

INTERNATIONAL TROPICAL TIMBER ORGANIZATION

ITTO

Type of report: PROJECT COMPLETION REPORT

Title: Training on Demonstration, Application and Extension of *ITTO Manual on Restoring Forest Landscapes* in Tropics of China

Serial Number: PD 423/06 Rev.2 (F)

Executing Agency: Institute of Forest Resource Information Techniques, Chinese Academy of Forestry

Host Government: The People's Republic of China

Starting Date: October 1, 2007

Actual Duration (months): 33 months

Actual Project Cost: 531,085 US\$

ITTO: 372,060 US\$

Gov't of China: 159,025 US\$

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Part I Executive Summary

1. Background Information About the Project

1.1 The Key problems intended to solve

The objective of the project as a whole is to promote the landscape restoration, sustainable management of tropical forests and the sustainable development of the tropics in China.

Although Chinese Central Government as well as local governments in tropics has exerted great efforts on tropical forest management, and tropical forest coverage rate has been increased, forest degradation, fragmentation and modification are still severe in same tropical area that ecological function of tropical forest landscapes and human well-being declined.

The key problems of the project intended to solve are as follows:

- (1) The lack of understanding of tropical forest landscapes to decision-makers, local communities, individuals and other stakeholders;
- (2) The indifference of stakeholders to public participation and lack of mechanism for different stakeholders participating forest management decision-making;
- (3) Poverty of local community and residents and lack of related knowledge, information and techniques;
- (4) The lack of desirable approaches and demonstrations, while conventional approaches can't balance the ecological integrity and human well-being and hardly to restore forest landscapes;
- (5) The lack of financial incentives and compensation to restore forest landscapes;
- (6) The ignorance of national policy to forest landscape restoration activities, including restoration of degraded primary forests, secondary forests and degraded forest lands.

Intended situation after project completion will be as follows:

- (1) To promote the restoration of forest landscape and improve the socio-economic conditions of local people in project area directly.
- (2) To benefit to poverty reduction and economic growth in tropics of China.
- (3) To enhance the environmental security and biodiversity conservation in tropics of China.
- (4) To promote forest landscape restoration, sustainable forest management and sustainable development in tropics of China.
- (5) To provide a fundamental base for developing related regulations, policy, law and other decision-makings to local governments at different levels.
- (6) To provide guidance and demonstration for forest landscape restoration activities of tropics in China.
- (7) To raise the understanding of tropical forest landscapes in China and strength the awareness of public participation.
- (8) To benefit the implementation of *Natural Forest Protection Program, the Conversion of Cropland to*

Forest Program, the Wildlife Conservation and Nature Reserves Development Program and Forest Industrial Base Development Program in China.

1.2 The specific objectives and outputs

- (1) **Specific Objective 1:** To train and apply *ITTO Manual on Restoring Forest Landscapes* in tropics of China

Output 1.1: Training of *ITTO Manual on Restoring Forest landscapes*

Output 1.2: Report on Application of *ITTO Manual on Restoring Forest landscapes* in Lingshui County of Hainan Province (project area)

Output 1.3: *Plan of FLR in Lingshui County of Hainan Province* (project area)

- (2) **Specific Objective 2:** To demonstrate and extend *ITTO Manual on Restoring Forest Landscapes* in tropics of China

Output 2.1: 60 Ha demonstrative plots for FLR in Lingshui County of Hainan Province (project area)

Output 2.2: Training and Extending of *ITTO Manual on Restoring Forest landscapes* in tropics of China

Output 2.3: Submitting of general report

1.3 The strategy adopted in carrying out the project

The strategy adopted in carrying out the project is to train, apply, demonstrate and extend *ITTO Manual on Restoring Forest Landscapes* in tropics of China in combination with China's national conditions and forestry conditions. In the implementation phase, the main activities and studies are as follows:

- (1) Train the project members and representatives of stakeholders in project area on *ITTO Manual on Restoring Forest Landscapes*.
- (2) Apply *ITTO Manual on Restoring Forest Landscapes* in the fields.
- (3) Adopt the methods which include meaningful public participation, balancing land-use trade-offs, the double filter, adaptive management, action-learning, joint decision-making and conflict management etc. to develop the Plan for Forest Landscape Restoration of Lingshui County of Hainan Province.
- (4) Establish the demonstrative plots for site-level restoration on degraded primary forests, secondary forests, degraded forest lands and agricultural lands for training of stakeholders in the application of the *ITTO Manual on Restoring Forest Landscapes*.
- (5) Train and extend the *ITTO Manual on Restoring Forest Landscapes* in the tropics of China based on the application and demonstration in project area.

The last, probably the most important, is essential to get support by the all stakeholders.

1.4 The project's planned duration and planned overall input

- (1) **Planned duration:** October 2007 – March 2010
- (2) **Planned overall input:** 531,085
ITTO contribution (US\$): 372,060
The Chinese government contribution (US\$): 159,025

2. Project Achievements

2.1 Outputs achieved

All of the 6 items of outputs, scheduled in the project planning, were achieved.

Output 1.1: Training of *ITTO Manual on Restoring Forest landscapes*, was finished. "*Restoring Forest Landscapes*" (ITTO Technical Series 23), "*ITTO Guidelines for the Restoration, Management and Rehabilitation of Degraded and Secondary Tropical Forests*" (ITTO Policy Development Series No 13), "*Revised ITTO Criteria and Indicators for the Sustainable Management of Tropical Forests Including Reporting Format*" (ITTO Policy Development Series No 15), "*ATO/ITTO Principles, Criteria and Indicators for the Sustainable Management of African Natural Tropical Forests*" (ITTO Policy Development Series No 14) and "*ITTO/IUCN Guidelines for the conservation and sustainable use of biodiversity in tropical timber production forests*" (ITTO Policy Development Series No 17) have been translated into Chinese and published. One training course of *ITTO Manual on Restoring Forest landscapes* to the project members and national experts was held in Haikou city, Diaoluoshan Forestry Bureau and Lingshui county respectively from February 25 to March 1, 2008. Another training course of *ITTO Manual on Restoring Forest landscapes* to representatives of main stakeholders in Lingshui County was held on March 5, 2008 in Lingshui County.

Output 1.2: Report on Application of *ITTO Manual on Restoring Forest landscapes* in Lingshui County of Hainan Province (project area), was finished.

Output 1.3: Plan of FLR in Lingshui County of Hainan Province (project area), was finished. In addition, Plan of FLR in Dagan demonstration area (community level) was developed.

Output 2.1: 60 Ha demonstrative plots for FLR in Lingshui County of Hainan Province (project area), was finished. 60 Ha site-level demonstrative plots for restoring degraded primary forests, managing secondary forests, rehabilitating degraded forest lands, and restoring forest functions on agricultural lands were established in Dagan demonstration area.

