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

PD 294/04 Rev.4 (F)

Project Completion Report

(Phase 1)

August 2008

Guangdong Academy of Forestry
Guangzhou P.R.China

PROJECT COMPLETION REPORT

(Phase I)

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)
Executing Agency:	Guangdong Academy of Forestry (GAF)
Host Government:	Government of the People's Republic of China
Starting Date:	October 1, 2006
Actual Duration:	24 Months
Actual Project Costs (Us$):	443,940

10 August 2008

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

Output 1.3: Establish and operate two DDs, including:

- Xinhui DD (in Guangdong), three plot were included:
  a) Natural restoration of forest ecosystem of TSF (67 ha.)
  b) Interplant of non-timber product species (67 ha.)
  c) Rehabilitation and restoration of degraded ecosystem of TSF (1000 ha.)
- Tongzha DD specially for interplanting rattan(67 ha., in Hainan)

1.3 Strategy adopted in carrying out the Project

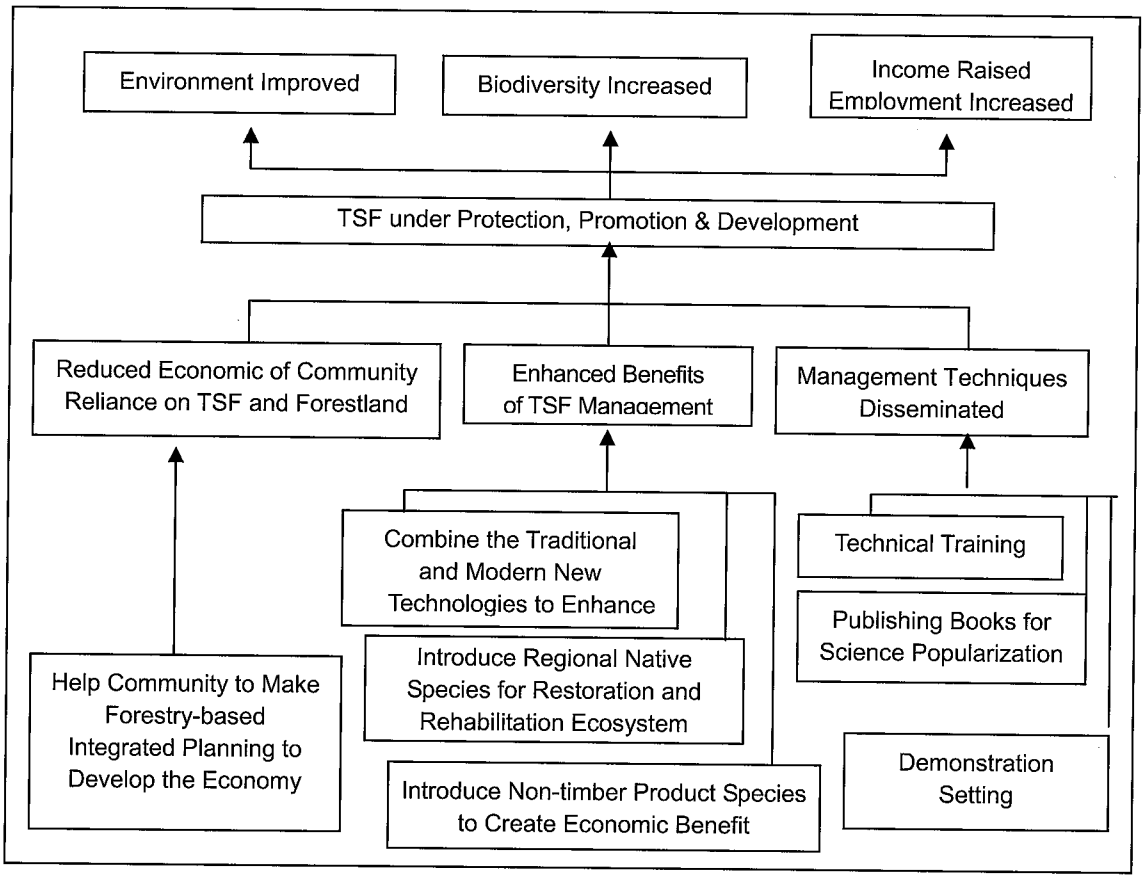
There was a basic conclusion from the pre-project that two reasons were caused for continuous destruction of TSF: (1) felling trees was the major means for farmers to survive since they lacked of income sources; and (2) forest management is in long-rotation, and it currently was shortage of management techniques and methods, and good species and seedlings that could generate output in a relatively short term in China. 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 TSF to develop on a sustainable track. Therefore, the basic idea for the project design was the integration of ecological and economic benefits with the increase of economic benefit as a condition, and the protection and improvement of TSF. Following points were addressed in the project strategy in implementation:

(i) By introducing non-timber species into degraded TSF to create economic sources for farmer at relative short time periods, to realize the objective of protecting TSF and enhancing ecological and economic benefits. The stakeholders can get economic benefits from non-timber forest products, and better ecological benefits through management, TSF be improved.

(ii) The project would be undertaken on the model of community-based management to let the stakeholders had opportunities to participant and used their traditional knowledge and experience, and share the benefits through their contributing.

(iii) On the project design, fully considered the species with good ecological and economic benefits be introduced into degraded SF.

The Object tree was in the following:



1.4 The Project's duration and planned over costs

Duration: 24 months, from October 1, 2006 to September 30, 2008

Expenses: Total Project budget was US$ 412,380. Of this amount, US$ 286,091 was committed by ITTO with the balance of US$ 126,289 by Govt. of China.

The relative sectors of the Project were paid much attention to.Chinese government had released the Project fund on time, and Ministry of Commerce, State Forestry Administration supervise in the whole course. The Management Center of EF of Guangdong Province and Forest Bureau of Jiangmen City had provided 29,000 US $ and 36,760 US $ financial support for Project implementation respectively.

2. Project Achievements

2.1 Outputs achieved

All of outputs in work planned have been achieved.

