emphasized the economic, socio-cultural and ecological importance of rattan. This called for a concerted effort of governments, private sector, NGOs and relevant international agencies like ITTO for the development of 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 is the recently concluded Regional Conference on Sustainable Development of Rattan in Asia that was held on January 22-23, 2004 in Manila, Philippines. This regional conference highlighted the need for ASEAN collaboration on rattan research and development. Further, it became the venue for the exchange of knowledge and information on rattan commodity and industry, whereby representatives from ASEAN member countries presented the state of the art on rattan in their respective countries and identified the technology needs/problems of their country concerning rattan production, processing and utilization, including marketing and socio-economics. Results and output of the two-day conference were the basis in the formulation of this project proposal.

It was agreed during the rattan conference in the presence of ITTO official that we should prioritize the identified needs/concerns in the respective ASEAN countries that would highlight impacts of the rattan industry on poverty alleviation at the community-level. Hence, this project highlights the involvement of local communities as active participants and beneficiaries of the project.

This project proposal aims to strengthen ASEAN collaboration and reduction of poverty at the community level through a network that supports and prioritizes the urgent needs/concerns for the development of the rattan sector. This project will include demonstration and application of production and utilization technologies, capacity building, research and information dissemination.

2. Sectoral Policies

This proposed project would support the national governments in their thrust to achieve sustainable development of forest-based industry at the same time alleviating poverty through livelihood opportunities for the local communities in the ASEAN region.

The destruction of forest is recognized as a contributing factor to global warming and changes in climatic pattern influencing not only local but also global climate. Timber extraction will continue since the demand for wood products is constantly increasing thereby resulting to a declining trend of wood products from the region. Thus, to ease the pressure from cutting of timber, ITTO has been promoting the sustainable development of non-timber forest products such as rattans, among others. Rattan is considered second to timber in importance and is one of the most sought non-wood forest products in the region. By focusing on its importance as an alternative to timber, rattan is viewed to provide economic and financial returns to government and other private sectors like what timber does. This project attempts to develop rattan resources on a sustainable basis that in a medium term will reduce the pressure on the forest for timber. Thus, more people will appreciate the value of rattan as an alternative raw material for the industry, and as a major source of income for the upland communities.

The following are the national policies for the tropical forestry sector in the ASEAN region:

Brunei

- Forestry Act, Chapter 46 of the Laws of Brunei, the royalty charge for rattan canes (First Schedule: Class II), is B\$0.85 per 100 kg, if taken under Form I License. If taken under Form III License, the charge is B\$1.00 per mensem (per month). Form I license/permit is issued to logging concessions, for timber harvesting, especially in the production forest reserves. Form II and Form III are license/permits issued to private individuals or associations, to extract forest products (either timber or minor forest products) in a limited volume or number for personal use or consumption only, which are usually taken from state land forests.
- National Forestry Policy stresses the need and the duty/responsibility of all the citizens to sustainably manage and develop the natural resources of the country for the greatest good of the greatest number of Bruneians through time continuum.

Indonesia

- Decree of the Minister of Forestry states concession rights harvesting rattan and other forest products. This is important due to the fact that over 90 % of the production is obtained from the natural forest, and the remaining 10 percent being mainly small diameter rattans harvested from plantations.
- Decree of the Minister of Trade concerning policies relation to trading of forest products.
- Decree of Minister for Finance controlling export of forest products.
- Along with the reform era and IMF (International Monetary Funds) pressure, Indonesia came out with an LOI (Letter Of Intents), policies on the rattan industry and commerce in Indonesia have been liberalized. In the year of 1998, there were published various regulations to give more freedom to the rattan industry.

Lao PDR

- Prime Minister's Order 14/psl, September 1990. Individual or communities cannot sell large quantities (i.e. truck-loads) of rattan unless approached by a quota-holding trader. Rattan canes for export should be in the form of semi- or finished products
- District Agriculture and Forestry Office (DAFO). Traders or rattan factories managers, after obtaining an official allowable cut, have gone to visit gatherers (villagers) and bargain for the price and number of rattan canes that the traders need.

Malaysia

- State Forest Departments have been implementing rattan-planting programmes since the early 1980s in an effort to replenish the rattan resource in PRFs and also as an activity to rehabilitate the forests. Besides allocation of development funds by State Governments, the Federal Government is also providing financial assistance from the timber export levy to be used for rattan planting and management (Harnarinder & Chin 1999).
- According to the National Forestry Act (NFA) 1984, a license is needed to harvest rattan from the Permanent Forest Estate (PFE) and Stateland Forests. Under the provision in the NFA 1984 and its amended version NFA 1994, besides requiring a license, there are also other regulations to be adhered to in rattan production including the payments of premium, royalty, forest development cases, license fee and registration fee for application as a contractor to the State Government.

Myanmar

- Myanmar Selection System, a systematic forest management, has been widely known and practiced in Myanmar for nearly 150 years. About 100-year old Forest Act (1902) was also replaced by the Forest Law (1992) and Forest Rules (1995) in the context of changing situations in social, economic and environment. The 1995 Myanmar Forest Policy was also promulgated in line with the forest principles adopted at the UNCED (1992).
- The Forest Policy (1995) encompasses possible aspects in protection and sustainability of forest resources, to fulfill the basic needs of the people and enhance

the efficiency in resource use, and to raise public awareness and encourage people-participation in forestry activities. However, most of regulations are focusing mainly on premier timber, teak, and other hardwoods for their far outweighed importance in national economy. On the other hand the numerous and diverse items of minor forest product fail to receive particular attention from decision makers. Some sections, under the Forest Law (1992), currently being used for forest products and minor forest products, which are also applied to rattan are as follows.

- A system of taxation on NWFPs is adopted, by which 25 percent of the prevailing local market price of each item is collected as royalty on a unit measurement basis. Issuance of tickets and license, permits on face-value is practiced. The former is issued at the forest products check point to levy a tax later is issued when an individual or a private group is given permission for the production of NWFPs from a specified area.

Philippines

- DENR Administrative Order No. 36 (Series of 1991): Guidelines governing the confiscation, seizure, and disposition of wild flora and fauna illegally collected, gathered, acquired, transported, and imported including paraphernalia. Pursuant to the provision of Act 2590 as amended, Act 3983 as amended, PD 705 as amended, Executive Order 192, and Executive No. 277, which authorizes Secretary of Environment and Natural Resources or his duly authorized representative to order the confiscation of forest products including wildlife, gathered, removed, possessed without authority including paraphernalia used in the commission of the offense and other pertinent policies, laws and regulations, the following regulations are hereby promulgated:
- Presidential Decree No. 705: Revising Presidential Decree No. 389, otherwise known as the Forestry Reform Code of the Philippines.
 1. Proper classification, management and utilization of the lands of the public domain to maximize their productivity to meet the demands of our increasing population is urgently needed;
 2. To achieve the above purpose, it is necessary to reassess the multiple uses of the forest lands and resources before allowing any utilization thereof to optimize the benefits that can be derived therefrom;
 3. It is also imperative to place emphasis not only on the utilization thereof but more so on the protection, rehabilitation and development of forest lands, in order to ensure the continuity of their productive condition;
 4. The present laws and regulations governing forest lands are not responsive enough to support reoriented government programs, project and efforts on the proper classifications and delimitation of the lands of the public domain, and the management, utilization, protection, rehabilitation, and development of forest lands;
 5. Philippines adopts the following policies:
 - a) The multiple uses of forest lands shall be oriented to the development and progress requirements of the country, the advancement of science and technology and the public welfare;
 - b) Land classification and survey shall be systematized and hastened;
 - c) The establishment of wood-processing plants shall be encouraged and rationalized; and
 - d) The protection development and rehabilitation of forest lands shall be emphasized so as to ensure their continuity in productive condition.
- DENR Administrative Order No. 2000-29: Guidelines regulating the harvesting and utilization of forest products within Community-Based Forest Management Areas. The CBFM aims to promote the socio-economic upliftment of forest communities and at the same time, achieving sustainable development/management of forest resources. It recognizes that responsible and efficient resource utilization by organized and empowered local communities based on sound ecological and economic principles can result to sustainable management of forest lands and resources. This recognition

is manifested in the granting of resource-use rights to peoples' organizations under the CBFM program otherwise known as Resource Use Permit (RUP).

- Executive Order No. 263: Adopting Community-Based Forest Management as the national strategy to ensure the sustainable development of the country's forest lands resources and providing mechanisms for its implementation. Participating organized communities may be granted access to the forest land resources under long term tenurial agreements, provided they employ environment-friendly, ecologically-sustainable, and labor-intensive harvesting methods. Such harvesting methods shall be mentioned under a site-specific management plan of each recipient community and duly approved by the DENR. The indigenous peoples may participate in the implementation of CBFM activities in recognition of their rights to their ancestral domains and land rights and claims.
- Executive Order No. 192(1987): Mandates the Department of Environment and Natural Resources (DENR) as the primary government agency responsible for the sustainable management and development of the country's natural resources.
- Philippines 2000 and the Government's Social Reform Agenda: Support people empowerment and the full, meaningful and indispensable participation of communities as immediate stakeholders of the forest lands resources in the protection and management of the forest ecosystem.
- 25-year Master Plan for Forestry Development: Recognizes the indispensable role of local communities in forest protection, rehabilitation, development and management, and targets the protection, rehabilitation, management, and utilization of at least 4 million hectares of forest lands, through the community-based forest management strategy; Entrusting the responsibility for forest rehabilitation, protection, and conservation to the community of stakeholders and affording them equitable access to the forest and coastal resources are viable forest land management strategies as borne by the experience of the DENR and various supporting agencies.
- Executive Order No. 15 (September 1, 1992): Creating a Philippine Council for Sustainable Development. The Philippines already adhering too the principle of sustainable development actively participated in the United Nations Conference on Environment and Development (UNCED) Summit held in Rio de Janeiro, and committed to the principles set forth in the Rio Declaration, the Agenda 21, the Conventions on Climate Change and Biodiversity; The United Nations in UNCED, has adopted a resolution for the creation of a Sustainable Development Commission that will evaluate and monitor the compliance too the agreements and commitments made in Rio and in the course of it's creation urged governments to also for similar bodies that will ensure that the activities at the national level are implemented and coordinated within global efforts; The agreements oblige the Philippines to translate the commitments to more concrete actions and ensure that all sectors of the society cooperate; In order to active these ends, the creation of a national sustainable development and thus assure its integration in the Philippine national policies, plans, and programs that will involve all sectors of the society.
- Philippine Strategy for Sustainable Development (PSSD): A National Conservation Strategy adopted in 1989, takes a balanced and integrated approach to environment and development issues by incorporating sustainable development principles and concepts in the national priorities of government Integrated Social Forestry Program.

Thailand

- Royal Forest Department: In the early years, there were four Laws related to forestry namely, Forest laws B.E. 2484 (1941), Wildlife Preservation and Protection Act B.E. 2503 (1960) and Amendment B.E. 2535 (1992), National Park Act B.E. 2504 (1961), and National Forest Reserves Act B.E. 2507 (1964). Regarding the prohibition of Wildlife and National Park Acts, nobody is allowed to gather rattan and to take them from the said areas. So the control of rattans is under the Forest Laws and National Forest Reserves Act.
- Ministry of Agriculture and Cooperatives' Announcement: When the cultivated rattan having been taken away from the forest for commercial purpose passed the first forestry check point, the mover has to pay the fee in the rate of not more than 10 percent of rattan price in the local area.

