

INTERNATIONAL TROPICAL TIMBER ORGANIZATION

ITTO

PROJECT DOCUMENT

TITLE	THE STUDY AND DEMONSTRATION OF THE MANAGEMENT OF SECONDARY FORESTS IN TROPICAL REGIONS FOR THE PURPOSE OF ENHANCING ECONOMIC AND ECOLOGICAL BENEFITS
SERIAL NUMBER	PD 294/04 Rev.4 (F)
COMMITTEE	REFORESTATION AND FOREST MANAGEMENT
SUBMITTED BY	GOVERNMENT OF THE PEOPLE'S REPUBLIC OF CHINA
ORIGINAL LANGUAGE	ENGLISH

SUMMARY

This project proposal is the outcome of Pre-project PPD 30/01 Rev.1 (F): "The Study and Demonstration of the Management of Secondary Forests in Tropical Regions for the Purpose of Enhancing Economic and Ecological Benefits".

Pre-project PPD 30/01 Rev.1 (F) documented the decade-long neglect of Chinese tropical secondary forests (TSF), which was due to the perceived low economic and ecological value. This project is aimed at accelerating sustainable forest management by better management of the secondary tropical forests in China. Its specific objectives are: a) to establish demonstration forests in two selected provinces for the study and demonstration of management of TSF including planted trees and non-timber forest products and b) to train forestry staff and villagers in TSF rehabilitation techniques and to publish and disseminate the project results (Phase II).

The expected outputs of the project are:

- Fifty superior timber, rattan and medicinal plant species selected and trial planted;
- Nurseries established and operational;
- TSF management models and demonstration plots of plantation established on 4,263 Ha. of land area in two provinces;
- One hundred government staff and villagers trained in TSF rehabilitation techniques; and
- TSF management techniques published and disseminated (Phase II).

EXECUTING AGENCY GUANGDONG ACADEMY OF FORESTRY (GAF)

COOPERATING GOVERNMENTS ---

DURATION 48 MONTHS (PHASE I: 24 MONTHS PHASE II: 24 MONTHS)

APPROXIMATE STARTING DATE TO BE DETERMINED

BUDGET AND PROPOSED SOURCES OF FINANCE:	Source	Total Contribution (in US\$)	Phase I	Phase II
	ITTO	466,464	286,091	180,373
	Govt. of China	183,670	126,289	57,381
	TOTAL	650,134	412,380	237,754

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Abbreviations

In this paper,

Secondary tropical forests is abbreviated as “STF”.

Secondary forests management as “SFM”, and

Study and demonstration of the management of secondary tropical forests as “SDMSTF”

Part I CONTEXT

1. Origin⁽⁶⁾

In view of the serious problems of STF such as low forest productivity, losing of biodiversity, fragile ecosystem, poor stand quality, land degradation, and converting forest land to other purposes, the 30th ITTC convention had approved the pre-project proposal entitled “The SDMSTF in Tropical Regions for the Purpose of Enhancing Economic and Ecological Benefits”(PPD 30/01 Rev.1 (F)) submitted by Guangdong Academy of Forestry (GAF) in 2001. This proposal is a formal application based on the research achievements of the Pre-project.

The successful completion of pre-project has increased our understanding of secondary forests in tropical regions as well as its management status, and also provided the technical foundation and practical experiences for the designing of formal project.

—**The secondary forests in tropical regions are still being disturbed and destroyed, and the resources are diminishing constantly. It is necessary and urgent to carry out the management of STF.**

Based on the investigation and study results of the pre-project, STF occupy a large proportion of forest areas in the world, especially in developing countries. Due to the economic pressure on local residents in less developed regions, there are almost no any management on STF to improve its quality; on the contrary, STF are constantly damaged, resulting in less species diversity and woodland degradation. Even in relatively well-developed regions, where forests are better protected, necessary managements are also in lack, the economic and ecological benefits of STF have been at a very low level. It may take as long as 100 years or longer for such STF of low quality to succeed to a stable community naturally. An experiment of STF management conducted in 1950's in Guangdong, China showed that the forest had progressed to a higher succession stage for only 50 years, half time period of those non-managed stands. The management of STF can not only improve ecological environment, but also gain economic benefits. It is very important for wide rural areas. Just as Dr. Eva Muller said, “in many tropical countries, the policy makers and forestry circles have all neglected the problems on STF in many circumstances. There is a lack of information on the extent and current and potential value of STF resources and on appropriate management options. The lack of recognition leads to low political priority and a scarcity of financial resources and constrains the development of research, training and dissemination programs.” The preliminary results from the pre-project have substantiated these points of view.

—**The most serious destruction of STF is in rural areas, poverty is the fundamental cause.**

The total tropical forest area in China (excluding Taiwan) is about 6.0738 million ha, excepting 3,4000 ha and 600,000 ha typical natural forests (including primary forests) distributed respectively in Hainan and southern part of Yunnan, the rest is all STF. The area of STF is about 5.44 million ha, accounting for 48.3% of forestland and 50.6% of forest in the tropical region of China, mainly distributes in 124 counties or cities and part of 50 counties or cities in Guangdong, Hainan, Guangxi, Yunnan provinces, and some

parts of Fujian and Tibet. China is one of the largest STF distributed countries in the world. In rural areas, however, due to heavy population and low income, farmers almost completely rely on wood for living, which leads to the gradual reduction of natural tropical forests and tree species, increased forest pest and disease attacks, and frequent drought and flood disasters.

Because of economic reason, about 6% of STF is being harvested annually and the land is converting to timber plantation, fruit orchard or agriculture. The trees with more than 10cm in diameter at breast height are hardly left in the secondary forests. Creating income source for farmers, therefore, is a basic requirement for the protection and improvement of STF. There is a very good example to illustrate this point. There were 63 families and 302 villagers in Maoxiang village, Hainan. Their average personal income was less than 200 US \$ in 2001. Under the support of local government, they interplanted palm and vine in the STF in 2002. It is predicted that their annual income will raise to 900 US \$ six years later. There are some more examples in Zhaoqing of Guangdong. They planted medical and edible plants under the secondary forests to gain extra income, and yielded 350 US \$ per ha annually in well management stand. These show that where the management of STF has been carried out, there the secondary forests can be protected and improved.

It is of great significance and also urgent to carry out a program of SDMSTF for purpose of enhancing economic and ecological benefits, to help people, especially in the countryside, to eliminate poverty and improving their living standard in such a developing country like China with most people living in the rural area and still being in poverty and degraded environment,

—It is very important that the planning and design of a STF management should be in accordance with local situation, economic condition, and methods that are practical and operational easily. The model of community-based management will be an ideal option.

The management experience of STF in the world was summarized in the pre-project. It pointed out that the community-based management was an ideal model. The major part of this model generally includes making an overall plan for STF management, hill closures for the stands with rich species and good growth, avoidance of human disturbance and let the forests develop naturally. In places where secondary forests are seriously damaged while the conditions of transportation are poor, the tasks are to increase the biodiversity and promote the development of stands by reintroducing indigenous species; In places where there is easy transportation but secondary forests are often seriously damaged, the management should first assign a certain area of land (the size will depends on the cultivation ability of local residents and their basic economic requirement) to introduce indigenous species, and then plant the non-timber plant species which is the part that will generate economic benefit for the growers, and hence the big proportion of secondary forests can be undisturbed and protected. The project design is just based on these ideas.

2. Sectorial Policies

This project is in compliance with the following policies of People's Republic of China:

- Constitution of People's Republic of China: In the sections of Articles 10 and 26, "rational utilization of land resources", "environmental protection" and "the government encourages tree planting and afforestation and forest protection".
- The Forestry Law of People's Republic of China:
 - Article 5: The development of forestry should be based on silviculture, and adhere to the principles of universality of forest protection, intensification of afforestation, combination of harvesting with planting, and sustainable utilization.
 - Article 8(1): Forest harvesting should be by quota limited, tree planting, hill closure for natural afforestation, and expanding the forest coverage should be encouraged.
- Agricultural Technology Extension Law of People's Republic of China
 - Article 5. The state encourages and supports scientific and technological professionals to develop and extend advanced agricultural technologies, encourages and supports farmers and agriculture managers to apply advanced agricultural technologies.
- Forestry Action Plan, China Agenda 21(1995)
 - Article 3.9 Problems existed in forestry resources and maintenance.
 - (b) Big area of STF is of unreasonable structure, low yield per unit area and poor conditions in of operation, development and utilization;
 - (f) Natural forests are under repeated disruption, in lack of management and low in productivity.
 - 3.17 Strengthen the tending and reformation of STF, abide by the purposes of high yield, high quality and high efficiency, gradually adjust the structure of tree species, intensify management and upgrade the quality.
- The Natural Forest Protection Program of People's Republic of China (1998):
 - STF that account for 57% of the total natural forest area in China should put under protection and in rational management, so that they can play their roles in the construction of ecological environment.
- The 44th order of Guangdong Provincial Government (2000)
 - Plant trees for afforestation and promote the benefits of forests.
- Decision of Speeding up Forestry Development, State Council, P.R.China (2003)
 - Article2.6 Forestry development should insist on the principles of integration of ecological benefit, economic benefit and social benefit with ecological benefit in priority, strictly protection, actively development, scientifically management and sustainable utilization.
 - Article2.7 Manage current forests properly, expand new planting, returning the farming to forest, optimize forestry structure, increase forest resources, enhance the overall function of forest ecosystem, increase the effective supply of forest products and raise the income of farmers and foresters.

3. Programs and Operational Activities

3.1 Relationship with relevant policies of Chinese Government

The project objectives and activities are aimed at enhancing the ecological and economic benefits of secondary forests and improve the management level of STF in tropical regions. By protecting and promoting STF management, increasing the biodiversity, raising the income of community residents and guaranteeing their basic living requirement, forestry development will move on a sustainable way. The project is in compliance with following policies of Chinese government:

- Forestry Action Plan, China Agenda 21——Strengthen the tending and reformation of STF, abide by the purposes of high yield, high quality and high efficiency, gradually adjust the structure of tree species, intensify management and upgrade the quality.
- The Natural Forest Protection Program of People’s Republic of China—— STF that account for 57% of the total natural forest area in China should put under protection and in rational management, so that they can play their roles in the construction of ecological environment.
- 《Decision of Speeding up Forestry Development, State Council, P.R.China》 —— Forestry development should insist on the principles of integration of ecological benefit, economic benefit and social benefit with ecological benefit in priority, strictly protection, actively development, scientifically management and sustainable utilization. Manage current forests properly, expand new planting, returning the farming to forest, optimize forestry structure, increase forest resources, enhance the overall function of forest ecosystem, increase the effective supply of forest products and raise the income of farmers and foresters.
- 《Agricultural Technology Extension Law of People’s Republic of China》 —— The state encourages and supports scientific and technological professionals to develop and extend advanced agricultural technologies, encourages and supports farmers and agriculture managers to apply advanced agricultural technologies.

3.2 Relationship with other projects

- The Pre-project PPD 30/01 Rev.1 (F) initiated by ITTO in 2001 is the foundation of this project, and its research results contribute to the design of this project.
- ITTO has supported a demonstration project in Hainan “Realization of Sustainable Utilization of Forests Through Classified Management” (ITTO PD 14/92 Rev.2(F)), but SF were not involved in the project;
- ITTO supported a project entitled “Realization of sustainable utilization through classified management” in Hainan, China, which did not involve the integrated benefits of ecological and economic of SF;
- ITTO supported a project entitled “Study of the Vegetation in Hainan Island with GPS and GIS”, which did not include the investigation and management of SF;
- ITTO supported a project of developing rubber timber forest in Hainan, which had no direct relation with SF;
- ITTO supported an afforestation project in Yunnan province, and the government of Netherlands supported a community participatory forestry project in the same province. These projects did not target at the problem of STF management either.

Part II THE PROJECT

1. Project Objectives

1.1 Development Objective

To accelerate SFM by better managed STF in China

With the implementation of project, STF in the demonstration districts will be well protected, forest quality will be promoted, biodiversity increased, and ecological and economic benefits enhanced. The participated residents will obtain higher incomes and employment rate will be raised. The environmental condition in the regions will be improved. By demonstration of the study and dissemination of the management techniques of STF, the awareness and interest of the public on STF management will be aroused, and the government will be attracted to pay more attention on the prescription of policies and laws regarding the sustainable management of STF..

1.2 Specific Objectives

Specific Objective 1. Establishing the districts for SDMSTF

(i) Selection and breeding of good planting species

It is planned to select and breed about 50 species. Among them, 35 regional native hardwood species, 5 exotic tree species like *Dipterocarpea*, 2 rattan species, 2-3 medicinal species, 2-3 bamboo (shoot) species for edible purpose, and 5 high-yield resin families of Masson Pine.

The major goal of planting rattan species is to obtain rattan products. In general, the products can be harvested constantly from the 5th to 8th year after the planting and more than \$350 per ha could be made each year. The medical plant is another source of income. Farmers can collect medicinal materials without disturbing the forest. Bamboo shoot is a good food and can be sold on the market form the 3rd year after planting. Masson pine is not a typical tropical species but it grows well in the tropical regions of South China. It is a good pioneer species in the seriously disturbed forestland, and can produce resin to supply the market 8 years later after planting.

(ii) Establishing the demonstration districts

Two demonstration districts will be established⁶⁾.

- Xinhui demonstration district (in Guangdong)

It is an integrated demonstration district, the principle part of the project. There are 3031 ha of natural broadleaf STF in this district, accounting for 72.2% of the total area. The secondary forests are composed of mainly broadleaf trees. The big portion of STF is formed through 20~30 years' natural succession after logging. Its timber production potential is fairly low because trees with DBH greater than 3 cm and height over 5m account for only 31% and 36% respectively of the stand. The maximum tree height is 10~14 m, maximum DBH is 13~21 cm. In order to restore the composition of original forests and the superior germplasm resources and accelerate the vegetation formation on bare

land, we plant to reintroduce the disappeared or degraded species at our best in this project. Meantime, we will also introduce a few precious exotic species that have been tested adaptable in regional experiments. The purpose of planting of non-timber species is to provide the community residents as much economic output as possible on the premise of that the STF is not disturbed.

