

## Research Article

### Case Study on the Development of Forestry Cooperative Organization after the Collective Forest Reform in China

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**Abstract:** In order to analyze the problems of forestry cooperative organization after the collective forest reform in China, this study investigated different stakeholders of the cooperative organization in Jiashang village of Shaowu City, which is an important part of the northwest green industry zone in Fujian Province. Chinese farmers have their own use right of forest land after China's collective forest reform. Cooperation requirement of forest production is increasing after the clarification of the use right. Paper by collecting the second-hand data, training the farmers in participatory interview and discussing with staff members of forestry bureau, many problems have been founded. This study investigated different stakeholders of the cooperative organization. According to the study, the main problems of the cooperative development are lack of motivations, requirement, operating capability, proper environment for legal operation and policy guarantee. Based on these problems, this study gives some suggestions such as Providing Fundamental Legal System Guarantee, Policy Guidance, Providing Sound Developing Conditions and Gradual Guiding the sound Development of Cooperatives to improve the development of forest cooperatives in collective forest area.

**Keywords:** Case study, China, collective forest reform, forestry cooperative organization

## INTRODUCTION

Various international models of landowner cooperation already exist in agriculture and forest all over the world (Klooster, 1999). Since the 1970s, China has launched a "household contract responsibility system" -oriented reform of rural economic system, which has greatly aroused farmers' enthusiasm for production and boosted the development of agricultural productivity. However, due to the asymmetry of market information, small scale of management and the shortage of capital, labor, technology and other factors of production, the households remained in a disadvantaged position in competition in farm products market. To improve households' market competitiveness, a variety of specialized farmer cooperatives have came into being since the mid-1980s. Cooperative organization provides woodland owners professional forestry assistance, in terms of forest management, marketing and educational activities (Klooster, 1999; O'Fallon and Dearly, 2002). With the issue of Law of the People's Republic of China on Specialized Farmer Cooperatives in July, 2007, these cooperatives have been expected to exert a bigger role in the development of China's rural areas and the addressing of issues concerning agriculture, countryside and farmers.

Because of the reform of collective ownership of forests system, the development of forestry industry has special need for the forestry cooperative organizations (Kittredge, 2005). After the collective forest tenure reform, the verification of forest ownership clarifies the subject of forest management, resulting in an unprecedented increase in the number of subjects and a rapid decline in the scale of their forest production and management (Simon and Scoville, 1982), further leading to the fragmentation of forest farmers' object of production and management. With the implementation of collective forest tenure reform, collective forests are allotted to tens of thousands of households, causing a dispersion of management area, a fall in the ability to withstand risks and an increase in forest management costs, which is adverse to the formation of scaled forest management and the effective allocation of resources. How to enable forest farmers to be better involved in competition in forest products market so as to raise their income from forestry and how to improve the efficiency of collective forest resources allocation, have become urgent real problems in China's forestry development. Confronted with the new situation and new problems after the collective forest tenure reform, especially in response to the needs of tens of thousands of households and the marketization of forestry development, forest farmer cooperatives have come into being.

Table 1: The population changes of Jiashang village

Year	2002	2003	2005	2007	2008	2009	2010	2011
Total family	408	411	409	412	415	418	430	435
Total population	1628	1621	1618	1620	1625	1627	1643	1620
Labor force	1146	1140	1138	1145	1148	1150	1100	1047

Data gained from field research on the village

Currently, forest farmer cooperatives in the southern collective forest area enjoy a rapid development and forest farmers have more and more requirements for these cooperatives (Xu *et al.*, 2007).

Under this circumstance, the government needs to provide forest farmers with scientific guidance, so as to help them understand, establish and operate cooperatives successfully. This study did a case study in Fujian Province in order to analyze the needs and problems of the forest farmer cooperatives. The conclusions provide a certain reference for the future development of cooperation organizations.

## STUDY AREA

Shaowu City, situated in the northwest Fujian and at the southern foot of Wuyi Mountain, is one of the key counties (cities) in the collective forest area in South China, as well as one of the representative pilot counties (cities) of Fujian's collective forest tenure reform. As the home of green industry, Shaowu City is an important part of Fujian Province's northwest green industry zone, a key forest area as well as one of the four major forest product processing centers in Fujian. In Shaowu, the per capita area of cultivated land is 1.21 acres. The total forest area of Shaowu is 3.256 million acres (among which 0.55 million acres are bamboo forest areas), the forest tree stock is 15.06 million m<sup>3</sup> and the forest coverage reaches up to 76.2%.