- Royal Decree B.E. 2530 (1987) on Specifications of Reserved Forest Product. All kinds of rattans available in Thailand, excluding imported rattan from abroad, are reserved forest products. To gather rattan in the forest, he/she has to follow the Ministerial Rules No. 19 (B.E. 2507, 1964) on "Gathering of Reserved Forest Products", and has to ask permission from forestry officer following Ministerial Rules No. 21 (B.E. 2517, 1974) on "Trading of Reserved Forest Products." and to pay for the fees with regard to ministerial Rules No.23 (B.E. 2517, 1975) on "Rate of Fees". National Forest Reserves Act B.E.2507.
- National Forest Reserves Act, Ministerial Rules on "Logging in the National Forest Reserves.
- There is Commercial Ministerial Announcement on "Commodity Exportation to Other Countries (No.51) B.E. 2521 (1978) dated April 18, B.E.2521. Controlling or regulation external trade of rattan.
- Forestry Act B.E.2484 and National Forest Resources B.E. 2507 with their penalties. Controlling or regulating access to rattan raw materials/ products.
- Constitution of the Kingdom of Thailand 1997 provisions on local participation in natural resource management section 56, the right of communities to participate in the preservation and exploitation of natural resources and biological diversity and in the protection, promotion and preservation of the quality of the environment, right to quality life.
- "Intellectual Property Laws" under Ministry of Commerce to protect such technologies invented by Thai citizens from exploitation by foreigners.

Vietnam

- In Vietnam, Government has issued a lot of policies for the development and protection of the forest resource. However, there is no specific policy or program on non-timber forest products (NTFP) management.
- The most important policy that made the great changes in the forest resource is the policy by Government on Land and Forest Allocation to the households and communities for management (The Decision No 02/CP dated 15 January, 1994 on the right of forestland use; Instruction No. 06 LN/KN on forestland allocation; The Decision No. 163/CP dated 16 November, 1999 on the rent and allocation of forestland. This policy states that communities and households have the right to grow forest trees on their forestland area (consisting of timber trees and other species such as bamboo, rattan, etc.).
- Law on Forest Protection and Development dated 19 August, 1991; and the Decision No 18-HSBT dated 17 January, 1992; Instruction No 13/LN/KHLN by the Ministry of Forest. These regulations issued many stipulations on the Development and Protection of Forest Resource.
- The Decision No. 664/ TTg dated 18 October, 1995 by the Prime Minister stipulated on the export some valuable non-timber forest products: "Banning Exportation of Bamboo, Rattan, and the Leaves of the Forest Trees".
- The Decision No. 66/TTg dated July 29, 1998 by the Prime Minister stipulated: forest products that are harvested from plantation; bamboo and other minor forest products from nature forest are traded freely in the market. Timber and other forest products harvested in the natural regenerated forest that belong to the production forest, of which the forest owners are households or individuals, are traded freely in the market.
- The Decision No. 65/TTg dated 24 March, 1998 by the Prime Minister on the exportation of wood products; forest products; and the importation of wood as raw material and forest products.
- Instruction No. 19/ CT-TTg dated 16 July, 1999 by the Prime Minister on the implementation of ways for the enhancement of value of wood coming from plantations stipulated that enterprises are allowed to export wood products; the favored tax applied to products made of wood comes from plantation.
- The Decision No. 09/NQ-CP dated 15 June, 2000 by the Prime Minister on the policies for the transference of economic structure and consumption of agricultural products. The Decision impressed in developing the special tree species

(*Cinnamomum casia*, etc.), timber trees, and trees as raw materials for production of goods, such as handicrafts, bamboo and rattan products, especially for export.

- The Decision No. 132/ TTg dated November 24, 2000 by the Prime Minister concerning policies on the encouragement of rural livelihoods, making plans for the development of raw material zones.
- Decision No. 661/TTg dated 29 July, 1998 states a gene study for the selection, hybridization, and Importation the new tree species that gives good results in growth and yield.

3. Programmes and Operational Activities

The Department of Environment and Natural Resources (DENR) was created by virtue of Executive Order No. 192 on June 10, 1987. It is the primary government agency responsible for the conservation, management, development and proper use of the country's environment and natural resources, including those in reservations, watershed areas and lands of the public domain, as well as the licensing and regulation of all natural resources utilization as may be provided by law in order to ensure equitable sharing of the benefits derived therefrom for the welfare of the present and future generations of Filipinos. Its functions and responsibilities included several concerns related to the management of a wide range of natural resources, such as forest inventory and protection, land classification, watershed protection, water, biodiversity and mineral resources conservation.

To accomplish the department's mandate, the following objectives serve as basis for policy formulation:

- Assure the availability and sustainability of the country's natural resources through their judicious use and systematic restoration or replacement, whenever possible;
- Increase the productivity of natural resources in order to meet the demands for forest, mineral and land resources of a growing population in a manner consistent with environmental protection and enhancement;
- Promote equitable access to natural resources by the different sectors of the populations;

ASEAN initiatives

The project complements the strategy of the respective national government of collaborating ASEAN countries in achieving the sustainable management of renewable natural resources. The following are some of the regional initiatives in the ASEAN regarding sustainable forest management and development:

- The activities of the two Canada-funded projects were terminated in 1997. The first project, the ASEAN Forest Tree Seed Centre (AFTS Centre) in Thailand which was proposed to be upgraded into AFTS Institute and has submitted to the ASEAN Secretariat for further action. Another project, ASEAN Institute of Forest Management (AIFM) in Malaysia successfully organized a regional seminar on Sustainable Tropical Forest Management dealing with progress towards achieving the ITTO Year 2000 in Balikpapan, Indonesia in October 1996 and an international conference on Transboundary Pollution and the Sustainability of Tropical Forest with special emphasis on wise forest fire management in December 1996 in Kuala Lumpur. ASEAN Member Countries is considering a project proposal on the AIFM plan of action on forest fire management in ASEAN to reduce transboundary haze pollution.
- ASEAN Member Countries continuously consult each other on cooperative approaches in the promotion of forest products as well as on joint approaches and positions on international forestry and timber issues such as eco-labeling certification, sustainability and CITES. Latest initiatives in the area include proposals to establish cooperation programmes in rattan regeneration, forest pests management and forest products utilization research.
- Member countries formulated integrated strategies for the promotion of all the eleven identified products, of which forest products are one of them. The working groups or

industry clubs that have been assigned with the promotion of these products will further meet to enhance their cooperative efforts.

- Proposals for cooperation project for the Mekong River Basin that include sustainable forest management have been identified, prioritized and submitted to the ASEAN-Mekong Basin Development Cooperation (AMDC) Steering Committee. These Initiatives of the ASEAN is in response to the request by the ASEAN Fifth Summit.
- ASEAN Member Countries continued to take a joint approach and a collective stand on international trade issues affecting the access of ASEAN agricultural, fishery and forestry products to world markets.
- ASEAN will continue to pursue global competitiveness in forestry and simultaneously maintaining the sustainability of its resources through increased application of science and technology, investment in human resources development as well as through greater liberalization of trade in forest products. Member Countries will strive to manage their forestry sectors efficiently; use the latest technology in production and processing; always be aware of market information; produce their goods at competitive prices and allow them to expand internationally, enter new markets and exploit technological and organizational advantages as widely as possible.
- Member Countries realize that these initiatives can only be achieved through greater commitment in regional cooperation and have agreed to further strengthen the ASEAN machinery and mechanism of cooperation in the food, agriculture and forestry sector.
- International Tropical Timber Agreement (ITTA 1994), which came into force on 1 January 1997, has been signed by 28 producer countries, 25 consumer countries and the European Union, giving the International Tropical Timber Organization (ITTO) a total membership of 54. The current agreement has a greater focus on sustainable forest management than did the previous one (1985 to 1995). The central focus of ITTO's work now is the "Year 2000 Objective", under which all producer countries have made the commitment to have their exports of tropical timber and tropical timber products come from sustainably managed sources by the year 2000. Consumer member countries have also made a commitment to have their forests under sustainable management by 2000. Among the issues currently being addressed by ITTO are the updating of ITTO's criteria and indicators for sustainable management of natural tropical forests; forest fires; market access; and market difficulties created by the current Asian economic crisis.

PART II: THE PROJECT

1. Project Objectives

1.1 Development Objective

The project aims 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.

1.2 Specific Objectives

- 1.2.1 Application of production technologies in the establishment and management of rattan demonstration plots at the village level. (COMPONENT 1)
- 1.2.2 Application of utilization technologies in the manufacture of furniture, handicraft and other products. (COMPONENT 2)
- 1.2.3 Generation of relevant technologies on production, processing, utilization and socio-economic aspects of rattan. (COMPONENT 3)

- 1.2.4 Enhancement of skills and capacity building of ASEAN member countries in the fields of taxonomy, inventory, production and utilization technologies. (COMPONENT 4)
- 1.2.5 Establishment of ASEAN Rattan Center (ARC) as a network for discussion and policy sharing to complement or support the implementation of rattan project. (COMPONENT 5)

2. Justification

2.1 Problems to be addressed

During the Regional Conference on Sustainable Development of Rattan in Asia last January 22-23, 2004 in Manila, Philippines, the problems and needs of the rattan sector were identified and enumerated by the participating ASEAN member countries. These include among others, limited information on production and utilization technologies (resource inventory, nursery and plantation, harvesting and post harvest, raw material processing), socio-economic aspects and ASEAN collaboration.

The problems and needs identified and prioritized in this project proposal are shown schematically in a problem tree and as follows:

- **Poverty**
The widespread poverty in ASEAN countries especially in the countryside may be reduced through the introduction of livelihood options. In this proposal, it is envisioned that the rural communities will actively participate in the application and utilization of various rattan technologies through the community-based approach.
- **Limited access to information on production, processing and utilization technologies**
Production technologies are needed to sustain production of rattan and ensure continuous supply of raw materials for the industries. On the other hand, processing and utilization technologies will lead to a more rational use of rattan resources. Some of the technologies identified during the regional conference are listed in Annex C.
- **Limited information on the available rattan resources in the region**

Standard rattan inventory design

Reliable estimates are needed to formulate policies and action plans that will lead to sustainable management of rattan. While rattan inventory is very crucial in quantifying the available resources most of the ASEAN countries still do not have accurate data on this aspect.

Rattan Field Guide

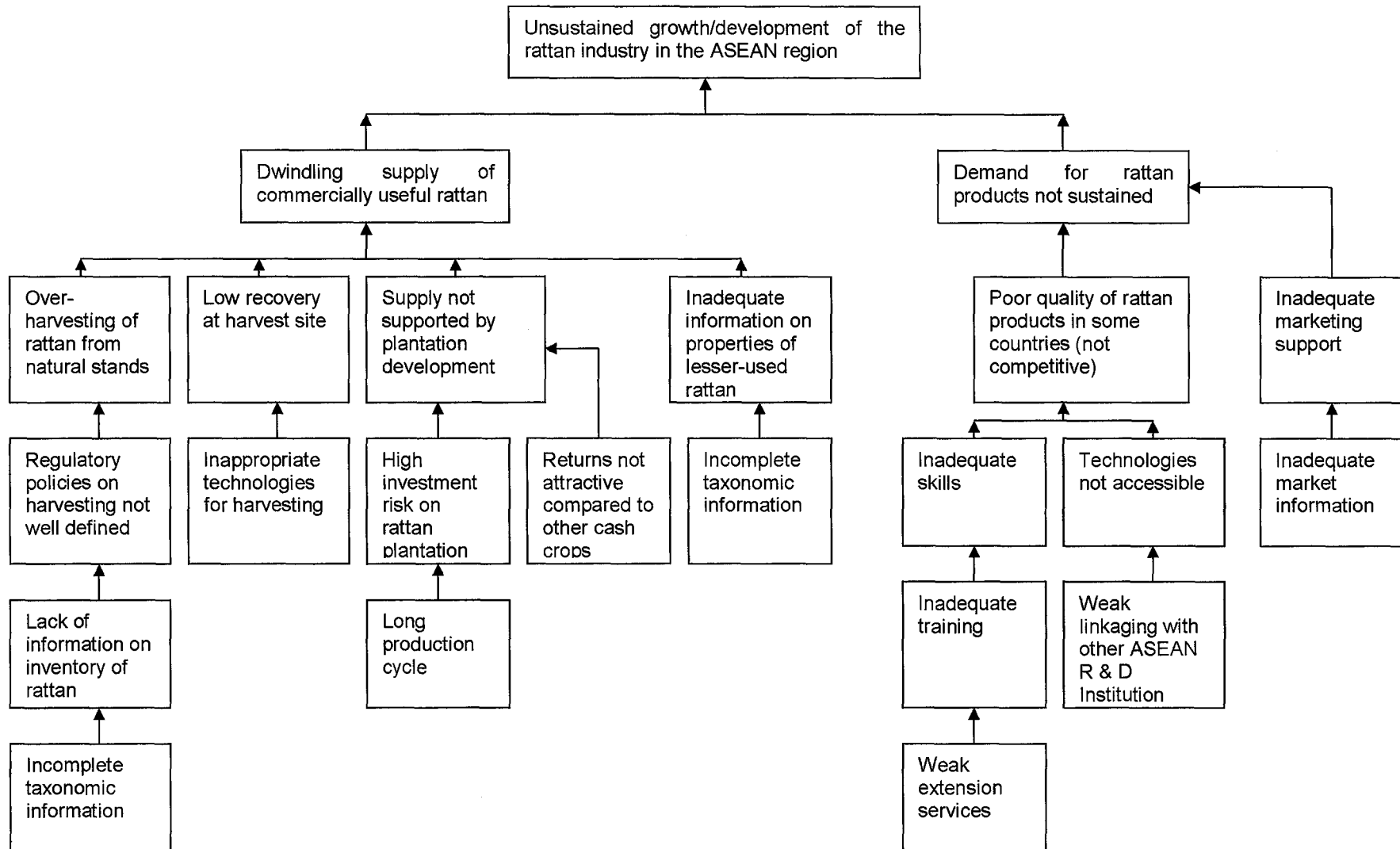
Rattan field guides are important in taxonomy, inventory and utilization of the rattan resources. Other ASEAN member countries like Cambodia, Indonesia, Myanmar, Philippines, Thailand and Vietnam still need to develop rattan field guide. Subsequently, these field guides will be integrated to come up with an ASEAN rattan field guide.

