

Part 2

CASE STUDIES

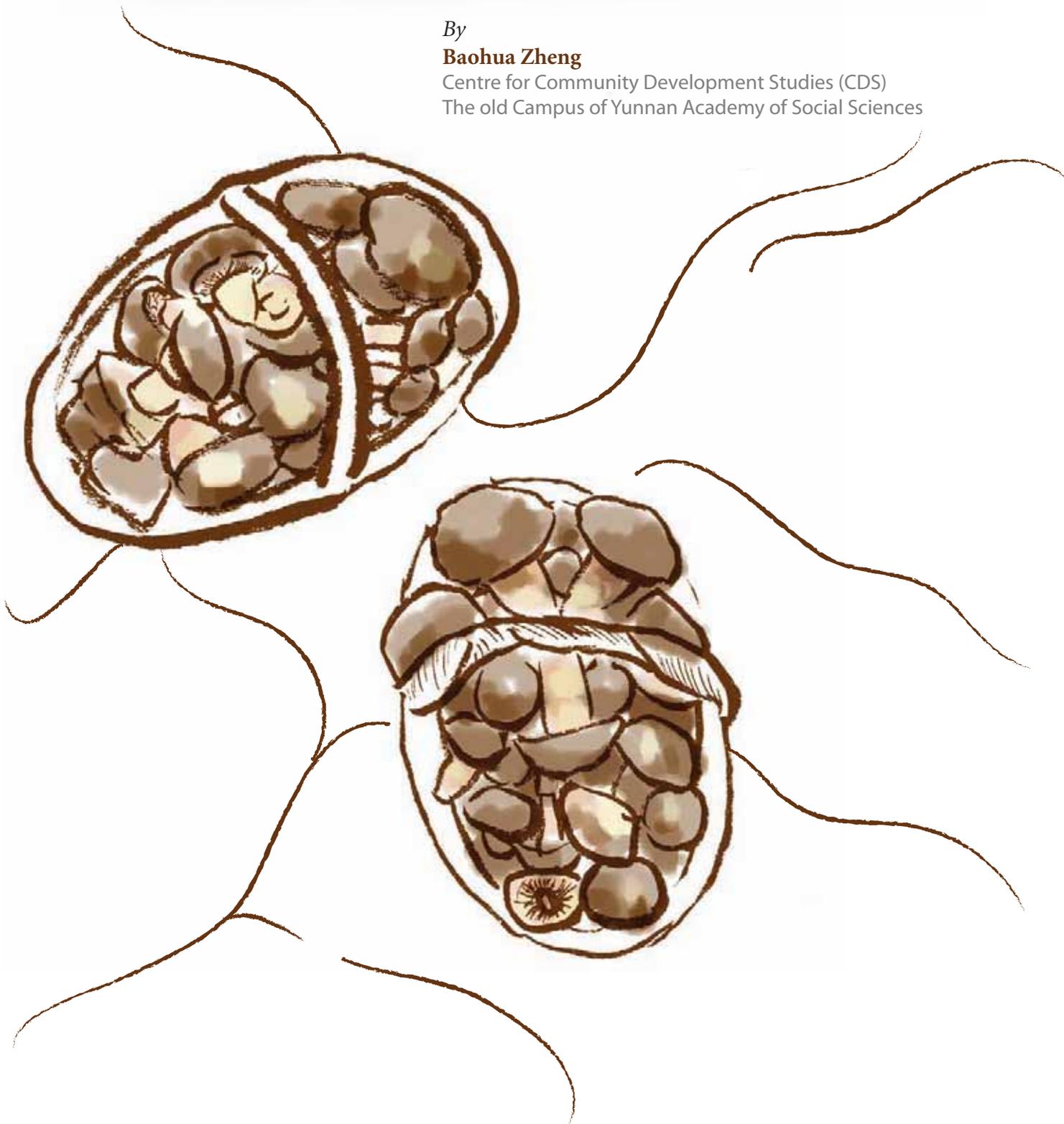
Changes and trends in forest tenure and institutional arrangements for collective forest resources in Yunnan province, China

By

Baohua Zheng

Centre for Community Development Studies (CDS)

The old Campus of Yunnan Academy of Social Sciences



Summary

Of China's 31 provinces, Yunnan in the southwest of the country is the fourth richest in terms of forest resources. Changes to Yunnan's forest tenure system are similar to the changes being made throughout China, as most tenure-related policies originated with the central government, especially before the early 1990s. From the early 1980s, the central government began to privatize use rights for forestry land and to strengthen forest ownership, while continuing to insist on State and collective ownership of forest land. This report highlights the major forest tenure types and their historical development in Yunnan province by focusing on collective forest resources. The report analyses the effectiveness and impacts of the forest tenure system and its contributions to sustainable forest management (SFM) and poverty reduction, and provides recommendations for improving forest tenure in Yunnan.

China's Forest Law states that "forest resources consist of timber, bamboo, forestry land and other wild plants and animals living in the forest". "Forest resources belong to all citizens (we may identify it as State ownership) except those parts belonging to collective entities (we identify it as collective ownership) as regulated by law. All the forestry land and forests, including forests, timber, and forestry land owned by either all citizens of the nation or all members of a collective, forest and/or timber owned and forestry land used by individuals, must be registered and issued with certificates by governments at county level and above, to clarify ownership and/or use right. The owners' and users' legal right over forestry land, forests and timber is protected by law. No other entity or people can violate them." That is, there are two kinds of ownership of forestry land: rural collective, and State. About 80 percent of forestry land in Yunnan is owned by collectives and the remaining 20 percent by the State.

Over the past 20 years, a rapid succession of changes in forestry land use rights has led to the emergence of several formal types of tenure in Yunnan. These changes can be divided into three major phases. The first phase began with implementation of the "two hills system", which was initiated in the early 1980s following the agricultural household responsibility system (AHRS). This policy allocated most collectively owned and a portion of State-owned forestry land to individual rural households in the form of "freehold hills", "shared responsibility hills" and "collective responsibility hills". The second phase of changes began with the auction of use rights for barren land, which started in the early 1990s in some counties. The third phase opened with implementation of the Rural Land Contract Law, which was approved in August 2002 and went into force on 1 March 2003.

Under these policies and laws there are currently four kinds of use rights for forestry land, as follows:

- *Freehold hills* are allocated to individual rural households. The total area allocated to freehold hills is 5 703 000 ha (including 862 000 ha for shifting cultivation), accounting for 29.4 percent of total collectively owned forestry land. Freehold hills are unused, barren lands, and households are granted free land and exclusive benefits to encourage them to plant trees.
- *Shared responsibility hills* are allocated to individual households. The total area allocated to shared responsibility hills is 6 332 000 ha, or 32.6 percent of total collectively owned forestry land. Under this arrangement, individual households share some of the benefits from their forest management inputs.
- *Collective responsibility hills*, in which use rights are contracted to collectives – usually villagers' groups or villagers' committees account for about 6 604 500 ha, or 34.0 percent of total collectively owned forestry land. In collective responsibility hills, ownership and use rights belong to the collective.
- *Contracted operation and management hills* emerged from the auction of use rights for barren land. The area allocated to this category is 777 500 ha, or about 4.0 percent of the total collective forestry land.

Based on a general policy of "whoever plants trees owns them", ownership of collective forests can be divided into three types, especially for timber: private household ownership of freehold hills, forests and trees in contracted operation and management hills; shared ownership between households and communities in shared responsibility hills; and collective ownership in collective responsibility hills.

Corresponding to forest use rights and ownership, there are three basic forest management types: household management of freehold hills, shared responsibility hills and contracted operation and management hills; collective management of some collective responsibility hills; and contracted management of collective responsibility hills and some shared responsibility hills.

Research has shown that the two hills system has three important shortcomings. First, freehold hills have not met their objective of encouraging rural residents to plant trees on barren hills, with tree plantation covering only 20 to 50 percent of allocated land despite the policy's stipulation that households must plant trees within three years. Second, the introduction of shared responsibility hills has resulted in increased deforestation and illegal cutting and a rapid decrease in forest resources, because of insecure forest tenure arrangements.

Third, household-based management of forestry land has increased operating costs. These shortcomings have been attributed to a lack of tenure security, frequently changing forestry policies, and the allocation of forestry land according to principles of equality rather than development and management efficiency.

The effectiveness of collective responsibility hills depends on the management approaches used by the collective, particularly on whether management is transparent and on the degree to which households are involved. For contracted operation and management hills, effectiveness depends on the contractor's capacity and the availability of institutional and technical support; inadequate financial support, in particular, has been a key constraint for forestry development. Government investment in forestry has been minimal, and many rural households did not invest during the 1980s because their major concern was improving their own livelihood security; households preferred to invest in agriculture and animal husbandry than in forestry.

The influence of forest tenure arrangements is not confined to management effectiveness; they also have a significant impact on the benefits and livelihood security that communities derive from forest. In general, communities' dependence on forest resources ranges from 10 to 70 percent, according to the availability of forest resources, tenure security and management effectiveness.

Analyses have identified several weaknesses of forest tenure in China: 1) the principle of "whoever plants trees owns them" was weakened by logging quotas, which make it impossible for benefit rights to be exclusive for all tenure types; 2) policy limits farmers' practical forest use rights; 3) the strengthening of forest departments' role in forest resource management has limited local communities' participation; and 4) government initiatives such as reforestation limit forest owners' rights over forest resources.

The efficiency of forest tenure systems also depends on government policy and legislation. Analyses have highlighted several issues relating to the implementation of legal instruments, especially national laws and policies: implementation starts well, but finishes badly; numerous conflicts among different government agencies lead to poor monitoring and planning; and a lack of financial resources and technical support makes it difficult to guarantee the successful implementation of laws and policies.

Different forest tenure arrangements may produce different levels of economic benefit for forest owners, and have different impacts on the environment and culture. Similarly, different areas using the same forest tenure system may derive different incomes and benefits. This study analyses one important factor related to unstable and insecure forest tenure by comparing the experiences of Taohua and Xiaoshao villagers' committee as an example. These two cases highlight that secure and stable forest tenure can generate good incomes and benefits through improving local communities' livelihood security, protecting the environment and utilizing local knowledge for SFM. However, community-based initiatives and creativity must be supported by government policy and laws, so the study emphasizes the importance of informal forest tenure arrangements and the effect of indigenous knowledge and practices.

Although developments in Yunnan's forest tenure system have been positive, the following are some of the many problems that still need to be resolved:

- Reform of the forest resource tenure system should be conducted as part of a broader reform of forestry development strategy.
- Further reform and improvement of forest resource tenure systems should be integrated into broader land rights reform.
- The two hills system should be improved and tailored to different local situations.
- Laws to protect legal tenure, particularly private forest ownership, should be designed where absent and improved where existing.
- The forest distribution and tax systems should be reformed, and a new incentive system for encouraging local communities to utilize and develop forest resources should be formed.
- Forest management should be reformed further in order to foster new management systems that put communities at the centre.
- Communities' social capital should be nurtured so that they can work together to manage and develop forest resources for improving their own well-being.
- There is a need to find new ways of discovering and regenerating minority cultures and indigenous knowledge and practices for sustainable forest resource management and utilization.

An efficient oversight system for policy and law implementation should be established, especially an effective planning, monitoring and evaluation (M&E) system.

Introduction

The People's Republic of China is a country of 1.3 billion people, of whom more than 800 million are classified as rural residents, and 76 million belong to 55 recognized ethnic groups. The government has five levels (central, provincial, municipal/prefecture, county and township), with parallel party and State institutions at each level. The province is the second level below the centre, and there are 31 provinces, autonomous regions and municipalities directly under the central government, as well as Hong Kong, Macau and Taiwan.