The demonstration plots will be included:

- a) Natural restoration of forest ecosystem of STF

Establish the plots for demonstrating natural restoration of forest ecosystem in the secondary forests with rich species and less disturbance by hill closure. The process of development and succession of STF in natural restoration without human disturbance will be observed in long term, and the occurrence and developing effects of natural ecological system will be studied.

- b) Interplant of non-timber product species

Plant non-timber forest product species to increase income and create employment opportunity for local residents; improve the growth and development of STF through management.

- c) Rehabilitation and restoration of degraded ecosystem of STF

By simulating the species composition of original forest, reintroduce indigenous species into degraded STF to restore and rebuild the ecological system. At the same time, a few of exotic precious species such as *Dipterocarpa* will be introduced to enrich the species.

- Tongzha demonstration district specially for interplanting rattan(in Hainan)

It is an assisting demonstration district of the project with an area of 67 ha. The forest stands are mainly composed of natural secondary broad-leaf species. The densities of stands are among 0.4 to 0.5, and the stands are poor in qualities. The vegetation are mainly included perennial herb and little bush, such as *Melastoma candidum*, *Melastoma sanguineum*, etc.. Main arbor species were *Cyathea spinulosa*, *Quercus fabri*, *Liquidambar formosana* Hance, *Erythrophleum fordii*, *Syzygium cuminii*(L.) Skeels. The storage capacity of each hectare is less than 4 m³; the growing amount is under 0.2 m³ each year. Where the secondary forest stands are the most of representative in Hainan.

It will be established specially for interplanting rattan to enhance economic benefits of STF, meanwhile to promote the development of STF through cultivation practices.

Tongzha demonstration district is the assisting part of the project. The major consideration is that there are traditional rattan management experience, geographical and market advantages for rattan planting in Hainan. The major purpose of this district is to increase income for local residents by harvesting the rattan products instead of cutting forest, thus to protect the STF. In addition, rattan interplanting and corresponding silvicultural practices can improve the forest soil condition and promote the growth of secondary forests subsequently.

The establishment of the Xinhui demonstration district as the core demonstration is based on the overall consideration of general problems such as its STF type, landownership, living standard of the residents and reliability on the forests, so as to facilitate the maintaining and extending of the project upon its completion. The establishment of Hainan special demonstration in Tongzha is chiefly for its advantage in geographical location

Specific Objective 2. Training and extension

- (i) Conduct technical training for two sessions. 30 forestry officers and 70 community backbone technicians from different rural areas will be trained.

By utilizing the study results and experience gained from the project, we will hold two sessions of training class within 9-3 month before the project completion, to train the forestry officers and technicians from regions STF distributing in Guangdong and Hainan for technology extension. At the same time, a network of technological extension by governmental related agencies will be established in Guangdong. By summarizing the experience, the training and extension will be expanded to other tropical areas in China.

- (ii) Compile and publish the book < STF Management Techniques > which will provide the people in the fields of science and technology, education, and management the theory and practical technology of STF management.

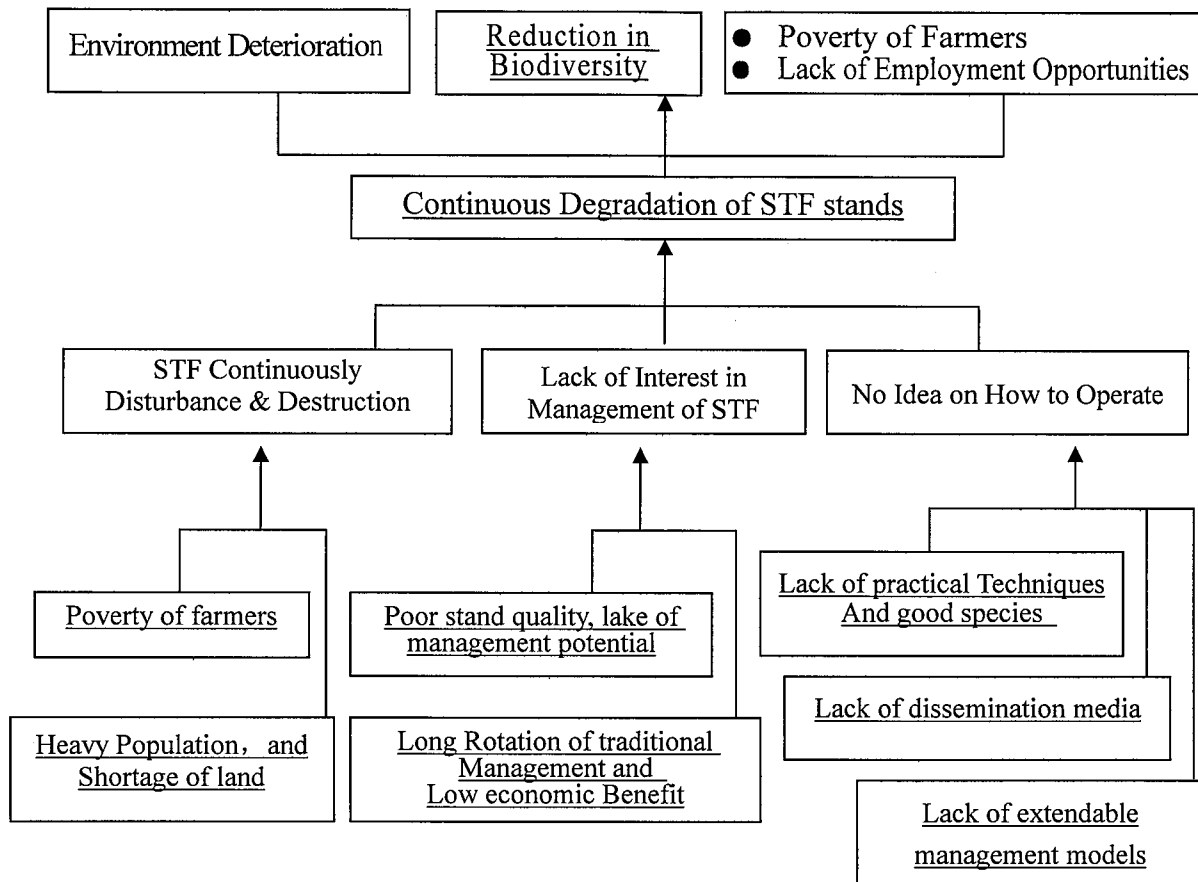
The book will expound the theory of management of STF, the guideline of ITTO to STF management, the status of STF and its management in the world, as well as the results and experiences from the study and demonstration of this project. The emphasis will be put on the summarization of the study and demonstration of this project. The readers are targeted to forestry education, research and management institutions and practical operation personnel. The objective of the book is to disseminate the knowledge, and extend the experience of STF management.

2. Justification

2.1 Problems to be addressed

At present, there are 5.44 million ha of STF in China, accounting for 50.6% of total tropical forest area. Due to population explosion and poor economic development, the SFT have been under disruption for a long time. The most part has been degraded with simple species composition, decreased in germplasm resource, reduced biodiversity and low economic benefit. These are prominent questions. Especially in the rural area where STF distribute widest and also is disrupted most, people are still chiefly relying on cutting trees to make money for living, to cover the costs of food, education and medical care, or/and to convert the forestland to other use like cash crops. STF are constantly suffering from artificial damage. On the other hand, because of the lack of practical management techniques, good plant species and management demonstration models, they do not know how to manage STF and what benefits they could gain from the management.

Problem Tree



Therefore, the key problem that the project has to solve is to increase the ecological and economic benefits of STF by scientific knowledge and reasonable management, establishing of demonstration model, technology training and dissemination, make farmers not rely on harvesting wood for their survival. It will improve the management of STF by reintroducing indigenous tree species into degraded forests to increase biodiversity and speed up the restoration of forest ecology system. It is not a general management activity,

2.2 Intended situation after Project completion

The following goals will be realized after project completion:

- Xinhui Guangdong demonstration district
 - (a) The present STF are protected and improved with richer and more diversified species composition. The forest management steps on the track of sustainable development.
 - (b) The environment is improved. The effects of forestry in promoting agriculture and improving residential environment begin to appear.
 - (c) The income of the residents in the district per capita will rise steadily at a rate of 46% upon the completion to arrive at 550 US \$ from current 376 US \$, more

job opportunities are generated.

- Tongzha rattan interplanting special demonstration district
The present STF are protected and promoted. The output of rattan per ha reaches \$350 from the 6th year after interplanting.
- 30 forestry officers and 30 community-based technicians from rural areas are trained in Guangdong and Hainan,.
- The book of “STF MANAGEMENT TECHNIQUES” is Compiled and published.
- The consciousness and interest of the public for managing STF are aroused, and governments are attracted to pay more attention on the management of STF

2.3 Project Strategy ⁽⁷⁾

There are two reasons for continuous destruction of STF: (1) felling trees is the major means for farmers to survive since they lack income sources; and (2) forest management is in long-rotation, and t currently here is shortage of management techniques and methods, and good species and seedlings that can generate output in a relatively short term. The basic idea for the project design is the integration of ecological and economic benefits with the increase of economic benefit as a condition, and the protection and improvement of STF. Only when the farmers in rural areas have solved their basic survival needs, can they pay more attention on forest protection and ecology. The integration of economic and ecological benefits can just make the protection and promotion of STF to develop on a sustainable track.

There is a basic conclusion from the pre-project that the most important thing to do for protecting STF from human disturbance and destruction is to create income sources to meet their basic living requirement. Therefore, we follow this principle in the project strategy. By introducing non-timber species into some parts of the STF lands to create economic sources for farmer at relative short time periods, to realize the objective of protecting STF and enhancing ecological and economic benefits. After the project completion, the stakeholders in the demonstration districts will get economic benefits from non-timber forest products, and STF will be improved with richer biodiversity and better ecological benefits.

The project strategy is in accordance with ITTO guideline, the principles and recommended actions.

a) **The project will be undertaken on the model of community-based management.** Community forestry management can make opportunities for every member of the community use their traditional knowledge and experience in participating the management, and share the benefits through contributing certain labor or cost. Moreover, the project will prescribe a community regulation, to list the items that should be followed by all the participants. On one hand, to develop the knowledge and roles of community residents in an organized manner to make every member has opportunity to learn from each other, on the other hand, benefit sharing and regulation prescription motivate their interest and awareness in participation. We are convinced that the rational management of STF will make the forests under fully protection and promotion. Community forestry management with extensive participants will realize the enhanced ecological benefit of STF. This follows the objective C: local residents share costs and benefits; and in accordance with principle 8: participation of stakeholders; principle 9: social equality; and principle 10: traditional knowledge.

b) **On the project design, the species with good ecological and economic benefits will be introduced into STF, which is in accordance with principle 14: suitable management; principle 15: social economic goal.**

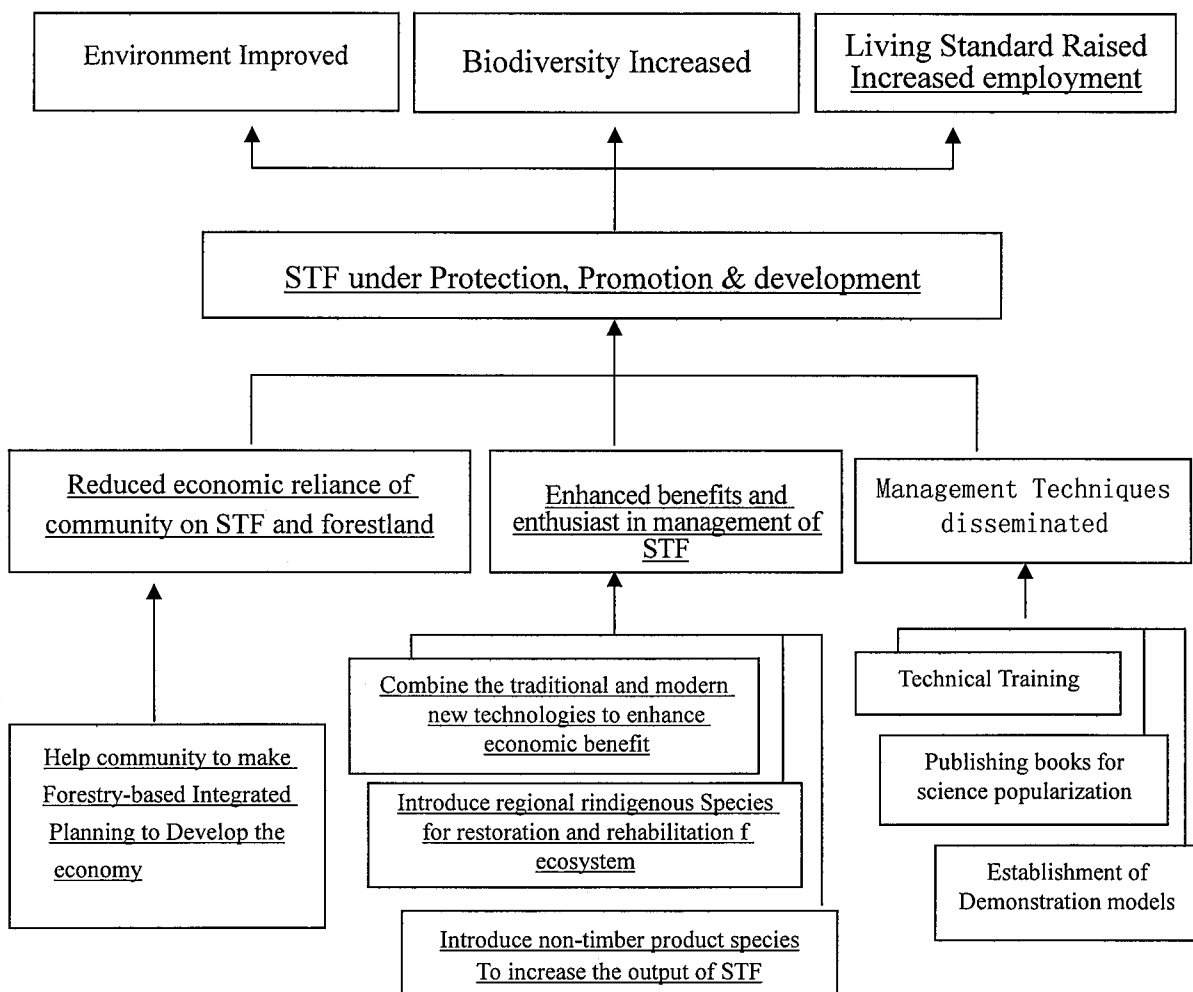
c) **On the methodology, according to “the objective H: applying suitable ecology and**

silviculture knowledge and effective management practice”, apply methods such as indigenous species reintroduction, natural and simple management techniques.

d) Follow the recommended action 24: create opportunities for local residents to gain economic benefits; recommended action 102: make project information available for all stakeholders.

