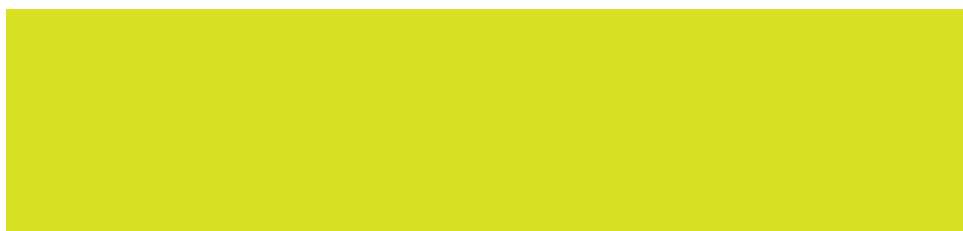


Supporting policy, legal and institutional frameworks
for the reform of forest tenure in China's collective
forests and promoting knowledge exchange

GCP/CPR/038/EC Working Paper: WP – 032 - E

Policy Assessment and Pilot Application of Participatory Forest Management in Fujian Province



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Policy Assessment and Pilot Application of Participatory Forest Management in Fujian Province

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1. Introduction

1.1 Describe of the issue

In 2004, Chinese government has launched a new round of reform in collective forest ownership system. After the reform of collective forest ownership, the key issues that may influence the effect and sustainability of the reform would be on how to strengthen the management of forest resources, improve management ability level, and increase revenue and incomes for forestry framers, and their cooperative organizations. The existing forest resources management system and collective forest management mode have been, in some degrees, ignoring the principal status of forestry farmers, which may make diversified or cooperative management difficult to promote effective distribution of forest resources. However, the establishment of forest resources working plan is able to guide forestry farmers to carry out production activities effectively, while the participatory approach can help strengthening the management awareness and skills of forestry farmers and their cooperative organizations, as well as promoting their initiative in the forest resource management and policy reform, further improving their participatory degrees in formulating supporting policies after the reform.

The participatory approach was introduced to China in the 1980s by international organizations. It has exerted favorable effects in China's countryside, forestry and social development programs, and remedied the weak points in the development of Chinese traditional society. The participatory approach, especially designed and implemented in forest resources management, has brought well done effects in different areas, such as the design and implementation of 6 key forestry programs, the community based resources management, the reserve zone community management, as well as the Chinese forestry programs organized by World Bank, Food and Agricultural Organization, EU and other international organizations. The participatory approach was proved, through practice, to be an idea, a thought and a method suitable for China's forestry development, while the community-based participatory management plan also has been identified as an effective way, to fully stimulate the community publics' initiative in forestry management, to better coordinate the relations between various stakeholders, as well as to improve the forest resources administration. In addition, the local personnel training, through proper project trainings programs, have possessed an immediate significance in continuous applications of the participatory approach in forest resources management, which also have been an important guarantee for shaping managerial abilities in local participatory of forest resources management.

In early January 2010, backing by the "Supporting policy, legal and institutional frameworks for the reform of forest tenure in China's collective forests and promoting knowledge exchange" program from UN's Food and Agricultural Organization (GCP/CPR/038/EC), a research group

from the College of Economics and Management in Beijing Forestry University was authorized by State Forestry Administration, to conduct field investigation and training guidance in 4 case villages in Youxi County, Shaowu City, Fujian Province, to probe into the conditions of the reform in collective ownership of forests, the development situation of its farmer's cooperative organizations, and to conduct training to the forest resources management plan, formed by farmers in participatory way.

The participatory policy evaluation is an important part of forest training program. The attitudes and viewpoints of forestry farmers, concerning central and local forestry development, are overriding for forestry department to announce relevant policies hereafter. Therefore, through participatory, the comments on the demanded policies by forestry farmers and current policies can be evaluated effectively.

1.2 Literature review

In the process of making the literature review, the research group has referred to myriads of scientific and technological essays, research reports and academic works home and abroad, covering forest management, community forestry, participatory development and other fields. The literature review below is written from different perspectives, methods and other research levels.

1.2.1 Definitions of forest resources management home and abroad

(1) The overseas privately-owned forest resources management

The overseas privately-owned forest has developed for a long time, thus various management modes are all quite mature. The foreign scholars have classified those modes and held in-depth discussions about the advantages and disadvantages of each mode.

Cleaves (1995) points out that, private owners of small plots or family plots normally do not engage in timber processing or only work in rough processing of the crude wood. Then they sell the processed wood to some large-scale timber-processing enterprises. When those private owners are engaged in forest management, some of them also carry out many other management activities such as agriculture, livestock or tourism. In recent years, researches in that field are very dynamic. Scholars in Asia and Europe call that field as "small-scale forestry", while many scholars from North America name it as "non-industry privately-owned forestry". When studying the management mode of forestry cooperative companies, Behan (2003) believes that the responsibility of those companies is to provide their members with comprehensive management service, such as forest land management service and marketing service. If private owners want to join those companies, they only need to apply to the company and become its members after consulting with the relevant company and signing the service contract. The company will work for the private owners according to their orders and agreement, while private owners will pay the

company corresponding fees based on the payment standard stipulated in the agreement. Ellefson (1985) thinks that the Canadian leaseholding practice is actually a company leaseholding mode, which means to get the felling right first and then regulate the afforestation and return the forest land to the nation after the lease is expired. The development activities of forests controlled by Canadian provinces are mainly carried out based on the public bidding system, which means that the provincial government signs leaseholding contracts with privately-owned companies and gives them a mandate for management and felling.

(2) The Chinese collectively-owned forests resources management

Zheng Dexiang (2009) points out in an article named *The Management Mode of Forest Resources and Assets in Fujian Province* that, the main management modes of forest resources and assets in China at present include the management mode of the economic sector under ownership by the whole people, the mode of the rural collective forest farms of collectively-owned economic sector, the mode of the economic sector under individual ownership, the mode of private forestry enterprises of private economy and the forestry joint management mode of an economic sector of mixed ownership. Cheng Hongwen and Zhou Shaoling (2009) mention in the article *Review on the Supplementary Measures of the Collective Ownership of Forests Reform* that, after the forestry reform, the mountain forests have been allocated to each household and the clarification of property right makes the owners' interests more direct. The management mode focusing on the single household will facilitate the forestry development in the short run, but both the forestry features and experience home and abroad proved that forestry should finally become standardized, specialized and intensified. According to the characteristics of local economy and the body of the collective ownership of forest reform, the implementation of diverse management modes is necessary, which means to both revitalize the forest land and timber assets originally contracted by forestry farmers, and take their long-term interests into consideration. The management modes are mainly the cooperative management between enterprises and forestry farmers, the joint management by farmers, cooperative operations among enterprises and joint caretaking management. In terms of managing collective forests, predecessors' viewpoints are quite similar and they all more or less agree with Zhang Lei and Sun Hui's opinion (2007). Zhang and Sun believe that for a long time, the management scheme of collective forest is made in accordance with the plan of state-owned forest, which pays insufficient attention to public participation and fails to coordinate with other development plans in the region. It is in denomination of county, grand but empty, and lacks adequate evidence and implementation of the index. Besides, the forest management goals and plans are stereotyped and there is no room for adjustments and amendments during the period of management. The lagging technology standard and technical regulations also limit the quality of

management scheme and its practical ability. Meanwhile, the plan-making is short of scientific anticipation and the management scheme is disconnected with the current policies and plans. The annual forest harvesting quota is not fully determined based on the reasonable felling amount made in the management scheme. Randomly or blindly arranging the harvesting quota is infeasible.

As the collective forest reform goes deeper, its management will more and more resembles villagers' joint management and village enterprises' joint operation. Viewing from this, joint management has become a more and more widely used management mode of the future forest operation.

1.2.2 Concept of the participatory forestry

The participatory concept was first proposed by foreigners and applied in management. For example, Mitchell defines "participation" as employees all participating in making decisions. Each employee will make contributions to the decision-making according to his own capability and position (Mitchell *et al.*, 1973). Fenton-O' Creevy defines participatory management as a management method that allows employees to exert some influence on how to integrate and operate the work (Fenton-O' Creevy, 2001).

The participatory concept has been brought into the forestry management for less than 20 years. The earliest document that systematically defined "participatory forestry" on the international stage was a masterpiece named *Participatory Forestry or Participatory Forest Management*, which was published by the British International Development Research Center in 1992. Later, this new concept was gradually adopted by FAO, World Bank and other institutions (Liu Jinlong, 2004). China introduced the participatory concept in the middle of 1980s. Liu Jinlong believes that the main entities of forest management is the rural public and those people must actively participate in and benefit from the relevant activities. Reforms in the social system concerning the forest land and timber rights, tax and charges as well as the distribution of profits should be implemented, so as to make the interest relationships between forest management and community public much closer and enable the public to feel that forestry is both their work and their profit (Liu Jinlong *et al.*, 1999). Besides, Tan Xinping thinks that participatory forestry means to make producers actively take part in the making, implementation, interest distribution, monitoring and evaluation of the forestry management. In a word, it means to make producers organize themselves, participate in any development process, share different duties, make concerted efforts toward a common goal, and gain benefits from the implementation of the forestry activities (Tan Xinping *et al.*, 2001)

Tab. 1-1 The difference between participatory forestry and traditional forestry

	Participatory forestry	Traditional forestry
1	Human-oriented	Tree-oriented
2	Humans are friends of trees and the government should make the relationship between forest management and local public much closer.	Local residents are forest destructionists and the government should separate local people from forests.
3	Integrated cooperation from multiple departments	Segmentation
4	The government and technicians are partners of the local people and they should encourage, support, coordinate and promote the spreading of the techniques and knowledge as well as the community organizations. They should also improve local people's living standard and carry out environmentally friendly activities concerning economic development.	The government should draw the blueprint for the local people and figure out the concrete measures of forest management for local residents to implement.
5	Forests are mainly under control of local people, but actually the forestry property right can be state-owned, community-owned or privately-owned. The participatory forestry pays much attention to the rights of traditional users of forests.	The government institutions manage the forests or transfer them to privately-owned enterprises.
6	Multiple utilizations of forests: timber, feeding stuff, shelter, fuel, building materials and so on	Mainly for timber
7	Various and adjustable forestry development plans	The forestry development plan should undergo fixed processes and be implemented in principle after being approved.
8	A system of encouraging public participating in the decision-making of forest management should be established.	The government and the public make efforts to influence the forestry decisions via policies and keep them in the direction of sustainable management.

1.2.3 The necessity and significance of participatory forestry

Scholars generally believe that participatory forestry plays an important role in promoting local ecological, economic and social efficiency (Tan Xinping *et al.*, 2001; Zheng Zhili, 2003). First, Tan Xinping believes that as participatory forestry uses a process of “from bottom to top”, which fully adopts farmers’ opinions and represents their interests, and optimizes the social environment as well. Second, Participatory forestry lays stress on the participation in the whole process and emphasizes farmers’ benefits in implementing forestry activities. In this way, Farmers’ initiative and enthusiasm have been aroused. Third, technologically, participatory method accentuates much the indigenous rural knowledge, public techniques and skills, thus it enhances the correctness and feasibility of its technology (Tan Xinping *et al.*, 2001). Zheng Zhili thinks that based on traditional forestry, the participatory forestry combines social science, takes human element into full consideration, organically integrate public interests and community interests and satisfies the demands of community public from the core. In this way, it can both meet farmers’ economic demands and obtain some ecological benefits (Zheng Zhili, 2003)

1.2.4 The current conditions and features of participatory forestry

The participatory forestry is mainly applied in the forest management of developing countries, namely Southeast Asia, African countries and some nations in Latin America, all of which display strong regional features. Recently the UN Food and Agriculture Organization have proactively promoted the plan for communities to join in the participatory forest management. Some developing countries in South and Southeast Asia, Africa and Latin America have also actively facilitated the community-based forest sustainable management, which transferred part of the power to the communities. All of those exploration works have alleviated the conflicts in the forest management in varying degrees and accelerated the protection and utilization of local forest resources (Wang Chunfeng, 2006).

Lee D.K (2001) believes that the earliest Asian participatory forestry first appeared in India, Nepal, Philippine and other countries in the 1980s. The participatory forestry on this stage mainly concentrated on exploring methods of managing and protecting forests of communities from the sense of institutions, and its main activities involve the preservation and restoration of deforestation. The participatory method itself has gradually been included into the national forestry policy system from experiment cases and become the mainstay approach for China’s forestry development. Agus. C (2003) believes that the participatory forestry management is now prevalent in the African continent and it is also regarded as an important measure to promote the forest sustainable management in this region. Leandro L. (2002) thinks that the participatory forestry in Europe and America is mainly manifested in the US, Canada, Finland, German and other developed countries. In the United States, the participatory approach is regarded as a

fundamental principle for Forest Service to make forest scheme and carry out the ecological system management in the sense of scenery. However, in Canada, the government fully adopts the participatory mechanism in promoting forest sustainable management and modeling forests administration, and emphasizes the trans-department communication and the construction of local community's co-management and partnership in order to solve the conflicts in forest management (Roger Moya Roque, 2004). In Finland, participatory scheme has been an important constituent for government and private department to make national and regional forest development scheme and implement the project (N kuffer, 2005). In German, participatory approach has been an overriding method for forest preservation, forestry coordination, constructing partnership with relevant institutions and proceeding conflict management (Reddy M.V, 2006).

Some scholars have conducted generalization researches concerning features of participatory forestry (Liu Jinlong *et al.*, 1999; Hou Yannan *et al.*, 2001; Zheng Zhili, 2003; Ma Yan *et al.*, 2006). Liu Jinlong believes that community is the target of participatory forestry research and development and it must be combined with anthropology. He also suggests that participatory forestry should focus on analyzing the relationship between communities and people's production and life, and its key part should be the public participation. Besides, the role communities and public play in participatory method should also be stressed (Liu Jinlong *et al.*, 1999). Another scholar, Hou Yannan believes that participatory forestry possesses the following traits: planning from bottom to top with widely public participation; open approaches; emphasizing women's role in the forestry activities. The core issue of participatory forestry is the ownership, which means the right to own land and forest timbers. The essence of participatory forestry is community public joining in the project and benefiting from that as well (Hou Yannan *et al.*, 2001). In Zheng Zhili's opinion, the participatory forestry characteristics contain the followings: the main body of forest management is the rural community public; community public must regard forest management as a constituent of rural community development, and actively take part in and benefit from the forest management activities; bringing the public knowledge and potential to the full play, and enhancing their sense of being a master in forest management; clearly defining the forest land ownership and profit distribution, and making community public feel that forestry is both their work and their interest (Zheng Zhili, 2003). Ma Yan suggests that the features of participatory approach include: first, the equality of participators; second, the training method must be creative and entertaining; third, the cultivation of the openness of the participatory approaches (Ma Yan *et al.*, 2006).