Yunnan province is located in the far southwest of China bordering with the Lao People's Democratic Republic and Viet Nam in the south and Myanmar in the west. Its capital is Kunming municipality. The province has a total population of 44 million people, of whom more than one-third come from 25 different ethnic groups. Many of these ethnic groups have their own lifestyles, religious customs, cultures and distinctive costumes, which have more in common with their Tibetan and southeastern neighbours than with the Han Chinese.

Yunnan province has a total land mass of approximately 394 000 km². Approximately 94 percent of the province is mountainous and hilly, with an average elevation of 2 000 m. Owing to its complex topography and geography, Yunnan has varying climates within its three general climatic zones: tropical, subtropical and temperate. Five great rivers flow south and west through the province: the Nujiang-Salween, the Lancang-Mekong, the Yuanjiang-Red, the Yangzi-Yangtze and the Zhu-Pearl. The Salween and Mekong rivers continue on into Myanmar and the Lao People's Democratic Republic. The Red River continues on into Viet Nam, while the Yangtze turns in an enormous loop and flows north into Sichuan province, then through more than ten provinces to the Pacific Ocean. The Pearl River runs on into Guangxi and Guangdong provinces, then into the Pacific Ocean.

In 2004, Yunnan province comprised 16 municipalities and prefectures, 129 counties and 1 574 townships. It is one of the poorest provinces in China, with 56.6 percent of its counties assessed as being below the national poverty threshold. The province ranks twenty-seventh out of China's 31 provinces in terms of per capita output from industry and agricultural production, and while per capita output is rising in Yunnan's industrialized urban areas, it remains stubbornly low in agriculture-dependent rural areas.

Yunnan was chosen as the site for this case study because: the Centre for Community Development Studies, Yunnan Academy of Social Sciences (CDS-YASS) focuses on Yunnan province, where it has conducted research on forest tenure systems for more than ten years; Yunnan is a mountainous province with abundant forest resources, ranking fourth in China in terms of both forest area and standing forest stock – forestry land comprises more than 63 percent of Yunnan's total land area, of which forest land accounts for about 20 million ha; and Yunnan adheres to national policies so it has a diverse forest tenure system.

Legal and formal forest tenure

LEGAL FOREST TENURE

Significant economic growth and social development in rural China are the results of a reform policy that has been implemented by thousands of farmers. This policy began with a new land tenure system for arable land in the early 1980s,⁵ followed by new tenure arrangements for non-arable land, specifically forestry land⁶ and grassland. The general approach for both arable and non-arable land was to allocate most of the collective-owned land to individual rural households according to the number of family members and/or the size of their labour force, and then to give households secure use rights. All these tenure changes and reforms on both arable and non-arable land were guaranteed by government policies and laws.

According to China's Forest Law (1998), "forest resources consist of timber, bamboo, forestry land and other wild plants and animals living in the forest". Hence, the discussion about forest tenure refers to the tenure of forestry land and/or the trees themselves, and is typically referred to as "hills and forest tenure" in Chinese. It can be defined broadly as the right(s) that owners of forestry land and/or forests can employ for some purpose(s). In China, rights can be divided into the rights to own, occupy, use, benefit from and dispose of forestry land and/or forests.

Article 2 of China's Forest Law regulates that "forest resources belong to all citizens except those parts belonging to collective⁷ entities as regulated by law. All the forestry land and forests, including forests, timber and forestry land owned by either all citizens of the nation or all members of collective, forest and/or timber owned and forestry land used by individuals, must be registered and issued with certificates by governments at county level and above, to clarify ownership and/or use right. The owners' and users' legal right over forestry land, forests and timber can be protected by law. No other entity or people can violate them". Article 23 emphasizes that "the forests planted and managed by collective economic organizations belong to the organization itself. Forests and trees planted by rural farmers on freehold hills, the freehold farmland and/or land around homesteads belong to farmers themselves. The forests and trees planted by collectives and individuals on collective forestry land; the forests and trees planted on those forestry lands belonging to all citizens but contracted and rented to collectives and/or individuals belong to the collective as a whole and/or to individuals. If the contract contains specific regulations, any determination should follow the contract's regulations".

According to a sample survey completed in 2002, most of the forest resources in Yunnan province are owned by rural collectives (see Table 1).

⁵ When a few villages in some provinces decided to allocate to individual households arable land that belonged to the collective. This initiative was very successful in terms of crop output and the improvement of villagers' livelihood security. In response, the central government issued policies to allow communities to allocate farming land to individual households according to the number of family members and/or the family labour force. The production team system was abolished, and the farming household became the basic production and consumption unit.

⁶ Forestry land is land designated for forestry development. It may consist of forest land, barren land identified for afforestation, and nursery gardens. Forest land is land where there are already forests or trees.

⁷ A collective is an administrative unit made up of a group of rural households from one or more villages, depending on the population of the village(s). There are two major types of collective. The villagers' group is based on a village and usually includes from 40 to 100 rural households – large villages have more than one villagers' group, while small villages share a group. The second type of collective is the villagers' committee, which has been an autonomous organization in rural China since 1998 when the Organic Law for Villagers' Committee gave rural residents the right to elect committee members themselves rather than have them appointed by government. A villagers' committee usually consists of several villagers' groups. Villagers' groups are equivalent to the production teams, and villagers' committees to the production brigades of the 1958 to 1981 period. Between 1982 and 1998, villagers' groups were referred to as cooperatives, and villagers' committees as administrative villages.

TABLE 1
Forest ownership in Yunnan

	State-owned		Collective-owned	
	Quantity	Percentage	Quantity	Percentage
Forestry land	4 822 600 ha	19.9	19 425 000 ha	80.1
Forest land	3 699 700 ha	24.6	11 315 300 ha	75.4
Cash trees	167 900 ha	12.3	1 194 900 ha	87.7
Natural forest	3 373 400 ha	27.0	9 127 100 ha	73.0
Standing stock	697 022 500 m ³	45.0	850 571 500 m ³	55.0

Source: Yunnan Forestry Department, 2003: 19.

HISTORICAL CHANGES IN THE FOREST TENURE SYSTEM

Policy changes in forest resource tenure in Yunnan province after the founding of the People's Republic of China can briefly be divided into the following phases: 1) the land reform of the early 1950s; 2) the “four fixings”⁸ from 1960 to 1962, when forest resource tenure was first titled; 3) the two hills system from 1981 to 1984 onwards; 4) wasteland auctions; and 5) implementation of the Rural Land Contract Law beginning in 2002. The focus of this study is on the later three phases.

The two hills system

From the early 1980s, forestry reform became increasingly urgent following successful implementation of the agricultural household responsibility system (AHRS), which was initiated in 1980 by farmers in some areas. Collectively owned cropland was assigned to individual households with ten- to 15-year contracts. AHRS provided farmers with incentives to raise production, which in turn promoted agricultural productivity. The same system was extended to forestry about two or three years later, starting with implementation of the Three Regulations for Improving Forestry Management (*linye sanding*). Deforested areas, barren hills and small patches of forest were transferred from the communes to individual families as freehold hills. For other land, known as shared responsibility hills, households were assigned management rights under contract, but tree and land tenure was retained by the collective. (The largest and most productive timber forest land remained under collective ownership, but was often poorly managed.) These arrangements for forest tenure are known as the two hills system, and were implemented nationwide.

In Yunnan province, parts of the forest land where ethnic minorities still practised shifting cultivation were allocated to individual households under this system, so it was sometimes called the two hills and one land⁹ policy.

Implementation of the Three Regulations for Improving Forestry Management began in 1979 in Yunnan province. At that time, the Provincial Committee of the Chinese Communist Party (PCCCP) and the Revolutionary Committee of Yunnan Province (the provincial government) issued a policy entitled “Announcement on allocating freehold hills to households”, which stipulated that the government should allocate a portion of barren land for afforestation by households. The regulations were as follows:

- Production teams with barren land should allocate 1 to 2 mu to each household as freehold hills, with the areas and quantity of barren land allocated by each production team depending on the forest resources that the team owned. If there were insufficient collectively

⁸ The central government issued a new policy in 1959 that allocated labour force, land (including forestry land), draught animals and production tools to each cooperative to motivate rural people's production.

⁹ That is, freehold hills, shared responsibility hills and shifting cultivation land. Traditional shifting cultivation was practised by minority groups in western Yunnan up until the mid-1990s. Basically it was a slash-and-burn technique in which most large trees and all bushes were cut and burned when they were dry. The residues were used for fertilizer and the land left for six to ten years after one or two crops. This method required very simple technology and low inputs, but large areas of land for shifting. Local governments allocated areas for households' shifting cultivation in the early 1980s, but the practice was stopped in the mid-1990s, because of shorter and shorter fallow periods, making it impossible for soil fertility to regenerate and for rational outputs to be sustained.

owned barren hills to meet the requirements for allocation, a portion of nearby, fragmented State-owned barren hills could supplement them. Production teams with no barren hills of their own could allocate 1 to 2 mu to each household from nearby State-owned barren hills.

- Freehold hills allocated to individual households were still owned by the collective or the State (through production teams, townships or communes), but the use rights belonged to the households. Farmers could plant trees for fuelwood, timber and cash crops, such as fruit and bamboo. They could also grow medicinal plants and other local products on their forestry land. The products belonged to the person who planted the trees.
- Production and management activities on freehold hills could be conducted in owners' spare time only; owners should always be present for collective work and their activities on freehold hills should not affect the production team's collective economic activities.
- The County Revolutionary Committee rather than the production team had the authority to divide barren hills and decide which part belonged to the collective and which should be allocated to individual households. The committee was also responsible for issuing freehold hill certificates to each household. The allocation of State- or collective-owned forestry land to households as freehold hills was prohibited, as was the allocation of grassland that could be used for grazing animals.

In March 1981, the Central Committee of the Chinese Communist Party and the State Council passed Regulations on Several Issues for Conserving Forests and Developing Forestry, which state that the purposes of the three regulations for improving forestry management policy are to stabilize property rights for forests and forestry land, to redefine freehold hills and to allocate responsibility for forest production.

In June 1981, Yunnan PCCCP and the Yunnan Provincial Government held the Forestry Development Conference. The conference decided that there was no need for change in areas where the Central Committee's 18 Items for Forestry Development policy (issued in 1961) were implemented and forest property rights were identified and clear; where forest property rights were identified during the land reform period, and had not changed since; and where property rights had been adjusted following 1980 regulations. Counties that had not clarified property rights for forest resources should do so by placing land markers to show boundaries, issuing ownership certificates for forest and forestry land and submitting a report of activities to the provincial government.

In July 1981, the Office Department of the State Council issued Document No. 61 to promulgate the Ministry of Forestry's Briefing on Stabilizing Forest Property Rights and Fulfilling Responsibilities in Forest Production. Stabilizing forest property rights, delineating freehold hills and clarifying responsibility for forestry became key activities of the period.

In the meantime, the provincial government and the PCCCP issued another policy entitled Using a Strong Approach to Protect Forest Resources, which emphasized the need to "stabilize forest and forestry land property rights, whether State-owned or collective-owned forest, once ownership has been clarified, it would be best not to change owners". In November 1981, the Office Department of the PCCCP asked each county to establish a task force on the Three Regulations for Improving Forestry. In December, the PCCCP and the provincial government issued the Announcement for Implementing the Three Regulations for Improving Forestry, which identified the objectives, responsibilities, work and policy principles of the Three Regulations, emphasizing the need to use legal tools to deal with forest issues and to manage commercial forests collectively.