The project includes objectives of technical training and extension. There will be 2 outputs: a) 2 training sessions and 100 trainees; b) the book of <STF MANAGEMENT TECHNIQUES> will be compiled and published. The technical achievements of the project will be extended to other regions to generate widespread influence after the project is completed.

Objective Tree



2.4 Target beneficiaries

The project will benefit universally, including:

- Landowners are direct beneficiaries;

- The community residents are the beneficiaries of the project. The improved environment, however, will benefit society;
- Chinese Governments, educational and research agencies and institutions, especially the forestry administrations in the southern provinces (Guangdong, Guangxi, Hainan and Yunnan);
- Relevant agencies abroad, including ITTO, FAO, IUFRO, IPF, TIFF and IFF;
- Countries with STF;
- The expanding group of experts, managers and forestry workers who engage in the study of tropical forests.

2.5 Technical and scientific aspects

The project will combine technical innovation and technical assembling. The research achievements made in the pre-project are important technical foundations of this project design. During the establishment of SDMSTF, the project will assemble the research achievement resources from GAF, CAF, and other forestry institutions, and utilize the STF management techniques and experiences from other tropical regions in the world. The necessary new studies include:

- (a) Selection and breeding of introduced species, including selection of varieties adaptable to different environmental and spacing conditions, and production of high quality seedlings.
- (b) The techniques of economic and practical usable species introduction and management.
- (c) The optimized management schemes for STF restoration and improvement under different degrees of disturbance.

The training and extension stated in specific objective 2 include two training sessions and the book of <STF MANAGEMENT TECHNIQUES>, which will provide technical support to the extension of project.

2.6 Economic aspects

Enhancing the economic benefit of STF management is an important guideline for the project. Only when the economic benefit of STF management is enhanced to meet the economic demands of farmer's survival in wide rural areas, can the goal of sustainable management of STF be reached. The economic outputs directly from the project in early stage include seedling supply and non-timber products. More social and economic benefits will be gained when forest is put under protection and ecological environment is improved.

On the design with regards to economy, two aspects are considered, ie. short term economic benefits and long-term economic benefits. For the former, short-rotating, market-potential and regional advantageous bamboo shoot as well as medicinal and food plants will be introduced into STF. It is predicted that the income of residents in Xinhui demonstration will rise from currently \$376 to \$550 in 2004, surpassing the annual per capita income (\$ 532) of farmers in Guangdong

province. The income from rattan product in Tongzha demonstration district will reach \$350 per ha annually 6 years later after planting. For the latter, the reintroduction of indigenous species will bring better ecological and economic benefits to the districts so as to maximize the benefits of STF management.

For the cost accounting, it is not appropriate to calculate the benefits by input and output ratio in this demonstration project because of the non-production cost will occupy a very big part. The cost is going to support and drive the STF management activities of community. Nevertheless, all input will be returned within three years after project completion, and subsequent output will be maintained in duration..

The income generated from the project will be allocated to the local residents to improve their living standard for repaying their participation. There still will be some research work to do after the project completion, such as observation of succession process of the STF, evaluation of management methods and the effectiveness of economic and ecological benefits, as well as the adaptability verification introduced species, etc.

2.7 Environmental aspects

The objective of project is to protect and improve secondary forests. When the project is completed, the environment in the demonstration districts will be greatly improved, the forest ecosystem will be formed more quickly, the residential environmental quality will be raised and natural disaster will inevitably reduce.

2.8 Social aspects

The enhancement of forest ecological benefit will be helpful for improvement of living condition, and the better economy will benefit to the local residents. The implementation of project will expand its influence to the society and arouse the interest of the public in the protection and management of STF. It is significant in contribution to solve key problems of rural area, agriculture and farmers in current China, and has active effect on solution of farmer's poverty, employment difficulty and stability of the society.

Xinhui demonstration district is located at Goudu, Yamen township, Xinhui city, Guangdong province, east longitude 112°52'30", north latitude 22°5'00", 150 km away from Guangzhou, the capital of Guangdong. It covers an area of 4196ha with 320 residents. People's per capita income in 2003 was 376 US \$/per year. The major incomes are from forest wood, fruits and agricultural crops. There is 2918 ha STF, 69.5% of land area; 874 ha plantation forest, 20.8% of the total; 145 ha agricultural land, accounting for 3.5%.

Tongzha special rattan interplanting demonstration district is located at hinterland of Wuzhi Mmountain, the central south of Hainan, north latitude 18° 50' , east longitude 109° 30' , 200 km away from Haikou, the capital city of Hainan province, 80 km away from Sanya to the south. Residents gain were fewer less than 230 us \$ every year in 2004.

2.9 Risks

There are several risks listed in below, maximum efforts will be made to minimize the risks.

- (i) Some introduced species in STF may not grow well on the sites with less sunlight. GAF has begun to carry out a pilot trial on tree-adaptability to different spacing and silvicultural practices. We are trying to get enough data for species selection before the project starts, thus to reduce the risk.
- (ii) The demonstration districts are usually the places where community residents conduct activities frequently, which may cause unexpected artificial damages including forest fire and animal browsing. The project team will closely coordinate with the local governments and community organizations to educate and remind of local residents. A full-time forest guard will also be hired.
- (iii) Damages of natural disaster. We will keep close contact with related forecast departments to take prevention measures.
- (iv) Change of landownership. GAF will sign contracts with the landowners to avoid the risk.

3. Outputs

3.1 Specific objective 1. Establish the SDMSTF districts

Output 1.1: Select and collect 50 good species to be introduced

Output 1.2: Set up 3 ha nurseries and put them in operation⁰⁹

Output 1.3: Establish and operate the SDMSTF⁰⁹ districts

3.2 Specific objective 2. Training and extension

Output 2.1: Hold 2 training sessions, and train 100 technical staff.

To extend the study results and experience obtained from this project, 100 forestry technical personnel will receive the technical training on STF management. The trainees are from governmental forestry technology extension organizations of major STF-distributed cities and counties in Guangdong and Hainan. A more than 15-person team of volunteers will be established to provide technical support and service for extension purpose.

Output 2.2. Compile and publish the book of <STF MANAGEMENT TECHNIQUES>

The book will be printed for 1,000 copies. In addition to submission to ITTO as one of the project output, the rest, for popularizing and extension purpose, will be disseminated freely to State Forestry bureau, the forestry administrations, educational and scientific institutions of tropical provinces and cities, the community management and technical personnel.

4 Activities⁰⁰

4.1 Output 1.1: Selection and collection of 50 good species to be introduced
Activity 1.1.1: Investigation and collection of species
Activity 1.1.2: Establishment of 2ha gene pool
4.2 Output 1.2: Establishment and operation of 3 ha nurseries
Activity 1.2.1: Establishment of 3ha nurseries
Activity 1.2.2: Production of 285,000 seedlings
4.3 Output 1.3: Establishment of the SDMSTF districts
Activity 1.3.1: Background information collection of the demonstration districts
Activity 1.3.2: Infrastructure construction of the demonstration items
Activity 1.3.3: Planting of the introduced species
Activity 1.3.4: Tending and management of the introduced species
Activity 1.3.5: Observation to the fixed sample plots
4.4 Output 2.1: 2 training sessions, and 100 trainees
Activity 2.1.1: <u>textbook writing</u>
Activity 2.1.2: <u>Training 2 sessions</u>
4.5 Output 2.2. <u>The book of <STF MANAGEMENT TECHNIQUES></u>
Activity 2.2.1: <u>Information collection and symposium</u>
Activity 2.2.2: <u>Writing and compiling</u>
Activity 2.2.3: <u>Publication</u>

(Underlined part in phase 2.)

5 SUMMARY TABLE OF THE LOGICAL FRAMEWORK

PROJECT ELEMENTS	INDICATORS	MEANS OF VERIFY	ASSUMPTIONS
DEVELOPMENT OBJECTIVE			
<p>To accelerate SFM by better management of STF in China</p> <p>With the implementation of the project, STF in the demonstration districts will be well protected, forest quality will be promoted, biodiversity increased, and ecological and economic benefits enhanced. The residents those participated will obtain higher incomes. Employment rate will be increased, and environment improved in the regions. Through demonstration and technical extension of the management on STF, the awareness and interest of the public for managing STF will be aroused, and the government will be attracted to pay more attention on prescribing the policies and the laws regarding the sustainable management of STF.</p>	<ul style="list-style-type: none"> ● The STF is protected and improved without human disturbance in the demonstration districts; ● Biodiversity increase; ● The residents acquire stable income, more job opportunities; ● The consciousness and interest of the public for managing STF are aroused; ● A series of management techniques is extended. 	<ul style="list-style-type: none"> ● Submit to Relative reports ITTO ● Financial reports for the demonstration districts; ● ITTO officers examination on spot; ● Observation Reports of fixed sample plots; ● The investigation report on community realization of STF. 	<ul style="list-style-type: none"> ● Support of state policy to forest resources protection ● Management model suitable to the local be chosen
SPECIFIC OBJECTIVE			
1. Establishment of the SDMSTF districts	Two demonstration districts established. One is in Xinhui, Gudongdong, including three items 1). Natural restoration of forest ecosystem; 2). rehabilitation and restoration of degraded a STF; and 3) Interplanting non-timber product species in the degraded SFT. The other is in Tongzha, Hainan, which is specially for rattan interplanting under STF.	<ul style="list-style-type: none"> ● The project design, diagram etc. ● Measurement on spot 	Support of local government and residents
2 Training and extension	<ul style="list-style-type: none"> ● Two training sessions held, and 100 foresters trained ● <STF MANAGEMENT TECHNIQUES> published 	<ul style="list-style-type: none"> ● Training records ● Publication 	Practically useful training materials and experienced teachers
Output 1.1: Select and collect 50 good species to be introduced	50 introduced species selected and collected. Among them: 35 native species, 5 exotic species, 2 rattan , 2~3 medicinal plants , 2~3 bamboo, 5 high yield resin pine families. Will be completed in tree months after the project initiate	<ul style="list-style-type: none"> ● Investigation report ● On-spot inspection 	Assistance with local technicians familiar with native species
Output 1.2: 3 ha of nurseries constructed and operated	Two nurseries total 3ha are built. Among them: Xinhui 2 ha, and Tongzha 1 ha; 285,000 seedlings produced.	On-spot inspection	No damages by human or animals
Output 1.3: Establishment of the SDMSTF districts	The Following demonstrations are established: a) Natural restoration of forest ecosystem with an area of 1000 ha; b)The rehabilitation and restoration of degraded STF, area of 67 ha 35f native hardwoods, 5 Dipterocarpaceae introduced; c)Interplanting non-timber product species in the degraded SFT, 67 ha, 2 rattans, 2~3 medicinal plants, 2~3 bamboos, 5 high yield resin pine families introduced; and d) Hainan special demonstration for rattan interplanting under STF., 67 ha. 2 rattans introduced.	<ul style="list-style-type: none"> ● On-spot inspection ● The operating map ● Special Technical reports 	<ul style="list-style-type: none"> ● Species selection ● Natural disaster

Output 2.1: 2 training sessions, and 100 trainees.	<ul style="list-style-type: none"> ● The training textbook written; ● 30 forestry officers and 70 community technicians trained. 	<ul style="list-style-type: none"> ● Textbook ● Training records 	Expected project achievements taken
Output 2.2. <STF MANAGEMENT TECHNIQUES>	Complied and published, 200, 000 words, and 1, 000 copies.	Publications	Support of publishing house
Activity 1.1.1: Investigation and collection of species	3 tree breeders and 6 workers in 3 groups conduct the investigation, selection and collection of species. 1 day training before working.	Reports and germplasm materials collected.	
Activity 1.1.2: Establishment of 2ha gene pool	1 technician in charge of design and construction. Sub-contraction by bidding, completion within 3 months.	<ul style="list-style-type: none"> ● On-Spot check ● Subcontract 	
Activity 1.2.1: Construction of 3ha nurseries	1 technician in charge of design and construction. Sub-contraction by bidding, completion within 5 months..	<ul style="list-style-type: none"> ● On-Spot check ● Subcontract 	
Activity 1.2.2: Production of 285,000 seedlings	1 technician in charge of technical supervision, completion within 12th month.	Seedlings production records	
Activity 1.3.1: Background information collection of the Demonstration districts	2 experts in each of the fields of botanic, zoological and insert, and 6 in plant genetics and cultivation conduct investigation for 15day, completion in the first quarter after project carry out, samples identified by authorities.	Reports and test records	
Activity 1.3.2: Infrastructures of the demonstration items	Plot marks established, 3 fixed sample plots for each item, total of 16. Completion within 5 months.	<ul style="list-style-type: none"> ● Sample plots diagram ● On-Spot check 	
Activity 1.3.3: Planting of the introduced species	Plant the seedlings in output1.3 b), c), d), total of 285000. 1 specialist, for each demonstration item, in charge of design and technical supervision for 10 days; 2 technicians in charge of planting for 60 days Completion within 12th months.	<ul style="list-style-type: none"> ● On-Spot check ● Subcontract 	
Activity 1.3.4: Tending and management of the introduced species.	Tending & fertilizing for output1.3 c), 6 months after planting. 2 years tending for output b) and d). 2 supervisors hired for 30days. Sub-contraction by bidding.	<ul style="list-style-type: none"> ● Subcontract ● Records 	
Activity 1.3.5: Observation of the fixed sample plots	Observation once every 6 months, including species, growth development and environment factors.	Observation records	
Activity 2.1.1: Textbook writing	100,000 words training textbook, 1,000 copies, completion by the end of the third year.	Textbook	
Activity 2.1.2: Training	3 project members, 2 hired consultants present management practices and experiences, management technical methods. 2 days each session, completion in the 1st half of the final year.	Training records	
Activity 2.2.1: Information collection and seminars	Information collection and outline writing before project completion, experienced experts invited to seminar.	Literatures	
Activity 2.2.2: Writing and compiling	6 months within after project completion	Textbook	
Activity 2.2.3: Publication	200,000 words and 1000 copies, 12 months within after project completion.	Publication	