1.2.5 The existing problem of participatory forestry

Because of the differences in political system and management mechanism, currently the existing

forestry management system in China still has its way up, compare with the participatory concept and method widely used in the international forestry development projects. And the issues on how to localize the participatory method in China's forestry resource management is still lack of studies.

The process of practicing participatory forestry is rather complicated, and its implementation involves higher operation cost, thus it is not easy to be accepted by cadres and community public in reality. Particularly in afforestation, the current annual assignment system and the acceptance checking mechanisms are quite different from the flexible management system in participatory afforestation. In fact there are quite a few challenges on how to adopt the participatory theory and practice method into the forestry management, define a perfect mechanism that combines participatory concept with current management system, which can also be easily accepted by community publics. The understanding of participatory theory and practice method are deviated, became superficial and formalized, in some regions. As the participatory forestry is conducted nationwide, scholars have summarized problems, experience and lessons drawn from implementations in various places (Tan Xinping *et al.*, 2001; Hou Yannan *et al.*, 2001; Liu Jinlong, 2004). Tan Xinping believes that the following problems exist in the process of participatory forestry implementation: first is the distance between concepts and understandings; second is paying too much attention to the immediate interests but ignoring long-term benefits; third is farmers' lagging information and limited specialized knowledge. Therefore, participatory forestry still needs to be further improved and strengthened in practice (Tan Xinping *et al.*, 2001). Hou Yannan thinks that problems appearing in the participatory forestry implementation are: the concept transformation of technicians; the trust degrees of farmers to the project; women's participation problem; technicians in charge of the participatory approach have too much work and there is a lack of human power(Hou Yannan *et al.*, 2001) . Liu Jinlong suggests that participatory forestry has not been included in the mainstay of China's forestry development. First, the research power is not strong enough; second, large amounts of excellent advocates who are engaged in participatory forestry research and development do not work in the forestry system and they have not been included in the mainstream of China's forestry development; third, there exists many systematical hindrances in participatory forestry practice activities; fourth, the overall development strategy of China's forestry does not include the rural development into the whole forestry development body; fifth, the forestry laws and regulations do not support the development of participatory forestry (Liu Jinlong,2004) .

1.2.6 The development trend of participatory forestry

Although the participatory forestry in China possessed early development background in social forestry and rural forestry, and these development modes did have some participatory features.

However, as a strict theory and practice method, the participatory forestry was introduced to China in 1980s. After 20 years of development, the participatory forestry thinking has gradually penetrated into the government's forestry development, however has not been fully adopted in the government's management policies. In the process of seeking leap forward, the voice of promoting reforms and creativity in China forestry mechanism has been growing louder and louder. Participatory theory emphasizes the idea of people-orientation, which is beneficial in facilitating the harmonious development of human, nature and society. Along with the new round of forestry development reform, the participatory theory and practice method shall be mainstreamed, adopted into the government's forestry management policies, and confirmed as a management system. That would be the future direction of participatory forestry in China's forestry development practice.

1.2.7 Literature review

After reviewing foreign literatures, we can see that foreign nations have rather more concerns about participatory forestry development, and paid more attention to the efficiencies of forest management. Viewing from the research content, foreign nations have mainly concerned the features and issues occurred in forest management activities, which conducted by various management entities, while China is integrating the current reform of collective ownership of forests, and paying attention to the problems existed in forest management. In a word, the current research results and practices possess important enlightenment in method selection, perspective confirmation and content design of this research. Besides, even though the collective ownership of forest reform have been much clearer in resources ownership, the current studies also shows that there are clear demands on improving current forest management skill levels, and enlarging management scopes. Which not only for better efficiencies in collective forest resources allocations, but more importantly, for overriding and ensuring the realization of a successful forest ownership system reform. Thus, there is an overarching realistic significance to the research of this project.

2. Objectives and methods

2.1 Research aims

This project is designed mainly to promote stakeholders in different levels of forestry departments and collective forests management, especially forestry farmers and their cooperative organizations, recognize major problems existed in the collective forests management, improve sustainable management of the collective forests, and make and implement reasonable management plans for collective forests so as to form participatory coordination management mechanism. There are five concrete goals as follows:

First, improve the forest managerial skills of forestry farmers' cooperative organizations and

their members. Through participatory training and making plans for participatory forest resources management, the government should endeavor to improve forestry farmers' cooperative organizations, their members and stakeholders' understanding of sustainable forest management, development approaches, and elevate their capabilities to join the development of plans for resources management. The knowledge of local forestry authorities about the importance for forestry farmers to carry out participatory forestry management should also be improved.

Second, the training to members of forestry farmers' cooperative organizations in the project area and corresponding stakeholder representatives about the application of participatory approach and the plan development for participatory resources management should be conducted in order to help cooperative organizations to make practical management plans in line with their members' interests. Based on this, efforts shall be made to summarize a general system for plan development, implementation and testing of cooperative organizations' participatory forest resources management should be summarized.

Third, the research teams adopt participatory method to conduct a survey of the cooperative organizations in the project area and corresponding stakeholders, review national, provincial and county-level policies concerning village-level forest management, collect relevant information on forest management, including forest resources, products, management, decision-making and testing system, collect views and opinions of cooperative organizations' members, villagers, the county forestry stations and township forestry enterprises on participatory forestry management, evaluate and analyze the shortcomings and problems of current policies and provide policy suggestions.

Fourth, participatory approach is used to help cooperative organizations in the project area establish consultation mechanism within the organizations and among stakeholders, so as to improve organizations' participatory working capabilities.

Fifth, the research team conducts training for relevant trainees about participatory approach and the plan development for participatory resources management, which will lay human resources foundation for the plan development and administration of participatory resources management in the case area in the future.

2.2 Research method

The implementation of the program involves many specific aspects such as literature review, specification of training materials, participatory training, participatory forest management plan, and participatory evaluation on relevant policies. In the fieldwork, the training program established a cooperative relationship with the county's program office.

2.2.1 Specification of review of literature and training materials

Literature review can facilitate the summary of the development methods, focal points, and successful experience in management plans both at home and abroad, especially those based on communities and implemented by international organizations. In order to improve the operability and pertinence of the training plans, we may consider specifying the training materials, with the help of sponsored books, based on the characteristics of trainees. A typical and representative case was designed for Shanlian village in the course of training implementation.

2.2.2 Participatory training for trainers

Trainees should receive participatory training mainly covering development of forest management plan; basic theory, principal means, and the usage of tools of the participation; how to use participatory methods to help communities or cooperative organizations develop management plans, so and so forth.

2.2.3 Development of participatory forest management plans

The guide to the development of forest management plan requires the full practice of participatory methods covered the fields of participatory recognition, problem analysis, activity choice, negotiations with relevant stakeholders, and plan development, among others, with a view to helping pilot communities or cooperative organizations to develop forest management plans.

2.2.4 Participatory evaluation on relevant policies

First, design the participatory analytical solutions with pertinent tools. Second, make participatory problem analysis towards **pilot communities**, members of cooperative organizations, and major relevant stakeholders. Third, figure out main system and policy issues as well as major factors restricting follow-up forest reform. Evaluate relevant management policies after the forest reform, and put forward suggestions.

This involves paying careful attention to the opinions of farmers and cooperative organizations on harvesting quotas, charging system, macroeconomic financial incentive policies, forestry efficiency compensation, and non-wood forestry production. In addition, the evaluation on traditional forestry knowledge and the role of traditional culture in forest management should be objective and reasonable.

2.3 Targeted group

The main stakeholders involved in the project process include forest owners (forestry cooperative organizations' members), village cadres, cooperative organizations' leaders and local government officials. Among stakeholders, an important member unmentioned is private sector, for example, forestry and bamboo processing enterprises. This project strives to solve that problem by strengthening organization construction and cooperative management. Therefore, the

launch of this project has great significance to the future development of forest resources. In the training of the plan development for participatory management, the main **target groups** involved the training and information collections are shown in table 2-1.

Table 2-1 Interviewees and the types of information to be collected

S. N.	Interviewees	Information collection and expected goals
1	Key members of the FFC	Basic information on forestry production, problems and needs in forest resource management, problems in the development and operation of the FFCs, and suggestions on improving policies and systems.
2	Ordinary members of the FFC	Basic information on forestry production, problems and needs in forest resource management, motivation to and gains from participation in FFCs , and suggestions on improving policies and systems.
3	Forest farmers who are non-FFC member	Basic information on forestry production, problems and needs in forest resource management, reasons for not joining the FFCs , and suggestions on improving policies and systems.
4	Members of the Villagers Committee	Status of forest resources and its management, suggestions on and support for the development of the FFCs, and the participatory forest management.
5	Officials from the township government	Local regulations on forest resource management, and suggestions on the development of the FFCs, and the participatory forest management.
6	Officials from the county forestry bureau	Regulations on the forest resource management at the county/city level, suggestion on the development of the FFCs, and the participatory forest management; and the orientation for optimizing local forestry policy.
7	Other stakeholders engaged in forest products processing and sale	Suggestions on the joint management, scale management , improvement of the competence ability and development of the FFCs.

3. Basic information

3.1 The overall conditions of youxi county and the city of shaowu in fujian province

3.1.1 The general condition of youxi county

Located in the middle of Fujian province, Youxi County has abundant forest resources. It is one of the 48 key counties of collective forests regions in southern parts of China, and over 80% of its mountain forests are collective forests. The county covers eight towns, seven townships, 251 villages and 12 residents committees. Its total population reaches 420,000, and its land area is 5.12 million mu, among which forestry land covers an area of 4.18 million mu, representing 81.6% its total. Besides, the county is a typical mountainous forestry county, with mountains

accounting for 80%, water 10%, and arable land 10%. Its total land is 5.132 million mu, among which, forest land reaches 4.193 million mu, representing 81.70% **of its total**. There are 3.74 million mu of wood land, with forest coverage accounting for 72.9% **of its total area**. In the forest land, economic forest covers 301.608 mu, occupying 8.06% **of its total area**, and bamboo forest area stands at 455,756 mu, accounting for 12.18% of its forest land.

In 2003, collective forest ownership reform was carried out in the county. At present, there are totally 246 villages finishing the clarification of property right, representing 98.8% of all the villages with assigned reform tasks, and property right of 2.5006 million mu of land has been clarified, taking up 93.3% of the required area. In 2009, the whole county accomplished 1.195 million cubic meters of commercial timbers production, sold 1.288 million cubic meters of timbers and obtained 4.63 billion yuan of **total forestry output value**, in which, **total forestry output value in 2009 came in at** 1.63 billion yuan, and the accumulative total output value of the forestry industry above the designated size stood at 3.58 billion yuan, among which, the total output value of forestry industry above the designated size in 2009 reached 1.3 billion yuan, with an average annual growth of 25% in terms of both total forestry output value and total output value of the forestry industry above the designated size. Currently, there are 199 timber and bamboo processing enterprises in the county, among which, 48 are large-scale forestry industrial enterprises, accounting for 24.1%. A total of 121 professional forestry associations (branches) and 46 professional forestry cooperatives have been established in the city to improve organization of forestry farmers, and promote forestry scale management. The county has been selected as a pilot county for forestry reform project supported by the FAO.

3.1.2 The overview of shaowu

Shaowu is located in the northwest of Fujian Province, at the south foot of Wuyi Mountain and in the upper reaches of Futun Stream (a tributary of Minjiang River). The city spans across 26°55' -27°35' N and 117°2' -117°52' E . It is adjacent to Jianyang in the northeast, and connects with Shunchang County in the southeast, and Jianyue, Taining, and Jianning counties of the city of Sanming in the south. It is adjacent to Lichuan County of Jiangxi Province in the west, and Guangze County in the northwest.

Shaowu has a total forest area of 3,504,000 mu, representing 82.2% of the city's total land area. Its actual forest land area is 3,256,000 mu, including 550,000 mu of bamboo forest, 93,000 mu of economic forest, 15.06 million cubic meters of standing forest stock, and 70.62 million standing bamboos. Ecological public welfare forest area of the city is 858,000 mu and the forest coverage rate is 76.2% with a greening rate of 94.6%. In 2004, Fujian Provincial Forestry Department identified Shaowu as a demonstration site for the comprehensive experimental zone for the province's forestry reform and development.

Since 2003, the city has seriously implemented the arrangements of provincial committee of the CPC and provincial government to proactively carry out reform of collective forest ownership system. At present, it has gained phased achievements: all the 139 administrative villages have accomplished the reform task, and clarified 2.118 million mu of collective commercial forests, accounting for 100% **of its total** coverage. Besides, the reform of the management and protection mechanism for ecological public welfare forests has been finished: the city has accomplished the reform tasks for 128 villages and the completed reform covers an area of 681,650 mu, representing 100% of the total villages and reform coverage that shall be reformed. Currently, collective forests ownership certificates have been granted for 139 villages and forest ownership certificates for six state-owned forestry felling and cultivation farms have also been issued. The city has released 14,291 forest ownership certificates involving 27,051 plots of 2.9936 million mu, and issued 1,600 joint forest ownership certificates. Among the certificates that have been issued, 13,719 certificates were issued for collective commercial forests involving 23,724 plots of 2.0038 million mu, representing 94.6% of 2.118 million mu of required area. Besides, 283 certificates were issued for collective ecological public welfare forests, involving 907 plots of 615, 000 mu, accounting for 86% of 714 thousand mu of required area.

3.2 Basic social and economic conditions of the pilot villages

According to the requirements of FAO, four pilots were selected for investigation based on the consultation and discussion with the project offices of Fujian province, Youxi County and city of Shaowu, given the new trend of local cooperatives' development. The sites for case analysis made by the research group are the Luyuan Forestry Professional Cooperative and the Mayang Joint Stock Cooperation Forestry Center in Youxi County, and Xinsheng Bamboo Planting Special Farmer Cooperative in Jiashang Village and Pingyang Bamboo Plantation Professional Cooperative in Shangdu Village in Shaowu. The basic conditions of pilot villages are shown in table 3-1.

