

# **Building Collective Tenure for Sustainable Forest Management in A Multi – Ethnic Community: A Case Study in Taohua Administrative Village of Lijiang, Yunnan Province, China**

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**Abstract:** This study was conducted in Taohua Administrative village, Lijiang County, Yunnan Province, China. The objectives were to study local arrangement in forest land tenure and traditional joint forest management; identify a set of principles guiding forest management in a multi-ethnic community; analyze local adaptation processes in forest land tenure and management; and to understand key institutions concern with forest governance. This research shows that multi-ethnic communities, managing forests as common property resources, can achieve a certain level of sustainable management. The community may respond to new situations by adopting new management practices, or by changing local regulations.

Contrary to the “tragedy of the commons” theory, a common property approach in this study site allowed communities to privatize rights to land and other resources without dividing the landscape into small individual plots. The common property system also provides incentive for investment in long-term resource productivity. This study suggests that future forest polices in China may provide general guidelines for forestry management and development, while leaving some flexibility for local government and communities to adjust to their specific local situations. Policy makers must pay more attention to the forest access rights of local communities, and to local capacity building.

**Keywords:** Collective Tenure, Sustainable Forest Management, Multi-Ethnic Community

## **I. Introduction**

In China today, community forests face increasing pressure from local communities due to an increase of rural population and living standards. In general, most rural community forests in China are poorly managed and protected. Deforestation and forest degradation usually lead to serious environmental problems, and local villagers’ livelihoods are seriously affected by a deteriorating environment and the depletion of natural resources. Changes in forest land tenure, unclear use rights and management responsibility, and centralized decisions and planning processes continue.

This study is an attempt to investigate and analyze an adaptive local system of forest management by several ethnic communities in Yunnan, China. These forest management system demonstrate on-going practices of collective resource tenure and joint forest management. The case of the continued practice of collective tenure and local management in Taohua Administrative Village<sup>1</sup> (now called Village Committee) in

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<sup>1</sup> In China, administratively, it is divided into Provinces, Autonomous Regions and Metropolis at Provincial levels. A province can be subdivided into prefectures or cities which include a number of counties. A county is composed of several townships which may include many Administrative Villages (AV, now

northwest Yunnan provides useful insights for broader application. Local forests at this study site are shared among several ethnic groups, including the Bai, Naxi, Lisu, Han and Pumi - who, since 1973, have been involved in collective timber production. Between 1973 and 1999, local groups have not only received economic benefits from the forest, but the actual area under forest coverage has been maintained at around 90% (Su Yufang, 2001:14). For northwest Yunnan, which in general is beset by problems of over logging and serious deforestation, this high rate of forest cover is rather unusual. This village, therefore, provides an example of sustainable management of forest resources. But how can a single village go against the trend of a broader region and manage its forests in a sustainable manner? It is this question, and this village, which forms the basis of this study. The research further asks how local land tenure and institutional arrangements operate to enable collective and cooperative action in the use and conservation of forests. Also, can local forest management adapt to changing policy and market environments? Finally, how and under what conditions can a specific community establish efficient forest management?

## **II. Arrangement of Collective Tenure and Forest Management in Practice in Taohua**

Taohua Administrative Village (AV) is located in the west of Lijiang County, about 90 kilometers away from the County Seat (County Seat means main town in the county. The county is understood in English as a land measure, not an urban center). It is one of the key forestry areas in Lijiang and administers 18 natural villages. Natural Village (NV) is natural resident area in rural China. AV is the lowest level of government administration. At administrative village level, there are two very important formal organizations: the Village Committee (VC), and the Village Branch of the Chinese Communist Party Committee (VBCP). The VC is the main body exercising governmental power in the village, and the VBCP is the representative of political power in the village. They work together to govern in accordance with state laws and regulations. They normally carry out their governance and administration through the heads of the natural villages, linking with the villagers.

In 1999 there were 572 households with 2,455 people, the Bai, Lisu, Naxi, and Pumi, which adds up to 84%. It is a very special village with four different minority groups co-existing with the Han people, who comprise the final 16% of the village's population. It is also a typical forestry village in which community forest is of great importance to villagers' livelihoods. By government policy, the ownership of community forest was classified at Natural Villages (NV) level, and community forest is deemed to be under individual household responsibility and the management of natural villages. In practice, Taohua has arranged these allocated forests as a collective single plot under local management of 18 NVs at the AV level.

