

INTERNATIONAL TROPICAL TIMBER ORGANIZATION

ITTO

PROJECT DOCUMENT

TITLE	CAPACITY BUILDING FOR THE DEVELOPMENT OF A SUSTAINABLE RATTAN SECTOR IN CHINA BASED ON PLANTATION SOURCES
SERIAL NUMBER	PD 100/01REV.3 (I)
COMMITTEE	FOREST INDUSTRY
SUBMITTED BY	GOVERNMENT OF THE PEOPLE'S REPUBLIC OF CHINA
ORIGINAL	ENGLISH

SUMMARY

The proposed project aims at supporting capacity building for sustainable rattan development in China in order to increase the social and economic contributions of the rattan sector to the country. This will be accomplished through demonstrating different rattan plantation management schemes, and disseminating technologies for sustainable management of rattan plantations.

The specific objective of the project is to demonstrate the sustainable management techniques for rattan plantations in three different ecological zones and to provide guidance and training on rattan plantation management for local farmers and foresters at local communities in south China.

EXECUTING AGENCY	CHINA INTERNATIONAL NETWORK CENTER FOR BAMBOO AND RATTAN (CINCEBAR)	
DURATION	36 MONTHS	
APPROXIMATE STARTING DATE	UPON APPROVAL	
PROPOSED BUDGET AND OTHER FUNDING SOURCES	Source	Contribution in (US\$)
	ITTO	504,369
	Gov't of China	479,213 (in kind)
	TOTAL	983,582

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PART I: CONTEXT

1. Origin

It is estimated that the demand for rattan canes for processing and manufacturing industries in China is 40,000-50,000 tons annually. However, the total annual yield of rattan canes is less than 10,000 tons. Since the late 1990s, most of the rattan producing countries in Asia have restricted the export of rattan canes. As a result, China has suffered from a shortage of raw materials for processing and manufacturing of rattan products. There exists an urgent need for China to develop its own rattan plantations on a large scale to increase the availability of rattan canes. A preliminary study showed that about 2 million ha of tropical forest plantations and secondary forests are suitable for inter-planting rattans in tropical China (Zhu, 2001).

With emphasis on taxonomy, germplasm collection, resources inventory, nursery techniques, tissue culture, plantation management, properties of rattan canes and nutrition contents of rattan shoots, research on rattans in the past in China has been comprehensive and fruitful (Xu et al. 2000), and this work was awarded the first prize of the National Award for Advanced Science and Technology in by the Chinese Ministry of Science and Technology 1996. It is now the right time to apply these research results to contribute to the development of rattan plantations in China.

The ITTO funded project "Comprehensive studies on the structure and properties of rattans for effective utilization" (PD 21/95 Rev 2 (I)) revealed that many rattan species naturally grown in China, species such as *Daemonorops margaritae*, *Calamus simplicifolius*, *C. platyacanthus* and *C. nambariensis* var. *xishuangbannaensis* produce high quality canes that are suitable for weaving. These species are also the main sources of raw materials for manufacturing small and medium sized rattan products, and are the proposed species for the establishment of demonstration rattan plantations in this project.

2. Sectoral Policies

- (1) Establishment and expansion of natural reserves: 11% of the nation's territory is classified as natural reserves. Most rattan resources are distributed within those reserves, limiting the production of rattan canes in the country.
- (2) Natural Forest Conservation Program (NFCP): A nation-wide natural forest conservation program was officially commenced in 1998 and logging of natural forests has not since been permitted. The natural forests in the upper reaches of the Yangtze River, the most important rattan cane producing areas in China, are within these conserved forests.
- (3) Western China Development Strategy: The national strategy developing western China encourages action plans that will benefit the social and economic development of western China.

3. Programmes and Operational Activities

- (1) Establishment of the China International Network Center for Bamboo and Rattan (CINCEBAR). Directly affiliated to the State Forestry Administration (SFA), CINCEBAR was

established in July, 2000 as a non-profit research and development organization. One of the most important functions of CINCEBAR is to carry out research and development projects on conservation, cultivation and management of bamboo and rattan resources, as well as its utilization.

- (2) Inclusion of rattan research and development in the nation's "Tenth Five-Year Plan": The conservation of rattan germplasm and improvement of rattan resources have been listed as one of the national key research and development programs in the "Tenth Five-Year Plan".
- (3) The selection and improvement of planting materials for western China is also a key research area set up in the SFA's "Tenth Five-Year Plan". Although very few tree species can be cultivated in the mountainous limestone areas of southwestern China, some rattan species of high commercial values grow well in these areas, showing promising for further development of plantations.

PART II: THE PROJECT

1. Project Objectives

1.1 Development Objective

The development objective of the project is to support capacity building for sustainable rattan development in China in order to increase the social and economic contributions of the rattan sector to the country. This will be accomplished through demonstrating different rattan plantation management schemes, and disseminating technologies for sustainable management of rattan plantations.

1.2 Specific Objectives

The specific objective of the project is to demonstrate the sustainable management techniques for rattan plantations in three different ecological zones and to provide guidance and training on rattan plantation management for local farmers and foresters at local communities in south China.

2. Justification

2.1 Problems to be addressed

- 1) In general, local foresters and farmers in tropical China lack knowledge of cultivation, management and utilization of rattans. There are some problems in rattan plantation management, such as improper selection of forest tree species under which rattans are planted, selection of unsuitable forest tree coverage, untimely planting, improper rotation length, unsuitable intensity and methods of harvesting and improper post-harvesting management practices. All of these have resulted in a low benefit from the management of rattan plantations.

- 2) In the mountainous limestone areas in Guangxi and Yunnan provinces of southwest China, there are a few tree species suitable for forest plantation management. The local foresters and farmers do not know which rattan species can be planted in the vast secondary forests and in some forest plantations. Recent investigations show that many rattan species with high commercial value are naturally distributed in these areas. For example, *Calamus platyacanthus* and *Daemonorops margaritae* are found in the southern parts of Guangxi and *C. nambariensis* var. *xishuangbannaensis* and *C. flagellum* are found in the Xishuangbanna region of Yunnan province. *C. platyacanthus* grown in secondary forests in Ningming and Longzhou counties in Guangxi Province can be harvested at intervals of 3 years. It grows up to 3 meters annually and shows great promise for plantation management. These species are worth selecting as plantation species in these limestone areas.
- 3) In some areas in the southern parts of China where the economy is comparatively well developed, some forestry companies, foresters and farmers who are interested in planting rattans reckon that planting rattans may not yield a short-term economic return and thus do not want to invest in rattan plantation management.
- 4) Recent investigations into the ex situ conservation of rattan resources show that the achievements of rattan germplasm conservation are not as effective as they should be as illegal harvest of rattan canes in natural reserves is somewhat serious for some commercial rattan species such as *Calamus simplicifolius*, *Daemonorops margaritae*, *C. egregius*, *C. yunnanensis*, *C. nambariensis* var. *xishuangbannaensis* and *C. platyacanthus*. These species will not produce seed unless their canes grow to a minimum length of 4 meters. This illegal harvest has meant most of the species are not able to grow up to the minimum length for fruiting, which has limited the natural regeneration of these commercial species. Establishment and management of rattan plantations will reduce the dependence on natural resources and increase the effectiveness of the conservation of rattan resources.

2.2 Intended situation after Project completion

This project is proposed to demonstrate the sustainable management technologies for different rattan plantation schemes. It will provide guidelines to the local farmers, foresters and communities on how to sustainably manage the diverse rattan plantations through training and dissemination of the management manuals. It is envisaged that:

- 1) The local farmers and foresters will have more knowledge of cultivation, management, harvest and utilization of economically important rattan species and will be more interested in participating in the management of rattan plantations;
- 2) There will be a potential increase in the income levels of local farmers and foresters due to diversified forest plantation management activities; and
- 3) There will be an increase in availability of rattan canes for rattan processing and manufacturing industries in China.

2.3 Project strategy

The project design is based on the need to develop and disseminate appropriate technologies for management and utilization of rattans in order to expand rattan plantation management practices. This need has been identified through recent investigations into the areas in southern China where scattered rattan plantations are distributed, and in-depth reviews of the status of development and application of technologies for cultivation and plantation management of rattans during the past 30 years. The latter discussions were organized by the SFA, and held at a recent workshop jointly organized by the Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH (Germany) and the International Network for Bamboo and Rattan (INBAR) (Zhu, 2001). In formulating the “Tenth Five-Year Plan” for the forestry sector, SFA emphasized that high priority should be given to the development and utilization of non-timber forest products (NTFPs) as logging of natural forests has been banned. Consequently, as an important NTFP, rattan was listed by the SFA as one of the forestry sector’s key products for development during the “Tenth Five-Year Plan.”

In general, rattan cultivation and plantation management technologies are well studied in China. However, there have long been problems in integrating these technologies and applying them to the production practices.

As mentioned in section 2.1 (Problems to be addressed), the natural and socioeconomic situations of areas that are suitable for rattan plantation management in tropical China vary from one region to another. Accordingly, this project is planning to organize three training courses to overcome the general lack of knowledge of the local people on cultivation, management and utilization of rattans, and set up three demonstration plots of rattan plantation management as follows:

1) Establishment of demonstration plots

a) Intensively managed and high-yielding rattan plantation.

High yields with short rotation lengths are the major concern in forestry development in the southern coastal areas of Guangdong, Fujian and Guangxi provinces where the economy is comparatively well developed, and the strategy of “high input-high output” is usually adopted in forest plantation management. The demonstration plot in these areas will bring together all the intensive management techniques developed during previous cultivation studies, with the establishment of an irrigation system in order to make possible the expected high-yield with reduced rotation length.

b) Rattan plantation management in secondary forests in mountainous limestone areas

It is estimated that about half of the areas suitable for rattan planting are distributed in the mountainous limestone areas of south and southwestern Guangxi province and the southern part of Yunnan province. These areas are largely covered with natural secondary forests and forest plantation management is less developed as very few tree species are suitable for planting/cultivation. Occupied by more than one third of the country’s minorities, these areas

have been the target areas of the Nationwide "Aid-the-Poor" Project. The selection of these areas as one of the project areas will provide the local people with alternatives for generating incomes through the management of rattan plantations.

c) Sustainably harvested rattan plantation

One of the existing problems that jeopardize the sustainable management of rattan plantations in China is the "cutting all the canes at one time" practice, without further management measures such as tending and application of fertilizer after harvesting. This practice not only wastes a large amount of immature rattan canes, but also decreases the number of harvests during a given management period, resulting in low benefits from the management of the rattan plantation. With the establishment of the demonstration plot, this project will demonstrate to the local people how rattan plantations can be sustainably harvested.

Moreover, three management manuals will be produced, one for each of the demonstration plantations and will be widely distributed to make up for the insufficiency of the technology transfer and diffusion through demonstration and training.