Table 3-1 Basic conditions of pilot villages

Name	Shanlian village	Mayang village	Jiashang village	Shangdu village
Natural village (number)	3	8	6	13
Villager group (number)	10	24	9	14
Household (number)	210	599	430	767
Population (number)	930	2538	1643	3226
Land coverage (mu)	11020	19602	55550	/
Forest land (mu)	9379	14974	50480	36996

Ecological public welfare forest (mu)	2422	808	177775	3319
Distance from the town (km)	15	19	13	3
Per capita net income (yuan)	/	3656	6190	/

3.3 Basic conditions of cooperative organizations

3.3.1 The luyuan forestry professional cooperative in shanlian village

Located in Shanlian Village, Xicheng Town, Youxi County, Fujian province, and established in October 2007, the Luyuan Forestry Professional Cooperative is 15 km from the town. The Cooperative adopts joint stock management mode, which means a management principle of independent accounting, self-financing, market-based operation, capital value maintenance management and shared risks and interests. Its business scope covers cultivation of forest resources, forest asset management and forest tree felling as well as forestry products sale. At present, its management area is about 614 mu. “Shanlian Village Luyuan Forestry Professional Cooperative” adopted share-holding cooperative operation mode, Farmers’ collective organization took 30% of the share with forest land as its equity, while farmers contributed with funds, representing 70% of the share. The fund of the current year for planting and tending in cut-over areas were divided equally according to the current population of the village. Each household formed the equity through the funds according to the number of family members. The shares can be owned by a household or transferred to others within the collective organization. The annual cost of planting and tending, management and income distribution should be accounted independently in conformity with the pieces of land. Stock warrants were granted to farmers. Through villagers’ autonomous election, the organization had its chairperson, members, supervisors, accountants, cashiers, and other members, who were responsible for acquiring the land for the organization, estimating the cost, contracting out forest planting and tending, checking and accepting construction, collecting share capital, recording equities, distributing income and so on.

Shanlian Village Luyuan Forestry Professional Cooperative boasts clear governance structure.

Members' Congress is the supreme organ of power, consisting of council and supervisory board. According to the Articles of Association of Cooperation Organization, each villager group selects 1-2 representatives through democratic

negotiation to constitute Members' Congress. The congress should be held at least once a year, and convened by the council. Its authorities include adopting or modifying the Articles of Association of Cooperation Organization; electing or dismissing leaders; reviewing the NPC and CPPCC reports; reviewing or formulating medium and long-term plans and annual plans for the cooperative; examining important management decisions, annual reports, financial budget, income distribution, and bonus distribution plans for the cooperative. Consisting of one chairperson, one vice chairperson, and three members, the council can be regarded as the vital element of the congress. The Supervisory Board includes one chief supervisor and three supervisors. The detailed structure of the organization is given in Fig.3-1.

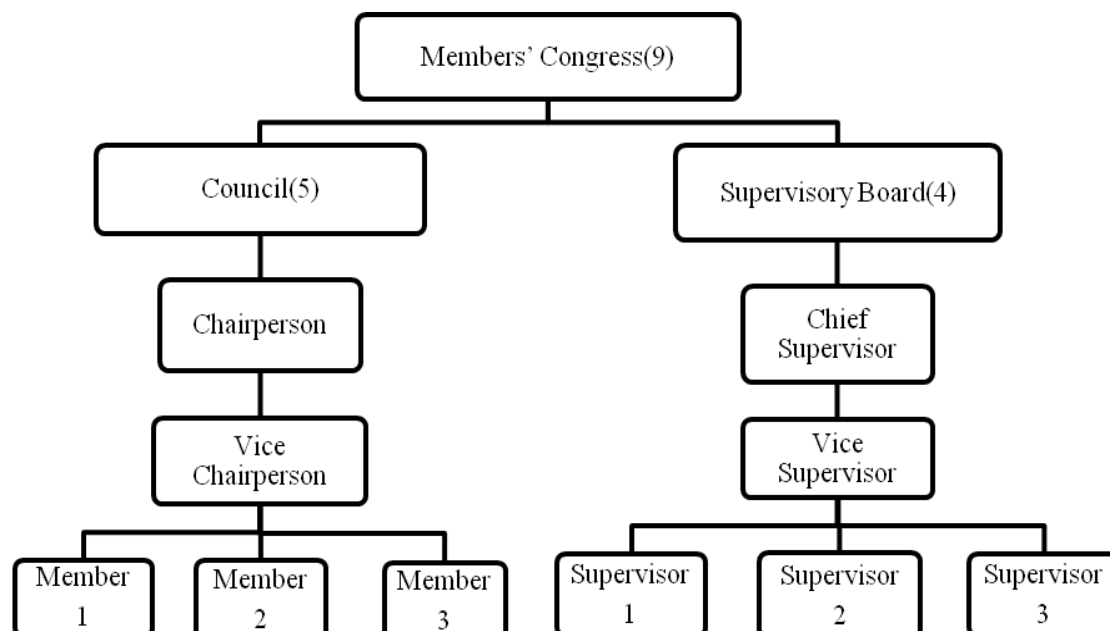
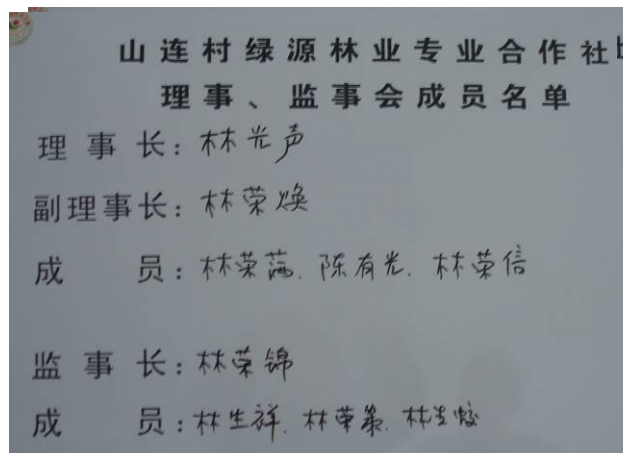


Fig.3-1 Governance structure of Shanlian Village Luyuan Forestry Professional Cooperative

3.3.2 Mayang joint stock cooperation forest company

In the forestry reform in 2004, Mayang Village founded the Mayang Joint Stock Cooperation Forest Company, adopted the principle of “owning shares and benefits without separating mountains and forests”, Since then, the using rights of forest land, the ownership and using rights of forest in Mayang Village was contracted to Mayang Cooperation, the ownership of forest land to the villagers committees. 11,543 mu of collective land was placed under the company in order to achieve 100% coverage of participation, area of reform and registration and certification of forest right. According to the collective FMP of Longxi County, with a total area of 17,902 mu, the cooperation forestry center is divided into 3 management districts, among which the area of District 52 is 6,533 mu, District 53 is 6,055 mu and District 54 5,309 mu. Conditions of these three management districts are basically the same on account that fir and pine trees are the main tree species and that forestry centers protect ecological forest land in a prudent way. Moreover, as for the moso bamboo forest and the oil tee forest, a contracted management form is implemented, while in the timber forest, pine trees and fir are collectively managed. Each management district has one forest protector to protect and manage the forestland.

Current village representatives of the Mayang Stock Cooperation Forestry Center are also representatives of shareholders, who have established the congress, the highest authority of the forestry farm. Village representatives have also established the board of directors and board of supervisors. The chairman is the current village director and he is the legal representative as well. There is one head of the farm who is in charge of all the production business of the forestry farm, including signing various contracts. Other directors are appointed from among the members of forest reform staff. The board of directors is not only the executive institution of shareholders representative conference, but also the decision-making management institution of the forestry production. The principle and major task are to further arouse farmers’ enthusiasm to carry out mountain plowing, forest cultivation and protection, increase farmers’ income and create investment efficiency of the original labor property for shareholders. Its management range contains afforestation, forest cultivation, forest timber resources management, and timber felling and forestry production sales. Besides, comprehensive construction of a well-off countryside should also be accelerated.

Based on the public opinions widely solicited, after the discussion of villagers’ representative conference, the equity of forestry joint stock management in this village should be decided as forest land stock and villager stock, among which forest land stock (equity of the village collective forest land) accounts for 40% and villager stock (equity of villagers’ forest management) represents 60%. Each year, the operating profit of the village’s joint stock forestry farm is distributed based on the equity ratio of forest land stock and villager stock, and all the

gains from forest land stock belong to the villagers committee while the villager stock all belong to villagers and is equally distributed based on the number of villagers. Anyone, whose household is registered in Mayang Village, including marriage reasons and people who can move their households into Mayang Village after obtaining approval, can participate in profit distribution.

3.3.3 Xinsheng bamboo planting special farmer cooperative in nakou

The cooperative, 20 km from the town and 56 km from the county, is 20 km away from the main road. Co-founded in 2008, it utilized the moso bamboo planting land of the forestry farm to attract many large bamboo planters, gradually developing into a bamboo production, management and sales-oriented farmer cooperative. Registered with the Industrial and Commercial Administration, it was created by Zhang Jiasheng, and was designed to support the village's development and the sharing of technical resources. With original five shareholders of the cooperative in 2008, its total number rose to 22 by the end of 2009. The cooperative has influenced about 50 farmer families and has a management area of 195,000 **mu** with the main products being moso bamboo and fir. The cooperative is mainly engaged in bamboo forest management, forestry cultivation, and moso bamboo felling with bamboo wood processing machines and other activities. The annual output value can reach 16 million yuan with an annual profit of 2.4 million yuan. The cooperative has received financial subsidies and technical supports from relevant administrative departments and enjoyed the policy that a cooperative deserves.

Table 3-2 The detail list of different land that each village possesses

Name	Zhu Qian	Zhu Fang	Jia Shang	Chi Xia	State-owned	Total
Moso bamboo (mu)	170	1215	5123	6742	506	13756
Broad leaf (mu)	0	149	786	2069	169	3173
Fir (mu)	0	532	58	23	76	689
Total (mu)	170	1896	5867	8934	751	17718

(Data source: filed research)

The cooperative operates according to its joint-stock system. Its members are different in their contributing shares: the capital of the substantial shareholder represents 50% of the total capital stock, making him one of five directors of the Board of Directors which consists of the cooperative's top five largest contributors whose contributions account for 80% of the total capital stock. The appointment of the five directors is based mainly on their contributions. The board has 172 members in

拿口镇加尚村家庭合作林场入股一览表

序号	姓名	山场土名	林班小班小班	林种	年龄	面积	折价现金 (万)
1	陈彪	望脚包	8-3-1.2①	杉木	6	285	28.5
2	吴立有 连德华	寨下	5-3-5	杉木	3	125	42.98
			5-5-6②.7②	杉木	3	246	
			6-2-3.5	杉木	3	243	
3	吴立有	海金	6-1-1.2A.3	毛竹		570	57
	付德春 官成武		6-2-1A				
4	唐春堂	望脚包	8-4-1.3②	马尾松	27	302	36.24
	朱建彪						
	周茂基						
5	朱建彪	扁岭	9-3-1①	毛竹	1	280	32
	黄义圣		9-3-3①	杉木		80	
	黄义富						
6	黄义富	梅子坑	11-3-2②.3.4	杉木	1	320	16
合计		面积 2451 亩，折价现金 212.72 万元					

total, including 22 large manufacturers and distributors or members from supply and marketing cooperatives, leading enterprises or rural grass-root organizations, while the rest 150 are non-members of the cooperative. The president of the board is also the manager of the cooperative. All members of the board hold 80% of total shares. 2010 witnessed four board meetings in total and each member has only one vote to participate in the decision making. In 2010, the Village Members' Representative Congress was only held once in total which adopted one-person-one-vote policy as well. A large capital contribution or transactions does not bring an additional vote in the congress.

The cooperative has detailed minutes of the board meeting and the congress and a complete and specified transaction records of each member's production and sales. In 2010, financial records of the cooperative were published once. Members of the cooperative have all the rights that the constitution has endowed and have the right to refer to or examine the meeting minutes and financial records mentioned above according to relevant regulations. The cooperative has members recorded, which had recorded the volume of each member's sales and the amount of public accumulation fund surplus returned to them. The cooperative and its members have signed a stable purchase and sale contract, under which, the cooperative, in the acquisition of its member's products, shall pay them at the price higher than the market price and pay them at different price levels based on the quality of their products; when the cooperative provide agricultural resources to the members, it must charge them at a discount price, barely charge at the cost price; the cooperative may not give all the surplus to the members as regards their transaction proportion in the cooperative, it can take a part away as the public accumulation funds; when a member withdraw from the cooperative, basing on his capital contribution proportion, he or she can share the public accumulation funds and the unallocated property.

By the end of 2010, the cooperative had 22 registered members and boosted 150 farmer

households; the value of the fixed assets was 3 million yuan; annual operating and service income reached 17 million yuan; annual surplus amounted to 3 million yuan, of which 20% was withheld as public accumulation fund, public welfare fund and risk capital, and the rest 80% returned to its members according to their proportion of capital stock, and 80% returned by their transaction proportion. The cooperative provided 5 times technical, business and cooperating guidance and training, involving a total of 200 person-times. Members carrying out the production in accordance with the cooperative's technical operation represent 90% and the processing area accounts for 75%.

Ideal moso bamboo is 6 years' bamboo, so existing bamboos are mostly bamboos of 2 years or 4 years with the 6 years' bamboo being cut down. moso bamboo's growing process can be divided into 3 stages, every two years is a stage. For a large bamboo land, farmers will cut by turns, felling bamboos in stage 3; leaving stage 1 and stage 2 bamboos growing continually; while for a small area, farmers will cut all as to save costs. The cooperative members stated that the ratio of bamboo numbers in different stages is 4:4:2 (that is stage 1: stage 2:stage3 =4:4:2) and the existing stage2 and stage 3 moso bamboos are all maternal bamboos. The present forest lands that have joined into the cooperative all have the certificate of forest ownership. Bamboo resources are examined under the site conditions: a land with fertile quality can produce better bamboo with a largest diameter of 17cm if possible.

3.3.4 Pingyang bamboos and trees plantation professional cooperative organization

Pingyang Cooperative is located in Shangdu Village, Hongdun County and the city of Shaowu. The cooperative was set up by Cai Qiming and other people, and was established on November 28th, 2009, with 11 billion yuan of registered capital. When Pingyang Cooperative was established in 2009, its management area was 3703 **mu**. After a year of development, its management area has been increased to 4600 **mu** now, in which, 85% are firs, 10% are moso bamboo forests and 5% are massons pines. The concrete resources distribution conditions can be seen in Fig.1-2. Classifying from the source, 90% are man-made forests, and 10% are natural forests.

The institution of the cooperative is comprised of the member congress, the executive council, and board of supervisors. The member congress is the highest authority of the cooperative, consisting of all the members of the cooperative. If the cooperators expand the scale and when the number reaches more than 50, from every 5 people a member representative will be elected (seven representatives currently) who can perform his duties on behalf of the congress. The tenure of representatives lasts five years and they may be reelected and reappointed. The member congress (representatives) makes the decision, which shall be passed by more than half of the cooperative members with the right to vote. When making decisions on big events like revising

the cooperative regulations, increasing or reducing the investment standard for members, conglomerating, dividing, dismissing, clearing and making external alliance, these decisions shall be passed by more than two thirds of the members. The member congress shall perform their right of vote with more than half of the passing votes from members who can not attend the meeting but appoint another director by a written power of attorney on his behalf. The executive council is composed of three members including a chairperson and a vice-chairperson. The tenure of the chairperson and council members is five years, and they may be reelected and reappointed.