6. WORK PLAN

OUTPUTS/ACTIVITIES	SCHEDULE (in months)															
	1-3	4-6	7-9	10-12	13-15	16-18	19-21	21-24	25-27	28-30	31-33	34-36	37-39	40-42	43-45	46-48
Specific objective 1. Establishments of the SDMSTF districts																
Output 1.1: Select and collect good species to be introduced																
1.1.1: Investigation and collection of species	■	■														
1.1.2: Establishment of 2ha gene pool		■	■													
Output 1.2: 3 ha of nurseries constructed and operated																
1.2.1: Construction of 3ha nurseries		■	■													
1.2.2: Production of 285,000 seedlings			■	■	■											
Output 1.3: Establishment of the SDMSTF districts																
1.3.1: Background information collection of the demonstration districts	■	■														
1.3.2: Infrastructures of the demonstration items		■	■													
1.3.3: Planting of the introduced species				■	■											
1.3.4: Tending and management of the introduced species						■	■		■		■		■			
1.3.5: Observation of the fixed sample plots				■	■			■	■		■		■			■
Specific objective 2. Training and extension																
Output 2.1: 2 training sessions, and 100 trainees																
2.1.1: Textbook writing											■	■	■			
2.1.2: Training														■	■	■
Output 2.2. the book of <STF MANAGEMENT TECHNIQUES>																
2.2.1: Information collection and seminars													■	■		
2.2.2: Writing and compiling															■	■
2.2.3: Publication																

(Underlined part in phase 2.)

7. Budget⁽¹³⁾

CONSOLIDATED TOTAL AND YEARLY PROJECT BUDGET

Budget Components		Total	YEAR 1	YEAR 2	YEAR 3	YEAR 4
10	Project Personnel					
	11. National Experts	73,000	22,000	17,000	17,000	17,000
	12. National Consultants	24,000	6,000	1,000	6,000	6,000
	13. Other labor	20,000	5,000	5,000	5,000	5,000
	14. scholarships and Training					
	15. International Experts					
	19. Component Total	117,000	33,000	23,000	28,000	28,000
20	Sub-contracts					
	21.2ha gene pool nurseries	2,000	2,000			
	22. 3ha nurseries	12,000	12,000			
	23. 28,5000 seedlings	71,250	71,250			
	24.non-timber plants 67ha	19,821	19,821			
	25.rattan planting 67 ha	11,207	11,207			
	26.introduced species 67 ha	19,821	19,821			
	27. 2 training sessions, 100 trainees	18,000			12,440	18,000
	28.publication	15,000				15,000
		29.Component Total	175,539	136,099		12,440
30	Duty Travel					
	31. Daily Subsistence Allowance	39,461	13,056	6,528	6,528	12,509
	32. International Travel					
	33. Transport Costs	30,000	12,000	6,000	6,000	6,000
		39. Component Total	69,460	25,056	12,528	12,528
40	Capital Items					
	41. Premises					
	42. Land					
	43. Vehicles	22,000	22,000			
		49. Component Total	22,000	22,000		
50	Consumable Items					
	51. Raw materials	49,000	29,400	19,600		
	52. Spares					
	53. Fuel and Utilities	26,400	10,560	5,280	5,280	5,280
	54. Office Supplies	11,712	2,928	2,928	2,928	2,928
		59. Component Total	87,112	42,888	27,808	8,208
60	Miscellaneous					
	61. Sundry	27,280	9,680	5,600	6,000	6,000
	62. Auditing	12,000	3,000	3,000	3,000	3,000
		69. Component Total	39,280	12,680	8,600	9,000
70	Executing Agency Manag. Cost					
		79. Component Total				
	SUBTOTAL	510,552	271,723	71,936	70,176	96,717
80	ITTO Moni., Evalu. and Admi.					
	81. Monitoring and Review		20,000			
	82. Evaluation Costs		10,000			
	83. Program Support Costs (8% in total)		28,551			
		89. Component Total		58,551		
90	Refund of Pre-Project Costs		81,031			
100	GRAND TOTAL		650,134			

CONSOLIDATED TOTAL AND YEARLY PROJECT BUDGET(Phase 1)

Budget Components		Total	YEAR 1	YEAR 2	YEAR 3	YEAR 4
10	Project Personnel					
	11. National Experts	39,000	22,000	17,000		
	12. National Consultants	6,000	6,000	1,000		
	13. Other labor	10,000	5,000	5,000		
	14. scholarships and Training					
	15. International Experts					
	19. Component Total	55,000	33,000	23,000		
20	Sub-contracts					
	21.2ha gene pool nurseries	2,000	2,000			
	22. 3ha nurseries	12,000	12,000			
	23. 28,5000 seedlings	71,250	71,250			
	24.non-timber plants 67ha	19,821	19,821			
	25.rattan planting 67 ha	11,207	11,207			
	26.introduced species 67 ha	19,821	19,821			
	27. 2 training sessions, 100 trainees					
	28.publication					
29.Component Total	136,099	136,099				
30	Duty Travel					
	31. Daily Subsistence Allowance	19,584	13,056	6,528		
	32. International Travel					
	33. Transport Costs	18,000	12,000	6,000		
	39. Component Total	37,584	25,056	12,528		
40	Capital Items					
	41. Premises					
	42. Land					
	43. Vehicles	22,000	22,000			
	49. Component Total	22,000	22,000			
50	Consumable Items					
	51. Raw materials	49,000	29,400	19,600		
	52. Spares					
	53. Fuel and Utilities	15,840	10,840	5,280		
	54. Office Supplies	5,956	2,928	2,928		
	59. Component Total	70,696	42,888	27,808		
60	Miscellaneous					
	61. Sundry	15,280	9,680	5,600		
	62. Auditing	6,000	3,000	3,000		
	69. Component Total	21,280	12,680	8,600		
70	Executing Agency Manag. Cost					
	79. Component Total					
	SUBTOTAL	343,659	271,723	71,936		
80	ITTO Moni., Evalu. and Admi.					
	81. Monitoring and Review Costs		10,000			
	82. Evaluation Costs					
	83. Program Support Costs (8% in total)		18,190			
	89. Component Total		28,190			
90	Refund of Pre-Project Costs		40,531			
100	GRAND TOTAL		412,380			

CONSOLIDATED TOTAL AND YEARLY PROJECT BUDGET (Phase 2)

Budget Components		Total	YEAR 1	YEAR 2	YEAR 3	YEAR 4
10	Project Personnel					
	11. National Experts	73,000			17,000	17,000
	12. National Consultants	24,000			6,000	6,000
	13. Other labor	20,000			5,000	5,000
	14. scholarships and Training					
	15. International Experts					
	19. Component Total	117,000			28,000	28,000
20	Sub-contracts					
	21.2ha gene pool nurseries	2,000				
	22. 3ha nurseries	12,000				
	23. 28,5000 seedlings	71,250				
	24.non-timber plants 67ha	19,821				
	25.rattan planting 67 ha	17,647				
	26.introduced species 67 ha	19,821				
	27. 2 training sessions, 100 trainees	18,000			12,440	18,000
	28.publication	15,000				15,000
		29.Component Total	175,539			12,440
30	Duty Travel					
	31. Daily Subsistence Allowance	32,640			6,528	12,509
	32. International Travel					
	33. Transport Costs	30,000			6,000	6,000
	39. Component Total	62,640			12,528	18,509
40	Capital Items					
	41. Premises					
	42. Land					
	43. Vehicles	22,000				
	49. Component Total	22,000				
50	Consumable Items					
	51. Raw materials	49,000				
	52. Spares					
	53. Fuel and Utilities	26,400			5,280	5,280
	54. Office Supplies	11,712			2,928	2,928
	59. Component Total	87,112			8,208	8,208
60	Miscellaneous					
	61. Sundry	27,280			6,000	6,000
	62. Auditing	12,000			3,000	3,000
	69. Component Total	39,280			9,000	9,000
70	Executing Agency Manag. Cost					
	79. Component Total					
	SUBTOTAL	166,893			70,176	96,717
80	ITTO Moni., Evalu. and Admi.					
	81. Monitoring and Review Costs		10,000			
	82. Evaluation Costs		10,000			
	83. Program Support Costs (8% in total)		10,361			
	89. Component Total		30,361			
90	Refund of Pre-Project Costs		40,500			
100	GRAND TOTAL		237,754			

7.1 OVERALL PROJECT BUDGET BY ACTIVITY

OUTPUTS / ACTIVITIES + Non-Activity Based Expenses	BUDGET COMPONENTS						Quarter Year	GRAND TOTAL
	10. Project Personnel	20. Sub-Contracts	30. Duty Travel	40. Capital Items	50. Consume Items	60. Miscellaneous		
Output 1.1: 50 species Selected and collected								
Activity 1.1.1: Investigation & collection of species	10,560(E)		15,500(I)			2,500(I)	Q1,Y1	29,560
Activity 1.1.2: Establishment of 2ha gene pool	900(E)	2,000(E)	2,000(I)			1,600(E)	Q1,Q2,Y1	5,500
Subtotal 1.1	11,460(E)	2,000(E)	17,500(I)			4,100(I+E)		35,060
Output 1.2: Nurseries constructed and operated		8,981(E)						
Activity 1.2.1: Construction of the nurseries	1,800(E)	12,000(E)	2,500(I)			4,000(E)	Q2,Y1	20,300
Activity 1.2.2: Production of 285,000 seedlings	21,600(E)	71,250(I)	4,000(I)				Q3,Q4,Y1	96,850
Subtotal 1.2	23,400(E)	92,231(I+E)	6,500(I)			4,000(E)		117,150
Output 1.3: Establishments of demo. Districts.								
Activity 1.3.1: Background information collection	7,200(I)		8,600(I)				Q1,Y1	18,580
Activity 1.3.2: Infrastructures construction	2,640(E)		9,300(I)			2,780(I)	Q1,Q2,Y1	16,340
Activity 1.3.3: Planting of the species	12,500(E)	57,289(E)	9,000(I)			4,400(I)	Q4,Y1	108,189
Activity 1.3.4: Tending of introduced planting	12,600(E)		6,000(I)		29,400(I)		Q2,Q4,Y2;Q2,Q4,Y2;Q4,Y4	38,200
Activity 1.3.5: Observation of the fixed samples	2,400(E)		3,620(I)		19,600(I)		Q1,Q4,Y2;Q3,Y3;Q2,Y4	6,020
Subtotal 1.3	37,340(I+E)	57,289(E)	36,520(I)		49,000(I)	7,180(I)		187,329
Output 2.1: Two sessions, 100 trainees								
Activity 2.1.1: Textbook writing	4,000(I)		1,248(I)				Q3,Q4,Y3;Q1,Y4,	5,248
Activity 2.1.2: 100 trainees with 2 sessions		30,000(I)	1,872(I)				Q2,Q3,Y4	31,872
Subtotal 2.1	4,000(I)	30,000(I)	3,120(I)					37,120
Output 2.2: Publishing book								
Activity 2.2.1: Information collection & seminars	4,800(I)						Q1,Q2,Y4	4,800
Activity 2.2.2: Writing & compiling	12,000(I)						Q3,Q4,Y4;Q1,Q2,Y5	12,000
Activity 2.2.3: Publication		12,000(I)					Q3,Q4,Y5	15,000
Subtotal 2.2	16,800(I)	12,000(I)						31,800
NON-ACTIVITY BASED EXPENSES								
(1) Fuel and Utilities					17,600(I) 8,800(E) 11,712(I)		Y1,Y2,Y3,Y4	26,400
(2) Office supplies							Y1,Y2,Y3,Y4	11,712
(3) Auditing						12,000(E)	Y1,Y2,Y3,Y4	12,000
(4) House rent						12,000(E)	Y1,Y2,Y3,Y4	12,000
(5) Vehicles				22,000(I)			Y1,Y2,Y3,Y4	22,000
(6) Consultants	24,000(I)						Y1,Y2,Y3,Y4	24,000
Subtotal	24,000(I)			22,000(I)	38,112(I+E)	24,000(E)		108,112
Subtotal (ITTO)	52,000	101,250	63,640	22,000	78,312	9,680		326,882
Subtotal (E. Agency)	65,000	80,270			8,800	29,600		183,670
Total	117,000	184,520	62,640	22,000	87,112	39,280		510,552

(I) – Contribution of the ITTO; (E) – Contribution of the executing agency / Host government