- **Limited information on socio-economic aspects of rattan production and utilization**
Socio-economic studies that would include indigenous knowledge system, gender roles, consumption patterns, distribution chain and financial feasibility of production and utilization activities need to be done. Impact assessment of specific interventions will also be conducted.

- Weak regional linkages

At present, sharing of information needs to be strengthened in the region. An ASEAN Rattan Centre will serve as a venue for discussion and policy sharing to complement or support implementation of rattan project. The setting up of a website and database will facilitate access of information to all stakeholders.

PROBLEM TREE



2.2 Intended situation after Project completion

Upon the completion of the project, technologies on production, processing and utilization are transferred to and adopted by the communities, institutions, industries and other stakeholders.

Rattan plantations in community-based forest management areas showcasing the production technologies are established. These demonstration plots highlight the financial viability of rattan plantation development. Consequently, there will be sustained supply of raw rattan materials for the local communities and industry. Adoption of utilization technologies lead to the production of improved and high quality products that will be available in the market. All these will contribute to the enhancement of livelihood/employment opportunities to all stakeholders.

The ASEAN Rattan Centre and its website and databases on rattan will be accessible to all end-users. A continuing exchange of information on rattan in the national, regional and global level is realized.

2.3 Project strategy

During the Regional Conference for the Sustainable Development of Rattan in Asia, representatives (Contact Persons/CPs) of the ASEAN member countries have identified the technology needs of their respective countries that are related to rattan production, processing and utilization. These identified needs, presented in a matrix in Annex D, were sent to the CPs for prioritization. Hence, the involvement of the ASEAN countries in the specific activities/components were based on the prioritization made as shown in Annex E.

This project will focus on some of the identified needs/problems and research gaps on rattan production and utilization technologies. Activities of the 5 components will be implemented simultaneously and each component will be headed and supervised by a Component Leader (CL).

In Component 1, production technologies will be applied and documented. Same strategy will be implemented in Component 2 concerning utilization aspects. Research gaps on Components 1 and 2 will be studied and this will be the focus of Component 3. Component 4 will conduct capacity building of various stakeholders of this project concerning rattan taxonomy, inventory, technology transfer, etc. All the data gathered on rattan from the completed pre-project and this project will be organized in a network that will be available for the ASEAN countries and this network will be the concern of Component 5.

Not all countries that prioritized certain activities will be included in those activities since there is limited budget for every activity. Criteria for selection of countries will be developed. Continuous coordination with the CPs of ASEAN countries (Annex C) will be ensured for the efficient implementation of the project.

2.4 Target beneficiaries

The beneficiaries of the project are: (a) the local communities where livelihood and employment opportunities will be made available through the application of production and utilization technologies; (b) the manufacturers of furniture and handicrafts and trading entrepreneurs of both raw materials and products in the ASEAN countries, and; (c) the research and development institutions engaged in technology generation on production and utilization (i.e. ERDB, FPRDI, UPLBCFNR and the ASEAN member countries). The various entrepreneurs engaged in this sector will be highly benefited from this undertaking through the application of improved technologies.

2.5 Technical and scientific aspects

In general, the project will address the following issues:

- (a) Pressure of extraction in the natural stands
Promoting the importance and focusing on rattan as an alternative to timber, pressure on forest for timber will be reduced.
- (b) Lack of knowledge and technical know-how of stakeholders particularly the local communities on sustainable management of renewable resources
Several capacity building activities will be conducted as incorporated in Component 4. This activity will develop the skill of various stakeholders through various training on rattan taxonomy, inventory, technology transfer, etc. in certain ASEAN countries.
- (c) Inefficient flow/exchange of information and technology in the region
Through the creation of ASEAN Rattan Center, a network will be generated that will regulate the exchange/flow of information and data on rattan.
- (d) Insufficient rattan raw material supply to industries
Improvement of various technologies on production and utilization (Components 1 and 2) through researches/studies that will be conducted by this project will definitely result to increased in the production and efficiency in utilization thus will sustain supply of raw rattan.
- (e) Slow-paced growth of manufacturing industry/sector
This is also the achieved through Component 2, improvement of technologies on utilization of rattan. Reduction of wastage through improved technologies can increased growth of rattan industry.
- (f) Limited livelihood and employment opportunities in the countryside.
This problem will be addressed through the introduction of livelihood options. It is expected that the rural communities will actively participate in the application and utilization of various rattan technologies through the community-based approach.

2.6 Economic aspects

Once the technologies for the rattan production and utilization are adopted by the various end-users, it is expected that income and other benefits will be generated. The local communities will adopt these technologies to make rattan as source of income. In the long run, the sector will contribute to the national economy and reinforce the governments' poverty alleviation program.

2.7 Environmental aspects

No harmful effects are foreseen since the activities involved are not detrimental to the environment. Moreover, it can better rationalize the production and utilization of rattan and will improve quality of products through adoption of efficient processing/manufacturing technologies.

This project is generally environment friendly since its activities are in line with ecologically sound and sustainable approach to the renewal of the resources. It emphasizes the use of indigenous species with high economic and ecological potentials. The replenishment of natural stand can ease up the pressure on wild thriving genetic resources, can help conserve the forest, soil and water and enhance biodiversity. Likewise, rattans intercropped with trees in plantations and existing forest will enlarge carbon sink areas thus can help abate global warming.

2.8 Social aspects

The project will harness local community participation in the implementation of the project to ensure success. Moreover, the project will impart knowledge and improve skills of the local communities on the sustainable management of renewable natural resources. They will not only play significant role as partners but also as eventual managers and owners of the resources. Further, their dependence on rattan is a major factor in the selection of communities or sites for the project. These identified communities are the primary beneficiaries of rattan production and utilization technologies. In the application of such technologies, these people can participate in providing solutions to the problems of unsustainable development of rattan resources in the ASEAN member countries.

The implementation of the project will create some social impact in the project areas and on the target beneficiaries especially the rattan entrepreneurs (collectors/gatherers, traders, manufacturers, etc.). Employment will be generated through activities involved in production and utilization.

Technical skills of various stakeholders will also be improved as envisioned by the fourth specific objective (Component 4) of the project.

2.9 Risks

Community participation is considered as risk. Since this will be implemented in the ASEAN region, it is possible that some communities may be hesitant to cooperate and participate in specific activities of the project. This is true especially in technology transfer, some of them still embraced their traditional knowledge when it comes to rattan production and utilization. Involvement of the CPs in the completed pre-project will be ensured and they are the first one that will seek cooperation of the communities. Criteria on appropriate selection of communities that will be involved in the project will be developed.

Implementation of the project in the ASEAN countries is associated with coordination risk. As mentioned above, the CPs will be coordinated consistently to update on the status and to ensure smooth flow of the project.

Natural calamities can be dealt with through proper timing of activities, which is based on rational decision-making, and application of preventive and precautionary measures.

All other activities will rely on the financial capacity of the project. If the project's fund is secured, the project will be successfully implemented and will be accomplished as desired.

3. Outputs

3.1 Specific Objective 1

Application of production technologies in the establishment and management of rattan demonstration plots at the village level. (COMPONENT 1)

Output 1.1	Training on production technologies conducted
Output 1.2	Rattan demonstration plots established (20 hectares/country)
Output 1.3	Rattan production technologies adopted, documented and assessed
Output 1.4	Manuals on rattan production technologies produced

3.2 Specific Objective 2

Application of utilization technologies in the manufacture of furniture, handicraft and other products. (COMPONENT 2)

Output 2.1	Trainings on utilization technologies transferred and conducted
Output 2.2	Training manuals prepared
Output 2.3	Impact assessment of specific interventions

3.3 Specific Objective 3

Generation of relevant technologies on production, processing, utilization and socio-economic aspects of rattan. (COMPONENT 3)

- Output 3.1 Researches conducted on relevant technologies and information generated
- Output 3.2 Technical papers/articles from the result/outputs of the studies produced and published
- Output 3.3 Rattan Field Guides

3.4 Specific Objective 4

Enhancement of skills and capacity building of ASEAN member countries in the fields of taxonomy, inventory, production and utilization technologies. (COMPONENT 4)

- Output 4.1 Regional trainings conducted
- Output 4.2 Regional training manuals prepared
- Output 4.3 Regional meetings/conference conducted

3.5 Specific Objective 5

Establishment of ASEAN Rattan Centre (ARC) as a network for discussion and policy sharing to complement or support the implementation of rattan project. (COMPONENT 5)

- Output 5.1 ASEAN Rattan Centre established
- Output 5.2 ASEAN Rattan Centre web page created
- Output 5.3 ASEAN Rattan Database created

4. Activities

- 4.1 Output 1.1, 1.2, 1.3 and 1.4
 - Activity 1.1.1 *Coordination with the villages*
 - Activity 1.1.2 *Selection of areas/sites where the rattan demonstration*
 - Activity 1.1.3 *Trainings on production technologies*
 - 1.1.3.1 *Scheduling of training*
 - 1.1.3.2 *Preparation of training program and modules*
 - 1.1.3.3 *Identification of training participants*
 - 1.1.3.4 *Preparation of training materials*
 - 1.1.3.5 *Implementation and evaluation of training course*
 - 1.1.3.6 *Impact assessment of specific interventions plots will be established*
 - Activity 1.1.4 *Nursery establishment and maintenance*
 - Activity 1.1.5 *Demonstration plot establishment and maintenance*
 - Activity 1.1.6 *Documentation and assessment of rattan production technologies*
 - Activity 1.1.7 *Preparation of manuals of production technologies*
 - Activity 1.1.8 *Estimation of financial returns*
- 4.2 Output 2.1, 2.2 and 2.3
 - Activity 2.1.1 *Scheduling of training*
 - Activity 2.1.2 *Preparation of training program and modules*
 - Activity 2.1.3 *Identification of training participants*
 - Activity 2.1.4 *Preparation of training materials*
 - Activity 2.1.5 *Implementation and evaluation of training course*
 - Activity 2.1.6 *Impact assessment of specific interventions*
 - 2.1.6.1 *Preparation of survey questionnaires*
 - 2.1.6.2 *Pre-test of questionnaire*
 - 2.1.6.3 *Interview*
 - 2.1.6.4 *Collation and analysis of results*
 - 2.1.6.5 *Actions and recommendations*

- 4.3 Output 3.1 and 3.2
 - Activity 3.1.1 *Conduct research studies on production, processing and utilization technologies and socio-economic aspects of rattan*
 - 3.1.1.1 *Data gathering and review of related literatures*
 - 3.1.1.2 *Data analysis*
 - Activity 3.1.2 *Technical paper/article writing*
 - Activity 3.1.3 *Publication of technical papers/articles*

