



SUCCESS CASES AND GOOD PRACTICES IN FOREST FARMER COOPERATIVE ORGANIZATIONS IN CHINA



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Professor Liquan Wang
School of Economics and Management
Beijing Forestry University

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

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For further information, please contact:

Ms. Qiang Ma
Forestry Officer
Forest Economics, Policy and Products Division
Forestry Department, Food and Agriculture Organization of the United Nations (FAO)
Viale delle Terme di Caracalla
Tel: +39 06 57055011
Fax: +39 06 57055137
Email: Qiang.Ma@fao.org

Cover image: ©Qiang Ma. A woman farmer working in her own bamboo forests, Anji of Zhejiang.

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Contents

1. Introduction.....	1
2. Methodology.....	2
Literature review.....	2
Case study selection.....	3
Criteria for assessing case studies.....	4
3. Types of forest farmer cooperative organization.....	7
Forestry associations.....	7
Shared-stock forest farms/cooperatives.....	7
Farmers' forestry professional cooperatives.....	8
4. Success cases and good practices.....	10
Industrial Raw Material Forest Base Association of Wujiatang Town.....	10
Three-Prevention Association of Dacao Village.....	12
Lingsi Shared-stock Forest Farm.....	15
Dongsheng Shared-stock Forest Farm.....	18
Shanglin Moso Bamboo Shared-stock Cooperative.....	20
Lisiling Hazelnut Professional Cooperative.....	23
5. Analysis of success factors and good practices in the selected forest farmer cooperative organizations.....	27
Demand and support from forest farmers.....	27
Government guidance, promotion and support.....	27
The critical role of experienced and innovative individuals.....	28
A development strategy adapted to local conditions.....	28
Institutional innovation and improvement.....	28
Challenges for the future.....	29
References.....	32

1. Introduction

To increase forest farmers' income and promote the rapid development of collective forest areas, China has implemented reforms of its collective forest tenure system since 2003. The main thrusts of these reforms have been clarifying property rights, reducing taxes, liberalizing business operations, and regulating the transfer of rights over forest land. It is demonstrated that forest farmers have been greatly motivated to engage in forestry production since being granted use rights over forest land and disposal rights over forest. However, the allocating of forests to individual households has also resulted in forest land fragmentation and small-scale management, which have hampered individual farmers' access to technical services, forest fire prevention, pest and disease control, forest road construction, etc. Collective management is an effective way of solving these problems. Supported by the government, various forms of forest farmer cooperative organizations (FFCOs) have been established and have rapidly increased in number. This report collects and assesses good practices from the FFCOs in China.

Case studies are an effective tool for exploring and understanding the development experience and existing problems of FFCOs. This report gathers case studies on FFCOs of different types to analyse their successful experiences and good practices, and to identify their role in poverty reduction. The report therefore not only facilitates the healthy and sustainable development of FFCOs in China, but also contributes to a larger best practices document for forest producer organizations in developing countries around the world.

2. Methodology

Literature review

As reform of collective forest tenure proceeds, the disadvantages of forest management by individual farmer households in China have gradually been revealed through the emergence of contrasts, such as those between small households and large markets, and between forest land fragmentation and management at an efficient scale (Kong and Chen, 2008). Forest management by cooperatives of individual small farmer households can help resolve these contrasts (Cheng, Wang and Tang, 2004). Encouraged by the government and stimulated by the market, forest farmers in different areas have spontaneously established FFCOs of different types. The business scope of these FFCOs covers almost the entire forestry production processes, including forest management and protection, pest and disease control, road construction, reforestation and afforestation, seedling production, forestry product processing, sales, inputs procurement, and technology and information services. Some of these cooperative organizations provide only single technical service or sales service, while others also provide integrated support to production, transportation, sales and other services (Wang, Li and Guo, 2006).

Existing studies of FFCOs in China mainly focus on their importance, present situation and existing problems, and on the government's role in their creation and operation (Huang and Wang, 2008). China's FFCOs are generally categorized according to their organization and operating patterns.

Wang, Li and Guo (2006) suggest two major categories of FFCO in China: forestry associations and forestry professional cooperatives. The latter include membership and shared-stock cooperatives. FFCOs can be also classified depending on how they were established – spontaneously by farmers, by village collectives, under the leadership of enterprises, with assistance from the government or international organizations, etc.

Kong *et al.* (2009) suggest that FFCOs can be divided into five categories based on how they are organized: i) household cooperative farms; ii) shared-stock cooperative farms; iii) forestry professional associations, such as those for protection against forest fires and theft, for pest control or for the planting of fast-growing forest species; iv) forestry professional cooperatives; and v) cooperative organizations for providing forest farmers with loans.

Huang and Wang divide FFCOs into three categories, based on the type of contract they have with their members: i) factor contracts, in which the FFCO controls and manages members' assets and capital; ii) commodity contracts, in which members pay dues and the FFCO provides services, with profits distributed according to members' volume of transactions, investment contributions or both; and iii) typical commodity contracts, such as in forestry associations.

Some scholars have analysed FFCOs of different types in specific provinces or counties. Du Liangliang *et al.* (2010) made an integrated analysis of 30 FFCOs in Lishui City,

Zhejiang Province, summarizing their establishment processes, functions, membership structures, scales, ownership structures, decision structures, benefit mechanisms, etc.

Existing studies of FFCO experiences and problems following forest tenure reform in China include 27 case studies on FFCOs in 23 villages across eight counties and six provinces, carried out by FAO (FAO, 2010). Based on studies of four FFCOs in Yongan and Shaowu Cities, Fujian Province, Kong and Chen (2008) used “self-supplying demand” theory to analyse the rationale for establishing economic cooperative organizations. The authors discovered that FFCOs run smoothly only when they focus on specific productive factors in forestry production and when the benefits of establishing an FFCO are greater than the costs. Comparing the benefits and costs of cooperation, these authors concluded that large, advantaged farmer households are more likely to establish FFCO spontaneously – and these FFCOs will function well – than are small and disadvantaged households, whose FFCOs (when they exist at all) are less likely to function well.

Zhao (2010) studied Sanzu Shared-stock Forest Farm in Fangtuan Village, Jingzhou County, Hunan Province and analysed problems in its internal management. The main problems identified included farmer households’ out-dated ideological understanding, an inadequate management structure, the lack of professional management personnel, and severely conflicting interests among members of the FFCO. Huang and Wang (2008) applied contract theory to analyse the stability of the Forest Joint-Prevention Association of Fujian and Jiangxi Provinces and discovered that each type of FFCO brings its own advantages to different aspects of forest management; that the operating efficiency of an FFCO is closely related to how reasonable its contracts with members are; and that decisions regarding the type of FFCO to establish should be based on analysis of the comparative advantages of factor and commodity contracts for the product(s) and production stage(s) concerned.