The Project elements planned and implemented as bellow:

Work Plan would be completed	Outputs Achievement
Output 1: Selection and collection 50 good introduced species	
Activity 1.1: Investigation and collection of species	103 of supper species had been investigated and collected.
Activity 1.2: Establishment of 2 ha gene pool	2 ha gene pool had been established in Guangzhou
Output 2: 3 ha of nurseries constructed and operated	
Activity 2.1: Construction of 3 ha nurseries	3 ha of nurseries had been constructed respectively in Guangzhou and Xinhui
Activity 2.2: Production of 285,000 seedlings	More then 290,000 seedlings had been produced in the two nurseries.
Output 3: Establishment of the SDMTSF districts	
Activity 3.1: Background information collection of the demonstration areas	background information had been collected in the two demonstration areas
Activity 3.2: Infrastructures of the demonstration items	Plot marks and 3 fixed sample plots for each item had been established
Activity 3.3: Planting of the introduced species	More then 285,000 seedlings had been reintroduced into the two DDs of Xinhui, Guangdong and Tongzha, Hainan.
Activity 3.4: Tending and management of the introduced species	Two fertilizations had been completed after planting. Tending and management of the introduced species are keeping on.
Activity 3.5: Observation of the fixed sample plots	Observation had been conducted twice, including species, growth, etc.

Output 1: 103 species were selected and collected

Under Output 1, 103 species were selected and collected. Among them, 68 local broadleaf species from 50 counties, 13 species from outside of China, 2 rattan species, 7 medicinal plant species, 2 bamboo species, 5 high yield resin pine families and 10 fruit tree species were selected and collected. Two ha of gene pool has been established in the garden of GAF and 103 species were reserved

Output 2: two nurseries totaled 3 ha had been built

Under Output 2, two nurseries totaled 3 ha had been built in Guangzhou and Xinhui for the production of quality seedlings. More than 290,000 seedlings can be produced each year.

Output 3: two of the demonstration areas have been established

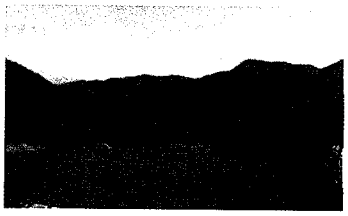
Under Output 3, there were two DDs have been established in Xinhui and Tongshi respectively. In Xinhui DD, the spots included: a) Natural restoration of forest ecosystem with an area of 1000 ha; b) The rehabilitation and restoration of degraded TSF, a 67 ha with 68 native hardwoods, 13 species from outside of China, such as Dipterocarpaceae had been introduced; c) Interplanting non-timber product species in the degraded SFT, a 67 ha with 2 rattans, 7 medicinal plants, 2 bamboos, 5 high yield resin pine families and 10 fruit tree species have been introduced. And in Hainan DD, a special demonstration for rattan interplanting under degraded forests TSF, a 67 ha with 2 rattans species had been reintroduced. More than 29,000 seedlings had been introduced into the degraded SF in total.

Tending and management of the species those were planted in the DDs as well as observation of the fixed sample plots, including the growth development and biodiversity variation are conducted on a regular time.

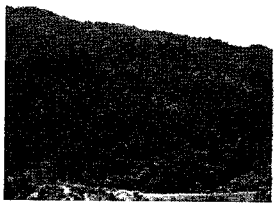
2.2 Specific objective achieved

Two of the DDs had been established

One was in Xinhui, Gudongdong, including three items 1) Natural restoration of forest ecosystem (1000 ha); 2) Rehabilitation and restoration of degraded TSF (67 ha); and 3) Interplanting non-timber product species in the degraded TSF. The other is in Tongzha (67 ha), Hainan, which is special for rattan interplanting under TSF.



Xinhui Demonstration District



Tongshi Demonstration District

Show Species Growth
by reintroduced in Xinhui

2.3 Contribution to the realization of development objectives

By completion of the Project Phase I, above three main outputs have been achieved. The contributions to the realization of development objective are included:

(i) It helped people understanding of the management meanings by better managed TSF in China, and the public's consciousness and interest on TSF management aroused.

It can be seen that the species those reintroduced into the degraded SF were growing

very well and some non-timber species have fruited. Average growth in length had reached 144.4cm, 13 species more than 200cm, highest one was 350cm, and some non-timber species already began to outputs, such as *Litsea cubeba*, can harvest 5 to 10 kg each tree, worth about 2 to 4 US $, only 14 months after plantation. Local residents in demonstration region are in very interesting to practices and the government in Guangdong began to disseminate this technique in the Ecological Forests (EF) construction program.

(ii) SF in the DDs are well protected

The significant result of the management to the SF in DDs, make the farmer begin to change the idea from felling to managing to SF. People are paid more attention to the SFM, about 4500 ha of SF be in better protection in the demonstration regions.

(iii) SF quality is promoted and biodiversity increased in the DDs

By reintroduced 103 of species to the degraded TSF, the biodiversity has been increased 56 percent and the qualities of the SF in the demonstration plots have much improved.

(iv) Provided an example and technical platform for TSF management of China

The DDs have already begun to produce a model function in Guangdong and Hainan. One of the more visible impacts of the project was that the management mode of the Project was as a key technique to popularize on the government's Ten Years Renovation program of 133 thousands ha degraded forest in Guangdong from 2008. Moreover, the Project has also completed the other necessary mechanisms to support implementation and application of the SFM for the purpose of enhancing economic and ecological benefits through the user-friendly website and the publications.

(v) Continuously provide quality nursery stock for community dissemination in the future.

The nursery stocks and gene pool established by the Project can provide large amounts of quality seedling or genetic copied of species for SFM in Guangdong and some other place. It has ensured the demands of species and quality seedling for dissemination of communities. The nurseries now have ability to provide more than 300,000 qualities seedling with 103 species to public annually.