2) Study tours to Malaysia, Indonesia and Thailand, and participation in ASEAN regional rattan conference

Among the rattan growing countries, Malaysia is the first country to establish large-scale commercial rattan plantations of the commercially important species in SE Asia, since 1980 in Sabah. It has the largest area of commercial rattan plantations, especially of the plantations of *Calamus manan* which is considered by many to be the best large-diameter cane, established under natural forests and rubber plantations in Sabah and Sarawak as well as in Peninsular Malaysia. Those rattan plantations have played an important role in the supply of raw materials for the development of rattan industry in Malaysia. The study tour to Malaysia will help the project staff improve their knowledge of cultivation and management of rattan plantations. The visiting group will consist of four members (the Project Director, Assistant project director, and two key staff members from two participating institutions). The proposed areas/organization of visit will include: Forest Research Centre of Sabah, Sabah Foundation (Innoprise Corporation Sendiran Berhad), and the Forest Research Institute of Malaysia. The study tour will last for four days.

Indonesia has long been well known as the biggest rattan exporting country in the world. It is reported that rattan contributes 6.5 % of the revenue coming from forestry product industry in Indonesia as well as ~80% of rattan global market. With ITTO's support, the Government of Indonesia is going to implement a project on development of production and utilization of rattan through participation of rattan small holders and industry (ITTO PPD108/01 Rev. 3(I)). A four-day study tour to Indonesia will help the project staffs improve their knowledge of participatory management of rattan resources, harvesting, product design and diversification and marketing. The proposed areas/organization of visit will include: the Directorate General

of Land Rehabilitation and Social Forestry, the Ministry of Forestry and some ITTO funded project sites in Indonesia. This visiting group will consist of three project members.

Thailand has traditionally used rattan shoots as daily diet and rattan shoot has now become more popular dishes in Thailand, especially in the North and Northeast parts. Recently, with the financial support from ITTO (ITTO PD24/00 Rev. 1 (I)), foresters in Thailand are developing techniques for producing canned rattan shoots. Studies by Chinese scientists also indicated that some of the nutrient contents of rattan shoots are even higher and beneficial to human body than those of vegetables and fruits that had been used for producing canned healthcare foodstuffs/products (Xu et al., 1991). It can be anticipated that with the support of the basic research results and of the proposed study tour to Thailand, this project will better benefit the local people in improving their knowledge of and techniques for using rattan shoots for producing foodstuffs in China. The visiting group will consist of two project staff members (the Assistant Project Director and one key staff member from a participating institution). The proposed areas/organization of visit of this four-day study tour in Thailand will include: the Royal Forest Department; Rattan shoot production and processing demonstration plots in Sakon Nakhon Province (Northeast Thailand) and rattan cane production and rattan weaving demonstration plots in Krabi Province (South Thailand). All these plots are the project sites of the ITTO funded project "Promotion of sustainable utilization of rattan from plantation in Thailand (PD024/00 REV.1 (I)).

With the financial support from ITTO, the Forest Products Research and Development Institute of the Philippines is implementing a Pre-Project (PPD 51/02) "Application of Production and Utilization Technologies for Rattan Sustainable Development in the ASEAN Member Countries." Under this Pre-project, An ASEAN Regional Conference on Rattan Sustainable Development is planned to be organized in the Philippines. We found that it is worthwhile for the project staff to attend this important event and to link this project to relevant activities being conducted in other Asian countries for information sharing and possible cooperation. Therefore this project will send two key staff members to participate at the conference.

3) Regional workshop/seminar on rattan for Asia

A 7-day regional workshop/seminar on rattan for Asia will be organized in the second calendar year of the project in Guangzhou with field visits to rattan products processing companies in Guangzhou and rattan plantations in Hainan or in Guangxi provinces. A total of 20 participants (10 from China and 10 from Asian countries) will invited to be participated in this workshop/seminar. This workshop/seminar is expected to provide an interactive platform for participants to review progress on issues related to R&D of rattan sector in Asia and to discuss future directions and strategies for the new millennium. The attendance of a wide range of

audience should also provide many networking opportunities for the exchange of views and ideas (see Annex F for more details).

4) Organization of training courses

Three training courses will be organized by the project, one on rattan tissue culture and nursery technologies, one on silviculture, plantation management and cane/shoot harvesting and processing, and one on products development and marketing for rattans (see Annex D for more details).

2.4 Target beneficiaries

In general, the beneficiaries of the project will be the local farmers and forest workers, the forestry research and development institutions and government departments who are directly or indirectly involved in the implementation of the project. Specifically, these beneficiaries include:

- 1) Local farmers/forestry workers who are directly employed to conduct the fieldwork of the project, and especially those who manage the lands on which the demonstration plantations are established;
- 2) Community leaders and forestry workers, technicians and extension workers who will participate in training courses offered by the project;
- 3) Project staff who can gather their work experiences for application of research results and demonstration of technologies;
- 4) Government departments at different levels who will have more basic information to support their policy-making for forestry development; and
- 5) Other tropical forestry related institutions and individuals around the world will also benefit from the implementation of the project through referring to the management manuals to be published and distributed by the project and the technical reports produced by the project.

2.5 Technical and scientific aspects

Taking into account that the local people generally lack knowledge of cultivation, management and utilization of rattans, it is proposed to begin this project with a component of on-farm demonstrations, followed by a component of technology diffusion through training and distribution of management manuals. The major approaches to be used are described below in relation to the aims of this proposal.

1) Establishment of demonstration plots

The general guiding ideology for establishing the three demonstration plots is to assemble/apply the available technologies developed during the past 30 years to produce diversified rattan plantation management schemes according to the specific problems that need to be addressed in different locations. Specifically, these plots will be established with the following technical approaches.

a) Intensively managed and high-yielding rattan plantation (Plot 1)

This plot will be established at the Nanhua State-owned Farm (NHSF) in Xuwen County, Guangdong Province. Two fast growing rattan species with high quality canes, *D. margaritae* and *C. simplicifolius*, for which cultivation techniques have been extensively studied in the past 30 years, will be used for establishment of the plantation. Rattan seedlings will be planted under the rubber plantations and intensive management practices, such as irrigation, tending and fertilization, will be adopted. Techniques for production and processing of rattan shoots will be learned from Thailand through a study tour to Thailand and participation at the ASEAN Regional Conference on Rattan Sustainable Development to be held in the Philippines under the ITTO funded Pre-Project "Application of Production and Utilization Technologies for Rattan Sustainable Development in the ASEAN Member Countries."

b) Rattan plantation management in secondary forests in mountainous limestone areas (Plot 2)

This demonstration plot will be located in the buffer zone of the Nonggang Nature Reserve (NGNR), Longzhou County, Guangxi Province. Four fast growing species with high-quality, medium-sized canes, namely *C. platyacanthus*, *C. simplicifolius*, *C. nambariensis* var. *xishuangbannaensis* and *Daemonorops margaritae*, will be the candidates for the selection of promising cultivation species in mountainous limestone areas. As *C. platyacanthus* and *C. nambariensis* var. *xishuangbannaensis* are distributed in limestone areas and *C. simplicifolius* has been planted on a small scale in limestone areas, one or two of the above promising species will be selected for rattan cultivation in mountainous limestone areas. Rattans will be intercropped in strips in secondary forest. One planting strip 5m wide will be separated by an intermission strip 4 m wide. Inside the planting strip, rattan plants will be planted in double lines at spacings of 3m x 3m. Large trees and trees with high commercial value in the planting strip will be kept at the sites for shade and to offer support to the rattans.

c) Sustainably harvested rattan plantation (Plot 3)

The sustainably harvested rattan demonstration plot will be established at the Experimental Center of Tropical Forestry (ECTF) of the Chinese Academy of Forestry (CAF) in Pingxiang City, Guangxi Province. Six to eight year old plantations of *D. margaritae*, *C. simplicifolius* and *C. tetradactylus* will be used to produce meaningful results within three years during project implementation.

The harvest intervals will be 3 years for *C. tetradactylus* and 4 years for *D. margaritae* and *C. simplicifolius*. The standards set for stems to be harvested are as follows: for *C. tetradactylus*, all stems longer than 4.0m will be harvested, and for *D. margaritae* and *C. simplicifolius*, all stems longer than 5.0m will be harvested. To secure a sustainable harvest, fertilizer will be applied after harvesting at a rate of 1.0 kg of compound fertilizer plus 3.0 kg of manure per clump per year. The experiences learned from Malaysia and Indonesia through

study tours will also be considered in the establishment and maintenance of the demonstration plantations.

2) Formulation, publication and distribution of management manuals

The three manuals will be compiled, in consultation with the international consultants, based on the results of past studies, worldwide information searches, and the output 1.1 of the project. They will include all common technologies and/or techniques, such as seed collection, seeding raising, site preparation, planting, shading, weeding, fertilization, pest and disease control, and cane/shoot harvesting. Different management practices specific for different management schemes will be considered. These manuals will be published in both Chinese and English.

3) Training courses on tissue culture/vegetative propagation, cultivation and sustainable rattan plantation management, utilization, products development and marketing

Three training courses will employ in-house courses, field visits and hands-on sessions to increase trainees' rational and perceptual knowledge about the tissue culture/vegetative propagation, cultivation and sustainable management of rattan plantations, products development and marketing. The in-house courses will be held at the CAF's Research Institute of Tropical Forestry, which has well-equipped laboratories for rattan tissue culture, training facilities and significant experience in organising international, regional and national training courses. The hands-on sessions will be implemented at different participating institutions concerned (see Annex D for more details).

2.6 Economic aspects

Rattan is an important and high value-added NTFP. Previous studies and financial evaluations have shown that the management of rattan plantations is economically feasible. For instance, a financial analysis of the Lundao Rattan Farm [rattans (*C. tetradactylus*, *C. simplicifolius* and *D. margaritae*) inter-planted in *Michelia macclure* plantations] in Gaozhou county in the western part of Guangdong province (Xu and Li, 2001), showed that within a management period of 25 years, the average yield of rattan canes was 15 tons per hectare, with an output value of 50-60 thousands CNY (1US\$=8.3 CNY) and an Internal Rate of Return (IRR) greater than 20%. The Period of Investment Return (PIR) was about 10 years. Farmers at the Lundao Rattan Farm can increase a net income of 7,243 CNY in 9 years with planting of one hectare of *C. Tetradactylus*, or a net income of 24,100 CNY in 11 years with planting of one hectare of *D. margaritae* (Xu and Li, 2001). It is well known that raw rattan canes are high value-added forest products. With the development of processing and manufacturing of rattan products, the economic benefits driven by rattan plantation management are anticipated to be even more remarkable.

In fact, the economic benefits of the project are far more significant than this direct financial benefit. The effects of capacity building through training and on-farm demonstrations are imponderable.