This announcement was geared towards stabilizing existing property rights for forest and forestry land, rather than attempting to establish a new system. It stated that in those areas where the Central Committee's 18 Items policy had been implemented and forest and forestry land property rights had been identified and were clear, there was no need to change ownership. Any disputes over property rights that had not been identified before were to be solved during implementation. After identifying forest and forestry land property rights, land markers were to be placed to show boundaries, ownership certificates for forest and forest land were to be issued and a final report was to be submitted to the provincial government.

Normally, local governments could allocate from 3 to 5 mu per household as freehold hills, but those with more forest resources could make larger allocations. However, State- and collective-

owned forestry land could not be allocated to households as freehold hills. Households could use freehold hills for a long time, but could not rent, sell or transfer them. On the other hand, commercial trees, fruit trees and bamboo planted near the house belonged to the household and could be inherited. Trees planted in public places, such as along nearby roads or ditches, belonged to the person who planted them.

The responsibility system for forestry was based on similar experiences in agriculture, and adopted some of the same arrangements. In principle, specialized agencies of the State manage State-owned forest. In areas without specialized agencies, production teams represent the State and manage State-owned forest, taking a Two Fixes and Three Guarantees approach by fixing borders and management areas, and guaranteeing no forest fires, no forest damage as a result of farming and no illegal forest cutting. Collective-owned forest can be managed by establishing collective forest plantations, forest user groups and forestry-based, specialized households. After making an inventory of personnel, tasks, costs and payments needed, forest plantation user groups or forestry-based specialized households can apply for contracts to manage specific forest areas. Some well-established forest plantations have independent accounting systems, while scattered forest areas can be contracted to forest user groups or forestry-based specialized households. Whatever kind of responsibility system is adopted, the aims are to ensure stable property rights, link rights with responsibilities and ensure the people and units that work more get more benefits. Economic activities should be based on contract documents that can ensure implementation.

In June 1983, Yunnan PCCCP and the provincial government issued a new policy entitled *Several Regulations on Freehold Hills and Shared Responsibility Hills*. The regulations stated that “we should liberate our thinking and broaden policy space. Like reform policies in agriculture, forest can be managed by households while remaining in State ownership. Freehold hills and shared responsibility hills should be in the hands of farmers”. The regulations also emphasized that “those production teams without barren land can allocate a portion of nearby State-owned barren land to households as freehold hills, but ownership will still belong to the State”. Additionally, “it is prohibited to allocate large areas of commercial forests and young forest stands to households as freehold hills”.

In March 1984, the provincial government issued another policy entitled *Broadening Forest Policy and Widening Exclusive Forest Management Rights*, which emphasized the need “to deal carefully with historical problems related to forest property rights, and to allocate freehold hills and shared responsibility hills to households”.

From the beginning of implementation of the Three Regulations for Improving Forestry and the two hills system in 1981 until the end of December 1983, 185 380 production teams carried out reforms. Of these, 179 531, or 96.8 percent of the total, had completed reforms. Roughly 4 841 200 ha of collective-owned barren land had been allocated to individual households as freehold hills. In total, 185 380 households were allocated 83 percent of the total barren land for distribution, at an average of about 20.3 mu for each household. A total of 6 331 200 ha of collective-owned forest land was allocated to households as shared responsibility hills, accounting for 87 percent of the total forestry land for household distribution. In addition, 862 200 ha of forestry land was fixed as farmland (no longer allowing shifting cultivation), and 1 936 200 ha of grassland was distributed to individual households for grazing animals. The total allocated area of Yunnan province under reformed forestry was 13 970 700 ha, but among the prefectures within Yunnan there were large differences in allocations (see Table 2).

TABLE 2
Areas allocated to households in prefectures (in thousand ha)

Prefecture	Freehold hills		Shared responsibility hills		Grassland	Shifting cultivation land	Total	
	Area	%*	Area	%*			Area	%*
Lijiang	329.5	70.0	569.8	100.0	189.9	18.9	1 108.2	88.4
Simao	386.4	76.0	514.7	64.0	243.7	259.0	1 403.8	77.1
Dali	451.3	97.0	843.6	91.0	74.1	20.7	1 389.6	92.5
Dehong	81.2	64.0	149.1	82.0	73.2	12.8	316.3	78.6
Lincang	234.1	100.0	329.8	100.0	96.2	178.9	839.0	100.0
Baoshan	504.5	96.0	313.1	74.0	196.5	14.5	1 028.6	87.4
Chuxiong	834.4	100.0	831.9	100.0	42.2	0.0	1 708.5	85.7
Yuxi	209.8	97.0	341.4	100.0	39.5	0.0	590.6	99.0
Wenshan	200.7	72.0	333.4	79.0	220.3	104.7	859.1	83.4
Qujing	574.0	87.0	651.1	87.0	19.4	19.2	1 263.6	87.7
Honghe	370.7	70.0	719.3	100.0	330.0	138.7	1 558.7	90.6
Zhaotong	331.6	80.0	211.4	89.0	301.5	23.7	868.2	88.7
Dongchuan	10.3	96.0	4.9	54.0	23.4	0.0	38.6	89.5
Bannan	15.0	11.0	28.7	20.2	16.4	59.9	120.1	34.3
Diqing	21.7	54.0	126.7	48.0	0.0	0.0	148.3	48.4
Nujiang	26.0	100.0	98.4	100.0	14.4	11.2	150.0	100.0
Kunming	260.0	79.0	263.9	100.0	55.6	0.0	579.5	89.2
Total	4 841.2	83.0	6 331.2	87.0	1 936.2	862.2	13 970.7	87.7

* Refers to the proportion of the specific kind of land that can be allocated.

Source: Yunnan Forest Department, 1984: 270–271.

To encourage farmers to invest in forestry on a wider scale, in 1983 the PCCCP and the provincial government issued Several Regulations on Freehold Hills and Shared Responsibility Hills and Regulations on Allocating Freehold Grassland and Implementing the Responsibility System. With these regulations, freehold hills, shared responsibility hills, grassland and shifting cultivation land were allocated to households province-wide.

From June 1989 to December 1994, certificates of State-owned forest ownership were issued throughout Yunnan province. In total, ownership of 3 221 200 ha of forestry land, or 88.4 percent of total State-owned forests, was certified among State institutions. Of this total, State-owned forest enterprises comprised 443 800 ha or 13.8 percent, State-owned plantations 1 284 400 ha or 35.7 percent, nature reserves 1 189 300 ha or 36.9 percent, prefecture and county commercial timber companies 255 200 ha or 7.9 percent, and the remainder was managed by other departments – 187 800 ha or 5.6 percent of total State-owned forest land. This was the first time since the establishment of the People's Republic of China that the ownership of State-owned forest resources had been clarified.

Auctioning use rights for barren land

In September 1993, based on further reform of use rights for rural land while insisting on State and collective ownership of forestry land, Yiliang county undertook the first forestry auction experiment in Yunnan. Use rights for 12 000 ha of barren and shrubland were auctioned to farming households, individuals from urban areas and other social groups with the capacity to develop and manage barren land.

In April 1994, the Yunnan Provincial Rural Development Conference was held. During this conference, the PCCCP and the provincial government praised Yiliang county's efforts in auctioning barren land, and decided to auction use rights for barren hills, low-quality forest land, shrubland and valleys throughout the province. From April to August 1994, 57 counties auctioned 77 800 ha,

earning 36 788 500 yuan (equivalent to US\$4 536 190). These revenues are equivalent to about 14 times the investment in reforestation by province, prefecture and county governments in 1993.

At the beginning of the same year, the office departments of the PCCCP and the provincial government approved a policy for Suggestions on Auctions for Collective-Owned Barren Land (including low-quality forest land and shrubland), which detailed the design and approaches for auctions. At the same time, most prefectures created implementation strategies and policies for conducting auctions more practically and feasibly. In November 1994, the tenth session of the Eighth Standing Committee of the Provincial People's Congress elevated the auction approach from policy to law and approved Regulations for Auctioning Use Rights for Barren Land.

In order to speed up auctions, almost every prefecture set up a task force for auctioning use rights for barren land with an office in charge of daily activities. Based on good policy, governments at different levels began to increase investments for reforestation and issued favourable policies, such as reducing and/or remitting taxation and strengthening information and technical services.

In January 1996 and June 1998, Yunnan PCCCP and the provincial government organized two meetings to distil and exchange lessons and experiences of auctioning use rights for barren lands and to promote the development of forest resources. Based on the findings of these meetings, a new policy on Some Suggestions on Improving Auctions and Encouraging Barren Land Development was approved in January 1999. This policy encouraged participating households to develop barren lands. Between 1994 and 1999, use rights for 777 505.3 ha of barren land were transferred to households and other social groups (including urban residents) throughout Yunnan, with differences among prefectures (see Table 3). Of this total, 764 287.7 ha, or 98.3 percent, was collective-owned, and 13 217.6 ha, or 1.7 percent, State-owned. A total of 455 442 farming households, urban residents and social groups acquired use rights; 450 000, or 98.8 percent, of these were farming households. Altogether, 120 567 000 yuan (US\$14 866 460) was collected from auctions. At the end of 1997, 413 547.7 ha had been afforested, accounting for 53.2 percent of the total area to which use rights had been auctioned.

TABLE 3
Areas and compositions of auctioned forestry land (ha)

Prefecture	Barren land	Forest land	Shrubland	Total
Lijiang	19 520.0	0	0	19 520.0
Simao	29 633.7	0	712.2	30 345.9
Dali	30 110.9	0	0	30 110.9
Dehong	56 300.0	336.2	108.0	56 744.2
Lincang	44 813.5	76 853.8	4 528.9	126 195.6
Baoshan	26 693.3	0	5 206.7	31 900.0
Chuxiong	31 091.9	657.3	6 705.7	38 454.9
Yuxi	25 063.3	0	0	25 063.3
Wenshan	33 935.1	194.6	0	34 129.7
Qujing	39 690.6	0	0	39 690.6
Honghe	49 950.9	0	266.3	50 217.2
Zhaotong	2 231.9	1 885.3	480.7	4 597.9
Dongchuan	2 600.3	0	0	2 600.3
Bannan	80 000.0	0	145 333.3	225 333.3
Diqing	384.8	0	0	384.8
Nujiang	1 937.4	79.3	0	2 016.7
Kunming	40 666.7	2 466.7	17 066.7	60 200.0
Total	514 624.3	82 473.2	180 408.5	777 505.3

Sources: Prefecture and municipal reports.

Implementation of the Rural Land Contract Law

Land tenure security, including the tenure of forest resources, has been receiving greater attention from the public, including local farmers. In response to this increased attention, the National People's Congress spent more than two years drafting the Rural Land Contract Law. It was approved by the Standing Committee of the National People's Congress, which is in charge of formulating and monitoring laws and regulations, in August 2002 and was put into force on 1 March 2003.

The law defines household contracts as the basis for rural land, while also allowing other contract approaches, such as user groups and collectives. It distinguishes different contract periods for different types of land: 30 years for arable land; 30 to 70 years for forestry land (longer for some specific forests, for which approval from forest management bureaux under the State Council is required); and 30 to 50 years for grassland (Article 20).

The law also regulates the rights, responsibilities and obligations of different stakeholders, including farming households, villagers' committees, villagers' groups and governments at different levels. These rights, responsibilities and obligations are different from those in previous laws. The law gives much authority to landowners, emphasizing, for example, that villagers' committees and/or villagers' groups, rather than government agencies, decide whether or not to adjust land allocations among households. Within villagers' committees and groups it is not the leaders who decide on adjustments, but rather the agreement of two-thirds of total households or representative villagers.

The law gives landowners more authority to decide tenure arrangements, but it is not clear how it should be implemented. The Yunnan Provincial People's Congress is currently drafting detailed regulations for implementation.