Kong, Zheng and He (2011) used case studies of four FFCOs in Liaoning, Zhejiang and Fujian Provinces to discuss the relationship between the construction of an FFCO and the stability of the basic rural system in which it operates. The authors suggest that FFCOs could be effective in realizing the Pareto improvement of agricultural efficiency within the framework of China’s rural system, and that the resulting improved framework would in turn enhance the cooperation willingness and behaviours of various entities. Zuo, Qin and Yang(2011) used Xinghai Phyllostachys Pubescens Professional Cooperative in Qixingling Village, Liuyang City, Hunan Province to analyse the factors that affect forest farmers’ willingness to participate in FFCOs. The main factors identified were the forest farmers’ levels of education and understanding, the operational benefits of the FFCO, the degrees of socialization and computerization of the FFCO, and the degree of commercialization of the farmer households.

Case study selection

According to FAO’s requirements, the cases selected for study should:

- (1) be from existing literature related to case studies on China’s FFCOs;
- (2) cover all basic types of FFCOs, taking regional factors into account;
- (3) represent and demonstrate the functioning of FFCOs;
- (4) reflect the present situation and changing trends for FFCOs as comprehensively

and dynamically as possible.

This report has selected one or two cases of each type of FFCO, to reflect on and summarize their development patterns and advantages. Regional differences are represented, as are FFCOs' different periods of development. The report summarizes successful experiences and good practices from these FFCOs, reflecting development trends.

Criteria for assessing case studies

In general, China's FFCOs developed soon after forest tenure reform (from 2003) to address forest farmers' small operating scale, weak competitiveness and vulnerability to risk, and their lack of public services. This short development period means that there is a lack of studies summarizing successes and experiences of longer-established FFCOs, and – as the existing FFCOs are still at early stages of development – it is difficult to judge whether they will be successful or not. For example, when strictly assessed, some of China's forestry professional cooperatives do not reach the standards generally required of entities in the forestry professional cooperative category. However, all of them meet the development requirements of local forest farmers and the forestry industry (Zuo, Qin and Yang, 2011).

Based on the current stage of development of China's FFCOs, the appropriateness and operational stability of each FFCO should be focused on when choosing study cases from the literature. In addition, the case studies selected were also assessed according to the influence of the FFCO, the degree to which forest farmers are involved in its establishment and operation, the degree to which the FFCO protects forest farmers' rights, and the roles that the FFCO plays.

The standards for assessing and choosing case studies used by this report are as follows:

(1) *The FFCOs selected should be “established by people, governed by people and beneficial to people”*: Developing FFCOs is an effective way of raising forest farmers' incomes and promoting development of the rural economy. The FFCOs selected should be led by farmers, involved farmers closely in their establishment, should be adapted to local conditions, and protect and respect farmers' rights to enter or quit the FFCO freely.

(2) *The FFCOs selected should have effective activities, function well, provide their members with services, or increase the incomes of forest farmers*, regardless of whether they are professional associations, forestry professional cooperatives or shared-stock forest farms.

(3) *The FFCOs selected should have relatively standard operating mechanisms and management structures, including incentives and guarantees that ensure the vitality and long-term development of the FFCO, and tenure arrangements and management structures that meet the legal and other demands of the various types of FFCO*. Absence of these features has led to FFCOs failing within a short time of their establishment.

(4) *The FFCOs selected should be representative of their categories, and influential.*

From the available case study literature, two forestry professional associations, two forestry professional cooperatives and two shared-stock forest farms have been selected. Most of these six FFCOs are in provinces where collective forest tenure reform took place relatively early. Basic details of each are given in Table 2.1.

Table 2.1: Basic details of the selected FFCOs

No.	Name	Date of establishment	Location	Members	Forest area	Registration	Business	Features
1	Industrial Raw Material Forest Base Association of Wujiatang Town	April 2005	Wujiatang Town, ShaowuCity	4 large households and 6 villages		Not yet	Promoting the planting of gum trees and other fast-growing trees	Promoted by the government, links enterprises and farmers
2	Three-Prevention Association of Dacao Village	June 2006	Dacao Village, Tonggu County, Jiangxi Province	All the village	28022 mu*	Civil Affairs Department, Tonggu County	Preventing forest fire, theft, pests and diseases	Wide influence, good example for learning, cooperates with other local associations
3	Lingsi Shared-stock Cooperative Forest Farm	2006	Chafu Village, Guangze County, Fujian Province	200 households	4000 mu	N/A	Forest planting	Flexible joint stock, inter-village management; participation of the elderly and women
4	Dongsheng Shared-stock Cooperative Forest Farm	June 2004	Hongtian Village, Yonggan City, Fujian Province	5 households	200 ha	N/A	Forest land management and forest product processing	Resolving problems of capital shortage, setting up processing factories
5	Shangjin Bamboo Shared-stock Cooperative	December 2008	Shangshuyu Village, Guishan Town, Anji County, Zhejiang	200 households	9100 mu	Commerce and Industry Department	Bamboo products and forest management	The first bamboo cooperative in Zhejiang; uses government capital
6	Lisiling Hazelnut Cooperative	March 2008	Xinghua Village, Kaiyuan County, Tieling, Liaoning	1360 people	606 ha	Local Commerce and Industry Department.	Production and management of hazelnuts, beef cattle, ginseng and fish	Well-led with integrated management; agroforestry brand management and green certification

* 1 mu approximately 0.07 ha (666.67 m²).

3. Types of forest farmer cooperative organization

Forestry associations

Professional associations are non-profit social organizations established voluntarily by members and relying on membership fees for their daily operations. They are juridical associations registered in bureaux of civil affairs and do not participate directly in production and operation activities, but provide their members with technology and information services. Forestry professional associations were aimed to promote innovative forestry techniques and provide technical services in their early stages. Since forest tenure reform, the disadvantages of single-family operations and difficulties in forest resource management and protection have led professional associations to diversify their services and organizational forms, for example, as “three-prevention” associations (preventing fire, theft and pests and diseases), forest joint-protection associations and forestry product marketing associations.

A forestry association is a relatively simple, loose and interdependent cooperative organization established according to the principle of “established by people, governed by people and beneficial to people”. Members usually pay membership fees. Associations operate independently to provide members with materials and services before, during and after production.

The two forestry professional associations selected for this report are the Industrial Raw Material Forest Base Association of Wujiatang Town, Shaowu City, which encourages farmers to plant eucalyptus and other fast-growing trees; and the Three-Prevention Association of Dacao Village, Tonggu County, Jiangxi Province, which is responsible for fire, thief and pest prevention on members’ forest lands but is not involved in production and operation activities.

Shared-stock forest farms/cooperatives

Shared-stock forest farms in China’s collective forest areas arose during the “three decisions” period in forestry (1981 to 1983), during which decisions were made regarding: i) mountain and forest rights; ii) allocations of hilly lands for private use; and iii) the system of responsibility for forestry production. The forestry shared-stock system of “dividing the stock but not the mountain, dividing the benefits but not the forest land” created in Fujian Province at that time was acclaimed as an example of “Chinese farmers’ great practice” and was promoted all over the country.