2.7 Environmental aspects

This project is proposed to demonstrate sustainable technologies for plantation management with economically important rattan species. Therefore, no environmental hazards will be produced within the framework of the project. The foreseeable minor risk would be that the open-up of planting strips under the secondary forests might result in loss of some plant species in the forests. However, this can be minimized through careful selection of demonstration sites. We will make sure that the species, which are likely to be lost, are found somewhere near the demonstration sites. The irrigation system in Plot 1 will be established by using all the newly developed and environmentally friendly materials. The rich supply of electronic power in this project area will avoid using diesel or petrol engines to power the system so that possible pollutions can be eliminated. Moreover, the establishment of the irrigation system will also enhance the growth of forest plantations under which rattans are planted. With the achievement of the proposed project objectives and the development of rattan plantations, an increase in incomes of local communities/forest farmers can be expected. The pressures on natural resources can be reduced and illegal harvesting of rattan resources can be minimized. All of these will benefit the conservation of biodiversity and the environmental improvement of the project areas.

2.8 Social aspects

The main rattan cane producing areas in China are the main residential areas of many of China's minorities. For instance, the Zhuang nationality is concentrated in the southern parts of Guangxi, the Li and Miao nationalities are found on Hainan Island and the Dai, Miao, Zhuang, Hani and Jingpo nationalities live in Yunnan. These minorities have a long history of production and utilization of rattans. However, the cultivation techniques they employ are primitive and simple. For instance, the Hani people in Yunnan sow rattan fruits directly in the field. This practice usually results in a very low germination rate or in no germination at all.

As briefly illustrated in Table 1, the economies at the three project sites are dominated by agriculture and represent the epitome of the current economic development situations in the country's rattan sector. The NHSF represents the areas with comparatively developed economies where the application of intensively forest management practices is possible. The ECTF represents the general situations of rattan plantation management under which the rattan resources are not fully utilized. The NGNR represents the areas that have a high potential for rattan plantation development, with a less developed economy and undeveloped rattan plantation management.

The proposed project will have a positive social impact as it takes into account the participation of local communities living within and around the project target areas and employs on-farm development methodologies.

Table 1 A brief introduction to the Project Sites

Project sites	Total population	Major socio-economic activity	Existing rattan plantations/natural forests	Utilisation of rattan canes
NHSF, Xuwen, Guangdong Province	650,000 ¹⁾	Mostly agricultural (rubber and sugar cane plantation management), limited forestry (small -scale forest plantations and shelterbelts).	100 ha of plantations of <i>D. margaritae</i> , <i>C. tetradactylus</i> and <i>C. simplicifolius</i> .	Purchase of rattan products from some large-sized rattan products processing and manufacturing enterprises in the Zhujiang Delta of Guangdong province and from Hainan province.
ECTF, Pingxiang, Guangxi Province	100,000 ²⁾	Primarily forestry (from production to utilization, with some R and D activities)	1000 ha of plantations of <i>D. margaritae</i> , <i>C. tetradactylus</i> and <i>C. simplicifolius</i> .	Rattan canes are used in some small-sized processing and manufacturing (mainly weaving) enterprises.
NGNR, Longzhou, Guangxi Province	200,000 ²⁾	Primarily forestry (forest conservation and development of NTFPs)	Natural forests of <i>C. platyacanthus</i> . Area unknown. Canes are harvested at intervals of 2 years.	Rattan canes are used for producing handicrafts and for weaving.

Notes: 1) Total population of the county where NHSF located; 2) Total populations within the boundaries of ECTF and NGNR, respectively.

It can be expected that implementing this project will benefit different stakeholders. Firstly, additional employment opportunities will be created for local residents to participate in the fieldwork for project implementation, such as site preparation, planting and maintenance of demonstration plots. As the main participants of the project, local farmers/foresters will directly benefit from the employment by the project during the project period. Furthermore, their participation in the project under the direct guidance by project scientists will help them learn more knowledge of rattan sustainable development. According to a forestry policy on the ownership of forest plantations (that is “who grows, who owns”), the demonstration rattan plantations will be managed and owned by the local people who plant these rattans. The maintenance and production activities will keep a stabilized local employment and/or even create more employment opportunities for the locals as the area of rattan plantations expands as a result of the multiplier effects of the project. Secondly, the selected foresters, community leaders, forestry extension workers, technicians in forest farms and in rattan products processing and manufacturing industries will be trained in rattan cultivation, management and utilization technologies. These trainees should become trainers in locally organized training courses and make a very valuable contribution to the sustainable development of the rattan sector within and around the project areas in the future. Thirdly, the published manuals will provide the sector with a series of reference materials which can be further developed into sectoral/ministerial standards and/or teaching materials of the agriculture and forestry related educational institutions. Fourthly, not only researchers and development workers in the sector of China, but also in other Asian countries will gain some more knowledge of rattan sustainable development through information

sharing during the proposed regional seminar. Finally, with the support forthcoming from the successful achievement of the project objectives, a significant improvement in the process of policy making by governments at different levels for development of the rattan sector in China is anticipated.

2.9 Risks

The risks that may occur and hinder the success of this project are considered low, as this proposed project is a demonstration project that applies/brings together improved technologies. Some possible minor risks will include non-cooperation of local governments and farmers in the establishment of demonstration plots and the conduct of training courses. Those can be handled by careful project planning and constant dialogues between the project staff members and key stakeholders in rattan development. The proposed training courses will play an important role in enhancing the participation of key stakeholders for the sustainable development of rattan sector. The other foreseeable risk is that under cultivation, *C. platyacanthus* may not grow as fast as it does in natural forests, in which it grows so fast that it can be harvested at an interval of 3 years. Normally, this can be ensured through application of fertilizers and careful selection of shading conditions/forest-coverage percentages.

3. Outputs

Output 1.1 Three demonstrations for the development and dissemination of sustainable rattan plantation and management techniques in three different ecological zones established.

Output 1.2 Three technical manuals for rattan cultivation, management and harvesting, and rattan cane processing published.

Output 1.3 Three national training courses, one on rattan tissue culture and nursery technologies, one on silviculture, plantation management and cane/shoot harvesting and processing, and one on products development and marketing for rattans organized.

Output 1.4 One regional course/seminar on rattan cultivation, management, utilization and marketing for Asia held.

4. Activities

Output 1.1 Three demonstration for the development and dissemination of sustainable rattan plantation and management techniques in three different ecological zones established.

A 1.1.1 Site selection, experimental design and field layout (Plots 1, 2 & 3)

A 1.1.2 Raising seedlings (Plots 1 & 2)

A 1.1.3 Site preparation (Plots 1-3) and installation of irrigation systems (Plot 1)

A 1.1.4 Plantation establishment (Plots 1 & 2)

A 1.1.5 Growth monitoring (Plots 1-3) and harvest of shoots (Plot 1)

A 1.1.6 Harvesting of rattan canes (Plot 3)

A 1.1.7 Study tours to Malaysia, Indonesia and Thailand

A 1.1.8 Participation at ASEAN regional conference on rattan sustainable development to be held in the Philippines

Output 1.2 Three technical manuals for rattan cultivation, management and harvesting, and rattan cane processing published.

A 1.2.1 Literature review and information search

A 1.2.2 Formulation of the manuals

A 1.2.3 Publication and distribution of the manuals

Output 1.3 Three national training courses, one on rattan tissue culture and nursery technologies, one on silviculture, plantation management and cane/shoot harvesting and processing, and one on products development and marketing for rattans organized.

A 1.3.1 Course planning and formulation of course texts

A 1.3.2 Selection of participants

A 1.3.3 Preparation of training materials (tissue culture equipment, nursery materials, seedlings, planting and harvesting tools, etc.)

A 1.3.4 Implementation of training courses

Output 1.4 One regional course/seminar on rattan cultivation, management, utilization and marketing for Asia held.

A 1.4.1 Announcement of the workshop/seminar

A 1.4.2 Collection of abstracts of presentations/posters and identification of workshop/seminar participants

A 1.4.3 Editing and publication of abstract proceedings

A 1.4.4 Organization of the workshop/seminar

4. Activities

Output 1.1 Three demonstration for the development and dissemination of sustainable rattan plantation and management techniques in three different ecological zones established.

Activities	Descriptions	Inputs
1.1.1	Site selection, experimental design and filed layout (Plots 1-3)	+ 1 man-month (M.M.) Project staff from CINCENBAR + 2 travels + 2 vehicles + Office supplies
1.1.2	Raising of seedlings (Plots 1 & 2)	+ 1 M.M. Project staff members + 2 travels + Casual labours + Seeds & fertilizers + Nursery site and equipment
1.1.3	Site preparation (Plots 1-3) and installment of irrigation systems (Plot 1)	+ Project staff from NHSF + Sub-contractors + Casual labours
1.1.4	Plantation establishment (Plots 1 & 2)	+ Fertilizers + Farm tools + Casual labours
1.1.5	Growth monitoring (Plots 1-3) and harvest of shoots (Plot 1)	+ 10 M.M. Project staff members + 10 Travels + Office supplies
1.1.6	Harvesting of rattan canes (Plot 3)	+ 0.5 M.M. Project staff members + 2 travels + Farm tools
1.1.7	Study tours to Malaysia, Indonesia and Thailand	+ 1.5 M.M. Key project staff members + 11 man-times travel expenses
1.1.8	Participation at the ASEAN regional conference on rattan sustainable development to be held in the Philippines	+ 0.5 M.M. key project staff members + 2 man-times travels

Output 1.2 Three technical manuals for rattan cultivation, management and harvesting, and rattan cane processing published.

Activities	Descriptions	Inputs
1.2.1	Literature review and information search Study tours to Malaysia, Indonesia and Thailand	+ 12 M.M. project staff from CINCENBAR + Fees for information search

1.2.2	Formulation of the manuals	+ 12 M.M. project staff from CINCEBAR + 3 M.M. National experts + Office supplies
1.2.3	Publication and distribution of the manuals	+ 3 M.M. project staff from CINCEBAR + 3 M.M. national experts + Office supplies + Sub-contractors + 6 travels

Output 1.3 Three national training courses, one on rattan tissue culture and nursery technologies, one on silviculture, plantation management and cane/shoot harvesting and processing, and one on products development and marketing for rattans organized.

Activities	Descriptions	Inputs
1.3.1	Course planning and formulation of course texts	+ 10 M.M. project staff from CINCEBAR + 9 M.M. national experts/consultants + Office supplies + 9 travels
1.3.2	Selection of participants	+ 2 M.M. project director, key staff & consultants + Office supplies
1.3.3	Preparation of training materials (tissue culture equipment, nursery materials, planting and harvesting tools etc.)	+ 3 M.M. project staff from CINCEBAR + Tissue culture equipment + Consumable materials + Office supplies + Casual labours
1.3.4	Implementation of training courses	+ 6 M.M. project staff from CINCEBAR + 1 M.M. international consultant + 2 M.M. national experts + Training equipment + Office supplies + 55 travels

Output 1.4 One regional course/seminar on rattan cultivation, management, utilization and marketing for Asia held.