In 2003, the Central Committee of the Chinese Communist Party and the State Council issued a decision on Accelerating Forestry Development; this was the first time that the Central Committee issued a specific policy on forestry development. The decision contains 25 articles, sets out development goals for forestry and adds new regulations. Two articles focus on tenure arrangements, specifying that freehold hills that have already been allocated to individual households can be used by households as they wish; the trees belong to the households, and no individual or institution can take back the land or forests. Shared responsibility hills should continue to issue contracts. Collective responsibility hills should have clear operational approaches, such as joint stock plantations and jointly managed plantations. Article 13 states that it is better to "allocate just the share to individual households rather than the hills, and distribute benefits rather than forests and trees to individual households". Clarification of the tenure system should include effective ways of stabilizing the transfer of use rights for trees and forests; any social group and individual can acquire use rights through contract, renting, transfer, auction and negotiation (Article 14).

MAJOR FORMAL USE RIGHTS OVER FOREST LAND

The rapid succession of changes in forestry land use rights has led to the emergence of several formal forms of tenure in Yunnan province. The following are the most notable of these.

Freehold hills

According to the two hills system, freehold hills allocated to individual households must be barren land. The purpose is to encourage farmers to plant trees and develop forestry by following the principle that "whoever plants trees owns them", but this has not always been the case. In some areas timber forests that were close to the village and easy to manage were allocated to individual households, while in others only those that were remote from the village and difficult to manage were allocated. In yet other areas, during the late 1980s, local governments combined freehold hills and shared responsibility hills into one type of forestry land, called freehold hills.

Freehold hills are managed by either individual households or collectives, and are run by farmers hired or subsidized by individual households or collectives. The various levels of government have not provided a great deal of support or technical services for reforestation and management on freehold hills. In many places, freehold hills were redistributed according to such factors as forest type, location, growth period and forest stands, as well as social factors such as number of family

members. The result is that each family owns several plots. In most cases, there are no clear boundaries between plots, so it is difficult for households to manage their land effectively. In Yunnan province, each household typically has about 10 mu, but some have only 2 to 5 mu. The reasons for distributing land according to the number of household members include equity, equality and consistency with the agricultural responsibility system.

Shared responsibility hills

The two hills system also allocated collective forestry land to individual households for management; these allocations are known as shared responsibility hills. In Yunnan, about 56.7 percent of the collective-owned forest land was allocated to individual households in this way. According to the two hills policy, shared responsibility hills are areas with forests and trees, and households have the right to manage forests and trees only, acquiring benefits according to their labour contributions.

In many places, forestry land under shared responsibility hills was allocated according to the number of family members and/or labourers in a household. In most cases, approximately 10 to 20 mu was allocated to each household, although this sometimes rose to more than 100 mu, depending on the community's forest resources (usually forest stock). A similar allocation method was adopted in most places, and each household tends to own several plots. In addition, no contract period was specified, so most households paid more attention to obtaining and maintaining food security when the policy was first implemented. Many households have not taken their management responsibility seriously and have proceeded to log their forests, which has resulted in serious deforestation. This is the major reason why the two hills system has not been successful in many places throughout Yunnan.

Collective responsibility hills

In some areas, forestry land was not allocated to individual households, and clear collective responsibility was maintained; this form of tenure is known as collective responsibility hills. Collective management was preferred in some areas because there were few forests, historically the forests were collectively managed, and there was concern that forests would be destroyed if they were allocated to individual households. The total area designated as collective responsibility hills is roughly 6 604 500 ha, or about 34.0 percent of the total area designated for forestry development in Yunnan province. Current management approaches for collective responsibility hills include the following.

Joint stock forest farms: In some areas, collective forest resources have been converted into stock shares for the households within a villagers' group or committee. Shares are distributed to village members according to family size. This method is known as "distributing the stock rather than the forests", and is very different from formal joint stock systems. Within this system, each villager who is linked to a household is a shareholder. A shareholder committee has decision-making rights, is responsible to the villagers' group or committee and elects a member from among villagers to be its manager. A certain percentage of farm profits are distributed to shareholders once a year, and the rest is handed over to the village administration for general welfare or invested in farm ventures. In practice, shareholders make a limited contribution to the farm's management, which is not considered particularly important in many joint stock forest farms; shareholders' benefits are not taken into consideration because individual households have no access to them.

Collective forest farms: In some areas forest resources managed by collectives have gradually been converted into collective forest farms, which have become a major management type. Villagers' groups or committees select several villagers through village representative meetings, and give them responsibility for care of forests. The villagers' group or committee organizes logging and marketing, and villagers may receive a share of the profits; taxes and fees are usually deducted before profits are distributed to households. Villagers' groups and committees also purchase agricultural production materials with revenue generated from forests and distribute these to households.

Collective management: Some villages take a collective management approach. The collective hires forest guards to manage the forest, and controls all benefits, with the aim of protecting the forests and maintaining natural regeneration. Management effectiveness depends on the accountability and transparency of village heads and the effectiveness of forest guards. There are two possible outcomes: management is effective, and builds its own momentum, or poor management is perpetuated.

Contracted operation and management hills

This new approach emerged in the 1990s, after the auction of barren land use rights. Its defining characteristic is that operation and management rights during the contract period, which ranges from 30 to 70 years, belong to contractors (both individual farmers and social groups). Contractors can gain benefits from the management and utilization of forest resources by adhering to regulations and policies. Forest resources may be located within or outside the village. The contractors can be villagers, other social groups or urban residents. High investment and industrialization are associated with this management approach, and the income and benefits are much higher than those from other forms of tenure arrangement.

Effectiveness and impacts

Since the implementation of reform and open door policies in the early 1980s, Yunnan province's forest tenure system has evolved considerably. This evolution has resulted in the coexistence of different use rights for forest resources and, to some extent, private ownership of forests. These different use rights for forestry land and ownership over forests and trees vary in effectiveness and have produced different impacts in different areas.

DIVERSIFIED MANAGEMENT

China's forestry reforms of the early 1980s consisted of three elements: the clarification of forest ownership rights; the allocation of collective-owned forestry land to households under the two hills system; and the introduction of responsible production systems for forest management (Ministry of Agriculture, 1982: 361–364). The two hills system involved the contracting of collective forestry land under three different arrangements: freehold hills, shared responsibility hills, and collective responsibility hills. Under this system, freehold hills and shared responsibility hills were accorded different purposes and implied different rights.

Freehold hills were intended to encourage farmers to plant trees to meet household fuelwood and timber needs by privatizing use rights to land and the ownership of trees on the land. Shared responsibility hills were introduced with the aim of modifying management methods within the collective system (Liu, 2001: 248). Tenure and management arrangements for shared responsibility hills vary, with some areas adopting household contracting and management and others maintaining some form of collective management. In all cases, trees on shared responsibility hills remain the property of the rural collective. In cases where shared responsibility hills were contracted to individual households, those households are entitled to receive a share of forest benefits. Both the percentage of forestry land allocated under each tenure and management arrangement, and the terms of benefit sharing between the collective and households on shared responsibility hills varied according to local circumstances (Liu, 2001: 248).

Recent research on forest tenure in Yunnan concluded that the two hills system has three important shortcomings (Liu, 2001: 249–251): 1) freehold hills have not met their objectives, with trees planted on only 20 to 50 percent of allocated land, in spite of a regulation stipulating that households must plant trees within three years or risk having their land taken back by the collective; 2) the introduction of shared responsibility hills has resulted in increased deforestation and illegal cutting and a rapid decrease in forest resources, because food security is the first priority for very poor households, which cut trees to generate cash for purchasing food and other daily items; and 3) household-based forest management has increased the operating costs for forestry. These shortcomings have been attributed to a lack of tenure security, frequently shifting forestry policies and the allocation of forestry land based on principles of equality rather than on management efficiency, effective financial and technical support and assistance from the government.

Under the two hills system, many villages in Yunnan have experimented with management systems that can be described as common property management. These local approaches can be divided into three broad categories. The first is management by the village collective, in which the management unit "is public, functions as an owner/manager, institutes a unified system of resource management, and can be considered a common property institution. Some forests are managed on this basis, and it is still an approach applied in reforestation" (FAO, 1999: 104). The second approach is long-term management of collective forests by specialized households under contract with the village collective (FAO, 1999: 104). And the third is a public or private shareholder association, typically organized by the villagers' group or committee, in which villagers contribute use rights to forestry land, labour, or capital in return for a share of the benefits obtained from the land (FAO, 1999: 104; Liu, 2001: 252). To some extent, such experimentation with different forms of collective forest management has flourished under the lack of law at local levels (for a discussion of self-initiated shareholding systems see Liu, 2001: 252–253; and for a description of experiments with common property see FAO, 1999: 104–106).

According to the two hills system, collectives have the right to take back use rights from households that do not plant trees on freehold hills within three years; do not take responsibility for managing forests adequately on both freehold and shared responsibility hills, resulting in deforestation and degradation of forest; and/or destroy forests through activities such as illegal logging on both freehold and shared responsibility hills. However, no specific government agencies are authorized to take land back. Until 1998, in most villages land was allocated to individual households, and village heads were appointed by government officials. Although village heads were nominally accountable to higher levels of government, they and their families did not want to oppose the villagers, who were their neighbours. As a result, village heads usually failed to carry out their monitoring responsibilities. Since 1998, with enforcement of the Organic Law of Villagers' Committees of the People's Republic of China¹⁰ and the strengthening of forest management policies, villagers' committees have taken partial responsibility for forest monitoring and management through village regulations and rules, but the results of management are still not satisfactory.

Another problem related to weak monitoring and management of forests under the two hills system is the ambiguity of ownership. Laws relating to landownership (including forestry land) appear to be clear. Based on the constitution, the National People's Congress formulated the Land Management Law (1998), the Forest Law (1998) and the Rural Land Contract Law, which stipulate that "land close to urban areas belongs to the State. Land in villages and suburbs belong to farmers' collectives. Housing plots, freehold farmland, and freehold hills belong to the collective.... Other collective-owned land should, according to the laws, be protected and managed by the collective; for land belonging to more than two collectives, management rights belong to village groups; for land that belongs to the township, management rights belong to the township's government". The amended Land Management Law stipulates that "forest resources belong to the State except where they belong to the collective and are regulated by laws. For the ownership of forests, timber trees and forestry land that belong to either the State or collective, county or local government should issue registration and certification for each piece of land in order to formalize ownership to individual farmers".

However, in spite of this legal clarity, studies show that ownership of forestry land remains ambiguous. First, it is not clear what kind of land should be considered "forestry land". Some local governments define all non-arable land resources except homesteads, roads and water surfaces as forestry land. This causes confusion between forests and grasslands, and even between forests and agrarian land, because there are no clear definitions of these different types of land use. Second, collectives no longer exist in many places, so it is not clear which entity is legally responsible for collective ownership. Where they do exist, collectives cannot take legal responsibility for forestry land, which means that the legal entity responsible for collective ownership is powerless. Third, on the ground, collective ownership is often not assumed by the villagers as a group (CDS, 2005).