7.2 YEARLY PROJECT BUDGET BY SOURCE

---- ITTO

Budget Components		Total	YEAR 1	YEAR 2	YEAR 3	YEAR 4
10	Project Personnel					
	11. National Experts	28,000	7,200			20,800
	12. National Consultants	24,000	6,000	1,000	6,000	6,000
	13. Other labor					
	14. Scholarships and Training					
	15. International Experts					
	19. Component Total	52,000	13,200	1,000	6,000	26,800
20	Sub-contracts					
	21.2ha gene pool nurseries					
	22. 3ha nurseries					
	23. 28,5000 seedlings	71,250	71,250			
	24.non-timber plants 67ha		3,000			
	25.rattan planting 67 ha					
	26.introduced species-67 ha					
	27. 2 training sessions, 100trainees	18,000				18,000
	28.publication	15,000				15,000
29.Component Total	104,250	74,250			33,000	
30	Duty Travel					
	31. Daily Subsistence Allowance	32,640	13,056	6,528	6,528	6,528
	32. International Travel					
	33. Transport Costs	30,000	12,000	6,000	6,000	6,000
	39. Component Total	62,640	25,056	12,528	12,528	12,528
40	Capital Items					
	41. Premises					
	42. Land					
	43. Vehicles	22,000	22,000			
	49. Component Total	22,000	22,000			
50	Consumable Items					
	51. Raw materials	49,000	29,400	19,600		
	52. Spares					
	53. Fuel and Utilities	17,600	4,400	4,400	4,400	4,400
	54. Office Supplies	11,712	2,928	2,928	2,928	2,928
	59. Component Total	78,312	36,728	26,928	7,328	7,328
60	Miscellaneous					
	61. Sundry	9,680	3,680	2,000	2,000	2,000
	62. Auditing					
	69. Component Total	9,680	3,680	2,000	2,000	2,000
70	Executing Agency Manag. Cost					
	79. Component Total					
SUBTOTAL		326,882	174,914	42,456	27,856	81,656
80	ITTO Moni., Evalu. and Admi.					
	81. Monitoring and Review Costs		20,000			
	82. Evaluation Costs		10,000			
	83. Program Support Costs		28,551			
	89. Component Total		58,551			
90	Refund of Pre-Project Costs		81,031			
100	GRAND TOTAL		466,464			

7.2 YEARLY PROJECT BUDGET BY SOURCE

---- ITTO (phase 1)

Budget Components		Total	YEAR 1	YEAR 2	YEAR 3	YEAR 4
10	Project Personnel					
	11. National Experts	7,200	7,200			
	12. National Consultants	12,000	6,000	1,000		
	13. Other labor					
	14. Scholarships and Training					
	15. International Experts					
	19. Component Total	19,200	13,200	1,000		
20	Sub-contracts					
	21.2ha gene pool nurseries					
	22. 3ha nurseries					
	23. 28,5000 seedlings	71,250	71,250			
	24.non-timber plants 67ha		3,000			
	25.rattan planting 67 ha					
	26.introduced species-67 ha					
	27. 2 training sessions, 100trainees					
	28.publication					
		29.Component Total	71,250	74,250		
30	Duty Travel					
	31. Daily Subsistence Allowance	19,584	13,056	6,528		
	32. International Travel					
	33. Transport Costs	18,000	12,000	6,000		
	39. Component Total	37,584	25,056	12,528		
40	Capital Items					
	41. Premises					
	42. Land					
	43. Vehicles	22,000	22,000			
	49. Component Total	22,000	22,000			
50	Consumable Items					
	51. Raw materials	49,000	29,400	19,600		
	52. Spares					
	53. Fuel and Utilities	8,800	4,400	4,400		
	54. Office Supplies	5,856	2,928	2,928		
	59. Component Total	63,656	36,728	26,928		
60	Miscellaneous					
	61. Sundry	5,680	3,680	2,000		
	62. Auditing					
	69. Component Total	5,680	3,680	2,000		
70	Executing Agency Manag. Cost					
	79. Component Total					
	SUBTOTAL	217,370	174,914	42,456		
80	ITTO Moni., Evalu. and Admi.					
	81. Monitoring and Review Costs		10,000			
	82. Evaluation Costs		0			
	83. Program Support Costs		18,190			
	89. Component Total		28,190			
90	Refund of Pre-Project Costs		40,531			
100	GRAND TOTAL		286,091			

YEARLY PROJECT BUDGET BY SOURCE

--- ITTO (phase 2)

	Budget Components	Total	YEAR 1	YEAR 2	YEAR 3	YEAR 4
10	Project Personnel					
	11. National Experts	20,800				20,800
	12. National Consultants	12,000			6,000	6,000
	13. Other labor					
	14. Scholarships and Training					
	15. International Experts					
	19. Component Total	32,800			6,000	26,800
20	Sub-contracts					
	21.2ha gene pool nurseries					
	22. 3ha nurseries					
	23. 28,5000 seedlings					
	24.non-timber plants 67ha					
	25.rattan planting 67 ha					
	26.introduced species-67 ha					
	27. 2 training sessions, 100trainees	18,000				18,000
	28.publication	15,000				15,000
	29.Component Total	33,000				33,000
30	Duty Travel					
	31. Daily Subsistence Allowance	13,056			6,528	6,528
	32. International Travel					
	33. Transport Costs	12,000			6,000	6,000
	39. Component Total	25,056			12,528	12,528
40	Capital Items					
	41. Premises					
	42. Land					
	43. Vehicles	22,000				
	49. Component Total	22,000				
50	Consumable Items					
	51. Raw materials					
	52. Spares					
	53. Fuel and Utilities	8,800			4,400	4,400
	54. Office Supplies	5,956			2,928	2,928
	59. Component Total	14,756			7,328	7,328
60	Miscellaneous					
	61. Sundry	4,000			2,000	2,000
	62. Auditing					
	69. Component Total	4,000			2,000	2,000
70	Executing Agency Manag. Cost					
	79. Component Total					
	SUBTOTAL	109,512			27,856	81,656
80	ITTO Moni., Evalu. and Admi.					
	81. Monitoring and Review Costs		10,000			
	82. Evaluation Costs		10,000			
	83. Program Support Costs		10,361			
	89. Component Total		30,361			
90	Refund of Pre-Project Costs		40,500			
100	GRAND TOTAL		180,373			

7.3 YEARLY PROJECT BUDGET BY SOURCE

----Chinese government

	Budget Components	Total	YEAR 1	YEAR 2	YEAR 3	YEAR 4
10	Project Personnel					
	11. National Experts	45,000	15,000	10,000	10,000	10,000
	12. National Consultants					
	13. Other labor	20,000	5,000	5,000	5,000	5,000
	14. Fellowships and Training					
	15. International Experts					
	19. Component Total	65,000	20,000	15,000	15,000	15,000
20	Sub-contracts					
	21.2ha gene pool nurseries	2,000	2,000			
	22. 3ha nurseries	12,000	12,000			
	23. 28,5000 seedlings					
	24.non-timber plants 67ha	19,821	19,821			8,981
	25.rattan planting 67 ha	17,647	17,647			
	26.introduced species 67 ha	19,821	19,821			
	27. 2 training sessions, 100 trainees					
	28.publication					
		29.Component Total	71,289	71,289		
30	Duty Travel					
	31. Daily Subsistence Allowance					
	32. International Travel					
	33. Transport Costs					
		39. Component Total				
40	Capital Items					
	41. Premises					
	42. Land					
	43. Vehicles					
		49. Component Total				
50	Consumable Items					
	51. Raw materials					
	52. Spares					
	53. Fuel and Utilities	8,800	2,200	2,200	2,200	2,200
	54. Office Supplies					
	59. Component Total	8,800	2,200	2,200	2,200	2,200
60	Miscellaneous					
	61. Sundry	17,600	6,000	3,600	4,000	4,000
	62. Auditing	12,000	3,000	3,000	3,000	3,000
	63. Contingencies					
		69. Component Total	29,600	9,000	6,600	7,000
70	Executing Agency Manag. Cost					
	79. Component Total					
	SUBTOTAL	<u>183,670</u>	<u>102,489</u>	<u>23,800</u>	<u>24,200</u>	<u>33,181</u>
80	ITTO Moni., Evalu. and Admi.					
	81. Monitoring and Review Costs					
	82. Evaluation Costs					
	83. Program Support Costs					
		89. Component Total				
90	Refund of Pre-Project Costs					
100	GRAND TOTAL		<u>183,670</u>			

YEARLY PROJECT BUDGET BY SOURCE

----Chinese government (phase 1)

	Budget Components	Total	YEAR 1	YEAR 2	YEAR 3	YEAR 4
10	Project Personnel					
	11. National Experts	25,000	15,000	10,000		
	12. National Consultants					
	13. Other labor	10,000	5,000	5,000		
	14. Fellowships and Training					
	15. International Experts					
	16. International Consultants					
	19. Component Total	35,000	20,000	15,000		
20	Sub-contracts					
	21. 2ha gene pool nurseries	2,000	2,000			
	22. 3ha nurseries	12,000	12,000			
	23. 28,5000 seedlings					
	24. non-timber plants 67ha	19,821	19,821			
	25. rattan planting 67 ha	17,647	17,647			
	26. introduced species 67 ha	19,821	19,821			
	27. 2 training sessions, 100 trainees					
	28. publication					
		29. Component Total	71,289	71,289		
30	Duty Travel					
	31. Daily Subsistence Allowance					
	32. International Travel					
	33. Transport Costs					
		39. Component Total				
40	Capital Items					
	41. Premises					
	42. Land					
	43. Vehicles					
		49. Component Total				
50	Consumable Items					
	51. Raw materials					
	52. Spares					
	53. Fuel and Utilities	4,400	2,200	2,200		
	54. Office Supplies					
		59. Component Total	4,400	2,200	2,200	
60	Miscellaneous					
	61. Sundry	9,600	6,000	3,600		
	62. Auditing	6,000	3,000	3,000		
	63. Contingencies					
		69. Component Total	15,600	9,000	6,600	
70	Executing Agency Manag. Cost					
	79. Component Total					
	SUBTOTAL	126,289	102,489	23,800		
80	ITTO Moni., Evalu. and Admi.					
	81. Monitoring and Review Costs					
	82. Evaluation Costs					
	83. Program Support Costs					
		89. Component Total				
90	Refund of Pre-Project Costs					
100	GRAND TOTAL		126,289			

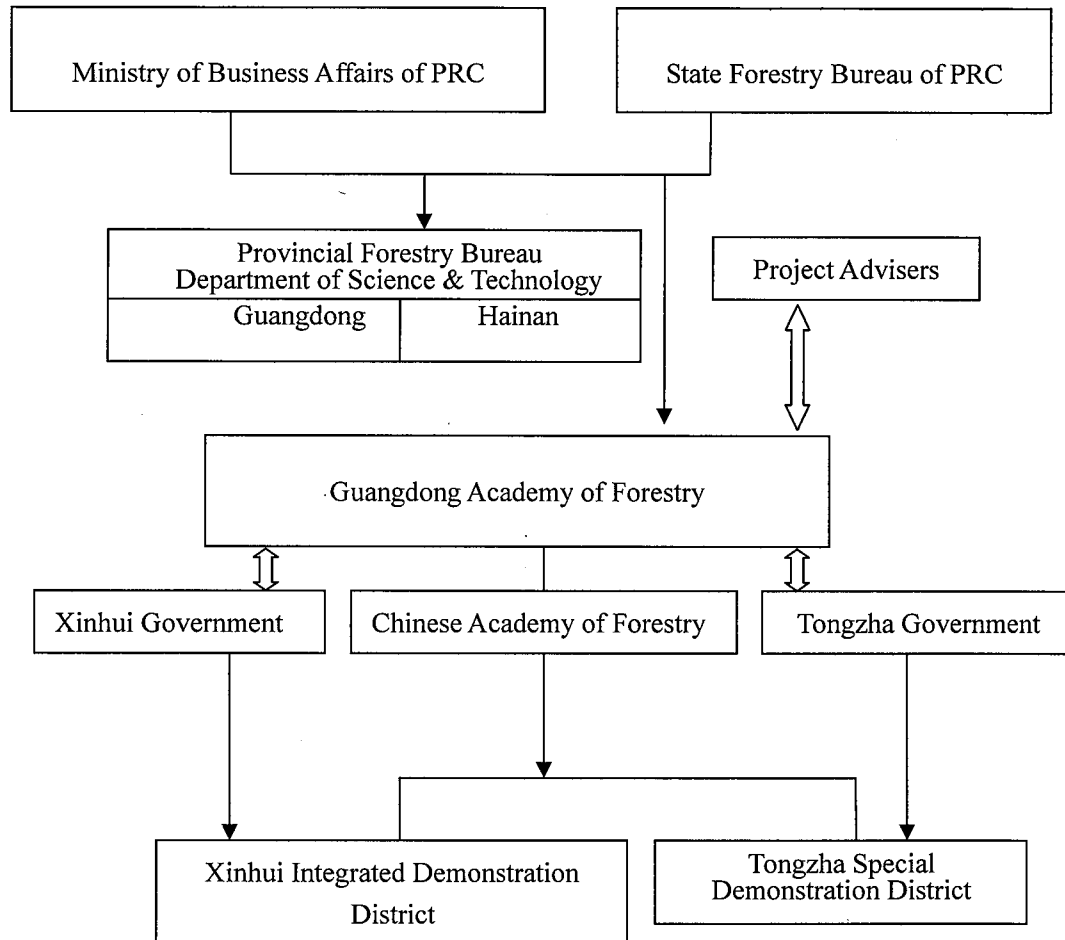
YEARLY PROJECT BUDGET BY SOURCE

----Chinese government (phase 2)

	Budget Components	Total	YEAR 1	YEAR 2	YEAR 3	YEAR 4
10	Project Personnel					
	11. National Experts	20,000			10,000	10,000
	12. National Consultants					
	13. Other labor	10,000			5,000	5,000
	14. Fellowships and Training					
	15. International Experts					
	16. International Consultants					
	19. Component Total	30,000			15,000	15,000
20	Sub-contracts					
	21.2ha gene pool nurseries					
	22. 3ha nurseries					
	23. 28,5000 seedlings					8,981
	24.non-timber plants 67ha					
	25.rattan planting 67 ha					
	26.introduced species 67 ha					
	27. 2 training sessions, 100 trainees					
	28.publication					
	29.Component Total					8,981
30	Duty Travel					
	31. Daily Subsistence Allowance					
	32. International Travel					
	33. Transport Costs					
	39. Component Total					
40	Capital Items					
	41. Premises					
	42. Land					
	43. Vehicles					
	49. Component Total					
50	Consumable Items					
	51. Raw materials					
	52. Spares					
	53. Fuel and Utilities	4,400			2,200	2,200
	54. Office Supplies					
	59. Component Total	4,400			2,200	2,200
60	Miscellaneous					
	61. Sundry	8,000			4,000	4,000
	62. Auditing	6,000			3,000	3,000
	63. Contingencies					
	69. Component Total	14,000			7,000	7,000
70	Executing Agency Manag. Cost					
	79. Component Total					
	SUBTOTAL	<u>57,381</u>			24,200	33,181
80	ITTO Moni., Evalu. and Admi.					
	81. Monitoring and Review Costs					
	82. Evaluation Costs					
	83. Program Support Costs					
	89. Component Total					
90	Refund of Pre-Project Costs					
100	GRAND TOTAL		<u>57,381</u>			

PART III. OPERATIONAL ARRANGEMENTS

1. Management Structure



The project executing agency, GAF, is under the supervision of the Ministry of Business Affairs of PRC, State Forestry Bureau of PRC, and the science and technology department of and forestry bureau of provincial governments. GAF will be responsible for ITTO, and in charge of planning, organizing and conducting the project. CAF, as the collaborator, will assist GAF to carry out the project implementation plan and be responsible for the establishment of Tongzha Hainan demonstration district, and has the right to use the funds designated to the district. Local government agencies where demonstration districts are located will be the supporter of the project. The consultant group will provide the executing agency with advice and consultancy.