Output 2.2: Training and Extending of *ITTO Manual on Restoring Forest landscapes* in tropics of China, was finished. Two training courses of *ITTO Manual on Restoring Forest landscapes* based on the application and demonstration in project area were held in Haikuo city and Lingshui county respectively

during March 30 to April 2, 2010 and 226 people were trained.

Output 2.3: Submitting of general report, was finished.

In addition, 2.5 km rural cement road from Qunying town to Dagan demonstration villages has been built in January, 2010 by aid of local government. New team of forest rangers around Dagan demonstration area has been established in May, 2010. Family methane tank project for whole Dagan demonstration villages and one irrigation project in Dagan demonstration villages were planned by local government.

Project members participated in the XIII World Forestry Congress 2009 (18-23 October 2009, Buenos Aires, Argentina) and presented the poster titled "Study on Forest Landscape Restoration (FLR) in Lingshui County, Hainan Province, China", as well as participated in the 23rd IUFRO World Congress (23-28 August 2010, Seoul, Korea) and had an oral presentation on "Analysis of Pattern, Dynamics and Driving Forces of Forest Landscapes at the Community Level in Lingshui Li Autonomous County, Hainan Province, China", both reports are parts of the main project results. One Ph. D candidate has graduated and got the degree in June, 2010 under the help of this project, the title of dissertation for the degree is "Study on Forest Landscape Restoration—a Case Study in Lingshui Li Autonomous County, Hainan Province".

2.2 Specific objectives achieved

The specific objectives of the project were achieved.

The project members, national experts and representatives of stakeholders in Lingshui County of Hainan Province were trained on *ITTO Manual on Restoring Forest Landscapes*. The Manual was applied in the fields and Plans for Forest Landscape Restoration both at region level and community level were development. 60 Ha demonstrative plots for site-level restoration on degraded primary forests, managing secondary forests, degraded forest lands and agricultural lands have been established to show demonstrative value. Two training and extending courses of *ITTO Manual on Restoring Forest landscapes* were hold and 226 people were trained.

2.3 Contribution to the achievement of the development objective

The development objective of the project is to promote the landscape restoration, sustainable management of tropical forests and the sustainable development of the tropics in China.

The implementation of the project has promoted the restoration of forest landscape and improved the socio-economic conditions of local people in project area directly, set up a successfully demonstrative system, and provided a scientific way for FLR at both region level and community level in tropics of China. Training on FLR manual and results of the project has raised the understanding of tropical forest landscapes in China and strength the awareness of public participation. During the implementation of the project, some parts of the results and experience have been understood by different stakeholders, including local governments. At present, tropics of China is still facing the problem of forest degradation, fragmentation and modification. Meanwhile, construction of International Tourism Island in Hainan, as one

of the major country strategies, provides strict requirements on ecological environment and forestry development, these challenges will provide a good opportunity for the development objective of the project in the future.

3. Target Beneficiaries Involvement

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

- (1) Local inhabitants, forestry workers and farmers in Lingshui County who have been directly employed to conduct the fieldwork of the project, and especially those who manage the lands in Dagan village on which the demonstration plots were established.
- (2) Community leaders and forestry workers, technicians and extension workers who have participated in training courses offered by the project;
- (3) Project staff ;
- (4) Government departments at different levels;
- (5) Other tropical forestry related institutions and individuals who have also benefited from the implementation of the project when referring to the FLR manuals to be published and distributed and the technical reports produced;
- (6) Other countries that have similar cases.

Firstly, the project staff, most of them are from Chinese Academy of Forestry and Hainan Forestry Bureau, are beneficiaries of the project. They can gather their work experiences for application of research results and demonstration of technologies. As forest-dependent people, local villagers, indigenous groups and forest communities in demonstration area have benefited from the project directly because the project helped them to restore the ecological integrity and human well-being by restoration of degraded and secondary forest and infrastructure construction. Local forestry agencies including Lingshui Forestry Bureau, Hainan Forestry Bureau and Diaoluoshan Forestry Bureau that were responsible for management and protection of degraded and secondary forest have been directly conducted the fieldwork of the project. They can get experience on how to avoid of unplanned deforestation and all types of forest degradation, as well as improve capacity for adaptation of tropical forests to negative effects brought about by climate change and human-induced impacts.

Secondly, forestry workers are staffs who work for forest management from Hainan Forestry Bureau, county-level Forestry Bureaus of Hainan Province, nature reserves and national forest parks in the province, and township-level Forestry Stations in Lingshui County have participated in training courses offered by the project. They can get a common understanding of the *ITTO/IUCN Manual on Forest Landscape Restoration* based on the application and demonstration both at region level and community level in project area. Different government agencies have participated in the training courses on FLR and discussion on status of Lingshui forest degradation through PRA methods. The project helped them to understand the importance of public participation and provided them relevant information on FLR to support their policy-making for forestry development.

Thirdly, countries that have similar cases can get new knowledge on how to implement FLR initiative and learn about the progress, experience and results of the project through publications and other media.

Finally, local villagers, indigenous groups and forest communities in demonstration area (Dagan village) are implementing the community level FLR plan now and will implement in the following years to protect the degraded primary forest and secondary forest, as well as improve their livelihoods. Lingshui Forestry Bureau made commitment to set up special project management organization and related mechanism to coordinate all stakeholders and take charge the protection and management of demonstration forests after project completion.

4. Lessons Learned

4.1 Development Lessons

4.1.1 Aspects of project design which most contributed to its success or failure in achieving the development objective

The design of this project is originated from the *ITTO Manual on Restoring Forest Landscapes (2005)* which was jointly launched by ITTO and IUCN and aims to help field practitioners in the tropics to undertake forest restoration activities that both improve the ecological functioning of landscapes and benefit communities living in those landscapes. Therefore, the project design tallied with the field application of the manual. At the beginning of the project design, field investigation was conducted to select project area (Lingshui Li Autonomous County) and to seek the support of different stakeholder groups. In addition, the project design accepted a wide range of ideas and results of projects which completed in Hainan Province and learned other basic researches relative to FLR from some institutes. The philosophy of systematic theory was adopted in the project design, which means to achieve one objective by means of using a number of measures which are coupled with each other. Therefore, the design of the project was very successful.

The project technical committee organized 2 meetings that enabled strongly the development of the project towards to the correct direction.

4.1.2 Changes in intersectoral links which affected the project's success

The cooperation between the Research Institute of Forest Resource Information Techniques of CAF and local sections including Forestry Bureau of Hainan Province, Diaoluoshan District and Lingshui County was critical to the project's success of the intersectoral links. Additionally, the links among the demonstrative area villages, town and the forestry bureaus are also important. However, some project staff are responsible officials in local Forest Bureaus in Hainan Province so that they could help to coordinate the links. These collaborators were invited to participate in the workshops and training courses held by the project as well as field surveys, which help them to understand the project activities and to propose some

suggestions to the project development.