BENEFITS AND COMMUNITY LIVELIHOODS

Throughout China, local communities' dependence on forest resources varies greatly according to the natural endowments, land tenure arrangements and access to forest resources of each community. Forests generally contribute from 10 to 70 percent of communities' livelihoods, but the revenues from forest resources account for less than 5 percent of gross domestic product (GDP). In Yunnan province, forest resources are concentrated in western prefectures and municipalities, such as Diqing, Lijiang, Nujiang, Baoshan, Dehong, Simiao, Xishuangbanna and Linchang. These areas have a total rural population of more than 13 million people, for whom more than 50 percent of daily activities are based on forests, including the collection of fuelwood for family consumption, shrubs for fodder, wild mushrooms, medicinal plants and wild vegetables for both family consumption and cash income, and timber for cash income. Some communities in Yunnan's eastern prefectures generate a reasonable income from forests by, for example, providing accommodation

¹⁰ This law describes villagers' committees as "grassroots villagers' autonomous organizations characterized by villagers' self-administration, self-education and self-service based upon democratic election, decision-making, management and supervision". It aims to encourage rural people to exercise direct democracy and to establish basic democratic systems.

for urban people and collecting wild mushrooms and medicinal plants. Forests may provide 20 to 50 percent of total household incomes for the 2 million people who inhabit forest areas in this region, but more than 10 million rural people in eastern Zhaotong, Qujing and Kunming obtain little income and few benefits from forests (about 10 to 20 percent of their total cash income) because there are very few forest resources (the forest cover rate is about 15 percent) in these areas.

The different levels of local community dependence on forests also derive from differences in forest tenure systems. This is part of the reason why the Chinese government pays so much attention to improving the tenure system for forest resources. Since the 1980s, the key objective of rural reform in China, particularly of land reform, has been to define the differences between ownership and use rights. Establishing this definition is a government priority that is supported by almost 800 million farmers. However, despite the reforms carried out over the last 20 years, farmers have not acquired secure use rights for forestry land. This can be illustrated through the following problems.

Benefit rights are not exclusive. The principle of “whoever plants trees owns them”, which permits inheritance and transfer, was clearly outlined in a 1956 policy with the purpose of encouraging local people to develop and protect forests. However, this principle has generally not been adopted and does not reflect basic market economy principles, in which the market guides buyers and sellers. Legally, individual property rights for timber forests and trees, at least for planted forests, are unclear. China’s Forest Law states that “forest resources belong to the State unless regulated to collectives by law”. If both the law and the policy were taken into account, there would be dual ownership: one owner being either the State or collective, and the other a farmer. However, according to the law, this is not tenable, as rights must be exclusive and cannot be controlled by two parties at the same time. In addition, China’s Civil Law emphasizes that a person’s legal benefit rights must be conducive to the common interests of the whole country. So, “whoever plants trees owns them” really means “people plant trees and the whole country owns them”. In other words, “whoever plants trees owns them” refers to production but not to sale and/or consumption. China’s Forest Law clearly states that farmers must obtain permission from the county forestry authority or township government before they harvest trees from their freehold hills and forestry land contracted from collectives. Permission is controlled by the central government’s quota system, which means that forest owners have no right to determine how much and when to harvest. In addition, the fact that the quota is controlled by all levels of government under the central government, makes it very difficult for local situations to be represented from the centre to the provinces, right through to the county, so it is difficult for the quota to reflect the real needs and production capacity of specific forests – reflecting needs and capacities is difficult enough from the county to the township and villagers’ committee levels. At all levels of government, human influence makes the quota allocation system difficult to manage, which became obvious after the logging ban of 1998, when most farmers in most counties of Yunnan province were not allowed to harvest any timber.

Forest policies limit farmers’ practical use rights to forestry land. The most prominent example of this is China’s classification of forests.¹¹ During field studies, farmers often complain that the forest department and foresters determine the areas and scale of public forests, but the forest department’s recommendations are often overruled without repeal. This is typical of a planned economy, and undermines the roles of science and technology while – even more serious – violating the rights of tenants. It is therefore not surprising that farmers complain about classification.

The government has strengthened forestry departments’ role in forest resource management. In order to expand the authority of forestry departments, the government has assigned considerable power to them for managing forests. More powerful forestry departments restrict the rights and functions of local government, and particularly the roles of farmers in managing and developing forest resources. Departments often do not understand the rural socio-economy and local communities’ needs, and forestry workers seldom consider the interactions among trees, forests and human beings (Yan, Zheng and Yu, 1992: 42–43). They consider their own position and the purpose of forestry to be more important than human beings, and overemphasize the ecological function of forests, ignoring the fundamental role of forests in improving human welfare. Such forestry departments exercise use

¹¹ This classification started in the late 1990s and early 2000s and divides forests into two major categories: public forest, which functions to protect the environment and enhance public welfare; and commercial forest, which is intended for timber production and profit-making for the producers.

rights over forestry land as distant managers. It is the forestry department rather than the tenant that determines the functions and purposes of forest land and the category of forests and trees, based on their own opinions and according to “forest science”. In forestry departments’ view, the role of farmers is merely to plant trees according to technical designs, contributing their labour and time, rather than exercising their ownership rights.

Programme factors limit forest owners’ use rights over forestry land and their ownership over forests and trees. For example, some forestry programmes that focus on ecological benefits stipulate that only a fixed percentage of the project area can be used for economic forests, and the trees planted must have protective functions rather than generating economic benefits. Other, large-scale programmes require forest plantations to be contiguous, both physically and in terms of the category of forests and trees. These limitations create obstacles to farmers’ use rights to forestry land.

Local communities’ ability to adapt to national and provincial policies is also important in determining whether and to what extent they can benefit from forests. Such adaptation depends on local social capital, as illustrated in the example of Taohua villagers’ committee.

Taohua villagers’ committee is located in the west of Yulong county, Lijiang municipality (northwest Yunnan), about 90 km from Lijiang. It is one of the key forestry areas in Lijiang municipality, and contains 18 villages. The villagers’ committee is made up of about 580 households with 2 500 people from a range of different ethnic groups including Bai, Lisu, Naxi, Pumi, Tibetan and Han. According to a detailed government land-use survey in 1993, the total area of Taohua villagers’ committee is 163 961.3 mu (10 930.8 ha), of which forestry land (all of which is forest land because there is no barren land) amounts to 10 024.5 ha, or 91.7 percent, and farm land to about 370.7 ha, or 3.4 percent of the total, providing about 2.2 mu per capita. The main crops are rice, wheat, maize, potato and beans, as well as some cash crops, such as tobacco and rape seed oil. Other sources of income include apple, pear, chestnut, walnut and plum, as well as income from non-timber forest products (NTFPs) such as mushrooms, particularly matsutake. Before the 1998 logging ban, the villagers’ committee depended greatly on the forest for cash income, especially from timber and NTFPs; in 1997, net per capita income reached its highest level, at about 840 yuan (US\$104). However, the logging ban seriously affected farmers’ income, which decreased to 740 yuan (US\$91) in 1998 and to 700 yuan (US\$86) in 1999. For the villagers’ committee, income from forestry decreased from 2 455 000 yuan (US\$302 713) in 1997 to 220 000 yuan (US\$27 127) in 1999, a drop of more than 91 percent. This represents a reduction in the proportion of total income derived from forests, from 56.1 percent in 1997 to just 5.7 percent in 1999. In 1999, villagers did not receive any income from timber production; the forestry income of about 220 000 yuan (US\$27 127) was all from NTFPs.

The most interesting story from Taohua is how the local community set up a system of village tenure rules before the logging ban was implemented. Taohua commenced commercial timber harvesting in 1973, when it initiated a new local economy based on collective timber harvesting and group decision-making. Villagers were represented in decision-making for the harvest and sale of logs, and also created regulations for timber harvesting. Key among these regulations were *si tongyi* and *yibenzhang hesuan*, meaning that there is only one accounting book for all timber harvesting in the villagers’ committee, and villagers carry out joint forest management, joint planning for harvesting, labour sharing arrangements and joint profit distribution. When the village’s commercial timber harvest increased, villagers considered the sustainable use of forests within the context of conservation. Forest management institutions adapted to changing conditions, improving as they did so, and villagers were able to enforce and improve their regulations continually.

The first rule of *si tongyi* is a power sharing mechanism based on group decision-making. When collective timber harvesting began in 1973, all decision-making became a group process. Every year, the heads of the villagers’ committee held meetings at which villagers’ representatives drew up plans for logging and timber harvesting before individual villagers applied for harvest certificates. Villagers’ committee members then considered a number of criteria for each logging site and village; these included forest resource conditions, infrastructure needs, quotas, road conditions, economic development, and location (upland or lowland). The villagers’ committee then passed the plan to a meeting of villagers’ representatives for final approval, before issuing harvest certificates from the township forestry station. The forestry station decided the total amount of timber, the number of logging sites, road conditions, logging methods and duration of logging. If the village representatives did not agree with these they could return to the villagers’ committee for reconsideration.

The second rule concerns benefit sharing based on an income distribution system controlled by the collective. Benefits and responsibilities are shared among the community of the villagers' committee, and at the village level. Taohua collectively controlled the distribution of income from timber production, and the villagers' committee governed the benefits of logging for individual villages and the whole community. From the beginning of timber harvesting in 1973 until 1981, all resources and means of production were managed communally, even though the value of timber was not high. The villagers' committee returned only 3 yuan (US\$0.37) per cubic metre (about a fifth or sixth of the total income from timber) to the villages that were in designated logging sites. With implementation of the two hills system in 1982, ownership of community forests was determined at the village level and some forest land (rather than barren land) was allocated to households as freehold hills. In order to adapt to this situation, 70 percent of total income was returned to the village, and 30 percent was controlled by the villagers' committee. This not only secured the forest owners' rights over forest resources and products, but also took into account benefit sharing and the stability of forest tenure at the village level, thereby guaranteeing more income for the owners of forestry land and forests.

The third rule is household involvement based on collective arrangements of labour. Every year, logging labourers were employed from all 18 villages in Taohua, apart from those that did not have labourers to spare. Every household and villager was involved in timber production and related activities. The villagers' committee made contracts with villagers' groups only, and not with individuals. Activities included road construction, logging and the loading, unloading and transport of timber, and the income and expenses of each activity were accounted. Labourers' income from logging depended on their specific contributions, and the detailed accounting of income was designed to control free riders. For example, workers were paid 0.5 yuan (US\$0.062) per cubic metre for each of the four processes in logging – felling, topping trees, trimming felled trees and barking logs.

The fourth rule imposes rotational logging. From when Taohua first harvested trees in 1973 until 1980, the villagers' committee organized villagers for clear cutting. As the quota for timber cutting increased, problems with clear cutting emerged, and the villagers' committee formulated new logging methods and management that introduced selective cutting. Tree cutting had to be implemented and monitored by the villagers' committee; individual cutting was prohibited. Tree cutting had to be on a rotational basis, and clear cutting was banned. (Local forest management practice leaves cleared plots for more than ten years to regenerate before new cutting commences.) Rotational cutting practices sustained green areas in the watershed forest, as well as sustaining the village economy. Before logging commenced, a chute was built for moving the logged trees, seed trees were selected and only overmature and adolescent trees were cut. Trees with a diameter of less than 24 cm could not be cut, and villagers had to avoid shocking small trees. During and after logging, the members of the villagers' committee checked and evaluated the logging process, penalizing any logging groups whose activities broke the rules. These rules were well enforced and the logging areas functioned for water and soil conservation purposes, as well as providing good conditions for the growth of juvenile trees (CDS, 2005: 213–236).

CAPACITY AND INSTITUTIONAL SUPPORT

As in many other developing countries and regions, many different factors in Yunnan have an impact on forestry development; these include human resources, financial inputs, technical services and policy incentives. In 1998, CDS conducted a questionnaire survey on major constraints for the further development of forestry, involving more than 246 government officials and academics. Respondents mentioned the following factors: insecure tenure arrangements and unclear boundaries (22 respondents, 8.9 percent of the total), insufficient financial inputs (82 respondents, 33.3 percent), poor management (46 respondents, 18.7 percent), long production cycles and low profits (74 respondents, 30.1 percent), conflicts between forestry and animal husbandry (16 respondents, 6.5 percent), and others such as poor policy implementation and inappropriate tree species selection (six respondents, 2.4 percent) (Zheng, Mu and Su, 2001: 81). The survey made no mention of human resources.