Afterwards, shared-stock forest farms continued to be created in response to reforestation projects’ demand for forest land. Since forest tenure reform, with single-family household operations unable to realize scale benefits, various forms of shared-stock forest farm have emerged, including household forest farms established by forest farmers with their household allocations of forest, and shared-stock forest farms that are founded based on the stocks of collective forest land which have been allocated to forest farmers. Shared-stock forest farms do not have legal personality in the strict sense, but the Property Law and the Rural Land Contract Law recognize both of these new types as legal. Legally recognized

shared-stock forest farms are therefore those established by forest farmers investing in contracts for managing the forest land; or those established by evaluating the collective forest land and distributing shareholdings in the land to villagers, with the approval of at least two-thirds of the villagers or their representatives.

Shared-stock forest farms are professional cooperative organizations that combine the stockholding system with the cooperative system. They also unify workers and capital. The characteristics of shared-stock forest farms are unified operation and management, benefit sharing and risk sharing.

This report selected Lingshi Shared-stock Cooperative Forest Farm in Fucha Village, Guangze County, Fujian Province, and Dongsheng Shared-stock Forest Farm in Hongtian Village, Yongan City, both of which focus on forest planting and management.

Farmers' forestry professional cooperatives

These are the only type of FFCO to be subject to special laws and regulations. According to the Law of the People's Republic of China on Professional Farmers' Cooperatives, farmers' forestry professional cooperatives are reciprocal economic organizations founded by producers and managers involved in similar types of forestry products, or by providers and users of similar types of forestry production and management service, under voluntary cooperation and democratic management and based on granting contracts to households for the management of collective forest land and trees.

Forestry professional cooperatives provide their members with services in purchasing forestry production materials and inputs, selling forestry products, processing, transportation and storage; and forestry production and management technologies and information. Legally, they differ from companies in terms of membership qualifications, capital constitution, business scope, organizational set-up, decision-making mechanisms and surplus distribution. Professional cooperatives are set up with payments from members, who are free to enter or quit the cooperative and enjoy equality and mutual benefits within it. In some more complicated professional cooperatives, members contribute shares of the capital, but these shares are generally approximately of the same amount. Farmers' professional cooperatives are managed according to the system of "one person, one vote". Profits are usually allocated according to the trading volume of the cooperative, unless members have paid shares of the capital, when profits are distributed according to each member's share and the cooperative's trading value.

In the eyes of the law, farmers' forestry professional cooperatives are independent market entities with farmers as the dominant body. They should be registered at local government departments of industry and commerce to conduct activities under their own names.

The two farmers' forestry professional cooperatives selected for this report are the Shanglin Moso Bamboo Shared-stock Cooperative in Shangshuxu Village, Guishan Town, Anji County, Zhejiang Province, which specializes in bamboo planting; and the Lisiling Hazelnut Professional Cooperative in Xinghua Village, Kaiyuan, Tieling City, Liaoning Province, which specializes in hazelnut production and processing and agroforestry.

Table 3.1 outlines the characteristics of each of these types of FFCO.

Table 3.1: Characteristics of different types of FFCO

Type	Case studies	Characteristics	Founding purpose	Legal qualification	Operational fund	Profit distribution
Forestry association	Industrial Raw Material Forest Base Association of Wujiatang Town	Simple, loose organization; non-profit	Providing technology and services for forest management and protection	Registered as a juridical association at the local department of civil affairs	Membership fees	N/A
	Three-Prevention Association of Dacao Village					
Shared-stock forest farm/cooperative	Lingsi Shared-stock Forest Farm	Combination of shared-stock and cooperative systems; labour and capital unification; profit-making	Unified management, benefit sharing, and risk sharing	No legal personality in the law	Contracted forest land invested in as shareholdings	Shared according to shares held
	Dongsheng Shared-stock Forest Farm					
Farmers' forestry professional cooperative	Shanglin Moso Bamboo Shared-stock Cooperative	Mutual-aid economic organizations for producers and managers of similar forestry products; profit-making	Providing services in forest management, production and sales	Registered as legal persons in local commerce and industry departments	Membership fees or approximately equal shareholdings	Shared according to shares held and volume of business transactions
	Lisiling Hazelnut Professional Cooperative					

3. Success cases and good practices

Industrial Raw Material Forest Base Association of Wujiatang Town

Introduction

Shaowu City is a key forestry area in Fujian Province with a developed wood and bamboo processing industry and huge demand for raw materials. The annual local supply of raw materials is about 200 000 m³, but demand reaches 400 000 m³. To deal with this shortfall, the Industrial Raw Material Forest Base Association was established in Wujiatang Town, Shaowu City in April 2005, led by the forestry station of Wujiatang Town. Farmers growing large areas of fast-growing forest species elected the association's president and formulated its regulations. The association aims to promote the planting of fast-growing tree species—eucalyptus and small-diameter bamboos. Its main members are four large farmers with planting areas of 13 to 20 ha each, and six villages with tens of hectares of fast-growing forests each.

Institutional arrangements and innovations

Shaowu City is located in a collective forest area and its forestry industry is thriving. The supply of resources is the basic condition for ensuring the market competitiveness of an enterprise, but there are three problems with the supply of raw materials in Shaowu: i) the fast-growing forest areas are insufficient to meet demand on the local market; ii) the small scale of most forest management makes planning and contracts between enterprises and individual farmers inefficient; and iii) it is difficult to guarantee the high-quality tree-planting because forest farmers lack skills and methods for planning and managing fast-growing trees.

To deal with these problems, the association merged the scattered forest lands of its members (the forest farmers) to establish a planting base, and guided members' planting of fast-growing species. Representing all of its members, the association signs contracts with enterprises and acts as a communication channel between the farmers and the enterprises. These activities increase trading efficiency for enterprises and small-scale farmers while ensuring a supply of raw materials for enterprises, eventually leading to a better mechanism for the supply of raw materials.

Results and impacts

Resource-intensive production: Market competition encourages the industrialization of raw materials production, creating a “virtuous circle” in which the increased raw material base

ensures adequate supplies for the wood processing industry, while development of the wood industry stimulates further development of the raw material base. A total of more than 133 ha of fast-growing species has been planted, including more than 50 ha of eucalyptus and about 70 ha of small-diameter bamboos. Driven by financial interests, local farmers have planted eucalyptus on all the available scattered barren hills, wastelands, slopes and “foursides” lands (houseside, villageside, roadside and waterside).

Linking small farmers and enterprises in a win–win situation for both: Depending on the willingness of forestland owners, the association links enterprises to small farmers in a win–win situation in which enterprises’ demand for raw materials is satisfied while farmers’ incomes increase. Therefore, the contrasts between small farmers and large markets and between forest land fragmentation and scale management are effectively resolved.

Key to success: why does it work?

A raw materials base that meets the needs of both small farmers and enterprises: The association was set up to respond to the ever-growing gap between supply and demand in the wood and bamboo market of Shaowu City. The establishment of a raw materials base not only meets the demand for raw materials of forest products processing enterprises, but also satisfies farmers’ needs for income from forest management on highly fragmented forest land.

Guidance and support from the government: The association was founded under the leadership of Wujiatang Town forestry station, which guides and supports members in planting eucalyptus and other fast-growing species, and arranges for members to participate in relevant training and learning activities to increase the survival rate of the trees planted and the quality of the nursery stock. This involvement of a government department facilitates cooperation between small farmers and enterprises, and guarantees the transactions of both to ensure a win–win situation.