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

- (1) Strictly follow contracts signed by project director and contractors, any problems were resolved as soon as they were occurred;
- (2) Strictly follow the regulations which were set up by the project;
- (3) Strictly follow the project budget;
- (4) Periodically holding the project work meetings between the relevant parties interested in the project, any problems were resolved as soon as they were occurred.

4.1.4 Factors which will most likely affect project sustainability after completion

- (1) Awareness of public participation. The site-level restoration interventions will not be implemented successfully without the active participation of local inhabitants at demonstration plots.
- (2) Financial incentives and compensation. Degraded and secondary forests in project area will not be restored in the long run without financial incentives to forest environment services because of persistent poverty among forest-dependent communities, coupled with lack of alternative sources of livelihoods.
- (3) Understanding of the importance of the demonstrative areas and the extent to which the demonstrative value could be achieved. The sustainability of the demonstrative effects would also stop or disappear without reliable arrangements to follow up.
- (4) Human resources. The extension of the project effects would stop going ahead if there are no persons, who have been trained by the project, to continue the work.

4.2 Operational Lessons

4.2.1 Project organization and management

The project has established a set of organizational systems and managerial regulations. Various items of output of the project have been assigned to project members, with duty-bound responsibility respectively. All activities cooperated among project staff have been arranged in unison by project director.

Two meetings of the Project Technical Committee and several workshops and project work meetings for project members and relevant parties were organized periodically during the implementation of the project.

4.2.2 Project documentation

A special system was set up to keep project files and documents. The relative documents and information of the project in different stages were added and presented in the system. These files and documents are very important records and references for writing technical reports and organizing training courses and extension activities.

4.2.3 Monitoring and evaluation; quality of project planning

Monitoring and evaluating mechanism has been effectively carried out by the project. The project implementation was inspected and guided by the Project Technical Committee every year. A project progress report was submitted to ITTO every six months. Detailed Yearly Plan of Operation for the implementation of the Project was developed every year and should be submitted to ITTO for approving. The project planning was suitable for the project, therefore, it was not changed readily.

4.2.4 Definition of the roles and responsibilities of the institutions involved in the project implementation

It was essential that the roles and responsibilities of the institutions involved in the project implementation were clearly defined in the beginning of the project. The roles and responsibilities of the international consultants, national experts were all clearly clarified in the project proposal and well documented by contracts. Besides, roles and responsibilities of some local institutions involved in any project activity were defined by contract assignment to promote the collaboration.

4.2.5 Actions to be taken to avoid variations between planned and actual implementation

- (1) The variations were timely identified and adjusted by project work meetings;
- (2) Activities which exceeded the scope of project plan but were in line with project objectives and did not take extra fund received encouragement.
- (3) Every project work meeting examined the progress of activities, sometimes, the expected time for output to be achieved was adjusted according to the actual situation.

4.2.6 External factors that influenced the project implementation and that could have been foreseen

Due to the indifference of public participation, some stakeholders were reluctant to participate in the related activities at the beginning of the project implementation. Interview with stakeholders to know their interest and hosting training courses on useful and practical FLR techniques to maximize the public participation.

There were certain conflicts between introducing new knowledge and local minority culture and society style, which influenced the demonstrative plots establishment. These were solved by respecting, understanding and using local cultures, indigenous knowledge and experiences while introducing new knowledge in the project activities.

4.2.7 External factors that influenced the project implementation and that could not have been foreseen

Natural hazards such as typhoon and drought affected the establishment of demonstrative plots, which were minimized by adjusting the forestation time to rainy season.

External factors that influenced the project implementation and that could not have been foreseen are the

natural hazards (negative) and the changes of government policies (positive). The damages caused by the natural disasters, mainly typhoon and drought damages to road system and demonstrative plots, are normally relieved or established timely.

5. Recommendations

Advance problems to be tackled based on fully field investigation and good understanding of ITTO developing objectives, consult with local forestry sectors at the project identification stage are so important to get their biggest support to project implementation and project sustainability. Problem-tree and objectives-tree based on stakeholder analysis are the key elements for designing the activities and outputs. Putting emphasis on language communication in Minority habitants, making full use of indigenous knowledge, and implementing some activities with the help of national and local development policies, if possible, incorporating the activity into local development programs are important for project implementation. Eestablishing a set of project regulations which could be accepted all partners, holding workshops and work meetings of project members and relevant parties periodically to promote their close cooperation will be helpful for project organization.

Part II Main Text

1. Project Content

1.1 Development Objective and Specific Objectives

The development objective of the project was to promote the landscape restoration, sustainable management of tropical forests and the sustainable development of the tropics in China.

The specific objectives were as follows:

- (1) To train and apply *ITTO Manual on Restoring Forest Landscapes* in tropics of China;
- (2) To demonstrate and extend *ITTO Manual on Restoring Forest Landscapes* in tropics of China.

1.2 Outputs

There are totally 6 outputs of the project, including:

- (1) Training of *ITTO Manual on Restoring Forest landscapes*;
- (2) Report on Application of *ITTO Manual on Restoring Forest landscapes* in Lingshui County of Hainan Province (project area);
- (3) Plan of FLR in Lingshui County of Hainan Province (project area);
- (4) 60 Ha demonstrative plots for FLR in Lingshui County of Hainan Province (project area) ;
- (5) Training and Extending of *ITTO Manual on Restoring Forest landscapes* in tropics of China;
- (6) Submitting of general report.

1.3 Project strategy

In order to achieve the objectives to restore tropical forest landscape in China The project adopted the strategy which was to train, apply, demonstrate and extend *ITTO Manual on Restoring Forest Landscapes* in tropics of China in combination with China's national conditions and forestry conditions, which both satisfied the demand of *ITTO* and needed the minimum expenditure with the least risks. Lingshui County of Hainan Province was selected as project area. In the implementation phase, the main activities and studies were as follows:

- (1) Train the project members and representatives of stakeholders in project area on *ITTO Manual on Restoring Forest Landscapes*.
- (2) Apply *ITTO Manual on Restoring Forest Landscapes* in the fields.
- (3) Adopt the methods which include meaningful public participation, balancing land-use trade-offs, the

double filter, adaptive management, action-learning, joint decision-making and conflict management etc. to develop the *Plan for Forest Landscape Restoration of Lingshui County of Hainan Province*.