In fact, the development of human resources for forestry in Yunnan is not a primary issue. Farmers have enough time to engage in forestry activities if they can obtain decent returns. This explains why the survey – which in any case was about forest tenure – did not pay more attention to

farmers' capacity for forestry. Lack of adequate financial input is a greater problem; the government has no specific funds for promoting forestry, especially collective forestry, while farmers are still too poor to invest household resources in forestry. In 2004, CDS conducted another questionnaire survey of five villagers' committees representing different socio-economic situations in Yunnan and involving 400 households. The survey results show that household expenditure on production in 2003 was 1 407.7 yuan (US\$174), or 17.9 percent of total expenditure. Of this, investment in forestry was less than 5 percent. Among the 400 households, 360 had loans for covering both production and living expenses, but only two households utilized these loans for forestry activities (Zheng, 2005).

A key question is why farmers do not invest in forestry when, as many studies have shown, they do not lack the capacity to manage their forests. In Yunnan province there are 25 ethnic minority groups, each of which (including the Han Chinese) has a long tradition and practical experience of protecting and managing forests. Many groups believe that spirits control all living things in the area and guarantee the safety of human beings. People pay their respects to spirit trees, offering sacrifices to gods and ancestors under them. They believe that the more a family pays for maintaining its spirit forest, the wealthier that family will become. For instance, Yao people have a village god (*Zhaishen*) and a forest spirit (*Linshen*) who protect the village. For these spirits, every village maintains certain nearby forest areas as *Fengshui lin* (geomantic omen forests – spiritual forests) and landscape forests. The key function of the spiritual forest is to protect village wealth, and none of its trees can be cut, even when they are dead. The landscape forest protects the natural environment and village safety, and only its dead trees can be cut.

Zhuang people worship the power of the dragon, which lives in the dragon hill or dragon forest. Water source hills are regarded as landscape hills. According to the regulations, trees on the dragon headwater source hills cannot be cut, neither can white pine (*Cupressua junbris*), pine and fir trees on households' hills.

Miao people view the hills and mountains behind the village as dragon hills and mountains, and the forests and trees growing on them have spiritual importance. As dragon hills and spiritual trees play a role in water conservation, and as water brings wealth, the hills are considered gods that control everything. Therefore, people's activities must respect the hills, and should not offend them. For Miao people, the hills give birth to all things on earth and nurture human beings.

Temples are built in front of some Naxi villages to house statues of the wealth spirit, the hill spirit and *Mawang* (the horse king, also a spirit). Every summer, villagers hold meetings to check the implementation of regulations and commence the closure of the mountain. Every village also has its own clan hills, which are their ancestors' resting places, where trees cannot be cut.

This discussion leads into another question regarding why farmers keep their spiritual trees and forests well but not the trees and forests on their own hills, especially on freehold hills. The answer to this lies in the technical services and institutional incentives provided by the government.

In China, technical services are provided by technical research and extension institutions that extend from the central government down to townships; villagers' committees in some counties of Yunnan province have technical forestry extension workers. Farmers should have easy access to these technical services, but this is not the case for two reasons. First, the supply of technical services is limited. The nearest source of technical services for farmers should be township governments, but township technical staff spend most of their time on township government affairs, which is called "core work", and providing services for farmers is a second priority. The second reason is the quality of the available technology. Most technical staff at the township level have received only one session of professional training and cannot update their knowledge.

The two hills system provides only limited incentives for farmers to plant and manage trees and forests, especially in terms of tax exemptions and reductions, cash and seedling subsidies. The forest auction policy provides some incentives, such as tax reductions and exemptions within three years after contractors plant trees, and subsidies of 30 yuan (US\$3.7) per mu for seedlings; the Grain for Green Policy¹² provides more subsidies. In 2003, the central government issued a decision on

¹² The central government issued this policy in 1999 with the aim of encouraging farmers to stop farming on land that slopes at more than 25 degrees and to transfer their activities to forest and grassland. Farmers who stop farming and plant

Accelerating Forestry Development, which emphasized the need for both central and local government to decrease taxes and increase investment. However, the extent to which this decision can be implemented is not clear, neither is the extent to which farmers would benefit from its implementation. Studies show that some policies, especially those requiring local government (county and township) to provide financial support or co-financing, are difficult to implement because of local governments' limited revenues.

GOVERNMENT POLICY AND LEGISLATION

There are several issues related to the implementation of legal instruments, especially national laws and policies. First, when policies are initiated, agencies are set up and budget and human resources support are put in place, but implementation tends to be characterized by a good start and a poor continuation, because of lacking institutional responsibility, human resources, enforcement and monitoring. Second, there are conflicts among different government agencies. When there are benefits to be gained from involvement in a project, agencies compete with each other for the greatest share. When benefits are less significant, they shift responsibility among themselves. Third, the financial and human resources that would guarantee the successful implementation of laws and policies are lacking.

Regarding the laws and policies themselves, there are several main issues. First is the absence of documentation on the content and clauses of laws and policies. For example, when the government encouraged local farmers to develop barren land by auctioning use rights to barren land to individual households, it proposed that banks in some counties should offer loans to support farmers during the difficult stage of establishing and developing their forests. However, such informal arrangements create conflicts of interest between the systems operated by the financial organizations that provide the loans and those operated by the local government. Second, and more important, current laws regarding the forest tenure system do not distinguish clearly between forestry landownership and forest ownership; there are no specific articles regulating forest ownership. For instance, households and/or contractors have certificates for land use that do not regulate the ownership of forests on the land. The principle of "whoever plants trees owns them" lacks legal support and can be misinterpreted or violated by the local government for its own purposes.

It is worth emphasizing that local government has increasing opportunities to participate in policy-making and legislative processes. For instance, there was a slight difference in policy-making processes between the two hills system and the auction of use rights to barren land. The former took a purely top-down approach, with local government merely following central and provincial government directives, while the latter was not controlled by a national policy on auctions. Auctions were first held in one county in Yunnan province, with a province-wide regulation following almost two years later. Another example is the drafting process for the Rural Land Contract Law, which included an "experts' draft" aimed at accommodating advice and recommendations from experts, and a "consultative draft" to solicit feedback from broader society. All social groups and individuals were invited to offer feedback and recommendations on the consultative draft.

Despite improvements, there are still three main problems with government policy and legal procedures. The most important is that the majority of stakeholders – the landowning farmers – do not participate actively because there is no mechanism for involving them and they lack access to information. As a result, farmers frequently complain that they, as landowners, have no right to decide how to dispose of their land, including forests. The second problem is that some national policy and laws have not been fully implemented by local governments. This is why in some places villagers claim that the policy and laws implemented in their village are different from those they have heard about via radio or TV. The third problem is farmers' lack of effective channels through which to reflect their views to higher-level government agencies, especially at the provincial and central levels, which means that their rights cannot be protected legally.

trees get 200 kg of grain for eight years and 78 yuan for seedlings and social welfare; farmers who stop farming and cultivate grass get 200 kg of grain for five years and the same quantity of cash for seeds and social welfare.

Contribution to sustainable forest management and poverty reduction

Adequate and effective forestry policies and legal instruments are an important foundation for sustainable forest resource management and utilization, the harvesting of valuable forest products, the generation of cash incomes and the reduction of poverty. Considering general theories of property rights in the Chinese context, CDS has concluded from long-term research on forest tenure systems that adequate and effective forestry policies and legal instruments must simultaneously fulfil the following three basic requirements:

- Rights must be exclusive: they cannot be shared by two parties at the same time, although one party may possess many rights. This exclusiveness should be clear in terms of both policy regulation and legal instruments.
- Rights must have clear durations, which must be at least equivalent to the production cycle. “Security is enhanced if the duration of rights is either in perpetuity or for a period that is clearly spelled out and is long enough for the benefits of participation to be fully realized” (Ellsworth and White, 2004: 11). Any change in rights must be agreed by all the parties involved.
- Under the market economy the acquirement of any right must be at cost so that the owner is ensured a profit in addition to covering trading and operational costs (Zheng, Mu and Su, 2001: 11). This principle is not only at the core of institutional economics, but is also a fundamental requirement for institutional guarantees.

Linking these considerations with the analysis of forest tenure types in Yunnan, the following conclusions may be drawn regarding the contribution of forest tenure to sustainable forest management (SFM) and poverty reduction.

FOREST TENURE, SFM AND POVERTY REDUCTION

Forest tenure systems may affect SFM and poverty reduction in the following ways:

- *By affecting farmers’ use rights to forest resources.* For instance, poverty reduction projects that focus on cash tree plantations may fail to meet their objectives because poor households have already lost their rights to barren land as a result of the auction policy.¹³ The logging ban may also frustrate rural families’ forest ownership, as more than 24 million ha of forest was identified as natural forest from which farmers are not allowed to harvest any timber, including fuelwood, of which about 11.5 million ha has been planted. These policies run counter to the principle of “whoever plants trees owns them”, as farmers who own natural forest have lost their forest utilization rights, and therefore also their interest in managing forests.
- *By guiding the status and degree of local people’s participation in projects, depending on their activeness and independence.* Farmers are not willing to plant timber forests because the duration of contracts for using forestry land is unclear and because there are heavy taxes and fees related to timber harvesting. They prefer to plant cash trees or eucalyptus (despite the negative impacts of eucalyptus trees on the environment), which generate benefits more quickly. In principle, this situation could be improved by the Rural Land Contract Law, but this law has not been effectively implemented.

¹³ According to a CDS study, only about 20 percent of households acquired forest use rights after the forest auction policy was implemented in Yunnan province. This means that about 80 percent of rural families lost their rights to use wasteland, even for grazing animals and collecting fuelwood.

- *By influencing management, and thus sustainability.* For instance, the government's insistence that farmers sell all timber from freehold and shared responsibility hills to government-owned timber companies encourages farmers to manage fruit trees rather than timber ones.
- *By affecting benefit distribution, and thus SFM and poverty reduction.* The proportion of households that possess property rights to forest resources and the extent of those rights determine the scale and level of local farmers' participation in forest management, thereby influencing SFM and poverty reduction (Zheng, Mu and Su, 2001: 6).

Well-managed forest resources contribute to poverty reduction

Secure forest tenure ensures well-managed forests, which may contribute to poverty reduction and the improvement of farmers' well-being. One example is Xiaoshao villagers' committee in Kunming municipality, Yuliang county. The committee includes about 400 households and 1 400 residents, with total forestry land of about 47 000 mu (3 130 ha). About 40 percent of forests have disappeared since the two hills system was implemented in 1982. Logging was common throughout all the villagers' groups within the committee, primarily for building new houses and so that households could reap economic benefits from the forest while they held management rights. In 1988, the villagers' committee closed forests to farmers because "the hills were bare, the water sources were dry, and the people were poor". In 1990, all forestry land was formally taken back under village collective management. After about ten years, village leaders estimated that tree cover in Xiaoshao had returned to approximately its 1982 level, but village leaders had the problem of generating income to pay forest guards. They decided to contract the hills to individual households, which took responsibility for managing forests and were given exclusive rights to harvest mushrooms. This initiative was first introduced on an experimental basis in one villagers' group in 1992, when approximately 800 mu (53.3 ha) of forestry land was contracted out for a total of 3 400 yuan (US\$419) a year. In 1993 and 1994, other villagers' groups introduced the practice, but the contracted land areas remained small and collective income was minimal.

