



**Supporting policy, legal and institutional frameworks
for the reform of forest tenure in China's collective
forests and promoting knowledge exchange**

GCP/CPR/038/EC Working Paper: WP – 010 - E

Assessment of Forest Farmer Cooperatives in Hunan Province



The designations employed and the presentation of material in this information product do not imply the expression of any opinion whatsoever on the part of the Food and Agriculture Organization of the United Nations (FAO) concerning the legal or development status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. The views expressed in this information product are those of the author(s) and do not necessarily reflect the views of FAO.

All rights reserved. FAO encourages the reproduction and dissemination of material in this information product. Non-commercial uses will be authorized free of charge, upon request. Reproduction for resale or other commercial purposes, including educational purposes, may incur fees. Applications for permission to reproduce or disseminate FAO copyright materials, and all queries concerning rights and licences, should be addressed by e-mail to copyright@fao.org or to the Chief, Publishing Policy and Support Branch, Office of Knowledge Exchange, Research and Extension, FAO, Viale delle Terme di Caracalla, 00153 Rome, Italy.

© FAO 2010

For more information, please contact:

Qiang Ma

Forestry Officer

Forest Policy & Economics Team (FOEP)

FAO

Viale delle Terme di Caracalla

00153 Rome, Italy

Email: qiang.ma@fao.org

Chunqian Jiang

National Project Coordinator

Project Management Office

Building 25, Hepingli 7 Qu, Dongcheng District.

100013 Beijing, China

Email 1: jiangchq@caf.ac.cn

Email 2: chunqian.jiang@fao.org

Hong Qi

National Project Director

Project Management Office

Building 25, Hepingli 7 Qu, Dongcheng District.

100013 Beijing, China

Email: sfa8608@126.com

Comments and feedback are welcome.

Assessment of Forest Farmer Cooperatives in Hunan Province

**College of Humanities and Development, China Agricultural University
Liuyang Forestry Bureau, Hunan Province
Hongjiang Forestry Bureau, Hunan Province**

**State Forestry Administration of China
Food and Agriculture Organization of the United Nations**

Rome, 2010

Content

1. Introduction.....	1
1.1 Description of the issue.....	1
1.1.1 Background of the project.....	1
1.1.2 Introduction of the assessment	2
1.2 Literature Review.....	4
1.2.1 Types of FFCs	4
1.2.2 Farmers' will and needs to participate in cooperative organizations, and the selection of internal operating mechanism	6
1.2.3 The financial operations and financial co-ordination.....	6
1.2.4 The role of Government in the development of forestry co-operation.....	7
1.2.5 Forestry organizations and the forest tenure reform.....	7
1.2.6 Problems, Countermeasures and Suggestions	8
2. Basic information	9
2.1 General information of province and counties.....	9
2.2 Information of villages.....	10
3. Forestry status.....	11
3.1 Forest tenure.....	11
3.2 Types	12
3.3 Forest products.....	14
3.4 Management and institutions	14
4. The status of FFCs	15
4.1 Basic information of FFCs.....	15
4.1.1 Village Forest Farm.....	15
4.1.2 Specialized forestry cooperatives.....	16
4.1.3 Forestry Committee.....	17
4.1.4 Private forestry product processing firm	18
4.1.5 Other cooperative organization forms	19
4.2 Formulation Process of FFCs.....	19
4.3 Organizationand management of FFCs.....	20
4.3.1 Village Forest Farm.....	20
4.3.2 Specialized forestry cooperatives.....	21
4.3.3 Forest Committee	22
4.3.4 Private forestry product processing firm	23

4.4 Operation and Practise of FFCs	24
4.4.1 Members positivity of participating in forestry activities	24
4.4.2 Role of FFCs in forest management.....	24
4.4.3FFCs increased forest farmer’s income to different extents.....	27
4.4.4 Benefit distribution in FFCs.....	27
4.4.5 FFC had impact on village governance.....	28
4.5 Effectiveness of current policies	29
4.5.1 Effectiveness of Forest Tenure Reform Policy	29
4.5.2 Effectiveness of Local Forestry Policies in Liuyang.....	30
4.5.3 Effectiveness of Local Forestry Policies in Hongjiang	32
4.6 Main problems or difficulties.....	34
4.6.1 Inadequate capacity to provide forest infrastructures.....	34
4.6.2 Simple income patterns of forestry farmers	34
4.6.3 Lacking of initiatives in forestation	35
4.6.4 High taxation and fees.....	35
4.6.5 Difficulties in forestry production processing.....	35
4.6.6 Low participation of forestry farmers	36
4.6.7 Lack of capable leaders.....	36
4.6.8 Loose management of FFCs.....	36
4.6.9 Women’s role in FFCs needs to be enhanced.....	37
5. The Views and Roles of Different Stakeholders.....	37
5.1 Government at different levels	37
5.1.1 Difficulties in Local Forestry Departments’ Work	38
5.1.2 Views of Local Forestry Department to FFCs.....	39
5.2 Village committees.....	40
5.3 Farmers (FFC members and non-members).....	41
5.3.1 Forestry farmers’ comments on FFCs	41
5.3.2 Estimation of non-FFC members to FFCs	42
5.4 Other stakeholders.....	43
6. Problem analysis	44
6.1 Experiences and lessons.....	44
6.2 Incentives and disincentives for forest management by FFCs	51
6.2.1 The need for and possibilities of forestry cooperation	51
6.2.2 Characteristics of forest resources determined the needs for FFCs	56
6.2.3 Disincentives and problems for forest management by FFCs.....	58

6.3 Support in policies and from institutions.	64
6.4 Access to information and information services	65
6.5 SWOT analysis for the development of FFCs	66
6.6 Potential	69
7. Recommendations for development of FFCs in Hunan.....	69
7.1 Policy	69
7.2 Legislation.....	70
7.3 Governance and institutions.....	71
References	72

1. Introduction

1.1 Description of the issue

1.1.1 Background of the project

Forestry development in China has undergone significant changes since the implementation of collective forest tenure reform in 2003. A range of policy documents successively issued by Chinese Central government have contributed to the depth and stability of the systems concerning collective forest tenure reform, such as the *Decision of the CPC (Communist Party of China) Central Committee and State Council on Accelerating the Development of Forestry (2003)*, *Decision of the CPC Central Committee and State Council on Forging Ahead With the Collective Forest Tenure Reform (2008)*, *No. 1 Central Document* of 2006 and 2007, and so on. By the end of September 2009, the tenure of more than 1.51 billion mu collective forest had been confirmed, which covered 59.42% of the total area of collective forest land of that year, 65.7% (near 1 billion mu) of which had been reallocated to farmer's household. 48.04 million Forest Tenure Certifications of about 1.14 billion mu forest land have been given to farmers' households and more than 43.9 million farmers' households have already received the Certification book. As the forest tenure became clearer, forestry farmers were acting more and more actively in forestation and forest production in forest regions. Utilization of the forest resource was improved and, consequently, forest revenues increased, the ecological environment was improved, and forest land disputes were significantly reduced.

Accompany the implementation of Collective Forest Tenure Reform, other supports have been taken to promote forestry development, as well. Promoting the development of Forestry Farmers' Cooperatives (FFCs) is one of the most important approaches to facilitate forestry management and operation in current times. The policy of *Decision of the CPC Central Committee and State Council on Forging Ahead With the Collective Forest Tenure Reform (2008)* pointed out that forestry development should be pushed forward through generalizing and promoting cooperatives of forestry farmers and it is important to develop the function of

cooperatives such as policy consultation, information service, technological extension, and independent management of forestry trades. After that, in June 2009, it was emphasized at the Central Forest Working Conference that Forestry Farmers' Cooperatives could be established in different forms as long as they would be applicable for providing self- service, decreasing costs of production and operation or increasing economic benefits. In August 2009, the State Forestry Administration promulgated the *Regulations on Promoting Developing of Forestry Farmers' Cooperatives* to promote and regulate Forestry Farmers' Cooperative's development and protect members' legal rights.

The Collective Forest Tenure Reform had also been supported by international organizations. The project "Supporting policy, legal and institutional frameworks for the reform of forest tenure in China's collective forests and promoting knowledge exchange", which was financed by the EU and executed by FAO and the State Forestry Bureau of China had made a goal of supporting institution establishment during the Collective Forest Tenure Reform, increasing the sustainability of forest management and improving the living environment of rural people. The program had chosen 16 villages from 8 counties in Anhui, Fujian, Guizhou, Hunan, Jiangxi and Zhejiang province as the research points.

1.1.2 Introduction of the assessment

The implementation of Collective Forest Tenure Reform had encountered lots of difficulties and challenges as the success and experiences gained. The distribution of forestry resources to forestry farmers had divided forest land into small pieces and been separately managed by small farmers' households. Especially in south China, where the area of forest lands were very small (just 0.5 hectare to 2 hectare per household), it was really difficult for different farmers to manage and benefit from the separately forested land effectively. Meanwhile, farmers' techniques and experiences in forestry management and operation were different so the productivity and development effectiveness was in sharp contrast in different areas and different farmers' forest land. Relevant service on forestry information, technical training and

forest protection was apparently insufficient and difficult to carry out for separated pieces of forest lands. In this situation, FFCs were developed by farmers' initiatives and were highly supported by the government in order to increase the economic profit of forestry production. Based on the various natural, social, cultural, and economic conditions, FFCs were set up in forms. Until the end of 2009, 36 thousand Forestry Farmers' Cooperatives had been registered, in which 13 million farmers' households and 126 million mu forest lands were involved.

Under the project of "Supporting policy, legal and institutional frameworks for the reform of forest tenure in China's collective forests and promoting knowledge exchange", College of Humanities and Development of China Agricultural University had executed the assessment of FFCs in Hunan Province by the commission of FAO and China State Forestry Bureau. The research team had investigation in two village of Liuyang and two villages of Hongjiang.

Based on field research and data analysis, case study on 4 villages's 5 FFCs fell into seven themes including: 1) Forestry resources management—to figure out the possibility of cooperation; 2) Forestry farmers' cooperative intensions; 3) Problem of farmers' ownership in the operation of forest farmers cooperatives(FFC); 4) Cooperation under the circumstance of FFC; 5) Development and cooperation among village-level forest products processing enterprises; 6) Function and development of village-level Forestry Committee; 7) Relationship between FFC and village governance. These seven themes of analysis on FFCs would shed light on the latest developments of forest cooperation in Liuyang and Hongjiang county-level cities, Hunan province.

On the basis of case studies, in order to discuss with local farmers, FFCs, forestry departments and other relevant stakeholders the existing problems in the collective forest tenure reform and the development of FFCs, the project team from COHD of CAU, in coordination with local forestry departments, has successively organized 4 village-level workshops, 2 county-level workshops and a synthetic Liuyang-Hongjiang workshop. The synthetic workshop about research on FFCs in

Hunan Province was participated by staff from FAO headquarters and officers from the State Forestry Administration as well as relevant stakeholders from Liuyang and Hongjiang County. The PRA method was successfully applied in all the 7 workshops and has received considerable and effective results.

The research team had undertaken deep analysis based on the basic information and views of different stakeholders collected from the case studies and workshops

1.2 Literature Review

Current research on FFCs focuses on five concepts: Forestry Farmers' Cooperative (FFC), Forestry Farmers' Association (FFA), FFC (FC), Forestry Association (FA) and Forestry Economic Cooperative (FEC), among which, the concepts of Forestry Farmers' Cooperative and Forestry Farmers' Association were used less in relevant literatures and the concepts of FC and FEC were used more frequently.

China was a big forestry country, in which FFCs and forestry organizations played important roles in forestry development and forestry farmers' production and living. After the implementation of the "Law of the People's Republic of China on Specialized Farmers Cooperatives", different kinds of FFCs in China have undergone further significant development. To the characteristics of China's forestry development, scholars carried out research on the management and operation of China's FFCs. The research could be divided into two levels, one was about the internal development of FFCs, such as type of the cooperatives, needs of forestry farmers' participation, access to financing and financial functioning of the cooperatives; the other level was about the external environment of the FFCs, including the external factors that impact the development of cooperatives, supports from government and relations with forest tenure reform.

1.2.1 Types of FFCs

WANG Deng-ju, et al (2006) classified the forestry cooperative organizations as FFCs and forestry associations.

From the nature of the organizations, China's forestry cooperative organizations

can be classified into Specialized Forestry Associations and Specialized FFCs. Specialized Forestry Association was kind of loosely organized, and the main function was to provide technical and information services, rights protection and self-discipline to carry out activities but does not directly engaged in business activities. Specialized FFC was the co-operation forms of organization in which members were closely connected with each other and the functions were servicing members, and engaging in commercial activities. These cooperatives were mostly registered as legal enterprise in the industrial and commercial administrative departments.

At present, China's forestry cooperatives were mainly the following two sub-types: membership-based cooperatives and joint-stock cooperatives.

From the business perspective, China's current forestry cooperatives have almost covered all aspects of forestry production, including forest management and protection, pest control, forest road construction, reforestation, afforestation, seedling production, forest products processing, marketing, materials procurement, technology and information services, among which there were both kinds of single specialized cooperative organizations, such as technology service-oriented, sales service-oriented and the integrated cooperatives setting production, supply, sales and service as a whole.

From the way of formation, China's current FFCs were mainly types formed by farmers themselves, formed by rural collective, formed by business initiatives, formed by government departments' support, and other types formed by international organizations' supports.

The model of Cooperation organizations' formation driven by leading enterprises was the extension and development of the model of "company + farmer" appeared in 1990s. The model of "Company + farmer" although to a certain extent, reduced the farmers market risk, the farmer was always in a passive and vulnerable position. In the new model of "company + professional cooperative + farmers ", the cooperative acts as a connecting bridge between the company and the farmers, which can uphold the interests of farmers, and reduce the cost of transactions between companies and

individual farmers, and then formed a reasonable mechanism for the distribution of benefits in the three parts.(Wang Dengju, etc., 2006)

Lu Mingliang (2007) divided the forestry cooperatives into many kinds in accordance with the content and direction of cooperation: specialized cooperatives of seedling, specialized cooperatives of crops, specialized cooperatives of forest products processing, specialized cooperatives of standardized production and specialized cooperatives of pollution-free production.

Huang Liping, Wang Wencan(2008) hold that, for the difference of the nature and objects of cooperation within the organization, economic organizations of forestry can also be correspondingly divided into 3 types: the elements of contract-based specialized cooperative economic organizations, commodity contracts-based specialized cooperative economic organizations, and typical commodity contract-based specialized cooperative economic organizations..

1.2.2 Farmers' will and needs to participate in cooperative organizations, and the selection of internal operating mechanism

Huang Heliang et al. (2008) had analyzed the impacting factors of farmers' participation in forestry economic organization based on Fujian province's experiences. The factors include: supports for non-agricultural employment channels for the rural labor force, farmers' basic household characteristics, regional economic development level, the local forestry sector's policy orientation.