In 1973, due to new timber market opportunities in Lijiang County, the rich forest, the poverty of the people and their abilities, the village leadership of Taohua had negotiated with and convinced the county government to allow them to begin commercial timber production. They received an 800 cubic meter timber quota from the Shitou Township Forest Station. Taohua then became the first timber production AV in Shitou

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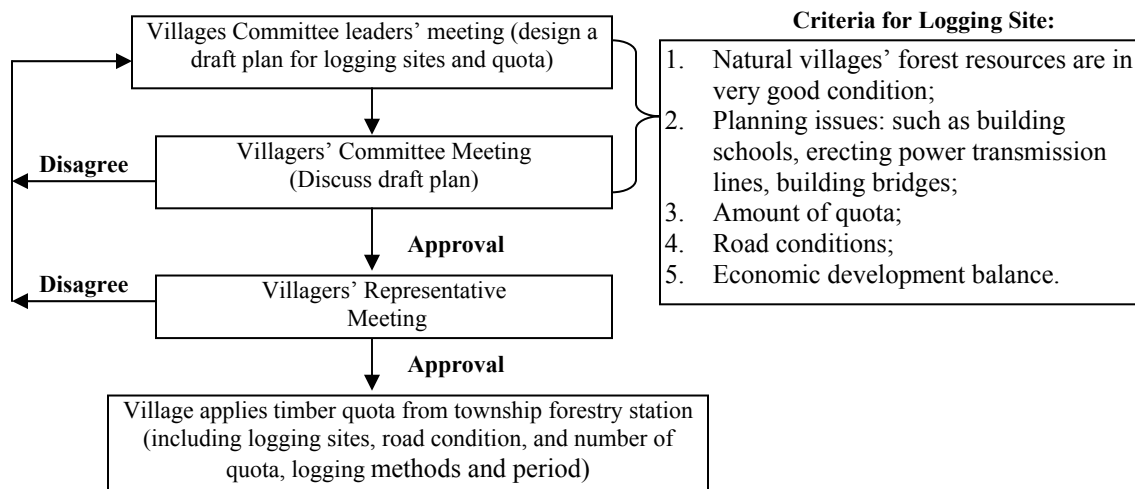
called Village Committee) and each AV administers several Natural Villages (NV, now called Village Group).

Township. A new local economy based on collective timber production and group's decision-making was initiated. The villagers had representatives to share decision-making on management and selling of timber. Meanwhile, they set up rules for timber production. Key among these were “*Si Tongyi*” (four collective timber production rules) and “*Yibenzhang Hesuan*” (one account book for all timber production). With increasing commercial timber production activities, villagers also considered subsistence use of forest in the context of conservation. Institutions around forest management interact with external conditions and change as those contexts change, and villagers were able to continually both enforce and improve these rules in a practical way.

**“*Si Tongyi*” First Rule.**

The first of the four “*Si Tongyi*” rules is power sharing through group decision-making. The decision is not made by only a few village leaders. Rather, villagers from different ethnic groups are ensured representation in the decisions on timber production. There is thus a mechanism for collective decision-making (Figure 1).

**Figure 1 Collective Decision-making for Timber Production**



Source: Discussion with villages' leader and old people groups, 2000.

It's clear that physical conditions, economic benefit and social services are also considered as criteria for logging sites. It means that besides conservation a productive forest, road access and infrastructure construction needs, the economic development balance among upland and lowland villages and different ethnic groups are also considered as important criteria for logging plans.

**“*Si Tongyi*” Second Rule.**

The second rule is benefit sharing based on collectively controlled income distribution. Benefits and responsibilities are shared by the larger community of the AV and also within the smaller community of NV members. The concern of the Village Committee, then, is not just with the benefits of logging for community forest owners (at the NV level), but for the entire community (at the AV level). Meanwhile, the income distribution between NV and AV was changing, as the value of timber, policy, market or public welfare needs were changing (Table 1).

**Table 1. Changes in Timber Production Income Distribution, 1973-1998.**

	1973~1981	1982~1986	1987~1998
<b>Administrative Village's income</b>	About 80% of total net income	30% of total net income	3% of total net income as forest conservation and fire control funds and 1% for education funds, 40% of the remaining total net income
<b>Natural Village's income</b>	About 20% of total net income	70% of total net income	60% of the remaining total net income
<b>Reasons for the changes</b>	Communal management system. All community resources and products were owned and shared by villagers.	Implementation of the 'Two Mountain System', the ownership of community forest was identified at natural village level.	Increasing infrastructure construction, social services.