- (4) Establish the demonstrative plots for site-level restoration on degraded primary forests, secondary forests, degraded forest lands and agricultural lands for training of stakeholders in the application of the *ITTO Manual on Restoring Forest Landscapes*.
- (5) Train and extend the *ITTO Manual on Restoring Forest Landscapes* in the tropics of China based on the application and demonstration in project area.

1.4 Work plan

Outputs/Activities	Schedules (in season)									
	Year 1				Year 2				Year 3	
	1	2	3	4	1	2	3	4	1	2
Output 1.1: Training of <i>ITTO Manual on Restoring Forest landscapes</i>										
Activity 1.1.1: To translate and publish <i>ITTO Manual on Restoring Forest landscapes</i> as well as other related materials										
Activity 1.1.2: To hold one training course of <i>ITTO Manual on Restoring Forest landscapes</i> to the project members										
Activity 1.1.3: To hold one training course of <i>ITTO Manual on Restoring Forest landscapes</i> to representatives of a wide range of stakeholders										
Output 1.2: Report on Application of <i>ITTO Manual on Restoring Forest landscapes</i> in Lingshui County of Hainan Province (project area)										
Activity 1.2.1: To build support for FLR Initiative in project area										
Activity 1.2.2: To collect the information on key components of the landscape mosaic in project area										
Activity 1.2.3: To carry out the mapping (GIS) and describing the landscape mosaic in project area										
Activity 1.2.4: To analyze the landscape dynamics and the forces responsible for landscape change in project area										
Activity 1.2.5: To develop the MIS of project area										
Activity 1.2.6: To identify the key stakeholders in project area and analyze their interests and interaction										
Activity 1.2.7: To analyze how biophysical, socioeconomic and ecological factors can affect FLR in project area										
Activity 1.2.8: To discuss, consult and decide site-level restoration strategies for degraded primary forests, managing secondary forests, degraded forest lands and forest functioning on agricultural land with representatives of all stakeholders										
Activity 1.2.9: To develop monitoring indicators on site-level in project area										
Activity 1.2.10: To compose a Report on Application of <i>ITTO Manual on Restoring Forest landscapes</i> in project area										

Output 1.3: Plan of FLR in Lingshui County of Hainan Province (project area)									
Activity 1.3.1: To discuss, consult and identify priority sites for restoration in project area									
Activity 1.3.2: To discuss, consult and design the corridor program in project area									
Activity 1.3.3: To develop draft plan on FLR in project area									
Activity 1.3.4: To discuss, consult, optimize and identify FLR plan in project area among representatives of all stakeholders									
Output 2.1: 60 Ha demonstrative plots for FLR in Lingshui County of Hainan Province (project area)									
Activity 2.1.1: To chose two typical villages to investigate and map at the aspects of society, economic and nature									
Activity 2.1.2: To analyze how different interventions impact landscape ecological integrity and local human well-being									
Activity 2.1.3: To call in representatives of villagers and other stakeholders together to discuss the plan for site-level restoration									
Activity 2.1.4: To establish demonstrative plot of site-level restoration for degraded primary forests and managing secondary forests									
Activity 2.1.5: To establish demonstrative plot of site-level rehabilitation for degraded forest lands									
Activity 2.1.6: To establish demonstrative plot of site-level restoration for forest function on agricultural lands									
Output 2.2: Training and Extending of ITTO Manual on Restoring Forest landscapes in tropics of China									
Activity 2.2.1: To hold two training courses of <i>ITTO Manual on Restoring Forest landscapes based on the application and demonstration in project area</i> and 160 people will be trained in tropics of China									
Activity 2.2.2: To compose a report on training and extending									
Output 2.3: Submitting of general report									
1.1 Activity 2.3.1: To compose general report for the completion of project tasks									
Activity 2.3.2: To compose general report on technique work of the project									
Activity 2.3.3: Check and acceptance									

1.5 Required inputs

The total investment budgeted was US\$ 531,085 of which US\$ 372,060 was contributed by ITTO and US\$ 159,025 by the Chinese government.

1.6 Project rationale and relevant background information

This project mainly originated from the *ITTO Manual on Restoring Forest Landscapes* (2005). The new manual on forest landscape restoration jointly launched by ITTO and IUCN will help field practitioners in the tropics to undertake forest restoration activities that both improve the ecological functioning of landscapes and benefit communities living in those landscapes.

The land area of tropical zone in China is about 264,900 km² and is located on the northern fringe of the global tropical zone. It covers Hainan Province, southern part of Yunnan Province, Guangdong province and Guangxi province, south-eastern part of Tibet and southern part of Taiwan. China's tropical climate belongs to monsoon climate of northern tropical zone, which is quite different from typical moist tropical climate with its eastern part influenced by the pacific south-eastern monsoon, and with its western part mainly influenced by Indian south-western monsoon. China's natural tropical forest now distributes mainly on Hainan Province, southern region of Yunnan (mainly over Xishuangbanna Prefecture) and valley area of south-eastern part of Tibet while other regions have already developed into secondary vegetation and artificial vegetation.

Although Chinese Central Government as well as local governments in tropics has exerted great efforts on tropical forest management, and tropical forest coverage rate has been increased, forest degradation, fragmentation and modification are still severe that ecological function of tropical forest landscapes and human well-being declined. The following items explain why tropical forest landscape restoration is not considered important.

- (1) The lack of understanding of tropical forest landscapes to decision-makers, local communities, individuals and other stakeholders;
- (2) The indifference of stakeholders to public participation and lack of mechanism for different stakeholders participating forest management decision-making;
- (3) Poverty of local community and residents and lack of related knowledge, information and techniques;
- (4) The lack of desirable approaches and demonstrations, while conventional approaches can't balance the ecological integrity and human well-being and hardly to restore forest landscapes;
- (5) The lack of financial incentives and compensation to restore forest landscapes;
- (6) The ignorance of national policy to forest landscape restoration activities, including restoration of degraded primary forests, secondary forests and degraded forest lands.

China possesses, beside 264,900 km² of tropical region, 2,500,000 km² of subtropical region quite similar to the tropical region. The implementation of forest landscape restoration could rationally manage the tropical and subtropical forests in large area to lighten the press on the whole forest in China.

Lingshui County of Hainan Province is a typical county in tropics of China, There are 16 minorities in the whole county, such as Li, Miao, Zhuang etc. There are different stakeholders such as Lingshui Forestry Bureau, National Forestry Bureau of Diaoluoshan, Nanping farm under the province, Lingmen farm, Administration of Nature Reserve and Bureau of National Forest Park, 114 villages etc. There are different kinds of lands such as original tropical forests, secondary tropical forests, degraded forest lands and farm lands etc. So, Lingshui County of Hainan Province is selected as project area.