In 1995, the village adopted a different contracting approach, and non-villagers were allowed to contract management rights. As a result, the area of land contracted increased greatly, and collective revenues from contracting rose to approximately 360 000 yuan (US\$44 390). Village rules required that contracting fees be used to cover annual operating expenses, including staff salaries and public works projects for each villagers' group. The increased contracting revenues allowed villagers' groups to cancel all other collective contributions, taxes and fees that had been imposed on farmers, and additional profits were distributed among all villagers' group members on a per capita basis. Village leaders provided farmers with annual accounts of expenditures and profit distributions. The practice of including non-villagers in the auction process continued from 1995 to 2000, with contracting revenues increasing each year to a maximum of 630 000 yuan (US\$77 682) in 2000. In each year, the revenues were sufficient to cover all public works and to generate profits for distribution to villagers, although the amounts distributed varied among villagers' groups, depending on the extent of public works that were required and the amount of contracting revenue raised. Village leaders reported that many villages had used the revenue to undertake basic agricultural infrastructure improvements, such as village reservoirs and irrigation schemes.

In 2001, however, the villagers' committee reversed its rules for contracting to outsiders, while continuing to encourage village residents to participate in the auction process. This shift led to a reduction in contracting revenue from 630 000 yuan in 2000 to 580 000 yuan (US\$71 517) in 2001, but villagers' committee leaders were unanimous in their support for the decision. When asked whether they would favour allocating forestry land to households, farmers expressed opposition. Non-contractors replied that they were happy to receive annual profit distributions "without doing anything", and reported that the benefit distribution in their villagers' group the previous year had been 300 yuan (US\$37) per person. Contractors pointed out that management by a small number of contracting households, which lived on the contracted land during the mushroom season, was more efficient and ensured better forest protection while providing the opportunity for individual profits. In 2003, the villagers' committee decided to set up an ecotourism site for urban tourists; during the rainy season, tourists can learn how to look for and collect wild mushrooms, joining home stays and picnics, while in the spring they can enjoy the pristine natural environment (Schwarzwalder and Zheng, 2001: 16–18).

KEY FACTORS CAUSING UNSTABLE AND INSECURE TENURE

In China, the most important of the factors relating to unstable and insecure tenure for forest resources is the frequently changing government policy. Continuing with the story of Taohua villagers' committee, in 1998 the logging ban was enforced and all logging activities stopped. As a result, a successful local practice ended even though forest tenure remained the same. The collective ownership of forestry land and the private ownership of parts of forests became *de facto* obsolete. The logging ban not only threatened tenure security, but also undermined local activities, procuring the following negative impacts on local communities:

- The income from timber production and related activities such as labour and transportation plummeted. It was estimated that in 1999 total village income decreased by 2 million yuan (US\$246 609), or about 800 yuan (US\$100) per capita. More than 1 000 people (about 40 percent of the population) returned to poverty. Some villagers can barely survive, because their income was mainly from logging, charcoal burning and/or providing services to logging activities. They used this income to buy rice and other subsistence needs, and farmers currently have only a three to four month grain ration on which to survive for the whole year.
- The rapid decrease in income meant that many infrastructure plans could not be implemented, leading to conflicts between the villagers' committee and villagers' groups, which had an impact on the authority of the villagers' committee and on collective action.
- Following the loss of income and food support from both the villagers' committee and their families, about 150 students (50 percent of the total) had to stop attending Taohua primary school; children from poor upland villages were particularly hard hit. In addition, in 2000, 12 of the 45 students graduating from Taohua primary school were unable to go to high school.
- The decreased demand for labour services and the resulting labour surplus have created security problems and ethnic conflict. Upland villages, such as Lisu and Pumi, depended mainly on forestry for their livelihoods, and 80 percent of their grain supplies were bought with income from forestry. These villagers now depend on illegal logging for survival.
- Somewhat ironically, forest conservation and fire control activities in the area are also facing difficulties, as villagers have lost interest in conservation and fire prevention. In the opinion of many villagers, forest fires can even be a good thing because they made it easy to gather fuelwood and mushrooms, which can be sold. Illegal logging is extremely difficult to control.

Informal tenure arrangements

Many communities in Yunnan still practise traditional forest tenure systems, but the government has paid little attention to these. Such systems include the Naxi people's "public hills"¹⁴ in Lijiang municipality, and spiritual forests for minority groups such as the Dai, Yao, Miao and Zhuang. These kinds of informal tenure system are common property regimes and the main management approach is collective management, which seems to be adequate and effective. In 2001, CDS and the Rural Development Institute of the University of Washington conducted a joint field study of 13 villages in three counties (districts) of Yunnan province. This study concluded that: common property resource management of forestry land exists, to varying degrees, in all 13 villages; both local officials and farmers expressed strong support for common property resource management on some or all of their communities' forestry land; in many contexts, heads and farmers felt that common property management arrangements for forestry land have been as successful as, or more successful than, household contracting in terms of achieving important policy goals; and the national legal and policy framework for forestry land should provide increased flexibility in designing and implementing land tenure arrangements for forestry land based on unique local circumstances and

¹⁴ In which two or more villagers' committees share ownership of certain forest areas, taking a joint management approach and operating a benefit sharing system among their communities.

preferences, including common property resource management approaches (Schwarzwalder and Zheng, 2001: 36–37).

INCOMES AND BENEFITS GENERATED FROM DIFFERENT FOREST TYPES

In 2004, CDS collaborated with the College of Economic Trade at Yunnan Agricultural University on a survey in ten provinces of southern China, including Yunnan, where the survey covered six villagers' committees in six counties. The 232 sample households in Yunnan comprised 12.9 percent of the total sample households for the ten provinces. The results of this study show that the highest incomes and benefits were achieved by: shared responsibility hills for more than 57.0 percent of households in Yunnan (and about 28.6 percent of households in the ten provinces); freehold hills for 19.9 percent in Yunnan (40.5 percent in the ten provinces); collective responsibility hills for 16.7 percent in Yunnan; and contracting operation and management forestry land for 6.4 percent in Yunnan (CDS and College of Economic Trade, 2005: 100).

Regarding different management approaches, the highest incomes and benefits were achieved by: individual household management for 58.1 percent of sample households in Yunnan (72.1 percent in the ten provinces); collective management (villagers' groups and villagers' committees) for 23.9 percent in Yunnan; and joint management, including user groups and stock-sharing forest farms, for 17.9 percent in Yunnan (15.4 percent for the ten provinces) (CDS and College of Economic Trade, 2005: 111).

Economic implications of decentralized forest tenure

The economic implications of decentralized forest tenure in Yunnan are closely linked to farmers' livelihood security. During the early 1980s, when forestry land and parts of forests were allocated to individual households, most farmers were struggling at the edge of poverty and their livelihood sources were heavily dependent on farming activities and the few available sources of off-farm income. In these conditions, the allocation of forestry land and forests became an important means of livelihood. This situation was aggravated by the liberalization of timber markets. Many households chipped wood and sold it to obtain grain, salt and/or cooking oil. Timber harvesting became a source of tuition fees and other expenses for middle school students. This is why some studies conclude that the timing of liberalization policies regarding the two hills system was not appropriate (CDS, 2005: 29). Later, especially after the early 1990s, most rural families had enough food for their own consumption, and their economic situation improved dramatically. However, developing diversified income sources and increasing cash incomes became important considerations for most rural families. In this situation, tree plantations can be one but not the only option. In some places, rural residents would be happy to spend money in auctions for the use rights to barren land. In summary, forestry land allocated to individual households during the early 1980s helped them to alleviate poverty by harvesting trees, while during the early 1990s it helped them to improve their well-being by planting trees.

Environmental implications of decentralized forest tenure

The lessons learned from changes in Yunnan's forest tenure system arrangements since the early 1980s indicate that policy devolutions in forest tenure have diverse environmental impacts. The rapid changes in forest cover rates clearly illustrate the impacts of policy devolution on forests and the environment (see Figure 1).

FIGURE 1
Changes in forest cover rates in Yunnan province

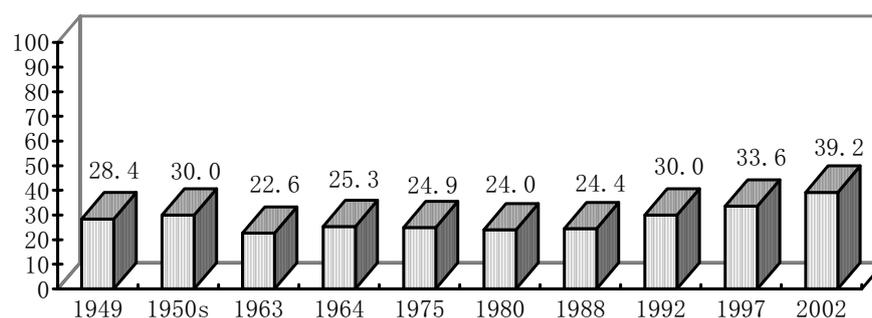


Figure 1 illustrates the great extent to which forest resources were destroyed during the Great Leap Forward (*da yue jin*) of the 1950s,¹⁵ as trees were chipped to provide fuelwood for steel and iron smelting all over the country. Within the 14 years from 1949 to 1963, forest cover decreased by 5.8 percent. The formulation of policies for forest tenure began in 1962, and identified forest property rights as the major motivating factor in people's planting of trees and protection of forests. As a result, forest cover increased, but not for long, as the Cultural Revolution (*wehua da geming*) and the People's Commune Movement (*renmin gongshe hua yundong*)¹⁶ revolutionized politics and the economy, respectively, in the 1960s and early to mid-1970s. During this period, forests and forestry land were taken back into State and commune ownership, and forest resources were seriously damaged as people lost the incentive to protect them. Subsequent policies at the beginning of the 1980s defined responsibilities for forest management, and were followed by the two hills system in the early 1980s. Figure 1 shows that during the 1980s forest cover remained roughly the same even though the government invested heavily in reforestation and forest management. The findings of the first forest resource survey conducted in 1987/1988 show that Yunnan's forestry land in 1987 amounted to 25 012 300 ha, of which forest covered 9 327 400 ha, increasing by only 125 400 ha. The volume of standing timber was 1 349 467 600 m³, an increase of 28 155 600 m³ (Yunnan Forestry Department, 1990: 5–17).

The two hills system gave farmers the opportunity to improve their livelihood security by harvesting forests. However, the cost has been environmental degradation. In some places, farmers not only logged trees, but also opened up forestry land to plant tobacco, sugar cane, grain and other cash crops, resulting in serious soil erosion on more than one-third of Yunnan at the end of the 1990s (Zheng, 2004: 230). The auction of barren land motivated farmers to plant and manage forests, as the policy strengthened their rights over forests. A survey of forest resources in Yunnan province, reports that forestry land grew from 23 911 700 to 24 247 600 ha between 1997 and 2002, an increase of 336 000 ha. The volume of standing timber increased from 1 488 357 600 to 1 548 594 000 m³, an increase of 59 236 400 m³ (Yunnan Forestry Department and State Forestry Bureau, 2003: 24–47).

Increased forest cover since the early 1990s improved the environmental situation greatly, but the structure of forests should now be given more attention in terms of its environmental impacts. In the last ten years, the area of cash tree planting has increased rapidly, and now accounts for 10 percent of total forest land. The results of this increase are decreased biodiversity and the decreased capacity of forests to prevent soil erosion and forest fires.

¹⁵ This policy aimed at increasing steel, iron and copper production so that China could match Western countries and break away from the control and limitations imposed by the former Soviet Union. Many blast furnaces were established in rural areas to produce steel, iron and copper, which consumed extensive areas of forest.