ZHANG Guang-sheng, et al (2007) had analyzed the influencing factors to the farmers' needs for FFCs, including 1) Farmers' age and education level; 2) The gap between rich and poor in rural areas; 3) Government and village committee's services to farmers; 4)Impacts of existing FFCs.

1.2.3 The financial operations and financial co-ordination

The characteristics of financial management in specialized forestry cooperatives: a)"service optimization" as the objectives of financial management; b)facing multi-risks and huge capital investment risks; c) financial management in different ways for the different types of specialized FFCs; d) the instability of financial

relations; e) the emphasis on members of cooperatives in the distribution.

Based on the above analysis, the following problem in the financial operation of forestry cooperatives could be illustrated: a) financing difficulties, and then a serious shortage of funds; b) financial management system was not perfect; c) the system of income distribution was unreasonable; d) the awareness of financial management was weak and capacity building of financial staff was inadequate.

1.2.4 The role of Government in the development of forestry co-operation

First of all, the government intervention was necessary. The development of the forestry cooperation was still in the initial stage development. Generally speaking, forestry farmers' quality was also low, with a lack of collective consciousness and desire for joint economic activities. The government intervention was essential for the development of cooperative organizations, which can be used as the impetus to make up for the lack of personal initiative.

Secondly, the government intervention also had risks. On the one hand, with respect to the management methods, some government officials appointed as co-managers of the organization directly, dampen the farmers' spirit and their sense of ownership of and undermine the vitality of cooperative organizations. On the other hand, the Government provides substantial funding and financial assistance to cooperative organizations, resulting in cooperative organizations dependent on government too strongly, government subsidies, once stopped, the cooperative organizations had risk of being disbanded.

1.2.5 Forestry organizations and the forest tenure reform

Huang Liping, Wang Wencan (2008) believes that the reform of forest ownership systemurgently needs the development of the specialized cooperative economic organizations.

CHENG Yunxing, et. al. conducted a preliminary analysis of the needs for developing forestry professional cooperative organizations after the forest tenure reform. With contract theory, the study tries a preliminary study of the choice of the form of forestry specialized cooperative economic organizations, with a view to help

the smooth progress of forest tenure reform, and forestry specialized cooperative economic organizations

Xiao Xuequn, etc (2008) pointed out that the reform of forest right system breaks the pattern of unified operation of collective forest. Thousands of families have become the main forest management. However, small-scale forestry operations were not an ultimate goal of the reform of forest ownership system, only that the forestry farmers voluntarily unify and take the road of scale development. Only in this way, can the forestry realize the industrialization, and enter the market, achieve improved forestry farmers' income, economic development and social harmony.

1.2.6 Problems, Countermeasures and Suggestions

From the environment and the internal mechanisms, WANG Deng-ju, etc (2006) had analyzed the problems of China's FFC. On the external environment, on the one hand, there was no Act on Cooperation Organization in China, which severely restricted the development of cooperative organizations; on the other hand, there was the lack of the necessary support from policy; what's more, the administration management structure does not conform; finally, the research of the FFC was not in-depth.

On the internal operation mechanism, the interests of coordination and cooperation from the members, as well as a sound system of incentives to regulate some aspects of the operation of cooperatives were analyzed.

And the corresponding countermeasures can be illustrated as follows: a) a correct understanding of the nature of forestry cooperation and the role of economic organizations; b) to speed up the legislative process and then build up a clear legal status of FFC; c) Increase policy support; d) increase the propaganda efforts and foster high-quality cooperative organization and management personnel; e) to strengthen the construction of the internal system of guidance and supervision, standardize the organization operating mechanism. (Wang Dengju, etc., 2006)

Overview of the above, we could see that, research of China's forestry cooperatives needs a more unified, standardized definition, in order to strengthen

forest management. Research on China's forestry cooperatives could focus on the perspectives of characteristics and types of forestry production, forestry farmers' needs, operating mechanism and impacts of external environment. Anyway, the development of forestry cooperatives is closely linked with the deepening reform of forest tenure systems in China and the research of forestry cooperatives had a very significant value to the forest tenure reform in China.

2. Basic information

2.1 General information of province and counties

Hunan province is in the south central area of China and borders on 6 other provinces or regions as Hubei, Jiangxi, Guangxi, Guangdong, Guizhou and Chongqing. The total area of Hunan is 211.8 thousand square kilometres, of which 51.2% are mountainous areas, 13.9% are basin areas, 13.1% are plains and 15.4% are hills. The height of 85% areas of the province is between 100-800 meters above sea level, belonging to humid subtropical monsoon climate and the yearly rainfall is between 1350~1450mm.

Population of Hunan province is 68.46 million(2008), of which 89.87% are Han people and 10.13% are minorities (6.39 million) including ethnics of Tujia, Miao, Tong, Yao, Bai, Hui, Zhuang, Weiwuer, Mogolia, She and Man.

Hunan is one of the most important forest regions of China and forestry makes up a big proportion in its economy development. In 2008, the forest area was 194 million mu, 61.09% of the total area of the province¹.

Liuyang was a county level city and one of the key forestry counties in Hunan Province, with a total population of 1.35 million and more than 0.90 million involving forestry. The total land area of the city was 7.51 million mu, of which forest land area was 5.17million mu (collective forest area of 5.07 million mu). With 65.82% forest cover rate and forest stock volume 11.8 million m³, the annual output value of forestry was 1.6 billion in 2007. As the pioneer of forestry reform in Hunan

¹Data from: DengSanlong, 2009

Province and because of its "Improving the execution of forestry, enhancing the contribution of forestry and enhancing the impact of forestry," Liuyang City won the "National advanced county (city) in Economic Forest construction", "National top 100 Counties for afforestation", "National advanced unit for forest resources management", "National advanced counties (cities) for Forestry Law Enforcement ", "Hunan top 10 counties (cities) in Forestry" and so on. It plays a leading and exemplary role in the national forestry reform.

Hongjiang was a county level city located in the Xuefeng Mountains at the eastern edge of the Yunnan-Guizhou Plateau, the southwest of Hunan Province and the upper reaches of the Yuan River. It had an area of 3,259,000 mu in which there were 2,302,000 mu of forest land, 146,000 mu of national forest land, 2, 154,000 mu of collective forest land, 4,850,000 m³ of stumpage volume, 681,000mu of national and provincial (county-level and city-level) ecological forest, 160,000 mu of merchantable log , 168,000 mu of timber forest, 220,000 mu of tangerine tree, 240,000 mu of bamboo, 160,000 mu of tea-oil tree. Hongjiang City was the model city of national forestry property right demonstration project. Since the forestry reform started in April 2007, the main reform had achieved staged achievement.

2.2 Information of villages

Guanyintang Village in Guandu Township and Qixingling village in Zhangfang Township were typical villages of joint-stock cooperative Village Forest Farms and specialized forestry cooperatives. Guanyintang village had more than 20,000 mu forest, the largest in Liuyang City. About 10% of households have more than 100mu forest land, 70% of households have 30-70mu forest land and 30% have less than 30mu. The typical FFC in this village was the Village Forest Farm, in which nearly all of the villagers were involved. The Forest farm signed an agreement with each member that forest rights belong to members but management rights belong to the forest farm.

Qixingling Village consists of two natural villages, Shuangxi and Qixingling Village, and 2200 villagers in 12 villagers' groups. There was totally 51 thousand mu

forest land in this village, about 23mu on average for each household. The Xinghai bamboo production and processing specialized cooperative in Qixingling Village was a joint-stock bamboo cooperative with more than 3,000 mu forest. The cooperative's formation follows "buying in with mountain rights, partnership, benefit-sharing, risk sharing". The cooperative reconstructed the mountain land and manages a fine processing factory of bamboo, which was the leading industry for the village.

The project villages of Hongjiang City were Shuanglong Village in Jiangshi Town and Tongping Village in Shuangxi Town. Both villages set up Forestry Committees at the end of 2007, and the councils' main duties were to conduct afforestation, forest fire prevention, pest control, forestry management, forestry information dissemination and so on. Shuanglong Village was in the southeast of Hongjiang City and the first batch of pilot villages, launching the reform of collective forest rights system in June 2004. The village had 7860 mu of forest land and 86% forest coverage rate. Forest resources were farmers' main income resource. Tongping Village was in the eastern part of Shuangxi Town, with 69,015,000 mu of forest land and 64.04% forest cover rate. Forestry revenues accounted for 73% of total revenue. In Tongping Village, all the forest warrants have been released to the forest farmers.

3. Forestry status

3.1 Forest tenure

Hunan Province started a trial reform of collective forest tenure from 2007. In June 2007, Hunan provincial government enacted the "Opinions on Deep Reform of Collective Forest Tenure" and carried out a collective forest tenure reform pilot project in Huaihua City, Liuyang County, Anhua County and Suining County, "one city, three counties," with main content as clearing the forest land use right and forest ownership, deregulating the operation right, implementing the disposal right and protecting usufruct. After the successful experiences in the pilot region, Hunan Provincial People's Government issued the "Implementation suggestions on prompting a comprehensive reform of collective forest tenure" in November 2008, to comprehensively implement the collective forest rights system reform in the whole

province.

By the end of October 2009, Hunan province had on-site verified the demarcation of more than 106.4 million mu forests, certificated more than 60.3 million mu and mediated disputes on the ownership of near 3 million mu forest lands, which were 58.3%, 33.1% and 67.7% of the total task respectively. 23 counties or cities had basically completed the task of conforming rights and demarcation and 28 counties or cities were expected to be completed before the end of the year. All the cities and counties had set up forest reform leading groups and offices, issued forest reform suggestions and fully started the forest reform. So far, the effectiveness of forest reform in Hunan province was showed mainly in four aspects. Firstly, farmers' income increased. Through measures such as tax relief, farmers' net forest income per capita grew by 18.6% in mountainous areas in 2008. Secondly, the operating mechanism of forestry was activated. In 2008, Hunan Province had absorbed more than 2 billion Chinese Yuan (CNY) social capital into forestry, growing by more than 30%. Thirdly, economical construction was promoted. Farmers' enthusiasm for planting and protecting forest ran very high and planted 3.145million mu in last winter and this spring, as 112.5% of the planned task. Fourthly, harvest index reform gave the forestry farmers clear expectations, significantly reduced forest fall and promoted forest dispute mediation. A large number of historically accumulated disputes were resolved after the forest reform.²

At the same time, FFCs grew very quickly. According to statistics, Hunan Province had set up various types of forestry specialized cooperative organizations of 3976 and operated forest 27.9 million mu until October 2009. Forestry social service organizations have been constantly improved, while levels of forestry production organization, forestry farmers' self-discipline and self-management increased constantly.

3.2 Types

²http://www.hunan.gov.cn/tmzf/xxlb/zwxx/200911/t20091109_179518.htm, 11.9.2009.

Forest resources and bio-diversity are really rich in Hunan province by virtue of its advantageous location and climate. Main forest species in the project counties were bamboo, fir and pine trees. From the data of “Forest Resources of 2000” of Hunan province, acreages and percentage of different types of forest in the total areas of forest land in 2000 were listed as table 1:

Table 1: acreages and percentage of different types of forest

	Arbor forest				Commercial forest	Bamboo forest
	Timber forest	Shelter forest	Fuel forest	Special forest		
	81.63%	11.98%	4.06%	2.33%		
Acreage (thousand hectares)	6742.7				2056.5	671.3
Percentage (%)	71.20				21.71	7.09

The amount of living bamboo was 1.61 billion in 2008 in Hunan province, which amounted to the second largest number of the whole country. Hunan is also rich in oil tea resource, there was 1185.3 thousand hectares of oil tea in 2008 and the production of tea oil was 120 thousand tons, the highest of the whole country both in acreage and production.³

Liuyang city and Hongjiang city have both gained great success in forestry development and are both rich in forest resources. The main forest species of the two cities were Bamboo, fir and pine trees and Liuyang also has abundant of flowers and fruit trees.

There was more than 20000mu forest land in Guanyintang village in Liuyang, fir and pine trees had taken half of the total area and the other half was mainly planted with bamboo. Timber and bamboo were the main income sources of the village. Most of the 50000mu forest land was natural forest with pine trees, the 20000mu

³Website of Hunan provincial Forestry Bureau: <http://www.hnforestry.gov.cn/ListInfo.aspx?ID=178525>

plantations were planted with fir trees and another 5000mu was planted bamboos, which was the main income source of forestry farmers there.

Situations in Shuanglong and Tongping villages in Hongjiang were similar, main forest resources were both fir trees, pine trees and bamboos and both had some amount of oil tea, orange, chestnut and walnut. The main income source of local people was also bamboo and the oil tea had great development potential. But currently, the oil tea species was old and diseases of oranges were difficult to control, which were the constraints to farmers' income generation.

3.3 Forest products

The rich forest resources brought diversities in forest products in Hunan. Main forest products were timber, bamboo, fruits, nuts and the processed products from the relevant processing industries, like furniture, paper, food, etc. Forest products had contributed obviously to the economic development of Hunan province.

Main products in Liuyang and Hongjiang were timbers of fir and pine and non-timber products of bamboo and products, fruits, nuts and tea oil.

3.4 Management and institutions

Most of the forest land in Liuyang and Hongjiang had already been distributed to forestry farmers' households. From the field investigation, forest management in Guanyintang village of Liuyang was mainly by the Village Forest Farm, which covered nearly all of the forest land in the village. Forest management in Qixingling village of Liuyang was based on individual households, the scale of "Xinghai Bamboo Production and Processing Specialized Cooperative" was developing but the impacts were limited, only less than a half of the households had joined the cooperative. Forest management in Shuanglong and Tongping villages in Hongjiang was also based on the individual households and the Forestry Committees contributed to information service and forestry disputes settlement. Details will be described in the following contents of the entire report.

4. The status of FFCs

4.1 Basic information of FFCs

Many types of FFC were found in both regions, including village-level cooperatives such as Village Forest Farm, specialized FFCs which focus on forest product processing and marketing, non-profit organizations whose main purpose was protecting forest resource, private forest product processing enterprises, and Forestry Committee. Some cooperatives have been paid much attention during field investigation, including Village Forest Farm in Guanyintang village, bamboo cooperative in Qixingling village, Liuyang city; Forestry Committees in Shuanglong village and Tongping village, small-scale private forestry enterprises in Tongping village, Hongjiang city and other related organizations.

4.1.1 Village Forest Farm

Village Forest Farm was the main FFC form in Guanyintang village, Guandu town, Liuyang city. Guanyintang Forest Farm established in 1985, and the Forest Farm was in charge of management and sale. From the very beginning, a few farmers joined Forest Farm with 3,000 mu forestry only. But there was 7,000mu forestry in 2002. Wood income was divided between forestry farmers and Forest Farm, farmers share was from 68% to 80%. With the reform of forest right and relevant acts in Liuyang city were put into effect, farmers' production enthusiasm was improved dramatically and most farmers accepted Forest Farm in principle. The scale of forest under the Forest Farm kept on expanding, the number of farmers who joined in Forest Farm was increasing. At present, 95% of farmers enlist under Forest Farm; the area of Forest Farm was up to 15,000mu. There were only 4 households who didn't join the Forest Farm. One of them had little forest land, the other 3 households' forest lands were far away from Forest Farm which made it hard to manage uniformly.