4. Analysis of the forest management of pilot villages

4.1 Resources and main forestry products

The main tree species in Fujian province are massons pines, firs and moso bamboo with a small amount of broadleaf forests. There are slight differences of forest species among four pilot villages: first, the main tree species in Shanlian village are massons pines and firs with another 200 mu of moso bamboo, and the forest professional cooperative still has no revenue; second, the main forestry products in Mayang Village are highly qualified commercial timbers, moso bamboo and oil tea, and currently forestry has already become the major industry for increasing revenue of Mayang Village and its villagers; third, the main tree species in Jiashang village are firs, moso bamboo and massons pines, and major sources of villagers' income are timber felling, bamboo felling, underwood economic income and tobacco plantation income; fourth, the main tree species in Shangdu village are firs, massons pines and moso bamboo, and there are 3319 mu of ecological public welfare forest, among which, 400 mu are economic forests (mainly fruit trees and quince), 800 mu are massons pines, 10180 mu are moso bamboo forests and the rest are all fir forests.

4.2 Income dependency of forestry farmers on forest management

Based on the field work, the income dependency of farmers on forest management in four pilot villages are different. First, the main tree species in Shanlian village are massons pines and firs and there is only a small amount of moso bamboo. The cooperative organization was just established and the growth cycle of timbers is rather long. At present, forestry farmers gain very little from forestry management. Only a small part of people own privately-owned timber processing factories, thus they have timber processing income and a limited amount of bamboo shoot income. Second, forestry farms with a joint stock system have been established in Mayang Village. In 2004, every farmer gained 100 yuan of dividend from forestry stock; in 2005, the dividend increased to 130 yuan; and in 2006, each farmer gained 240 yuan. Villagers can obtain various amounts of dividend annually and forestry has become a major industry to increase farmers' income and village's assets. Third, the per capita net income of Jiashang village in

2010 reaches 6500 yuan, among which tobacco plantation accounts for 1/3 of its total revenue, forestry (bamboo included) makes up 1/6, food income represents 1/3, and others reaches 1/6. Fourth, the forestry output of Shangdu village accounts for 40%-60% of the total social output and the major forestry industries in this village are bamboo sales industry and bamboo shoot products.

4.3 Approaches of forest management

As with the four pilot villages, Shanlian village, Jiashang village and Shangdu village all adopt the cooperative management approach of establishing forestry professional cooperative organization, while Mayang Village uses the management mode of joint stock forest farm. First, the Luyuan Cooperation of Shanlian village adopts the joint stock management mode, which means a management principle of independent accounting, self-financing, adhering to marketing approaches, capital maintenance management and shared risks and interests. The range of management covers the cultivation of forest resources, forest asset management and forest tree felling as well as forestry products sales. Second, Mayang Village has established Joint Stock Forestry Center Co. Ltd. The company founds the board of directors and board supervisors, and implements corporatized operation. The coverage of the collective forest ownership reform reaches 11543 mu, all of which belong to the company. The participation rate of villagers into the forestry reform is very high and the reform coverage reaches 100%, so does the coverage of the release of forestry ownership certificate. Its major management range contains afforestation, the cultivation of forest resources, forest asset and timber resources management and forest tree felling as well as forestry products sales. Third, Xinsheng Bamboo Planting Special Farmer Cooperative has been founded in Jiashang village, which adopts joint stock management. The amount of stocks held by different members are quite different: shares of the first investor accounts for 50% of all and shares of the top five investors make up 80% of its total. The appointment of administrative council members is decided based on the amount of investment and shares of its members account for 80% of its total. Fourth, Pingyang Bamboos and Trees Plantation Professional Cooperative Organization has been founded in Shangdu village and its main business activities include plantation, management and administration of bamboo and timbers as well as production, processing and marketing of timbers (wood and bamboo included). The tree species of cooperative management contain firs, moso bamboo and massons pines, among which firs make up the largest proportion.

4.4 Governance of forest management

After the collective forest tenure reform, the clarification of property rights gives full play to farmers' initiative and solves the problem of power in the process of forestry development. Nevertheless, there emerged a series of new problems brought by subdividing operating entities

and the diversification of operators. The first problem comes to a new round of losing land. Because of the small per capita management area, low level of management expertise, and the worries about the changeable policies, 6 farmer groups in Shanlian village transferred in succession 6 pieces of land altogether 614 mu from 2004 to 2007, which led to a new round of loss of land and fields. Second, the funds for forestry production are insufficient. On one hand, due to the lack of funds, most farmers can hardly contract the land subcontracted in pieces by farmers' collective organization; on the other hand, even if those land were contracted based on household contract responsibility system, farmers cannot plant trees in time because of high social payment and large sums of input money. Third, the appearance of forest may be damaged. Different levels and aims of management led to the damaged to the appearance of forest in the field newly subcontracted. In this way, the damage is inconsistent with the needs of large-scale forestry operation. Fourth, the conflicts involving forest land have increased. Fifth, it is difficult to impose a fine on the use of woodland. Consequently, legitimate rights of the rural organizations can hardly be guaranteed or see normal operation. In order to solve the existing and new problems, farmers of Shanlian Village established "Shanlian Village Luyuan Forestry Professional Cooperative" in October of 2007 through in-depth discussion.

4.5 The advantage and disadvantage of existing forest management

At present, the advantages and disadvantages of carrying out forest resources management through cooperatives in pilot villages are shown as follows:

First, there are five advantages: (1) cooperative organizations can carry out scale operation and unified management; (2) conflicts and disputes can be reduced; (3) investment can be cut to abate production cost; (4) members of cooperatives are enthusiastic for participation; and (5) the management of cooperatives can enjoy more preferential policies.

Second, there are four disadvantages: (1) as the cooperative was just established, its managerial skills are weak and limited (mainly referring to Shanlian village); (2) the management coverage of forest land is quite restrained and the scale of operation is not large enough; (3) there is a lack of technology and capital support; and (4) current profit can not be guaranteed.

5. Analysis of constraints on participatory forest management in the pilot FFC

5.1 Mechanism and basic requirement for the implementation of PFM

5.1.1 Resources data

Making the plan for forest management must be based on concrete and accurate forest resources information, including up-to-date forest resources files, results of recent forest resources planning and design and specialized technology files. The document developers that have recently finished forest resources planning and design should verify and update those files, and include them in the annual document. The document developers that have finished forest

resources planning and design in a short time should organize supplementary research and update resources data based on forest resources files. The document developers, which have not carried out forest resources planning and design or their research time effect exceeds the management period, should redo forest resources research.

5.1.2 Resources analysis

The research team should focus on analyzing the quantity, quality, distribution, structure and dynamic changes of forest resources. Attention should also be paid to the completeness of forest ecological system, forest health and biological diversity. The ability of forests to provide wooden and non-wood forestry products, and the ecological and social service functions of forest to conserve soil and water, nourish water source, provide recreational service and labor employment should be much accounted of. The forestry pests, disease and pest prevention, forest fire and soil fertility decline must be greatly emphasized.

5.1.3 Environment analysis

The research group should make a comprehensive analysis of the economic, social and ecological demands of the nation, region and community for forest management. They should also find out the affecting factors and degrees of external environment on forest management. Detailed analysis should also be made on the restraints and requirements of relevant forest management policies and forestry administration system. Researchers should pay much attention to local residents' production and living conditions, relevant stakeholders' demands and dependency on forest management and requirements and limitations of ecological safety and forest health to the forest multi-target operation. The management strategy should be made according to the concept of overall planning with regard to ecological, economic and social efficiency and coordinated development.

5.2 Attitude, behavior, capacity analysis of different stakeholders to join the PFM

During the plan development process of participatory forest management, corresponding stakeholders are mainly members of forestry farmers' cooperatives, non-cooperative members, township forestry station and county-level forestry administration.

5.2.1 Cooperative members

By talking with specialized cooperative members, researchers find out that their main demands cover five aspects: (1) forestry farmers need some timber-producing areas to



provide qualified timber for marketing in order to increase their incomes; (2) some areas for timber reservation resources are needed to provide some timbers to local residents to build houses and make furniture. Meanwhile, the regional special species diversity should be maintained to provide species sources for natural management; (3) the forest area for local residents' drinking water sources should be guaranteed; (4) villagers' domestic fuels need some forest land to gather fertilization in order to improve the soil of arable land; (5) non-wood products should be picked in the bamboo forests; and (6) the long-term development and profit of cooperatives should be pursued.

5.2.2 Non-cooperative members

By talking with non-cooperative members, we find that their main demands are basically in accordance with those of cooperative members.

5.2.3 Township forestry station

By communicating with staff of forestry stations in Nakou County and Xicheng County, researchers find their main demands are that bamboo forests and



other forest resources can better provide ecological service and staff of forestry stations can provide technique guidance for forestry farmers.

5.2.4 County-level and city-level forestry administration

Through communication with the staff of forestry administrations in the city of Shaowu and Youxi County, researchers find that their demands are mainly to maximize forestry farmers' ecological, economic and social efficiency based on the proper forest coverage rate.

5.3 The constraints on the implementation of PFM in the pilot FFCs

In Shaowu and Youxi, the forest management-related policies and systems include taxes and charges policies, forest cultivation funds institution, forestry ecological funds, harvesting quota control system, central public welfare forest compensation system, compensation system for local public welfare forests, forest insurance policies and all kinds of forestry subsidies. However, from the farmers' perspective, it is found that members of cooperative held a neutral attitude towards the taxes and charges system, forest cultivation fund system, forestry ecological funds system, the central public welfare forest compensation system, medical compensation system for local workers (compensation system for local public welfare forests) and various forestry grants and subsidies. They thought that the systems like taxation and charge system and forest cultivation fund system should abolish taxes on forestry land. As for harvesting quota control

system, they hold an objective view, think forest farmers attach so much importance to bamboo forest that they will consciously protect bamboo resources and will not destroy it. In the light of this, they hoped to abolish quota control system. For forest insurance system, the cooperative members stated that at the present stage, only the local ecological forests had covered the forest insurance; there is no insurance policy for the economic forests. So they hoped that the central government can issues forests insurance policy that should cover both economic and ecological forest as to reduce losses.

6. Capacity building

6.1 Trainees

The main targets of this participatory forest management training are key members, ordinary members and non-members of forestry professional cooperative organizations, village cadres, township government and relevant staff from county forestry administration.

6.2 Training methods and contents

This training contains ten lessons. Table 6-1 shows the detailed information about training plans and schedules.

Table6-1 Training plans and schedules of shanlian village

Time		Training plans	Participants	Methods
2011.1.15	1 st lesson	Introduction of background and aim	Officials of Youxi	Discussion;
	2 nd lesson	Introduction of participatory forest management	County Project Office; members of	semi-structured interview;
	3 rd lesson	Preparation for drafting plan	villagers committees;	materials
2011.1.16	4 th lesson	Evaluation of forest management systems	farmers; members of Luyuan Forestry	collection; PRA tools;
	5 th lesson	SWOT and strategic choice	Professional	questionnaire
	6 th lesson	Operable plans picking	Cooperative	
1011.1.17	7 th lesson	Analysis of stakeholders	Organization	
	8 th lesson	Policy evaluation Problem Tree		
	9 th lesson	Questionnaire and interview		
	10 th lesson	Course assessing and ending		

The training mainly uses participatory training method. Participatory training method means each trainee must participate in the exchange and sharing of information during the training process. In the participatory training process, there exists equality between teachers and trainees, and among trainees; everyone has the equal opportunities to participate. So naturally in this learning process, everyone will be brave to express their own views, experiences and confusions,

which will greatly improve their self-confidence and participation awareness. The main feature of this method is that each trainee will actively participate in the training activities, gaining knowledge, skills and proper behavior. The participatory methods this training used are listed as follows:

First, meetings. People seldom regard meeting as a method of training. Actually, participating in a meeting can make people exchange information, get inspirations, get to know the latest progress in a certain field and broaden their horizons. This participatory method ran through the whole training process. By using this way, the trainer has brought together the target group to discuss the details of forest management plan development.

Second, brainstorming. Brainstorming is effective to inspire everyone's thoughts and stimulate creative thinking. It can maximize the creativity of each participant, providing more and better solutions to problems. The use of brainstorming requires only one topic, which is the specific problem to be solved. Participants are gathered to freely express their suggestions or solutions to that problem. Organizers and participants cannot criticize others' suggestions and proposals. After the brainstorming, views will be gathered and handed out to all participants. Then the participants will exclude the duplicate and obviously unreasonable ones and re-design the proposals that contain vague expressions. Organizers will guide all participants to evaluate each solution one by one and finally select the best option. In this training, brainstorming was used mainly to discuss the factors that affect the future development of the cooperative and to facilitate the use of SWOT analysis to explore the strengths, weaknesses and strategic analysis of the cooperative.

Third, group training. The purpose of group training is to help build up participants' collective awareness and team spirit, teaching them to consciously communicate and collaborate with others and work together so as to ensure the attainment of a specific goal. The number for each training group is about four to six; it is best that each participant has a different personality, different experiences and different knowledge and skills. Group training focuses on solving a particular problem. During the problem-solving process, the participants are supposed to realize the importance of communication and collaboration.

In order to successfully establish the forest management plan, the organizer has brought together various stakeholders as to introduce the concept and content of the forest management plan to them firstly.



Fig. 6-1 The scene of participatory training and the plan-making of forest management of the luyuan forestry professional cooperative in shanlian village, youxi county, Fujian province



Fig. 6-2 The scene of the plan-making of forest management of mayang stock cooperation forestry center in mayang village, youxi county, Fujian province



fig. 6-3 The scene of participatory training and the plan-making of forest management of xinsheng bamboo planting special farmer cooperative in jiashang village, the city of shaowu, Fujian province



Fig. 6-4 The scene of interview of pingyang bamboos and trees plantation professional cooperative organization in shangdu village, the city of shaowu, Fujian province

6.3 Drafting forest management plan

6.3.1 The concept of forest management plans

Forest management plan is a medium- and long-term program designed to operate scientifically and reasonably, fully exert ecological, economic, and social benefits, and develop production order and operation methods. It is based on the needs of national economy and social development, forestry laws and regulations, situations of forestry resources, society, economic, and nature resources.

Forest management plan is not only an annual plan made by forestry operators, but also an important basis for organizing forestry operating activities and arranging forestry production. It is essential for the competent forestry authorities to manage, check, and supervise forestry operation. Formulating and implementing forest management plans is a legal work.