- 4.4 Output 3.3
 - Activity 3.3.1 *Compilation and preparation of rattan field guides*
 - Activity 3.3.2 *Finalization of the rattan field guides*
 - Activity 3.3.3 *Publication of rattan field guides*

- 4.5 Output 4.1, 4.2, and 4.3
 - Activity 4.1.1 *Coordination with Contact Persons/agencies in the participating ASEAN member countries.*
 - Activity 4.1.2 *Scheduling of training*
 - Activity 4.1.3 *Regional training on Rattan Taxonomy*
 - 4.1.3.1 *Preparation of training program and modules*
 - 4.1.3.2 *Identification of training participants*
 - 4.1.3.3 *Preparation of training materials*
 - 4.1.3.4 *Implementation and evaluation of training course*
 - Activity 4.1.4 *Regional training on Rattan Inventory*
 - 4.1.4.1 *Preparation of training program and modules*
 - 4.1.4.2 *Identification of training participants*
 - 4.1.4.3 *Preparation of training materials*
 - 4.1.4.4 *Implementation and evaluation of training course*
 - Activity 4.1.5 *Regional training on Rattan Production and Utilization Technologies*
 - Activity 4.1.6 *Impact assessment of training programs*
 - 4.1.6.1 *Preparation of survey questionnaires*
 - 4.1.6.2 *Pre-test of questionnaire*
 - 4.1.6.3 *Interview*
 - 4.1.6.4 *Collation and analysis of results*
 - 4.1.6.5 *Actions and recommendations*

- 4.6 Output 5.1
 - Activity 5.1.1 *Establishment of ASEAN Rattan Centre (ARC)*
 - Activity 5.1.2 *Coordination of project activities*
 - 5.1.2.1 *Preparation of reports*
 - Activity 5.1.3 *Preparation and publication of newsletter*

- 4.7 Output 5.2
 - Activity 5.2.1 *Creation of ARC web page*
 - 5.2.1.1 *Designing the web page*
 - 5.2.1.2 *Gathering information/data for the web page*

- 4.7 Output 5.3
 - Activity 5.3.1 *Setting up of ASEAN rattan database*
 - 5.3.1.1 *Coordination with the ASEAN member countries regarding available data on rattan*
 - 5.3.1.2 *Compilation of available literatures on rattan to be included in the database*

5. Logical Framework Worksheets

Logical Framework Matrix (Objectives)

PROJECT ELEMENTS	INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
DEVELOPMENT OBJECTIVE The project aims 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.	Strong ASEAN collaboration Sustainable supply of raw rattan for industry Livelihood for local community. Access to rattan database.	Technical Reports prepared and reviewed for publication. Progress, Annual and Completion reports. Rattan database created.	Participation/collaboration of ASEAN participants. All inputs required are available on time and scheduled.
SPECIFIC OBJECTIVE 1 Application of production technologies in the establishment and management of rattan demonstration plots at the village level. (COMPONENT 1)	Rattan demonstration plots established. Financial returns estimated	Progress, Annual and Completion reports Report/documentation of nursery/plantation establishment activities Manuals of nursery/plantation establishment. Research/study outputs. Financial returns	Participation of ASEAN member countries, local communities
SPECIFIC OBJECTIVE 2 Application of utilization technologies in the manufacture of furniture, handicraft and other products. (COMPONENT 2)	Rattan utilization technologies applied and adopted	Progress report; Report/documentation of activities; manuals rattan utilization technologies; financial returns	Participation of ASEAN member countries, local communities
SPECIFIC OBJECTIVE 3 Generation of relevant technologies on production, processing, utilization and socio-economic aspects of rattan. (COMPONENT 3)	Relevant technologies and information generated; Researches conducted; Technical papers/articles from the result/outputs of the studies produced	Progress report; Documentation; Technical reports; Copy of technical papers/articles	Participation ASEAN member countries; Relevant technologies and information will be disseminated to end-users
SPECIFIC OBJECTIVE 4 Enhancement of skills and capacity building of ASEAN member countries in the fields of taxonomy, inventory, production and utilization technologies. (COMPONENT 4)	Training manuals prepared; Training conducted; Attendance; Regional meetings/ trainings/conference conducted; rattan field guide and checklist prepared	Progress report; Training report/ proceedings; discussion outputs; survey/inventory outputs; rattan field guide/checklist	Participation of ASEAN member countries, local communities
SPECIFIC OBJECTIVE 5 Establishment of ASEAN Rattan Center (ARC) as a network for discussion and policy sharing to complement or support the implementation of rattan project. (COMPONENT 5)	ASEAN Rattan Centre established; ARC web page and database created and accessed	Progress report; ARC opened; web page opened and accessed	Researchers/scientists around the world will have access on rattan database/information

Logical Framework Matrix (Outputs)

PROJECT ELEMENTS	INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
<p>OUTPUT 1.1 Trainings on production technologies conducted</p> <p>OUTPUT 1.1 Rattan demonstration plots established (20 hectares/country)</p> <p>OUTPUT 1.2 Rattan production technologies adopted, documented and assessed</p> <p>OUTPUT 1.3 Manuals on rattan production technologies produced</p>	<p>Number of trainings conducted.</p> <p>Rattan demonstration plots established (20 hectares/country). Reduced pressure of extraction in the natural stand; financial returns estimated</p> <p>Rattan production technologies adopted, documented and assessed.</p> <p>Manuals produced.</p>	<p>Progress, Annual and Completion reports.</p> <p>Plantation/demonstration plots establishment. Increased income of local communities Financial returns</p> <p>Technologies are disseminated and end-users are using the technologies</p> <p>Training manuals</p>	<p>Participation of local communities; ASEAN members cooperation; technologies developed in the demonstration plots will be transferred to end-users; Manuals will be available; Units of measurements for costs and benefits are standardized for all the countries</p>
<p>OUTPUT 2.1 Trainings on utilization technologies transferred and conducted</p> <p>OUTPUT 2.2 Training manuals prepared</p> <p>OUTPUT 2.3 Impact assessment of specific interventions</p>	<p>Number of trainings on rattan utilization technologies conducted</p> <p>Number of manuals published</p> <p>Number of interventions assessed</p>	<p>Progress, Annual and Completion reports. Technologies are disseminated and end-users. Financial returns</p> <p>Manuals</p> <p>Assessment report</p>	<p>Participation of local communities; ASEAN members cooperation; technologies developed will be transferred to end-users; Manuals will be available; Units of measurements for costs and benefits are standardized for all the countries</p>
<p>OUTPUT 3.1 Researches conducted on relevant technologies and information generated</p> <p>OUTPUT 3.2 Technical papers/articles from the result/outputs of the studies produced/published</p> <p>OUTPUT 3.3 Rattan Field Guides</p>	<p>Relevant technologies and information developed; researches/studies conducted</p> <p>Technical papers/articles produced/published;</p> <p>Rattan Field Guides published</p>	<p>Progress, Annual and Completion reports. Outputs/results/data of studies/researches</p> <p>Copy of published technical papers/articles;</p> <p>Copy Rattan Field Guides</p>	<p>Participation of ASEAN members scientists and researchers; several questions concerning rattan research and development will be answered</p>

OUTPUT 4.1 Regional trainings conducted	Number of regional trainings conducted	Progress, Annual and Completion reports. Proceedings	Willingness of the key persons dealing with rattan to participate; ASEAN members cooperation
OUTPUT 4.2 Regional training manuals prepared	Number of training manuals prepared	Training manuals	
OUTPUT 4.3 Regional meetings/conference conducted	Number of regional meetings/conferences conducted; Number of participants	Proceedings of the meetings/conference; paper presentations; discussion outputs	
OUTPUT 5.1 ASEAN Rattan Centre established	ASEAN Rattan Centre established	Progress, Annual and Completion reports.	Participation of ASEAN countries. Data/information on rattan in ASEAN will also be accessible to be included in the rattan database and website.
OUTPUT 5.2 ASEAN Rattan Centre web page created	ASEAN Rattan Centre web page created	Web page accessed	
OUTPUT 5.3 ASEAN Rattan Database created	ASEAN Rattan Database created	Database accessed	

Logical Framework Matrix (Activities)

PROJECT ELEMENTS	INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
ACTIVITY 1.1.1 Coordination with the villages	Villages visited and available areas identified	Progress, Annual and Completion reports. List of villages	Participation of ASEAN members and local communities
ACTIVITY 1.1.2 Selection areas/sites where the rattan demonstration plots will be established	Areas/sites selected	Progress, Annual and Completion reports. List of areas/sites	Participation of ASEAN members and local communities
ACTIVITY 1.1.3 Trainings on production technologies 1.1.3.1 Scheduling of training 1.1.3.2 Preparation of training program and modules 1.1.3.3 Identification of training participants 1.1.3.4 Preparation of training materials 1.1.3.5 Implementation and evaluation of training course 1.1.3.6 Impact assessment of specific interventions plots will be established	Number of trainings conducted; Number of participants. Schedule of training. Training programs and modules prepared. Training course evaluated. Specific interventions assessed.	Progress, Annual and Completion reports. List of trainings; participants. Training schedules. Training programs and modules.	Participation of ASEAN members and local communities

ACTIVITY 1.1.4 Nursery establishment and maintenance	Nursery established	Progress, Annual and Completion reports. Number of seedlings raised	Participation of ASEAN members and the local communities
ACTIVITY 1.1.5 Rattan demonstration plot establishment and maintenance	Rattan demonstration plots established (20 ha/country)	Progress, Annual and Completion reports. Number of rattan seedlings planted	Participation of ASEAN members and the local communities
ACTIVITY 1.1.6 Documentation and assessment of rattan production technologies	Rattan production technologies documented and assessed	Progress, Annual and Completion reports. List of rattan production technologies adopted and assessed	Participation of ASEAN members and the local communities
ACTIVITY 1.1.7 Preparation of manuals of rattan production technologies	Manuals of rattan production technologies prepared	Progress, Annual and Completion reports. Manuals of rattan production technologies	Participation of ASEAN members
ACTIVITY 1.1.8 Estimation of financial returns	Costs ensured and benefits derived per demonstration plot establishment and maintenance activities	Progress, Annual and Completion reports. Financial returns	Participation of ASEAN members; Standardized costs and benefits
ACTIVITY 2.1.1 Scheduling of training	Training scheduled	Progress, Annual and Completion reports. Training schedules.	Participation of ASEAN members
ACTIVITY 2.1.2 Preparation of training program and modules	Training program and manuals prepared	Progress, Annual and Completion reports. Training program and manuals	Participation of ASEAN members
ACTIVITY 2.1.3 Identification of training participants	Training participants identified	Progress, Annual and Completion reports. List of training participants	Participation of ASEAN members and the local communities
ACTIVITY 2.1.4 Preparation of training manuals	Training manuals prepared	Progress, Annual and Completion reports. Training manuals	Participation of ASEAN members
ACTIVITY 2.1.5 Implementation and evaluation of training course	Training course implemented and evaluated	Progress, Annual and Completion reports.	Participation of ASEAN members
ACTIVITY 2.1.6 Impact assessment of technology transfer 2.1.6.1 Preparation of survey questionnaire 2.1.6.2 Pre-test questionnaire 2.1.6.3 Interview 2.1.6.4 Collation and analysis of results 2.1.6.5 Actions and recommendations	Technology transfer assessed Actions and recommendations identified	Progress, Annual and Completion reports. Survey questionnaires	Participation of ASEAN members and the local communities
ACTIVITY 3.1.1 Conduct research studies on production, processing and utilization technologies and	Research studies conducted. Data analyzed	Progress, Annual and Completion reports. Results/outputs of studies	Participation of ASEAN members who highly prioritized the identified research studies