Activities	Descriptions	Inputs
1.4.1	Announcement of the workshop/seminar	+ 2 M.M project staff from CINCEBAR + Office supplies
1.4.2	Collection of abstracts of presentations/posters and identification of workshop/seminar participants	+ 3 M.M project director, key staff & consultants + Office supplies
1.4.3	Editing and publication of abstract proceedings	+ 6 M.M. project staff members + 1 M.M. international consultant + Consumable materials + Office supplies
1.4.4	Organization of the workshop/seminar	+ 2 M.M. project staff from CINCEBAR + Office supplies + 20 travels + Seminar rooms

5. Logical Framework Worksheets

PROJECT ELEMENTS	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Development Objective</p> <p>To support capacity building for sustainable rattan development in China in order to increase the social and economic contributions of the rattan sector to the country.</p>	<p>Increase people's knowledge about sustainable management of rattan plantations.</p> <p>Expansion of sustainably managed rattan plantations.</p> <p>Increase in supply of rattan canes to the rattan products processing and manufacturing industries.</p>	<p>Technical reports.</p> <p>Management manuals.</p> <p>Government statistics.</p> <p>Evaluation report of project activities and outputs.</p> <p>Workshop/seminar proceedings.</p>	<p>Support of local governments to rattan cultivation and management.</p> <p>Support from international organisations (e.g. IPGRI) and host institutions to be visited.</p>
<p>Specific Objective</p> <p>To demonstrate the sustainable management techniques for rattan plantations in three different ecological zones and to provide guidance and training on rattan plantation management for local farmers and foresters at local communities in south China.</p>	<p>Demonstration plots established by the 2nd quarter of Year 1.</p> <p>Three technical manuals produced by the 3rd quarter of Year 3.</p> <p>Three training courses organised by the 3rd quarter of Year 3.</p> <p>Local people's knowledge on sustainable management and utilisation of rattans improved.</p>	<p>Areas of demonstration plantations.</p> <p>Technical reports.</p> <p>Technical manuals.</p> <p>Mailing lists.</p> <p>Course reports.</p> <p>Workshop/seminar proceedings.</p> <p>Numbers of workshop participants.</p>	<p>Support of the local people and governments in the project areas.</p> <p>Availability of seeds of rattan species to be used.</p> <p>Cooperation of key stakeholders.</p> <p>Availability of qualified consultants.</p>
<p>Outputs</p> <p>1.1 Three demonstration for the development and dissemination of sustainable rattan plantation and management techniques in three different ecological zones established.</p>	<p>Demonstration plots representing three different ecological zones identified.</p> <p>Demonstration plots established by the 2nd quarter of Year 2.</p> <p>Demonstration plots acceptable to all stakeholders.</p>	<p>Area of demonstration rattan plantations.</p> <p>Technical reports.</p> <p>Project progress /completion reports.</p>	<p>Permission of local governments to create the strips (selection cutting) in the forests.</p> <p>Harvest practices by local people followed strictly the set up standards.</p>

PROJECT ELEMENTS	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>1.2 Three technical manuals for rattan cultivation, management and harvesting, and rattan cane processing published.</p>	<p>Technical manuals of high quality prepared.</p> <p>Manuals produced and distributed by the 3rd quarter of Year 3.</p>	<p>Number of copies of the manuals produced.</p> <p>Mailing lists.</p> <p>Project completion report.</p>	<p>Co-operation of publishers.</p>
<p>1.3 Three national training courses, one on rattan tissue culture and nursery techniques, and one on cultivation, plantation management, cane and shoot harvesting, processing and marketing for rattans organized.</p>	<p>Appropriate participants identified.</p> <p>Courses held in the 2nd to 3rd quarter of Year 3.</p>	<p>Number of participants.</p> <p>Course reports.</p> <p>Project completion report.</p>	<p>Active participation of local people.</p> <p>Suitable consultant being available.</p>
<p>1.4 One regional workshop/seminar on rattan cultivation, management, utilization and marketing for Asia held.</p>	<p>Competent participants identified.</p> <p>Workshop/seminar organized in the 4th quarter of Year 2.</p> <p>Quality proceedings prepared and disseminated.</p>	<p>Number of participants.</p> <p>Workshop/seminar proceedings.</p> <p>Project completion report.</p>	<p>Active participation of participants.</p>

6. Workplan

This project will be implemented in 36 months. The detailed work plan is given below.

OUTPUTS/ACTIVITIES	RESPONSIBLE PARTIES	SCHEDULES (IN BI-MONTHS)																	
		YEAR 1						YEAR 2						YEAR 3					
		2	4	6	8	10	12	2	4	6	8	10	12	2	4	6	8	10	12
Output 1.1 Three demonstration for the development and ... 1.1.1 Site selection, experimental design and field layout (Plots 1 - 3) 1.1.2 Raising seedlings (Plots 1 & 2) 1.1.3 Site preparation (Plots 1-3) and installation of irrigation...(Plot 1) 1.1.4 Plantation establishment (Plots 1 & 2) 1.1.5 Growth monitoring (Plot 1-3) and harvesting of shoots (Plot 1) 1.1.6 Harvesting of rattan canes (Plot 3) 1.1.7 Study tours to Malaysia, Indonesia and Thailand 1.1.8 Participation at the ASEAN rattan conference	CINCEBAR, NHSF NHSF, NGNR NHSF, NGNR CINCEBAR, NHSF CINCEBAR, NHSF CINCEBAR, ECTF Key staff Key Staff																		
Output 1.2 A manual of management technologies for each of ... 1.2.1 Data collection and information search 1.2.2 Formulation of the manual 1.2.3 Publication of the manual	CINCEBAR CINCEBAR Sub-contractor																		
Output 1.3 Three training courses, one on rattan tissue culture and... 1.3.1 Course planning and formulation of course texts 1.3.2 Selection of participants 1.3.3 Preparation of training materials (tissue culture equipment... 1.3.4 Implementation of training courses	CINCEBAR CINCEBAR CINCEBAR CINCEBAR																		
Output 1.4 One regional workshop/seminar on rattan... 1.4.1 Announcement of the workshop/seminar 1.4.2 Collection of abstracts of presentations/posters... 1.4.3 Editing and publication of abstract proceedings 1.4.4 Organization of the workshop/seminar	CINCEBAR CINCEBAR CINCEBAR CINCEBAR																		

7. Budget

With an ITTO's contribution of 504,369 US Dollars and a Chinese Government's contribution of 479,213 US Dollars (exclusive of land tax that the Executing Agency does not have to pay in cash), the overall budget of this project totals 983,582 U.S. Dollars. The details of the overall budget by activity and the consolidated yearly project budget by source are given in Table 2 and 3, respectively.

7.1 Overall project budget by activity

Table 2 Overall Project Budget by Activity (ITTO's contribution)

OUTPUT/ACTIVITIES + Non-Activity Expenses	Budget Components								Grand Total	
	10. Project Personnel	20. Sub- Contracts	30. Duty Travel	40. Capital Items	50. Consum- able Items	60. Miscella- neous	Quarter/ Year			
Output 1.1 Three demonstration for the development and...										
1.1.1 Site selection, experimental design and ... (Plots 1-3)			1,830	30,000	600		Q1/Y1		32,430	
1.1.2 Raising seedlings (Plots 1 & 2)	4,390		1,830	600	850		Q1-4/Y1		7,670	
1.1.3 Clearance of planting sites and installation of ... (Plot 1)	1,100	11,000					Q4/Y1		12,100	
1.1.4 Plantation establishment (Plots 1 & 2)	5,860			300	2,930		Q1-2/Y2		9,090	
1.1.5 Growth monitoring (Plots 1-3) and harvesting of...	9,250		22,380		4,600	1,000	Q2,4/Y2,3		37,230	
1.1.6 Harvest of rattan canes (Plot 3)	7,200		1,200	900	1,500		Q2/Y1-3		10,800	
1.1.7 Study tour to Malaysia, Indonesia and Thailand			16,380				Q1/Y1, 2		16,380	
1.1.8 Participation at ASEAN rattan conference			4,120				Q1-4/Y1		4,120	
Output 1.1 Sub-total	27,800	11,000	47,740	31,800	10,480	1,000			129,820	
Output 1.2 Three technical manuals for rattan cultivation ..										
1.2.1 Literature review and information search	9,000				900	1,500	Q1-4/Y1		1,500	
1.2.2 Formulation of the manuals	9,000	24,000	9,000		1,500	600	Q1-4/Y2		9,900	
1.2.3 Publication of the manuals		24,000				2,100	Q2-3/Y2		44,100	
Output 1.2 Sub-total	18,000	24,000	9,000		2,400				55,500	

Table 2 Overall Project Budget by Activity (ITTO's contribution, continued)

	Budget Components						Grand Total
	10. Project Personnel	20. Sub-Contracts	30. Duty Travel	40. Capital Items	50. Consumable Items	60. Miscellaneous	
OUTPUT/ACTIVITIES + Non-Activity Expenses							
Output 1.3 Three training courses, one on rattan tissue...							
1.3.1 Course planning and formulation of course texts	32,000				400		32,400
1.3.2 Selection of participants					200		200
1.3.3 Preparation of training materials (tissue culture	3,000			28,400	5,300		36,700
1.3.4 Implementation of training courses	16,800		37,000			900	54,700
Output 1.3 Sub-total	51,800		37,000	28,400	5,900	900	124,000
Output 1.4 One regional workshop/seminar on rattan...							
1.4.1 Announcement of the workshop/seminar					2,000		2,000
1.4.2 Collection of abstracts of presentations/posters...	10,000	10,000			1,000		21,000
1.4.3 Editing and publication of proceedings		7,000	32,700		5,000		51,700
1.4.4 Organization of the workshop/seminar	10,000	17,000	32,700		8,000		67,700
Output 1.4 Sub-total	10,000	17,000	32,700		8,000		67,700
NON-ACTIVITY BASED EXPENSESES							
(1) Fuel and Utilities					15,000	6,000	21,000
(2) Office supplies				20,000		6,000	26,000
(3) Auditing						6,000	6,000
(4) Three PSC meetings (Guangzhou, Beijing and Nanning)			24,200		6,000	600	30,800
Non-activity based expenses Sub-total			24,200	20,000	21,000	18,600	83,800
Component Total	107,600	52,000	150,640	80,200	47,780	22,600	460,820
ITTO Monitoring and Evaluation cost							15,000
Sub-total							475,820
ITTO Administration cost (6%)							28,549
GRAND TOTAL							504,369