In response to Decisions on Accelerating Forestry Development issued by the central government in 2003, the State Forestry Administration started the pilot reform of collective forest tenure system in four provinces, including Fujian Province, in 2004. In accordance with the overall deployment of Fujian Provincial Committee of the CPC and the provincial government, the collective forest tenure reform has been comprehensively implemented and the principal part of the reform has been completed. Within the whole city, 2.118 million Mu collective commercial forests have been registered, accounting for 100% of those expected to be registered. Among the registered collective commercial forests, 1.736 million Mu have been contracted to households, which is 82% of the registered area. The reform of the mechanism for managing and protecting ecological forests for public welfare has been finished, covering an area of 682,000 Mu, 100% of the area to be reformed.

This study selected Xinsheng Bamboo Cooperative of JiaShang Village, Shaowu City as the case cooperative. Jiashang Village, located in the east of

Nakou Town, is 13 km away from the centre of the town and 80 km away from downtown Shaowu. Being a key forest village of Nakou, Jiashang Village administers 9 villager groups, 435 households and 1620 people. Table 1 shows the population changes of Jiashang Village from 2002 to 2011.

Xinsheng Bamboo Cooperative of Nakou Town, Shaowu City is 20 km away from the township and the main road and 56 km away from the city. In 2008, Jiashang Village set up Xinsheng Bamboo Cooperative of Nakou Town, which has welcomed great success in recent years. This cooperative is a joint-stock farmer cooperative co-founded by several big forestry households, led by Zhang Jiasheng, Zhang Jiafa, Fu Dexiong, Xu Xinggui and Huang Yiming and co-funded in the form of forest land assets. When first established, the cooperative involved 5 households, 24 villagers, covering a forest area of 13,000 Mu and having an asset of 27 million Yuan.

This cooperative, based mainly on the Mao bamboo forestland of cutting and growing farms and combined with the surrounding big Mao bamboo planting households, is a specialized forest farmer cooperative focusing on production, management and sales of Mao bamboo. It is created by Zhang Jiasheng and registered in the Commercial and Industrial Bureau, with an aim to jointly support forestry development and share technical resources. By the end of May, 2012, the cooperative has 100 household members involving 385 people, covering a forest area of 18530 Mu and having an asset of 37 million Yuan. In 2011, the cooperative's operating income reached 15.5675 million Yuan and it received a fiscal subsidy of 190,000 Yuan, which was used for the construction of scientific and technical demonstration forests. The main products of the cooperative are Mao bamboo and fir and it mainly engages in bamboo forest management, forestry cultivation, bamboo cutting with bamboo wood processing machines and other activities, obtaining an annual profit of 6 million Yuan. The cooperative has also received financial subsidy and technical support from relevant administrative departments and has enjoyed corresponding preferential policies.

## METHODS AND PROCESS

**Collection of second-hand data:** The survey group collects required second-hand data, including the basic information about the case county's economy and forestry, relevant polices and laws on local forestry development, the current state of forest resources and management in the township forest station and the case village, the basic condition of the case cooperative and

so forth, which provide detailed background information for the implementation of the survey.

#### **Forest farmers training and participatory interview:**

The survey group organizes a series of trainings of and interviews with stakeholders in Jiashang Village, Nakou Town, Shaowu City (training attendants include members of the cooperative, non-cooperative members, village officials, leaders of the cooperative and township government officials). During the training and interview, the pamphlets are distributed and professors of the survey group interpret the content about forest farmer cooperatives in the pamphlet, so as to improve the knowledge basis of those involved in the training and discussion. After attendants read through the draft handbook, the professors, with the help of big blank sheets and a blackboard, lead them to conduct discussions, identifying their problems in forest management and the development of the cooperative and summing up all stakeholders' opinions and suggestions about the development of the cooperative.