2. Monitoring, Reporting and Evaluation

2.1 Project monitoring

The project will be supervised and monitored by the ITTO, Ministry of Business Affairs of PRC, State Forestry Bureau of PRC, and the Science and Technology Department and Forestry Bureau of Guangdong Province. The project will be inspected and evaluated by the ITTO and the donation countries. All reports will be submitted to ITTO by the executing agency, GAF.

- a) Project Progress Reports: submission once every 6 months.
- b) Financial auditing reports: submission once a year. Final auditing report will be submitted in the fourth year, within 3 months after the project completion.
- c) Project Technical Reports: The first one submitted in the 12th month, the second in the 22nd month, the third in the 34th month, and the fourth is the final report, which will be submitted within 3 months after project completion.
- d) Monitoring, Review and Steering Committee's Visits: the 24th month for the first time, and the 36th month for the second time are suggested.
- e) Evaluation: the 24th month for mid-term, and 46th month for the final are suggested.
- f) Project Completion Report: submitted within 3 months after the project completion.

3. Future Operation and Maintenance

The gene pools and nurseries in the demonstration districts will be handed over to the landowners when the project is completed. GAF will continue to provide free technical support and conduct some related studies and extensions as a base of science research. Most of the income from the project in the demonstration districts will return to the landowners and part of them will be used to support the continuous management of STF. Keeping on the observation of economic and ecological benefits of demonstrated STF will be significant in that it will further examine the feasibility of management methods and generate more results. This, however, will depend on the support of ITTO in the future.

PART IV THE TROPICAL TIMBER FRAME WORK

The project is in consistency with the fundamental objectives or benefits of the ITTA members. It is a strategic project for the realization of sustainable management of STF.

1. Compliance with ITTA 1994 Objectives

The expected project achievements are: through STF management, ecological and economic benefits will be enhanced, ecological environment improved, biodiversity increased, farmers' income raised, and STF are under sustainable management. Therefore, the project meets the following items listed in Article 1, Chapter 1 of the International Tropical Timber Agreement, 1994:

(c) Contribute to the process of sustainable development; **By better management of STF, the productivities and biodiversity will be improved and sustainable forest management will be promoted in China.**

(f) Encourage the tropical timber production countries to conduct researches in the field of promoting forest management quality.

(j) Support members to carry out the activities in afforestation, forest management and rehabilitation of degraded woodland.

(k) Increase the proportion of wood production from sustainable management.

(l) Encourage members to develop national policies with regard to forest sustainable utilization, timber production and conservation of genetic resources as well as the maintenance of ecological balance in the regions concerned.

2. Compliance with the ITTO Action Plan

It is compliance with the "ITTO YOKOHAMA ACTION PLAN 2002 – 2006":

3. Goals and Actions:

3.2 Reforestation and Forest Management:

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

Action 1: Support the effective enforcement of forest laws and regulations that ensure sustainable forest management and secure the production base better management of STF will make community residents better conduct forest laws and regulations in China;

Action 2: Support networking and the exchange of information with relevant international organizations to maintain the integrity of the resource base, including protected area networks. project personnel and technical information will be exchanged internationally;

Action 4: Establish and promote the implementation of an auditing system for ITTO's Criteria and Indicators for Sustainable Management of Natural Tropical Forests the project includes the such demonstration;

Action 5, Assess opportunities for, and promote development of, non-timber forest products and forest services which can improve the economic attractiveness of maintaining the forest resource base **the edible bamboo (shoot) and medicinal plants and resin-pine will be planted and managed;**

Action 7: Secure the forest resource base through the implementation of forest policy, legislation and associated strategies, revised and updated where appropriate the project achievement will give forest policy, legislation reference for the ecological welfare of forest management in China.

Goal 2, Promote sustainable management of tropical forest resources;

Action 3, Develop and promote the implementation of guidelines for the management of secondary tropical forests, the restoration of degraded tropical forests and the rehabilitation of degraded forestland. **this project is a real practice in China;**

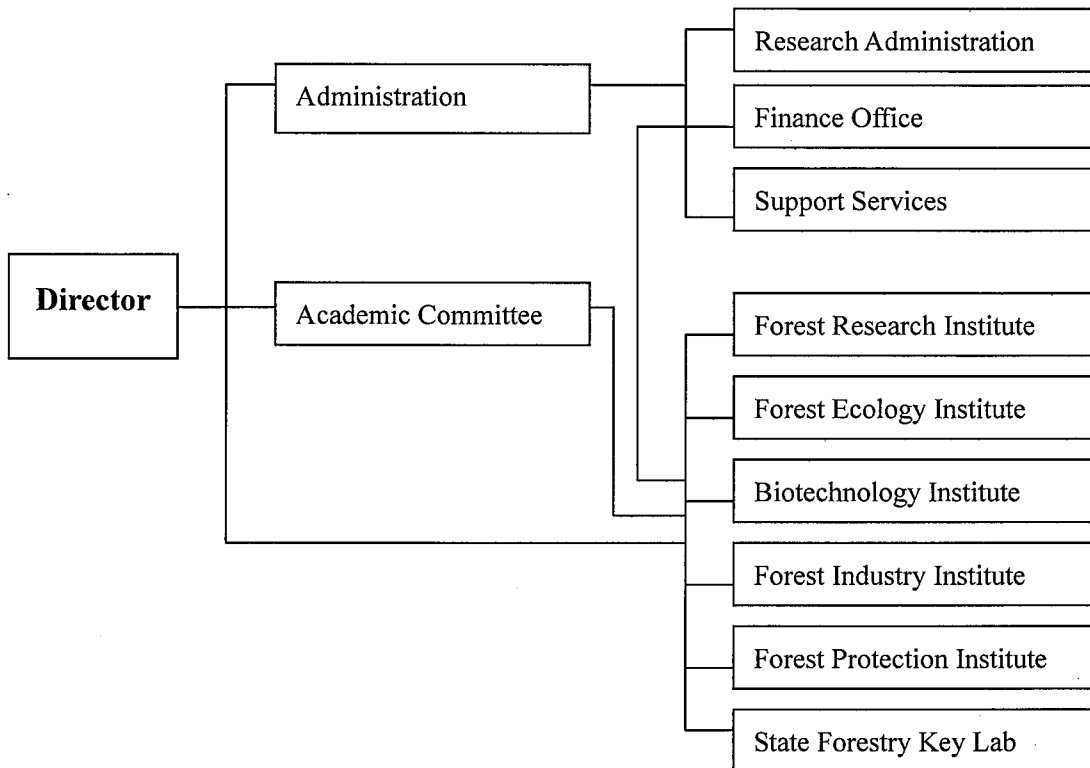
Action 10: Improve the productive capacity of natural forests, where appropriate, through intensified silvicultural practices, better utilization of lesser-used species, the promotion of non-timber forest products, guided natural regeneration, enrichment planting and reforestation; Implement research and development activities in the management of secondary tropical forests, restoration of degraded tropical forests and rehabilitation of degraded forest land, taking into consideration ITTO guidelines; Strengthen training institutions and intensify training of forestry personnel and other stakeholders..... indigenous broadleaved species and lesser-used species such as *Dipterocarpeae* will be planted, and training is one item of the project.

ANNEX A:

PROFILE OF THE EXECUTING AGENCY

1 The Expertise of the Executing Agency

GAF is located in Guangzhou city. Since its establishment in 1959, GAF has steadily grown up to be a forestry science and technology center of the province and has been playing a key role in the development of the local forest industry.



GAF Organization Structure

In recent years, 130 research projects have been carried out by GAF, supported by government and non-government organizations including ITTO, Forest service of USA, China National Science and Technology Ministry, State Forestry Administration, Science and Technology of Guangdong Province, Forestry Bureau of Guangdong Province. ITTO-supported projects (PD 52/99 Rev 2(I) and PPD 30/01 Rev.1 (F)) has been completed on expectation and great achievement has been made.

2. The Infrastructure of the Executing Agency

On the 50 ha campus, there is a well-managed arboretum with 1041 tree species belonging to 113 families and 450 genera. There is also a timber collection with nearly 3000 domestic and foreign timber specimens. The herbarium has 8344 specimens in 214 families, 977 genera and 2362 species. These are the valuable resources not only to support the research but also to serve the education and industry

sectors.

A project founded by the World Bank to improve the facilities and to train the staff of the institute was completed in 1987. A laboratory of forest protection research was established in 1994 as a national key laboratory. A timber preservation laboratory and a pilot timber treating plant, funded jointly by the International Tropical Timber Organization (ITTO) and Chinese government, have been in operation since 2000. GDFRI is one of the top institutes in forest sector in the country and making significant contribution to the development of sustainable forestry, especially in the tropical and subtropical southern China.

GAF has over 10,000 m² building space, including administration, research, laboratory, library, pilot workshop and training building. There is a 3 ha nursery for experiments.

3. Budget

In the last three years, GAF budget are maintained at 2,800,000 US\$. Among it, 1,150,000 US\$ for personnel, 600,000 US\$ for sub-contracts, 450,000 US\$ for research-related travel, 400,000 US\$ for capital items, and 200,000 US\$ for consumable items.

4. Personnel

150 scientists and technicians are working in the forestry fields. Among them, there are 4 scientists with Doctoral degree, 44 Masters; and 77 bachelors; 43 senior scientists, 25 technicians; and 25 administrative personnel.

ANNEX B:

CURRICULA VITAE OF THE KEY STAFF

Mr. Zeng Linghai

Date and place of birth and nationality: July 8, 1957, Guangzhou, P.R. China

Field and institution of graduation: Forest management, college of forestry, South China Agricultural University

Professional title: professor

Continued education: 1990.3~1991.4 Visiting scholar of Southern Forestry Experiment Station, Forestry Service, US Department of Agriculture

Professional experience: :

2000.4~present, Research scientist of forest breeding and silviculture, Guangdong Academy of Forestry

1995~2000.3, Vice president, senior scientist of forest breeding and silviculture, Guangdong Academy of Forestry

1987.12~1995.3, Engineer of forest breeding and silviculture, Tropical Forest Research Institute, Chinese Academy of Forestry

1980~1987.11, Assistant engineer of forest breeding and silviculture, Tropical Forest Research Institute, Chinese Academy of Forestry

Relevant work undertaken in the last 3 years:

- ITTO Pre-project, PPD 30/01 Rev.1 (F)
- Guangdong provincial government, Industrialization technology and demonstrative extension of superior Masson pine varieties
- Guangdong provincial government, Selection and cultivating models of excellent native broadleaf tree species with big diameter
- Guangdong forestry bureau, The application of molecular marking technology in forest tree genetic improvement
- National forestry bureau, Selection for superior Eucalyptus species and construction of the propagation base
- National project, Superior seed resources of precious timber species of Dipterocarpaceae and introduction of cultivating technology
- Guangdong provincial government, Selection of superior native broadleaf tree species for ecological forest and their ecological benefits

Honors:

- Standing member of South China branch of Chinese Society of Forest Genetics and Breeding
- Standing member of Guangdong Research Society of Science and Technological Management
- Member of Guangdong Forestry Society

- Member of the National Committee of Forest Genetics and Breeding Branch, Chinese Forestry Society

Major publications:

- Study on the Seedling Cultivation Technique of the Introduced Dipterocarps, Guangdong forestry science and Technology, 2005-2
- Study on cutting propagation technique of Masson pine with high-yield resin. Guangdong forestry science and Technology, 2004:
- Silvicultural techniques of 100 species for commercial forests in Guangdong, Guangdong Science & Technology publishing house, 2003
- Chinese eucalypts, Chinese Forestry Press, 2002
- Geographical provenances of Masson pine, Chinese Forestry Press, 2002
- comparison of the growth and resin-yield among pine species, Guangdong forestry science and Technology, 2002
- Several questions in current ecological construction of our province, Modern Townships, 2001
- Growth promotion efficacy of specialized eucalypts fertilizer, Guangdong Forestry Science and Technology, 2000
- Cultivation techniques for strong seedlings of Eucalyptus urophylla, Guangdong Forestry Science and Technology, 1999
- DNA isolation and Southern blotting hybridization of pines, Scientia Silvae Sinicae, 1994
- Selection for the pine of high resin productivity and its heredity assessment from the progeny test, Guangdong Forestry Science and Technology, 1994
- Propagation of Loblolly, Slash, and Longleaf Pine From Needle Fascicles, US \$ A, Tree Planter Notes, 1992

Language: Chinese/English

Address: Guangdong Academy of Forestry, Longdong, Guangzhou, China, 510520

Phone: (020)87035645 Fax: (020)87031245 E-Mail: zlinghai@263.net

Duties and responsibilities: Responsible for leadership and management of the project, in charge of overall work of the project including establishment of demonstration districts, management technology study, writing and examination of research reports. Spending 36 months on the study.

Mr. Hou Yuanzhao

Duties and responsibilities: Assisting supervision and management of the project, mainly in charge of research and demonstration activities in Hainan, and assisting the examination and approving of research reports. Spending 48 months on the research.

Curriculum vitae: Research scientist of CAF (former director of Scientific Information Institute), 56 years old, graduated from, and guest professor of ENGREF in France, supervisor of doctoral students. Be an expert in forestry developing economics, forest environmental economics, tropical forestry and world forestry research with 10 years' experience in tropical forestry research. Be

an assistant leader of ITTO Pre-project PPD30/01(F), and has organized formulating, submitting and participating the project of ITTO PD14/92 Rev.2(F).