There were 5 managers and 8 forest workers. Because there were more taxes for Forest Farm, Forest Farm changed into Guanyintang agricultural cooperative (in this report "Forest Farm" was still its name) which could decrease taxes. This cooperative

was stock share and held meeting each year for informing about the income of the organization.

4.1.2 Specialized forestry cooperatives

“Xinghai Bamboo Production and Processing Specialized Cooperative” was the main FFC in Qixingling village, Zhangfang County, Liuyang city. It was established in 2006, leaded by the former village party secretary Tang Taixi. It was managed by other 3 villagers and Tang Taixi. One of them was Zhou Wenhui who was the present director of this cooperative. At that time, there were 20 households entered in this cooperative. The main purpose of this cooperative was striving for more money to foster woods. In 2007, Qixing village combined with its adjacent village Huyang village, got more members, established a processing factory and changed their name into “Xinghai Bamboo Production and Processing Specialized Cooperative”. At present, there was 6,800mu forest land enlisted under this cooperative.

In 2007, some managers proposed that village leaders couldn't be cooperative council members. As a result, there were some adjustments in managers: (1) council members were elected in a general meeting and the number of council members became 5; (2) council appointed supervising committee, there were 3 supervisors, these were the village party secretary and other 2 villagers; (3) there were one to two general meetings per year.

In order to manage and transport forestry product conveniently, the wood lands of cooperative members were distributed along with roads. Actually the wood lands around roads were compulsory: when cooperative expanded in 2007, council members made great efforts to persuade villagers to join the cooperative; if they didn't enlist under the cooperative, they couldn't get deforestation share. But for those villagers whose forest lands were away from roads, they were free to join or not join the cooperative. Each household needed to pay 13 CNY for enrolling in this cooperative. The uniform management of forestry includes: wood land fertility-improving transformation, fertilization, diseases and insects and pests prevention and control, forest land reclamation, spray irrigation and straw cover and

so on. This cooperative established a processing production which mainly produces toothpicks, disposable chopsticks, summer sleeping mats, curtains etc. From 2009, the cooperative members could obtain 0.2 CNY bonus for each bamboo while those villagers who didn't join cooperative couldn't get. But the cooperative doesn't make restrictions for bamboo sale; both members and non-members could sell bamboo to the processing factory or sell to anyone else.

4.1.3 Forestry Committee

As state-level forestry tenure test program demonstration city supported by FAO and EU, Hongjiang city made active efforts to discuss and support FFCs from April, 2007: they established 316 village Forestry Committees which were bridges between government, market and farmers. In 2007, Shuanglong and Tongping village supported by Hongjiang city forestry bureau, established Forestry Committees by voting in a general meeting and defined Forestry Committee as a village FFC located between village administration management and village self-governance. Anyone, who got contacted forest land both local farmers and outside farmers, could apply for council membership. Presently all villagers in Tongping and Shuanglong participate in the Forestry Committee and all forest lands were managed by the Forestry Committee.

According to Specialized Cooperation Law, Forestry Committees constitute relevant regulations and council rules which define the function of organization, enrolment regulation, the member rights and duties, elections and decision-making, funds management and income distribution and so on. Just as the other Forestry Committee in Hongjiang, the Forestry Committees in Shanglong and Tongping rely on two village committees. In line with organization construction, the Forestry Committee was composed of general directors and directors. The General Director was the legal representative, with associate general director, accountant, cashier and a common director under its management. Farmers address council members differently: some villages, like Shuanglong, name the general director (lishizhang); while some villages, like Tongping, name chairman (huizhang). Take Shuanglong for example, the

post of general director was occupied by village party secretary, associate general director was held by village committee officer, accountant was held by women officer.

4.1.4 Private forestry product processing firm

The “Bamboo Processing Association” in Tongping village, Hongjiang City was in fact some small bamboo basket processing workshops, which were invested and organized by some villagers. Forestry farmers could work in the workshops and get income as hired workers. Tongping village had 3 workshops and each of them was invested by 5 to 7 households. Investors provide fields, purchase raw and processed materials, buy simple processing machines, employ workers in local village and organize workers to produce bamboo baskets. These investors were different from bosses in common enterprise: they do not only invest and employ workers, they themselves and their families were also labour. Their products were used for orange packing. And the investors were also in charge of products sale. In terms of one villager, one investor could earn 10,000CNY per year, but they could only get 4,000-5,000 yuan per household per year due to orange diseases and pests which caused orange yields to decrease and lower basket demand. The number of employees also changes with market. Employees were paid according to piece work and their payment varies for taking different jobs. In general, one employee could earn not more than 50 CNY.

Survey team members made a field visit to a bamboo basket processing workshop in Tongping. This workshop occupied 100 square metres, with half of its space for processing and the other half for piling up raw materials. The production condition was relatively simply: in a simply-built hut there was a machine used for processing bamboo; most of processing was done by hand; only 5-6 employees working here from nearby villages. There was no fixed rest time for employees and they had lunch in the work place which was home-made and taken into the work place. Most employees work during the agricultural slow period, taking this job as income supplement which was not their main income source. It was found that some farmers took raw materials home and took baskets back after processing.

4.1.5 Other cooperative organization forms

Besides those FFCs listed above, there were other forms of forestry cooperatives and organizations in other areas of Liuyang and Hongjiang city: forestry product processing and management organizations (like wood processing organizations, flower and seedling organization and fruit trees cooperatives), and service forestry associations (like forestry fireproofing organization). Due to restrictions in time and survey locations and similarity in some FFCs, this research selected 5 representative local FFCs in 4 kinds in appointed research points.

4.2 Formulation Process of FFCs

The current FFCs could be divided into 3 categories during their initiating and formation process:

First, government forestry departments dominate, like “Forestry Committee” in Hongjiang. This type of FFC could obtain more attention and support from government so that it could develop more rapidly. But it tends to be influenced and controlled by government departments. The independence and sustainability should be addressed during development. If this type of FFC could develop preferably, it could play a vital role in promoting farmers’ enthusiasm and bringing along other organization. However, it would put the government department in a passive position if this were to happen.

Second, local elite dominates and initiates, like “Xinghai Bamboo Cooperative” in Qixingling, Liuyang. Those elites or able persons include village leaders and wealthy villagers. In the early stage, this type of FFC had some difficulties, depending on the initiators’ capacity and authority. The key factor was whether the organization could get villagers’ support.

Third, village committee dominates, like “Guanyintang Village Forest Farm”. Most managers were committee members. Based on the authority of committee and social relations with superior departments, this kind of organization was apt to get government’s attention. It’s easier to manage unified wood land. However, the farmers’ participation could easily be neglected.

There was another type that in fact does not belong to FFCs, the private forestry product processing firms, like the small bamboo basket processing workshops in Tonping village. It was initiated and organized by several villagers for private benefits. This kind of organization was more flexible than the other FFCs both in management and operation. The foundation, operation and termination of them were both determined by the benefits of investors and were somehow independent from the government but mainly impacted by the market. Forestry farmers joined the workshops or firms were only as hired workers to get payment and do not have to bear any risks.

4.3 Organization and management of FFCs

4.3.1 Village Forest Farm

Village Forestry Farm was organized by village committees. Farmers become shareholders by self-owned forest land. Contracts, which prescribe the rights and obligations of shareholders, were signed by all the participants. Village Forest Farms take charge of management and protection of forest land and product, construction and maintenance of infrastructure, application of harvesting quota and related forest development project to forest department, unified deforestation and marketing, forest dispute regulation, and profit distribution.

The income of Forest Farm was from price difference between purchasing price from farmers and sale price to markets. The purchasing prices were decided by following factors: farmers' increasing income; workers' salaries in Forest Farm; road maintaining fee; market price estimation; official expenses. Also, the sale price was decided by 5 managers. At present, the salary of 5 managers was 400CNY per month and the average salary of worker was 300 CNY. As told by the Forest Farm's managers, remaining income will be all used for infrastructure construction and management of the Forest Farm. Up to the survey time, income of the Forest Farm had reached 130 thousand CNY and there would be 40-50 thousand CNY remaining for infrastructure construction if needed.

As for harvesting quota, its application and distribution was decided by managers

according to wood growth and market. First, managers of the Forestry Farm decide the harvesting amount. Then they apply for the harvesting quota from upper forestry apartment. As soon as the harvesting amount was distributed to the Forest Farm, managers further distribute this amount to various farmers. If farmers were reluctant to harvest their wood, they can deposit their harvesting quota in the Forest Farm. They could pay some money for the Forest Farm as management fees to get the harvesting quota again when needed.

4.3.2 Specialized forestry cooperatives

Take the “Xinghai Specialized Cooperative of Bamboo Production and Processing” as an example, the specialized forestry cooperative was operated as similar as the Village Forest Farm. Members join the cooperative by their forest land and bear risks together. Usually, this kind of cooperative was founded and organized by local leaders or elites. Members invest their forest land for cooperative management and enjoy service and benefits from the cooperative. Compared with the Forest Farm, this kind of cooperative was more flexible in management and operation, which could be seen from the flexible purchase prices that changes with the market prices for sellers including both members and non-members. Also, there was no compulsion on members’ sale behaviours.

There were two main approaches for bamboo sale: one was local small processing workshop, which was actually family-run handcraft workshop; the other was cooperative’s bamboo processing factory, which was larger than the workshop, and the cooperative will sell the products to other provinces like Zhejiang. Purchase price of the cooperative’s processing factory was a little higher (0.2CNY per bamboo) than the workshop but its purchase amount was changing with the market situation. Both members and non-members of the cooperative could sell their bamboo to any of the purchasers freely. Since 2009 Members would be given a share of the profits if the cooperative does well during the year. So the cooperative mainly uses price advantage to attract farmers. Members could make their own decision for forestry activities that benefit them most and could get technical support and services for forestry

management. But the main problem for the specialized forestry cooperative was a loose management system and the high pressure on organizers to increase profits.

4.3.3 Forest Committee

The Forest Committees in Shuanglong and Tongping villages, Hongjiang city, which became the bridge that connected market, government and farmers, were organized by the forest department in Hongjiang city were aimed to serve for forest farmers, protect the legitimate rights and interests of members, strengthen exchanges and cooperation between members and finally promote the healthy and orderly development of the forestry industry.

- **Application of members' harvesting quota**

Since the establishment of Forestry Committee, it takes charge of harvesting quota application. Hongjiang city was an experimental unit for harvesting quota reform: from top-down distribution to bottom-up application of harvesting quota.

- **Forestry dispute settlement**

It was convenient to settle forestry disputes through fine and discharge. There were 2 forms forestry dispute: one was originated from boundary dispute between forestry and rice ground; the other was forest land dispute in boundary between homestead and forest land. In 1982, "forestry dispute settlement association" was founded, which was changed into forestry dispute settlement office. This organization was mainly operated by village committee members. After the establishment of the Forestry Committee dispute settlement became the function of the council.

- **Provide information service**

The Forestry Committee provided following information: (1) relevant forestry policy information. Forestry Committee conveys forestry policies by the way of poster, general meeting and group communication; (2) diseases and pests prevention information, such as prevention methods and techniques; (3) forestry fireproofing information- to improve members' fireproofing awareness via blackboard, posters, slogans and indoor propaganda; (4) fine seeds information- to provide good seedling information for afforestation each year; (5) wood market information- the Forestry

Committee only provides circumjacent market information instead of being involved in wood business.

4.3.4 Private forestry product processing firm

Take bamboo processing workshop for example, the management of this kind of firm was different from FFC organization and a genuine entrepreneur. Investors decide on investment amount and opportunities depending on their own risk endurance capacity. Farmers who were the employees of workshops were flexible dealing with work and investors. For example, employees could work in workshops or take jobs home and they could join in as long as workshops need employees. As for raw material purchase, first, investors confirm the bamboo area and apply to the Forestry Committee for a deforestation amount. Then Forestry Committee repeats the same process with the superior department.

In order to gain some amount of income, investors need to bear business risks, especially in the last 2 years costs of raw material and employees were increasing while sales amount was decreasing which depressed their investment enthusiasm. However, employees prefer this sort of non-agriculture income. Because they were not far away from villages they have time to undertake agriculture production and they can also make use of leisure time to make money. Some investors show that some farmers would like to expand bamboo processing workshop, but due to the limited bamboo area, raw material supply was lacking. So up to now, it's only a fantasy.

Besides, there was another kind of organization called "bamboo yield improving association". In fact, it's another form of bamboo marketing. Bamboo demanders-out-of town bamboo processing firms choose some forest land, sign agreement with farmers, and then firms invest in this forest land for technique improving training. When bamboo was ready for harvest, investors purchase these bamboos according to market price. This sale mode could solve farmers' fund deficiency, improve bamboo yield and quality and save transport costs. However, it competes with local bamboo processing workshop.

4.4 Operation and Practise of FFCs

4.4.1 Members positivity of participating in forestry activities

Most of local farmers, village leaders and FFCs' managers said that the positivity of forestry farmers participating in forestry activities was increased after the setting up and in the development of FFCs. Forest management supported by FFCs promoted forests' quality and forestry farmers' income, also, labour input of forestry farmers into forestry management and operation was reduced, which give more time to them for innovations of forestry production as use of new techniques, changing of planting structures and other new ideas and activities. In questionnaire survey, nearly 40% of interviewed FFC members said that their planting structure was changed after they joined the FFC and nearly 30% of them said that the cooperation among farmers was increased since they joined the FFC. Table 1 was of the percentage data of interviewees' selection of different activities, in which their cooperation was increased:

Table 2: Selection of different cooperation activities that increased (%)

	Cooperation in production	Cooperation in marketing	Cooperation in fire prevention and theft deterrent	Joint activity in FFCs	Others
Percentage	10.5	16.8	26.3	10.5	15.8

4.4.2 Role of FFCs in forest management

Current FFCs were playing important roles in forest land management and forestry development and have gained good effectiveness up to now. But functions and responsibilities of different FFCs were diverse based on different goals and different management mechanisms.

- **Forest management and protection**

From the survey on the Village Forest Farm of Guanyintang village, Liuyang City, the “Xinghai Specialized Cooperative of Bamboo Production and Processing”, the Forestry Committee in Shuanglong and Tongping villages, Hongjiang City, we could see that the FFCs' operation had good effects on forest land and forestry

development and most members were satisfied. Mainly represented in the low-yield forest land transformation, pest control, improvement of production technology, fire preventing, theft and livestock, effective management, also infrastructure construction, varieties of new technologies and application of ensuring measures. For instance, in Guanyintang village, almost all the forestry farmers joined the Village Forest Farm, and finally the forest quality was significantly improved and also saved on labour. The “Xinghai Specialized Cooperative of Bamboo Production and Processing” in Qixingling village took a joint management approach in including low-yielding forests transformation, fertilization, pest and disease defense, and reclamation technical management, and also adopted new technologies such as drip irrigation to increase the bamboo production, and actively made efforts in bamboo natural disaster insurance to reduce the forestry farmers’ disaster losses. Forestry Committee in Hongjiang City, also played an important role in the unified management of the forests.