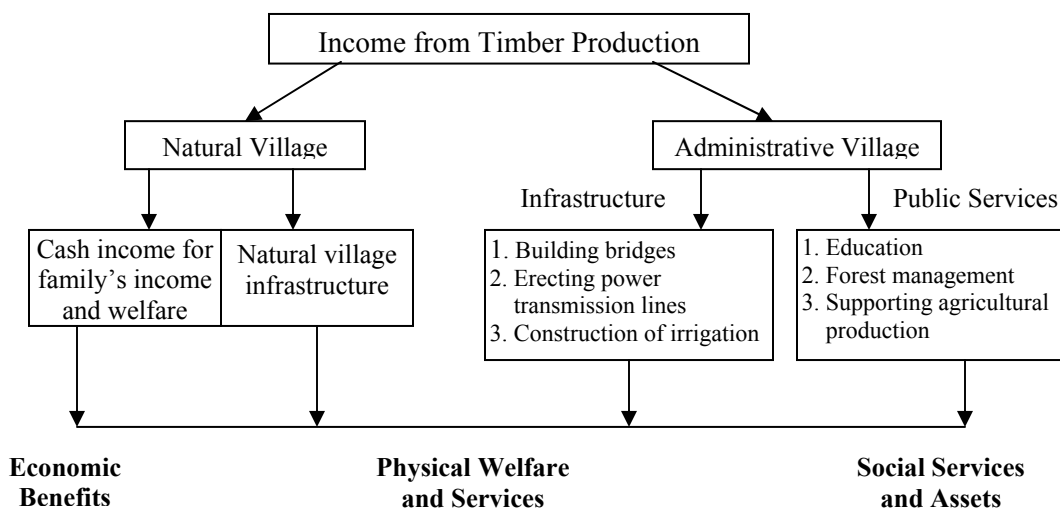
Source: village survey, 2000.

From 1978 to 1983, under the household responsibility system, agricultural land was contracted out to individual farmers, but forests remained under state control. During 1982 and 1983, with successful experiences learnt from agricultural land reform several provinces implemented the "Two Hills System" (freehold and contracted forestlands) with the aim of stabilizing forestlands, and getting farming households actively involved in restoring forest areas. This not only necessary to secures the forest owners access to forest resources and products, but also considers benefit sharing and stability of forest tenure. Under this, both freehold plots and collectively held forests (so called community forest) could be leased to individual households. The ownership of both types of forest was defined at the NV level, but for the freehold forests, individual households had use rights, rights to the benefits deriving from the forest, and rights to dispose of the forests as they wished.

In Taohua, collective timber production has, in practice, been continuous in the village and there is no freehold forest at all for household use. The ownership of community forests is with the NV, but more income goes to the owners. All the income at the AV level was used for village's infrastructure construction, public welfare and service (Figure 2). Therefore, the benefit sharing based on collective controlled income distribution and usage has achieved economic physical welfare and services benefits, and increased social services and assets.

In addition, the boundaries between state forest and community forest were changed from the fire protection line to natural boundaries. The community forest land is increased to 120,265 mu, or 80 percent of the total forest land (the state forest land is decreased to 20%). In fact, it is increased 68,965 mu and 97,100 mu compared with 1962 and 1966 respectively. Under community forest, freehold forest land amounted to 2,087 mu, or 1.55 mu per person, but in fact the freehold ownership of land was largely a paper classification and in reality there was little difference from the past.

**Figure 2 Timber Income Distribution, Taohua.**



**“Si Tongyi” Third Rule.**

The third rule is households’ involvement based on a collective arrangement for labor. Every year logging laborers are employed from all 18 NVs of Taohua, except if there is a labor shortage. Every household and villager are involved in timber production and related activities. The Villagers’ Committee only makes a contract with groups and does not allow contracts with individuals. Laborers income from logging work is dependent upon their specific contribution and the detailed account of income is designed to control free-riders. Thus, the villagers earn income not only from selling timber, but also from their labor contribution, thus maximizing their income from timber production. So whether they are from no-logging or intensive-logging areas all villagers could earn income from timber production through the provision of labor or other services.