Conclusions: main lessons and future outlook

Under the guidance and support of the town’s forestry station, the association has become a platform for connecting enterprises and scattered small farmers. By satisfying the needs and interests of both, it promotes the development of local markets for forest products and the industrialization of production. However, the association has operated for only a short time and is still at a small scale. Its future development is likely to be affected by many factors, particularly the future demand for forest products on the market, and the possible emergency of another gap between supply and demand in the local wood market, as existed when the association was founded.

Note: Case materials are from Kong and Chen, 2008 and the following Web pages (in Chinese): www.66163.com/fujian_w/news/fjrb/gb/content/2006-01/03/content_865443.htm

Three-Prevention Association of Dacao Village

Introduction

At the end of 2009, the total population of Dacao Village, Sandu Town, Tonggu County, Jiangxi Province was 746, of whom 450 were labourers. Forest land area was 28022 mu, accounting for 95.84 percent of the total land area. Timber, bamboo and bamboo shoots are the main sources of forestry income.

Since forest tenure reform, forest farmers have managed their forest lands independently, but face growing challenges in preventing forest fires, thefts, pests and diseases. With encouragement from the government's preferential policies and support, the Three-Prevention Association of Dacao Village was founded to lower the operational risks to small farmers, reduce the costs of managing and protecting trees, and maximize efficiency of the rural labour force; it was registered in the county civil affairs department as a social corporate body in June 2006. The association provides information and guidance on fire prevention, and sends two employees out every day to patrol the mountains according to a scheduled routine, and to report on their patrols. In response to the rising incidence of forest pests and diseases over recent years, the association sends members to participate in relevant technical training.



Members of the Three-Prevention Association of Dacao Village patrolling their mountains

Credit: <http://3n.jxnews.com.cn/system/2006/08/23/002321302.shtml>

Institutional arrangements and innovations

Providing public services in forest management: As forest tenure reform progresses, forestry development is adopting a new pattern of diversification of business entities and forms and decentralization of the forest tenure structure, with ownership passing to

individual forest farmers. However, it is not easy for these individual forest farmers to manage and protect their forests, especially in preventing forest fires, thefts, pests and diseases. The Three-Prevention Association was established spontaneously by the forest farmers. Members pay a standard fee of RMB 1/mu/year, which is used to employ people to patrol the woodland areas within the association's jurisdiction. This reduces the expenses of management and protects the forest assets owned by farmers, filling the gap between demand and supply in public services for individual farmers.

Members assisting and cooperating spontaneously to meet their own needs for public

services: Since forest tenure reform, forest farmers have to provide their own services, but often lack the necessary funds, labour force and time. The result is increased risk to forest assets, as it is difficult to ensure effective protection. In response to this shortage, and in line with the principle of voluntariness, forest farmers set up this mutual aid organization to meet their own demand for public services in managing their forests.

Results and impacts

Protecting the forest assets of small farmers: Since its foundation, the association has played an active and stable role in protecting the forest assets of small farmers in Dacao Village against fire, theft, pests and diseases. By improving the efficiency of protection it indirectly ensures ecological security.

Improving farmers' capacity in forest management and protection: The association is responsible for informing and guiding fire prevention in the village. In a survey, 95 percent of the farmers visited had received guidance on fire prevention, which raised their awareness of fire prevention, helped avoid human-induced forest fires and made fire prevention more effective. In recent years, the association has expanded its scope by sending members to participate in training on the prevention and control of forest pests and diseases. The results are better pest and disease control, and improved capacities and skills in forest protection among members.

External exchanges and cooperation: The association is the first of its kind in Jiangxi Province. Its remarkable results in preventing forest fires, thefts, pests and diseases has had a strong impact and provide an example for the surrounding area. Government departments, researchers and other associations often visit to learn from the association, which is invited to assist in fighting any forest fires in surrounding villages or counties. The association has cooperative relationships with other three-prevention associations, and is expanding the scope of this cooperation, including by signing a joint defence agreement with neighbouring Pingtian Village in Yifeng County on preventing the digging-up of bamboo shoots; it has also assisted Huangtian Village, Tonggu County in extinguishing two forest fires.

The key to success: why does it work?

Forest farmer's willingness to cooperate: Forest fires, pests, diseases and illegal logging create huge financial losses for forest farmers, but lack of funds, skills, workforce, time, etc. make it difficult for individual farmers to deal with these problems. Mutual assistance and cooperation are an option for guarding the forest assets of small farmers, reducing their economic losses and the costs of forest protection. Satisfying the needs of forest farmers is therefore a prerequisite for ensuring cooperation and the stable development of the association.

A good operating system: The association has excellent institutional systems, including rules and regulations relating to the association's responsibilities, patrolling of the forest, reporting on important forest issues, financial supervision, etc. For example, the association insures its daily forest patrols against accidents. These internal systems ensure successful performance by the association in improving the prevention and control of forest damage, and restraining the destruction of forest resources.

Democratic management: During decision-making and control of major issues such as financial affairs, the association adopts a fully democratic approach. Eight of its 25 key members hold managing posts, with the remaining 17 constituting a representative assembly. The association's financial and other affairs are reported to the representative assembly, which also designs the annual work plan, reflecting the principle of "established by people, governed by people and beneficial to people" and stimulating the enthusiasm and involvement of the village's forest farmers.

Support from government: Tonggu County government played an active role in guiding the foundation of the association and supporting preferential policies for its development. At the outset, the local government provided RMB 3000 for purchasing fire protection and office equipment.

Conclusions: main lessons and future outlook

The Three-Prevention Association of Dacao Village is a spontaneous professional organization aiming to solve realistically the problems that forest farmers encounter. With the founding purpose of preventing forest fires, thefts, pests, diseases and deforestation, the association established a well-run operating system, including measures for arranging staff to patrol forests and carrying out integrated forest protection, all of which reduce the expenses while improving the efficiency of forest management and protection. These are services that forest farmers need but cannot provide individually. The association's cooperation with other associations for joint theft and fire prevention is a useful experience. This kind of exchange promotes information and technology sharing among associations, further enhancing the efficiency of forest management and protection for all involved.

However, shortages of capital, technology, etc. within the association made the theft prevention totally depend on woodland patrols by labour force, so it was more difficult to

prevent theft. The technology and methods used for pest and disease control are also out of date, and resistance to forest pests and diseases is low. Whether or not the equipment used and the skills of members can be enhanced will have a decisive impact on the association's long-term and stable development, which also depends on the economic condition of its members. Development of the association therefore still needs guidance and support from government policies.

Note: This case is based on the following Web pages and research reports (in Chinese):

http://sard.ruc.edu.cn/kongxiangzhi/index.php?option=com_content&task=view&id=137

www.forestry.gov.cn/portal/main/s/102/content-456349.html

FAO. 2011. *Capacity Building Report of Dacao Village in Sandu Town, Tonggu County, Jiangxi Province.*

FAO. 2010. *Report of forest farmer cooperative organizations in Jiangxi Province.* WP-005-C.