- **Settlement of forestry disputes**

The unclear forest boundary resulted in forest disputes which were difficult to solve. Some disputes lasted for years and had a negative influence on the relationship between villagers. Even the village committee had no idea of how to redefine the forest ownership fairly because of their lack of power in forest management. But FFCs such as the Forestry Committee and the Village Forest Farm make another circumstance. These FFCs work as an authorized formal forestry management organization and had been approved by the majority of the villagers. For this reason, the decisions of the FFCs will be carried out because of its formal authorized status. Much of forest disputes which were rooted in history have been solved under the effort of FFCs. It was shown in the questionnaire that 53.3% of interviewed FFC members believed that the FFCs changed the relationship of villagers, and 56.1% of them considered that the interpersonal relationship in the whole village had been improved.

- **FFC had obviously improved forestry producing scale**

The most obvious effect brought by FFCs was the enlarging of forestry

producing scale. Forest management was becoming more convenient and productivity had improved when forest resources were put together. According to the survey, scale of forest operation of the Village Forestry Farm in Guanyintang village, the Xinghai Bamboo Cooperative in Qixingling village, and the Forestry Committee in Shuanglong and Tongping village were all over 7000 mu, but before the FFCs were founded, even the biggest forest production scale was not over several hundred mu.

- **FFC helped a lot in improving the added value of forest product through forest processing enterprise**

Most FFCs had expectations to found their own forest processing enterprises. Take the Xinghai Bamboo Cooperative in Qixingling village for example, the cooperative had founded a forest processing enterprise and it could make a profit of about 4 million CNY each year. Besides, the enterprise had not only increased the added value of forestry production but also increased the sale of unprocessed materials for local villagers. The Village Forestry Farm in Guanyintang village had not founded their own processing enterprise but it had a consistent contact with some forest processing enterprises outside to ensure the sale and benefit of forest production. The speed of founding forest processing enterprises was accelerated by the rising of FFCs.

- **Other services provided by FFCs**

Other services provided by FFCs are as follow: First was information service. All kinds of FFCs have made great effort in providing forest production information and production marketing information which promoted the improving of production techniques, the connection between forestry farmers and markets, and the protection of forest resources. Second was providing infrastructure construction. The Forestry farm in Guanyintang village built 2~3 kilometres of forest roads each year by using the remaining income of the Farm, till now, 15 kilometres of forest roads had been built for forest production transporting. Third was harvesting quota application. The procedure of applying for harvesting quota was difficult to carry out by farmers who have lower education and have little contact with the forest department, but applying

as the term of a forest cooperative could save much time and energy for farmers.

4.4.3 FFCs increased forest farmer's income to different extents

Farmers' income had been increased in all 4 villages after joining in the FFCs. Though complete forest management has not been implemented in Shuanglong and Tongping village, the improvement of forestry techniques and the service for providing market information have had much impact on increasing farmers' income. The bamboo processing enterprise with small scale in Tongping village also helps in improving income growth. Based on the data from the survey, the respondents in 4 villages give estimation on income changes after joining in the FFCs as follows:

Table 3: Income changes in 4 villages after participated in FFCs (%)

Income changes	Obviously increased	Some Increase	No change	Some decrease	Obviously decreased
Guanyintang	40.9	31.8	18.2	9.1	0
Qixingling	41.2	41.2	17.6	0	0
Shuanglong	36.8	21.1	42.1	0	0
Tongping	16.7	23.5	59.8.	0	0

4.4.4 Benefit distribution in FFCs

The Forestry Committees in Shuanglong and Tongping village in Hongjiang were mainly in charge of forest management and service but have not been involved in business affairs so they were not dealing with any benefit distribution. The private forestry product processing firms were enterprises in fact, farmers working there as hired workers, thus receiving payment for their labour, and the payment was decided by the investors or bosses based on the market and the investigation showed that farmers did not have any input on the issue of payment. The benefit distribution was therefore focused on the Village Forestry Farm in Guanyintang village and the "Xinghai Specialized Cooperative of Bamboo Production and Processing" in Qixingling village.

For the Village Forestry Farm, it was in charge of the application and distribution

of wood harvesting quota of the most forest in the village and the farmers had to receive the harvesting quota through the Forestry Farm if they needed to harvest any wood, bamboo or other forestry products from their forest land, and they also had to sell the harvested products to the Forest Farm as required. In fact, the Forestry Farm controlled the harvesting and sale of forestry products of farmers. Price from the Forestry Farm was lower than the market price and the Forestry Farm got its income by the price difference, which sometimes reached 150-200CNY/m³. Farmers lost their decision rights and opportunities to enter the market in this benefit distribution approach, which somehow affected their production enthusiasm.

However the “Xinghai Specialized Cooperative of Bamboo Production and Processing” used price advantage to attract farmers’ sale of materials to its processing factory and the benefits were distributed by market. The help for members for the application of harvesting quota by the Cooperative was only its service function but not an approach for benefit control. Both members and non-members could sell their forestry products freely and since 2009 the Cooperative would distribute some bonus to members if the profit was satisfactory in the year. Scale of bonus distribution would be decided by the Cooperative Committee.

4.4.5 FFC had impact on village governance

The development of FFCs not only had impact on forestry and farmers but also on the development of village governance.

In the first place, FFCs could take charge of forestry management together with village committees. On the one hand, FFCs could solve some special problems caused by forest management or production that was difficult for the village committee to settle. On the other hand, FFCs reduced the burden of the village committees by taking charge of forest management, so that the village committee could focus on the other public affairs.

Secondly, FFCs contributed a lot to improving democratic consciousness, cooperative consciousness and participatory consciousness, thereby impacting the performance of farmers on village public affairs.

Thirdly, FFCs, especially the Forestry Committee and the specialized FFC, accepted non-committee members as managers to supervise and restrict each other's power.

Finally, FFCs opened up a path for the communication between government and forest farmers.

4.5 Effectiveness of current policies

It is undoubtedly that the Forest Tenure Reform policy is one of the most important forestry policies in China since its pilot projects began in 2003. In local forestry departments, the important work was to promote the forest tenure reform and provide relevant counterpart measures. In addition, there were some local policies for supporting forestry or FFC development in Liuyang and Hongjiang.

4.5.1 Effectiveness of Forest Tenure Reform Policy

Liuyang was one of the earliest counties (county level city) with pilot projects of forest tenure reform. In 2008, the forest tenure reform in Liuyang passed the check by the Hunan provincial government. Up to now, 95% of forest land had been distributed to forestry farmers in Liuyang. Forest Tenure Reform in Hongjiang city began in 2007 and had gained remarkable success. Most of the forest land had been distributed to farmers and certifications were given. Also, innovations were gained in harvesting quota distribution.

The Forest Tenure Reform policy was also mostly the concern of forestry farmers among all the policies related to forestry development. In the village workshop, forestry farmers generally expressed that forest tenure reform, which brought real benefits to forest farmers, was welcomed and highly praised. They also hoped the policy could be executed in the long term to keep the property rights stable and unchanged. At present, most forestry farmers had their own forest land with clear property right. They had the awareness of self-regulation and protection of their own forest land, improving the yield, and taking full responsibility. The forestry farmers believed that forest tenure reform caused an essential change in their forestry production and management condition. Such an improvement was mainly due to the

stability of forest rights, which directly promoted farmers' forestation initiatives.

The impacts of forest tenure reform on forestry farmers could be illustrated as follows: first, forestry farmers' forestation initiatives had been promoted. The forest rights had become stable after the reform, which was referred to by forestry farmers as "The root of tree was stabilized, people's mind could be stabilized". The forest tenure reform process greatly promoted forestry farmers' initiative towards developing forestry production and their protection awareness on forest land. Most forestry farmers stated that they could take responsibility of their forest land under the long-term consideration and planted trees for their sustainable livelihood as long as the policy was unchanged in the long term. Second, forestry operation was more flexible and the forestry farmers' benefits could be guaranteed. Forest land could be contracted, leased and mortgaged in formal form because of the more flexible operation. Third, the eco-environment had been improved greatly. The clear identification of forest rights on the one hand increased the forest coverage and played a role in ecology preservation. On the other hand, it not only decreased deforestation and forestry disputes but also satisfied the forestry farmers by lightening their burden of managing and protecting the forest.

4.5.2 Effectiveness of Local Forestry Policies in Liuyang

Some local policies were formulated with the forest tenure reform process in Liuyang.

1) Establishment of the center of forest tenure trade. In Liuyang Forest land was distributed and forest tenure certifications were issued for forestry farmers based fully on respect of farmers' willingness. Additionally, forestry farmers could not only transfer the forest land but also could auction and mortgage the land by using the forest tenure certification. Therefore, the Forest Tenure Office in Liuyang set up the forest tenure trade center which was responsible for transferring large area of forest land and organizing auctioning forest land. In village workshops, many villagers said that they knew of this policy but only a few participated in the auction.

2) Establishment of forest insurance mechanism. Forest insurance was set up

after the Hunan snow disaster in 2008 which caused 6 billion CNY economic losses. At present, the forest insurance fee was 1.60CNY per mu in total, 0.56CNY by rural household and 1.04 CNY by government. The claim amount was 400 CNY per mu. The forest insurance on the one hand improved the disaster compensation mechanism, on the other hand encouraged the forestry farmers to invest daringly. The results of village workshop showed that a part of households knew this policy, but they were not acquainted with its specific rules.

3) Sunshine action. Sunshine action meant that distributing the forest harvesting quotas directly to forestry farmers' households, which in the past was distributed first to townships by county level Forestry Bureau and then to village groups, at last to households. Moreover, there were some preferential policies for FFC. As for the cooperatives with more than 3000mu forest land, the harvesting quotas will be given directly to the cooperatives and then the cooperatives distributed and used the quotas specifically. The harvesting quotas in Guanyintang village was first distributed to the Village Forest Farm and then distributed to households by the Forest Farm. Farmers showed a high degree of satisfaction with this way of distribution because they believed that the present harvesting quotas could meet the demand of production and at the same time would not result in deforestation. The bamboo cooperative in Qixing village was only responsible of distributing part of harvesting quotas.

4) Establishment of a specified forestry disputes mediation institution. The Forest Tenure Office was the main institution for mediating forestry disputes. It was on the agency of county government to identify the forest rights and set up a special mediation room.

5) Supports for the development of FFCs. There were 126 cooperatives in Liuyang city including forest farms, wood sales and processing cooperatives, forest land operation cooperatives, flowers and seedling organizations, fruit trees organizations, forest protection cooperatives and forestry specialized cooperatives. The number of formally registered cooperatives was 92. The total forest area related to these cooperatives was up to 1,600,000mu. The forestry department supports the

cooperatives through some preferential policies such as specialized harvesting quotas for the villages with forestry cooperatives, decrease of forestry tax or increase of subsidy standard and supports for the cooperatives with funds or material through projects. Under the promotion of encouragement policies, the number of local cooperatives was large and the types were varied.

4.5.3 Effectiveness of Local Forestry Policies in Hongjiang

The main Forestry policies and strategies carried out in Hongjiang were as follows: 1) the innovation of forest harvesting quota distribution. Originally, forest harvesting quotas were distributed from national government to province, then to the city, county, township and then villages finally. After the innovation, rural households could make harvest plans and apply for harvesting quotas by themselves according to their requirements, which satisfied the requirements of farmers, made the management easier, saved resources and at the same time, harvested forests in a reasonable way. 2) the foundation of forest tenure trade centre, which was the first forest tenure trade center founded in Hunan province. 3) the promotion of "reform in forest harvest management", with emphasis on harvesting management, preparation of management plan, and protection system, to explore the innovation and complete the preparation of specific forest management plans; 4) to carry out the work of forest tenure mortgage loan; 5) establishment of the forestry insurance system. There was 850,000mu of forest that had been insured by the special insurance policy up to that time and the scale was to be expanded to 2.03 million mu.

Additionally, the establishment of the Forestry Committee was promoted in each village and 316 villages in the Hongjiang had established Village Forestry Committees, which serves as a bridge between the government, market and forestry farmers. The committee, a village level forestry economic cooperation organization existing between village administrative management and self-regulation of villagers, could not only execute management functions but also service functions. The committee provided a foundation for further developing of FFCs. It played a role mainly in formulating village forestry constitution, offering forestry production

consult, technique guidance, information communication and sales service, organizing the development plans of forestry industry in the whole village and guiding members to operate sales, monitoring forestry resource management and prohibiting deforestation, mediating forestry disputes to maintain the stable order in forest areas, carrying out forest fire and pest disease prevention work.

In recent years, the main plans in forestry work of Hongjiang Forestry Bureau include: 1) to divide the forest land into different function zones. According to forest land features and location conditions of different places in Hongjiang, the forest land would be divided into five function zones and different management would be implemented in different zones; 2) to make simple forest management cards. It would be more convenient for households to directly apply for harvesting quota in the forestry department for the card could simplify the procedures of farmers' harvesting quota application. 3) to carry out the "Temporary Regulations for Non-commercial Forest Management" as soon as possible, which set protecting forestry farmers' benefits and promoting ecology development as its objectives. 4) to formulate the "Operation Measures for Forest Insurance" and "Measures for Forest Tenure Mortgage Loan" with the collaboration of the Civil Affairs Bureau and the People's Bank; 5) to make simple plans on harvesting management, operation management and insurance mechanism.

The forestry bureau held a highly supportive attitude towards the development of the Forestry Committees, especially after the forestry tenure reform. The forestry department would try its best to provide the Forestry Committees with policy guidance on conduct and formal operations (in terms of financing, account foundation, staff management. etc). The basic measures included: 1) supporting the committees to apply for technology extension projects in the name of the cooperative to gain the support of funds and techniques. 2) carrying out sustainable forest operation activities; 3) establishing a forest insurance system and offering other insurances. 4) providing preferential policies in terms of financing and tax. 5) investing in infrastructure construction such as forest protection and forest road building. 6) encouraging

development of FFCs by giving financing supports to cooperatives to facilitate a typical cooperative model.

4.6 Main problems or difficulties

Generally speaking, although the development of FFCs had such advantages, there were still problems and difficulties, which were different in different areas.