**“Si Tongyi” Fourth Rule.**

The fourth rule is ensuring a sustainable rate of cut based on unified logging and rotational cutting. Since Taohua first cut trees in 1973, the VC organized villagers for clear cutting until 1980. As the quota for timber cutting had been rapidly increased, some problems for clear cutting arose, and then the VC started to set up rules for logging methods and management as unified logging. First, trees cutting should be implemented by the VC, with individual cutting absolutely prohibited. Second, tree cutting should be on an intermediate and rotational basis with clear cutting banned by the VC. Local forest management also enables cleared plots to be regenerated for more than ten years before new cutting. This is a rotational cutting practice which functions to sustain green areas of the watershed forest as well as village economy and income. Third, before logging, a board-chute, skidding road must be built and then seed trees would be selected, with only over matured and adolescent trees being cut. Indeed, trees with a diameter less than 24 centimeters were not allowed to be cut. During the logging process, villagers must also try to avoid damage on small trees. Fourth, during and after logging, the members of the VC strictly check and evaluate the logging processes, and if anything is not up to the required standard or in disagreement with the rules, the logging groups would be

penalized. These rules were well enforced. Nobody was above these regulations, and so the logging areas could function for water and soil conservation, and also provide good conditions for juvenile trees to grow.

**“Yibenzhuan Heshuan” One Account Book**

There is only one account book (*Yibenzhuan Heshuan*) for collective timber production. All accounts of income and expenditure (including income from selling timber, income distribution, and costs for timber production, such as labor wages, investment for road construction) are in one accounting book. And every year the final accounting report should be displayed for all villagers. This accounting process allows for the control of free-riders and maintains transparency in the VC’s decision-making process for timber production among all groups. Villagers can be aware of what decisions are made, how much income has been earned and where it is spent.

**Other Rules for Subsistence Forest Use in the Context of Conservation**

With the increased value of timber and the implementation of the quota system<sup>2</sup> by government, a number of rules based on traditional practices have been set up with regard to subsistence forest use and conservation. Such as all villagers must apply for permission and a quota from the VC for building houses and collecting fuel wood. A forest administrative system is also set up. Besides full-time staff from local government, there are 19 full-time forest guards who are hired by the VC to take care of each NV’s forests, which is totally different from other villages. And after timber production, in order to conserve the forest, the forests were classified into five types based on traditional practices of lowlander Naxi and Bai people: conservation forest, watershed forest, fertilizer forest, fuel wood forest and timber forest (Table 2).

**Table 2. Five Types of Forest Comparison**

Items	Location	Function	Utilization Patterns
Conservation Forest	Behind village, besides field and road	Prevent soil erosion	Conservation and logging ban area
Head Watershed Forest	Head Watershed area	Conserve water sources and prevent soil erosion	Conservation and logging ban area
Fertilizer Source Forest	Nearby village, enrich soil	Provide fertilizer	Collect pine needle for fertilizer making.
Fuel Wood Forest	Close to village, overgrown with brambles	Provide fuel wood	Planned cutting once year, after get permission, can be used.
Timber Forest	The rest of forests	Used for timber production and building house etc.	After get permission and quota, can be used for timber production and household use.

Source: village survey, 2000.

<sup>2</sup> A policy has been implemented since 1985 to set a logging quota for each area to control tree felling. An annual logging quota is set in Beijing for the whole country; to ensure that cutting each year does not exceed total forest recovery growth. The total quota is then divided among provinces, which in turn allocate the cut to prefectures and counties throughout each province.

### **III. Collective Management as an Adaptive Mechanism in Forest Management**

The existing situations in Taohua, and their sustainable forest management practices, lead us to ask the questions of why the village built collective tenure for timber production and forest management. Why could these institutional arrangements be so well established and implemented? Clearly, there are strategies which work to maintain effective local adaptability in negotiating state policy, and to guarantee access to forest resources and markets, and to gain economic benefits and positive environmental outcomes. There are some key conditions that influence the sustainable forest management under collective tenure based on experiences learnt from Taohua.

- **Negotiating with State Policies for Timber Production in the Context of Market Opportunities**

Through historical processes, the people of Taohua administrative village in order to respond to changing policies and market opportunities and with their former experiences of collective management in agriculture, have built and maintained collective tenurial arrangements for timber production. Local control in terms of organizations and rules are an essential aspect at an adaptive management mechanism that creates and maintains local power or authority over their resources. The villagers themselves rarely see collective timber production as meeting a demand for autonomy or isolation from the state. The meaning and purpose of new institutional arrangements for the villagers concerned often has more to do with new linkages to external authority. “There is not a demand for a reduced state but for a better state, one which is more responsive to their needs” (Li, 1996). The villagers use their effective management of forest resources to show their ability and negotiate with local government to be more responsive to their needs and support their activities.