Although we are in phase I of the Project, only two years development, the trees introduced grew very well, over 95 percent of survival rate, and reach 1.8 meters height in length in average so far. Some non-timber product species, such as *Litsea cubeba* and some non-timber product species began to outcome economic benefit. In the DDs, biodiversity had been increased, environment improved, and nature trees in the TSF have been accelerated by activities of management, the SF have been protected in the DDs.

Profit from non-timber product can maintain the project kept going on after project completion.

3. Target Beneficiaries Involvement

The direct Project beneficiaries are stakeholders. There are 16 families with the ownership of SF land have participated in the Project management. They provide SF as demonstration plots of the management for the Project and worked with unpaid in the field management activities, and share 50 percent of the income from non-timber products. They were very interesting the management through took part in the activities and began to replicate in their own TF land. **The indirect Project beneficiaries** include the local communities and governments in DDs, also the relative educational, research institutions and Chinese government. Gudou forests community of Xinhui has provided strong support for the Project in coordinating with local people and relative institutions, rear services, transportation to the experts and working people. The Management Center of EF of Guangdong Province and Forest Bureau of Jiangmen City had provided 29,000 US $ and 36,760 US $ financial support for Project implementation. South China Agriculture University has sent experts and students in the fields of forests management, tree breeding, biodiversity &soil, ecology and cultivation to work with Project team, and regard the DDs as a long-term research and teaching base. Department of Guangdong Forestry began to popularize the technique in the government's Ten Years Renovation Program of 133 thousands ha degraded forest from 2008. Chinese government had released the Project fund on time, and Ministry of Commerce, State Forestry Administration supervise in the whole course. They will continue cooperation with the Project team to operate after completion.

4. Lessons Learned

4.1 Development lessons

4.1.1 Aspects of project design which most contributed to the success in the achieving the Development Objective

(i) The planning and design of a TSFM should be in accordance with local situation, economic condition, and methods which are practical and operational easily;

(ii) The reduced and degraded of TSF constantly as a result of the livelihood requirement of the residents highly relied on timber product in the mountain areas. The economical benefit base on non-timber products was fully considered. And non-timber product species should have local advantage such as market status, easy storing and processing;

(iii) Native species is most important in species selection of degraded forest reintroducing for environment safety and succession normally in the future, and introduce some

super exotic species in an appropriate amount will improve forests stand; and

(iv) Right place right species is a principle in reintroduce planting, a key to success in plantation of reintroduce species.

4.1.2 Additional arrangements that could improve cooperation between the relevant parties interested in the project

Expand the cooperation fields which close the project between the relevant parties will improve cooperation relationship and understanding in the implementation. We developed another provincial project of low quality EF renovation successfully in Xinhui DD.

4.1.3 Factor which will most likely affect project sustainability after completion

Technical support to the DD continuously will most likely important to project sustainability after completion.

4.2 Operation lessons

4.2.1 Project organization and management

(i) Operational arrangements. Under the guidance of ITTO and Chinese government, consultant with Project advisers, cooperation with the institutions of forest research and education and department of regional forests, and together with stakeholders, would make more easy and fruitful in the Project implementation. It was important to establish the systems of regular exchange and examination in enhancing cooperation between the organizations related the project, which was helpful to mutually understanding work process of other side and research progress and solving timely technological and management problems as well as keeping chances of expressing different opinions;

(ii) In aspect of the project document drafting, according to ITTO project guidance, finding the most importance problem facing at present and suggesting solving scheme are the key of successful application of project. Only doing it like this can accord with benefits of ITTO member country, improve tropical forests and serve for society;

(iii) In aspect of the qualities in project inspection and estimation and project design, we kept effective information exchange regularly, followed work process to each division leader and established strict financial examination system to evaluate if members of Project had enough ability to complete fixed tasks according to relative standards and procedure. We may solve possible arising problems and do necessary adjustment so as to timely complete planed tasks with good quality and quantity. Therefore, it was better than expected no matter in quality or on the quantity of the Project;

(iv) The responsibilities of the executive organizations were partitioned and assigned

clearly from the beginning of the project, and signed in agreement. Such as Tongshi district of Hainan, would was fully responsible by Chinese Academy of Forestry and the use of funds of the relevant activities. During implementation, the responsibilities and tasks might be adjusted and fixed it with supplement agreement according to the situation. Thus the functions and responsibilities for all joining organizations were very clear;

(v) In order to ensure fund expenditure and work progress of the project to go on as plan, we established independent fund management account, and the project office renewed progress charts at interval of 10 days. When ITTO fund release out of step of operation plan, we used the fund provided by Chinese Government adjusting, so as to ensure the project to go on schedule;

(vi) It didn't be emerged that the intrinsic and extrinsic factors those could be predicted would affect the project implement.

5 Recommendations

(i) Keep close cooperation with the local forest department can bring stronger support and efficiency to the Project implementation. Local government forest institutions can support in many aspects to Project, such as financial, coordinate the relation with local people and organizations, and utilize the government's appeal and program to popularize Project achievements. In this Project, the EF Management Center of Guangdong Province and Forest Bureau of Jiangmen City had provided 29,000 US $ and 36,760 US $ financial support for Project implementation respectively, and extend management technique in ten years program of 2015 thousands ha of degraded forest renovation of Guangdong province;

(ii) Together with participants, understand what they want to do most, exchange experiment each other, train in simplest way of management technique;

(iii) Standardizing is very important in construction of the demonstration plot, it will direct influence the confidents of SFM to people, government and non-government organizations;

(iv) It is very important to popularize that the planning and design of a TSFM should be in accordance with local situation, economic condition, and methods that are practical and operational easily;

(v) The model of community-based management made more farmers had an opportunity to participate in. Not only they learnt technical ability under the guidance of technical staff, but also exchange experience each other;

(vi) Economical benefit should be fully considered in the design of SFM. People pay more attention to livelihood requirement in developing country, especially in rural areas. It is the most effective method to guide communities to management SF by introduced non-timber product species into the degraded land to create economic benefit;

(vii) It will be effectively to dissemination that the Technical reports release on the publication and website and meeting on time.