Mr. Wang Hongfeng

Duties and responsibilities: Dealing with general office affairs of the project (project organization and coordination, domestic and international liaison, financial management, etc.), organizing and participating entire demonstration, establishment and management work, writing research reports. Input 48 months.

Curriculum vitae: Senior engineer of silviculture, Guangdong Academy of Forestry, graduated from College of Forestry, South China Agricultural University with M.S., 35 years old, proficient in English, director of ITTO Pre-project PPD30/01(F) office, has been engaging in tropical mixed and industrial plantations study.

Other standing members and their corresponding work

Mr. Li Zhiyong: 39 years old, Director of Scientific Information Institute, CAF/supervisor of doctoral student/implementation of Hainan demonstration districts

Mr. He Liping: 40 years old, Senior engineer, GAF/implementation of Guangdong demonstration district

Mrs. Wu Shuiyong: 32years old, Doctor of agricultural economics/Scientific Information Institute, CAF/implementation of Hainan demonstration districts

Mr. Xue Li: 44 years old, Doctor of forestry/ associate professor of South China Agricultural University/ ecosystem establishment technology

Mr. Yang Zongyang: 37 years old, Senior Engineer/ Hainan Forest Research Institute, responsible for the implementation of Hainan demonstration district

Mrs. Li Yuming: 34 years old, Engineer, Scientific Information Institute, CAF/ implementation of Hainan demonstration districts

Mr. He Boxiang: 33 years old, senior engineer of silviculture, GAF/ implementation of Guangdong demonstration district

Advisors

Two national consultants will be employed.

Mr. Chen Tongai: Professor, former president of CAF, President of Chinese Society of Forest Economics, group leader of the expert panel of the mountain area development office of the State Council, with rich experiences in the management of Chinese tropical forestry, responsible for advising on the project strategy, Project design, process control and the Project evaluation

Mr. Zhong Weihua: Professor, South China Agriculture University, with experience in forest management and tree planting, familiar with zone native hardwood species and local traditional knowledge. Responsible for advising on the Project design, selection of reintroduce species, plantation ,use of traditional knowledge and the course controlling.

Annex C:

Information about Personnel and Sub-contracts to be Paid for with ITTO Funds

Budget Item	Output And Activities	Input		Unit Cost	Q/Y	Total
		Unit & Quality	Quant.			
11. National Experts	Output 1.3 Activity 1.3.1: Background information collection	3 groups, 4 persons each group for 15 days, Unit: Day	180	40	Q1Y1	7,200
	Output 2.1 Activity 2.1.1: Textbook writing	Unit: Day	100	40	Q3,Q4,Y3,Q1Y4	4,000
	Output 2.2 Activity 2.2.1: Information collection	Unit: Month	4	1,200		4,800
	Activity 2.2.2: Writing and compiling	Unit: Day	300	40	Q3,Q4Y4 Q2,Q3,Q4Y4	12,000
12. National consultants	Two national consultants hired, responsible for advising on the project strategy, designing of the plan, implementation, process control and the project evaluation, and use of traditional knowledge.	4 years, 2 months/per person/per year, Unit: Month	16	1,500	Y1,Y2,Y3,Y4	24,000
	Sub-total					28,000
23. Production of 285,000 seedlings	Output 1.2 Activity 1.2.2: Production of introduced seedlings	Unit: Plant	285,000	0.25	Q3,Q4Y1	71,250
27. Two Sessions of training	Output 2.1 Activity 2.1.2: Training	Each session				
		(1) Meeting hall rent, Unit: Session	2	500	Q3Y4	1,000
		(2) Accommodation, 40 US \$/p * 50 p * 2d = 4000 US \$ Unit: Session	2	4,000		8,000
		(3) Support-service Unit: Session	2	4,500		9,000
	Subtotal					18,000
28. Publication	Output 2.2 Activity 2.2.3: Publication	Unit: Copy	1,000	15	Q4Y5	15,000

Annex D⁽¹⁵⁾:

Explanation for Budget

Budget item	TOTAL	Explanation	Quarter, Year
11. National experts	73,000	1). One districts administrators hired, work for 45 months, monthly wage 1000 US \$. 2). Activity 1.3.1: Background information collection, 3 groups, 4 persons each group, work 15 days, 180d, daily pay 40 US \$; 3). Activity 2.1.1: Textbook writing, 100 days, daily pay 40 US \$; 4). Activity 2.2.1: Information collection and data processing, 4 months, monthly wage 1,200 US \$; 5) Activity 2.2.2: Writing and compiling, 10 months, monthly wage 1,200 US \$.	Y1; Y2; Y3; Y4 Q1,Q2,Y4 Q3,Q4,Y3;Q1Y4 Q2,Q3,Q4,Y4 Q3,Q4,Y4;Q1,Q2,Y5
11. Other labor	20,000	Project experts total work time of 1000 days. Daily pay 20 US \$.	Y1; Y2; Y3; Y4
21.2ha gene pool nurseries	2,000	Construction cost per ha 1,000 US \$	Q1,Q2,Y1
22. 3ha nurseries	12,000	Establishment cost per ha 4,000 US \$, roads, water and power supply.	Q2,Y1
23. 28,5000 seedlings	71,250	Contract price for each seedling production 0.25 US \$	Q3,Q4,Y1
24.non-timber plants 67ha	19,821	Planting cost per ha 295.85 US \$	Q4,Y1;Q1,Q2,Y2
25.rattan planting 67 ha	17,647	Planting cost per ha 263.3 US \$	Q4,Y1;Q1,Q2,Y2
26.introduced species 67 ha	19,821	Planting cost per ha 295.85 US \$	Q4,Y1;Q1,Q2,Y2
27. 2 training sessions, 100 trainees	18,000	2 days each session, meeting room rent 500 US \$ /session, living cost \$40/d/p, transportation, and support-service 4500 US \$ /session.	Q3,Q4,Y1
28.publication	15,000	1000 copies, 15 US \$ each copy.	Q4,Y5
31. Daily subsistence allowance	32,640	Field work leave duty allowance, 1088 days, 30 US \$ per day.	Y1;Y2,Y3,Y4
33. Transport costs	30,000	Return tickets: BJ-GZ, 400 US \$ /each, 2 persons, 16 times; GZ-HN, 140 US \$ /2p/12t; GZ-GX 200 US \$ /2t/3p; GZ-YN 400 US \$ /2t/3p, rent vehicles for duty-leave \$10,240.	Y1;Y2,Y3,Y4
43. Vehicles	22,000	Purchased Vehicles 1 for field work, 22,000 US \$	Y1
51. Raw materials	49,000	Nursery use chemicals and pesticide 4,000 US \$, fertilizer 246 tons, 183 US \$ /t	Y1;Y2,Y3,Y4
53. Fuel and utilities	26,400	Petrol 3,000US \$ /y, telephone, fax, etc. 3650 US \$ /y, 4 years.	Y1;Y2,Y3,Y4
54. Office supplies	11,712		Y1;Y2,Y3,Y4
61. Sundry	27,280	Gene collection nursery rent 2ha, 250 US \$ /ha/y; nursery rent 5 ha, 1,000 US \$ /ha/y, 4 years; others \$5,280.	Y1;Y2,Y3,Y4
62. Auditing	12,000	Auditing once a year.	Y1;Y2,Y3,Y4

Annex E:

Recommendations of the 28th expert panel

PD294/04(F)

The Study and Demonstration of the « Management of Secondary Forests in Tropical Regions for the Purpose of Enhancing Economic and Ecological Benefits »

Assessment by the Twenty –eighth Panel

A) Overall assessment

The panel acknowledged the relevance of the project concept which builds on Pre-project PPD 30/01 Rev.1 (F) that has been completed earlier. However, the proposal does not adequately articulate the elements justifying this relevance while findings and recommendation of the pre-project is not adequately presented in the proposal, the Panel noted that the development objective is not clearly defined and there are too many specific objectives. In addition, the problem analysis is inadequately performed. While a problem tree is presented no explanation in the text of the problems to be addressed, Moreover, the logical framework is very weak as indicators are treated as targets. The Panel also noted that the strategy is unclear and the intended situation after the project completion is too ambitious. The Panel further noted that a large amount of budget is allocated for sub-contracts but no Terms of Reference is provided to justify such allocation, Finally, the Panel found that the Operation Arrangements part does not specify which one is the Executing Agency and Presentation of Part IV is inadequate.

B) Specific Recommendations

The proposal should be revised taking into account the overall assessment and the following :

- 1 Improve the problem analysis by identifying the main problem to be addressed and redefine the project objective and specific objective(s) accordingly;
- 2 Reduce the specific objectives to only two as accurate Specific objectives 1 and 2 can be united;
- 3 Identify outputs and activities based on the newly defined specific objectives and reduce the number of activities to a manageable number;
- 4 Develop a sound logical framework matrix consistent with the objectives and outputs identified with due consideration on measurable indicators and means of verification;
- 5 Improve the strategy and intended situation sections by providing specific details and target on attainable situations;
- 6 Revise the Operational Arrangements and clearly show the Executing Agency that will implement the projects;
- 7 Improve Part IV by explaining why and how the project is relevant to the ITTA 1994 objectives and ITTO action Plan;
- 8 Revise the budget in the following way:
 - * Present the budget in accordance with the ITTO formats as presented in the ITTO Manual for Project Formulation, second edition, Pages 22-25
 - * Reduce the budget on sub-contracts;
 - * Include US\$24,000 for ITTO monitoring and review costs and US\$15,000 for the ex-post evaluation costs,
 - * Recalculate ITTO's programme support costs at 8% of ITTO total project costs as decided by the 35th ITTO.
- 9 Provide terms of references for all consultants /experts and sub-contracts to be paid for with ITTO funds;
- 10 Include an annex that shows the recommendations of the 28th Expert Panel and the respective modifications in tabular form.

C) Conclusion

The Panel concluded that a re-formulation of the project proposal is essential and the Panel will need to assess the reformulated proposal before it can commend it to the Committee for final appraisal.

Annex F:

**Recommendations of the 29th Expert Panel and
Summary of the Modifications**

According to the recommendations made by 29th ITTO expert panel, the project proposal has been revised, and bold type is used in the revised sections.

- i) We have made the parts of unclear and ambiguous more accurate.
- ii) The budget is reduced significantly, and the reduced total reaches 178,603 US \$, accounting for 19.9%. Among which, the ITTO funds is reduced 14.7% to \$95,875,; Chinese government fund is reduced 33% to \$82,728. The budget reduction comes from three parts. The first is from increased bearing of the executive agent and demonstration participators, accounting for 54.9% of the reduced total; the second is from reduction of 2 ha nursery construction and 67 ha plantings, accounting for 25.5%; finally, the third is from canceled fellowship training and invitation of international advisors.
- iii) Description of the modification for respective recommendations of ITTO expert panel is shown in following table.

Specific Recommendations	Modification Description
1. Present findings and lessons learned in PPD concisely to facilitate understanding on the design of proposed project.	Added at “project origin”
2. The development objective remains as very complex with no focus. It may be more appropriate to redefine it as “to accelerate SFM by better management of secondary tropical forests in China”.	Amended in “1.1 the project development objectives” and “5 summary table of the logical framework.
3. On the specific objectives, clarity relationships of rattan interplanting with SFM of STF on Hainan demonstration district and explain the need to include also bamboo, exotic species and families of non-tropical masson pine.	Explained in “1.2 specific objective”
4. Improve the problem analysis by clarifying whether the project is focusing on degradation of forests in general as depicted or only on need to improve management of STF.	Added in “2.1 addressed problem”
5. On project strategy, the main approach is integration of economic and ecological benefits, clarity how these were derived from the PPD thus incorporating other non-timber species in the design, and explain how the strategy can provide better benefits to intended beneficiaries in section2.4.	Added in “2.3 project strategy”.

6. Incorporate appropriate approaches from the ITTO Guidelines for the restoration, management and rehabilitation of degraded secondary tropical forests.	Added in “2.3 project strategy”
7. The economic aspect is very general and need to be supported by findings of the PPD on how environmental and economic benefits can be maximized.	Added in “2.6 economic aspect”
8. Briefly the forests and STF as well as social conditions in the two demonstration areas.	Added in “2.8 social aspect”
9. Improve the logical framework matrix by using appropriate assumptions relating to the risks identified in section 2.9, and measurable indicators.	Improved in “summary table of the logical framework”
10. Improve part IV of the proposal by clearly relating the project elements with the ITTA 1994 Objectives and Yokohama Action plan.	Amended in part IV
11. Scale down the budget significantly by reducing personnel and subcontract costs.	<p>The budget from ITTO fund has been reduced in the following:</p> <ul style="list-style-type: none"> ● Personnel expense is reduced 43% from 91,000 US \$ to 52,000 US \$, Fellowship training and international advisors are canceled. Explained in the mark notes 【11】. ● Subcontract is reduced 30% 166,950 US \$ to 116,250 US \$, 66 ha planting and seedlings production are reduced but the rest still satisfy the basic requirement of demonstration.
12. Provide terms of reference for subcontracts, international and local consultants, and fellowship and training.	Shown in the annex C
13. Provide information on the objective and output of training and extension in the strategy and technical aspect sections.	Added in the associated sections.
14. Include an annex that shows the recommendations of 29 th panel and respective modifications in tabular form. Modifications should also be highlighted in the text.	Added in Annex F (this table)

Annex G:

The Mark Notes Explanation of the modifications after Recommendations of the 29th Expert Panel

- 【1】** The sentence of “the total area of 4263ha” has been deleted. Which is not accurate to express, and the scale of demonstration is expressed in subsequent context.
- 【2】** Original expression is “STF natural ecological restoration” . Reason: It is more accurate now.
- 【3】** Original expression is “demonstrated deteriorated restoration and rehabilitation” . Reason: It is more accurate now.
- 【4】** Previous budget: “ ITTO 648,904.56 US \$, Chinese government 248,617.00 US \$, the total 897,521.56 US \$.
- 【5】** The third paragraph in previous proposal is deleted “By summarizing the world STF management methods,STF management for sustainable development succeeds when STF economic output to supplies the local residents demand while satisfying basic ecological requirements.” . Reason: It is not necessary to express in this section.
- 【6】** The sentence of “the total area of 4263ha” has been cancelled. Reason: Same as note **【1】** .
- 【7】** The last paragraph of this part is deleted, “ The design of STF management for secondary forests will follow the classification management rules based on the forest quality, site and transportation condition.....STF management will still go on the current models and the conflict between resident survival and forest protection will forever exist, if the ITTO project is not undertaken.” , and is substituted with present expression.
- 【8】** Original expression is “ residents” . Reason: It is more accurate now.
- 【9】** Previous area is “5ha” . Reason: Too large for the budget.
- 【10】** Original expression is “establishing STF management demonstration district of 4263 ha” . Reason: Not accurate.
- 【11】**
 - i) Combined output 1.1.1 and output 1.1.2 as output 1.1.1;
 - ii) Activity 1.2.2 produced seedlings is reduced from 500,000 to 285,000 in order to reduce trial scale.
 - iii) “ Activity 1.3.1 fellow training” is cancelled. Reason: supervision by GAF experts instead in order to reduce expense.
 - iv) “ Activity 1.3.4 hiring international advisors” is cancelled. Reason: It may not be necessary since foreign experts are not familiar with China indigenous tree species. We may apply for the aid China government if necessary.
- 【12】** The objective indicator has been amended, Reason: It is more accurate now.
- 【13】** The budget is amended based on the adjustment of activities and output, some expense is allocated to executive agent GAF and demonstration participators.
- 【14】** Cancelled the international advisors. Explained same as note **【11】** .
- 【15】** Reduced number of personnel and pay standards in order to reduce the budget.