7.2 Consolidated yearly project budget by source

Table 3-1 Consolidated yearly project budget by source - ITTO

Budget components		Unit cost	Total	Year 1	Year 2	Year 3
10.	Project Personnel					
	11. International consultants	10,000\$/man/mo.	30,000	---	20,000	10,000
	13. National experts	3,000\$/man/mo.	36,000	12,000	12,000	12,000
	14. Casual labors	Varied	41,600	18,600	11,500	11,500
	19. Component total		107,600	30,600	43,500	33,500
20.	Sub-contracts					
	21. Setting up irrigation system	11,000\$/set	11,000	11,000	---	---
	22. Publishing manuals	4000\$/ver./manu.	24,000	---	---	24,000
	23. Publishing proceedings	10,000\$/procee.	10,000	---	---	10,000
	24. Workshop/seminar room	1,000\$/day	7,000			7,000
	29. Component total		52,000	11,000	---	41,000
30.	Duty Travel*					
	31. International travels					
	311. DSA	80\$/man/day	12,400	2,400	10,000	
	312. Transportation	Varied	39,000	9,000	30,000	
	32. Domestic travels					
	321. DSA1 (training, field trips)	50\$/man/day	33,500	3,000	6,000	24,500
	322. DSA2 (PSCM, Seminar)	80&\$/man/day	11,200	2,800	5,600	2,800
	323. Transportation	Varied	54,540	7,060	14,200	33,280
	39. Component total		150,640	24,260	65,800	60,580
40.	Capital Items					
	41. Farm tools	Varied.	1,800	1,800	---	---
	42. Disinfecter	9000\$/set	18,000	---	18,000	---
	43. Digital projector	10,400\$/set	10,400	---	10,400	---
	44. OA equipment (PCs, etc.)	5,000\$/office	20,000	20,000		
	45. Vehicles (for on-site use)	15,000\$/vehicle	30,000	30,000		
	49. Component total		80,200	51,800	28,400	---
50.	Consumable Items					
	51. Fertilizers	Varied	18,780	1,950	12,030	4,800
	52. Fuels and utilities	Varied	29,000	7,000	7,000	15,000
	59. Component total		47,780	8,950	19,030	19,800
60.	Miscellaneous					
	61. Office supplies	2,000\$/yr	6,000	2,000	2,000	2,000
	62. Auditing	3,000\$/yr	6,000	---	3,000	3,000
	63. Sundry	Varied	10,600	4,400	3,200	3,000
	69. Component total		22,600	6,400	82,00	8,000
	Sub-total 1		460,820	133,010	164,930	162,880
80.	81. ITTO Monitoring and Evaluation		15,000			
	82. ITTO Administration cost	6%	28,549			
	89. Component total		43,549			
90.	Refund of Pre-Project Costs		---			
100.	GRAND TOTAL		504,369			

Table 3-2 Consolidated yearly project budget by source - Chinese Government

	Budget components	Unit cost	Total	Year 1	Year 2	Year 3
10.	Project Personnel					
	11. Project director	1,200\$/man/mo.	21,600	7,200	7,200	7,200
	12. Assistant project director	1,000\$/man/mo.	36,000	12,000	12,000	12,000
	13. Assistant scientist	800\$/man/mo.	92,000	32,000	48,000	12,000
	14. Research assistant	600\$/man/mo.	69,000	24,000	36,000	9,000
	1.9 Component total		218,600	75,200	103,200	40,200
20.	Sub-contracts		---	---	---	---
30.	Duty Travel		---	---	---	---
40.	Capital Items***					
	41. Lab equipment	18,000\$/yr	54,000	18,000	18,000	18,000
	42. Office facilities	12,000\$/yr	36,000	12,000	12,000	12,000
	49. Component total		90,000	30,000	30,000	30,000
50.	Consumable Items	10,000\$/Yr	30,000	10,000	10,000	10,000
60.	Miscellaneous	6000\$/Yr	18,000	6,000	6,000	6,000
	Sub-total		356,600	112,200	149,200	96,200
70.	Executing agency management costs (15%)		122,613			
100.	GRAND TOTAL		479,213			

* DSA includes accommodation, foods and incidentals. The DSA for workshop/seminar and PSC meeting participants (from China and abroad) is treated equally, and as the same as that for international travels. DSA for donor agencies' and ITTO's participants attending the PSC meetings is NOT included in the budget.

** The previous budget line 41 "Land Tax" was removed as it will be an in-kind contribution of the Chinese Government that the Executing Agency does not have to pay in cash.

PART III. OPERATIONAL ARRANGEMENT

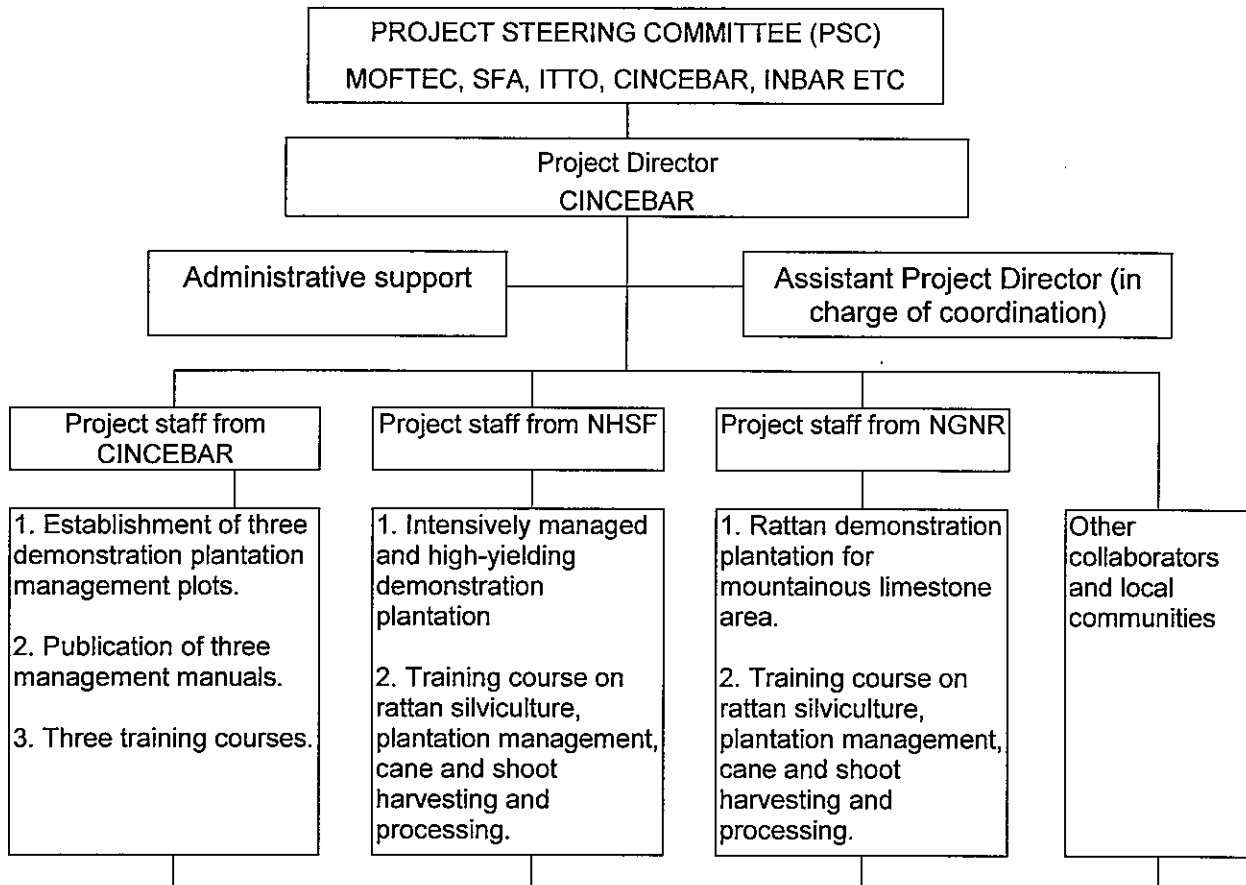
1. Management Structure

Under the overall supervision of the Ministry of Foreign Trade and Economic Co-operation (MOFTEC) and the State Forestry Administration (SFA) of China and the International Tropical Timber Organization (ITTO), this project will be implemented by the CINCEBAR in cooperation and consultation with the International Network for Bamboo and Rattan (INBAR). Professor Jiang Zehui, President of CAF, will serve as the Project Director.

Project activities will be conducted by the project staff members who will consist of chief scientists/experts, assistant chief scientists/experts, and research assistants. These will be drawn from CINCEBAR (mainly from the Research Institute of Tropical Forestry (RITF) and the

Experimental Center of Tropical Forestry (ECTF) of the Chinese Academy of Forestry), the Nonggang Natural Reserve (NGNR), Guangxi Province, and the Nanhua State Farm (NHSF), Guangdong Province, as well as from other institutions, in cooperation with the local collaborators.

Organization Chart



For the effective monitoring of the project, a Project Steering Committee (PSC) will be established and will meet once a year on the initiative of the Project Director. Its members will include:

- 1) Representative of Ministry of Foreign Trade and Economic Cooperation, P R C;
- 2) Representative of State Forestry Administration, PRC;
- 3) Director of CINCEBAR, PRC
- 4) INBAR representative;
- 5) Projects Manager or any other representative of the ITTO;
- 6) Representative of funding sources;
- 7) Project Director.

The task of the PSC is to examine the annual budget, the Yearly Plan of Operation and the activity reports.

In addition to the PSC, a Project Management Office (PMO) will be set up at CINCEBAR and four on-site offices each at RITF, ECTF, NHSF and NGNR to better coordinate and manage the implementation of project activities, with the staffing of those participating institutions.

2. Monitoring, Reporting and Evaluation

2.1 Arrangements for reporting

- 1) Project Progress Reports: A project progress report will be prepared and submitted to ITTO every six months during the project implementation period. The final progress report will be included in the Project Completion Report.
- 2) Project Completion Report: The Project Completion Report will be submitted to ITTO within three months of completion of this project. Technical reports on three demonstration plantations will be presented at the end of this project.
- 3) Project Technical Reports: These reports will be submitted to ITTO as and when they are ready. The final versions of the reports will be submitted to ITTO within three months of completion of the project.

2.2 Monitoring, Review and Steering Committee's visits

A Yearly Plan of Operation (YPO) for the project will be submitted to ITTO at the beginning of each calendar year. This project is subject to monitoring by ITTO representatives with ITTO guidelines according to the YPO, at a date to be mutually agreed by the ITTO and the implementing agency.

2.3 Evaluation

This project will be formally subject to participatory evaluation with ITTO guidelines.

3. Future Operation and Maintenance

There will be three demonstration plantations left for future maintenance and study when this project is completed in three years time.