1.7 The ITTO context of the project

The project was within the priority action of subsidy by ITTO, and conforms to the goal and principle of International Tropical Timber Agreement (1994), and especially tallied with the related items in the field of “Reforestation and Forest Management” of the ITTO Yokohama Action Plan 2002~2006.

2. Project Context

This project accorded with item 9, item 10, item 14, item 20 and item 26 of the *Constitution of the People’s Republic of China* respectively on “reasonable utilization of natural resources and protection of precious animals and vegetation”, on “reasonable utilization of land resources”, on “extent of advanced technology, raising of labor productivity and economic benefit and improvement of people’s living level”, on “popularization of scientific and technical knowledge”, and on “amelioration of ecological environment and protection of forest”. This project also conformed to the *Law of Forest*, the *Law of Land Administration*, the *Law of Environment Protection*, and the *Law of Wild Animal Protection*. It tallies as well with related articles of *Decision on a certain number of problems about forest protection and forestry development* of Central Government and State Council. This Project conformed to *Forestry action plan of China 21 Century Agenda* and the *Action Plan for the protection of Biodiversity of China*, especially tallied with the *Decisions on Protection of Natural Resources* of the State Council and the *Eleventh Five-year Plan* and the *Outline for Integrated Exploitation of Forestry in Mountainous Regions* issued by the State Forestry Administration.

China is a developing country and its economy is not yet developed. Although the governments at different levels are interested in the project, they couldn’t afford to assist the smooth implementation of project. Therefore, foreign financial support is needed to carry out the smooth complementation of the project.

The demonstration and extension of the project could solve not only the problems of forest department in project area, but also the problems of other departments concerned, so that all trades and professions in project area may develop coordinately to advance the sustainable development of social economy in project area. The achievement of this project could be used in other tropical regions of China, and even the whole globe.

The economical demand of this project was to realize a favorable development of tropical forests through training of stakeholders in the application of the *ITTO Manual on FLR* so that high quality timber, non-wood forest products and service would be continuously provided. The economic income of the people in forest area would be increased and the production situation as well as the living condition of local people would be improved.

3. Project Design and Organization

3.1 Correct definition of problems to be tackled

The development objective, specific objectives of the project and the problems to be resolved through the project, and the methodology of project implementation were all set up on the basis of current status of Chinese tropical forest management and *the ITTO Manual on Restoring Forest Landscapes (2005)* which was jointly launched by ITTO and IUCN.

Field investigation at the beginning of the project design concluded that forest degradation, fragmentation and modification in tropics were so severe although tropical forest coverage rate has been increased and the forest-dependent communities were very poor, as well as conventional approaches couldn't balance the ecological integrity and human well-being and hardly to restore forest landscapes. Forest landscape restoration is a new term that provides a unifying theme for several well-established planning and field techniques. It is designed to bring people together to identify, negotiate and implement practices to restore a balance of environmental, social and economic benefits from forests and trees within a broader pattern of land-use.

Forest landscape restoration differs from conventional restoration approaches in several other ways. (1) It takes a landscape-level view, which means that site-level restoration decisions need to accommodate landscape-level objectives. (2) It is a collaborative process involving a wide range of stakeholder groups collectively deciding on the most technically appropriate and socio-economically acceptable options for restoration. (3) It can be applied to degraded forest but also to degraded lands and even agricultural lands, and it doesn't necessarily aim to restore forests to their original condition. There are several main methods in FLR, such as meaningful public participation, balancing land-use trade-offs, the double filter, adaptive management, action-learning, joint decision-making and conflict management etc, some of them are not used widely in China.

Therefore, problems to be tackled were defined as promoting the forest landscape restoration in tropics of China by training and extension of *ITTO Manual on Restoring Forest Landscapes* based on the application and demonstration in project area.

It is indicated in the study that the demonstrative and extension system can be established through combination of the existing technology and appropriated research, which is the best way to resolve problems and has been proved by practices.

3.2 Sound conceptual foundation of the project

FLR, public participation, researches which has finished in Hainan Province, etc. are the main conceptual foundation of the project. While the overall conceptual framework of FLR is new, virtually all the principles and techniques behind the approach have been around for some time and are already familiar to many forestry practitioners. Public participation is one of the important elements of FLR, which needs to promote in the relevant researches on tropical forest researches in China. Training courses on FLR and public

participatory methods, which was given by international consultants, have been held for project member and different stakeholders at the beginning of project implementation.

Under the promotion of IUCN, ITTO and other organizations, many countries and regions have already started the work on FLR. This project was able to benefit from the experiences of those old or long-term forest restoration projects around the world, which included approaches or elements that now is key principles of forest landscape restoration.

In addition, there are 3 completed ITTO projects implemented in Hainan Province. (1) ITTO PD 14/92 Rev .2 (F) project “A Demonstration Programme of Sustainable Utilization of Tropical Forests by Means of Differentiated Management in Hainan Island, China”. The project provided a demonstrative system of sustainable development of tropical forestry by means of differentiated forest management, in Hainan Province, which included 4 demonstration areas and 2 supporting sub-projects. The project provided a series of techniques for sustainable management of tropical natural forest, artificial ecosystem of tropical agro-forest-husbandry and conservation of primary tropical forest. (2) ITTO PD 57/97 project “Establishment of Satellite Remote Sensing Monitoring and Geographical Information System for Tropical Natural Forests in Hainan”. The project provided the techniques of RS and GIS to monitor the situation of tropical forest resources. (3) ITTO PD 12/00 Rev .3 (F) project “Developing and Extending of Criteria and Indicators for Sustainable Management of Natural Tropical Forests in China”. The project reported the situation of natural tropical forests in Hainan Province and developed the Criteria and Indicators for Sustainable Management of Natural Tropical Forests in China. In addition, many other basic researches relative to FLR have been made on tropical forests in Hainan Province by Tropical Botanic Institute of Chinese Academy of Science (CAS), Chinese Academy of Forestry, Forestry Research Institute of Hainan Province, Forestry Institute of Guangdong Province etc. These results of ITTO projects and other projects provided large amount of basic data and techniques related to FLR for this project.

3.3 Adequacy of time and other resources for project formulation

It took about one year to consider the frame of the project after the study of the FLR manual. The Executing Agency, Research Institute of Forest Resources Information Techniques, Chinese Academy of Forestry (CAF), has adequate resources used for project formulation. On the one hand, the institute provided information, results and data of tropical forest researches. The institute mainly undertakes national projects and researches on aspects of forest resources, remote sensing monitoring of forest disasters, information sharing and others. There are 4 ITTO projects applied and executed by the institute: (1) Demonstration of Sustainable Utilization of Tropical Forests by Differentiated Management in Hainan Island of China (ITTO PD 14/92 Rev.2(F)), which had been executed during 1993-1998; (2) Development and Extension of Criteria and Indicators for Sustainable Management of Natural Tropical Forests in China (ITTO PD 12/00 Rev.3 (F)), which had been executed during 2001-2003; (3) Tropical Forest Fire Monitoring and Management System Based on Satellite Remote Sensing Data in China (ITTO PPD 22/01(F)); and Tropical Forest Fire Monitoring and Management System Based on Satellite Sensing Data in China (ITTO PD 228/03 Rev.2 (F)) . The projects (1) and (2), implemented in Hainan Province, could provide the research results for this project. On the other hand, the institute possesses advanced infrastructure, including laboratory, office rooms, image processing and GIS software.