Participatory operation means that local residents are encouraged to take part in the local development so as to make the management plan fully embrace the opinions and suggestions of all the parties involved.

6.3.2 Procedures for the formulation

Formulating forest management plan covers several steps: preparation, system evaluation, operating decision, public participation, planning, and evaluation and modification.

First, preparation: organize; collect basic materials; do research; fix technical and economic index; and write work proposal and technical plans.

Second, system evaluation: examine and summarize forest management plans of last managerial term; analyze operating environment, resources situation, trend of operation, requirements of management, etc. during this period; and clarify operating goals and the pressing problems in management plans.

Third, operating decision: put forward several alternatives from different perspectives through systematic analysis, make input-output analysis, ecological and social evaluation on every alternative plan, and pick out the best plan

Fourth, public participation: receive comments widely from management departments, operating entities, and other stakeholders so as to adjust the best plan appropriately, and make the final plan as the basis of the program.

Fifth, planning: design forest management plans and write down the project according to the best plan.

Sixth, evaluation and modification: submit the achievements in the light of relevant requirements; revise and finalize the plan according to the verdict.

Every pilot village has its specific forest management plan. See the appendix for more detailed information.

6.3.3 Structure and main content

Forest management plan mainly contains three parts: main body, planning sheet, and resource diagrams. The table 6-2 shows the main content of the forest management plan.

Table 6-2 main content of forest management plan

Plan structure	Main content
Outline	Basic information of forestry cooperative organization
	Goals of forest management
	Measures for forest management
	Supervision and evaluation on forest management
	Analysis of investment and profits

6.4 The needs of village group members in the development of forest management plan

First of all, it is necessary to set goals based on the current forest resources, forestry production capacity, forestry operating ability, and local economic and social environment. Operational goals should include development of forest resources, supply of forestry products, and overall efficiency of forest management plan.

Second, it is necessary to understand different economic and social benefits brought by different trees in different periods before taking any measure. Besides, analysis of short-term and long-term investment will be of great help.

Third, supervision and evaluation on operational efficiency should be done under the guidance of relevant department. Through learning scientific methods and supervision indexes, improving managerial ability and further increasing profits will become realizable.

Besides, as the productivity of soil fertility of forest land keeps falling, a pointed technique guidance of a whole process including a management plan, implementation and monitoring should be made so as to solve issues of management plans, implementation and monitoring in order to create or maintain a healthy forest, ensure that forests can offer products and services which can satisfy forest owners' demands, manage forest land sustainably, and guarantee its constant output.

6.5 Evaluation on capacity building

After this training, staff of forestry bureau and forestry station gained better and deeper understanding of some issues, which can play a positive role in their making or implementation of forest management plan. These issues are: getting to know the participatory forest management and define roles that farmers and forestry workers played in the management; self-responsibility in the management of forest; how to prepare participatory forest management plan; how to make evaluation outline for forest management system; how to use appropriate analysis outline to evaluate forest management system; ensure more information and design methods to meet those requirements; how to make trend analysis of forest management; how to make SWOT analysis; how to make strategic decision; how to use logic framework to make plan for forest management development; how to make participatory monitoring system for forest management; how to make participatory monitoring outline for forest management; how to help farmers to prepare draft plan for the development of forest management, and how to utilize such plan to improve farmer's livelihoods through participatory method, and find out their thoughts on forest management and encourage them to join the process of policy-making. Meanwhile, it is of great

help for forestry workers to develop management plans for the future.

Village cadres can improve their communication ability and serve as a bridge between farmers and the superior department. Participatory discussion is a vehicle for them to fully understand people's opinions which are fed back later to the superior department. At the same time, they have realized the advantages, weakness, risks, and opportunities of the village or its cooperative organization, and clarified various functions of different stakeholders.

As for farmers, they have gained a thorough understanding of the development procedures for forest management plan. Having found out their weak points in forestry operation, they have learnt to improve their managerial abilities and adjust operating patterns. Besides, they can take part in the whole process of planning, which strengthens their decision-making power and makes the management plan more practical and feasible.

7. Review on forest management policies and systems at national, provincial and county level

China and its local governments have issued a series of policies and systems for forest management, and this chapter will describe systematically the national, provincial and city-level policies concerning harvesting quota control system, forestry tax and charges system, forestry ownership mortgage loans policy, forest eco-compensational fund mechanism, the role governments play in the environmental service payment market, and relevant policies of non-timber forestry products and traditional forestry.

7.1 Felling quota system

According to article 29 of forest act, based on the principle that the timber consumption must be lower than its increment, the government has strictly controlled the annual forest harvesting quota. In light of the *Circular of the State Council for Approving and Transmitting the Audit Opinion Submitted by the State Forestry Administration about the Forest Felling quota during the Eleventh Five-year Plan of All Regions*(No.41, 2005) , the total amount of the national forest harvesting quota which has been examined, verified and compiled during the eleventh five-year plan is 248.155 million cubic meters(moso bamboo harvesting quota excluded).

Table7-1 Relevant laws and regulations for felling quota

level	Name of the Law/Regulation	Issued Date	Main Content
Central	<i>Regulations for the Management of Forest Cut and Regeneration</i>	1987/9/10	Clearly defines the types of deforestation; the management of felling license; timber felling methods and technical procedures and regeneration inspections
	<i>the Circular of the State Council for Approving and Transmitting the Audit</i>	2005/12/19	Management of forestry resources harvesting quota system; all-around

	<i>Opinion Submitted by the State Forestry Administration about the Forest Felling quota during the Eleventh Five-year Plan of All Regions(No.41, 2005)</i>		management of forestry resources protection; the development of related forestry industries and forest management; a comprehensive planning for enhancing legal construction, institutional and mechanism reform and other issues related to forestry construction and development.
	<i>Regulations for the Management of Forest Cut and Regeneration for Fujian Province</i>	2002/6/27	Implements forest harvesting quota institution and license-based felling institution; make annual production plan for the felling of merchantable timber.
Provincial	<i>the Circular of Fujian Government for Approving and Transmitting the Opinion Submitted by the Provincial Forestry Administration about Implementing the Forest Felling quota Approved by the State Council during the Eleventh Five-year Plan Period</i>	2006/3/29	Approves Fujian province to implement the forest harvesting quota institution during the eleventh five-year plan period.
	<i>The Detailed Operating Rules for Implementing Forest Felling quota Institution during the Twelfth Five-year Plan Period for Fujian Province</i>	2011	Approves Fujian province to implement the forest harvesting quota institution during the twelfth five-year plan period.
City	<i>Managing Suggestions on the Standardization of Quota Allocation and Utilization for Collective Forest</i>	2007/7/26	Clearly stipulates Shaowu city to implement forest harvesting quota institution

The breakdown quotas divided by the felling type are: principal felling 117.437 million cubic meters, intermediate felling 56.241 million cubic meters, regeneration, and other felling 74.477 million cubic meters; while the breakdown quotas divided by consumption structures are: commercial timber 157.697 million cubic meters(mill run 99.827 million cubic meters) ,non-merchantable timber 90.458 million cubic meters. If divided by sources of forest, the breakdown quotas are: natural forest 91.214 million cubic meters, man-made forest 156.941 million cubic meters(among which raw material forest for industry 54.229 million cubic meters) . As moso bamboo possesses features like fast-growing and great changes in annual felling amount, its harvesting quota during the eleventh five-year plan will be determined by provincial forestry authorities and be implemented after getting agreement from the State Forestry

Administration.

The forest harvesting quota index during the eleventh five-year plan varies in different provinces, among which the province with highest harvesting quota is Yunnan, 34,182 million cubic meters. Fujian province ranks the second, with an index of 25.780 million cubic meters. Other provinces with high harvesting quota include Guangxi, Hunan, and Jiangxi, and their indexes are 25.010, 20.013 and 18.153 million cubic meters, respectively. In order to adjust and improve the implementation plan for the natural forest preservation project and according to the requirements of sustainable forest management and sustainable forest area development, the timber production of key state-owned forest regions in Northeast China and Inner Mongolia has been reduced from 10.580 million cubic meters during the Tenth Five-Year Plan period to 6.184 million cubic meters during the Eleventh Five-Year Plan period. This is a great change.

7.2 Taxes and charges

China's current forestry tax and charge system is mainly divided into 2 parts: one is taxes and charges on forest resources felling phase and the other is taxes and charges on the phase of forest resources processing and integrated utilization.

7.2.1 Main taxes and charges involving felling forest resources

First, the special agricultural tax. In 1994, the No. 7 document of financial and agricultural taxes, the *Circular of the Ministry of Finance on Specific Matters on Imposing Special Agricultural Tax*, stipulates that the enterprises and individuals that produce and purchase crude wood and bamboo shall pay at the flat tax rate of 8% according to the regulations. Second, the afforestation fund. Based on the *Management of Imposition and Utilization of Forestation Fund* newly printed in 2009, the afforestation fund shall be imposed at most less than 10% of forestry products sales income. The concrete imposition regulations shall be examined and ratified by all the provinces, autonomous regions and municipalities based on the economic capacity of forestry production and management enterprises and individuals. Third, maintenance fee, also known as renovation and improvement fund. It covers the extension of the road for timber transportation, river regulation, relevant project facilities and purchase of personal equipment. For collective forest areas, such fee will be collected as per a proportion of the timber sales price; for the state-owned forest areas, such fee will be managed in line with specified regulations and included in the timber cost according to actual expenditure. Fourth, forestry preservation and construction fee. The charging standard is 5 yuan per cubic meter. The fee scope exclude rural collective and forestry farmers but include other timber sellers and enterprises ratified by forestry department to directly enter forest areas and purchase timber.

7.2.2 Taxes and charges involving forest resources processing and integrated utilization

Major tax categories involved in timber processing and integrated utilization of forest resources

include value added tax, income tax, sales tax and urban maintenance and construction tax. To forestry industries with timber as their raw materials, the tax categories involved are mainly value added tax, income tax and urban maintenance and construction tax, while in terms of architectures in forest areas, transportation, service and forest tourism, main tax categories are sales tax, income tax, and urban maintenance and construction tax. Relevant taxation regulations and tax rates are in accordance with national tax law, enforcement regulations, rules and concrete issues.

Table 7-2 Policies on tax

level	Name of law/regulation	Year
central	Management Regulation on collecting and using silviculture fund	2009.5.25
provincial	Management and implementing method on collecting and using silviculture fund in Fujian Province	2009.10.25
	Circular of Fujian People's Government concerning the adjustment of forest land use fees to ensure the stability of state-owned forest farms and forest tending farm operation areas	2005.1.1
municipal	Guiding opinion on strengthening the charging of forest land use fees and management of using in Sanming	2005.9.30

In recent years, as the Chinese government has paid increasing attention to the forestry ecological construction, a series of preferential policies for forestry taxes have been issued, which have alleviated forestry tax burden on the whole. But the current forestry taxes and charges still confront myriads of problems, for example, chaotic forestry internal operation and difficulty in financial payment. Thus, the promotion of forestry tax and charge reform should be based on the economic laws of the socialist market. Starting from the strategic height of facilitating sustainable social development, China is accelerating its modern forestry drive, and endeavoring to satisfy the multiple demands of sustainable economic and social development for forestry ecological, social and economic interests.

7.3 Micro-mortgage financing policy

Forest ownership mortgage loan means using the ownership (or the use right) of forest and timber as well as the use right of forest lands as the estate under mortgage to apply for loans from financial institutions.

Table 7-3 The Management Methods for Forest Ownership Mortgage Loan in some provinces

Province	Regulations in <i>The Management Methods for Forest Ownership Mortgage Loan</i>
Hebei	In principle, the mortgage rate shall be no more than 70% of the evaluation value, and the mortgage term shall be no longer than the expiration of the right to use forest lands ruled in the certificate of forest rights. The rising range of interest rate shall not exceed 50% by principle.

Jilin	In principle, the mortgage rate shall be no more than 50% of the evaluation value of the estate under mortgage, while the longest term shall never exceed 10 years. The forest ownership mortgage loan shall settle interest every 3 months.
Yunnan	In terms of the young timber forest and bamboo forest along with the economic forest before production, their mortgage rate shall never exceed 40% of the evaluation value; as with the half and near-mature timber forest and the economic forest in full fruit period (fruit trees, tea, rubber and so on), their mortgage rate shall be no more than 55% of the evaluation value; while the mortgage rate of mature timber forest and bamboo forest shall be no more than 60% of the evaluation value with the longest term never exceeding 10 years.
Heilongjiang	The mortgage rate shall be no more than 60% of the evaluation value by principle and the credit period shall be no longer than 5 years. The interest rate of forest ownership mortgage loan shall be determined reasonably according to the principle of market orientation and never exceed the interest rate of other agricultural loans at the same level. Additionally, proper favor will be given for sake of forestry farmers.
Jiangxi	Credit cooperatives can decide by themselves the line of credit within 60% of the evaluation value of the mortgage loan (including 60%) and the preferential policies implemented in forest ownership mortgage loan shall be no longer than 5 years. The rising range of the interest rate shall be no more than 50% of China's benchmark interest rate by principle.

According to *the Guiding Opinions on the Implementation of Forest Ownership Mortgage Loan* released by China Development Bank and State Forestry Administration (No.112 Document, 2010) , the credit period of the forest ownership mortgage loan shall be determined reasonably according to the borrower's production and operation cycle, credit standing and purposes of loan: first, the term of small loan for forestry farmers shall be no longer than 10 years at most; second, in principle, the term of the construction of ecology, fast-yielding plantation, oil tea and energy forest base as well as the development of their follow-up industries may not be fixed in 15 years, but the construction can last no longer than 20 years. Third, the integrated forest-pulp-paper-board-oil project shall last no longer than 12 years. Fourth, if the right to use the forest land is rented by the mortgagor, his credit period shall be no longer than the term which he has already paid for the use right minus the term during which he has managed the forest land. As different provinces have developed their *Management Methods for Forest Ownership Mortgage Loan*, the concrete implementation varies slightly from province to province.

The forest ownership mortgage loan is a supplementary measure for forest ownership reform. It has not only broken the single configuration that banks for long offer loans mainly under the gage of real estate and introduced the new gage of use right of forest land and timber ownership,

but also turned the idle forest resources into assets that can be mortgaged and changed into cash. It has also made forestry farmers possess the gage in real sense for the first time, which means a fulfillment of zero breakthrough of rural finance.

7.4 Forest compensation fund management system

The eco-compensation aims to protect ecological environment and promote harmonious development between man and nature. Based on the service value of ecological system, the cost of ecological protection and development of opportunity cost, it is a public system that utilizes government and market instruments to adjust the interest relations among stakeholders concerning ecological protection.