Annex H:

Recommendations of the 30th Expert Panel and Summary of the Modifications

Specific Recommendations	Modification Description
1. Present findings of and lessons learned in completed PPD 30/01 Rev.1 (F) concisely and make use of this information to further refine the problem analysis, the problem tree and the objective tree;	Problem analysis, problem tree and objective tree further amended according to the results from PPD 30/01 Rev.1 (F)
2. Justify the establishment of two demonstration areas, the planting of over fifty species of tree and NTFP in Xinhui Guangdong but only inter-planting of rattan in Tongzha Hainan and the use of exotic species;	Supplemented in 1.2 specific objective, part II
3. Clarify how the proposed CBFM approach will improve the ecological benefits of STF and what strategy will be pursued to involve local communities and to utilize their traditional knowledge	Supplemented in 2.3 project strategy, part II
4. Describe briefly the forest conditions of the two demonstration areas;	Supplemented in 1.2 specific objective 1, (ii) Establishing the demonstration districts, part II
<p>5. Revise and scale down the budget along the following line:</p> <ul style="list-style-type: none"> ● If seedlings are to be produced under sub-contract, budget line 51 in Annex D for raw materials are not required; ● Purchase only one unit of vehicle at maximum price of US\$ 22,000.- ● Apply DSA rate of not more than US\$ 40 for the trainees; ● Eliminate the contingency; ● Fuel and utilities are supposed to be partially borne by the Executing Agency; and ● Recalculate the ITTO's programme support costs at 8% of total project costs. 	<ul style="list-style-type: none"> ● The seedling production subcontract in the budget is limited to labor cost only, not include pesticides, chemicals and fertilizer. This is an ordinary way in subcontracting adopted by Chinese governmental agencies to control the qualities of raw materials. Since the fertilizer is used in planting and tending of introduced species, it is necessary to keep this part in the budget. ● Reduced to purchase one vehicle only, the amount is adjusted as US\$ 22,000. ● The standard of DSA is adjusted as US\$ 40/person/day. ● The contingency is eliminated. ● Fuel and utilities are adjusted, 2/3 will be borne by ITTO, and 1/3 by the Executing Agency. ● ITTO's program support costs are recalculated
6. Provide terms of reference for each of the national consultants and sub-contracts;	Supplemented in Annex I, page 38.
7. Provide information on the objectives and outputs of the proposed training and extension;	Supplemented in 1.2 specific objective 2 and in 3. output, Part II

Note: In the text, underlines and digits with a ground were used to mark the modifications.

Annex I

Terms of Reference for the National Consultants and Sub-contracts

A. National Consultants

The consultants will be chosen in the way as individual employment.

Missions

1. To assist in implementation strategies designing and activities planning;
2. To assist program design and establishment of the demonstration districts;
3. To assist the selection and planting of the introduced species;
4. To assist the design of fixed sample lots, and a observations formula on economic and biological benefits;
5. To review the progress of the project and make recommendations for carrying out the project objectives during the life of the project. Offer an evaluation report to the project every year;
6. To assist in organizing and make input into the seminars and training/courses.

Inputs

1. Working time: Two months each year;
2. Honorarium: 1500 US \$ a month

Qualification

1. Senior-engineer/Professor;
2. Experience in organizing and management of project/programs in forestry research;
3. University graduated in the forest management related fields;
4. With expertise of tropical forest and experience working in communities;
5. Chinese nationality.

B. Experts

Tasks/Duties

1. One administrator in forest management responsible for the management of two demonstration districts according to the arrangement of the project manager all the year round beginning in the second quarter after project starting to completion, monthly wage 1000 US \$, 45 months;
2. Activity 1.3.1: 3098 ha of STF background information collection in demonstration districts, two experts in each of the fields of botanic, zoological and insert, and six in plant genetics and cultivation conduct investigation for 15day, completion in the first quarter after project starting. daily pay 40 US \$;
3. Activity 2.1.1: Course books writing for four days training in two sessions, with 100,000 words, and completed in the first quarter of last year. 100 days, daily pay 40 US \$;
4. Activity 2.2.1: Base information collection and data processing prepared for the book writing and compiling of STF Management Techniques. One expert in

forest management work 4 months, monthly wage 1,200 US \$;

5. Activity 2.2.2: Writing and compiling of the book. Three experts participate in writing, including forest management, bionomics and economics. 300 days in total, daily pay 40 US \$,. Finish in six months after the project completion.

C. Sub-contracts

1. Production of seedlings in Budgeted 23:

50 species and 28,5000 seedlings need to be produced respectively in the project nurseries of Xinhui and Tongshi. This sub-contract does not include facilities and raw materials for seedling breeding, only adopt the way of workforces to contract This is also a common way in forest contract of Chinese government agency, the purpose is to guarantee the quality of the raw materials.

The sub-contract will open competitive bidding to forest seedling companies. Under meeting the necessary of bidding document, the lower one will gain the contract at price. The competitive bidding meeting will be held in the second quarter after the project is carried out, and superintendent from government be participated in.

2. The training sessions in budget

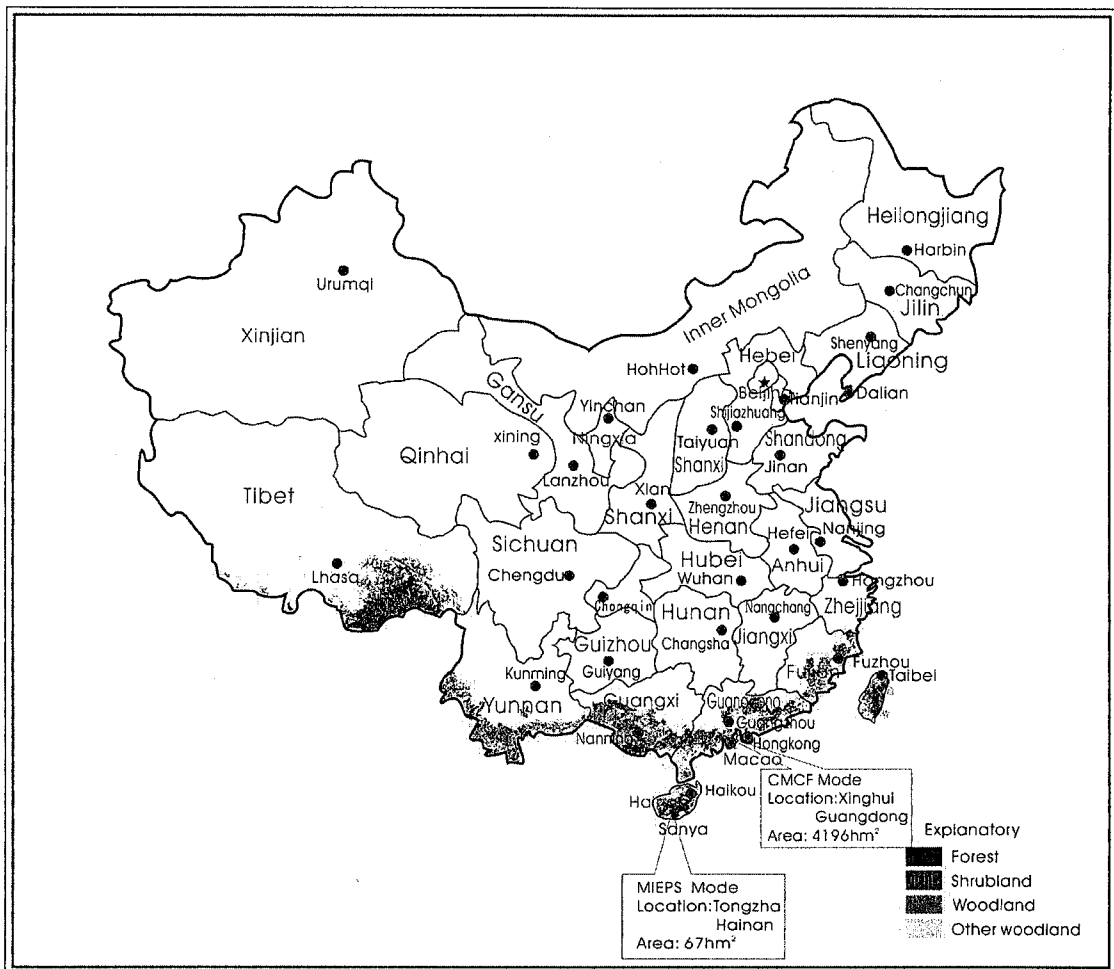
GAF and China Academy of Forestry will be in charge of training together, in order to draw support from the technical force of two R&D institutions. The services for the meeting will sub-contract to service company which can be satisfied the condition according to the standard. Training will be held on the second and third quarter of the last year.

3. Publication

To print 1000 copies of STF Management Techniques produced by the Project, with 200,000 woods. It will be sub-contracted to the publishing house, and completed in 12 months after project completion.

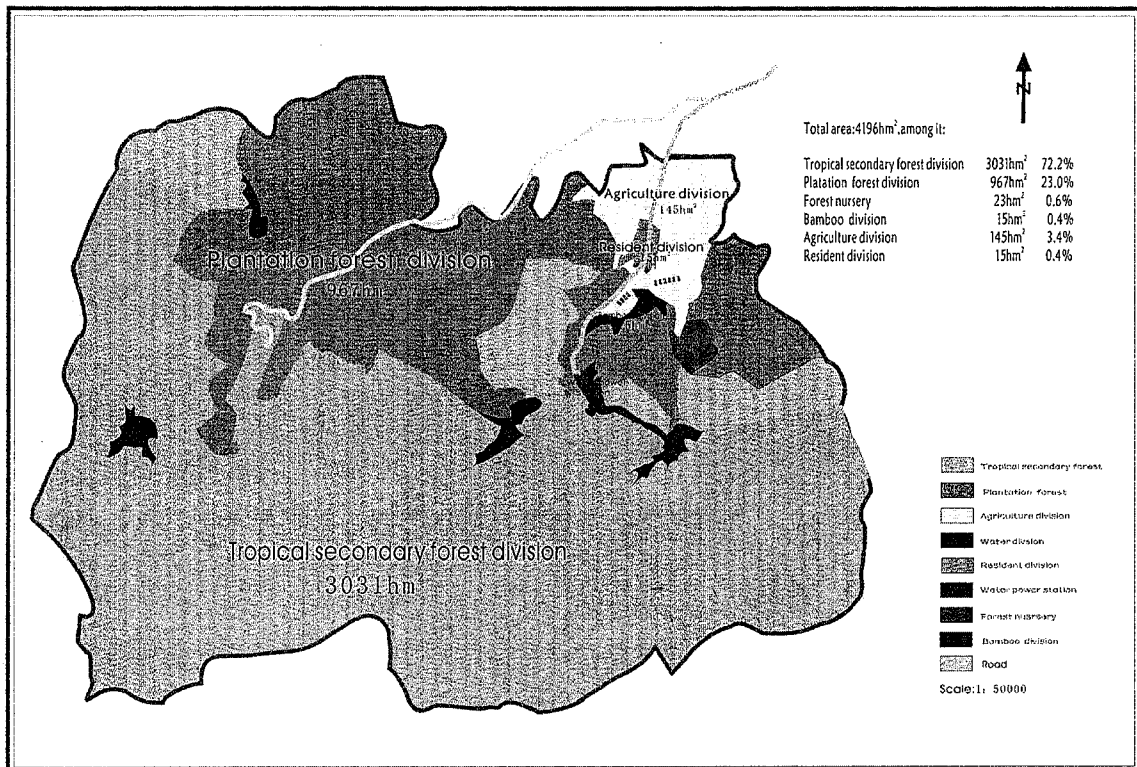
Attached Drawing A:

A Location Map of The Study and Demonstration Districts



Attached Drawing B:

**Basic Situation and Planning Outline of the Community-Based
Demonstration District in Gudao of Guangdong**



The demonstration district located at the STF region in Yamen, Xinghui, Guangdong Province, east longitude 112°52'30", north latitude 22°5'00". The total area of the district is 4196 ha, including 3031 ha of natural broadleaf STF, occupying 72.2% of the tropical forests. There are 967 ha of plantation forests, occupying 23.0%, 145 ha of farmland which includes a few hillside fields with a slope over 25 degrees. There are 320 residents with an annual per capita income of about 390 US \$; the major economic sources are from timber, orchards and farming.