Participatory discussion with staff members of shaowu forestry bureau and nakou forest station. The survey group holds a discussion meeting, attended by staff members of Shaowu Forestry Bureau and Nakou Forest Station, senior engineers of FAO project of Shaowu Forestry Bureau and so on and conducts a questionnaire among them. In the form of participatory interview, brainstorming, questionnaire and etc, the attendants discuss the content and operability of the Guidelines and express their opinions and suggestions on the cooperative development in Shaowu City.

## **RESULTS AND DISCUSSION**

**Basic characteristics of sample forestry workers participated in discussion meeting:** In the discussion meeting oriented towards forestry departments, seven staff members of Shaowu Forestry Bureau attended, including Deputy Chief of Shaowu Forestry Bureau, Director of Legal Affairs Office, Head of Resource Station, Manager of Forest Management Company, Director of Technical Center, Head of Administrative Office for Animal and Plant Protection and Director of Forest Tenure Service Center, among which 1 is female. All participant forestry workers have college degree or above and have been in the forestry filed for 12 years on average.

**Basic characteristics of sample subjects participated in village-level training and interview:** The subjects involved in the training and interview include 15 forest farmers and members of Xinsheng Bamboo Cooperative of Nakou Town, Shaowu City, among which 4 are non-members (including 2 village officials), 8 are cooperative members, 1 is the chief leader of the cooperative, 1 is the staff member of Nakou Forest Station and 1 is the township government official (also the County Director of the National People's Congress).

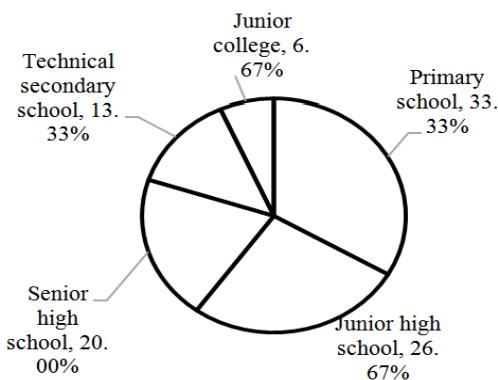


Fig. 1: Education levels of the subjects in Jiashang village

The basic characteristics of the subjects chosen in Jiashang Village are as follows: firstly, all 15 subjects are males at the average age of 41, 7 of which fall into the age group of 40-50, accounting for 46.7% of all; secondly, the education levels of these subjects are relatively higher than the average level of the whole village, since people with junior high school degrees or above account for 40% (see Fig. 1 for the detailed education levels of subjects); and thirdly, the average size and labor force of their families are 4 and 3, respectively.

**Developing problems according to the managers of cooperatives:** Previous research has founded many problems of the forest cooperatives such as the small-scale of production by nonindustrial family forest landowners, limited capacity of market competition, shortage of laborers and so on (Yang *et al.*, 2013). According to this study, managers of cooperatives think that the major problems influencing the future development of the cooperative mainly fall into the following aspects despite the growing market need, forest farmers have suffered partial loss in recent years due to the government's emphasis on ecological construction and restriction on the utilization of forest resources Secondly, since more and more young villagers go to work in the city, the village is faced with an obvious shortage of labor force, which greatly increases the labor cost, after the forest tenure reform in the collective forest area, the forest lands are allotted to each household, which makes it difficult for the cooperative to realize large-scale forest management confronted with an increasingly fierce market competition, the cooperative lacks corresponding technical training to improve its' competitiveness. Finally, the cooperative adopts a rather single form of management, focusing on the management of Mao bamboo while limiting the development of other products, such as under-forest products.

**Farmers' attitudes and requirements for cooperatives:** Under the assistance of local forestry bureau, the survey group conducts training of forest