- **Collective Control of Timber Production and Forest Management under Differential Access to Forest Resources**

This study argues that collective control of resource management is an adaptive management mechanism that creates and maintains local power or authority over resources. This local control is necessary to achieve independent decision-making, flexible involvement, equal resource sharing and effective timber production. Collective control of forest management means that 18 NVs join together for collective timber production at the AV level. These different NVs have variable access to forest resources, and, forest area per household is quite different in each village. Indeed, there is also differential access to roads as well as to timber markets.

The collective control of timber production helps in balancing the unequal access to forest resource among NVs and resolved conflicts. Different NVs, as well as different social groups have differential access to forest resources. Collective timber production not only claims a larger area for rotational cutting, increase access to forest resources and balances the differential access to forest resources, but also provides enough labor for cutting, and attracts enough capital for timber production investment. Collectively controlled timber income distribution also balances the differentiation between villages. Whether they are no-logging areas, less-logging areas, or intensive-logging areas, all NVs

share economic benefits, physical welfare and services, and social services and assets. It is evident that collective management is an effective strategy to adapt to the ecological differentiation across all NV, and ensures that all have access to the benefits derived from timber production.

- **Ethnic Diversity and the Construction of Shared Values**

In Taohua, local conditions are re-created as workable incentives for forest management. A key condition that determines the community's ability to manage resources collectively is local social cohesion and willingness to set and strive for common goals. Analytical attention must also, however, be devoted to the wider historical context. Historical and social conditions affect whether villagers are more or less willing to work together regarding their forest management. From the historical development of forest management, it can be seen that with the establishment of the People's Republic of China, the five different ethnic groups became equal co-existing members of the community with leaders drawn from each of the five groups. Whether they are Bai, Naxi, Pumi, Han, or Lisu, all groups could identify themselves as Taohua villagers. The villagers cooperate with one another rather than compete.

Moreover, all households share similar economic conditions and livelihood strategies. Forest resources therefore play a key role in determining villagers' livelihoods, and they have common interests in how these resources should be managed. Even though different groups at different economic levels may have different livelihood strategies, all households' income from timber production and related activities was generally over 55 per cent. So all groups have a similar attitude towards management of forest resources. Different groups realize that their livelihoods depend on the forest, so that they must take care of the forest for long term sustained use. Therefore, with increased dependency on timber production, different groups have constructed shared values and meanings in collective timber production and forest management.

- **Complexity of Tenurial Arrangements, Rules and Practices as Adaptive Mechanisms**

Forests are one of the most important common resources. Collective forest management refers to all kinds of forest management carried out on the basis of group action. Tenure is one of the largest and most complex subjects in forest resource management. Forest resource tenure is particularly concerned with the complex web of institutions, relationship, and human behavior that determine society's relationship to the natural forest as reflected in the ownership and use of forest. Forest management systems need to be based on a recognition that the system must accommodate the concerns of more than one participating interest group. Given such diversity and variation from situation to situation and over time, there can be no universal models. In actual practice, property is not purely based on state precinct or local understanding, but rather a mix of both.

In Taohua, the formal policies on forest tenure have changed many times. But the policies "on paper" can never respond to the actual field-level complexity of the forest tenure practices. For example, in 1982, Taohua village also designated some forestland to individual households, the so-called freehold forest. But this was only on paper,



however, and was not well followed in practice, and forest continues to be managed collectively. Thus, even though the ownership of community forest is defined at the NV level and some community forests were distributed to individual households by state policy, in practice all community forest were still managed at AV level for collective timber production. Therefore, with the complexity of tenurial arrangements, Taohua could adapt to changing policies and market conditions, and maintain both benefits from collective timber production and balance differential access to forest resources. The village demonstrates a particular situation of strength, security and complexity of forest tenure.