According to the *Central Financing Management Methods for the Forestry Ecological Efficiency Compensation Fund* (No. 7 Document, 2007), the average compensation standard of the fund from the state revenue is 5 yuan per mu annually, among which 4.75 yuan is used for the management and protection expenditure of state-owned forestry enterprises, collectives and individuals. The rest 0.25 yuan is included in the expenditure in the provincial government budget, which is used for the management and protection inspection of major public welfare forests, the establishment of transregional fire barriers and other forest fire prevention measures as well as maintenance of forest roads. All of those are organized and carried out by provincial forestry authorities. After the *methods* are issued, different provinces will see slight changes under concrete circumstances (See more details in table 7-4).

Table 7-4 Content of the Management Methods for the Forestry Ecological Efficiency Compensation Fund in Some Provinces

Province	Content of <i>The Management Methods for the Forestry Ecological Efficiency Compensation Fund</i>
Shandong	The compensation standard is 5 yuan per mu annually, in which, 4.5 yuan is compensational expenditure and the rest 0.5 yuan is public protection expenditure. In the 4.5 yuan, 4 yuan is used to compensate the professional management and protection staff per mu every year, the rest 0.5 yuan is the charge for replanting seedlings, site preparation and forest tending in the management and protection area per mu annually.
Heilongjiang	The management and protection staff will be compensated based on the standard of 9000 yuan to 11000 yuan per person annually while charges for replanting seedlings, site preparation and forest tending in the management and protection area will be compensated according to the standard that the coverage of management and protection must be less than 1 yuan per mu. Public management and protection expenditure will be compensated in line with the standard of 0.5 yuan per mu.
Hainan	The average compensation standard of the fund is 5 yuan per mu annually, in which 4.5 yuan is used as compensational expenditure and 0.5 yuan is public management and protection

	expenditure. The labor costs or the individual compensation fee of forestry farmers will be no less than 3 yuan per mu.
Zhejiang	The compensation standard for public welfare forest is 8 yuan per mu annually, in which 7 yuan is compensational expenditure and 1 yuan as public management and protection expenditure. In the compensational expenditure, 5 yuan is allowance for loss and 2 yuan is the labor costs for rangers. In the public management and protection expenditure, forest fire prevention, pest prevention and resources monitoring expenditure should be no less than 0.5 yuan, but the management fee should be no more than 0.5 yuan.
Anhui	The average compensation standard of state-owned public welfare forest is 5 yuan per mu annually, in which 4.75 yuan is management and protection allowance expenditure and 0.25 yuan public management and protection expenditure. The average compensation standard for public welfare forest owned by collectives and individuals is 10 yuan per mu every year, in which 9.75 yuan is management and protection allowance expenditure and 0.25 yuan public management and protection expenditure.
Jiangsu	The average compensation standard of the fund is 8 yuan per mu annually, in which 7.2 yuan is compensational expenditure and 0.8 yuan public management and protection expenditure. The compensational expenditure is mainly used as the labor costs of professional management and protection staff or the allowance for forestry farmers as well as the charges for replanting seedlings, site preparation and forest tending in the management and protection area. The public management and protection expenditure is used in forest fire prevention, pest prevention and resources monitoring of major public welfare forests.

7.5 Government's role in market for payment for environmental services

From the perspective of public economics, the government can stimulate full supplement of regional public goods, reduce damage to ecological environment and improve resource allocation efficiency by enforcing consumers and violators to pay for corresponding fees for ecological services through government interference in the payment market of environmental service. Youxi County increased government investment in the forestry construction, included public welfare forest construction, management and major forestry investment in infrastructure into the budgets of governments at all levels, and give priority to it. As to the key ecological projects relevant to livelihoods, local planning investment in regional ecological projects is included into local budgets, departments, supporting ecological projects planned investment into the relevant project's overall budget. Forest ecological benefit compensation fund was included in the central and local budgets, and gradually increase the size of funds, food for work, comprehensive agricultural development funds and other financial support for agriculture, forestry construction due to increased investment in key areas of fast-growing timber bases of the building and valuable timber species in the construction of forest fire prevention, pest control and good seed of the development and promotion of other social and public welfare building, part of the

investment by the state has arranged to gradually standardize the construction of the ecological engineering afforestation subsidies. With the focus on the gradual deepening of the reform of state-owned forest areas, local governments gradually assume the original by the forest industry investment in social responsibility of enterprises, the state will give necessary support.¹

7.6 Non-timber forest products policy

In current years, non-timber forestry has attracted widespread attention worldwide. In China, the awareness of developing non-timber forestry products has gradually become more and more significant. The exploitation of economic forest, flowers, bamboo and rattan as well as forestry chemical products resources in China has moved further and Chinese government has also given proper support and encouragement in policies and systems. For example, the city of Nanping issued *the Implementation Opinions of Nanping Municipal Government on Accelerating the Development of Wood and Bamboo Product Industrial Cluster* and *Opinions of the State Forestry Administration on Developing Oil Tea Industry* by (No. 274 Document, 2006) on June 5th, 2005. The development pattern of “enriching forestry farmers by bamboo” has been established in Youxi County, playing a positive role in improving the infrastructure of bamboo forest management, implementing scientific management system, optimizing the management layout of bamboo forest, increase the investment in this field, promoting appropriate technology, facilitating the modernization of bamboo forest cultivation, and elevating its management level and economic, ecological and social benefits. There are lots of oil tea forests and tea forests in Youxi County, but the yield per unit is rather low due to lack of control for long. Therefore, measures such as ditch cleaning, ridging, trimming, fertilization and pest prevention are needed to promote the growth and improve the yield. As with some oil tea forests and tea forests which are already desolate and aging, returning land for tea forests to forestry should be implemented.

With a long history of planting large areas of kumquat, Youxi County is one of the biggest kumquat belts in China. According to the kumquat resource conditions, manual processing can turn the resources advantage into economic advantage. On the one hand, scientific methods should be used to fertilize the existing kumquat and detailed management should be also adopted to improve yield per unit. On the other hand, the government should adapt to local conditions by enlarging cultivated areas so as to enable forestry farmers to get rich first.

7.7 Traditional forest-related knowledge and customary regulations

In order to enhance the development of forestry production, maintain normal production sequence in forest areas, and effectively restrain various kinds of illegal behaviors, Xicheng

¹ Quoted from < *Decision of the Central Committee of the Communist Party of China and the State Council on Accelerating Development of Forestry* >

Town in the province has made village rules for all villages based on relevant laws and regulations such as the *Forest Law* and the *Rules for the Implementation of the Forest Law in Fujian Province*.

First, the management of forest land occupation. ① All enterprises and individuals that need to occupy forest lands must apply to the villagers committee, settle occupation formalities with forestry authorities and pay for corresponding fees. ② All individuals and organizations that invest in afforestation or planting other crops on local forest lands shall obtain consent from villagers' representatives. Individuals shall not randomly dig or occupy forest lands. For those who take up forest lands without permission, a fine of 200 yuan per mu shall be imposed and they shall restore the lands in half a month.

Second, resources protection and forest policy management. ① Only after obtaining forest tree felling license from forestry department can people harvest timbers and bamboo. ② As for punishment standard, destructive deforestation or deforestation without permission will be fined according to the timber's head diameter, for example, 3 yuan per centimeter for firs, 2 yuan per centimeter for pines and weed trees, and 10 yuan per piece for moso bamboo. Deforestation of precious tree species without permission will be fined 500-5000 yuan per piece. ③ Individuals who have breached the rules above should be fined of 50-100 yuan for each person each time. Those people shall, in case of serious circumstances, be handed to relevant department of higher authorities until they are prosecuted for criminal responsibility. ④ Cattle and goats are forbidden to graze in young forest. If seedlings and young trees have been damaged, herders should be fined 3 yuan per piece besides replanting seedlings. ⑤ After the reform of forest ownership system has been implemented, self-employed individuals' legitimate rights shall be protected. ⑥ Anyone who has reported people making destructive felling of forest will be rewarded with 50% of the fine each time apart from ensuring confidentiality, if the report has been confirmed.

Third, the management of fire use in open areas in the forest. ① For any fire use within 10 meters of the forest border, permission and approval from forestry station shall be obtained. ② The non-production fire beyond 10 meters of forest border shall be reported to the forestry station after getting approval from the village forest farm. ③ During the forest curfew period, any outdoor fire use is forbidden. ④ People who use fire without permission but cause no fire disaster shall be fined 50-100 yuan each time. In case of fire disaster, the violators shall endeavor to organize others to put out the fire and pay 20 yuan for per person participating in the fire fighting. Besides, the violators shall also be responsible for cleaning the hill at their own costs, and make compensations for the loss of timbers and reforestation. ⑤ Villagers who find forest fire danger and give prompt report will be rewarded 30 yuan each time. People involved in fire

fighting in time to avoid causing great economic loss will be rewarded 100-500 yuan based on the severity of the case.

Fourth, the management of wildlife protection. ① Every villager has the right and responsibility to protect wildlife included in the national protection list, and hunting precious animals is forbidden. ② Anyone who kills wild animals under protection will be fined 500-5000 yuan under the supervision of superior department until he is prosecuted for criminal responsibility.

7.8 Others

This chapter introduces some forest management-related rules and regulations at national, provincial and municipal level uncovered in the above chapters, such as the *Forest Law of the People's Republic of China*, *Implementing Rules for Forest Fire Precaution in Fujian Province* and the *Circular of Nanping Government Office for Transmitting the Opinions of the Nanping Forestry Department on Strengthening Timber Transport Management and Enhancing Services of Timber Processing Businesses* (see details in Table 7-5). These rules and regulations have standardized the management of forest.

Table7-5 Other Rules and Regulations

Level	Title	Issued date	Main content
National	Decision of the Central Committee of the Communist Party of China and the State Council on Accelerating Development of the Forestry	2003/6/25	Article 13: The State shall protect the property rights of forest right owners, safeguard their legitimate rights and interests. To those who have clear ownership and are approved forest right certificate, we should effectively maintain the legal force of the certificate, all according to law.
	Instructions on Strengthening Management of Forestry Resources in Southern Collective Forest Areas and Firmly Forbidding Reckless Deforestation	1987	Article 3: The State shall protect according to law the ownership of the state-owned forest from encroachment.
	<i>the Law of Specialized Farmers Cooperatives of the People's Republic of China</i>	2007/7/1	Stipulate the procedures of registration, examination and approval and operation specification.
	<i>Agricultural Law of the People's Republic of China</i>	2003/3/1	Adjust laws, administrative regulations, local laws, government regulations and other normative documents that involves agricultural economic activities
	<i>Forest Law of the People's</i>	1985/1/1	Managing, Protecting and Harvesting of

	<i>Republic of China</i>		Forest
Provincial	<i>Implementing Rules for Forest Fire Precaution in Fujian Province</i>	1989/12/21	Penalties for forest fire prevention regulations, etc.
	<i>Administrative Measures for Nature Reserves in Fujian Province</i>	2000/6/20	Enhance the construction and management of natural reserves, effectively protect natural environment and natural resources
	<i>Regulations on Coast Protection Forest in Fujian Province</i>	1995/9/29	Enhance the construction, protection and management of coast protection forests
City	<i>Circular of Nanping Government Office on Transmitting the Opinions of Nanping Forestry Department on Strengthening Timber Transport Management and Enhancing Services of Timber Processing Businesses</i>	2005/10/9	Strengthen timber transport management and enhance services of timber processing companies
	<i>Application Program of Shaowu Forestry Department on Making Shaowu a Pilot City for Establishing Specialized Farmers Forestry Cooperatives</i>	2011/2/18	Provide institutional safeguard for specialized farmers cooperatives

8. Attitude and perception towards forest management policies and systems from stakeholders

In the research, policies and systems on forest management cover tax and charge systems, fund for forest cultivation, forest ecology fund, harvesting quota control system, central compensational system for public forest, regional compensational system for public forest, forest insurance policies and various forestry allowances. By brainstorming and participatory discussions, researchers find that attitudes and perception of members and non-members of forestry professional cooperatives, staff from forestry stations and the county and city-level forestry administrations and various stakeholders share common and different views.

8.1 FFC Members

Generally, after forestry farmers join cooperative organizations, their independent consciousness as forestry producers will become stronger and stronger. As all preferential agricultural policies have been successfully implemented, farmers' use right, and their rights to gain profit and dispose forest resources have all been put into effect, which has effectively lifted forestry farmers' enthusiasm for protecting and developing forests. Meanwhile, forestry farmers also shoulder more management responsibilities. They will get involved in the daily management of

the cooperative organizations with a sense of ownership and effectively ensure the control of fire, pest and unauthorized deforestation.

According to those interviews, it is found that members of the cooperatives held a neutral attitude towards the tax and charge system, forest cultivation fund system, forestry ecological funds system, central public welfare forest compensation system, medical compensation system for local workers (compensation system for local public welfare forests) and various forestry grants and subsidies. They thought that such systems as tax and charge system and forest cultivation fund system should abolish taxes on forestry land.



And for harvesting quota control system, they hold an objective view that forest farmers attach so much importance to bamboo forest that they will consciously protect bamboo resources and will not destroy them. In the light of this point, they hope that the quota control system can be abolished. For forest insurance system, the cooperative members stated that at the present stage, only the local ecological forests are covered by the forest insurance; there is no insurance policy for the economic forests. So they hope that the central government can issue forest insurance policy that covers both economic and ecological forest so as to reduce losses.

8.2 Farmers Who Are Not FFC Members

According to those interviews, it is found that cooperative non-members held an objective view towards tax and charge systems and harvesting quota control system. They believe the government should take forest farmers into consideration and abolish the tax. Besides, as the bamboo's growing process is relatively fast, there is no need to impose quota control system. For forest cultivation fund system, forestry ecological funds system, the central public welfare forest compensation system and compensation system for local public welfare forests, they held a neutral attitude. They thought that the compensation for public welfare forests is relatively low and should be raised. For forest insurance and other subsidies, they noted that there are no relevant local policies and systems.

8.3 Town forestry stations and county forestry bureaus

The government formulates public policies, while the civil servants in the policy implementation departments belong to a powerful interest group. According to the research, in the process of forestry ownership reform in Youxi County, the director's mailbox has been set up to receive various opinions, and visits from forestry farmers are also welcome. Moreover, after the work

has been carried out, the leaders of forestry administration usually go for inspection in forest areas, which has enhanced the communication and mutual support between forestry farmers and forestry administration. The technicians at the forestry station usually communicate and exchange ideas with village cadres and cooperative organization members, fully displaying their support for the cooperative organization. Staffs from Nakou Township Forestry Station and Shaowu Forestry Department held a supportive attitude towards the tax and charge system, forest cultivation fund system, forestry ecological funds system, the central public welfare forest compensation system, compensation system for local public welfare forests and various forestry grants and subsidies. They thought these systems are just and fair, and can reduce forest farmers' operating cost and to some extent. For harvesting quota control system, they held a mixed attitude: on one hand, they thought it right to employ this system so as to protect the forests' ecological benefits; on the other hand, they believed it unfair for forest farmers, since the bamboos will grow fast yearly, there is no need to impose quota control system, and quota elimination should be imposed instead. For forest insurance policy, they claimed that there are no relevant local policies and systems, hoping that forest insurance and relevant policies can be issued soon.