Part II Main Text

1 Project Results

1.1 Situation existing at project completion as compared to the pre-project situation

The difference fore-and-aft the Project implementation, mainly are:

(i) The TSF have been protected in the DDs since Project implementation.

(ii) The biodiversity has been increased. By reintroducing 103 of species to the degraded TSF, 56 percent of the species has been increased.

(iii) The qualities of the SF in the demonstration plots have much improved. The species those reintroduced into the degraded SF were growing very well. Average growth in length had reached 144.4cm, 13 species more than 200cm, highest one was 350cm.

(iv) Some Non-timber product species by reintroduced into SF have fruited, economic benefit come into view. Such as *Litsea cubeba*, can harvest 5 to 10 kg per tree, worth about 2 to 4 US $, only 18 months after plantation.

(v) Quality nursery stock can provide. The nursery stocks and gene pool established by the Project can provide large amounts of qualify seedling or genetic copied of species for TSFM in Guangdong and some other place. The nurseries now have ability to provide more than 300,000 qualities seedling with 103 species to public annually. It satisfies the demands of species and quality seedling for dissemination of communities.

(vi) People pay more attention to the SFM. The significant result of the management to the SF in DDs, make the farmer begin to change the idea from felling to managing to SF, and the government are paid more attention to SF management in the demonstration regions, the SF are in better protection. In Guangdong, the management mode of the Project will be as a key technique to popularize on the government's 133 thousands ha of degraded forest renovation program in next10 years from 2008.

(vii) People know more about the knowledge of SF management through User-friendly website and the publications.

1.2 Extent to which the project Specific Objective was achieved

The Specific Objective of the Project was realized.

Two demonstration areas have been established in Xinhui of Guangdong and Tondshi of Hainan. In Xinhui DD, the spots included, a) a natural restoration of forest ecosystem (1000 ha); b) an rehabilitation and restoration of degraded TSF with 68 native hardwoods

(67 ha); c) non-timber product species in the degraded SFT were interplanted (67 ha). In Tongzha DD special for rattan, a 67 ha with 2 rattan species was introduced under TSF.

Under Output 1, 103 species were selected and collected. Among them, 68 local broadleaf species from 50 counties, 13 species from outside of China, 2 rattan species, 7 medicinal species, 2 bamboo species, 5 high yield resin pine families and 10 fruit tree species were selected and collected. 2 ha of gene pool had been established in the garden of GAF and 103 species were reserved.

Under Output 2, two nurseries totaled 3 ha had been built in Guangzhou and Xinhui for the production of quality seedlings. More than 290,000 seedlings had been produced in the two nurseries.

Under Output 3, more then 103 species have been reintroduced in the degraded TSF (67 ha). In Tongzha DD special for rattan, 2 rattan species was introduced in degraded TSF of 67ha. More then 29,000 seedlings had been introduced into the two DD. 16 fixed sample plots have been established, and background information on the two demonstration areas collected. Tending and management of the species reintroduced into the DDs as well as observation of the fixed sample plots have been conducted on a regular time, including the survival rate, growth development and biodiversity variation.

1.3 Impact of the project results on the sectoral programmes, on the physical environment, on the social environment, on the target beneficiarial.

Ecological and economical benefit has begun to appear after implementation of the Project. The effect of results of the Project has brought the Government's attention of Guangdong and Hainan to accelerate SFM by better managed TSF. Department of Guangdong Forestry has accepted the management model to popularize in the government's ten years renovation program of 133 thousands ha degraded forest from 2008. Most of government's forest department in Guangdong has provided nursery stock to farmers for free to manage SF. People began to practice in their family TF land using the management technique development by the Project. Some educational and research institutions, such as South China Agriculture University and Tropical Forest Research Institute of Chinese Academy of Forestry regard the DD as a long-term research and teaching base.

1.4 Project sustainability after project completion as a result of project conceptualization, assumptions made and conditions prevailing at completion.

The intended situation after whole Project completion documented was that the goals would be realized: In Xinhui DD, a) the present TSF is 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; and c) the

annual per capita income of the residents in the district will rise steadily at a rate of 46% upon the completion to arrive at 550 US $ from 376 US $ in 2005, more job opportunities are generated. In Tongzha rattan interplanting special DD, the present TSF are protected and promoted and the output of rattan per ha reaches $350 from the 6th year after interplanting.

Although we are in phase I of the Project, only two years development, the hypothetical assumptions we made have already verified elementary that can be reached. The trees introduced grew very well, over 95 percent of survival rate, and reach 1.8 meters height in length in average so far. Some non-timber product species, such as *Litsea cubeba* and some non-timber product species began to outcome economic benefit in Xinhui DD. In the DDs, biodiversity had been increased, environment improved, and nature trees in the TSF have been accelerated by activities of management. Profit from non-timber product can maintain the project kept going on after project completion. The management of SF will be in sustainable.

2 Synthesis of the Analysis

(a) Specific Objective Achievement: Realised

(b) Output: Realised

(c) Schedule: In advance

(d) Actual Expenses: >10% above planned

(e) Potential of replication: Significant potential

(f) Potential for scaling-up: Significant potential

Total budget was 412,380 US$, and actual expenses was 443,940 US$, 7.6% above planned. In ITTO founds, disbursement to Executing Agency was 217,370 US$. Among ITTO found of disvursement, the expenditures include: the amount of US$19,200 for Project Personnel; 71,250.00 for Sub-contracts; $37,584 for Travel; $22,000 for Project vehicle; $63,656 for Consumable items; and $3,680 for Miscellaneous. The project vehicle (Oodyssey HG6480, Made in Guangzhou-Honda) was purchased with the amount of US$32,475, US$22,000 from ITTO, and another US$10,475 from the financial contribution of GAF.