4.6.1 Inadequate capacity to provide forest infrastructures

In Guanyintang Village and Qixingling Village, all forestry farmers said road conditions were really poor in the forests, so the cost for transportation was high. It was so difficult to transport wood in the forests that many even couldn't be sold out. While the cost for building roads was too high for forestry farmers to afford on their own. Since the roads were used by everyone normally, they should also be built collectively. Although Guanyintang Village utilized funds left after building forests, roads built could only satisfy part of the needs. In a large area of forests, cutting cost was so high that wood could not be sold. Infrastructure in forests was too weak. In many forests, there was no road, or the roads were too distant. In this way, transportation still faced many problems. For many objective difficulties such as inadequate funds or steep slopes, forestry farmers were unable to construct roads in the forests by their own, so they have to rely on the capital and policy support of relevant government departments. Forests belonging to some forests now have direct access to highways, so the transportation was very convenient, while others were just the opposite. Forestry farmers' Cooperative did not have enough capital to solve this problem.

4.6.2 Simple income patterns of forestry farmers

Because of limited arable lands, forestry farmers' income from the woods will directly affect their total income. Once natural disaster happens, forestry farmers will be severely impacted. The snow disaster in the early 2008 caused huge economic losses to the surveyed forestry farmer families. Since at that time, forest insurance system had not yet been established, forestry farmers had to shoulder all economic

losses.

4.6.3 Lacking of initiatives in forestation

FFCs and farmers did not have enough initiative to plant forests freely and forestry farmers did not have enough initiative or funds to do so. In 1980s and 1990s, after the forests were severely damaged, many forests became barren hills. Although the situation had been improved to some extent, it still remained to be a major task to continue to plant large areas of forests, which was beyond the capacity of forestry farmers. Government and the society needed to increase input in this field. At present, the forestation tasks assigned by forestry departments were limited, without enough capital support. At the same time, the support for the afforestation project was also inadequate. Taking bamboo as an example, every year, bamboo groves need much work of maintaining and management to be harvested. In Shuangxi Village, the annual quota for reformation was only about 600mu, while the total area of bamboo was over 7000mu.

4.6.4 High taxation and fees

Forestry taxation needed to be reduced. Forestry farmers thought forestry taxation was still too high. Ecological forests logging was decreasing, affecting forestry farmers' income. Forestry farmers generally believed that forestry related fees were too high. Taxations such as agriculture tax had been reduced, but forestry tax had not been reduced accordingly. Forestry farmers hoped that forestry related fees could be further reduced. Besides, ecological forests were managed by forestry farmers, but they benefited very little from this since the compensation was little.

4.6.5 Difficulties in forestry production processing

It was difficult to establish timber processing factories, while existing factories were facing mounting pressure. None of Guanyintang Village, Shuanglong Village, Qixingling Village and Shuangxi Village had enough forestry product processing enterprises, but the lack of resources limited the establishment of timber processing factories. In this way, forestry products couldnot be further processed, and much of

the work force was left unused. If processing factories could be established, on the one hand, transportation costs could be saved, on the other hand, the unemployment problem could also be solved. But, once processing factories suffer from losses, other problems may occur.

4.6.6 Low participation of forestry farmers

Forestry farmers were not fully involved as they should be. Generally speaking, the operation of FFCs (forestry farms) had brought tangible benefits to forestry farmers, but FFCs in Guanyintang Village need to improve their work in terms of respecting the dominant position of forestry farmers, protecting their rights to participate and be informed in the management of forestry farms, as well as protecting forestry farmers' rights of managing woods. In the symposium, we have also detected some problems with the operation of the cooperative organizations, mainly reflected in the absence of forestry farmers' dominant position. For example, forestry farmers lack voice in negotiating cutting quota, in the decision-making process, in benefitting from the forestry farms, in knowing the operation of the forestry farms' fees and so on.

4.6.7 Lack of capable leaders

The Bamboo Cooperative Organization in Qixingling Village, set up by local elites, was a very good example, while in many other villages, they lack such qualified leaders to lead, who need to have the capacity of consolidating resources and prestige.

4.6.8 Loose management of FFCs

The present organizing structure of organizations was relatively loose and managers not qualified, which have limited the long term development of those FFCs. In terms of institutional setting, many organizations only have board of directors, but no board of supervisors. Even for those have board of supervisors, it had no virtual power.

4.6.9 Women's role in FFCs needs to be enhanced

Through interviews with women, we find out that women were still in a weak position in Shuanglong Village. Women were obviously vulnerable in terms of education, access to information (policy and market), decision-making in the family, participating in public affairs and others. Women were satisfied with the FFCs' board of directors, but they also admit that their own roles were not obvious, mainly in managing illegal logging and the distribution of logging quotas.

Besides, in team discussions, many problems with the forestry production needed to be solved by FFCs. For example, unsound infrastructure caused difficulty for transportation; forestry-related fees were too high; compensation for afforestation was inadequate which affects the forestry farmers' initiatives of planting and protecting forests; disputes over forests (mainly in the conflicts between neighboring owners, since woods in the bordering areas may affect the growth of crops because of the shade of trees); processing and supply of raw materials were not balanced; forest lands may be damaged by livestock because of the lack of management; in some villages, the quota for logging was too small and application procedure too complicated for the logging quota needs to be applied by the forestry farmers themselves; the capacity of withstanding risks such as natural disasters and diseases were inadequate. The 2008 snow disaster in the South caused as much as 470 thousand losses to the forestry industry in Tongping Village.

The FFCs also faced challenges in terms of policy, market and others. In terms of policy, at present, there's no relevant legal protection, managing regulation, institutional and capital support from specialized managing entities. The government support was also inadequate. In terms of the market, FFCs face all kinds of challenges such as the inadequate capacity to withstand risks, too much exposure of forestry processing factories to the market price turbulence, too high a demand for FCCs in economic strength from the heated competitions and others.

5. The Views and Roles of Different Stakeholders

5.1 Government at different levels

County level forestry departments and their sub-sectors paid great attention and have given much support for the development of FFCs. A lot of support was given to the FFCs by the government policies, such as in harvesting quota's application, technological training and information service, especially for the Forestry Committees, which were founded by the support and guidance of Hongjiang Forestry Bureau.

The township governments also concentrated a lot on the development of FFCs both because of the requirement of upper level government and their own ability to facilitate local forestry development. In the investigation, relevant leaders and staff from the township government expressed that they will give as much support to the FFCs' development as they could and they had great expectations for the FFCs' development in their region. In fact, they helped a lot in the suggestions for FFCs' development, facilitations in FFCs' management, organization of training and services for forestry and provision of information about pricing and markets. The local farmers also said that township leaders and staff came to their village more often since the FFCs set up.

5.1.1 Difficulties in Local Forestry Departments' Work

Both of the participants from Liuyang and Hongjiang Forestry Bureaus expressed that the process of forestry tenure reform needed high investment in both capital and human resources, which was not affordable by county level forestry department and more support was needed from the state. Moreover, the local forestry departments encountered other difficulties in the practice of forestry tenure reform. Take the process of forest tenure distribution for example, it was really a hard and complicated work to clearly identify forest boundaries in every village, because: 1) only in the areas where forest resources were rich and forest lands were productive that forestry farmers were keen to join in the forest tenure reform process and get Forest Tenure Certifications, but forest farmers in other areas were not so motivated by the forest tenure reform policy, especially in the ecological public forest welfare areas, where forestry farmers were forbidden harvest and could not benefit from forest resources except some subsidy from the government. 2) Forestry disputes were many

and complicated to settle, especially in some boundary areas, large input of capital, human resources and time were needed in the process. 3) Executing of forestry laws also need large financial support from the government. 4) It was difficult for the forestry department to give financial support to the development of FFCs. The financial income of county level forestry departments from the local government and from forestry farmers as taxes, penalties and other fees charged were both limited in amount and could not satisfy the FFCs' expenditure.

Relevant laws and regulations should be improved. The Current institutional system was not integrated into the forestry development, for example, there were many activities which could not find enough relevant laws to support or regulate these activities, such as the logging of old trees, only some local regulations had mentioned that the logging of old trees was forbidden but relevant laws on this issue was really lack and terms in the regulations were not clear enough in detail. The same problems also existed in the issues of household forest and illegal deforestation.

Special human resources were needed for the forest tenure reform work. There were even not enough staff in township forestry sectors for their regular work and the staff turnover was high, which had a negative impacts on the forest tenure reform process, which was presented as the phenomena that “the central government and the provincial government pay attention to, the municipal government pay some attention to and the township government pay little attention to the forest tenure reform”. So, there should be special sectors with special staff for the forest tenure reform process in local governments to maintain continuity with the tenure reform process. A Forest Tenure Office was set up in Liuyang city but no such sectors were found in other areas of the county.

5.1.2 Views of Local Forestry Department to FFCs

Although FFCs in Hunan province had entered fast development in recent years, there were still restrictions and problems in the development of FFCs, such as: the knowledge of forestry farmers about FFCs was lacking, their motivation to join the FFCs was low, trust between FFC members was not nurtured, capacity building was

in short supply and communication among FFCs was limited. There were also restrictions in the management and operation of FFCs, as: small operation scales, high pressures from the market, lack of funding and human resources, high risks of possible legal action (sometimes there were disputes or conflicts between FFCs and their members or forestry farmers, also disputes in market trades), difficulties in organization of activities and improving of forestry farmers' enthusiasm.

Development of FFCs needed the support from relevant government sectors, like the support in capacity building, staff training, members' education and facilitation of communication among different FFCs. Policy support was also needed on forestry taxes and fees and setting of special sectors for FFCs' management.

Participants from the county level forestry bureaus and township forestry stations pointed out that the organization of current FFCs was loose, connections between FFC members were not enough, financing for FFCs' operation was inadequate. Participants from Hongjiang Forestry Bureau gave the opinion that development of FFCs in Hongjiang would be mainly facilitated by the Forestry Committees which were set up and organized by the cooperation of Hongjiang Forestry Bureau and local village committees in recent years. They also suggested that FFCs should develop forestry processing enterprises to improve forestry productivity and increase their profit.

It was also pointed out that the institution of FFCs' management should be improved, publicity of financial management, price decision process and income and expenditure of the cooperative to let members understand clearly about the management and decision making process, in which trust could be founded and conflicts would be decreased.

5.2 Village committees

Village leaders of the village committee told that the relationship between the village committees and the FFCs was cooperative and supportive to each other. The FFCs were supplementary for the village committees on forestry affairs. There were members from the village committees in the committees or councils of FFCs except

the private forestry product processing firms and the committee members were mainly from the village committees in the Village Forest Farm and the Forestry Committee. So, most FFCs were tightly connecting to the village committees and the development of FFCs was also an important objective of village committees.

Opinions of village committees showed that they had high expectations for FFCs and found that many challenges stood in the path of development of FFCs. They thought the formation of an information network was necessary to solve information problems in the operation of FFCs, for example, the lack of information on market prices, sale opportunities and technologies, but FFCs themselves did not have adequate financing for founding information networks. Forestry products processing of FFCs was still at the level of small scale workshops, which had low capacity for operation and risk taking. They suggested that more supports should be given by the government for forestry products processing, including preferential policies to facilitate the development of processing enterprises, capacity building and training for management of FFCs and processing enterprises, etc.

5.3 Farmers (FFC members and non-members)

5.3.1 Forestry farmers' comments on FFCs

We could see from the analysis that FFCs solved lots of problems and difficulties that were difficult or impossible for forestry farmers to solve by themselves and they brought service and benefit for forestry farmers. From the collected data, most forestry farmers were basically satisfied with the operation and management of the FFCs, see table 3 and table 4 about the basic evaluation of FFC members for the main operation and management of FFCs:

Table 4: Holistic evaluation of forestry farmers (members) for FFCs (%)

Degree of satisfaction	Very satisfied	Just satisfied	Ordinary	Not very satisfied	Unsatisfied
Guanyintang	34.8	39.1	17.4	8.7	0
Qixingling	6.3	81.3	12.5	0	0
Shuanglong	61.1	33.3	5.6	0	0

Tongping	60.0	20.0	20.0	0	0
----------	------	------	------	---	---

Table 5: Evaluation of forestry farmers (members)for FFCs’ operation (%)

Degree of satisfaction	Very satisfied	Just satisfied	Ordinary	Not very satisfied	Unsatisfied
Guanyintang	31.8	31.8	22.7	13.6	0
Qixingling	6.25	68.8	25.0	0	0
Shuanglong	50.0	27.8	16.7	5.56	0
Tongping	60.0	40.0	0	0	0

To sum up, most forestry farmers showed the satisfaction towards FFCs holistically and on their operation.

5.3.2 Estimation of non-FFC members to FFCs

There was some clarification to table 6 that only 4 farmer households did not join in the FFC in Guanyintang village, 3 farmer households in Tongping village did not join and just one household in Shuanglong village, and the forest land they have is of small scale. Thus, there was no data of Shuanglong and Tongping village in the table.

Table 6: Estimation to cooperative running by non-cooperative members (%)

Estimation	Very good	Good	Just fine	Not so good	Bad
Guanyintang	10	50	40	0	0
Qixingling	14.3	42.9	42.9	0	0
Shuanglong					
Tongping					

Comments of forestry farmers given to the FFCs were as follows:

- 1) Setting up of a FFC made it possible to expand forestry operation scale, hence the profit of forest production was improved;
- 2) Joining in the FFCs facilitated unified management of forest resources, management and technology was improved;
- 3) Joining FFCs reduced input of labor and saved cost;
- 4) Some FFCs contributed a lot to local forest infrastructure construction;
- 5) FFCs promoted the establishment and development of enterprises of forest products processing and on the one hand promoted product sales and increased

additional value of forest products;

6) FFCs improved the settlement of local forestry disputes

Nevertheless, the development of FFCs was still at the initial stage, there were many problems and challenges due to various reasons in the process of FFC development, on which forestry farmers gave their views and suggestions:

- 1) Some of FFCs, such as the Forestry Committees in Hongjian, were loosely organized and lacked of direct interests links;
- 2) Small scales, lack of finance and human resources, facing high pressures in the market and with the risks of taking legal responsibilities were some of the problems and deficiencies of the FFCs ;
- 3) A long process was needed for the development of FFCs due to a lack of experience and deficiencies in organization;
- 4) Difficult to set up information networks.

5.4 Other stakeholders

In addition, other stakeholders, such as the agriculture departments, enterprises and other organizations or individuals also gave some suggestions for the development of forestry and FFC. County officials believe that there was an essential difference between forestry and agriculture. Although the household contract responsibility system increased the production enthusiasm of farmers and promoted agricultural development, the system does not suit forestry production. Due to its own characteristics, forest resources were more suitable for large-scale operation. Therefore, after forest tenure reform, the challenge of how to organize individual farmers with small forest lands to scale operation in order to advance the process of development came to the fore. FFCs provided an effective choice in the process.

Meanwhile, people from related companies (forest products processing enterprises, nursery stock companies, etc.) felt that taking a corporate mode of operation may be an effective way to get rapid and sustained development of FFCs.