In addition, Hainan Forestry Bureau, Lingshui Forestry Bureau, Diaoluoshan Forestry Bureau and other local forestry agencies provided large amount of basic data for this project.

At last, the ITTO 32nd Expert Panel and ITTO 33rd Expert Panel has given some useful recommendations for the project proposal modification.

3.4 Understanding and appropriateness of the roles and responsibilities of the institutions involved with the project implementation

Research Institute of Forest Resources Information Techniques, Chinese Academy of Forestry (CAF) is the Executing Agency of the project. The project was implemented under the Executing Agency, Collaborators (Forestry Bureau of Hainan Province, Lingshui County and Diaoluoshan District), and local communities of demonstration area.

Forestry Bureau of Hainan Province is responsible for the development of forestry and policy making, which is helpful for the implementation and result extension of the project. There is a eucalypt extension centre with a group of experts on tropical plantation forest. The branch of human resources of the provincial forestry bureau supervises personal training that makes it easy to organize training activities. Forest managerial bureaus, forest farms and the provincial forestry institute which are all supervised by the provincial forestry bureau in administration have participated the training coursed held by the project.

Lingshui Forestry Bureau took charge the characteristic investigation of degraded and secondary forest in demonstration area, and helped the project member to do stakeholder analysis, develop the FLR plan of Lingshui County and establish the demonstrative plots. Lingshui Forestry Bureau would take charge the protection and management of demonstration forests after project completion.

3.5 Beneficiary involvement with the project's efforts and actions

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

- (1) Local inhabitants, forestry workers and farmers in Lingshui County who have been directly employed to conduct the fieldwork of the project, and especially those who manage the lands in Dagan village on which the demonstration plots were established.
- (2) Community leaders and forestry workers, technicians and extension workers who have participated in training courses offered by the project;
- (3) Project staff ;
- (4) Government departments at different levels;
- (5) Other tropical forestry related institutions and individuals who have also benefited from the implementation of the project when referring to the FLR manuals to be published and distributed and the technical reports produced;
- (6) Other countries that have similar cases.

First of all, the project staff, most of them are from Chinese Academy of Forestry and Hainan Forestry Bureau, are beneficiaries of the project. They can gather their work experiences for application of research results and demonstration of technologies. As forest-dependent people, local villagers, indigenous groups and forest communities in demonstration area have benefited from the project directly because the project helped them to restore the ecological integrity and human well-being by restoration of degraded and secondary forest and infrastructure construction. Local forestry agencies including Lingshui Forestry Bureau, Hainan Forestry Bureau and Diaoluoshan Forestry Bureau that were responsible for management and protection of degraded and secondary forest have been directly conducted the fieldwork of the project. They can get experience on how to avoid of unplanned deforestation and all types of forest degradation, as well as improve capacity for adaptation of tropical forests to negative effects brought about by climate change and human-induced impacts.

Secondly, forestry workers are staffs who work for forest management from Hainan Forestry Bureau, county-level Forestry Bureaus of Hainan Province, nature reserves and national forest parks in the province, such as Wuzhishan Forestry Bureau, Changjiang Forestry Bureau, Sanya Forestry Farm, Yinggeling Nature Reserve, Dongzhaigang Nature Reserve, and township-level Forestry Stations in Lingshui County, such as Wenluo Forestry Station, Qunying Forestry Station, Yingzhou Forestry Farm and Nanwan Nature Reserve, have participated in training courses offered by the project. They can get a common understanding of the *ITTO/IUCN Manual on Forest Landscape Restoration* based on the application and demonstration both at region level and community level in project area. Different government agencies including Lingshui Agriculture Bureau, Lingshui land, Environment and Resource Bureau, Lingshui Tourism Bureau, Lingshui Water Bureau, Lingshui Marine and Fishery Bureau, Lingshui Ethnic and Religious Affairs Bureau Lingshui Development and Reform Bureau, Lingshui Poverty Alleviation and Development Office, have participated in the training courses on FLR and discussion on status of Lingshui forest degradation through PRA methods. The project helped them to understand the importance of public participation and provided them relevant information on FLR to support their policy-making for forestry development.

Thirdly, countries that have similar cases can get new knowledge on how to implement FLR initiative and learn about the progress, experience and results of the project through publications and other media.

Finally, local villagers, indigenous groups and forest communities in demonstration area (Dagan village) are implementing the community level FLR plan now and will implement in the following years to protect the degraded primary forest and secondary forest, as well as improve their livelihoods. Lingshui Forestry Bureau made commitment to set up special project management organization and related mechanism to coordinate all stakeholders and take charge the protection and management of demonstration forests after project completion. Hainan Forestry Bureau and Diaoluoshan Forestry Bureau also made commitment to cooperate with project team actively and guarantee the long-term sustainability after project completion.

4. Project Implementation

4.1 The most critical differences between planned and actual project implementation

Activity2.2.1: Two training courses of *ITTO Manual on Restoring Forest landscapes* based on the application and demonstration in project area, was postponed (about 3 months), because the training materials of the publication of Chinese translation of ITTO Policy Development Series No. 14, 15 and 17 by Chinese Forestry Publishing House took long publishing cycle and because of holidays of New Year and Chinese Spring Festival.

In terms of project outputs, the FLR Plan of demonstration area (community level) and the Chinese version of 3 ITTO publications were added. The Chinese version of 3 ITTO publications are: (1) ITTO Policy Development Series No. 14 "*ATO/ITTO Principles, Criteria and Indicators for the Sustainable Management of African Natural Tropical Forests*"; (2) ITTO Policy Development Series No. 15 "*Revised ITTO Criteria and Indicators for the Sustainable Management of Tropical Forests Including Reporting Format*"; (3) ITTO Policy Development Series No. 17 "*ITTO/IUCN Guidelines for the Conservation and Sustainable Use of Biodiversity in Tropical Timber Production Forests*".