1) The three hectares of intensively managed and high-yielding demonstration plantations at NHSF will be used for further demonstration and research of cane and shoot production. Data on shoot production and stem growth will be measured and collected continuously by NHSF and RITF staff.

2) The five hectares of rattan demonstration plantations under secondary forests in mountainous limestone areas at NGNR will be used for further demonstration and research. Data on rattan growth will continue to be collected, variations in shading will be recorded and their effects on rattan growth studied by NGNR and RITF. Evaluation of the most promising rattan species for development in mountainous limestone areas will be continued. Once the most promising rattan species have been selected, half of the plantations will be used for sustainable management research and the other half kept for production of rattan seeds.

3) The three hectares of sustainably harvested demonstration plantations at ECTF will also be used for further demonstration and study. RITF and ECTF will continue the management work and the productivity of these plantations will be continuously studied. This study will show the changes in stem growth and cane production as harvests continue. Replanting of rattan should be done when the clump stocks are degraded. The degradation of rattan clump stocks under consecutive harvests is of great research interest and is a question never answered before.

PART IV: TROPICAL TIMBER FRAMEWORK

1. Compliance with ITTA 1994 Objectives

The project mainly complies with two objectives, established in Chapter 1, Article 1 of the International Tropical Timber Agreement, 1994:

Objective (c): To contribute to the process of sustainable development.

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

The on-farm demonstration and training on sustainable management and utilization technologies for rattans that are inter-planted in timber producing forests will improve forest management and the efficiency of utilization of forest resources. The sustainable management and utilization of rattans, the most important NTFPs in tropical China, will undoubtedly contribute to the sustainable development of the forestry sector in this region. This will, in the long term, have a positive impact on the process of sustainable development of the socio-economies of the region.

2. Compliance with ITTO Action Plan

The project meets the basic priorities of ITTO LIBREVILLE ACTION PLAN (1998 - 2001); in particular it meets the priorities in the field of reforestation and forest management as follows:

Goal 1: Promote increased and further processing of tropical timber from sustainable sources.

Action 2: Commission and publish analytical studies that identify critical knowledge and information; and Action 3: Assist in the promotion and transfer of new and/or improved techniques and technologies.

The project will publish three manuals for sustainable management of rattan plantations and set up models for multiple-use of forest resources in co-operation with local foresters and farmers in forest areas.

Action 5: Assist human resource development and institutional strengthening by designing and conducting regional and international events such as specialist workshop and seminars and by the provision of fellowships; and Action 6: Encourage and assist Members, as

appropriate, to – organize workshops/seminars on the use of new and/improved techniques, technology and the development, testing and adoption of guidelines.

The project will organize two training workshops on sustainable rattan management and many other relevant new and/or improved technologies to enhance the technical and human capacities to manage tropical forests of which rattans are a main component.

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2. Z. H. Zhu (Editor). 2001. Development of Bamboos and Rattans in Tropical China. International Network for Bamboo and Rattan (INBAR) Proceedings Series No. 6. China Forestry Publishing House, Beijing. China.
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ANNEX A. PROFILE OF THE EXECUTING AGENCY

1. The Expertise of the Executing Agency

1.1 Mission and Nature

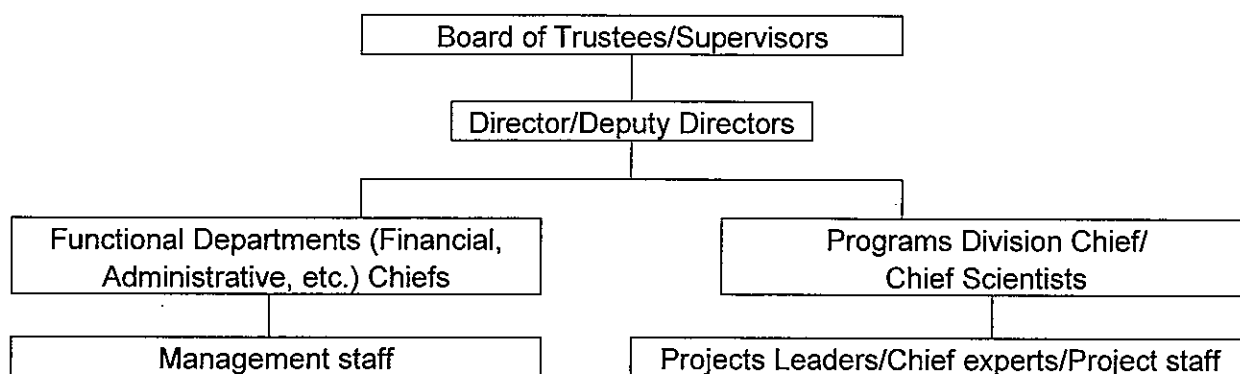
Established in July 2000, the China International Network Centre for Bamboo and Rattan (CINCEBAR) is the first non-profit organization of the State Forestry Administration (SFA) of China specialising in research and development of bamboo and rattan.

According to the SFA Working Document 30/2000 approved by the Central Government, CINCEBAR's missions are:

- a) To be responsible for preparing to establish 1) the National Key and Open Laboratory for Bamboo and Rattan and 2) the World Bamboo and Rattan Gene Pool;
- b) To provide advanced equipment and facilities for research of bio-technology, and property testing for bamboos and rattans;
- c) To carry out research projects on conservation and cultivation of bamboo and rattan resources, property testing for bamboo culms and rattan canes, as well as comprehensive development and utilization of bamboo and rattan resources from different channels such as international science and technology co-operation, national key research programs and national key basic research programs in order to establish an open, international scientific research system for bamboos and rattans;
- d) To assist the International Network for Bamboo and Rattan (INBAR) to organise and implement international scitech co-operation and exchange on bamboo and rattan research and technology transfer, and to develop different cultivation and management models for bamboos and rattans, as well as approaches to the comprehensive utilization of bamboo and rattan resources;
- e) To develop an international scitech information network for bamboo and rattan so as to provide information services for the development of the bamboo and rattan sectors world-wide; and
- f) To organize international bamboo and rattan related training workshops and exhibitions of new technologies, new techniques and new products.

1.2 Organisational chart

As a newly established non-profit research and development organization, CINCEBAR will adopt a completely new management system that is different from those of the existing state-owned research and development institutions. The most notable characteristic of CINCEBAR is its programs/projects-oriented and employment contracts-based staffing system.



1.3 Projects/studies and donors funded those projects/studies in the last three years

As a newly established organization and a decentralised network centre, CINCEBAR organizes and co-ordinates CAF's existing and future projects or studies on bamboos and rattans. These existing projects/studies are mainly funded by the Chinese Government, the Government of Japan, ITTO and other national and international donors. These projects/studies are smoothly implemented.

2. The Infrastructure of the Executing Agency

CINCEBAR has a Headquarters' building in Beijing, which will be ready for use in September 2002. This building consists of offices, laboratories, experimental facilities, an international conference hall, a training centre, and experts' apartments and is in adjacent to a three-storey, 5,034 square meters INBAR new Headquarters. These facilities are designed to meet all the needs of carrying out bamboo and rattan research areas and development work, as well as research on other forestry related issues. In addition to this building, CINCEBAR is entitled to use CAF's existing facilities throughout the country to achieve its missions and objectives.

3. Budget

As a state-owned non-profit R&D organization, CINCEBAR's budget/operational funds will mainly come from the following channels: 1) financial support from the Government of China, 2) funding from international funding agencies, 3) international co-operative and national R&D projects funds, 4) incomes generated from providing pay services such as training, consultancy etc., and) other possible donations from the society.

4. Personnel

The total number of CINCEBAR's staff is about 50, with a minimum number of the administrative management staff. The staff members are employed mainly from the CAF with the employment of the programs/ projects-oriented and employment contracts-based staffing system. In addition, a certain numbers of famous international and national scientists specialising in bamboos and rattans will also be employed.

ANNEX B - CURRICULA VITAE OF THE KEY STAFF

1. PROJECT DIRECTOR

Name: Jiang Zehui

Date and place of birth: 1938. Yangzhou city, Jiangsu Province, China.

Nationality: Chinese

Field and institution of graduation: Anhui Agricultural University

Field and institution of post-graduation: Silviculture

Relevant work undertaken in the last tree years: As a Doctoral Student's Supervisor and the President of CAF, and an Academician of the International Academy of Wood Science, Prof. Jiang mainly engages management and research work in wood sciences. Her relevant work in bamboo and rattan research and development is her great contribution to the supervision of the Missions and Mandate of the International Network for Bamboo and Rattan (INBAR) as the Co-Chair of the Board of Trustees of INBAR, and to the establishment and operation of CINCEBAR .

Institution of employment: The Chinese Academy of Forestry, Beijing, China.

Contact details: Dr. Huang Shineng

Tel: (86-10) 6495 6961 Fax: (86-10) 6495 6962/83

Email: snhuang@inbar.int

2. ASSISTANT PROJECT DIRECTOR

Name: Huang Shineng

Date and place of birth: November 22, 1963. Debao county, Guangxi province, China

Nationality: Chinese

Field and institution of graduation: Forest Management, Department of Forestry, South-Central Forestry College, Zhuzhou city, Hunan, China

Field and institution of post-graduation: Ph.D. in Ecology, College of Life Sciences, Zhongshan University, Guangzhou, China.

Relevant work undertaken in the last tree years: As acting project leader, implemented the ITTO Pre-Project 16/96 Rev. 2 (F): "Demonstration on Reforestation Using Tropical Hardwood species in Yunnan Province of China" and formulated the proposal of the ITTO funded PD 38/98 Rev.2 (F) "Technology Development and Demonstration on Reforestation Using Tropical Hardwood Species in Yunnan Province of China." He was seconded to INBAR in September 2000 and is severd as the Manager of Outreach Program that deals with network development, information services and technology transfer.

Institution of employment: Chief of the Research Management Division of RITF and now is seconded to International Network for Bamboo and Rattan (INBAR), Beijing, China.

Contact details: Dr. Huang Shineng
Tel: (86-10) 6495 6961 Fax: (86-10) 6495 6962/83
Email: snhuang@inbar.int

3. KEY STAFF MEMBERS

Name: Yin Guangtian

Date and place of birth: Dec. 15, 1960. Xiangtan city, Hunan Province China

Nationality: Chinese

Field and institution of graduation: Forest Management, Department of Forestry, Central-South Forestry College, Zhuzhou city, Hunan, China

Field and institution of post-graduation: None.

Relevant work undertaken in the last tree years: Has been involving in rattan research since 1985, more than 25 research papers published. The relevant work undertaken in the last three years was the implementation of a project on introduction of superior rattan germplasm funded by the Chinese Government as the Deputy Project Leader.

Institution of employment: RITF/CAF and CINCEBAR, Guangzhou, China.