¹⁶ This political reform aimed at purifying the socialist system in rural China. It started in 1962 and took all the production materials in cooperatives and individual farming households into commune (later called production brigade) control. Each commune then arranged its own production plan and labour needs, allocating crops and very limited cash incomes to households according to their numbers of members and labour contributions. This system was revoked in the early 1980s with the introduction of AHRS.

CULTURAL IMPLICATIONS OF DECENTRALIZED FOREST TENURE

The allocation of forest resources to individual households resulted in the loss of indigenous knowledge on forest management. Indigenous knowledge and practices are created and improved through their use by social groups, especially ethnic minorities. Indigenous knowledge and practices for the utilization and management of forest resources are characterized by integration because of specific features of forest resources. Integration requires that all individuals within a community and/or social unit obey regulations and rules that are made collectively, so implementation involves all community members. It is difficult for an individual or household to sustain these regulations and rules. The allocation of forest resources to individual households for management therefore led to the loss, weakening or dilution of indigenous management systems.

Planning and monitoring system

A main reason why many forestry policies were relatively effective when first implemented but then deteriorated – “tiger head but snake tail” as described by local farmers – is the lack of support for policy implementation. Such support should include two basic aspects: institutional support and guaranteed human and financial resources. Regarding institutional support, the government usually forms a temporary agency or leading group, with a working group under it, to implement a policy. The members of many leading groups are directors of various departments and agencies and it is difficult to bring them together, for various reasons. Working group staff also come from different departments and agencies, and follow orders from their institutional leaders; the difficulties faced by the leading groups mean that many working groups cannot function effectively. The lack of financial and human resources contributes to the failure of some forest policy implementation, especially for local government, on which the burden of implementation falls.

Policy implementation also lacks a monitoring and evaluation (M&E) system. The main actors in implementing policy are local governments (county and township) and local communities, so implementation suffers if the local government lacks the motivation to participate actively. In such situations, there is no possibility for self-monitoring and evaluation, while there is also no special agency or science-based system for monitoring policy implementation. However, M&E is an important part of policy implementation, because it identifies problems, making it possible to find ways of resolving them, and eliminates conflict among different actors. At present, most M&E activities are carried out by government agencies and are usually understood to be checks of results and quality. There is no third party to conduct independent analysis.

Recommendations for moving forward

EMPLOY A HOLISTIC APPROACH

Currently there are two important tasks for forestry development in China. The first is to incorporate forest tenure reform into the overall reforms of China's forestry development strategy. Tenure issues are a key constraint to forestry development in many parts of China, but are certainly not the only factor and sometimes not even the most important one. Forestry development in Yunnan and across China also faces problems related to institutions, taxation, opportunity costs, markets and technology. Without the harmonization of forest tenure reforms with other issues, problems will continue to plague China's forestry sector.

The second task involves integrating further reform and improvements of forest tenure systems into China's larger property rights reforms. Forest tenure, especially property rights for forestry land, is an inseparable part of the property rights system for rural land. Some local governments have drawn up integrated land development plans, but there are no clear land classifications, so policies sometimes conflict when they are implemented; conflicts between forestry land and grassland and between forestry land and farming land are particularly frequent. Comprehensive reform and integrated land-use planning at the village group level should now be a top priority.

IMPROVE THE TWO HILLS SYSTEM ACCORDING TO LOCAL CONDITIONS

The two hills system has been an important initiative for rural land reform in China, and should be maintained. Improving the system according to different local conditions means giving more authority to local governments and communities to decide how to improve it within the broader context of national development policies and strategies.

Freehold hills

For the purposes of social equity, it is necessary to ensure that every willing household holds a certain area of freehold hills. This can be achieved through negotiations, supplemented by public bidding, with priority going to the previous holders. In other words, the rights of previous holders should be given preference in acquiring freehold hills, even if bidding results in higher prices. There is no need to consider the condition of forest stands because this depends on the previous holder's labour inputs. The duration of tenure can be 70 years, and longer in some remote areas.

Shared responsibility hills

Shared responsibility hills that are barren or covered with sparse, low-value forests or shrubland, and for which it is generally acknowledged that the previous contractor under the two hills system did not make any investment, should be auctioned off, giving the former landholder priority in acquiring them. Shared responsibility hills with forest that was planted by the former landholder under the two hills system should be transferred to that landholder at the same price as for barren land. Former landholders that cannot reacquire their land through public bidding should be compensated by the government. During this process, it is important to prevent illegal logging and forest destruction. The duration of this tenure can be 70 years.

Collective responsibility barren land

Bare hills, barren, low-value sparse forests and shrublands that are owned by collectives with contracted management can be regarded as barren land and their use rights transferred through public bidding and auction. Again, the duration of tenure can be 70 years.

Collective responsibility forest land

In principle, collectives are meant to use this type of land for establishing collective forest farms that increase collective revenues and provide technical services and seedlings for individual households. Where the collective cannot continue to run the forest farm, the land can be transferred through

lease or contract to organizations or individuals that can manage it. The tenure period should be decided between the two parties and specified in the contract.

LEGISLATE AND IMPROVE LAWS TO PROTECT TENURE

Based on reform efforts to separate forest ownership from forestry landownership, national policies on forestry development should focus on protecting private forest ownership. In order to protect farmers' private ownership of trees and other products from freehold hills, shared responsibility hills, contracted operation and management hills and other areas, the Standing Committee of the Provincial People's Congress should draw up specific regulations based on the principle that "whoever plants trees owns them". Local governments should provide legal services to farmers and other social groups to help them protect their legal rights and benefits. After implementation, modification and improvement, policies legalizing farmers' private ownership over forest could become law. The most important tasks underlying this process are experimentation to identify ownership over forests and the issuance of certificates to owners. Trials can start from villagers' committees or groups, and will be more effective if they take a participatory approach.

REFORM THE FOREST MARKETING AND TAX SYSTEM

Research indicates that forestry development in Yunnan is facing many structural problems. In many places, in addition to urgently required forest tenure reform, there is need for markets for forest products (timber and non-timber), reduced taxes and fees related to the control of logging and elimination of the impacts of higher taxes and fees on individual investments in forestry (Landcare, 1998). Many households still concurrently engage in agriculture, forestry and animal husbandry; if profits from forestry cannot be improved, these households will lose their incentive to claim use rights for barren land, and forest production will not be improved. To improve production, marketing development and reforms of the tax system are needed to form new incentive systems and help local communities utilize and develop forest resources. Such reforms include: 1) classification of the Reforestation Fund for different forest types so that loggers of natural forests pay full fees, loggers of semi-natural forests pay less than full fees – especially when they make large labour, material and capital inputs – and producers of planted forests pay no fees; 2) abolition of the special local products tax for agriculture and forestry; 3) abolition of the road construction charge, the forest road construction charge, the judicial services charge, the forestry administrative charge and other charges collected by county and township governments; and 4) regulation of strict measures to prohibit informal charging and irrational fees.

IMPROVE FOREST MANAGEMENT TOOLS

With further reform and improvement of China's forest tenure system and fee and tax systems, increasing numbers of forest farmers and other producers will engage in forestry. To anticipate this development it is necessary to improve forest management mechanisms focusing on the following activities.

Strengthening management approaches based on local communities' proactive participation: In order to reduce individual households' risk in forestry and to realize scale economies, the government should encourage households to adopt different operational and management systems, and particularly to establish forest farms based on shared stock systems. In these systems, local communities should have decision-making rights. Local government may help communities to learn from outsiders through study tours and farmer field schools.

Nurturing communities' social capital: An effective method for supporting secure and stable tenure for local communities is to foster communities' social capital. Currently, the most important approach to supporting social capital is to implement the Organic Law of Villagers' Committees and make villagers the true managers of their resources and community affairs. In addition, it is necessary to provide communities with ownership rights, allow them to take responsibility, and respect minority groups' culture, knowledge and practices. Villagers should be allowed to formulate regulations themselves, be responsible for the implementation and supervision of those regulations, and benefit from that implementation.

Enriching indigenous knowledge of forest management: Meeting the challenges and taking advantage of the opportunities in China's forest management requires discovering and extending indigenous knowledge and culture by transferring and improving indigenous knowledge and practices among communities, integrating the indigenous knowledge and practices of different communities and ethnic groups, and promoting interaction between minority and mainstream cultures.

ESTABLISH AN EFFECTIVE M&E SYSTEM

Department-specific supervision should be combined with broader social supervision. The Forestry Department's cross-checking of afforestation results provides a useful model for the departmental (or professional) supervision of forestry policy. Full advantage should also be taken of the People's Congress and People's Political Consultative Commission at different levels and of other social organizations, which could assume more permanent supervisory roles. At the same time, other monitoring methods are necessary, such as media, education and channels for formal redress.

When developing and implementing forest tenure policy, it is essential to establish an effective M&E system that includes consultation processes for when different areas carry out a new policy, problem identification and solution recommendation during implementation, and studies of persistent problems and approaches for improving policy and law implementation. The human resources of consultation organizations and research institutions should be actively involved in this.

References

- CDS. 2005. *Forestland tenure and sustainable forestry management in southwest China*. Kunming Yunnan, China.
- CDS & College of Economic Trade. 2005. *Analysis report of questionnaire survey for non-arable land tenure arrangement in southern China*. Kunming Yunnan, China. (in Chinese)
- Ellsworth, L. & White, A. 2004. *Deeper roots: strengthening community tenure security and community livelihoods*. New York, Ford Foundation.
- FAO. 1999. *Legal bases for the management of forest resources as common property*. FAO Community Forestry Note by J. Bruce. Rome.
- Landcare. 1998. *Study and recommendation of land policies in Fujian province*. Asian Development Bank TA Report. New Zealand, Landcare Co. Ltd.
- Liu, D. 2001. Tenure and management of non-State forests in China since 1950: a historical review. *Environmental history*: 6(2): 239–263.
- Ministry of Agriculture. 1982. *China agricultural yearbook 1981*. Beijing, China Agricultural Publishing House.
- Schwarzwalder, B. & Zheng, B, eds. 2001. *Tenure and management arrangements for China's forestland and grassland resources: fieldwork findings and policy recommendations*. Seattle, Washington, USA, Rural Development Institute.
- Su, Y. 2002. *Building collective tenure for sustainable forest management in a multi-ethnic community: a case study in Taohua village, Lijiang, Yunnan, People's Republic of China*. Regional Center for Social Science and Sustainable Development, Chiang Mai University, Thailand. (Master's thesis)
- Yan, D., Zheng, B. & Yu X., eds. 1992. *Introduction to social forestry*. Kunming Yunnan, China, CDS. (in Chinese)
- Yunnan Forestry Department. 1984. *Forestry data, volume 7*.
- Yunnan Forestry Department. 1990. *Reviewing findings of the first forest resource continuous survey in Yunnan province*. Yunnan Provincial Forestry Investigation and Planning. (in Chinese)
- Yunnan Forestry Department. 2003. *Fourth forest resource survey findings in Yunnan*.
- Yunnan Forestry Department and State Forestry Bureau. 2003. *Reviewing findings of the fourth forest resource continuous survey in Yunnan province*. Southern Forest Resource Supervision Centre. (in Chinese).
- Zheng, B., ed. 2004. *Yunnan rural development report (2003–2004)*. Yunnan University Press House. (in Chinese)
- Zheng, B. 2005. *The grassroots perspectives on rural development in Yunnan: analysis report of baseline survey for the long-term follow-up study*. Kunming Yunnan, China, CDS. (in Chinese)
- Zheng, B., Mu, W. & Su, Y. 2001. *Field study of forestland use-right in Yunnan province, China*. Kunming Yunnan, China, CDS. (in Chinese)