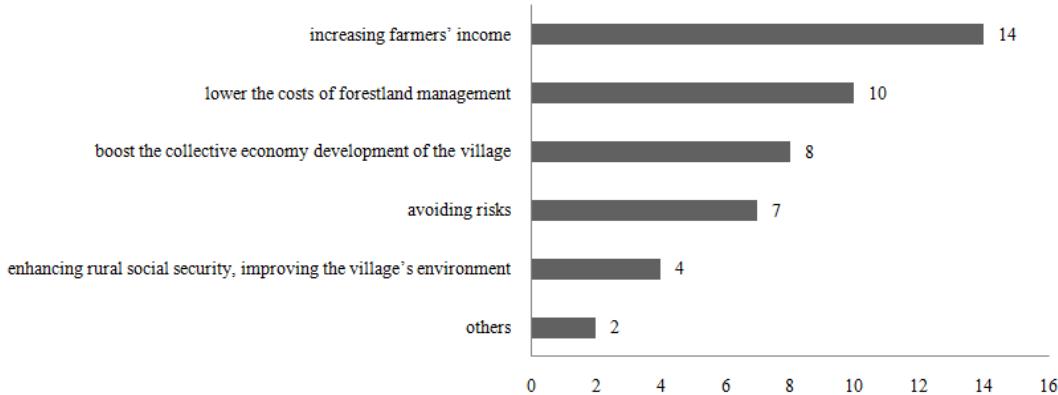


Fig. 2: Farmers' opinions on the role of cooperatives

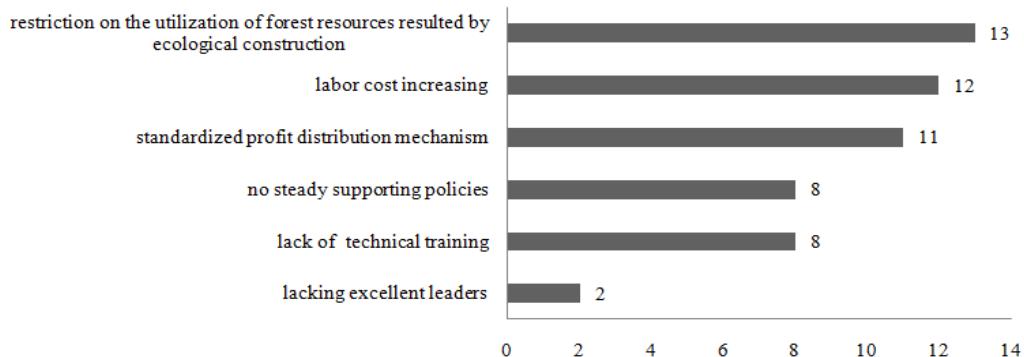


Fig. 3: Problems in the development of the cooperative

farmers, organizes discussions with them and does a questionnaire survey of them, through which the group gets to know forest farmers' understanding and viewpoints of local cooperatives' development and collects their requirements for Cooperatives.

**The role of the cooperative:** Among the households being surveyed, 86.67% of them think it is necessary to establish cooperatives in the village, while only 13.33% consider it to be unnecessary. After a further discussion about the role of cooperatives, it is found that farmers regard "increasing farmers' income" as the most important effect of cooperatives. The surveyed say, after the forest tenure reform in 2004, their income from forest products suffered a loss because of the small-scale forestlands, poor operation and management skills and other factors. The establishment of cooperatives can facilitate the management of small-scale forestlands in such aspects as pest control, discount interest loans, market information and etc. Apart from the function of increasing income, farmers also believe the establishment of cooperatives can lower the costs of forestland management and greatly boost the collective economy development of the village. Besides, cooperatives also play a significant role in avoiding risks, enhancing rural social security, improving the village's environment and so on (Fig. 2 for details).

**Problems in the development of the cooperative:** At the household level, the problems affecting the future development of Xinsheng Bamboo Cooperative of Nakou Town mainly concentrate on the following aspects (Fig. 3): firstly, government's emphasis on ecological construction and restriction on the utilization of forest resources has a negative impact on forest farmers' income; secondly, since more and more young villagers go to work in the city, the village is faced with an obvious shortage of labor force, which greatly increases the labor cost; thirdly, there is no steady supporting policies to guarantee the development and profit of the cooperative; fourthly, the cooperative lacks technical training on forest management; and fifthly, there is no standardized profit distribution mechanism. Since the current leader of the cooperative enjoys a high prestige and has strong leadership and management skills, he can maintain the normal operation of the cooperative, therefore the problem of "lacking excellent leaders" is not obvious in the development of this cooperative.

**Requirements for the cooperative:** Many recent studies have demonstrated that the legal system, capital, technology, management and other issues are very important for forest cooperation (Zhang *et al.*, 2013; Guo, 2013). According to the survey results of this

research, the households' requirements for the cooperative mainly include the following aspects: firstly, they need a comprehensive legal protection to settle the problems like forest land disputes and guarantee the legal interests of cooperative members; secondly, they need financial support to maintain the normal operation of the cooperative; thirdly, they need certain technical guidance to improve the farmers' forestry productivity, so as to enhance the market competitiveness of cooperative's forest products; and fourthly, they need a reasonable profit distribution mode to safeguard the members' economic interests. Some recent researches have demonstrated that forestry workers' opinions in the development of forest farmer cooperatives.