socio-economic aspects of rattan 3.1.1.1 Data gathering and review of related literatures 3.1.1.2 Data analysis			
ACTIVITY 3.1.2 Technical paper/article writing	Number of technical papers/articles written	Progress, Annual and Completion reports. Copy of published technical documents/papers/articles	Participation of ASEAN members researchers/scientists
ACTIVITY 3.1.3 Publication of the technical papers/articles	Number of technical papers/articles published	Progress, Annual and Completion reports. Copy of published technical documents/papers/articles	Participation of ASEAN members researchers/scientists
ACTIVITY 3.3.1 Compilation and preparation of rattan field guides	Rattan field guide compiled and prepared	Progress, Annual and Completion reports. Rattan field guides	Participation of ASEAN members
ACTIVITY 3.3.2 Finalization of the rattan field guides	Rattan field guides finalized	Progress, Annual and Completion reports. Rattan field guides	Participation of ASEAN members
ACTIVITY 3.3.3 Publication of rattan field guides	ASEAN rattan field guides published	Progress, Annual and Completion reports. ASEAN rattan field guides	Participation of ASEAN members
ACTIVITY 4.1.1 Coordination with Contact Persons/agencies in the participating ASEAN member countries.	Interaction between participating ASEAN Contact Persons and their agencies facilitated and conducted	Report/documentation on ASEAN CPs and agencies interaction and collaboration	Cooperation with the ASEAN members regarding the activities of the project where they are involved
ACTIVITY 4.1.2 Scheduling of training	Training scheduled	Progress, Annual and Completion reports. Training schedules	Participation of ASEAN members
ACTIVITY 4.1.3 Regional training on Rattan Taxonomy 4.1.3.1 Preparation of training program and modules 4.1.3.2 Identification of training participants 4.1.3.3 Preparation of training materials 4.1.3.4 Implementation and evaluation of training course	Training conducted Training participants identified Training materials prepared Training course implemented and evaluated Rattan field guide produced	Progress, Annual and Completion reports. Discussion outputs; paper presented	Participation of ASEAN members
ACTIVITY 4.1.4 Regional training on Rattan Inventory 4.1.4.1 Preparation of training program and modules 4.1.4.2 Identification of training participants 4.1.4.3 Preparation of training materials	Training conducted Training participants identified Training materials prepared Training course implemented and evaluated Rattan inventory output produced	Progress, Annual and Completion reports. Discussion outputs Inventory outputs Paper presented	Participation of ASEAN members

4.1.4.4 Implementation and evaluation of training course			
ACTIVITY 4.1.5 Regional training on Transfer of Rattan Technology on Production and Utilization 4.1.5.1 Preparation of training program and modules 4.1.5.2 Identification of training participants 4.1.5.3 Preparation of training materials 4.1.5.4 Implementation and evaluation of training course	Training conducted Training participants identified Training materials prepared Training course implemented and evaluated	Progress, Annual and Completion reports. Discussion outputs Paper presented	Participation of ASEAN members
ACTIVITY 4.1.6 Impact assessment of training programs 4.1.6.1 Preparation of survey questionnaires 4.1.6.2 Pre-test of questionnaire Interview 4.1.6.3 Collation and analysis of results 4.1.6.4 Actions and recommendations	Training programs assessed Actions and recommendations identified	Progress, Annual and Completion reports. Survey questionnaires	Participation of ASEAN members
ACTIVITY 5.1.1 Establishment of the ASEAN Rattan Centre (ARC)	ASEAN Rattan Centre established	Progress, Annual and Completion reports.	Participation of ASEAN members researchers/scientists
ACTIVITY 5.1.2 Coordination of project activities 5.1.2.1 Preparation of reports	Project activities organized; reports prepared	Progress, Annual and Completion reports.	Participation of ASEAN members
ACTIVITY 5.1.3 Publication of newsletter	Number of Newsletter/s published	Progress, Annual and Completion reports. Newsletter	Participation of ASEAN members and other researchers and scientists
ACTIVITY 5.2.1 Creation of ARC web page 5.2.1.1 Designing of web page 5.2.1.2 Gathering information/data for the web page	ARC web page created	Progress, Annual and Completion reports. Web page opened and accessed	Participation of ASEAN members to compile available data or information on rattan to be uploaded to the ARC website
ACTIVITY 5.3.1 Setting up of ASEAN rattan database 5.3.1.1 Coordination with the ASEAN member countries regarding available data on rattan 5.3.1.2 Compilation of available literatures on rattan to be included in the database	ASEAN rattan database set up	Progress, Annual and Completion reports. Database opened and accessed	Participation of ASEAN members to compile available data or information on rattan to be uploaded to the database

7. **Budget**

7.1 Overall Project Budget by Activity

OUTPUTS/ACTIVITIES	BUDGET COMPONENTS							
	10. Project Personnel	20. Sub-contracts	30. Duty Travel	40. Capital Items	50. Consumable Items	60. Miscellaneous	70. Executing Agency Management Cost	80. ITTO Monitoring, Evaluation and Administration
Component 1								
OUTPUT 1.1 Training on production technologies conducted								
OUTPUT 1.2 Rattan demonstration plots established (50 hectares/country)								
OUTPUT 1.3 Rattan production technologies adopted, documented and assessed								
OUTPUT 1.4 Manuals of rattan production technologies produced								
ACTIVITY 1.1.1 Coordination with the villages	2,000	2,000	1,000					
ACTIVITY 1.1.2 Selection areas/sites where the rattan demonstration plots will be established	2,000	2,000	2,000					
ACTIVITY 1.1.3 Trainings on production technologies	20,000	13,000	5,000		500			
1.1.3.1 Scheduling of training								
1.1.3.2 Preparation of training program and modules								
1.1.3.3 Identification of training participants								
1.1.3.4 Preparation of training materials								
1.1.3.5 Implementation and evaluation of training course								
1.1.3.6 Impact assessment of specific interventions plots will be established								

OUTPUTS/ACTIVITIES	BUDGET COMPONENTS							
	10. Project Personnel	20. Sub-contracts	30. Duty Travel	40. Capital Items	50. Consumable Items	60. Miscellaneous	70. Executing Agency Management Cost	80. ITTO Monitoring, Evaluation and Administration
ACTIVITY 1.1.4 Nursery establishment and maintenance	30,000		3,000		1,000			
ACTIVITY 1.1.5 Rattan demonstration plot establishment and maintenance	70,000		7,000	7,000		500		
ACTIVITY 1.1.6 Documentation and assessment of rattan production technologies	20,000		2,000		500	500		
ACTIVITY 1.1.7 Preparation of manuals of rattan production technologies	6,000		1,500		1,000	1,000		
ACTIVITY 1.1.8 Estimation of financial returns	1,400		500					
Sub-Total 1	151,400	17,000	22,000	7,000	3,000	2,000		
Component 2								
OUTPUT 2.1 Trainings on utilization technologies transferred and conducted								
OUTPUT 2.2 Training manuals prepared								
OUTPUT 2.3 Impact assessment of specific interventions								
ACTIVITY 2.1.1 Scheduling of training	1,000	2,000						
ACTIVITY 2.1.2 Preparation of training program and modules	14,000	2,000	5,000		500			
ACTIVITY 2.1.3 Identification of training participants	1,000	1,000	1,000					
ACTIVITY 2.1.4 Preparation of training manuals	10,400	5,000	1,000		1,000			

OUTPUTS/ACTIVITIES	BUDGET COMPONENTS							
	10. Project Personnel	20. Sub-contracts	30. Duty Travel	40. Capital Items	50. Consumable Items	60. Miscellaneous	70. Executing Agency Management Cost	80. ITTO Monitoring, Evaluation and Administration
ACTIVITY 2.1.5 Implementation and evaluation of training course	40,000	1,500	5,000	1,000	500			
ACTIVITY 2.1.6 Impact assessment of specific interventions	15,000	1,500	10,000	1,000	4,000			
2.1.6.1 Preparation of survey questionnaire								
2.1.6.2 Pre-test questionnaire								
2.1.6.3 Interview								
2.1.6.4 Collation and analysis of results								
2.1.6.5 Actions and recommendations								
Sub-Total 2	81,400	13,000	22,000	7,000	6,000			
Component 3								
OUTPUT 3.1 Researches conducted on relevant technologies and information generated								
OUTPUT 3.2 Technical papers/articles from the result/outputs of the studies produced/published								
ACTIVITY 3.1.1 Conduct research studies on production, processing and utilization technologies and socio-economic aspects of rattan	15,000	13,000	10,000	15,000	2,000			
3.1.1.1 Data gathering and review of related literatures								
3.1.1.2 Data analysis								
ACTIVITY 3.1.2 Technical paper/article writing	1,000	1,000	2,000		1,000			
ACTIVITY 3.1.3 Publication of the technical papers/articles	1,000	1,000	5,000		1,000			

OUTPUTS/ACTIVITIES	BUDGET COMPONENTS							
	10. Project Personnel	20. Sub-contracts	30. Duty Travel	40. Capital Items	50. Consumable Items	60. Miscellaneous	70. Executing Agency Management Cost	80. ITTO Monitoring, Evaluation and Administration
OUTPUT 3.3 Rattan Field Guides								
ACTIVITY 3.3.1 Compilation and preparation of rattan field guides	7,000				1,000			
ACTIVITY 3.3.2 Finalization of the rattan field guides	9,000	1,000	2,000		300			
ACTIVITY 3.3.3 Publication of rattan field guides	10,000	1,000	1,000		700			
Sub-Total 3	43,000	17,000	20,000	15,000	6,000			
Component 4								
OUTPUT 4.1 Regional trainings conducted								
OUTPUT 4.2 Regional training manuals prepared								
OUTPUT 4.3 Regional meetings/conference conducted								
ACTIVITY 4.1.1 Coordination with Contact Persons/agencies in the participating ASEAN member countries.	1,000	2,000	2,000					
ACTIVITY 4.1.2 Scheduling of training	500	1,000	2,000					
ACTIVITY 4.1.3 Regional training on Rattan Taxonomy	11,000	3,000	5,000		500			
4.1.3.1 Preparation of training program and modules								
4.1.3.2 Identification of training participants								
4.1.3.3 Preparation of training materials								
4.1.3.4 Implementation and evaluation of training course								

OUTPUTS/ACTIVITIES	BUDGET COMPONENTS							
	10. Project Personnel	20. Sub-contracts	30. Duty Travel	40. Capital Items	50. Consumable Items	60. Miscellaneous	70. Executing Agency Management Cost	80. ITTO Monitoring, Evaluation and Administration
ACTIVITY 4.1.4 Regional training on Rattan Inventory 4.1.4.1 Preparation of training program and modules 4.1.4.2 Identification of training participants 4.1.4.3 Preparation of training materials 4.1.4.4 Implementation and evaluation of training course	11,000	3,000	4,000					
ACTIVITY 4.1.5 Regional training on Transfer of Rattan Technology on Production and Utilization 4.1.5.1 Preparation of training program and modules 4.1.5.2 Identification of training participants 4.1.5.3 Preparation of training materials 4.1.5.4 Implementation and evaluation of training course	11,000	3,000	4,000		500			
ACTIVITY 4.1.6 Impact assessment of training programs 4.1.6.1 Preparation of survey questionnaires 4.1.6.2 Pre-test of questionnaire 4.1.6.3 Interview 4.1.6.4 Collation and analysis of results 4.1.6.5 Actions and recommendations	14,500	3,000	2,000			1,000		
Sub-Total 4	49,000	15,000	19,000		1,000	1,000		

OUTPUTS/ACTIVITIES	BUDGET COMPONENTS							
	10. Project Personnel	20. Sub-contracts	30. Duty Travel	40. Capital Items	50. Consumable Items	60. Miscellaneous	70. Executing Agency Management Cost	80. ITTO Monitoring, Evaluation and Administration
Component 5								
OUTPUT 5.1								
ASEAN Rattan Centre (ARC) established								
ACTIVITY 5.1.1	12,500		3,000		1,000	500	245,000	
Establishment of ASEAN Rattan Centre (ARC)								
ACTIVITY 5.1.2	500		2,000			1,000		
Coordination of project activities								
5.1.2.1 Preparation of reports								
ACTIVITY 5.1.3	6,500		2,000			1,000		
Publication of newsletter								
OUTPUT 5.2								
ASEAN Rattan Centre web page created								
ACTIVITY 5.2.1	8,000		2,500		500	1,000		
Creation of ARC web page								
5.2.1.1 Designing the web page								
5.2.1.2 Gathering information/ data for the web page								
OUTPUT 5.3								
ASEAN Rattan Database created								
ACTIVITY 5.3.1	6,000		4,000			1,500		
Setting up of ASEAN rattan database								
5.3.1.1 Coordination with the ASEAN member countries regarding available data on rattan								
5.3.1.2 Compilation of available literatures on rattan to be included in the database								
Sub-Total 5	33,500		13,500		1,500	5,000	245,000	