There is a great potential for replication and scaling-up the project achievements. The governments and stakeholders are keen of adopting and using the selected tree species, TSF management techniques to increase the economic and ecological benefits. There will be significant improvement towards pursuance of TSFM if the project technical results are disseminated and forest stakeholders including community villagers and government

official be trained.

The DDs have already begun to produce a model function in Guangdong and Hainan. It began to popularize on the government's 10 years renovation program of 133 thousands ha degraded forest in Guangdong from 2008. Moreover, the Project has also completed the other necessary mechanisms to support implementation and application of the TSFM for the purpose of enhancing economic and ecological benefits through the user-friendly website and the publications.

Part III Conclusions and Recommendations

a) Development Lessons

(i) It is estimated through the management of four years, unit output of the non- timber products in management land can reach 450 US $ per hectare, per capital annual income will reach 750 US $, higher than project designed (550 US $).

(ii) It is the most effective method to guide communities to SFM by introduced non-timber product species into the degraded land to create economic benefit. The stakeholders pay much more attention to SFM after the establishment of demonstration fields.

(iii) Nature trees in the SF have been accelerated by activities of the management. It will be speeded up the process of development and succession of TSF to a stable community naturally, less than half time of those non-managed stands.

(iv) By reintroduced a large number of species those were disappeared or degenerated in degraded TSF, biodiversity will be increased.

(v) It is very important to popularize that the planning and design of a SFM should be in accordance with local situation, economic condition, and methods that are practical and operational easily.

(vi) The government's attention was very important, can make farmer increase their confidence of management. In addition, still can help them to solve some practical problems, such as offering the subsidy of the nursery stock and plantation.

(vii) Although stakeholders are willing to TSFM practices, lack of technology and good quality nursery stocks will still be in main problem. Training is a most important task for dissemination in next step.

b) Operation Lessons

(i) Under the guidance of ITTO and Chinese government, consultant with Project advisers, cooperation with the institutions of forest research and education, can keep going on track in Project implementation;

(ii) Kept close cooperation and friendly with the local forest department and stakeholders can make and efficiency to the Project implementation;

(iii) It is important that there was a management mechanism of job responsibility in the project team. The responsibilities of the executive organizations are partitioned and assigned clearly from the beginning of the project, and sign in agreement;

(iv) In project inspection and estimation and project design, keep effective information exchange regularly, follow work process to each division leader and establish strict financial examination system to evaluate if the member of Project has enough ability to complete fixed tasks according to relative standards and procedure;

(v) The model of community-based management can let more farmers had an opportunity to participate in. They can learn management technique directly through the project implementation and replication on their own land;

(vi) The species selection of non-timber product should base on the local advantage such as market popular, simple to keep and process, and better economic benefits;

(vii).The seedlings those were introduced into the degraded forest should be strong enough and more than 50 cm in height. Otherwise, they are very difficult survives owning to the light requirement.

c) Recommendation for Future Project

(i) Community-based management is a good development path to accelerate SFM. It can let more residents have an opportunity to participate in, and share the benefits;

(ii) Native species is most important in species selection of degraded forest reintroducing for environment safety and succession normally in the future;

(iii) Economic benefit is more important considered by private sectors in SFM. Non-timber product species introduce into degraded forest is a most important way to solve the problem of SF protection;

(iv) It is very important to popularize that the planning and design of a SFM should be in accordance with local situation, economic condition, and methods that are practical and operational easily;

(v) It is also important to Project development in the future that government be involved in the Project implementation, they can provide widely support, such as financial, management and policies making;

(vi) Stakeholders generally lack understanding of SF and management experience. It is a key to accelerate SFM by better managed TSF in China, the training program need to be carried out immediately.

Responsible for the Report

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Project Leader

Chief-engineer of GAF

Date: August 10, 2008

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We acknowledge with sincere appreciation and gratitude the invaluable contribution and support of the numerous government and non-government agencies, different forest stakeholder, funding, executing and cooperating agencies, in making possible the successful completion of the "The Study and Demonstration of the Management of SF in Tropical Regions for the Purpose of Enhancing Economic and Ecological Benefits".

We are also many thanks to Mr. Peng Yaoqiang, director of Administration Center of Guangdong EF, Xie Jiango, deputy director of Forests Administration Bureau of Jiangmen City, for financial and management supports to the Project.

We appreciative acknowledge to our national consultants and those who shared their insights, wisdom, and expertise during the project implementation. Particularly, we are highly indebted to community-based Peoples Organizations, government and non-government organizations, and other persons and institution, whose also contributed and provided inputs, in one way or the other, to the realization of this endeavor a complete listing of which would be impossible.

Annex A

Logical Framework Matrix

PROJECT ELEMENTS	INDICATORS	MEANS OF VERIFY	ASSUMPTIONS
DEVELOPMENT OBJECTIVE			
To accelerate SFM by better management of TSF in Chine With the implementation of the project, TSF in the DDs 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 TSF, the awareness and interest of the public for managing TSF 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 TSF.	● The TSF is protected and improved without human disturbance in the DDs; ● Biodiversity increase; ● The residents acquire stable income, more job opportunities; ● The consciousness and interest of the public for managing TSF are aroused; ● A series of management techniques is extended.	● Submit to Relative reports ITTO ● Financial reports for the DDs; ● ITTO officers examination; ● Observation Reports of fixed sample plots; ● The investigation report on community realization of TSF.	● Support of state policy to forest resources protection ● Management model suitable to the local be chosen
SPECIFIC OBJECTIVE			
Establishment of the SDMTSF districts	Two DDs established. One is in Xinhui, Gudongdong, including three items 1) Natural restoration of forest ecosystem; 2) rehabilitation and restoration of degraded a TSF; 3) Interplanting non-timber product species The other is in Tongzha, Hainan, which is special for rattan interplanting under TSF.	● The project design, diagram etc. ● Measurement on spot	Support of local government and residents
Output 1: Select and collect 50 good species	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	● Investigation report ● On-spot inspection	Assistance with local technicians familiar with native species
Output 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.3: Establishment of the SDMTSF 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 TSF, 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 TSF, 67 ha. 2 rattans introduced.	● On-spot inspection ● The operating map ● Special Technical reports	● Species selection ● Natural disaster