6. Problem analysis

6.1 Experiences and lessons

Drawn from the case studies and conclusion of the workshops, after forest tenure reform, while the forestry farmers had access to the forest management autonomy, the characteristics of forest resources has led to small-scale farmers operating difficulties and low efficiency, then resulting in the demand for co-operation. The forestry farmers' growing willingness to cooperate stimulates various types of FFCs and the mood of cooperative operation, also promotes the forestry development and cooperation between forestry farmers. The emergence of Village Forest Farms, FFCs, and private forest products processing enterprises, Forestry Committee, and various other forms of FFCs and operation and management forms meet the forestry farmers' various needs of production and management. Village Forest Farms and Forestry Committees play an effective role in united, standardized management and protection, and promote the improved yield and quality of forestry resources, and laid the foundation for the improvement of their efficiency. Village Forest Farms and the Forestry Committee also made a certain amount of contributions to the improvements of the forestry infrastructure, saving cost of harvesting, transportation, and reducing the burden of forestry farmers. In the same time, the business model of Village Forest Farms, FFCs, and FFC promote the large-scale operation. It not only saves labor resources, but also highlights the advantage which individual farmers do not have in terms of the response to market risks and the settlement of difficulty of investment. Private forest products processing enterprises can be organized as an effective supplement to FFCs. A small number of people's co-investment and organization have made positive impact on the settlement of idle labor force during the slow period of work for most people, increasing forestry farmers' non-farm income, and improving local forestry production and development. So the private forest products processing enterprises were widely welcomed by the forestry farmers.

Besides, forest farmers' cooperatives could not only provide new methods to improve managing and organizing systems to realize intensive operation, expand

scale, strengthen forest products' competitiveness and increase farmers' income, they could also advance democracy in rural areas, improve rural governance and transform social and economic structure. However, at present, the number of local forestry cooperatives was relatively small and penetration rate was low, so they only play quite a limited role in rural governance.

At the same time, a lot of problems have been created in the process of the development of the forestry cooperation. The root of the problem focused on the distribution and improvement of benefits, risks resistance etc. Those problems could be solved through this way: enhancing public participation of the FFC organization's management, seeking external financial, technical and information support, thus promoting management transparency and fairness in the distribution of benefits, expanding production scale, improving technical level and production efficiency, and promoting product development and marketing. Therefore, the improvement of production efficiency will be possible and the FFCs' enthusiasm can be promoted. It will also play a positive role in promoting further development of cooperation in forestry.

According to investigation results, different types of cooperatives have their own special characteristics and advantages. Nowadays the Forestry Committee is in its elementary and exploration phase. It can settle forest disputes and supply relevant information as well as manage forest cooperative organizations. Because it was guided by the village committee, the Village Forest Farm has centralized the administration of the forest and protected local forest resources. In addition, it promoted large-scale management of forest production. Private forest product processing enterprise was full of vitality because of flexible management and free cost for farmers. This research highly praises the management and operation models of forestry cooperatives, taking the "Xinghai Specialized Cooperative of Bamboo Production and Processing" for example. Since in the process of operation, those cooperatives focus more on the application of pricing mechanism so that the operation was in accordance with market rules. In this way, cooperatives could improve

themselves in terms of the exploration of new markets, product innovation, productivity and efficiency. With the increased efficiency, cooperatives could return more profits to forestry farmers so that they will be more willing to participate, which will in term, promote the cooperatives' sustainable development.

In conclusion, current FFCs were in their early stages of development and both forestry development and relevant stakeholders still had their demands for FFCs' development which was also the hope of forestry farmers. FFCs' foundation and development had impacts on forestry farmers' livelihoods in different aspects. Development of FFCs could be and would be an effective way for forestry development in forestry areas of China.

Although various types of FFCs in the development process have encountered varying degrees of difficulties and challenges, they also accumulated rich experience. And combined with support from higher level government departments and analysis and study from research institutions, those organizations can be considered as solutions to the problem and future development goals. Using the village committee or the Forestry Committee as a unified governing institution will effectively promote the development of forestry. The institution can manage the various FFCs and operate in a unified and standard manner, and promote the development of a variety of forms of cooperation. Meanwhile it can also continuously promote forestry farmer's cooperation enthusiasm, expand production scale, and develop product markets. In addition, to the promotion of forestry development and forestry farmers' cooperation, FFCs have also produced a certain impact on the co-management of village-level organizations. The rapid development of FFC has played an important role in the economic development of the village, and has effectively made up for the failure of the market and government. It has also played an active role in the promotion of rural economic restructuring. Firstly, the FFCs, such as Village Forest Farms, Forestry Committee and other entities can play an effective role in the village-level forest management, such as forest management and conservation of forest land dispute mediation, etc. Secondly, FFCs will help improve the democratic consciousness of the

villagers and the sense of participation, it also promotes the villagers' self-management capabilities. Thirdly, the Forestry Committee could build a bridge of communication between the government and the villagers to promote the effective communication and understanding between government departments and forestry farmers.

It could be seen from the upward analysis, the FFCs investigated in this research had different advantages and problems, table 10 gives the result of SWOT analysis of different FFCs.

Table 7: SWOT analysis of FFCs

	Strengths		Weakness		Opportunities		Threats
Village Forest Farm	1.Authority and effectivenessofforest management 2.Increasingforest operation scale 3.Stability of forestry farmers' income 4.Support from relevant forestry departments		1.Forestry farmers' ownership was not fully reflected 2.Lack of transparency in forest management and operations 3. Strict control ofharvesting and sales 4.Fairness of benefit distribution was questioned		1. the possibility of continuing expansion of the operation scale 2.Possibility of continuing expansion of the market share 3.Possibility of improving forestry management and operation		1.the uncertainty of market 2.Unfairness of benefit distribution might lead to lower willingness to cooperate and increasingly intense contradictions
Specialized FFCs	1.Effectiveness of integrated forestmanagement 2. Increasing forest operation scale 3.Improvement of forestry technologies 4.the freedom (through price		1. A few elites lead and organize, the foundation process was difficult 2.Lack of support from government departments 3.Members have low enthusiasm		1. Continuous enhancement of the market competitiveness of 2.Improvement of production technology level and diversification of the products 3.Forestry farmers' enthusiasm to join the		1.The uncertainty of markets 2.There might be a large-scale withdrawal of members when the cooperative faces a predicament 3.Risk of climate and other natural factors 4.Facing possibility of failure with respect to the development of the product and

	<p>advantage and the profit return mechanism to attract members) of the forestry farmers to join in the FFC</p> <p>5.Members' strong decision making power of self-cutting and sales</p>	<p>4.Having difficulties to cooperative was raising and market connected with the the scale of cooperative was expanding</p> <p>market,and the products were weak in market competition</p> <p>4.Possibility of support from the higher forestry sector</p>		
Forestry Committee	<p>1.The standardization and integration of forest management</p> <p>2.Effectiveness in dealing with forestry disputes</p> <p>3.Contribution to the effective communication between forestry farmers and relevant governments</p> <p>4.Full support from county, township government and village committee</p>	<p>1.AFFC led by the county forestry sector and had no real business activities</p> <p>2. No fixed sources of funding</p> <p>3. Function has not yet been given full opportunity to develop</p>	<p>1.the management institutions of the village-level FFC playing an effective role in promoting the standardized management and unity of the FFC</p> <p>2.To strive for more foreign support for the development of forestry</p>	<p>1.The overlap of the village leadership and the lack mechanisms of improving enthusiasm leading to the staff's lack of initiative</p> <p>2. If the function cannot be fully supported this could lead to the organization's failure to function</p>
Private	1.Vitality and flexibility in	1.A smaller scale	1.Possibility to be managed	1.Market changes, and changes in related

forest	operation	2. Management was loose,	systematically by the Forestry	products led to lower product prices or
products	2. According with the needs of	low level of technology,	Committee	unmarketable product
processing	both the investors and forestry	backward equipment, and	2.The possibility of the	2.Poor competitiveness and at
firms	farmers	the production efficiency was	expansion of production scale	andisadvantageousposition during the
	3.Promoting forestry products'	not high	3.product diversification and	acquisition of raw materials
	sale and value	3.Product quality was not	continuous market	3. Investors withdrew in the face of
	4.Improving forestry farmers'	uniform, and the standard	development	exceptional circumstances
	non-agricultural income	was low	4.Capital increasing led to	
	5. Making full use of free labor	4. The lack of external	expansion of equipment and	
		support	technology investment	
		5. Capitalwas Limited		
		6.Market Information		
		ineffective		

6.2 Incentives and disincentives for forest management by FFCs

6.2.1 The need for and possibilities of forestry cooperation

Under the forest tenure reform, forest land has been distributed to households or villagers' groups, which led to forest land fragmentation. In addition, shortage of small farmers' financial resource and technology impeded the governance and development of forest resources. Main difficulties of small farmers' forestry management and operation were found as follows:

- **The poor condition of infrastructure**

The main problems in forestry infrastructure were the forest road construction shortage and the long distance from the forestry to road. The local forest covering rate was high and the wood storage was excessive, but most woods were located in the mountain areas, which were far away from the forest roads with a very inconvenient transportation. For these forest lands, the forestry farmers needed to hire people (usually wood acquirer) with felling and transporting, which has greatly increased the forestry costs and meanwhile reduced their earnings. Forestry farmers want to build a wide range of forest roads, and though constantly forest infrastructure improving to reduce the traveling distance required to make timber sales.

The second problem was the lack of fire-fighting facilities. Currently the protection was dependent on the primitive manual-fire-fighting, without effective protection. So the forestry farmers want to get enough forest fire fighting facilities through the Council to increase fire protection for forest land.

- **High forestry cost**

Forestry farmers generally agreed that the cost of forestry was too high, including the application of export approval (Fir was 130CNY / cubic meters, pine was 100CNY / cubic) and the afforestation risk funds (30CNY / cubic meters), etc. While the agricultural tax and other taxes have been exempted, the forestry tax has not been reduced at all. When the forest land were contracted through the way of small household production, the farmers bore the high level of forestry taxation and faced greater pressures, and they hoped forestry fees for individuals can be further reduced.

- **Forestry disputes were existed**

The forest land disputes were frequent, and some of them cannot be effectively addressed. This problem mainly surfaced between the adjacent mountain land owners, due to the blocking of sunlight by forest boundary trees growing close the farmlands, which affected the growth of field crops. The mediation of the village committee can play an important role, but the disputes cannot be completely resolved. Forestry farmers generally agreed that the need for a relevant departments or a special organization to develop a relevant systems or measures that can effectively mediate the disputes on the mountains.

- **Difficulties in forest products marketing**

The phenomenon of resistance to outside purchasers getting into local trade and monopolizing the market price, have largely affected the forestry farmers' earnings. For instance, the sales of chestnuts were monopolized by local small traders and limited the price of local Chinese chestnut. Chestnuts were currently selling primarily through local traders, and they already reached an agreement on the Chestnut price, they control the price at a relatively low level through this method. While foreign vendors can provide a more reasonable price, they were excluded by the local vendors by making it difficult to enter the local rural market. Forestry farmers wish that the relevant departments or organizations could manage and regulate the market, and raise the prices to solve the monopolistic market problem. In addition, other forest products sales also present problems; individual farmers clearly had an insufficient capacity to respond to the market risk.

- **Backward forestry production technology**

The technology of local forestry farmers for forest production was relatively backward, the shortage of new varieties of forestry and the improvement of cultivation techniques, especially in pest control and hoeing techniques. Major local problems were pests and diseases, including chestnut root diseases and pine moth pests. Farmers were unable to cope with serious diseases and insect pests, for example, in 2008, the prevalence of "big fruit fly" pest seriously affected citrus trees, chestnut

and other fruits trees' growth and sale so farmers suffered huge losses that year. In addition, forestry farmers urgently need the forest land transformation, forestry technology and new varieties, such as the forestry farmers in Hongjiang village who expect the seeds of Camellia, to change the status of the low yield of Camellia so they can get higher incomes. But the forestry farmers still lack experience and capacities in introducing new technologies and new varieties.

- **Forestry production and marketing information shortage**

As the communication in the mountain areas was inaccessible and the transportation was inconvenient, forestry farmers had difficulties getting the information of forestry production and marketing, which caused the low level of market connections, thereby the risks in the forestry production and management increased. Therefore, forestry farmers need the emergence of cooperation, which on one hand can provide relevant forestry production and marketing information services, strengthen the connection with the market and enhance information access capacity and forestry management capacity of forestry farmers; and on the other hand, this can enhance the ability of forestry farmers to deal with risks.

- **Difficulties in forest resource management**

The afforestation and management capacity of forestry farmers were limited. On the one hand, the forest productivity was low and requires large-scale transformation; on the other hand, more pests, diseases and natural disasters caused greater losses; also there exists the problems of livestock destruction, illegal logging and other management problems. Individual forestry farmers seem powerless in dealing with these issues.

In the difficulties which forestry farmers faced in forestry production and management, some of them were difficult to solve on the village level, which required government or social support, such as forest road and highway-road construction, firefighting facilities and other infrastructure constructions; And another part was the necessity for the state or local policies to support the solutions, such as the forestry taxation issues, setting up forest disputes resolution institution, etc. The third part

can be solved by the forestry cooperation, such as forest products selling channels, sales information, technical information, forest fire fighting and so on, though through the forestry cooperation, these problems were more effectively solved, as the following table (Table 6) shows :

Table 8: possible ways to solve the operational difficulties in forestry production

	The difficulties faced by forestry farmers	Forestry farmers expect / demand	Possible solutions
Infrastructure	<ul style="list-style-type: none"> ▪ poor infrastructure; ▪ lack of forest protection facilities 	<ul style="list-style-type: none"> ▪ build forest roads and high-way ▪ get firefighting facilities 	<ul style="list-style-type: none"> ▪ funding, project support from government or civil society
Forest Fees	<ul style="list-style-type: none"> ▪ high cost of forestry 	<ul style="list-style-type: none"> ▪ reduce forestry taxes and fees 	<ul style="list-style-type: none"> ▪ policy support by government
Forest land Dispute	<ul style="list-style-type: none"> ▪ part of the disputes cannot be effectively resolved 	<ul style="list-style-type: none"> ▪ specialized forest department to be responsible for disputes resolution mediation 	<ul style="list-style-type: none"> ▪ establish the specific agencies or organizations
Sales	<ul style="list-style-type: none"> ▪ market monopolized by local vendors; ▪ narrow forest products sales channels 	<ul style="list-style-type: none"> ▪ coordination of vendors with their monopolistic behavior; ▪ expand sales channels 	<ul style="list-style-type: none"> ▪ forestry farmers joint response to monopolistic behavior; ▪ relevant organizations to develop new markets
Forestry Technology	<ul style="list-style-type: none"> ▪ lack of pest control technology; ▪ hoeing technique needs to be strengthened; ▪ lack of new varieties, yields lower 	<ul style="list-style-type: none"> ▪ need for technical training; ▪ need for new varieties 	<ul style="list-style-type: none"> ▪ relevant organizations for training and promotion of new varieties
Forestry Information	<ul style="list-style-type: none"> ▪ lack of forestry production, sales and other information 	<ul style="list-style-type: none"> ▪ providing relevant information though joint efforts 	<ul style="list-style-type: none"> ▪ relevant organizations provide information services

Forest Management	<ul style="list-style-type: none"> forestry farmers' ability to manage the forest lands was limited 	<ul style="list-style-type: none"> unified organize the forest management and protection 	<ul style="list-style-type: none"> relevant organizations conduct unified management of forest land
--------------------------	--------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------

As can be seen from the table, most solutions of the forestry problems required a forestry organizations or institutions, and the FFC has become the most appropriate solution to address these issues. On one hand, its specific operation and management of forestry were more professional than the village committee in addressing forestry issues; on the other hand, it was the forestry farmers' own co-operative organization, and has a better understanding of the wishes of forestry farmers, also their participation will accelerate the problem solving and make the solutions more effective and fair. In addition, for the problems that can be resolved through other means, the FFCs could also play roles in promoting or organizing, to ensure problem-solving efficiency and effectiveness. Consequently, the urgent need for cooperation on forestry production, management and operation were presented. In our investigation, most forestry farmers thought it was necessary to set up FFCs and they themselves would like to join in as members, and for the reasons that they would join or have already joined FFCs are shown in table 7:

Table 9: Reasons forestry farmers joining in FFCs

Reasons	To stabilize or raise prices	To solve the marketing problems	to cut down on cost	To improve the technology level	For the supplied training	Helps enhances relations between villagers	Others
Selection (%)	19.2	19.2	17.0	8.5	4.3	12.8	46.8

From the table, many interviewees selected the first 3 selections but the last one which was "Others" was selected by biggest portion of interviewees. In fact, most people that selected "Others" said it should be "solving of forestry disputes" and some people thought it should be "reducing of market risks". From the selection of "Helps and enhances relations between villagers" we could see the inter impacts among

village people in rural areas.