8.4 Other stakeholders

As a key timber forest region, Fujian province will definitely prosper and develop into a dominant force. In the research, the team has conducted interviews with small-sized forestry enterprises and analyzed their policy demands and perceptions.

First, views about harvesting quota control system. The harvesting quota control leads to the weakening and division of forest resources and forest owners' property rights. Enterprises, especially small-sized enterprises can not arrange felling according to their own economic conditions and hardly gain an



access to the market at the most reasonable price, thus they lose the best opportunity to maximize profits or increase felling cost. Besides, applying for felling license takes much time cost. Therefore, small-sized timber processing factories hope to gain an easy access to felling right.

Second, views about diversified financing policies. Small-sized enterprises hope that the government can provide an equal, smooth and convenient financing channel and establish a diversified financing system including financial support from government, and investments from individuals, social economic organizations and foreigners as well as forestry funds. Relevant

financial institutions should properly ease credit terms to small-sized enterprises and increase discount loans, small credit loans and guarantee loans and promote forest ownership mortgage loans. Meanwhile, financial institutions beneficial to small-sized enterprises should be established and the requirements for access to rural financial market should be reasonably relaxed. Additionally, a new service system, whose main content covers policy and law, financing management and technology consultation systems, should be established.

Third, the stabilization of the tax preferential policy for small-diameter timber processing. In China, the reform marked by the taxes and charges collected from producing primary forestry products is obviously far from enough, and relevant forestry enterprises hope the government can issue preferential policies to stabilize the existing tax policy for small-diameter timber processing.

9. SWOT analysis of forest management policies and institution from farmers' perspective

As an internal analytical method for enterprises, SWOT analysis is based on the fixed internal conditions of enterprises to find out their advantages, disadvantages and core competences. In this term, S stands for strength, W for weakness, O for opportunity and T for threat. The S and W are internal elements while O and T are external ones. According to the complete enterprise competition strategy concept, this strategy should be an organic combination between what an enterprise is able to do (the strengths and weaknesses of an organization) and what it is likely to do (the external opportunities and threats). The following part is an analysis of the management environment of the Luyuan Cooperative with the help of SWOT method. (See more details in Fig. 9-1).

The internal advantages of forest management policies and systems are shown as follows: (1) regulating farmers' forest management activities; (2) guaranteeing forestry farmers' benefits in managing forest resources; (3) ensuring the reasonable utilization and management of forest resources; (4) helping villagers make reasonable plans for forest resources management; (5) guaranteeing forestry farmers' rights against harm; and (6) providing information and technology support.

The internal disadvantages of forest management policies and systems are shown as below: (1) inflexible policies and systems; (2) tedious and complicated procedures for declaration, examination and approval; (3) less reasonable setting of relevant forestry taxes and fees; (4) immature policies and systems for forestry insurance and circulation of forest land; and (5) insufficient publicity of policies and systems, and resulting limited knowledge of many forestry farmers on them.

The external opportunities of forest management policies and systems are exhibited mainly in the

following aspects: (1) the government has issued a series of policies that benefit forestry farmers and forestry; (2) it has also released a series of systems and policies that benefit forestry development and further processing; (3) farmer's opinions will be an important reference in revising policies and systems; (4) the government has exerted macro-control on the forestry products market which sees a huge demand potential; (5) relevant policies and systems have not been released yet, thus the environment for policy setting is relatively loose so that it can fit the reality better.

The external threats of forest management policies and systems are manifested mainly as follows: (1) there are contradictions existing between normal management mode and ecological damage; (2) the policies and systems are nothing but an empty shell; (3) the impeded information channels make it difficult for forestry farmers to know the situation; (4) forestry farmers' benefits are not clearly embodied in the policies, leading to their low enthusiasm for managing forest resources; and (5) policies are unstable and changeable.

Table 9-1 The SWOT Strategy Analysis Matrix about Forest Management at Farmers' Level

Analysis of the Internal Environment	Strength	Weakness
	<ul style="list-style-type: none"> ➤ Standardize forestry farmers' behaviors of forest management; ➤ Guarantee forestry farmers' operating profit; ➤ Ensure the reasonable utilization of forest resources; ➤ Assist villagers make forest management reasonably; ➤ Guarantee forestry farmers' right against harm; ➤ Provide information and technology support; ➤ Share information and technology; ➤ Reduce manufacturing cost. 	<ul style="list-style-type: none"> ➤ Policies and Systems lack flexibility; ➤ Application, examination and approval procedures are rather complicated ; ➤ Relevant forestry tax and charges setting is not reasonable enough; ➤ Forestry supplementary policies and systems are not complete enough; ➤ The publicity toward forestry farmers is not strong enough; ➤ The development degree of forestry cooperative organizations are relatively low; ➤ Forestry financing channel needs to be broadened; ➤ Government's preferential policies are not available; ➤ The monitoring mechanism of administrators is not complete.
Analysis of the External Environment		
Opportunity	SO (growth-oriented strategy)	WO (reversion strategy)

<ul style="list-style-type: none"> ➤ Satisfaction degree of forestry reform policies is high; ➤ Actively explore non-wood resources; ➤ Proactively prevent forest pest and fire; ➤ Government has issued a series of preferential policies benefiting farmers and forestry; ➤ Government has issued a series of policies benefiting forestry development and further processing; ➤ Forestry farmers' opinions as reference of make policies; ➤ Government makes macro-control over forestry products market; ➤ Space for making policies is loose. 	<ul style="list-style-type: none"> ✓ The intensified and scale management of forest resources; ✓ Forest further processing, forest authentication; ✓ Exploration of non-wood resources; ✓ Industrialization makes forestry farmers rich; ✓ Seriously consider forestry farmers' opinions and make reasonable forest management together. 	<ul style="list-style-type: none"> ✓ Enforce investment; ✓ Broadening financing channel; ✓ Improve the construction of cooperative organizations; ✓ Adjustment of tree species structure.
Threat	ST(diverse management strategy)	WT (defensive strategy)
<ul style="list-style-type: none"> ➤ There are conflicts between normal management mode and ecological damage; ➤ Policies and systems are nothing but an empty shell; ➤ The information channel is not smooth; ➤ Forestry farmers' benefit can not be shown in policies thus farmers' enthusiasm in managing forest resources is not high; ➤ Policies are inconstant and unstable; ➤ Contribution of forestry to increasing revenue is small; ➤ Management system needs to be improved. 	<ul style="list-style-type: none"> ✓ Sustainable diverse management of forest; ✓ Accelerate the procedures of issuing certificates; ✓ Improve procedures of harvesting quota application; ✓ Further processing of bamboo and timber resources. 	<ul style="list-style-type: none"> ✓ Resources utilization is coordinated with its protection; ✓ The unification of economic, ecological and social efficiency; ✓ Forest pest prevention.

The table 9-1 is the SWOT strategy analysis matrix for forest management policies and systems from the perspective of forestry farmers. It proposes the following four strategy options: the first is growth-oriented strategy (SO)--focusing on the advantage and opportunity elements, and maximizing them to achieve scale development of forest resources management and ensure the sustainable development of forest land and timbers; second is twisted mode strategy (WO)--considering disadvantages and opportunity elements to minimize the disadvantages and

maximize the opportunities, so as to improve the cooperative's management level and increase investment and effective market incentives; third is diverse management strategy (ST)--centering on the advantages and threat elements to maximize the advantages and minimize the threats, in order to strengthen forest land protection, avoid human damage, improve abilities to resist natural disasters, reduce forest land disputes, keep enhancing the cooperative's managerial skills and improve forest resources qualities; fourth is defensive strategy(WT) , which considers disadvantage and threat elements to minimize both, so as to strengthen the protection and management of forest resources, enable the cooperative to develop and operate steadily, effectively make use of the preferential policies issued by the government, and combine current advantages and avoid management risks to pursue profit from stability.

10. Problems analysis of the policies and systems

Forestry policy exerts influences on the sustainable forest management. These influences are specifically demonstrated in the following four areas: firstly, standardizing forest management; secondly, developing economic measures to regulate forest management; thirdly, adjust the operating system and mechanism; and fourthly, enabling policies to play a role in guiding forest management. Current problems in the forest management policies and systems lie mainly in the following four aspects.

Firstly, instability in forest land use rights. Instability in forest land use rights affects expected economic benefits. Land in China is mainly of socialist public ownership, that is to say, the ownership of forest land belongs to the state and the public and individuals do not possess the ownership of the land. Through the signing of agreement on contracted management, individuals get the forestry land use right and the ownership of the trees that grow on the land. So whether there is a stable use right on the forestry land directly affects investors' economic benefits of forest management. According to the *Land Management Law*, in the pursuing of public benefit, the state may lawfully possess collectively owned land. The government, on grounds of public interest, often requisites forest land and changes its functions, thus greatly reducing the stability of forest land use rights and lowering the operators' trust in government. Moreover, as the compensation is too low, forest operators' input is not fully taken back, the expected economic benefits are affected. The management cycle of forest is long and risky, requiring some management scale. According to some researches, many forest farmers worry about the contracting years. This affects farmers' investment in some relevant policies, funds, technology and other resource inputs. In addition, the emphasis on forest's ecological and social benefits along with the external effectiveness that forest resource inherently carries have also increased the instability of the forestry revenue expectations to some extent.

Secondly, the narrow coverage of forestry insurance system. Currently, vast majority of forest

lands in Fujian Province are not covered in the insurance policy. The low coverage is bound to damage the effectiveness that forestry insurance should play as an important mechanism to resist the forestry operating risks. Forestry insurance not only involves some technical issues on forest industries but also requires difficult field researches. It is a complicated and hard work, which results in a relatively higher working cost for insurance companies. For instance, if an insurance company wants thousands of families to sign insurance contracts, the company may send staffs to collect premium from door to door. Staffs also need to go to remote mountain areas so as to conduct survey and assess damage and claim. These difficulties often make insurance companies reluctant to fulfill forestry insurance, in that the business is difficult to do for insurance company employees working and living in the city. Based on the current situation in the province, without the involvement of related forestry departments, forestry insurance is almost difficult to carry out.

Thirdly, hardships in implementing forest tenure mortgage loan. According to filed researches, the hardships in implementing forest tenure mortgage loan for Shaowu lie mainly in the following areas: firstly, the lending coverage is not wide. Because forest farmers do not understand the policy, many of them do not know about the loan and do not dare to apply for a loan. Moreover, there are many people in the area; forest tenure may be possessed by one or more person, so it is difficult to implement responsibilities which causes some forest farmers cannot get the loan. Secondly, high lending rate makes forest farmers hard to accept long-term loans. Thirdly, mortgage terms are strict. In order to control, relieve and reduce the risks of mortgage loan, forestry departments and some financial facilities have made relatively strict mortgage terms. Fourthly, the defects in the loan service is demonstrated mainly in that the mortgage registration procedure still fails to meet the standard and the lack of rating agencies and financial professionals.

Fourthly, lack of brand-supported policy insurance. In regard to the cooperative's structure and organization, the cooperative is organized and guided mainly by some capable people while others follow them and take active part. This means that many forest farmers do not have a general idea about the relevant policies toward the cooperative's development and do not know more about the systems, standards and procedures for the cooperative's establishment and operation. Without recognizing that a joint production pattern can produce better benefit, the joint production operation based on cooperatives can not be fulfilled. Therefore, in the process of formulating forest farmers' cooperative management pattern, we should positively make full use of the advantages of those capable people who know how to make money. At this point, we should, first of all, fully realize the advantages of joint management pattern and then make those capable people the leader and organizer of the joint cooperative. The research found that the plot

village has a prosperous bamboo industry and at the beginning of its foundation, the cooperative received 100,000 yuan compensation from the agricultural bureau. However, without the support and encouragement from the forestry bureau, the cooperative cannot expand its market, and consequently cannot strengthen and expand the bamboo industry.

As with the existing forest management policies and systems, the research has adopted a logic tree to discuss with all stakeholders the existing problems and demands for policies and systems. The concrete problems are shown in table 10-1.

Table 10-1 Existing problems in policies and systems of resources management

Policies and systems of resources management		Existing problems		Consequence
Felling quota control system	✓	Tedious and complicated procedures	✓	Affecting afforestation
	✓	Opaque operation process		enthusiasm
	✓	Lacking flexibility	✓	Affecting income level
	✓	Unbalanced timber felling		
Eco-compensation system for public welfare forest	✓	Compensation amount is too low	✓	Affecting management and
	✓	Range division is not flexible enough		protection enthusiasm
	✓	Punishment for damaging public welfare forest is not severe enough	✓	The power to control destruction is too weak
Tax and fee system of forestry	✓	Taxes and fees are too high	✓	Affecting the enthusiasm of
	✓	Forestry farmers have very limited knowledge about details and procedures of taxes and fees		managing forest resources
Insurance and mortgage loans system	✓	The standard for preferential policies is too demanding	✓	Increasing management risks
	✓	The term for small amount credit loan is too short		
	✓	Lacking supplementary measures for forestry insurance		
Forest land circulation mechanism	✓	Forestry farmers circulate forest lands without permission and cause chaos	✓	Forestry farmers are easily
	✓	The circulation price is not high		tempted by immediate interests and
	✓	The information channel is impeded		end up with loss
Forest management allowance system	✓	Lacking allowance project	✓	Affecting forestry farmers'
	✓	Publicity is not powerful enough		management enthusiasm

Over the years, the policy study from the forestry sector has been committed to policy scientificity and effectiveness. Scientific and rational methods are major tools used to study and analyze forestry policies, in which, experts and professional skills have played an important role. The description and aims of forest management are subject to due adjustment. The use of participatory methods in forest decision-making and management can stimulate “bureau forestry” transfer to “social forestry”. The traditional "command and obedience" management model formed under the planned economic system fails to meet the needs of the changing forestry development. It will be gradually replaced by the "guidance and service" management model (formed under the market economic system) instead. Forest farmers should not passively implement the stipulations issued by the forestry bureaus but rather participate in the policy making process and better utilize their rights in self-management..

11. Policy recommendations

Sustainable forest management requires the guidance of sound forestry policy system. The timely policy adjustment can promote the sustainable socioeconomic development. Due to the long management cycle in forest management, forestry policies should be adjusted but stability should be maintained so as to eliminate those production relations that fail to adapt to sustainable development. We should gradually stabilize a complete policy system and ensure the sustainability of forest management.