	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 TSF, 67 ha. 2 rattans introduced.		
Activity 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 1.2: Establishment of 2ha gene pool	1 technician in charge of design and construction. Sub-contraction by bidding, completion within 3 months.	● On-Spot check ● Subcontract	
Activity 2.1: Construction of 3ha nurseries	1 technician in charge of design and construction. Sub-contraction by bidding, completion within 5 months.	● On-Spot check ● Subcontract	
Activity 2.2: Production of 285,000 seedlings	1 technician in charge of technical supervision, completion within 12th month.	Seedlings production records	
Activity 3.1: Background information collection	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 3.2: Infrastructures of the demonstration items	Plot marks established, 3 fixed sample plots for each item, total of 16. Completion within 5 months.	● Plots diagram ● On-Spot check	
Activity 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.	● On-Spot check ● Subcontract	
Activity 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.	● Subcontract ● Records	
Activity 3.5: Observation of the fixed sample plots	Observation once every 6 months, including species, growth development and environment factors.	Observation records	

Annex B Project financial and cash flow statements

PROJECT FINANCIAL STATEMENT (in US Dollar)

Funding for ITTO

Project No. PD 294/04 Rev.4 (F) Period ending on: 10 Aug. 2008

Project Title: The Study and Demonstration of the Manangement of SFs in Tropical Regions for the Purpose of Enhancing Economic and Ecological Benefits

Component	Original Amount (A)	Expenditures To-date			Available Funds (E) {A - D}
		Accrued (B) a/	Expended (C)	Total (D) {B + C}	
I. **Funds managed by Executing Agency**					
10. Project/Pre-Project Personnel					
11. National Experts	7,200	0	7,200	7,200	0
11.1 Hired temporarily	7,200	0	7,200	7,200	0
11.2 Forester 1					
11.3 Forester 2, etc.					
11.4 Administrator					
12. Other Personnel					
12.1 Assistant 1					
12.2 Assistant 2					
12.3 Other labour					
13. National Consultants	12,000	0	12,000	12,000	0
13.1 Consultant 1(Prof. Chen Tongai)	6,000	0	6,000	6,000	0
13.2 Consultant 2(Prof. Zhong Weihua)	6,000	0	6,000	6,000	0
13.3 Consultant 3					
14. International Consultant(s)					
14.1 Forest Inventory Expert					
14.2 Consultant 2					
15. Fellowships and Training					
15.1 Training 1 (specify beneficiaries)					
15.2 Training 2					
15.3 Training 3					
19. Component Total:	19,200	0	19,200	19,200	0
20. Sub-contracts					
21. Sub-contract (Seedlings)	71,250	0	71,250	71,250	0
22. Sub-contract (with B)					
23. Sub-contract (with C)					
24 Sub-contract (with D)					
25 Sub-contract (with E)					
26 Sub-contract (with F)					
29. Component Total:	71,250	0	71,250	7,1250	0
30. Travel					
31. Daily Subsistence Allowance	19,584	0	20,090	20,090	-506
31.1 National Expert(s)/Consultant(s)	19,584	0	20,090	20,090	-506
31.2 International Consultant(s)					
31.3 Others					
32. International Travel					
32.1 National Expert(s)/Consultant(s)					
32.2 International Consultant(s)					
32.3 Others					
33. Local Transport Costs	18,000	0	19,565	19,565	-1,565
33.1 National Expert(s)/Consultant(s)	18,000	0	19,565	19,565	-1,565
33.2 International Consultant(s)					
33.3 Others					

39.	Component Total:	37,584	0	39,655	39,655	-2,071
40. Capital Items						
41.	Premises					
42.	Land					
43.	Vehicle(s)	22,000	0	22,000	22,000	0
44.	Capital Equipment					
	44.1 Computer Equipment (specify)					
	44.2 Forestry Equipment (specify)					
	44.3 Others					
49.	Component Total:	22,000		22,000	22,000	0
50. Consumable Items						
51.	Raw Materials (fertilizer etc.)	49,000	0	49,000	49,000	0
52.	Spares					
53.	Utilities	8,800	0	8,326	8,326	474
54.	Office Supplies	5,856	0	5,630	5,630	226
59.	Component Total:	63,656		62,956	62,956	700
60. Miscellaneous						
61.	Sundry	3,680	0	3,680	3,680	0
62.	Audit Costs					
63.	Contingencies					
69.	Component Total:	3,680	0	3,680	3,680	0
70. National Management Costs						
71.	Executing Agency Management Costs					
72.	Focal Point Monitoring					
79.	Component Total:	0			0	
	Sub-Total:	217,370	0	218,741	218,741	-1,371
80. Project Monitoring & Administration						
81.	ITTO Monitoring and Review	10,000				
82.	ITTO Mid-term and Ex-post Evaluation					
83.	ITTO Programme Support Costs	18,190				
83.	Donor Monitoring Costs					
89.	Component Total:	28,190				
90.	Refund of Pre-Project Costs (Pre-Project Budget)	40,531				
	Sub-Total:	68,721				
100.	GRAND TOTAL:	286,091				

Note: Budget Components are those detailed in the Project/Pre-Project Document.

a/ Accrued expenditure: expenditures committed/accrued as at the end of the reporting date, but not yet settled.
b/ Funds retained and accounted for by ITTO - details not available with Executing Agency.