Besides, project members have participated in the XIII World Forestry Congress 2009 (18-23 October 2009, Buenos Aires, Argentina) and presented the poster titled "Study on Forest Landscape Restoration (FLR) in Lingshui County, Hainan Province, China". Project members have participated in the 23rd IUFRO World Congress (23-28 August 2010, Seoul, Korea) and had an oral presentation "Analysis of Pattern, Dynamics and Driving Forces of Forest Landscapes at the Community Level in Lingshui Li Autonomous County, Hainan Province, China". Both reports are parts of the main project results. Another important output added is one Ph. D candidate has graduated and got the degree under the help of this project, the title of dissertation for the degree is "Study on Forest Landscape Restoration---- a Case Study in Lingshui Li Autonomous County, Hainan Province".

4.2 Measures and actions which would have avoided these variations

The time schedule of outputs was adjusted to suite the actual situation. Each output was ensured to finish before the end of the project.

In addition, project progress was made through cost control, meetings and field inspections to avoid any mistakes during the implementation.

4.3 Appropriateness of the assumptions made and corrected identification of the risks involved

Most of the risks involved in the project were made appropriate assumption and identified correctly. For example, some stakeholders were reluctant to participate in the related activities due to the indifference of public participation; there were some conflicts between introducing new knowledge and local minority culture and society style; natural hazards such as typhoon and drought have affected the establishment of

demonstrative plots. So these risks didn't influence the smooth implementation.

However, there were still some other risks that have not been foreseen and identified before the project implementation. For example, it was difficult for project members to communicate with local people in minority habitation because of the language barrier. Although these risks influenced the progress of some activities to some extent, the successful implementation of the project was ensured by taking adaptive measures to transfer the risks timely.

4.4 Project sustainability after project completion

Chinese translation of ITTO manual on FLR and ITTO Policy Development Series No. 14, 15 and 17, 60 Ha demonstrative plots for FLR, FLR plans of project area both at region level and community level, provide the technical support for sustainability after project completion.

Lingshui Forestry Bureaus has set up special management organization and related mechanism to take charge the protection and management of demonstration forests, and guarantee the long-term sustainability after project completion.

One important sustainability activity after project completion is that a new team of forest rangers has been set up in Qunying town of Lingshui County in June, 2010, taking in charge of natural forest protection, especially degraded and secondary forest in Qunying town under the direction of Lingshui Forestry Bureau. There are 6 rangers responsible for the forests around Dagan demonstration area in Qunying Town.

As one of measures to improve human well-beings, infrastructure construction such as road construction and family methane tank building etc., has been incorporated into local anti-poverty projects or projects of promoting domestic demand by aid of national or local development policies. 2.5 km rural cement road from Qunying town to Dagan demonstration villages has been built in January, 2010 and now the road is benefit the transportation of agricultural products, technology and information. Family methane tank project for whole Dagan demonstration villages were planned and will be substituted for firewood to meet life energy needs of each family, including cooking, washing and cultivation. And one irrigation project in Dagan demonstration villages were planned and will be benefit for the agriculture land.

In order to further restore the degraded and secondary forest in demonstrative plots, native tree seedlings (most are *Dalbergia odorifera*) will be provided by Forestry Bureau of Hainan Province to help local villagers to sustain the demonstrative effect and the enrich-planting will be finished in rainy season next year.

In addition, the project member found that some degraded and secondary tropical production forests in project are facing the risk of gradually converting to crop-trees in forest-dependent communities mainly because of lack of financial incentives to forest environment services. Therefore, another ITTO project RED-SPD 020/09 Rev.1 (1) was approved which aims to develop and demonstrate on scheme of Payment for Environmental Services (PES) derived from degraded and secondary tropical production forests in Hainan Province. This may be another way to keep project sustainability.

4.5 Appropriateness of project inputs (quality and quantity)

There is no significant gap between the inputs (both ITTO and Chinese government) and project requirement for fund, the input was able to keep the project going normally and smoothly.

5. Project Results

5.1 Synthesis of project results

5 ITTO publications have been translated into Chinese and published, which are "*Restoring Forest Landscapes*" (ITTO Technical Series No. 23), "*ITTO Guidelines for the Restoration, Management and Rehabilitation of Degraded and Secondary Tropical Forests*" (ITTO Policy Development Series No. 13), "*ATO/ITTO Principles, Criteria and Indicators for the Sustainable Management of African Natural Tropical Forests*" (ITTO Policy Development Series No.14), "*Revised ITTO Criteria and Indicators for the Sustainable Management of Tropical Forests Including Reporting Format*" (ITTO Policy Development Series No. 15) and "*ITTO/IUCN Guidelines for the Conservation and Sustainable Use of Biodiversity in Tropical Timber Production Forests*" (ITTO Policy Development Series No. 17).

Two FLR plans have been developed, including FLR plan of Lingshui Li Autonomous and FLR plan of Dagan FLR demonstration area. The FLR plan in *Lingshui* County presents the process of field application of the Manual. The process was: the support for FLR Initiative in Lingshui County was built. The main relative documents on key components of the landscape mosaic in Lingshui County were collected. The mapping and describing the landscape mosaic in project area were carried out. The landscape dynamics and the forces responsible for landscape change in project area were analyzed. MIS of project area were developed. The key stakeholders in project area were identified and their interests and interaction were analyzed. How the biophysical, socioeconomic and ecological factors can affect FLR in project area was analyzed. Priority sites for restoration in project area were discussed, consulted and identified. The corridor program in project area was discussed, consulted and designed.

Report on applicability of ITTO Manual on Restoring Forest landscapes (draft) was developed.

Four training courses of ITTO Manual on Restoring Forest landscapes have been successfully held. One is for the project members and national experts in February and April, 2008. The second is for representatives of main stakeholders in Lingshui in March, 2008. Another two training courses were hold based on the application and demonstration of the ITTO Manual on FLR in project area in April, 2010 and 226 people were trained. The reports on each training and extending has been composed.

Moreover, characteristics of degraded and secondary forests in tropics of China have been understood through the field survey in demonstration area. Characteristics of degraded primary forests in Dagan demonstration area of Forest Landscape Restoration, Hainan Province were analyzed.

At last, the project has also obtained great achievements in technical training and developing human

resources. One Ph. D candidate has graduated and got the degree in June, 2010. Two post-doctors have finished their research reports with the help the project.

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

The situation existing at project completion as compared to the pre-project situation is as follows, some impacts may occur incrementally over a long period of time.