OUTPUTS/ACTIVITIES	BUDGET COMPONENTS							
	10. Project Personnel	20. Sub-contracts	30. Duty Travel	40. Capital Items	50. Consumable Items	60. Miscellaneous	70. Executing Agency Management Cost	80. ITTO Monitoring, Evaluation and Administration
NON -ACTIVITY BASED EXPENSES								
1. Fuel and Utilities					11,000		25,000	
2. Office Supplies					7,000			
Sub-Total ITTO	356,800	62,000	98,000	29,000	18,000	6,000		28,500
Sub-Total Executing Agency				245,000		25,000		
TOTAL ITTO	598,300							
TOTAL EXECUTING AGENCY	270,000							
GRAND TOTAL	868,300							

7.2 Yearly Project Budgets by Source

7.2.1 Yearly Project Budget by Source – ITTO (in US\$)

Annual Disbursements	TOTAL	Year 1	Year 2	Year 3	Year 4
Budget Components					
10. Project Personnel					
11. National Experts	76,800	19,200	19,200	19,200	19,200
12. National Consultants	12,000	3,000	3,000	3,000	3,000
12. Other Labor	262,000	118,000	48,000	48,000	48,000
13. Administrative Personnel	6,000	1,000	1,500	1,500	1,500
14. Fellowship and Training					
<u>Component Total</u>	356,800	141,700	71,500	71,500	71,500
20. Sub-contracts					
21. Training/Seminar/ Workshops	36,000	8,000	8,000	10,000	10,000
22. Production and printing of information materials and proceedings of training/seminar/workshop	26,000	5,000	7,000	7,000	7,000
<u>Component Total</u>	62,000	13,000	15,000	17,000	17,000
30. Duty Travel					
31. Daily subsistence allowance	46,500	11,000	11,500	11,500	12,500
32. International Travel	10,500	1,500	4,500	4,500	-
33. Transport costs/airfare	41,000	11,000	10,000	10,000	10,000
<u>Component Total</u>	98,000	23,500	26,000	26,000	22,500
40. Capital Items					
41. Premises					
42. Land					
43. Vehicles	14,000	14,000			
44. Capital Equipment	15,000	15,000			
<u>Component Total</u>	29,000	29,000			
50. Consumable Items					
51. Fuel and Utilities	11,000	2,000	3,000	3,000	3,000
52. Office Supplies	7,000	1,000	2,000	2,000	2,000
<u>Component Total</u>	18,000	3,000	5,000	5,000	5,000
60. Miscellaneous					
61. Communications	4,000	1,000	1,000	1,000	1,000
62. Utilities (Lights and water)					
63. Contingencies	2,000			1,000	1,000
<u>Component Total</u>	6,000	1,000	1,000	2,000	2,000
Subtotal	569,800	210,700	117,700	120,700	120,700
80. ITTO Monitor., Evaluat. And Admin. Costs	28,500				
<u>Component Total</u>	28,500				
Subtotal	598,300	210,700	117,700	120,700	120,700
M & E MONITORING GRAND TOTAL					

7.2.2 Yearly Project Budget by Source – E. Agency/GOP in US\$

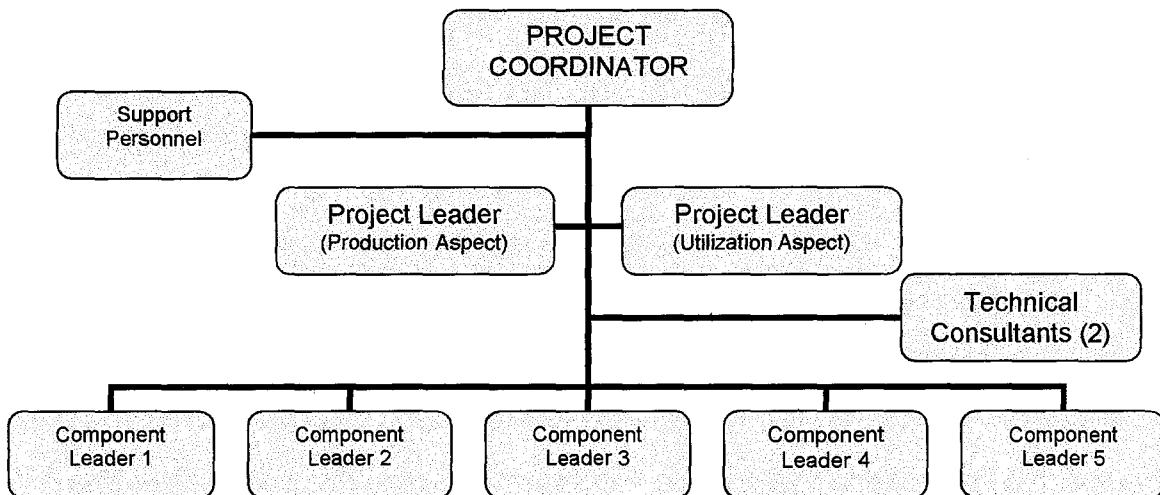
Annual Disbursements	Total	Year 1	Year 2	Year 3	Year 4
Budget Components					
10. Project Personnel 11. National Experts 12. Other Labor 13. Administrative Personnel <u>Component Total</u>	-				
20. Sub-contracts 21. Training/Seminar/ Workshops 22. Production and printing of information materials and proceedings of training/seminar/workshop <u>Component Total</u>	-				
30. Duty Travel 31. Daily subsistence allowance 32. Transport costs/airfare <u>Component Total</u>	-				
40. Capital Items 41. Premises 42. Land 43. Capital Equipment <u>Component Total</u>	125,000 120,000 245,000	31,250 30,000 61,250	31,250 30,000 61,250	31,250 30,000 61,250	31,250 30,000 61,250
50. Consumable Items 51. Office Supplies <u>Component Total</u>	-				
60. Miscellaneous 61. Communications 62. Utilities (Lights and water) 63. Contingencies <u>Component Total</u>	15,000 10,000 25,000	3,750 2,500 6,250	3,750 2,500 6,250	3,750 2,500 6,250	3,750 2,500 6,250
Subtotal 1	270,000	67,500	67,500	67,500	67,500
EXECUTING AGENCY/GOP GRAND TOTAL	270,000				

PART III: OPERATIONAL ARRANGEMENTS

1. Management Structure

The project management shall adopt a holistic strategy in addressing the specific objectives. An Overall Project Coordinator (OPC) will manage and administer all activities to attain the project objectives. The OPC will be assisted by the two (2) Project Leaders (PLs). They shall formulate the plans and programmes for an efficient and effective implementation of the project. There will also be two (2) Technical Consultants (TCs), five (5) Component Leaders (CLs) and Support Personnel (SP) to assist the OPC and the PLs in the implementation, documentation, preparation and integration of pertinent reports/documents. The Project Personnel shall coordinate with DENR, Department of Trade and Industry (DTI), International Network for Bamboo and Rattan (INBAR), concerned institutions of ASEAN member countries, traders, furniture and handicraft enterprises, and other stakeholders.

PROJECT ORGANIZATIONAL CHART



2. Monitoring, Reporting and Structure

(a) Project Progress Reports

The Project Progress Reports will be prepared and submitted to ITTO. The First Progress Report will be submitted 6 months after the start of the project or at any other time upon the request of ITTO or the Executive Committee.

ITTO may schedule midterm and post evaluation visits as required.

(b) Project Completion Report

The Project Completion Report will be prepared and submitted to ITTO once the project has been completed and within three months after completion, at the latest.

(c) Project Technical Reports

The Project Technical Reports will be prepared and submitted annually following the activities and outputs of the project.

(d) Monitoring, Review and Steering Committee's Visits

The project will be subjected to monitoring by ITTO representative(s), at least once a year. The monitoring commission will visit the Executing Agency.

Further, a Project Steering committee will be established, whose members include ITTO representative(s) and the collaborating agencies.

(e) Evaluation

A final evaluation will be carried out on the basis of the outputs of the project.

3. Future Operation and Maintenance

ERDB – DENR is committed to the future operation and maintenance and ensure the availability of personnel, equipment and material acquired by the project. This is to ensure the continuous access on database on rattan at the ARC.

PART IV: TROPICAL TIMBER FRAMEWORK

1. Compliance with ITTA 1994 Objectives

This project proposal is compliant to objectives c, f and j of the International Tropical Timber Agreement (ITTA), 1994:

- To contribute to the process of sustainable development.
This will be achieved through sustainable management of rattan in the natural stand and establishment of rattan plantation that would ensure the supply of raw materials for the industry as primary substitute for wood.
- 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.
The research and development of rattan plantations will improve production of raw material. This will reduce pressure in the natural stands. Rattan can be used as reforestation species which can be an instrument in the conservation of tropical timber because these can serve as nurse trees for rattan during the earlier stages of their growth. The appropriate processing and utilization technologies will lead to efficient utilization of rattan thus conserving forest resources.
- To encourage members to support and develop industrial tropical timber reforestation and forest management activities as well as rehabilitation of degraded forest land, with due regard for the interests of local communities dependent on forest resources.
Rattan as intercrop species enhances productivity in terms of increased biomass. It is compatible with associated tree species as understory promoting multi-canopy structure for biodiversity conservation and ecological stability. Therefore, with rattan

the local communities would gain from the increased products and services provided by the forest.

2. Compliance with ITTO Action Plan

The project proposal complies with the ITTO Action Plan Goals of the Committee on Forest Industry as stated in the ITTO Yokohama Action Plan 2002-2006. Improved technologies on rattan production, processing and utilization, being one of the outputs of this project proposal, is suitable to the Committee's actions in developing, publishing and disseminating information on increased utilization efficiency and the reduction of waste throughout the production chain through recycling and utilization of residues. Establishment of demonstration plots that will address the increased production and utilization efficiency is also one of the Committee's actions.

References

- Baja-Lapis, A. 1999. Status of Philippine Rattan Production and Industry. In R Bacillieri et al. (eds). Rattan Cultivation: Achievements, Problems and Prospects. An International Consultation of Experts for the Project: Conservation, Genetic Improvement and Silviculture of Rattans in Southeast Asia. 12-14 May 1998. Kuala Lumpur, Malaysia.
- Baja-Lapis, A. Rattan genetic resources in the Philippines. RAS/91/004 Technical Document No. 3 FAO, UNDP, Los Baños, Laguna.
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- FAO. 1985. Tropical Forestry Action Plan. Rome.
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- Philippine Master Plan for Forestry Development. 1990. Department of Environment and Natural Resources.
- Proceedings of the Regional Conference on Sustainable Development of Rattan in Asia. January 22-23, 2004. Manila, Philippines.
- Tanggol Kalikasan website. (www.tanggol.org)
- World Resources Institute. 1994. Washington, DC. (www.wri.org)
- www.erdb.org.ph

ANNEXES

- A. Profile of the Executing Agency
- B. Curricula Vitae of the Key Staff
- C. List of Cooperating Agencies and Contact Persons in the ASEAN Member Countries
- D. Technologies and research studies identified during the regional conference
- E. Summary of Prioritization of Identified Technology Needs for Rattan Sustainable Development Project

ANNEX A – PROFILE OF THE EXECUTING AGENCY

Ecosystems Research and Development Bureau (ERDB)
 Forestry Campus, UP Los Baños, College, Laguna 4031, Philippines
 Telephone Numbers: (63-49) 536-2229; 536-2509; 536-3628; 536-2269
 Fax Number: (63-49) 536-2850
 Email Addresses: erdb@laguna.net; erdbodir@laguna.net

3.1 The Expertise of the Executing Agency

Being the principal research unit of the Department of Environment and Natural Resources (DENR), ERDB is responsible for assembling research results, scientific information and technologies on the management of various ecosystems and natural resources. Specifically, these are the forest, grassland and degraded areas, upland farms, freshwater and coastal zone ecosystems. Its vision is to achieve excellence in research and development (R&D) on environment and natural resources towards year 2000 and beyond. The Bureau's mission is to provide relevant technology and information through research towards sustainability and enhanced productivity of the natural resources and protection of the environment, for the improvement of the quality of life of the Filipino people. ERDB has the advantage in term of networking with DENR field offices nationwide in terms of data collection since it has Ecosystems Research and Development Services (ERDS) in all regions.