6.2.2 Characteristics of forest resources determined the needs for FFCs

In addition, from its own characteristics of forest resources, forestry co-management was also needed, reflecting in the following areas:

First, the forestry resources existed in a form of concentrated distribution, which have strong externalities, and thus determine its co-management needs. While the forest resources have been artificially divided into different households, the forest resources as the ecological resources with the public nature, their management will directly affect the ecological environment of that region. The externalities of forest resources make the forest resources users also affect the ecological benefits of other non-users. With respect to forestry resources management, the impact of the diseases and insect pests on forestry resources will not be artificially divided according to geographical sections, but generally occur within the natural areas; So does the forest fires, its destructive power will affect the entire region of forest security and farmers' income.

Secondly, in terms of the efficiency of management of forest resources, the collective management was more efficient than the household individual management system, and it also saved on human resources. The fire-fighting, preventing the forest land destruction by livestock especially in the tending forest, preventing illegal logging, also required joint care and co-management, which would be more efficient than single-family care. In terms of felling permit application, on one hand, a separate calculation of various indicators of deforestation was very costly, while the collective calculation was much easier; on the other hand, the process of permit application was complicated, so that the individual households spent a lot of time and cost on it, while the collective application for felling permits can be more efficient. In household management, forest resources were degraded, because of inefficient management.

Third, the reality of long-term production needs for FFCs to compensate for its input - output gap. Except bamboo, the cycle of forestry production was relative longer than agricultural production, most timber needs 10 to 15 years or even longer

to grow. Because the farmers' forest area was small, if the forest had just been cut mostly and once again entering the growing season, the farmers' inputs were much greater than the short-term production outputs, while the gains available were very limited. However, if the forest resource was organized together through cooperation, and the forest area can reach up to the scale of economy.

Fourthly, cooperation in the management of forestry resources was conducive to play intensive advantage. The processing and marketing of forest products were in economies of scales, the larger the scales, the lower the costs. Local production of forest products were sufficient to support a forest products processing enterprise, and meet their raw materials demands. Through the processing of forest products, such as bamboo, pine sheet processing, the income of forestry farmers can be increased though the value-added products. But this kind of processing enterprises needs to cooperate on the progressive development of the cooperation, in order to protect farmers' interests. In terms of sales alone, selling forest products together though cooperative organizations can provide an organizational foundation for price negotiations with the buyers. On the sales channels, forestry cooperative organization was more likely to find sales channels than the individual farmers themselves.

Fifth, public infrastructure which forestry production and management needs was based on a collective nature. In the division of forestry resources, the location of the various households' forest was different, due to high-way, forest road conditions, making a growing gap between some farmers near the highway with a lower forest cost and the farmers far away from the roads could not even to sell their products. These construction costs of high-ways, roads construction were difficult for individual forestry farmers, so it usually by the way of a collective action. Forestry Cooperation has become a viable option for providing public services. On the other hand, forest fire prevention facilities should also be collectively purchased, managed and used.

In summarize, development of FFCs would be an effective approach to solve current problems and for the sustainable development of forestry and forestry farmers. So different types of FFCs became established, which were meeting and satisfying forestry farmers' needs on different aspects. Much experiences and lessons were

gained from the development of FFCs, but there were still difficulties and challenges in the way.

6.2.3 Disincentives and problems for forest management by FFCs

FFCs of different kinds have gained obvious effect in promoting forest management and production. Forestry has been developed a lot, farmers production activity has been greatly motivated, and farmers' income increased. However, the developing of forestry cooperative was facing a lot of difficulty and challenge because of lack of experience in coping with various crises. The following was an analysis of existing problems during the developing of forest cooperative.

- **Village forest farms**

Since forest farms began to manage forests in a collective way, farmers were satisfied with the system because it decreased the cost of managing the forest and gave information for forest production. However, at the same time, some farmers still felt dissatisfied about the following:

Firstly, there was conflict in division of interest. One of the most vehement conflicts was the division of hewing quota. Some of the respondents thought it was not even that all hewing quota was taken control of by the forest farm whether they had enrolled in the farm or not, though they knew that hewing quota should be divided at the level of household by the relevant policy. But now, they can only apply to the farm to get the hewing quota. Meanwhile, all their forest products can only be sold to the farm to gain the profit irregardless of the price in the market was much higher than the farm offered, for example, the price of lumber in the farm was 400 CNY per cubic meter which was 150-200 CNY lower per cubic meter comparing to the market's about 550-600 CNY per cubic meter. In fact, the farm monopolized the purchasing of forest products through taking control of hewing quota, and farmers lost their chance for trading in the market. Most forest farmers hope that they could get the hewing quota so they can take control themselves and choose the buyers they want. Just as every coin has two sides, managers of the farm and leaders of forestry department thought that it was necessary to have the price differential to keep the

farm working normally and providing public service.

Secondly, information in forest financial management was not transparent. As the survey shows, the forest farm never made the financial revenue and expenditure information public. Financial information such as cost of forest road building, transporting cost for selling forest products, cost for forest protection, and so on. Almost all forest farmers showed that they knew nothing about financial revenue or expenditure of the farm, thus people had suspicions about it.

Thirdly, participation by forest farmers was low. Widespread and democratic participation by farmers hardly existed when the controlling the hewing quota and forest product selling was concentrated in the hands of few leaders of village committee. This became the main reason cause for the discontent towards division of profits. Each year, the farm organizes villager representatives for auditing the financial account, but all these villager representatives were leaders of village group. According to the survey, 11.5% respondents think that important decisions were always made by main leaders in the farm, 34.8% respondents think that important decisions were made by the whole farm council, and 43.5% respondents think that important decisions were made at the general meeting of cooperative members.

Finally, some people think little work has been done on forest tending. Farmers in Guanyintang village pay the forest tending fee every year, but some farmers said that they didn't gain as much tending as they expected. Farmers hope that the farm could seek the opportunity to get a subsidy from the government to promote the tending of the forest.

In a word, farmers were pleased with infrastructure construction, forest protection, product transportation and dispute solving brought by the forest farm which saved on production and input cost, but these were gained by alienating the right of management. From the perspective of commodity chain analysis, farmers were at the bottom of the chain with low, passive status. It can also be concluded through comparing table 4 and table 5 that farmers in Guanyintang village have a lower degree of satisfaction than average and a higher degree of dissatisfaction than average in the estimation of the farm itself and its running. At present, forest farmers'

right to information, management and participation all haven't been well respected. That farmers questioned if the farm was not used only to legitimize gaining larger returns but also a way of pressing for institutional reformation.

- **Specialized forestry cooperative**

Xinghai bamboo cooperative was a typical example of a specialized forestry cooperative. The greatest distinction between specialized forestry cooperative and forest farm was that the former one makes no restriction on hewing and cooperative members' sales. In this case, the cooperative attracts farmers for enrolling by providing purchasing prices equal to market prices and providing profit return, which was more market-oriented and avoids monopolization. However, specialized forestry cooperatives also face a lot of challenges during the process of development.

First of all, specialized cooperatives were faced with difficulties at startup. At the beginning of the cooperative, most people just took a wait and see attitude before enrolling. This was the greatest challenge which had to be resolved at that time and a compelling measure was taken through allocating hewing quota. Now, the cooperative still has problems in enlarging the scale of the cooperative because of its unclear future.

Secondly, the cooperative was managed mainly by few members in the cooperative council, and ordinary members have a low participation. It was shown in the survey that 41.2% of respondents think that important decisions were made by the farm council, 47.1% of respondents think that important decisions were made at the general meeting of cooperative members, and 11.8% of respondents don't know how the decisions were made. As for the degree of participatory in making decisions for the cooperative, the respondents give opinions as the follow (table 8):

Table 10: Participation in decision making by Xinghai cooperative members (%)

Participatory degree	Always	Sometimes	Seldom	Never
Proportion (%)	41.2	29.4	11.8	17.6

It can be seen from table 7 that respondents who can always be involved in the

decision making were less than half, and respondents who seldom or have never been involved in the decision making were in the majority. Actually, the cooperative still has the control of division of hewing quota in order to apply for hewing quota all at once. The arrangement is different with the forest farm, Xinghai bamboo cooperative addresses this issue by attracting farmers enrolling by visible economic profit.

Thirdly, the cooperative processing enterprise offers a higher purchasing price than other small processing enterprises, so when the market price was too high for the cooperative processing enterprise to offer higher prices, the cooperative enterprise will have no choice but to stop purchasing lumbers, and the cooperative enterprise in that case will cease to function. New operating methods should therefore be taken to attract farmers to supply lumber.

Lastly, cooperative members show a low level on acknowledging the advantages of a cooperative, which depresses the activity for farmers enrolling in the cooperative and the development of the cooperative. Villagers in Qixingling live separately and hardly communicate well with those who live far away, according to the survey, quite a lot of villagers show their unawareness of the cooperative. This can be partly attributed to the inadequate publicity of the cooperative. It was shown in the survey that 17.6% of cooperative members don't know whether the cooperative has its own managerial regulations or not, 35.5% of cooperative members don't know what these specific regulations are. The following table 8 shows the degree of understand of the formulating and implementing of cooperative regulations by cooperative members:

Table 11: Knowing of Xinghai cooperative by members and non-members

	Formulating of regulations			Implementing of regulations			
	Knows well	Knows a little	Knows nothing	Strictly implemented	Implemented just fine	Seldom implemented	Not clear
Proportion (%)	52.9	17.6	29.4	18.8	56.3	0	25.0

It was clear that over a quarter of farmers show their ignorance of the formulation and implementation of the regulations of the cooperative while one half

of non-members show a lower proportion of understanding such regulations or even the services the cooperative could provide.

- **Forestry Committee**

The Forestry Committee was still at its early stage of development and well facilitated forest management in the villages, although, there were still potential functions that could be developed and more effectiveness could be brought.

The Forestry Committee was mainly directed by government according to the way it organized and council's Organizational Structure. Leaders of Forestry Committees were the same as the village committee leaders, which was quite necessary in the Forestry Committee's elementary stage. While with the development of the council, the conflict between Forestry Committee and village committee was hard to avoid and it was encouraged for cooperatives to represent farmers' self-organization. Accordingly, the Forestry Committee should include rural elite to be the member of leadership. In addition, there was no supervisory board, which was quite necessary for an advanced cooperative organization, in this Forestry Committee. It was the supervisory board's responsibility to audit internal finances to ensure the health and orderly operation of the council as well as to protect members' lawful rights and interests.

Furthermore, the Forestry Committee does not yet have the function of managing forests. Its contributions to promote forest industry intensification, production of scale as well as increase of farmers' income were quite limited. The role orientation of Forestry Committee restricted its profit-making. The Financial system was established for the day-to-day operations of Forestry Committee, without expending to profit-sharing. In the table 3, we can see the growth rate of farmers' income in Shuanglong and Tongping villages was considerably smaller than farmers in other two villages in Liuyang city.

Farmers were not fully satisfied with Forestry Committee. Some farmers indicated that it didn't contribute a lot, its configuration were relatively weak and loose. Almost 30% of farmers stated that they knew little about the establishment and

management of Forestry Committee and they joined this organization only because they were not required to submit any fees and it was easy to apply harvesting quota. Besides, most of interviewees said they never participated in discussion and decision-making of the Forestry Committee. What they really did was voting in meetings. Though the Forestry Committee would make public the financial information, farmers didn't know the details. According to the investigation in Shuanglong village, almost half of interviewees often participate in the decision-making phase, 23.6% interviewees rarely or have no chance to participate. The participation situation was better in Tongping, but still cannot satisfy local farmers. Some farmers thought they have nothing to do with the Forestry Committee since no affairs related to the council matters related to them if they don't submit fees or apply for harvesting quota. By comparing table 3 and table 4, we can see that interviewees in Shuanglong and Tongping villages were satisfied more with overall condition of the Forestry Committee than its operation procedures.

- **Private forestry products processing firms**

These firms had good effects in bamboo purchasing from the local village and use of extra labour. Governments also gave some support to them, as information service and convenience in harvesting quota application. Although these small private firms have their agility and flexibility in operation and management, they also face the challenges of market risks and had problems in their operation.

- 1) Loose management and low productivity;
- 2) Low and inconsistent quality levels of products;
- 3) Lack of training and low technologies;
- 4) Market risks could make it fail, non-sustainability of development;
- 5) Lack of market information;
- 6) Restriction of funds from the investors;
- 7) Responsibilities of investors or managers were not clear which would bring conflicts or disputes;
- 8) Small production scale and limit on income that farmers could get.

Anyway, this kind of cooperative mode had its own special characteristics and problems, but great potential functions could be facilitated if the problems could be solved by supports from outside, like local governments.

6.3 Support in policies and from institutions.

The Collective Forest Tenure Reform policy of the state was the most important policy in current forestry development. The policy greatly improved forestry farmers' enthusiasm in forestry production and brought along a series of counterpart policies and projects. The State Forestry Bureau carried out the "Opinions for the facilitation of development of farmers' forestry specialized cooperatives" in 2009, emphasized the importance of farmers' forestry specialized cooperatives' development and required local government to give policy supports for the development of forestry cooperatives, based on which, the Hunan provincial government paid more attention to the development of forestry farmers' specialized cooperatives.