**Advantages and goals of cooperatives:** During the interviews, forestry workers point out a series of advantages of developing cooperatives. In the collective forest areas in South China, after the forest were allotted to households in the forest tenure reform, the household-run pattern increased the cost of forestry production and lowered the forest land's ability to resist risks, which is not in favor of the forest land's scaled management and forest resources' effective allocation. But cooperatives can centralize the scattered resources, achieve scale merit, lower cost and at the same time enhance the forest land's ability to withstand risks. Cooperative is an important economy organizing pattern for the forestry production and operation in the future. The ultimate goals of promoting cooperatives in collective forest areas are to create fortune for forest farmers and to make contributions to the realization of three major benefits of forestry.

**The policy environment for developing cooperatives:** After the forest tenure reform in 2003, forest farmers could not only invest more in forestry but also have more confidence in operating forestry after clarifying the forest ownership. It has been proved that the various favorable policies put forward after the forest tenure reform contributed to the establishment of a large number of cooperatives (Kong *et al.*, 2011). The present forestry policy system lacks long-term thoughts. For example, the tenure of a forest land is generally 30 to 70 years, but after the reform, part of the forest land will even be adjusted every 15 years. Thus, the farmers can only benefit from the first generation forests. Since the production circle of forests is relatively long and a reallocation will be carried out after the first generation trees are cut, forest farmers lack long term awareness and ignore the long term benefits brought by cooperatives.

In addition, the country has paid more and more attention to ecological benefits in recent years, so the policies are more oriented toward ecological construction. It is forest farmers who pay the price for ecological construction while the whole nation is

enjoying the ecological benefits. Ecological construction projects limited the economic benefits of forestry and impaired the forest farmers' economic interests. Currently, the compensation for ecological forests for public welfare is 12 Yuan per Mu, which is far from enough for forest farmers. Hence, in terms of the overall environment, the current policy environment restricts the cooperative's development to some extent.

**Problems concerning the diversified development of cooperatives:** At present in our country, there are lots of preferential policies for the setting up of specialized forest farmer cooperatives. The forestry workers interviewed regard these preferential policies as the key reason for the fast growing number of cooperatives. Shaowu City started to promote cooperatives in 2009 and so far, 420 cooperatives have been set up within the whole city. However, the surveyed forestry workers point out that though the number of the cooperatives increases rapidly, the original goals of promoting cooperatives has not been achieved in the developing process and the development of cooperatives is still very slow. The main reason for this is that the developing mode of cooperatives is rather one-sided. The existing cooperatives mainly deal with forest products like timber and bamboo, while those cooperatives mainly engaged in flowers, seeds and under tree growing and breeding are very difficult to be approved. What's more, the cooperatives that can really realize scale benefits and economic benefits have great difficulties in developing themselves. The business scope of cooperatives should be broadened in the future so as to enable them to develop in a diversified way.

## CONCLUSION AND SUGGESTIONS

**The motivations and requirements of developing cooperatives:** The real driving force for the development of the cooperative organization itself was farmer's demand, which came from the people's asking for benefit in forestry management. The establishment of the cooperative organization in reality, on one hand, was because the forestry production and operation encountered problems such as lacking of capital, technology, market information or labor, so it needed everyone to cooperate to solve the problems. On the other hand, was because of pursuing some benefit in the forest management process. Foresters' personal operating cost was high while the income was low, only in cooperative way could they reduce cost and increase income. It was obvious that the driving force of establishing the cooperatives was the pursuit of benefit and the source of benefit was to increase benefit, to reduce cost and to solve the problems. In the case of the driving force was not clear, the development of cooperative organization needed more policy guidance and protection, strengthening the development and demonstration of it. At present, the forestry cooperative

organization's development was still in its infancy, forestry had its own particularity, such as the production cycle was long, the intensive degree was low and it was more dispersed in terms of resource use as well as production and operation time, so cooperation was an important way to solve the real-world problems.