11.1 Enhancing the capital and policy support for forestry farmers' cooperative organizations

The development of those organizations must be a process of extended reproduction based on forest resources. In this process, the capital plays an extremely important role in realizing extended reproduction and revving up its development. Additionally, the financial support for the cooperative organizations should target mainly at afforestation of large-scale and high-yield forests so as to promote the increase of forest resources and improvement of their quality as well as forestry farmers' income. Besides, forest road construction and the purchase of management infrastructures are quite helpful for high-yield forest afforestation, so the government should consider financial support in order to gain improvement in this respect and innovation in exploratory financial credit and financial transfer payment systems. The project guidance on forestry loans should be strengthened. The government should combine current forestry industry policies, actively guide loan capital and invest it in good projects that will increase farmers' income and forestry efficiency, bring into full play the financial role in serving forestry scientific development and make farmers' truly enjoy the achievements of the collective forest ownership reform.

The government should also improve organizing capacity of effective cooperatives, pay attention to the effects of relevant international organizations and positively attract those organizations to participate in the construction of the cooperatives. Particularly at the very beginning, the government should fully unveil those organizations' advantages in capital, techniques and staff, and rapidly guide China's forestry farmers' cooperatives to prosper and improve the effectiveness and scale of farmers' management.

11.2 Enhancing and improving forest and bamboo insurance system building

Accelerating the improvement of the forest insurance system building is not only the priority of current forest ownership reform, but also an urgent problem for the public to deal with. It is especially important against the backdrop of increasingly frequent natural disasters, because it can effectively reduce the risks of farmers' forest management and improve their capabilities to prevent natural disasters. In terms of the difficulties and problems encountered by farmers in fulfilling forest insurance, common efforts from the government, farmers and insurance companies are needed. Besides, the government needs to enhance its perception toward forest insurance and truly regard forest insurance as a preferential policy instead of a new "financial burden". The government's support for insurance companies should be enhanced and allowances should be also provided. As with the forest insurance business of commercial insurance companies, the government will implement tax-free policy, with a view to improving insurance companies' abilities to deal with management risks and elevate their enthusiasm. Farmers, as forest and bamboo operators, should completely abandon the thought of "relying on assistance in case of disasters", establish the awareness of paying practical insurance cost to offset risks in forest management, recognize the importance and urgency of forest insurance coverage and increase effective demands for forest insurance. Groups like big afforestation households, collective forestry farms and cooperative organizations should especially learn how to master the economic method of "insurance" to transfer risks. As for insurance companies, within the reasonable cost range, procedures for buying insurance should be simplified; loss evaluation should be accelerated and claims settlement must be accelerated. From the long-term perspective, the amendment to and improvement of the insurance law and its enforcement regulations should be launched. The government should also set up relevant regulations concerning forest insurance policies, and expressly define the nature, range, management principle, trade entities, profit body and corresponding rights and duties of forest insurance in the form of legislation. At present, the government should frame corresponding administrative regulations and implementation methods, specify the government and insurance companies' responsibilities and effects in carrying out policy forest insurance, decide the operation procedures and provide system guarantee for promoting forest insurance.

11.3 Intensifying the publicity and keeping the information channel smooth

According to the conditions of field research, most forestry farmers have a very limited knowledge about the small loans policy, the examination and approval procedures for harvesting quota and the content of forest management allowance policy, all of which make the policies and systems nothing but an empty shell to the surveyed village. Therefore, the local government and forestry authorities should, on a regular basis, organize professional workers to publicize to villagers elementary knowledge of laws and policies and clearly assign tasks to village cadres to make sure that forestry farmers can acquire information about the current policies and systems instantly and precisely. On the other hand, by publicizing the national policy for land contracting, the government can stabilize the contracting relationship between forest land and other lands, avoid the harm brought by the short-term management of forest land from inconstant forest land policies, let farmers have good anticipation for policies, stabilize their contracting sentiment, and provide policy and mental guarantee for realizing the long-term scale management of forest land.

11.4 Increasing the technology and management training programs for the cooperative organizations

China's forestry has long been in the elementary development stage and its underdeveloped rural society and economy as a whole leads to forestry farmers' poor operational skills and management capabilities in forestry production. Therefore, the cooperative organizations urgently need technology and management skills training, each of which should have at least one capable technician and one management employee. As for technology, much attention should be paid to the techniques for gaining high-yield bamboo and timbers as well as those for pest control. As for training, besides competent forestry authorities taken as the organizer, cooperation and coordination between different departments and projects should be taken into consideration.

11.5 Improve systems of forest assets evaluation and mortgage

The slow development in forestry finance is attributable mainly to the difficulty in forest resource assets evaluation and the lack of guarantee mechanism. In view of the scarce forest resources for small forest farmers and the difficulty and high cost in assets evaluation, professional forest assets evaluation and mortgage institutions should be established. Evaluation institutions should have a high discernment in forest resource assets evaluation and should have the ability to quickly transfer or operate forestry assets in case of loan problems. These groups are mainly local economic entities engaged in forest management or production, including local farmers, large forest farmers, farmers' cooperatives and various enterprises closely related to forestry resources. In addition, with ability of identifying forest resource value, forestry administrative departments can participate in the guarantee service of forest tenure mortgage

loan.

11.6 Improving and exploring forestry service field

The government should highlight forestry farmers' demands, improve the construction of township forestry service centers, approve and issue forest ownership registration, forest timber felling license, timber transportation license, plant quarantine certificate, mortgage registration for forest resource assets, forestry ownership transaction and other integrated business, and other services. In this way, forestry farmers and owners can enjoy convenient and efficient, qualified and standardized one-stop service. Meanwhile, the government should implement the project of "science and technology access to households" and improve services of the forestry service hotline of "96355" to provide forestry farmers with forestry regulations and technical consultation. The forestry middle and high-level scientific and technical workers shall be encouraged to match with forestry farmers for assistance to promote forestry science and technology and improve their management level. The receiving, examining and approving and monitoring platforms for the online forestry administrative examination and approval system shall be built to facilitate forestry farmers in dealing with relevant procedures.

While improving traditional forestry service, the government should explore new forestry service fields. It should provide policy guidance on further processing of bamboo products and increasing added value, and assist cooperative organizations to establish brand advantage, strengthen market analysis, and improve marketing skills and product competitiveness, so as to provide one-stop service before, during and after production.

12. Experiences gained from the application of the materials

During the participatory training, we realized that improvement of the village's capacity building should involve farmers' own opinions and suggestions.

Firstly, it is necessary to develop a forest management plan. Operational objectives should be based on the current forest resources, forestry production capacity, forestry operating ability, and local economic and social environment. In order to effectively improve managerial ability of farmers, we should give overall considerations to all the indicators.

Secondly, the government should facilitate its management openness and transparency, enhance public participation, promote impartial profit sharing, establish information service mechanism, strengthen network construction, and improve information communication, technology, and management level through sustaining effective information services.

Thirdly, the government should offer more training programs relevant to technical expertise so as to further improve the construction capability of cooperative organization, managerial ability and operating skills. What's more, the government should cultivate excellent leaders and talented people to accelerate forest resource operation.

Fourthly, the competent authorities should give a full consideration of the opinions on the grass roots---the subjects of the policy. Through the systematic study of the detailed process of participatory forest management plan, they have got to know the policy and technical constraints which farmers could encounter in forest management. This has provided references for their future technical guidance and policy support for farmers.

Fifthly, from the forest planning facilitators' perspective, to make farmers and local officials understand the participatory forest management plan preparation process during the training process, they have obtained major stakeholders' different needs and perspectives in the participatory forest management plan development process.

13. Recommendations to the implementation of participatory forest management at the village level

Sustainable forest management scheme is designed by forest management entities according to the requirements for national economic and social development, medium and long-term plan for forest resources cultivation, preservation and utilization based on China's forestry policies, as well as plan design of manufacturing sequence and management methods. It is not only the reference for forest management entities to make annual plan, organize and arrange forest management activities, but also an important reference for forest department to administrate, check and monitor forest management activities. In terms of participatory forest management at village level, several points should be paid attention to:

First, the utilization, planning, coordination and engagement of local land. Township (village-level included) forest management should proceed its strategy scheme, management plan and job design under the guidance of the utilization and planning of local land and county-level forest management scheme. The strategy planning should aim at the long-term goal and make decisions about management objectives, forest land division and forest functions. Its key point lies in designing forest management activities in the future management period, in order to realize the goals proposed for realizing strategy planning, while job design means the designing work of practical forest management activities that should be carried out annually.

Second, making forest management plan should refer to public opinions. The following steps should be obeyed in making forest management plan: (1) investigate basic conditions of project villages by collecting materials and conducting interviews; (2) acquire the demands of stakeholders by talking with villagers and researching villagers nearby; (3) after knowing the requirements of stakeholders, researchers should proceed timber cruising, sample survey and regional investigations, and draw up tentative management function area and relevant methods based on the Analysis of research results; (4) discussing with villagers to make sure management

goals and corresponding methods; (5) make village rules based on the management function area and relevant approaches, make clear the right and duty, reward and punishment and make all the villagers obey the rules in the future management activities.

14. Recommendations to the training materials

Participatory Forest Management in China's Collective Forest Region--the Guidebook for the Assistant in Making the Participatory Forest Management plan and China's Participatory Forest Management--the Training Guidebook for the Assistant in Participatory Evaluating, Programming and Monitoring Farmer cooperative provided by FAO-SFA-EC project has played an indispensable role for us to make forest management plan. It can explain the whole training process comprehensively. It plays an important and unavoidable role in making forest management with strong guidance and referential significance. However, there still exist some shortcomings and deficiencies in the following aspects. Further improvement and completeness are anticipated to have stronger guiding significance for China's participatory forest management.

First, the content needed to be included. Various forest species should be properly added, such as firs, bamboo and cultivation of different species. As there are big differences between the management processes of bamboo and trees and many regions in the south are developing bamboo forests on a large scale, trainers can probe into the working conditions as soon as possible and gain knowledge of the management activities carried out mainly by the cooperatives. Next, in terms of the annual plan and investment-profit analysis, materials should be more detailed and complete for collaborators who make forest management scheme to better understand and implement the project. Apart from that, participatory training is equally important for forestry station staff and workers of government functional departments, and the training materials target mainly at forestry farmers, thus the training content and methods toward forestry staff should be reasonably added.

Second, briefing training material. The content of training material is very abundant and rules out detailed and comprehensive regulations on stakeholders, forest operation techniques, forest management policies, structures and capabilities of cooperative organizations, forestry management environment, products market and future development trend. Be it trainers or trainees, they all feel it complicated and tedious. In a relatively short cycle, it is not easy to give detailed explanations to forestry farmers, because people's receptivity is quite limited, not to mention digestion or absorption; it is especially difficult for farmers to understand in class. On the other hand, many terms are involved in the training material, such as "evaluation and analysis scheme", "selection of strategy", "forest management plan", "forest health", "sustainable forest management", "the index system for sustainable forest operation", "forest monitoring",

“villagers’ happiness”, “environmental demands”, and “afforestation system”. It is also not easy to tell clearly the true meanings of those terms to forestry farmers, as collaborators’ good background knowledge and communication abilities are needed, and trainees themselves are required to possess some basic knowledge of terminology, which is exactly what Chinese farmers lack currently.

Therefore, when revising training materials, researchers should make them brief and highlight key points. However, overemphasizing procedures will lead to a lack of operability, which is both inadvisable and unnecessary in practical work. For the use of language, it should be concise and clear with few terminology. Researchers should also choose understandable language to cater for the actual situations of both China’s vast rural areas and its farmers, which is not only helpful for collaborators to understand the basic content of the materials, but also useful for forestry farmers to have a good command of each aspect and process of forestry management.

Third, participatory training. Participatory training can create a pleasant and relaxing learning environment. Many visual and acoustic tools can be used to guide learners to think and come up with their own ideas on a common problem. Participatory training can effectively help learn about people’s real thoughts and intentions and give play to their subjective initiative. From this perspective, participatory mode is feasible. However, the precondition for carrying out participatory training is that participants should be equipped with participatory abilities, which means one has his own judgment and perceptions about relevant issues and can propose his views and positions. However, here is the problem. As many forestry farmers can not understand corresponding issues because of low education level and a lack of relevant knowledge, the phenomenon of following others blindly is rather severe. Therefore, whenever discussing the future development directions and selection of strategies of cooperatives, those farmers can not come up with their own opinions. pinning all their hope on “capable people” of the cooperatives. Thus, it is not feasible to stubbornly adhere to participatory method regardless of targets and content.

On the whole, the training materials possess strong reference significance, which has great instructional and practical value for the making of the overall participatory management plan for forest resources. However, it should be made much closer to Chinese farmers’ forestry management and further improve its operability.

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List of the Project Publications
GCP/CPR/038/EC Working Paper

编号	标题
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
WP013C	安徽省林权交易中心研究报告
WP014C	福建省林权交易中心研究报告
WP015C	贵州省林权交易中心研究报告
WP016C	湖南省林权交易中心研究报告
WP017C	江西省林权交易中心研究报告
WP018C	浙江省林权交易中心研究报告
WP019E	Assessment of Forest Tenure Trade Centers in Anhui Province
WP020E	Assessment of Forest Tenure Trade Centers in Fujian Province
WP021E	Assessment of Forest Tenure Trade Centers in Guizhou Province
WP022E	Assessment of Forest Tenure Trade Centers in Hunan Province
WP023E	Assessment of Forest Tenure Trade Centers in Jiangxi Province
WP024E	Assessment of Forest Tenure Trade Centers in Zhejiang Province
WP025C	安徽省参与式森林经营指南应用及政策评估报告
WP026C	福建省参与式森林经营指南应用及政策评估报告
WP027C	贵州省参与式森林经营指南应用及政策评估报告
WP028C	湖南省参与式森林经营指南应用及政策评估报告
WP029C	江西省参与式森林经营指南应用及政策评估报告
WP030C	浙江省参与式森林经营指南应用及政策评估报告
WP031E	Policy Assessment and Pilot Application of Participatory Forest Management in Anhui Province
WP032E	Policy Assessment and Pilot Application of Participatory Forest Management in Fujian Province
WP033E	Policy Assessment and Pilot Application of Participatory Forest Management in Guizhou Province
WP034E	Policy Assessment and Pilot Application of Participatory Forest Management in Hunan Province
WP035E	Policy Assessment and Pilot Application of Participatory Forest Management in Jiangxi Province

WP036E	Policy Assessment and Pilot Application of Participatory Forest Management in Zhejiang Province
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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/>