Name: Zeng Bingshan

Date and place of birth: Feb. 23, 1969. Jiangxi Province, China

Nationality: Chinese

Field and institution of graduation: Jiangxi Agricultural University, Nanchang, China

Field and institution of post-graduation: M. Sc. in Ecology of Bamboos, Nanjing Forestry University, Nanjing, China

Relevant work undertaken in the last three years: Took part in the SFA's key project "Studies on sustainable management technologies for rattan plantations (1995-1999)", and a project on introduction of superior rattan germplasm funded by the Chinese Government; and leader of two projects: 1) "Evaluation of ex situ and in situ conservation of rattan germplasm in China" funded by IPGRI; and 2) "Studies on technologies for ex situ conservation of rattan germplasm" funded by the Chinese Academy of Forestry.

Institution of employment: RITF/CAF, Guangzhou, China.

Name: Li Rongsheng

Date and place of Birth: March 7, 1975, Fujian Province, China

Nationality: Chinese

Field and institution of graduation: B. Sc. Agri. School of Forestry, Agricultural and Forestry University of Fujian (former Fujian Forestry College), Nanping, P. R. China

Field and institution of post-graduation: Master of Agriculture, School of forestry, Agricultural and Forestry University of Fujian (former Fujian Forestry College), Nanping, P. R. China.

PhD candidate, Silviculture (cultivation, management and ecology of rattan plantations), RITF/CAF.

Relevant work undertaken in the last three years: Attended two academic meetings on rattans: one symposium with the oral presentation entitled *Review of Rattan Introduction and Domestication in the World* in China, one international conference with the poster entitled *Review of Relationship between Rattan and Water* in Malaysia, one international course on field biology in Malaysia, and co-edited the book entitled *Bamboo and Rattan in the World*. Taking part in RITF's rattan research and development projects.

Institution of employment: RITF/CAF and CINCEBAR, Guangzhou, China.

Name: Yang Jinchang

Date and place of Birth: March 12, 1976, Fujian, China

Nationality: Chinese

Field and institution of graduation: B. Sc. Agri. School of Forestry, Agricultural and Forestry University of Fujian (former Fujian Forestry College), Nanping, Fujian, China

Field and institution of post-graduation: Master of Agriculture (forest management), School of Forestry, Agricultural and Forestry University (former Fujian Forestry College), Nanping, P. R. China.

PhD candidate, Silviculture (cultivation, management and ecology of rattan plantations), RITF/CAF.

Relevant work undertaken in the last three years: Graduated and obtained a master degree in 2001. In the last three years, taught in tree measurement, took part in two projects funded by the natural science fund of Fujian province, and co-edited the book *Bamboo and Rattan in the World*. In addition, as a member of the Property Evaluation Firm of Fujian Forestry, joined the work of evaluation and the basic investigation of forest resources.

Institution of employment: RITF/CAF, Guangzhou, China.

Name: Feng Changlin

Date and place of birth: April 19, 1970. Guangxi Province, China

Nationality: Chinese

Field and institution of graduation: Department of Forestry, College of Agriculture, Guangxi University, Nanning, China.

Relevant work undertaken in the last three years: Took part in the SFA's key project "Studies on sustainable management technologies for rattan plantations (1995-1999)", a project on introduction of superior rattan germplasm funded by the Chinese Government; and the IPGRI funded project "Evaluation of ex situ and in situ conservation of rattan germplasm in China" and the CAF funded project "Studies on technologies for ex situ conservation of rattan germplasm".

Institution of employment: ECTF/CAF, Guangxi, China.

Name: Chen Kangtai

Date and place of birth: April 17, 1950. Lianjiang County, Guangdong Province, China

Nationality: Chinese

Field and institution of graduation: College of Tropical Crops, China Tropical Agricultural University, Danzhou city, Hainan Province.

Field and institution of post-graduation: None.

Relevant work undertaken in the last tree years: Took part in the SFA's key project "Studies on sustainable management technologies for rattan plantations (1995-1999)" and the CAF funded project "Studies on technologies for ex situ conservation of rattan germplasm".

Institution of employment: NHSF, Xuwen County, Guangdong Province, China.

Name: Huang Liquan

Date and place of birth: Nov. 23, 1952. Longzhou County, Guangxi Province, China

Nationality: Chinese

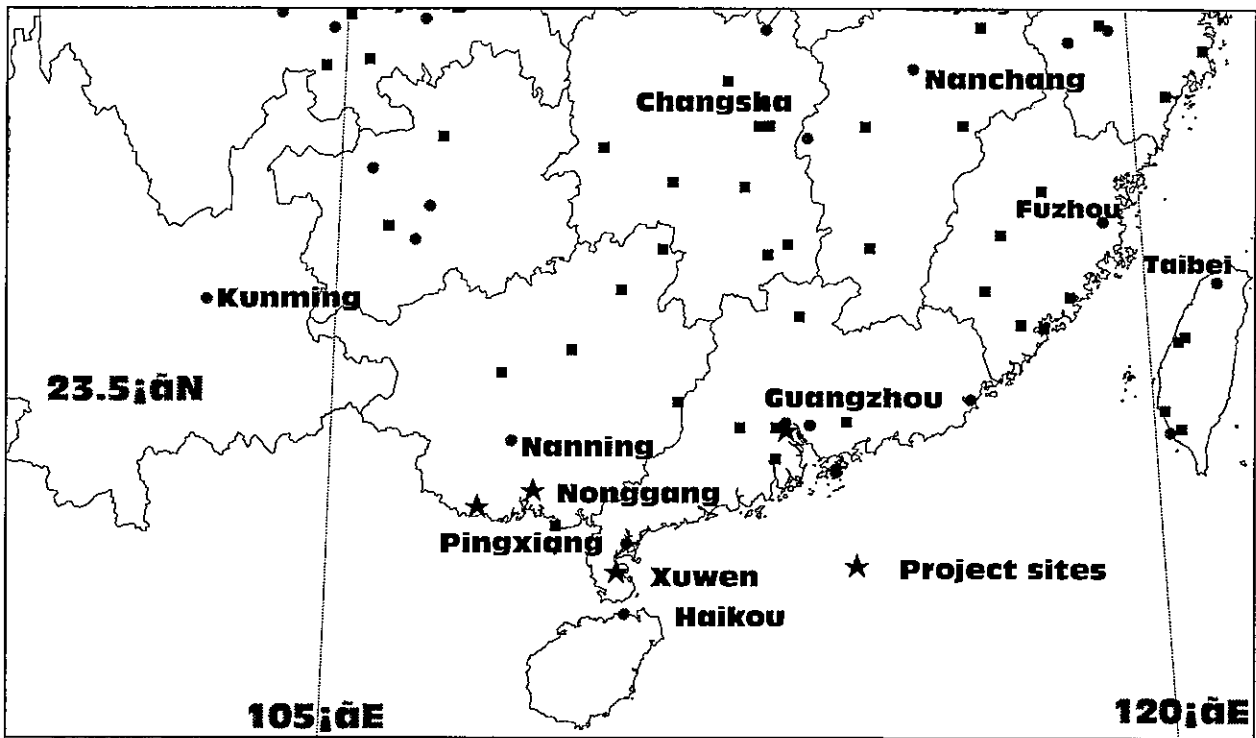
Field and institution of graduation: Guangxi Forestry College, Guilin city, Guangxi Province, Nanning, China.

Field and institution of post-graduation: None.

Relevant work undertaken in the last tree years: Took part in the IPGRI funded project "Evaluation of ex situ and in situ conservation of rattan germplasm in China" and the CAF funded project "Studies on technologies for ex situ conservation of rattan germplasm".

Institution of employment: NGR, Longzhou County, Guangxi Province, China.

ANNEX C – A MAP SHOWING THE PROJECT SITES



ANNEXES D - TRAINING COURSE SCHEDULES

Course One: A Training course on Rattan Tissue Culture and Nursery Technologies (Draft), RITF, Guangzhou, China

Sources of trainees/participants:

Forest farmers, tribe leaders, forestry extension technicians, officers in governments, engineers in local breeding and nursery stations, engineers and officers in state forest farms and so on.

Number of trainees/participants: Fifteen (15).

Course programs/subjects:

This training course will be held at the Research Institute of Tropical Forestry (RITF). The main subjects on nursery techniques are seed collection, seed treatment, seed storage, germination, sowing, transplanting, fertilizer, shading, watering, nursery disease and pest control and so on. For tissue culture techniques, the main subjects will be explant collection, disinfection, medium preparation, autoclaving, proliferation culture, subculture, rooting culture, acclimatization in vitro and outplanting.

Tentative timetable:

Day 1: Opening Ceremony; Lecture on technology and principles of tissue culture.

Day 2: Lecture on technologies and principles of rattan seed collection, processing and nursery.

Day 3-7: 1) Training on 1) medium preparation, explant collection, sterilization, inoculation, subculture, rooting culture, acclimatization and outplanting; and 2) seed collection, seed storage, germination, sowing, shading and other nursery operations.

Day 8: Final Evaluation and Closing Ceremony.

Course Two: A Training Course on Silviculture, Plantation Management and Cane/Shoot Harvesting and Processing. (Draft): RITF, Guangzhou, Guangdong Province and Pingxiang, Guangxi Province, China

Sources of trainees/participants: Forest farmers, tribe heads, technical extension engineers, officers in governments, engineers and officers in state forest farms, rattan related business people, technicians of small and medium-sized rattan processing and manufacturing industries.

Number of trainees/participants: Fifty-five (15).

Course programs/subjects:

The training of site preparation, application of base fertilizer, planting, canopy control, pest and disease control, management of forest will be conducted in the demonstration plots of NHSF, ECTF and NGR. Training of post cane harvest such as harvest method, standard of cane, seasoning of cane, bundling and packing of cane will be conducted at ECTF. The trainees will also learn enough technology about cane processing and get important information on rattan market through a visit to big rattan furniture factories and rattan market in Guangdong Province. This will help them a lot in cane marketing and sale and encourage them to plant rattans.

Tentative timetable:

Day 1: Registration, Opening Ceremony

Day 2-3: Lecture on technology and principles of rattan silviculture, plantation management and marketing.

Day 4: Visit to Nanhai Rattan Furniture and Handicraft Factory, Exhibition of Rattan Furniture and Handicrafts and Rattan Cane Market.

Day 5: Travel to Nanhua State Farm

Day 6: Visit to rattan shoots plantation, shoot harvest

Day 7: Visit to Pingxiang, Guangxi Province

Day 8-9: Planting, fertilization, canes harvest, cane seasoning and etc.

Day 10: Travel to Nongang National Reserve

Day 11: Visit to rattan plantation in limestone area

Day 12: Final Evaluation and Closing Ceremony

Course Three: A Training Course on Rattan Products Development, Trade and Marketing (Draft):

RITF, Guangzhou, China

Sources of trainees/participants: Technicians/engineers, products designers of small and medium-sized rattan processing and manufacturing industries, and rattan related business people.