Lingsi Shared-stock Forest Farm

Introduction

When forest farmers became the owners of woodland after the forest tenure reform, three problems emerged in Lingsi Village: i) most young and middle-aged people leave the village as migrant workers, leaving only elderly people and women and making it difficult to organize people for tree planting; ii) it costs more than RMB 600 to plant trees on 1 mu of land, which is more than most farmers can afford; and iii) greater financial, labour and material inputs are needed to generate a profit because of the long management cycle and high risk of tree plantation.

To achieve the scale for efficient operations without forcing small farmers to lose their potentially valuable woodlands by transferring them to large-scale farmers or enterprises, Chen Gongzhi, a villager in Chafu Village, founded the Lingsi Shared-stock Forest Farm. Since 2001, before the forest tenure reform, Chen Gongzhi had led another seven villagers in planting trees as a shared-stock cooperative. They planted 200mu of *Camellia oleifera Abel* as commercial trees on barren hills. After certification of individuals' forest landownership, the shareholders in Lingsi Shared-stock Forest Farm increased from the original 20 to 200 in 2011. They have forest areas of more than 4000 mu covering five village groups in Chafu Village, and have invested more than RMB 2.4 million, including Chen Gongzhi's personal fund of more than RMB 200000.



Chen Gongzhi (left) and his son planting a Schima tree

Credit: www.ihomezz.com/portal.php?mod=view&aid=45317

Institutional arrangements and innovations

A shared-stock system based on shares of forestland, labour and cash: The absence of young and middle-aged people and the lack of funds seriously affected the management of some farmers' forest lands after forest tenure reform. As a result, some farmers sought short-term benefits rather than a long-term livelihood source by selling or renting their newly acquired forest lands. To solve this issue, the forest farm invented a shared-stock system of "forest lands transferred without ownership transferring". Shares are calculated based on the forestland, labour and cash invested by each shareholder, with the costs of tree planting and forest management distributed according to each member's shareholdings and stipulated in a signed agreement. This institutional arrangement enables people with both forest land and money and those with forest land but no money to cooperate in planting trees. Although the forest lands are managed jointly, the long-term interests of individual forest farmers are fully protected, which increases enthusiasm for planting trees.

Participation of women and elderly people: Because many women and elderly people find it difficult to plant trees on their own forest land, the forest farm mobilizes them for joint tree planting with the professional team founded by Chen Gongzhi. This ensures both greater tree planting and the engagement of the elderly and women in the cooperative.

Results and impacts

Increased forested area and improved tree planting: The founder of the forest farm has good tree-planting skills, rich experience, a range of tree-planting machines and a team of tree planters, all of which he shares. This has resulted in successful tree planting, a higher survival rate among nursery seedlings, and a larger planted area, as well as some improvement in the quality of the trees.

Ensured rights, interests and long-term gains for small farmers: Shared-stock cooperation and scale management make forest assets a “cash cow” for their owners, solving the problems that single forest farmers faced after forest tenure reform. The management model of “forest lands transferred without ownership transferring” promotes the long-term development of forest areas and ensures the interests and long-time benefits of small farmers.

An expanded scale of operations: Most FFCOs in China are limited in scale. Chen Gongzhi overcame the limitations of the small-scale shared-stock model of “one forest farm in one village” and explored the possibilities for larger-scale, multi-village shared-stock forest farms by using his own capital, technology and experience. Forest farm members increased from 20 to 200, while the area planted grew from about 600 to more than 4000 mu. This model enables large-scale specialization and market direction.

Ecological benefits: With sufficient funds and technical support, not only has the forest farm improved trees’ survival rate and the quality of tree planting, but it has also been able to focus on intercropping, fire prevention and biodiversity through timely and effective tending and protection activities. This has created a win–win situation with both ecological and economic benefits.

Enhanced participation by women: Women are generally less involved in FFCOs than men, but as the forest farm is short of young and middle-aged male workers, women have been closely involved in the tree-planting activities, improving their participation in forest management.

The key to success: why does it work?

Satisfaction of forest farmers’ requirements: Forest management is a long-cycle, high-risk activity, so intensive and scale management is needed to obtain good profits. Most individual farmers lack the necessary funds and labour force, so a cooperative provides an excellent solution. The forest farm innovative model of allocating shares based on forestland, labour or cash protects the long-term interests of small scale forest landowners and stimulates their enthusiasm for involvement in forestry.

Capable leadership: Chen Gongzhi played a vital role in the farm’s development. He provided a specialized tree-planting team with rich experience, and a significant financial contribution, resulting in less capital being needed from other villagers, higher labour efficiency, lower costs and higher tree-planting quality. Other forest farmers have seen this success, and 14 of the 16 farmer groups in Chafu Village are interested in joining the forest farm. In the meantime, scale management increases the economic benefits to all farm members, including Cheng Gongzhi.

Government promotion and guidance: The government encourages and supports the forest farm as a good tool for transferring forest land, realizing economies of scale and ensuring the

interests of forest farmers. For example, when the farm found itself unable to conduct transactions with enterprises because of its unidentified legal status and lack of legal representative, the local government helped it to evolve into a professional cooperative to obtain legal personality so it could build up its operating scale.

Conclusion: main lessons and future outlook

Lingsi Shared-stock Forest Farm supports the long-term interests of its members by maintaining their sources of livelihood.

The important role of the farm's founder is considered a key to its success in helping other forest farmers solve difficult problems and achieve good forest management. However, reliance on the driving force of one individual is not a good recipe for sustained success, and it is important to establish a system for ensuring long-term effectiveness. The farm now needs to establish and improve interior mechanisms of farm management, adopt democratic management, and formulate regulations for its long-term development.

Note: This case is based on the following Web pages (in Chinese):

www.66163.com/Fujian_w/news/fjrb/gb/site1/rbdzb/2009-03/24/content_1579434.htm

<http://hb.qq.com/a/20100609/000773.htm>

http://fjrb.fjsen.com/fjrb/html/2011-08/30/content_268516.htm

http://fjrb.fjsen.com/fjrb/html/2010-12/06/content_208141.htm

Dongsheng Shared-stock Forest Farm

Introduction

Dongsheng Shared-stock Forest Farm was established in June 2004 with five forest farmers from different villages as shareholders in tree planting, harvesting and marketing activities. The shareholders all had similar experiences of financial limitations and high risks for single farmer households managing forests alone. They believed that joint management would not only solve the financial difficulties, but also provide economies of scale for production. After establishing the forest farm, the shareholders used their trees as collateral for loans from credit cooperatives in the town, and used the loans to obtain management contracts for other forest farms. The forest farm therefore grew and, in its founding year it established its own factory for processing wood into semi-finished and finished products. The five shareholders carry out joint decision-making; the proceeds of activities are either shared among them as earnings, or invested in other activities. The farm's cooperation mechanism is flexible.