ERDB mandates are as follow:

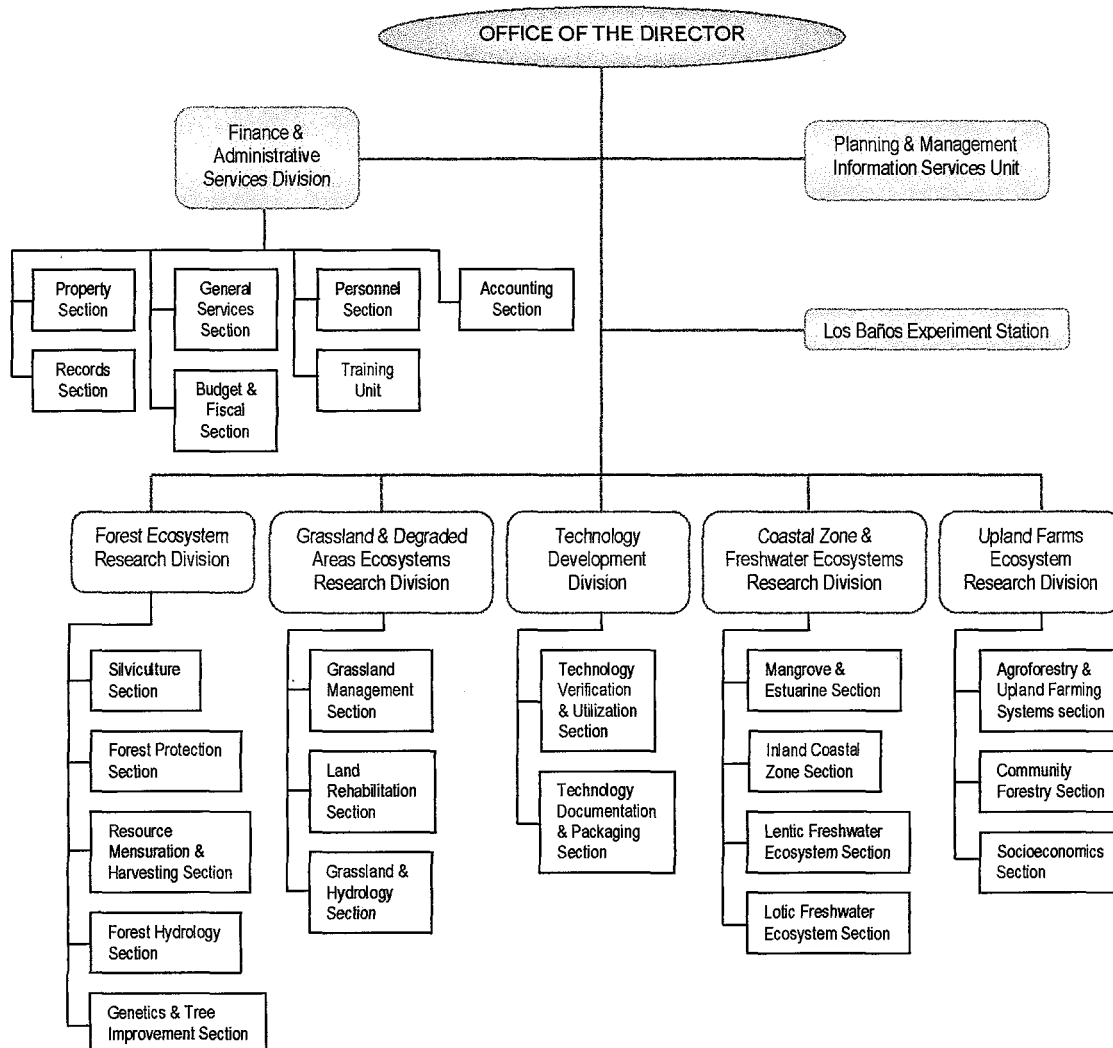
- * Formulates and recommends an integrated R&D program relating to Philippine ecosystems and natural resources such as minerals, lands, forests, as holistic and interdisciplinary fields of inquiry;
- * Assists the Secretary of DENR in determining a system of priorities for the allocation of resources to various technological research programs of the department;
- * Provides technical assistance in the regional implementation and monitoring of the aforementioned research programs;
- * Generates technologies and provides scientific assistance in the R&D of technologies relevant to the sustainable use of Philippine ecosystems and natural resources; and
- * Assists the secretary in the evaluation of the effectiveness of the implementation of the integrated research program.

Organization: Please refer to the ERDB Organizational Chart in the next page.

In year 2003, ERDB has 31 ongoing projects/studies broken down under the R & D programs as follows:

Researches/Studies per Research Division	No. of Projects	Source of Fund	
		ERDB	External
Forest Ecosystem	14	8	6
Grassland & Degraded Areas Ecosystem	3	0	3
Coastal & Freshwater Ecosystem	5	1	4
Upland Farms Ecosystem	8	5	3
Technology Transfer	1	0	1
Total	31	14	17

ERDB Organizational Chart



For year 2000-2001, 36 research projects were completed. Twenty-three were regularly funded by ERDB while 13 were externally funded.

Eleven studies were carried out for the forest ecosystem. Most of the ongoing studies on this ecosystem focused on the production of improved seeds and planting materials of different forest tree species. Other studies dealt on the analysis of supply and demand for wood and major wood products in the Philippines; the economic policy implications of carbon storage and sequestration; and the production and plantation management of medicinal plants in the Philippines.

For grassland and degraded areas ecosystem, 11 studies were carried out. Research projects focused on different grassland species, tree species for reforestation, rattan and bamboos.

For the coastal zone and freshwater ecosystems, 4 studies were implemented. The studies dealt on mangrove plantations; gravel and sand extraction and related mining activities on river systems; and on the Laguna Lake and its tributaries.

Nine projects were completed for upland farms, while 1 project for the technology development.

3.2 The Infrastructure of the Executing Agency

ERDB is housed in a three-story building with a floor dimension of 72.50 m X 40.50 m located at UPLB Forestry Campus, College, Laguna. This building houses five main divisions – the administrative and planning offices, the office of the director and other support units like accounting, budget and auditing offices. Other facilities include the following:

- Library
- Microcomputer Laboratory
- Los Baños Experiment Station
- Printing Unit
- Bambusetum
- Rattan Gene Bank
- Laboratory Facilities
 - ☞ Chemistry – plant tissue and water quality analyses
 - ☞ Soil – soil physical, chemical and sedimentation analyses
 - ☞ Genetics and tissue culture – genetic improvement of species; mass production of planting materials through tissue culture and analysis through electrophoresis
 - ☞ Botany 'cum' herbarium – storage of herbarium specimen for educational purposes; provides assistance in the identification of trees and other species
 - ☞ Pathology – analysis, identification and control of diseases attacking seedlings and forest plantations
 - ☞ Entomology – identification and control of insect pests attacking seedlings and plantations
 - ☞ Zoology – showcases stuffed animal for educational purposes
 - ☞ Seed - seed
 - ☞ Genetics - DNA analysis of plant species

3.3 Budget

ERDB's budget for the year 2003 was 79,625.00. In year 2002, the Bureau's budget amounted to Php 75,689.00. For calendar year 2001, ERDB's total financial resource was Php 70,297,000.

3.4 Personnel

ERDB has more than 150 personnel in the forestry-related fields out of its 301 total staff. This was composed of 239 regular employees and 62 casuals. The number of experts with post-graduation degrees is 83. Eighteen (18) personnel have completed their doctoral degrees while seven are ongoing. Forty (40) staff has earned their master's degree while 18 are still pursuing.

ANNEX B – CURRICULA VITAE OF THE KEY STAFF

CELSO P. DIAZ, M.Sc.

Born on 09 January 1941 at Sta. Cruz, Marinduque
Filipino

Post-Masteral Training in Natural Resources Economics
University of New England, Australia
March to November 1984

Master of Science in Wildland Resources Science (1977-79)
(Major Fields: Forest Resources Economics)
University of California, Berkeley, California, U.S.A.

Certificate in Development Economics (1971-72)
UP School of Economics, Diliman, Quezon City

Bachelor of Science in Forestry (May 1966)
University of the Philippines Los Baños

He is the Director of the Ecosystems Research and Development Bureau (ERDB), research arm of the Department of Environment and Natural Resources (DENR) since 1996. Prior to his present position as Director IV and Career Executive Service Officer (CESO) III of the Career Executive Service Board (CESB) of the Office of the President, he was the Regional Technical Director for Research, National Capital Region, DENR from 1989 to 1995. His previous assignments were: Assistant Regional Director, Region IV, Bureau of Forest Development (BFD), Department of Natural Resources (DNR), 1986-88; Chief Planning Officer, Forest Research Institute (FORI); Division Chief, Socio-Economics Division, FORI (1975-1985); Senior Forest Economist, BFD, DNR (1970-74); and Faculty Member, Department of Forestry Extension, College of Forestry, UPLB (1966-69). He is also the Overall Project Coordinator of the ITTO funded pre-project entitled "Application of Production and Utilization Technologies for Rattan Sustainable Development in the ASEAN Member Countries" [PPD 51/02 Rev. 1 (I)].

He had served as Chairman of the Board of Examiners for Foresters (1989-98) under the Professional Regulation Commission, Office of the President, Republic of the Philippines. His other government responsibilities include: Vice-Chair, Technical Advisory Committee, Philippine Council for Agriculture, Forestry and Natural Resources Research and Development (PCARRD), Department of Science and Technology (DOST); Member, Technical Review and Assessment Committee, (PCAMRD), DOST; and Member as representative of Environment Sector, National Committee on Biosafety of the Philippines (NCBP), 1998 to present.

He is also the Philippine Focal Person (1995 to present) to International Bamboo and Rattan (INBAR) Council which holds office at Beijing, China. In addition, he is the Philippine Representative since 1996 to the Scientific Planning Group, Asia-Pacific Research for Global Change (APN) whose office is in Kobe, Japan. He is also the DENR Secretary's official alternate as Philippine representative to the Institute for Global Environmental Strategies (IGES). He had represented the Philippines in various conferences, seminars, symposia and fora abroad.

ANNEX B – CURRICULA VITAE OF THE KEY STAFF

AIDA B. LAPIS, Ph.D.

Born on 30 July 1951 at Balara, Quezon City
Filipino

Doctor of Philosophy in Forest Biological Sciences
(Major Fields: Forest Biological Sciences; Forestry Ecology and Silvics)
University of the Philippines Los Baños (UPLB)

Master of Science in Forestry, UPLB
(Major Fields: Forest Biological Sciences; Plant Taxonomy)

Bachelor of Science in Forestry, UPLB
(Major Field: Wood Sciences and Technology)

She presently holds a Section Chief position in ERDB and at the same time designated as the Chief of the Research and Development Branch of the ASEAN Regional Centre for Biodiversity Conservation (ARCBC), an EU assisted project, executed by the DENR. She manages research grant programme for participating ASEAN member countries, supervises the conduct of in-house researches, arranges and coordinates scientific meetings in the ASEAN region. She is also the Project Leader in the Production and Management Aspect of the ITTO funded pre-project entitled "Application of Production and Utilization Technologies for Rattan Sustainable Development in the ASEAN Member Countries" [PPD 51/02 Rev. 1 (I)]. In addition, she manages the ERDB Botany Laboratory cum Herbarium (EBL).

She has 30 years of research experience, in the field of forest production, particularly in taxonomy, forest ecology, and silvics. She engaged in bamboo and rattan production research geared towards plantation establishment and their genetic conservation. Her researches were concentrated on the taxonomy of Philippine rattans, ecology, cultivation and silviculture. She also worked on the propagation of important minor forest species like bamboo, *nito* and other bast fibers producing forest plants. She has pioneered in establishing rattan gene banks in a living garden in Mt. Makiling, Los Baños, Laguna and Malaybalay, Bukidnon.