County governments executed a series of relevant policies and plans based on the practical local situations. Liuyang government made the "Opinions for deepening forest tenure reform and facilitating forestry development" and the "Implementation plan of collective forest tenure reform in Liuyang", and at the same time disseminated the "Requirement of facilitating collective forest tenure reform and reducing farmers' burden", after which special work groups like the supervising group, technical supporting group, dissemination group, document group and disputes settlement group were set up to carry out relevant work. The Forest Tenure Office was set up to charge regular work in the forest tenure reform process. The county level government of Liuyang also carried out a file called "The opinions to encourage all social stakeholders to invest in forestry" in 2006 to improve the investment in forestry development. Furthermore, as described, the Liuyang government had some other practices to facilitate forestry development in the forest tenure reform process, as the foundation of the Forest Tenure Trade Center, the forest insurance institution and the sunshine action.

The Hongjiang government also made and carried out a series of relevant

policies to facilitate the forest tenure reform process and improve forestry development. Policies files were as: “Forest harvesting regulations of Hongjiang city”, “Plan for functional forest zones of Hongjiang city”, “Management regulations for forest tenure mortgage loan”, “Regulations for the implementation of forest insurance”, etc. At the same time, a Forest Tenure Trade Centre was set up, which was the first one in Hunan province. Other practices like innovation of forest harvesting quota distribution, initiating forest operation plan, setting up forest guarantee system, etc. All the policies and practices contributed a lot to the forest development of Hongjiang city in the process of forest tenure reform and founded a basis for the development of forest cooperation. 316 Forestry Committees were established under the guidance county level forestry bureau.

6.4 Access to information and information services

Access to information was one of the most important difficulties in local forestry development. Forestry farmers’ capacity was limited to access enough information in the environment with poor infrastructure and poor techniques, so they faced great market risks in forestry operation. That was one of the reasons why innovations and scale operations in forestry development were so difficult to be implemented. For example, farmers in Shuanglong village of Hongjian city thought that there was an opportunity to develop oil tea production in their village because the price of tea oil was high and the village was rich in oil tea resource, but the traditional oil tea species was needed to be improved because of the low yield. It had been a long time but no practice had taken place as the farmers had no access to species improvement and no money to gain information or new techniques.

Although FFCs had expanded forestry operation scales and improved production techniques and management level, they still had difficulties in accessing adequate information, especially market information. Also, the capacity of FFCs in information accessing and other issues mainly depended on the individual capacity of the leaders, most of who were also the sponsors of the FFCs. Anyway, there were limitations of individual’s capacity and resources and the sustainable development of FFCs needed

the stable information access institution, which should be set up by the supports from the government.

In fact, the local government expended great efforts in forestry information service to forestry farmers and FFCs, including supplying sale information, helping with connecting buyers and supports in sale activities. The Forestry Committees in Hongjiang also contributed to information service for the forestry farmers by dissemination of new information on techniques, markets and forest protection. Although, there was no special institution for information service, the current work was in a scattered and stochastic condition, the information of Forestry Committees was also not consistent.

6.5 SWOT analysis for the development of FFCs

In the synthetic workshop of Liuyang and Hongjiang, we invited participants to write on cards and make presentations and discussions, to do the SWOT (strength, weakness, opportunities and threats) analysis for the current development state of FFCs, and also made suggestions on the existing problems and challenges. All of the participants (including forestry department staff, the Central Project Office heads and staff, primary level workers, the project village cadres, FFCs' leaders, ordinary villagers, researchers, delegates from FAO and other related departments, such as agriculture and water departments) had expressed their own opinions and given their suggestions, as well as carried out a full discussion. Because of the time constraints, the discussion was not necessarily exhaustive, however, we believe the discussion results by people from different angles will play a guiding role in the development of local forestry and FFCs, and accelerate the FFCs to some extent and promote better implementation of the project. Integrating with the SWOT analysis results of the earlier village level and county level workshop, the SWOT analysis of FFCs showed as following:

Table 12: Summary of the SWOT analysis in the workshop

<p><u>Advantages of FFCs:</u></p> <ol style="list-style-type: none"> 1. To reduce the management and protection cost of forest resource 2. Be conducive to the extension of new technologies and new varieties 3. Has a certain ability to withstand market risks (need the guidance of the competent authorities) 4. Become As the junction of farmers and market to resolve the contradiction between small-scale operation and large market) 5. Can meet the greater demands from the state, enterprises or markets 6. able to undertake the opportunity of financial capital and city capital flowing into forestry 7. Has Adequate local human resources (skilled craftsman, labor) 8. Do better in providing market information 9. Is beneficial to the construction of infrastructure 	<p><u>Opportunities available to FFCs:</u></p> <ol style="list-style-type: none"> 1. The national preferential agricultural policy supports FFCs 2. The attention and support from national and local governments 3. Forestry tenure reform and policy are consistent with the needs of forestry farmers' development and forestry production 4. Play a demonstration role in forestry development and operation, setting good examples and making driving effect 5. Forest product certification is a global trend. 6. Forest farmer's operation areas are small, this made a chance for FFCs' development 7. Unified management, scale operation, higher organization level will make scale economies and promote industrialization 8. To protect farmers' rights, to endeavor to promote farmers' right of self- representation and increase farmers income 9. Urbanization, scale operation and provision of information 10. Formation of scale enhances ability to compete 11. Open Market , the international arena, international market competition 12. Favorable negotiation position
<p><u>Weakness of FFCs:</u></p> <ol style="list-style-type: none"> 1. FFCs' current operation mode and performance are poor 	<p><u>Threats to FFCs:</u></p> <ol style="list-style-type: none"> 1. The policy supports need the cooperation of related departments

2. Need to improve insystem construction, operation mechanism standardization and benefits distribution	and implementation is the key.
3. The classification of FFCs is not clear, for example, can transferring timberland be classified into FFCs?	2. Some difficulty in technical guidance and services, project support and implementation, capital raising, self-improvement and regulation.
4. The level of forestry production and management is lowand lack of appropriate guidance	3. Lack of related national and local legal and policy support
5. Poor capacity building, need to strengthen guidance and training to FFCs (capacity to access to the market, capacity of boards of director and supervisory boards, financial management, etc.)	4. Inadequate government support, support channel and direction need to be improved
6. Lower quality of forest farmers, loose organizational structure and low level of professionalism restrict the long-term development of FFCs	5. Assistance policy cannot keep up, forest law enforcement charges erratically
7. Lack of strong leaders of a comprehensive ability	6. Organization and management need to be improved and standard management to be strengthened.
8. Forestry farmers' perception and cooperative awareness are limited, tending to focus more on immediate benefit, look before they leap.	7. Informational encapsulation, information management need be to enforced, how to share information and any other ways?
9. Lack of trust establishment (fairness, profit)	8. What is the ideal model?
10. Lack of capital, forestry is periodic and lack of capital to regulate it.	9. The lack of appropriate market mechanisms, weak market adaptability
11. Taxes are too high, excessive costs. Preferential policies are not enough, for example, can some preferential policies be given for mortgage by Forest Property Right Certificate?	10. Open market, increasingly fierce competition, forest farmers' growing sense of protection. they must do everything possible to protect forest farmers' interests
12. Forestry did not form in large scale.	11. Market economy liberalization, competition facing FFCs is growing, while support and preferential policies cannot keep up
13. FFCs' low operation level, capacity of dealing with market competition is not enough, facing the threats of market risk	12. Survival (self-sustaining)
14. Weak infrastructure, poor communications	

6.6 Potential

It could be concluded from the SWOT analysis that the FFCs had their own development advantages and there were a lot of opportunities for their development though difficulties and challenges were exiting. The development of FFCs meted the needs of forestry farmers and accorded with the characteristics of forest resources. Meanwhile, a series of supporting policies and practices were executed by national and local governments which had shown their effect in facilitating the development of FFCs and we could see the possibility of more preferential policies would be carried out for the development of FFCs. Also, more and more experiences and lessons from the management and operation of current FFCs were summarized and disseminated, which gave a good foundation to the better and sustainable development of existing and new FFCs.

7. Recommendations for development of FFCs in Hunan

Promoting the development of FFCs would be the inevitable trend of forestry development with the forest tenure reform in China. The current demand for forestry development was mainly reflected in afforestation, construction of forest roads, dispute mediation, docking market, diversification of livelihoods and so on. These relied on government support as well as the self-development of FFCs. FFCs should be voluntary economic cooperatives, in whose development, administrative intervention can play a stimulating role, but to long-term development, the practical basis for cooperation is indispensable. The cooperation should be voluntary rather than simply out of compliance with regulations. After the investigation, workshops and all the analysis, this research would give the follow suggestions for relevant government departments to facilitate the sustainable development of FFCs:

7.1 Policy

- 1) Local forestry government department need to concentrate more on FFCs and give more supports from relevant policies;
- 2) The need for supporting policies were mainly focusing on the reduction of

forestry tax and fees, preferential policies in forest tenure mortgage loan and the full implementation of current policies;

- 3) Make special policies for the support of FFCs' development, including supporting policies on technologies, information and capacity building;
- 4) Listen to the opinions and suggestions of forestry farmers and make adjustment to current policies to improve the effectiveness of policy execution;
- 5) Do some baseline survey to gain full understanding of local forest resources, livelihoods of local farmers and development situations of FFCs for the basis of policy making and adjusting;
- 6) Improve the dissemination of forestry policies to increase farmers' and FFCs' understanding of relevant policies;
- 7) Supply capacity building for farmers and FFCs to improve their capacity in the participation policy making.

7.2 Legislation

- 1) Perfect laws, regulations and institutions on FFCs. Specific regulations and management rules should be issued specifically for FFCs based on The Cooperative Law. FFCs' authority, electoral system, benefits and management should be mentioned in the provisions and FFCs operational guidelines should be prepared to strengthen the management of FFCs and their standardization and regularization.
- 2) Local government should make detailed regulations for the management of FFCs;
- 3) Improve the dissemination of relevant laws and supply training and education for forestry farmers and FFCs to increase their legal consciousness of self-protecting and reduce the occurrence of illegal behavior;
- 4) Improve the executing capacity of relevant institutions and staff in the implementation of laws.

7.3 Governance and institutions

- 1) Local forestry departments strengthen the management and guidance for FFC development with special institutions and staff;
- 2) Local forestry government could facilitate the village committees or the Forestry Committee to be special organizations for systematic management of FFCs and help the FFCs to formulate effective regulations;
- 3) Relevant government departments intervene into the management of FFCs to facilitate the transparency of FFCs' management and promote members' participation in decision making;
- 4) Provide information guidance platform for the development of FFCs. The forestry sectors can set a cooperation platform for the various FFCs in the county, organizing delegates from FFCs and of farmers to discuss the experience and difficulty in forestry, learn from each other to search for appropriate models to different situations around the forestry development. They should gradually expand the communication network, and lead the villages that have not set up FFCs. The Forestry sector can provide a platform to communication for FFCs or between FFCs and Farmers;
- 5) Organize capacity building for both the FFCs' committee members and forestry farmers on FFCs' management and cultivate good leaders to facilitate sustainable development;
- 6) Actively support the FFCs' exploration and practices and cultivate typical models. Some awards may be established to encourage the development of FFCs and finance their next stage of development by bonus, thus promoting the formation and development of FFCs. Increase publicity of outstanding FFCs and organize visits and studies. Try to establish collective and beneficial FFCs will also present practical reference to major problems;
- 7) Strengthen the information network construction, set a platform for sales information and technical information for members. It is best to build an internet information platform if possible, otherwise, the villagers can make it

in terms of bulletin board or handbook;

- 8) Reduce the taxes and rationalize the tax system. Taxes are usually deducted in the spring while applying felling quota, but farmers haven't begun to sell timber, that means they advance taxes. It is advisable to adjust the tax time.

References

1. Shao Quanxi, The current situation, problems and treatments of forest tenure trade in Liuyang, Forestry Economy, 5.10. 2007;
2. Wang Dengju, Li Weichang, GuoGuangrong, Situation of and suggestion for the development of forestry cooperatives in China, Forestry Economy, 5. 2006;
3. Huang Heliang, Analysis of factors that impact on farmers participation in forestry cooperatives-an example from Fujian province, Forestry Economy, 9. 2008;
4. Xiao Xuequn, The possibility of forestry cooperation, Jiangxi Forestry Technology, 4. 2008;
5. Huang Liping, WangWencan, Analysis of the inter bargain selection in forestry cooperatives- an example from Fujian and Jiangxi, Forestry Economic Problems, 3. 2008;
6. State Forestry Bureau, "Opinions of facilitating the development of farmers' forestry specialized cooperatives", China Forest, 9. 2009;
7. Xu Xiang, Role of the government in forestry development, Forestry Economy, 2. 2007;
8. Lv Mingliang, Role of FFCs in the extension of forestry technologies, Fujian Agricultural Technology, 4. 2007;
9. Zhang Guangsheng, Impact analysis on needs of farmers for specialized cooperatives, Agricultural Economic Problems, 11. 2007;
10. Zhang Zheng, GaoLan, Analysis on financing of FFCs, Anhui Forestry Technology, 4. 2006;
11. State Forestry Bureau, State forestry situations of 2009 , 1.14. 2010, <http://www.forestry.gov.cn/portal/main/s/304/content-195991.html>
12. The No. 1 Central Document of 2010;
13. Website of Hunan Provincial Forestry Bureau:
<http://www.hnforestry.gov.cn/ListInfo.aspx?ID=178525>

List of the Project Publications

GCP/CPR/038/EC Working Paper

No.	Title
WP001C	安徽省林农合作组织研究报告
WP002C	福建省林农合作组织研究报告
WP003C	贵州省林农合作组织研究报告
WP004C	湖南省林农合作组织研究报告
WP005C	江西省林农合作组织研究报告
WP006C	浙江省林农合作组织研究报告
WP007E	Assessment of Forest Farmer Cooperatives in Anhui Province
WP008E	Assessment of Forest Farmer Cooperatives in Fujian Province
WP009E	Assessment of Forest Farmer Cooperatives in Guizhou Province
WP010E	Assessment of Forest Farmer Cooperatives in Hunan Province
WP011E	Assessment of Forest Farmer Cooperatives in Jiangxi Province
WP012E	Assessment of Forest Farmer Cooperatives in Zhejiang Province



The project “Supporting policy, legal and institutional frameworks for the reform of forest tenure in China’s collective forests and promoting knowledge exchange” supports the reform of forest tenure in China’s collective forests through strengthening policies, laws and institutions responsible for the management of collective forests in six pilot provinces. Funded by the European Union (EU) and implemented by the State Forestry Administration of China (SFA) and the United Nations Food and Agriculture Organization (FAO), the project will also promote the exchange of knowledge and experiences on forest tenure reform both within China and with other countries.

Website: <http://www.fao.org/forestry/tenure/china-reform/en/>