Hongtian Village, Yongan City, the location of Dongsheng Shared-stock Forest Farm

Credit: www.66163.com/fujian_w/news/sebc/big5/20070706/jryw105289.html

Institutional arrangements and innovations

Economies of scale through cooperative management: The five shareholders established the forest farm voluntarily to overcome the financial challenges and reduce the operational risks they had experienced and innovated individually. Their use of trees as collateral for loans with which to contract the management of other forest farms allowed them to expand the farm and achieve economies.

Greater involvement in the industrial chain and increased industrialization: In June 2004, with registered capital of RMB 100000, the newly founded forest farm established a factory for processing wood into semi-finished and finished products. By expanding its involvement in the industrial chain and its level of industrialization, the farm was able to increase the value of its trees and the incomes of its members.

Results and impacts

Increased scale of management: The forest farm expanded its operational scale rapidly; by the end of 2005 it covered more than 10 000 mu in more than 20 villages.

Extended industrial chain: By founding a processing factory, the farm became involved in two links of the forestry industrial chain, increasing the value of its products and bringing new opportunities for development.

Increased incomes for members: The wood-processing factory increased the incomes of both the farm's shareholders and other local forest farmers, who sold their wood to the factory or were employed by it. The shareholders' average annual income increased from

about RMB 80000–100000 in 2003 – before the farm was founded – to RMB 200000 in 2005.

The key to success: why does it work?

Easier access to capital through cooperative management: It is very difficult for individual farmers to raise sufficient funds for forest management, and their woodland areas are too small to provide adequate collateral for loans. By combining their woodlands, the farm shareholders found it relatively easy to raise sufficient funds from credit cooperatives. Cooperative management breaks the limitations on capital that individual forest farmers meet, enabling members to achieve an adequate operational scale.

Shareholders' willingness to cooperate: The five shareholders' willingness to cooperate played an important role in the successful establishment of the forest farm, the overcoming of financial constraints, the expansion of the operational scale, and the increase of their incomes.

Flexible institutional arrangements: The forest farm is managed according to the principle of sharing funds, risks and interests. These operational arrangements reflect the shareholders' willingness and flexibility in allocating income to improving the management of the forest farm.

Conclusion: main lessons and future outlook

The five shareholders in the forest farm solved their funding problems by combining their woodlands to raise finances for leasing additional woodland and expanding their operational scale. The wood processing factory extended the farm's involvement in the industrial chain, added value to its trees, and opened up new development potential.

However, because the forest farm raises funds by mortgaging its woodlands, and uses these funds mainly to lease more woodlands, its capital chain depends on having a stable output from its woodlands, which makes forest fires, pests and diseases a particular risk. The forest farm should therefore pay particular attention to the safety of its woodlands in its future development plans.

Note: This case is based on Kong, 2008; Kong and Chen, 2008; and the following Web page (in Chinese): http://sard.ruc.edu.cn/kongxiangzhi/index.php?option=com_content&task=view&id=240

Shanglin Moso Bamboo Shared-stock Cooperative

Introduction

There are 312 households and nearly 1200 farmers in Shangshuxu Village. The bamboo forest covers 413.3 ha and the bamboo industry is prosperous. However, as the village is located in an economically developed province, and secondary and tertiary industries related

to bamboo have been vigorously promoted in Anji County, the labour force for forestry is decreasing. To solve this problem, with support from the local government forestry department, village head Li Xiliang and another seven villagers established and registered Shanglin Moso Bamboo Shared-stock Cooperative.

Farmers' shares in the cooperative are based on their outputs of bamboo– with every 5000kg of bamboo entitling members to one share for a period of two years. Households join the cooperative voluntarily and are free to leave when they like. The cooperative's 42 household members own a total of 45 ha of bamboo forest and have 114.12 shares, which are equivalent to about RMB 420 000. It is the first shared-stock cooperative specializing in bamboo in Zhejiang Province.

The cooperative's Board of Directors and Board of Supervisors are elected according to the principle of "one member, one vote". Members entrust all their forest lands to the cooperative for establishing a bamboo production base, with employed professionals carrying out administration, management and product marketing tasks. Members share both the profits and risks, but take up non-farming jobs while leaving their bamboo business to the cooperative's employees. Many farmers who did not join the cooperative at the outset have since expressed an interest in joining.

Institutional arrangements and innovations

Having converted their bamboo outputs into shares in the cooperative, the members elected experienced and innovative individuals to carry out the cooperative's administration and marketing and to calculate the shares of benefits and risks to be allocated to each member. The cooperative established regulations under which it retains 60 percent of the annual profits as a reserve fund for future activities, and allocates the remaining 40 percent to the shareholder members according to their individual shareholdings. Forest farmers are therefore free to earn incomes from non-farming jobs while enjoying these profits from their forest land rights.

Results and impacts

Increased incomes for members: In 2010, the distributable profit of the cooperative was RMB 200 000, giving each member an average income of RMB 10050, which was nearly 20 percent higher than the income of non-member farmers. Many of these cooperative farmers abandoned forestry production and now work in factories or have opened small rural hotels, resulting in total income increases of RMB 10 000 to 40 000.

Increased membership: By the end of 2010, the cooperative had increased from 42 to 200 members, accounting for 60 percent of all the households in the village. Its total forest landholdings were 200 ha – 50 percent of the village's total bamboo forest lands.

A good example: The cooperative is the first of its kind in Zhejiang Province. Following its successful experience, 16 more shared-stock cooperatives have been set up in Anji County, with a total of 30 000 mu of land, more than 1 000 member households and more than 500

long-term jobs provided for farmers. In addition, 21 professional cooperatives working with bamboo, bamboo shoots and other commercial tree species have been established in the county. These have nearly 1000 members and 320000 mu of land.

Wider opportunities for employment: As an economically developed province, Zhejiang has witnessed the rapid development of the bamboo industry in recent years. In Anji County, secondary and tertiary industries related to bamboos are thriving and much of the farm workforce has entered the non-farming industry. However, forest land management and forestry production provide resources for secondary and tertiary industries, and also have ecological and environment benefits. By adopting a centralized and unified management model, the cooperative is able to realize these benefits while leaving its members free to pursue employment opportunities in local secondary and tertiary industries.

Use of government resources: The cooperative takes full advantages of the projects in support of forestry development that local government agriculture departments implement, and uses project funds to improve its infrastructure, administration and management. For example, the cooperative received RMB 2 million to build 9.8km of forest road, a bridge, an irrigation system covering 500 mu, and improve 3 000 mu of low-yield bamboo forest land within a bamboo park. These improvements and the resulting decrease in labour costs increased the cooperative's income by RMB 55600, bringing financial benefits to all its members.

Key to success: why does it work?

The cooperative's centralized and unified management model allows it to realize economies of scale, address the shortage of labour, increase the efficiency of its forest lands, and increase its members' incomes, while ensuring long-term benefits from their forest lands.

It has also become a platform for implementing government projects for constructing and enhancing infrastructure and improving production conditions and management efficiency. Grassroots farmers benefit from the secondary distribution of social wealth, which promotes social equity.

Conclusions: main lessons and future outlook

The cooperative's successes have boosted the flow and capitalization of forestry production factors and promoted development in rural areas. The cooperative has adopted a good reinvestment mechanism by drawing 60 percent of annual profits into a reserve fund for its own future development.