She had published more than 22 technical papers and 13 of them dealt with rattan. Six among her 20 semi-technical papers published were about rattan. Some of the publications are listed below:

1. *Rattan Genetic Resources in the Philippines*. In Bamboo and Rattan Genetic Resources in Certain Asian Countries. Vivekanandan et al (Eds). 1998. IPGRI-APO Serdang, Malaysia.
2. *Rattan Taxonomy and Ecology in the Philippines*. Rao, A.N. and V.Ramanatha (Eds) 1997. In Rattan-taxonomy-ecology, Silviculture, Conservation, Genetic Improvement and Biotechnology. Proceedings of Training Course 'cum' Workshop. Sarawak, Sabah. p.105-110.
3. *Philippine Rattan Resources, Production and Research*. Rao, A.N. and V.Ramanatha (Eds) 1997. In Rattan-taxonomy-ecology, Silviculture, Conservation, Genetic Improvement and Biotechnology. Proceedings of Training Course 'cum' Workshop. Sarawak, Sabah. p. 207-206.

ANNEX B- CURRICULA VITAE OF THE KEY STAFF

MAGDALENA Y. GIRON, Ph.D.

Born on 04 May 1944 at Tinajeros, Malabon, Metro Manila
Filipino

Oregon State University
(Major Field: Forest Products Pathology)

UP College of Agriculture
(Major Field: Plant Pathology/Microbiology)

ANNEX C - List of ASEAN Contact Persons

Name	Country	Position/Designation/Office
Mr. Joffree Bin Haji Ali Ahmad	Brunei Darussalam	Forest Botany Section Biodiversity Conservation Division Forestry Department Ministry of Industry and Primary Resources Tel.No.: 00-673-3230767 Fax No.: 00-673-2381012 e-mail: forestrybrunei@hotmail.com
Mr. Vuthy Lic	Cambodia	Department of Forestry and Wildlife Forest and Wildlife Research Institute #40 Preah Norodom Blvd., Phnom Penh Tel.No.: 00-855-23213612 Fax No: 00-855-23213612 e-mail: dfw.syphan@online.com.kh
Mr. Bambang Wiyono	Indonesia	Non-wood Forest Products FORDA Tel.No.: 00-573-215704501 to 4 Fax No: 00-573-217945 e-mail: Bambangw@forda.org B-wiyono@eudoramail.com
Mr. Sounthone Ketphanh	Lao PDR	Head NTFP Section Forest Research Center, National Agriculture and Forestry Research Institute, Vientiane, Lao PDR Tel.No.: (856) 21 770892 Fax No: (856) 21 770892 e-mail: sounthone53@yahoo.com
Dr. Raja Barizan Raja Sulaiman	Malaysia	Natural Forest Division Forest Research Institute Malaysia (FRIM) Tel.No.: 00-603-627-97000 or 97196 Fax No: 00-603 627-97878 or 97857 e-mail: barizan@frim.gov.my
U Win Myint	Myanmar	Staff Officer ASEAN and Int'l. Relations Unit Forest Department Ministry of Forestry Tel.No.: 00-951-681928 or 726796 Fax No: 00-951 664336 or 665592 e-mail: DG.FD@mptmail.net.mm

Forester Celso P. Diaz	Philippines	Director Ecosystems Research and Development Bureau (ERDB) Department of Environment and Natural Resources (DENR) Tel.No.: (6349) 5363628, 5362229, 5363481 Fax No: (6349) 5362850, 5363481 e-mail: erdbodir@laguna.net
Mr. Chudchawan Sutthisrisilapa	Thailand	National Park, Wildlife and Plant Conservation Department (Formerly Royal Forest Department) Tel.No.: 00-66-2-9708119 or 9708859 mobile no.: 06-9965693 DG No.: 00-66-2-5796886 Fax No: DG: 00-66-2-5799576 e-mail: chudsut@yahoo.com
Ms. Do Thi Ngoc Bich	Vietnam	Forestry University of Vietnam Tel.No.: Fax No: e-mail: bichthien@yahoo.com fcv@netnam.org.vn

ANNEX D - Technologies and research studies identified during the regional conference*

- a. The use of chemical induction to break the phase of grass stage to hasten rattan growth.
- b. Isozyme and DNA analysis for rattan
- c. Regeneration system
- d. Proven germination techniques for lesser-known species
- e. Potential/lesser used species
- f. Eco-physiological site characterization
- g. Comparative analysis of intercropping rattan with other tree species
- h. Silvicultural requirements of commercially potential underutilized rattan species
- i. Ex-situ conservation (establishment of germplasm and seedbanks)
- j. Harvesting cycle/economic rotation
- k. Analysis of demand versus annual allowable cut to determine sustainable levels of resource supply and demand.
- l. Develop planting technology for edible shoot/cane
- m. Develop technology for waste reduction
- n. Develop appropriate tool for harvesting
- o. Develop and adopt ASEAN grading standard
- p. Right season/timing of harvest to reduce susceptibility to insect destruction or staining
- q. Comparative study on preservation practices used in ASEAN region
- r. Application of existing technology on Kiln drying for rattan
- s. Develop improved product design based on market demands
- t. Technology on mechanized weaving
- u. Develop improved bleaching technologies that are environment friendly
- v. Develop new preservation technologies at depot
- w. Study on socio-economic aspects of rattan (financial analysis, indigenous knowledge system, gender roles)
- x. Study on consumption patterns and market preferences
- y. Review market chain to determine what is economically viable to the farmer

*Not all technologies or research studies listed above will be conducted but only selected items that are highly prioritized by the ASEAN member countries (See Annex D).

**ANNEX E - Summary of Prioritization of Identified Technology Needs for
Rattan Sustainable Development Project**

Components	Needs	Country/ies Involved
1. Resource inventory 1.1 Taxonomy 1.2 Extent of natural stand/plantation	a. Field guides	Cambodia Myanmar Philippines Thailand Vietnam
	b. An expert from Kew Garden to guide and validate the contents of the field guides.	Cambodia Myanmar Thailand Vietnam
	c. A standard rattan inventory design (standard ASEAN inventory).	Brunei Darussalam Cambodia Indonesia Malaysia Myanmar Philippines Thailand Vietnam
	d. Establishment of a practice to conduct inventory before restocking especially in logged-over areas.	Brunei Darussalam Cambodia Indonesia Malaysia Myanmar Thailand Vietnam
	e. ASEAN checklist.	Brunei Darussalam Thailand Vietnam
2. Nursery activities 2.1 Propagation 2.2 Seedling care and maintenance	a. Further development of the technology using chemical induction to break the phase of grass stage that may hasten growth of rattan.	Brunei Darussalam Malaysia Philippines Vietnam
	b. Establishment of research and development for rattan orchard where male and female species will be identified through molecular technique using isozyme and DNA analysis.	Indonesia Malaysia Thailand
	c. A study on developing the regeneration system: (1) for natural stand - the seed-rattan method regeneration system to sustain production; and, (2) for plantation – clustering/solitary system in time with rotation of support trees.	Brunei Darussalam Cambodia Indonesia Myanmar Philippines Thailand Vietnam
	d. Study on proven germination techniques on lesser-used species.	Cambodia Indonesia

Components	Needs	Country/ies Involved
2. Nursery activities (cont.)	f. Study on potential/lesser used species (anatomical, physiological, chemical analysis).	Cambodia Indonesia Malaysia Myanmar Philippines Thailand Vietnam
3. Plantation establishment 3.1 Site requirement 3.2 Site preparation 3.3 Outplanting 3.4 Maintenance and Protection	a. Study on eco-physiological site characterization which includes light and water with a program to test intercropping with rattan.	Brunei Darussalam Cambodia Lao PDR Myanmar Philippines Thailand Vietnam
	b. Study and documentation on a Comparative Analysis of Intercropping rattan with other tree species on rattan as the primary crop.	Brunei Darussalam Indonesia Myanmar Thailand
	c. An assessment study of Silvicultural requirements (to link production with utilization) of commercially potential underutilized rattan species.	Brunei Darussalam Cambodia Malaysia Myanmar Thailand Vietnam
	d. An ex-situ conservation to establish germplasm and seedbanks, this includes setting up of rules and policies similar to biodiversity guidelines.	Brunei Darussalam Indonesia Malaysia Thailand Vietnam
	e. Study on harvesting cycle/economic rotation, intensity of other rattan species.	Brunei Darussalam Cambodia Indonesia Lao PDR Malaysia Myanmar Philippines Thailand Vietnam
	f. An analysis of demand versus annual allowable cut to determine sustainable levels of resource supply and demand.	Brunei Darussalam Indonesia Malaysia Philippines Thailand Vietnam
	g. Develop a planting technology for edible shoots and cane.	Brunei Darussalam Cambodia Indonesia Thailand

Components	Needs	Country/ies Involved
4. Harvesting System and Grading Standards	a. Develop a technology for waste reduction during harvesting and alternative use of rattan waste products in forest, cane production.	Brunei Darussalam Cambodia Indonesia Malaysia Myanmar Philippines Thailand Vietnam
	b. Develop appropriate tool for harvesting small and large diameter canes.	Brunei Darussalam Cambodia Indonesia Malaysia Myanmar Thailand
	c. Develop and adopt an ASEAN grading standard.	Brunei Darussalam Lao PDR Malaysia Philippines Thailand Vietnam
	d. Study on the right season/timing of harvest to reduce susceptibility to insect destruction or staining.	Brunei Darussalam Indonesia Malaysia Myanmar Thailand Vietnam
5. Post-harvest activities	a. Comparative study on preservation practices used by other ASEAN countries.	Brunei Darussalam Cambodia Indonesia Malaysia Myanmar Philippines Thailand Vietnam
	b. Application of existing technology training on Kiln drying for rattan.	Brunei Darussalam Cambodia Thailand Vietnam
	c. Improved product design based on market demands for rattan.	Brunei Darussalam Cambodia Malaysia Myanmar Philippines Thailand Vietnam
	d. Sharing of technology on mechanized weaving.	Brunei Darussalam Cambodia Lao PDR Myanmar Philippines Thailand Vietnam

Components	Needs	Country/ies Involved
5. Post-harvest activities (cont.)	e. Develop improved bleaching technologies that are environment-friendly.	Brunei Darussalam Cambodia Indonesia Malaysia Philippines Thailand Vietnam
	f. Develop new preservation technologies at depot.	Brunei Darussalam Indonesia Malaysia Myanmar Thailand Vietnam
6. Socio-economic aspects	a. Study on socio-economic aspects of rattan (includes financial analysis, indigenous knowledge system, gender roles), computation of its contribution to carbon sequestration.	Brunei Darussalam Cambodia Indonesia Lao PDR Malaysia Myanmar Philippines Thailand Vietnam
	b. Study of consumption patterns and market preferences.	Brunei Darussalam Cambodia Malaysia Myanmar Thailand Vietnam
	c. Review the market chain to determine what is economically viable for the farmers.	Brunei Darussalam Cambodia Indonesia Lao PDR Malaysia Myanmar Thailand Vietnam
7. Strengthening the ASEAN collaboration through a network	a. Establish a national herbarium with a rattan section by each country. An ASEAN database on rattan can be set up to facilitate access to information.	Cambodia Malaysia Myanmar Thailand Vietnam
	b. Establish a common database/taxonomy data.	Cambodia Malaysia Myanmar Thailand Vietnam
	c. Establish a seedbank and germplasm.	Indonesia Malaysia Thailand Vietnam

Components	Needs	Country/ies Involved
7. Strengthening the ASEAN collaboration through a network (cont.)	d. Establish an ASEAN certification and fair trade practices.	Brunei Darussalam Malaysia Myanmar Thailand Vietnam
	e. Establish an ASEAN rattan network that would discuss and share policies to complement or support implementation of rattan project. e.g. transboundary issue. (Rattan Project Website)	Brunei Darussalam Cambodia Indonesia Malaysia Myanmar Philippines Thailand Vietnam
	f. Coordinate, compile documents for sharing e.g. dissemination of information through RIC electronic bulletin using the FRIM website.	Brunei Darussalam Cambodia Malaysia Myanmar Philippines Thailand Vietnam