Number of trainees/participants: Fifteen (15).

Course programs/subjects:

The training course will be conducted at RITF, Guangzhou. The trainees will be trained in design and manufacturing of rattan products and its trade and marketing. This will help them a lot in rattan products development and marketing.

Tentative timetable:

Day 1: Registration, Opening Ceremony

Day 2-3: In-house lectures.

Day 4-7: Hands on sessions, including visits to Nanhai Rattan Furniture and Handicraft Factory, Guangzhou and some marketing places in or around Guangzhou.

Day 8: Final Evaluation and Closing Ceremony.

ANNEX E – TERMS OF REFERENCES

Project Director

1. Manages and administers the implementation of the project activities and finance;
2. Develops strategies for the effective implementation of the project;
3. Identifies and coordinates the international and national consultants as needed for the project;
4. Coordinates with the local governments/institutions and communities with respect to the use of forestlands for the project purpose;
5. Presents project accomplishments during review, monitoring and evaluation of the project; and
6. Prepares and submits project reports to ITTO.

Assistant Project Director

Assists the Project Director in the all daily administrative and project management work as needed for the implementation of the project.

Qualification:

1. Be rich in experience in administrative and project management;
2. Be rich in experience in R&D, especially in training and transfer of technologies on rattans, and holds a doctorate degree in forestry or related subjects;
3. Be good at use of both spoken and written English; and
4. Chinese nationality.

Project key staff members

1. Carry out the project activities as study leaders or project sites managers;
2. Prepare the Year Plan of Operation for the project implementation; and
3. Prepare technical reports of the project.

Qualification:

1. Hold, at least, a position of associate research professor or senior engineer, or a Master degree in agriculture/forestry with at least 3 years or a B. Sc. in agriculture/ forestry with at least 5 years of experience in R&D on rattans; and
2. Be good at use of both spoken and written English

International Consultants (for consultancy services in training and publication)

1. Reviews of current R&D on rattans;

2. Assist the project staff members in the identification of needs for training, selection of trainees, and design and preparation of the training course texts;
3. Assist the key project staff members in the information search, design and publication of the proposed management manuals; and
4. Prepare reports at the end of each mission including findings and recommendations and submit them to the Project Director.

Qualification:

1. Hold at least a Master degree in agriculture/forestry;
2. Be good at communication in English, preferably both in English and Chinese; and
3. Be familiar with organization of training Courses and publication of technical reports/manuals.

Duration of services:

Three in total (Two months for training courses and one month for editing of the workshop/seminar proceedings).

National Experts (for participation in project implementation)

1. As the national counterparts of the international consultants;
2. Take part in the implementation of project activities, especially in identification of needs for training, selection of trainees, and design and preparation of the training Course texts;
3. As resource persons/trainers of the training courses; and
4. Provide assistance in formulation of the proposed technical manuals.

Qualification:

1. Hold at least a Master degree in agriculture/forestry and has rich experience in rattan research and development;
2. Be good at communication in English;
3. Be familiar with organization of training courses and publication of technical reports/manuals; and
4. Non-government employees.

Duration of services:

Four months of each calendar year.

ANNEX F REGIONAL WORKSHOP/SEMINAR ON RATTAN FOR ASIA

1. Workshop/seminar objectives

- To discuss issues in R&D of rattan sector as well as direction and strategies;
- To discover business and investment opportunities in the rattan sector in Asia;
- To explore, exchange and update scientific and technological findings and information;
- To provide a forum for researchers to present their projects and methodologies, state-of-the-art technologies, products and services;
- To identify new directions and strategies in R&D of rattans; and
- To provide a platform for key players in rattan industry and government officials to interact, network and build strategic partnerships.

2. Themes

- Assessments, management and conservation of natural rattan resources;
- Cultivation and plantation management;
- Processing and utilization;
- Biotechnology, biodiversity and the environment;
- Forest policies and economics;
- Application of information technology (IT) in rattan industry.

3. Participants (15, 5 from China and 10 from other Asian countries)

- Researchers/Academicians;
- Policy makers/government officials concerned;
- Forest managers/foresters;
- Non-Governmental Organisations;
- Private sectors (agroforestry/planters/rattan industries);
- Individuals involved in forest management, natural resources management, landuse planning and development, forest and forest products, forest certification and auditing and environmental policies.

4. Duration and schedules

This workshop/seminar will be held in the 2nd calendar year of the project and will last for one week.

ANNEXE G RESPONSES TO THE COMMENTS AND RECOMANDATIONS MADE BY THE 22RD EXPERTS PANEL FOR THE TECHNICAL APPRAISAL OF PROJECT PROPOSALS

Note: All the revised parts (additions and amendments) of the project proposal are highlighted in the form of bold type.

1. The similar outputs e.g. Outputs 1.1, 1.3 and 1.5, Outputs 1.2, 1.4 and 1.6, and Outputs 2.1 and 2.2 have been emerged into one output each such as Outputs 1.1, Output 1.2 and Output 1.3, respectively, and their associated activities had been reorganized under different outputs (see pages 14-15 of the revised proposal).
2. The proposed two study tours to Malaysia and Thailand (Activity 1.7 under the Output 1.1) had been justified (see page 10 of the revised project proposal).
3. The risks that may occur and hinder the success of the project had been elaborated in a more realistic manner and strategies to avoid/eliminate them provided (see page 13-14 of the revised project proposal).
4. The project strategy had been further developed according to the specific objective of the project (see pages 6-11 of the revised project proposal).
5. The economic, environmental and social aspects of the project had been further elaborated (see pages 11-13 of the revised project proposal).
6. The Logical Framework Matrix had been improved based on the revised/reorganized outputs and activities (see pages 15-18 of the revised project proposal).
7. The budget item 41 "Land Tax" had been removed from the project budget as the Executing Agency does not have to pay in cash. It becomes an in-kind contribution from the Chinese Government (see page 23).
8. The ITTO's Programme Support Costs had been re-calculated at the new standard of 6% (see page 21).

Moreover, two more project staff members who are all PhD candidates specializing in cultivation, management and ecology of rattan plantations are added in order to make project team more comprehensive in specialties.

ANNEXE H RESPONSES TO THE COMMENTS AND RECOMANDATIONS MADE BY THE 23RD EXPERTS PANEL FOR THE TECHNICAL APPRAISAL OF PROJECT PROPOSALS

Notes: The Panel's overall assessment was read carefully and amendments were made according to the specific recommendations. All the revised parts (additions and amendments) of the project proposal are highlighted in the form of bold type and underline.

Panel Recommendations	Actions taken	Explanations
1. Combine the two specific objectives into one and define output 1.1 in a concise way.	<p>a. The two specific objectives were combined in to one (on the cover page, and page 5 – Section 1.2 Specific objectives)</p> <p>b. Output 1.1 was further and concisely defined.</p>	Output 1.1 was defined in a concise way.
2. Further elaborate the technical and scientific, environmental and social aspects in relevant sections.	<p>a. Work related to rattan tissue culture was included in Section 2.5 (on page 11).</p> <p>b. Distributions of the project benefits to the main stakeholders were further elaborated (on pages 14-15).</p> <p>c. Information on the establishment of the irrigation system was provided (on page 13).</p>	
3. Further improve the indicators of the logical framework.	<p>a. Indicators of the objective and outputs were further detailed (on pages 20-21).</p> <p>b. Inputs by each activity provided as verifiable indicators in the previous version were removed.</p>	

<p>4. Reduce the project budget substantially. The budget for duty travel and for the purchase of project vehicles should be reduced by at least 50%.</p>	<p>a. Provisions allocated for study tours were lightened through reduction of duration of visits from one week to four days (on pages 10-11).</p> <p>b. Budget for duty travels (study tours, training courses and seminar) was cut down by reducing the numbers of participants and study tour members (on pages 10-11, and Annexes D&F).</p> <p>c. Budget for the purchase of project vehicles was reduced by 50%, by reducing the numbers of vehicles (on pages 23-24).</p> <p>(d. Budget for the publication and seminar room renting was reduced by 50% to reduce the total project budget.)</p>	<p>a. We think at least 4 days each are needed for the three study tours as about two days will be spent for entry and departure.</p> <p>b. The man-days of the three study tours were cut down from 112 to 36, hence the budget was reduced by ~60%. The number of participants of the three training courses and the seminar were reduced from 100 to 55 and 30 to 20, hence the budget was reduced by about 45%.</p> <p>c. Because of the high tax and fees (+100% for vehicles) paid for purchasing vehicles in China, we have to reduce the numbers of vehicles from four to two to meet the requested reduction of the budget.</p>
<p>5. Show clearly the inputs necessary for each activity in a tabular form and clarify the unit costs of the budget allocated for the digital projector.</p>	<p>a. Inputs necessary for each activity were further detailed and tabled (on pages 16-19, Section 4: Activities).</p> <p>b. The unit cost of the digital projector was clarified (on page 25).</p>	<p>In fact, inputs for each activity were provided in the previous two copies as the verifiable indicators in the Logical Framework Work- sheets.</p>

<p>6. Include an Annex, which shows the recommendations of the Panel and the respective modifications in a tabular form.</p>	<p>As this table shows.</p>	
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ANNEXE I EXPLANATORY NOTE OF THE REVISION 3 OF THE PROJECT PROPOSAL

The revision 3 of the project proposal was made according to the suggestions of reduction of the project travel costs made by the American delegation, and suggestions of correction of errors in calculating the project management cost in the revision 2 made by the ITTO Secretariat during the 31st Session of the ITTO Committee on Forest Industry. The following are the details of the revised parts:-

1. The total budget for project travels had been reduced from 174,440 USD to 150,640 USD by:
 - a. Reducing the number of participants of the proposed training workshop 2 from 25 to 15 people, the duration of this workshop can not be shortened as it is really tight scheduled.
 - b. Shortening the duration of the proposed training workshops 1 and 3 from 12 days to 8 days, this means that the workload of the workshop organizers (the project staff members)/trainers and of the participants is increased.
 - c. Reducing the number of the Chinese participants of the proposed regional seminar from 10 to 5 people, however the number of participants from other ITTO member countries has not been reduced, as we think this practice will be more benefiting other ITTO member countries.
2. The ITTO monitoring and evaluation cost was reset and reduced from 24,231 USD to 15,000 USD.
3. The reductions of project travel costs and ITTO monitoring and evaluation cost resulted in a total reduction of 33,558 USD of ITTO contribution to the project after recalculation.
4. Errors made in calculation of the Executing Agency management costs in reversion 2 were corrected according to the ITTO Manual for Project Formulation (2nd Edition). The recalculation resulted in an increase of 63,623 USD of the Chinese Government's contribution to the project.
5. Rebudgeting of the travel costs and recalculation of the Executing agency management coats resulted in an increase of 30,063 USD in the total budget of the project.