- (1) Decision-makers, local communities, individuals and other stakeholders in tropics of China have got a deeper understanding of FLR.
- (2) The desire of stakeholders to public participation in project area has improved and mechanism for different stakeholders participating forest management decision-making has been learned, especially for people in demonstrative plots.
- (3) The restoration of forest landscape in Lingshui County has been promoted directly, that is primary forest and degraded primary forest have got protection, secondary forest has been protected and enrich-planted, degraded forest land has been rehabilitated.
- (4) Besides the promotion of forest landscape restoration, sustainable forest management and sustainable development, the Poverty reduction and economic growth in Lingshui County have been benefited, especially for human well-beings in demonstrative plots, such as road construction, employment opportunity increase, and diverse income sources.
- (5) The project provided a fundamental base for developing related regulations, policy, law and other decision-makings to local governments at different levels.
- (6) The implementation of *Natural Forest Protection Program*, the *Conversion of Cropland to Forest Program*, the *Wildlife Conservation and Nature Reserves Development Program* and *Forest Industrial Base Development Program* around forest-dependent communities has been benefited.

5.3 Extent to which the project specific objectives were achieved

In general, *ITTO Manual on Restoring Forest Landscapes* was trained and applied, and then demonstrated and extended in tropics of China, which means the project specific objectives were achieved.

In the concrete, Lingshui County of Hainan Province was selected as project area. First the project members and representatives of stakeholders in project area were trained on *ITTO Manual on Restoring Forest Landscapes* at the beginning of the project. Then *ITTO Manual on Restoring Forest Landscapes* has been applied in the fields adopting the methods which included meaningful public participation, balancing land-use trade-offs, the double filter, adaptive management, action-learning, joint decision-making and conflict management etc. FLR Plans of Lingshui County (region level) and Dagan demonstration area (community level) have been developed respectively. The demonstrative plots for site-level restoration on degraded primary forests, managing secondary forests, degraded forest lands and agricultural lands have been established under the FLR plan. Based on the application and demonstration in project area, the *ITTO Manual on FLR* was trained and extended in the tropics of China through two training courses to forestry workers and other relative stakeholders of Hainan Province.

5.4 Arrangements for project sustainability after completion

Lingshui Forestry Bureaus has set up special management organization and related mechanism to take charge the protection and management of demonstration forests, and guarantee the long-term sustainability after project completion. A new team of forest rangers has been set up in Qunying town of Lingshui County in June, 2010. Infrastructure construction such as road construction and family methane tank building etc., has been incorporated into local anti-poverty projects or projects of promoting domestic demand by aid of national or local development policies.

6. Synthesis of Analysis

6.1 Specific Objectives Achievement

All specific objectives achievement realized.

6.2 Outputs

All outputs realized.

6.3 Schedule

Schedule almost on time (about 3 months delay, not seriously).

6.4 Actual Expenditures

Actual expenditures of ITTO contribution were 332,198 US\$ and budgets were 329,500 US\$. The remaining balance of funds was -2,698 US\$ and <1% above planned. Actual expenditures of Chinese government contribution were 332,198 US\$ and were the same of the budgets.

6.5 Potential for replication

Significant potential for replication.

6.6 Potential for scaling-up

Significant potential for scaling-up.

part III Conclusions and Recommendations

1. Development lessons

The project has developed FLR Plans of Lingshui County (region level) and Dagan demonstration area (community level) adopting the methods which included meaningful public participation, balancing land-use trade-offs, the double filter, adaptive management, action-learning and joint decision-making. And the project has applied the *ITTO Manual on Restoring Forest Landscapes* in the fields, which not only provides a new demonstration on forest management and biodiversity conservation for tropics of China, but also enriched the contents and practices of FLR.

The FLR Plans developed in the projects is an alternative or complement to top-down, expert-driven land-use planning, providing a means to reflect societal choice through applying the principles of an ecosystem-management approach and will be restore ecological integrity and enhance the development of local communities and national economies. Experiences showed that community habitants depending on the forests and government sectors were quite willing to accept this down-top, public participatory planning approach. So mechanism for different stakeholders participating in the project has provided a useful demonstration for development of other plans in tropics, even other area of China. Meanwhile, experiences on establishment of demonstrative plots showed that forest-dependent communities are still in the status of persistent poverty and lack of alternative sources of livelihoods, resulting in their urgent demands of FLR initiative that both restore degraded forest landscapes and improve human well being. Therefore, the outputs and results of the project have made an effect on restoring forest landscape and will have a very big development prospects.

As to the lessons from project training and extension, it was essential to invite international consultants to give training on new information of FLR for project members and national experts. Training courses on FLR for forestry workers based on project outputs and results have gotten satisfactory effect because local forestry staff was willing to receive new forestry concepts, approaches and knowledge, meanwhile, it's more convincing for them to take the field implementation of the project as training materials. In terms of project extension, focus on international exchange is one important means to enhance the influence of the project, for example, the project members has participated in two International Forestry Congress and presented part results of project.

2. Operational lessons

- (1) Problems to be tackled by project came from fully field investigation on the status and the good understanding of ITTO developing objectives. Area with diversity forest types was selected as project area. It was essential to fully consult with local forestry sectors at the project identification stage so as to get their biggest support to project implementation and project sustainability.

- (2) The support of stakeholders for FLR initiatives in Lingshui Li Autonomous County was built by a series of activities: data collection, stakeholder analysis, holding training courses on FLR to representatives of stakeholder groups, participatory interview and founding the steering team of FLR. This provided a strong constituency of local-level support for successful restoration activities.
- (3) The driving forces responsible for landscape change were analyzed and understood to ensure the successful of restoration efforts.
- (4) Site-level restoration strategies were provided based on field survey and analysis of characteristics of degraded and secondary forests in project area.
- (5) Indigenous knowledge and experiences has gotten respected and fully use while introducing new knowledge in the project activities during establishment of demonstrative plots.
- (6) As one of measures to improve human well-beings, infrastructure construction such as road construction, family methane tank building etc., has been incorporated into local anti-poverty projects by aid of national or local development policies on the premise of fully communication with local government and other sectors to get their maximum support for the project, which saved the expenses of project and expanded the project outputs.
- (7) PRA method has been adopted as mechanism for public participatory throughout the project.
- (8) Regular meetings of PTC, workshops and work meetings of project members and national experts were all important guarantee for the project.

3. Recommendations for future projects

- (1) **Identification:** advance problems to be tackled based on fully field investigation and good understanding of ITTO developing objectives, consult with local forestry sectors at the project identification stage so as to get their biggest support to project implementation and project sustainability.
- (2) **Design:** problem-tree and objectives-tree based on stakeholder analysis are the key elements for designing the activities and outputs.
- (3) **Implementation:** put emphasis on language communication in Minority habitants, make full use of indigenous knowledge, and implement some activities with the help of national and local development policies, if possible, incorporate the activity into local development programs.
- (4) **Organization:** establish a set of project regulations which could be accepted all partners, hold workshops and work meetings of project members and relevant parties periodically to promote their close cooperation.

Responsible for the Report

Name: Huang Qinglin

 (signature)

Position held: Project Director

Date: September 30, 2010