However, as market competition intensifies and increasing numbers of local workers seek work elsewhere, the cooperative will face severe challenges in maintaining and improving its competitiveness. It should therefore continue to explore appropriate ways of developing, such as by improving its unified management model, providing reasonable arrangements for its workforce, and enhancing its members' ability to manage mountain forests. It should also seek to improve the quality of its bamboo products and open up more sales channels, establishing its own brands as soon as possible to improve its competitiveness.

Note: This case is based on Kong, Zheng and He, 2011; and the following Web pages (in Chinese):

<http://wenku.baidu.com/view/e79af4f9c8d376cecaaa31b6.html>

<http://www.zjagri.gov.cn/html/main/gb2312/index.html>

www.hzlyj.gov.cn/bdxw/10456.htm

www.zjaic.gov.cn/zjaic/gzfw/xfjs/201111/t20111102_88331.htm

Lisiling Hazelnut Professional Cooperative

Introduction

Xinghua Village in Kaiyuan, Tieling City, Liaoning Province was once a notoriously poor village with 70 percent of its area mountainous, 20 percent watery and only 10 percent farmland. Li Shoufa was the deputy commander of the Changchun military sub-area. When he retired back to the village, he wanted to lead the villagers out of poverty. Before forest tenure reform, he tried to plant poplars and other tree species, but failed because of the barren lands. However, he found that wild hazelnut trees grow well, and the hazelnut market is relatively good. Li Shoufa therefore encouraged the villagers to plant hazelnut trees with him. In 2006, his annual income was more than RMB 40 000 from sales of hazelnuts collected from trees on 40 mu of barren mountain. This encouraged other villagers to start hazelnut production and related industries.

To connect small farmer households to the large market and to boost villagers' incomes, in March 2008, Li Shoufa set up and registered Lisiling Hazelnut Professional Cooperative with a Board of Directors and a Board of Supervisors. Both boards served for three years and were re-elected in 2010. The original five directors and 315 members increased to seven directors and 1360 members, of whom 816 are from Liaoning, 332 from Gongzhuling in Jilin, and 212 from Taoshanin Heilongjiang. Farmers join the cooperative according to the principle of "joining voluntarily, doing business independently and taking responsibility for their own profits or losses". Lisiling Hazelnut Association was established in Kaiyuan in June 2009 to promote development of the cooperative. By 2010, the cooperative's registered capital had increased from RMB 0.5 million to 2 million, with annual income of about RMB 1 million and fixed assets of more than RMB 5 million. Production bases covering a total of 9100 mu have been set up in Liaoning, Jilin, Heilongjiang and elsewhere.



Li Shoufa, the founder of Lisiling Hazelnut Professional Cooperative
http://ncdz.dzwww.com/news/snrw/200902/t20090201_4256811.html



Siling Hazelnuts sold in the Lisiling Hazelnut Cooperative shop
www.spzs.com/news/viewnews/7344.html

Institutional arrangements and innovations

The “five-unifieds” operating model: The cooperative adopts an operating model of “unified production, collection, processing, marketing and management”, and holds seminars on hazelnut production and training on planting skills. It provides 80 percent of agricultural materials and controls all processes, from production to marketing, ensuring the quality of the product and creating the conditions for development of ecological organic foods.

Agroforestry management: In 2006, some villagers suggested that beef cattle should be stocked in the hazelnut forest, to help pollinate the hazelnut trees by the cattle's movements – thereby increasing hazelnut output– while providing the cattle with the forage grasses that grow in the hazelnut forest. By 2008, there were nearly 500 head of beef cattle in Xinghua Village. The cooperative has gradually optimized its agroforestry system and now follows an integrated ecological model of “planting trees on the upper areas of the mountains, hazelnut on the slopes, crops on the lower areas and ginseng beneath the forests, and breeding fish in the water”.

Results and impacts

Poverty reduction: In Xinghua Village, maize used to be the sole source of income, which averages RMB 800 per capita per year. The villagers had not found suitable tree species or crops to plant on their barren hills. Since the cooperative started to plant hazelnuts, which are adapted to local soil condition and are of high economic value, average per capita incomes have increased, reaching RMB 8100 in 2009 –a significant reduction in poverty.

Gradual acceptance on the market: The cooperative engaged in brand marketing, registering the “Lisiling Hazelnut” brand in 2004 and setting up a chain of shops. The cooperative purchases farmers' hazelnuts and processes them for marketing under the brand. This extends the cooperative's industrial chain, increases the value-added of hazelnut and establishes a regional brand, providing the cooperative with a good foundation for future development. In 2006, “Lisiling Hazelnuts” participated at the first China Food Trade Fair held by the Ministry of Commerce in Ningbo. “Lisiling Hazelnuts” were identified as a China Green Food by the China Green Food Development Centre in 2007, and they won the silver medal awarded by the Organizing Committee at the first Chinese (Tieling) Hazelnut Festival in November 2010. The cooperative was honoured as one of the 50 best Chinese farmers' cooperatives in 2011, and Li Shoufa was personally awarded as one of the “Top Ten People” at China's Annual Achievement Award in the Cooperative Economy in 2010.

Key to success: why does it work?

Sound management mechanisms: The cooperative's management system and sound institutional principles create a favourable business environment for its healthy and rapid development.

Brand building and improved competitiveness: The cooperative provides skill training to improve hazelnut planting and ensure product quality. Great attention is paid to brand building and rapid expansion of the production scale, ensuring a gradual increase in the incomes of cooperative members and significant poverty reduction.

Conclusions: main lessons and future outlook

The founder of the cooperative noticed the economic value of hazelnuts and allowed villagers to join the cooperative voluntarily to achieve prosperity. As well as providing training, the cooperative promotes good management through brand building and establishment of an agroforestry system. It plays an important role in poverty alleviation in Xinghua Village.

However, it can be seen that the development and success of the cooperative rely very heavily on its founder, which is not good for the cooperative's long-term development.

Note: This case is based on *China Green Times*, 17 March 2011, page 2; and the following Web pages (in Chinese):

www.lnlcy.com/plus/view.php?aid=956

www.lnly.gov.cn/tls/tlqy/201111/t20111129_144261.html

www.yicunyi.cn/ycyw/html/?1606.html

www.ccfc.zju.edu.cn/a/xinxijianxun/2011/0605/6241.html

www.lnly.gov.cn/sydwzw/xcbgs/mtxb/201103/t20110331_78951.html

4. Analysis of success factors and good practices in the selected forest farmer cooperative organizations

Demand and support from forest farmers

Forest farmers' ownership of forest resources since forest tenure reform has increased their motivation for managing forests. However, single forest farmers face many difficulties and challenges, such as lower profits, higher management risks, forest fires, thefts, pests and diseases, and lack of labour and capital. Joint and cooperative management is an effective way of dealing with these challenges, satisfying forest farmers' requirements. Successful FFCO establishment and development depends on forest farmers' demand for and participation in the FFCO.