PROJECT FINANCIAL STATEMENT (in US Dollar)

Funding for Govt. of China

Project No. PD 294/04 Rev.4 (F) Period ending on: 10 Aug. 2008

Project Title: The Study and Demonstration of the Manangement of SF in Tropical Regions for the Purpose of Enhancing Economic and Ecological Benefits

Component	Original Amount (A)	Expenditures To-date			Available Funds (E) {A - D}
		Accrued (B) a/	Expended (C)	Total (D) {B + C}	
I. Funds managed by Executing Agency					
10. Project Personnel					
11. National Experts	25,000	0	25,000	25,000	0
11.1 Project Coordinator					
11.2 Forester 1					
11.3 Forester 2, etc.					
11.4 Administrator					
12. Other Personnel	10,000	0		21,350	-11,350
12.1 Assistant 1					
12.2 Assistant 2					
12.3 Other labour					
13. National Consultant(s) (short term)					
13.1 Consultant 1					
13.2 Consultant 2					
13.3 Consultant 3					
14. International Consultant(s)					
14.1 Forest Inventory Expert					
14.2 Consultant 2					
15. Fellowships and Training					
15.1 Training 1 (specify beneficiaries)					
15.2 Training 2					
15.3 Training 3					
19. Component Total:	35,000	0	46,350	46,350	-11,350
20. Sub-contracts					
21. Sub-contract (Gene pool)	2,000	0		2,300	-300
22. Sub-contract (Nurseries)	12,000	0		12,650	-650
23. Sub-contract (Non-timber plants)	19,821	0		19,980	-159
24 Sub-contract (Rattan planting)	17,647	0		18,620	-973
25 Sub-contract (Introduced species)	19,821	0		19,950	-129
26 Sub-contract (with F)					
29. Component Total:	71,289	0	71,289	73,500	-2,211
30. Travel					
31. Daily Subsistence Allowance					
31.1 National Expert(s)/Consultant(s)					
31.2 International Consultant(s)					
31.3 Others					
32. International Travel					
32.1 National Expert(s)/Consultant(s)					
32.2 International Consultant(s)					
32.3 Others					
33. Local Transport Costs					
33.1 National Expert(s)/Consultant(s)					
33.2 International Consultant(s)					
33.3 Others					
39. Component Total:	0	0	0	0	0
40. Capital Items					

41.	Premises					
42.	Land					
43.	Vehicle(s)	0	0	10,475	10,475	-10,475
44.	Capital Equipment					
	44.1 Computer Equipment (specify)					
	44.2 Forestry Equipment (specify)					
	44.3 Others					
49.	Component Total:	0	0	10,475	10,475	-10,475
50.	Consumable Items					
51.	Raw Materials					
52.	Spares					
53.	Utilities	4,400	0	6,528	6,528	-2128
54.	Office Supplies					
59.	Component Total:	4,400	0	6,528	6,528	-2128
60.	Miscellaneous					
61.	Sundry	9,600	0	13,625	13,625	-4,025
62.	Audit Costs	6,000	0	6,000	6,000	0
63.	Contingencies					
69.	Component Total:	15,600	0	19,625	19,625	-4,025
70.	National Management Costs					
71.	Executing Agency Management Costs					
72.	Focal Point Monitoring					
79.	Component Total:	0	0	0	0	0
	Sub-Total:	126,289	0	156,478	156,478	-30,189
80.	Project Monitoring & Administration					
81.	ITTO Monitoring and Review					
82.	ITTO Mid-term and Ex-post Evaluation					
83.	ITTO Programme Support Costs					
83.	Donor Monitoring Costs					
89.	Component Total:	0				
90.	Refund of Pre-Project Costs (Pre-Project Budget)	0				
	Sub-Total:					
100.	GRAND TOTAL:	156,478				

Note: Budget Components are those detailed in the Project Document.

a/ Accrued expenditure: expenditures committed/accrued as at the end of the reporting date, but not yet settled.
b/ Funds retained and accounted for by ITTO - details not available with Executing Agency.

PROJECT CASH FLOW STATEMENT

Project No. PD 294/04 Rev.4 (F) Period ending on: 10 Aug. 2008

Project Title: The Study and Demonstration of the Manangement of SF in Tropical Regions for the Purpose of Enhancing Economic and Ecological Benefits

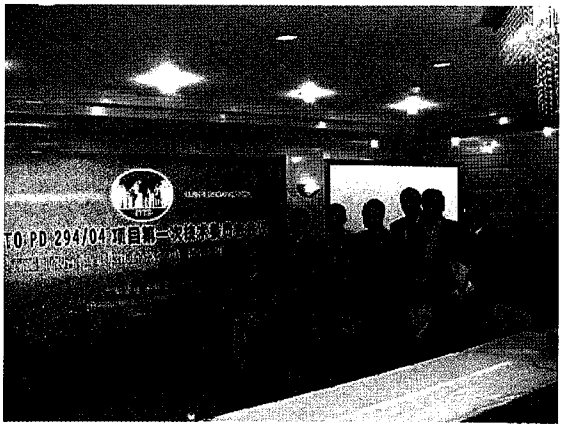
Component	Reference	Date	Amount	
			in US$	Local Currency
A. Funds received from ITTO:				
1. First installment	Agreement	18 Oct 06	$70,000.00	560,000.
2. Second Installment	Agreement	31 May 07	$80,000.00	610,600.
3. Third installment	Agreement	18 Nov 07	$40,000.00	292,000.
4. Fourth installment	Agreement	8 Apr. 08	$27,370.00	188,853.
ETC.				
Total Funds Received:			$217,370.00	1,651,453
B. Expenditures by Executing Agency:				
10. Project/Pre-Project Personnel				
11. National Experts	YPO	10 Aug. 08	$7,200.00	54,702
11.1 Hired temporarily			$7,200.00	54,702
11.2 Forester 1				
11.3 Forester 2, etc.				
11.4 Administrator				
12. Other Personnel				
12.1 Assistant 1				
12.1 Assistant 2				
12.2 Other labour				
13. National Consultants		10 Aug 08	$12,000.00	91,169
13.1 Consultant 1(Prof. Chen Tongai)			$6,000.00	45,584.5
13.2 Consultant 2(Prof. Zhong Weihua)			$6,000.00	45,584.5
13.3 Consultant 3				
14. International Consultant(s)				
14.1 Forest Inventory Expert				
14.2 Consultant 2				
15. Fellowships and Training				
15.1 Training 1 (specify beneficiaries)				
15.2 Training 2				
15.3 Training 3				
19. Component Total:			$19,200.00	145,871
20. Sub-contracts				
21. Sub-contract (Seedlings)		31 Dec 07	$71,250.00	541,317
22. Sub-contract (with B)				
23. Sub-contract (with C)				
24. Sub-contract (with D)				
25. Sub-contract (with E)				
26. Sub-contract (with F)				
29. Component Total:			$71,250.00	541,317
30. Travel				
31. Daily Subsistence Allowance		10 Aug 08	$20,090	152,632