**Cooperatives' lack of operating capability:** Cooperatives in our country are still in the early stage of development. The members' cooperation awareness and their qualities in fulfilling their obligations are relatively low. Now, there exists a lack of mature external environment for cooperatives. As a result, key figures dominating the development of cooperatives is often the case common members do not know their own rights and responsibilities. Thus, they are not enthusiastic in taking part in the activities of the cooperatives.

**The lack of a proper environment for legal operation:** Law of the People's Republic of China on Specialized Farmer Cooperatives focuses more on cooperatives formed in the farmers' agricultural and sideline activities. Since forestry is different from agriculture, forest farmers' demands for factors, land, market and techniques and their cooperation desires vary. Therefore, the cooperative laws can not cover all the basic features of the forestry and the cooperatives, which lead to a lack of effective legal support and guarantee.

**Suggestions on the development of forestry cooperatives:** Based on the conclusion, this study gives some suggestions to develop the forest cooperatives.

**Providing fundamental legal system guarantee:** The relevant laws and guarantee systems for resource exploitation and management should be made in accordance with the forest farmers or the forestry cooperatives. For example, the policies concerning the social service, system guarantee and interest's compensations should be completed so as to provide fundamental legal guarantee to the future development of the cooperatives.

**Publicity, demonstration and policy guidance:** Through publicity and policy guidance, we could promote the sound development of some of the normative and profitable cooperatives so as to carry forward their guiding and demonstrating functions rather than to develop the cooperatives in a mandatory way. The fundamental motivation for the development of the cooperatives is the farmers' pursuit for interests. So, the cooperatives should be developed basing on the practical demands of the forest farmers rather than the demands of the government.

**Providing sound developing conditions:** Through forestry technology training, especially the skill training

for the cooperative and the cooperative members, the forest farmers will be provided with a better external and fundamental condition to join the cooperatives. The contents of the training should include the basic knowledge of the cooperative, relevant laws and supporting policies and practical forestry skills.

**Gradual guiding the sound development of cooperatives:** It takes a long process to develop the cooperatives and we cannot be eager for quick success and instant benefits. A fast and sound development needs the following three essential conditions: the developing of the country's market economy, the completing of the country's systems and policy environment and the elevating of the farmers' awareness and qualities. Currently speaking, the department in charge of forestry should pay more attention to guiding, demonstrating and guaranteeing and enhancing the sound developing environment so as to promote the cooperatives' development step by step.

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## REFERENCES

- Guo, A., 2013. Analysis on farmer's behavior of participating in forestry cooperative organization after the reform of collective forest right system based on the theory of planned behavior. *J. Anhui Agr. Sci.*, 4: 69. (In Chinese)
- Kittredge, D.B., 2005. The cooperation of private forest owners on scales larger than one individual property: International examples and potential application in the United States. *Forest Policy Econ.*, 7(4): 671-688.
- Klooster, D., 1999. Community-based forestry in Meico: Can it reverse processes of degradation? *Land Degrad. Dev.*, 10(4): 365-381.
- Kong, X., L. Zheng and A. He, 2011. A study on the development of farmers' forestry cooperatives and stabilization of rural fundamental economic institutions. *Forestry Econ.*, 8: 24-30.
- O'Fallon, L.R. and A. Dearly, 2002. Community-based participatory research as a tool to advance environmental health sciences. *Environ. Health Persp.*, 110(Suppl2): 155-159.
- Simon, D.M. and O.J. Scoville, 1982. Forestry cooperatives: Organization and performance. ACS Research Report No. 25. U.S. Department of Agriculture, Agricultural Cooperative Service, Washington, D.C.

- Xu, X., Y. Nie and J. Zhang, 2007. Study on the localization of government's role to the forestry cooperative organization. *Forest. Econ.*, 2: 011. (In Chinese)
- Yang, L., Y. Wen and F.X. Aguilar, 2013. Nonindustrial family forest landowners' stated willingness-to-participate in forest cooperatives in southern China. *Int. J. Forestry Res.*, 2013: 12, Article ID 983168.
- Zhang, L., L. Zhi and Z. Tan, 2013. Research progress and trend of the development performance of specialized forestry cooperative organizations. *Forest Resour. Manag.*, 2: 4. (In Chinese)