For example, the Three-Prevention Association in Dacao Village helps farmers to mitigate the risks of forest fire, theft and disease by pooling their resources to protect their forests. This reduces both protection costs and forest losses, and farmers who see these benefits participate enthusiastically in the cooperative. The five shareholders in Dongsheng Shared-stock Forest Farm understood that joint management could reduce management risks, improve the operational scale of management and generate more profits, all of which stimulated their interest first in establishing the forest farm and then in expanding it via loans and contracts to manage additional forest land.

Government guidance, promotion and support

The development of FFCOs is affected by many factors, among which the government's guidance, promotion and support are important. During the establishment and development of the FFCOs, government departments and local village committees provided various forms of support, including registration, financing for start-up and equipment, logging quota systems, skills training, infrastructure construction, formulation of regulations, loans, incentives, specific projects, publicity and encouragement. Government therefore played a vital role in the development of FFCOS.

For example, to deal with the inadequacy of supplies on the local wood and bamboo market, the forestry station of Wujiatang Town, Shaowu City set up the Association of Industrial Raw Material Forest Base in Wujiatang Town, guiding association members in planting eucalyptus and other fast-growing tree species, and organizing them to take part in relevant training and learning activities. This strengthened scientific tree planting and management. The association not only guaranteed the forest farmers' benefits and supplies, but also promoted development of the wood processing industry in Shaowu City. Lingsi Shared-stock Forest Farm in Chafu Village, Guangze County, Fujian Province could not do business with other companies because it was not legally qualified and had no legal representative. The local government's solving of this problem brought positive results that promoted the forest farm's development.

The critical role of experienced and innovative individuals

FFCOs are a relatively new development in China in which individual farmers with experience and drive have played a very significant role. These leading farmers have market awareness, cooperation awareness and brand perception. They lead and organize local forest farmers in setting up associations, shared-stock forest farms and professional cooperatives to realize economies of scale, using their own economic, technological and other resources.

For example, the founder of Lisiling Hazelnut Professional Cooperative in Xinghua Village, Kaiyuan, Tieling City, Liaoning Province had been seeking ways of making the village richer since 1999. He established Lisiling Hazelnut Professional Cooperative after forest tenure reform, organized skills training for villagers to improve production quality, registered the cooperative's hazelnut brand and carried out brand building, thereby increasing villagers' incomes and playing an important role in poverty alleviation. Another initiator, Chen Gongzhi, used his own financial capacity, professional tree-planting team and vast experience of afforestation to set up Lingsi Shared-stock Forest Farm. He took a large personal stake in the forest farm, which reduced the need for capital from other villagers, who shared in the increased labour efficiency, lowered costs and higher quality of tree planting. Chen Gongzhi's example and influence drew farmers from other villagers into the forest farm, expanding it beyond the boundary of its own village, which is not common among FFCOs.

A development strategy adapted to local conditions

Making use of high-quality local resources and unique products that are adapted to local conditions is the foundation for healthy development of an FFCO. Both Lisiling Hazelnut Professional Cooperative and Shanglin Bamboo Shared-stock Cooperative use superior local resources and unique products, and encourage more and more small farmer households to manage their production in accordance with market needs. This focus on high-quality local resources allows FFCOs for small farmers to generate increased incomes, expand their industrial chains and increase the industrialization of their farming.

Institutional innovation and improvement

Forest management faces natural risks – such as forest fire, pests and diseases – market risks and policy risks. The value of an FFCO is in allowing farmers to achieve economies of scale and increasing their ability in mitigating risks by organizing themselves. The institutional arrangements for establishing and managing an FFCO, and the system for pooling resources and distributing benefits are therefore important driving forces in the FFCO's development.

For example, Shanglin Bamboo Shared-stock Cooperative calculates shareholdings according to members' bamboo yields, and elects its boards of directors and supervisors according to the principle of one person, one vote. Members assign their contracted forest land to the cooperative for management. The cooperative employs professionals to carry out unified control, management and marketing of the bamboo production base, retaining 60 percent of annual profits as a reserve fund for future development, while the other 40 percent is allotted to members according to their individual shareholdings. Lisiling

Hazelnut Professional Cooperative has introduced and gradually optimized an agroforestry system based on hazelnut planting and processing. As well as grazing beef cattle in the hazelnut forests, the cooperative has also established three-dimensional, integrated eco-agriculture by “planting trees on the upper areas of the mountains, hazelnut on the slopes, crops on the lower areas and ginseng beneath the forests, and breeding fish in the water”.

Challenges for the future

The case studies show that following collective forest tenure reform, Chinese FFCOs developed rapidly. They solve problems that result from the granting of forest lands to individual households –such as fragmentation of landholdings, small scale of management, and limited technical services, forest fire prevention, pest and disease control and forest road construction – which are difficult for single households to deal with. FFCOs also play an important role in poverty reduction, the protection of forest resources, and rural economic development.

Challenges to their future development include increasingly fierce market competition, financial and technical constraints, overreliance on experienced and innovative individual farmers, and imperfect governance structures and operating mechanisms. An inclusive and flexible development environment, strong policy support from the government and long-term capacity building will help address these challenges to promote FFCOs’ sustainable development.

Table 5-1: Main success cases and good practices in China's FFCOs

Success cases and good practices	Forestry associations		Shared-stock forest farms/cooperatives		Forestry professional cooperatives	
	Industrial Raw Material Forest Base Association of Wujiatang Town	Three-prevention Association of Dacao Village	Lingsi Shared-stock Forest Farm	Dongsheng Shared-stock Forest Farm	Shanglin Moso Bamboo Shared-stock Cooperative	Lisiling Hazelnut Professional Cooperative
Demand and support from forest farmers	Demand for fast-growing forest technology, and for a platform for negotiations with businesses	Demand for protection against forest fire, theft, pests and diseases	Demand for liberation of labour from forest management, and for maintaining farmers' forest landownership	Demand for joint management	Demand for liberation of the labour force from forest management	Desire to rise out of poverty through hazelnut production
Government guidance, promotion and support	Led by Wujiatang Town forestry station	RMB 3000 from the local government	Help in establishing the association as a legal person		Government projects funding the cooperative's construction of local infrastructure	
The critical role of experienced and innovative individuals			Chen Gongzhi			Li Shoufa
Development strategy adapted to local conditions	Located in an important forest area for industrial raw materials			Large forest area and a factory	Located in an important bamboo production area	Located in a hazelnut production area

	Institutional innovation and improvement	"Enterprise forest base farmers" model	Voluntary mutual assistance and cooperation to meet own demand for public services	Shares allotted based on forestlands, labour inputs and cash investments; participation of elderly people and women in afforestation	Economies of scale	Centralized and unified management model	Unified production, collection, processing, marketing and management; agroforestry
Challenges	Market constraints; capital and technical constraints; governance structure and operating mechanism	Supplying the timber market and filling the demand gap; increasingly fierce competition in the market	Financial and technical constraints	Overreliance on the innovative founder; imperfect governance structure and operating mechanisms	Expansion based on stability of woodland output	More local workers leaving the area; intensified market competition; weaknesses in the unified management model	Overreliance on the innovative founder

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