	31.1 National Expert(s)/Consultant(s) 31.2 International Consultant(s)			$20,090	152,632
	31.3 Others 32. International Travel 32.1 National Expert(s)/Consultant(s) 32.2 International Consultant(s) 32.3 Others 33. Local Transport Costs 33.1 National Expert(s)/Consultant(s) 33.2 International Consultant(s) 33.3 Others		10 Aug 08	$19,565	148,644
	39. Component Total:			$39,655	301,276
40.	Capital Items 41. Premises 42. Land 43. Vehicle(s) 44. Capital Equipment 44.1 Computer Equipment (specify) 44.2 Forestry Equipment (specify) 44.3 Others		1 Nov 06	$22,000	167,143
	49. Component Total:			$22,000	167,143
50.	Consumable Items 51. Raw materials (fertilizer etc.) 52. Spares 53. Utilities 54. Office Supplies		10 Aug 08 10 Aug 08 10 Aug 08	$49,000 $8,326 $5,630	372,274 63,256 42,774
	59. Component Total:			$62,956	478,304
60.	Miscellaneous 61. Sundry 62. Audit costs 63. Contingencies		10 Aug 08	$3,680	27.959
	69. Component Total:			$3,680	27,959
70.	National Management Costs 71. Executing Agency Management Costs 72. Focal Point Monitoring				
	79. Component Total:			0	0
	Total Expenditures To-date:		10 Aug 08	$218,741	1,661,870
	Remaining Balance of Funds (A-B):		10 Aug 08	-$1,371	-10,416

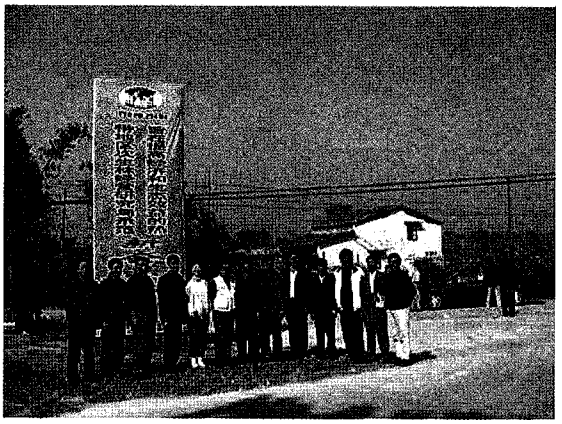
Notes: (1) Amounts in U.S. dollars are converted using the average rate of exchange when funds were received by the Executing Agency

(2) Total Expenditures To-date (in local currency) should be the same as amount shown in Sub-Total of column (C) of the Financial Statement.

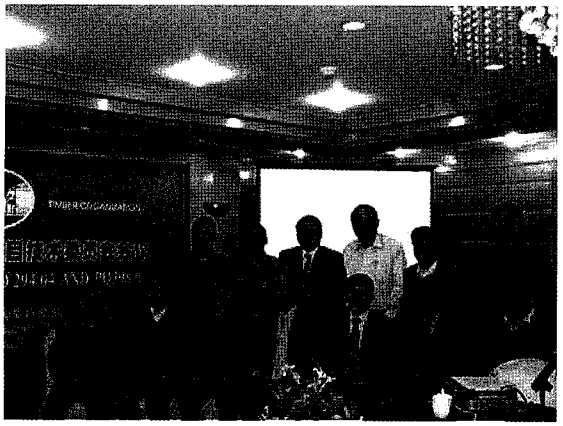
Annex C Photos of the PTC meeting and Field visit



The 1st PTC Meeting on 22 Dec. 2006, Guangzhou

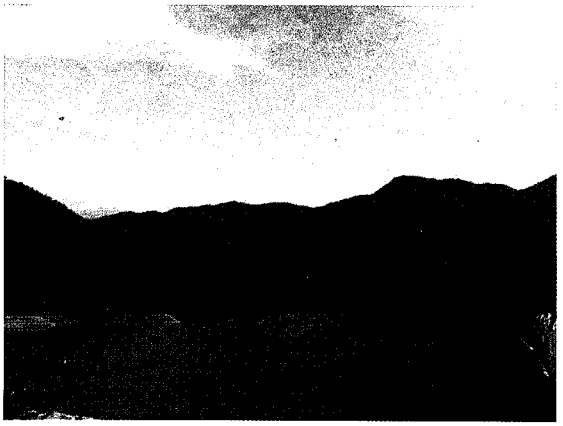


Field visiting



The 2nd PTC Meeting on 25 Feb 2008, Guangzhou

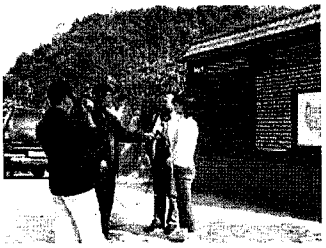
Field visiting



Xinhui Demonstration District

Tongshi Demonstration District

Super Tree Selection



Dr. Hiras Sidabutar
interviewed by local TV

Dr. Hiras Sidabutar and Ms. Yang Lingyun
on Nursery Spot Inspection

Mr. Zeng Linghai
interviewed by local TV

Dr. Hwan OK Ma,
on Spot Inspection

Mr. Li Qiang
on Spot Inspection

Ratten

Bamboo

Native Species
Daibergia odorifera

Medicinal species
Spatholobus suberectus

FINAL TECHNICAL REPORT