Institutions at the local level together with the incentives they generate are at the center of explanations of forest use and conditions. Since local institutions guide the daily consumption of natural resources, it is appropriate to keep them at the center of analyses concerning forest use. The decision-making process is always the crucial core in forest resource management. The decision-makers of forest management should be those people who are the direct beneficiaries, or an organization that can fully represent these people. In the case of Taohua, rules already exist which determine the make-up of the decision-making body as well as the process which they carry out and the criteria by which they must abide. It is clearly identifiable, then, that the decision of the group are also the decisions of the entire village.

It is important that the headman and his counselors are members of the community and owners and users of the collective forests. Since they are more easily accepted by the villagers as their own rather than as an outside agency. These special and unique features mean the VC can present the benefits and interests of the whole village. Meanwhile, the capacity and personality of community leaders is also important for effective forest management. This is not always the case, however, and forest management cannot depend solely on the personal character of local leaders. Even if leaders are biased toward community, it is not certain that they will behave as expected by villagers, or will automatically put the interests of the community before their own. The key issue is that there exist incentives and rules to regulate the leader's behavior and the rules to select better leaders and "fire" poor leaders. Thus, a good leader is always accompanied by good rules, and Taohua is a case in point.

Transparent communications between decision-makers and villagers is also important for gaining villagers' support for decision making regarding collective forests. Intense "face-to-face" communication between the villagers and decision-makers, and amongst the villagers themselves, helps to strengthen and expand transparency. Transparency and communication within the organization of collective management is an important indicator and tool to enhance villagers' participation. To increase transparency and communication requires certain rules and regulations concerning the decision making and management of the organization. There are also certain rules set up to increase transparency and communication for logging accounts in Taohua.

It is clear that the collective control of timber production in Taohua not only benefits and meets the needs of villagers, but also produces more local power or authority over the forest. Local control in terms of local organizations and rules are adaptive mechanisms that create and maintain a local communities' ability to manage their forest resources and help communities in terms of power sharing, independent decision-making, and shared

values to improve adaptability to the changes of internal and external conditions. With the construction of shared values, different groups realize that they must depend on each other for sustained timber production. The complex tenurial arrangements and rules allow for greater flexibility of involvement and participation in timber production and forest management by different groups and villagers. All villagers are equally involved in decision-making, share the benefits of, and differential access to forest resources. Moreover, collective control of timber production not only can claim large areas for rotational cutting and balance the differential access to forest resources, but also provide enough labor and capital investment for timber production. Therefore, the community can create strong adaptability to both internal and external changes to achieve sustainable collective timber production and forest management. Here, sustainable forest management means not only technology, environment and benefits, but also, the most important, local control over forest resources.

#### **IV. The Difficulties after “Logging Ban”**

However, even though collective timber production has achieved sustainable management, the economy of Taohua is highly dependent on timber production and related activities. With the implementation of the logging ban and natural resource conservation policies in 1998, the villagers could no longer harvest trees, and all of the benefits from timber production as well as their main income source were lost. They subsequently faced many problems. There are, however, a number of issues to consider.

First, the income from timber production, and relevant activities such as labor services, transportation and services has been quickly reduced. It is estimated that in 1999, total villager's income decreased by 2,000,000 CNY, or about 800 CNY per capita. More than 1,000 people (about 40% of the population) returned to living in poverty again. Due to rapid decrease income, many plans of the VC for natural villages infrastructure projects could not be fulfilled. This led to conflicts between the VC and villagers and had impacts on the authority of the VC and collective action. With losing financial and food support from both the VC and their families, about 150 (50 per cent of the total) students have discontinued their studies at Taohua primary school, particularly those from upland poor villagers.

Second, the price for agricultural products and by-products are also greatly reduced. According to villagers, from 1998 to 1999, the price for rice decreased from 1.25-1.35 CNY/kg to 1-1.05 CNY/kg, and pork from 6-7 CNY/kg to 4-5 CNY/kg, the cattle decased from 1,600-1,800 CNY/head to 900-1,000 CNY/head. The prices of medical herbs, vegetables and fruit were also slashed. All of these led to serious problems for villagers' livelihood as well as agricultural production.

Third, the decline in opportunities for labor services and the increasing number of surplus laborers led to problems of social security and ethnic conflicts. The upland villagers such as Lisu and Pumi have mainly depended in the past on forestry for their livelihood, and 80 per cent of their grain ration was bought by using income of from forestry. Now they have to sell illegally cut trees for survival.

Fourth, and somewhat ironically, forest conservation and fire control activities in the area are also facing difficulties as a consequence of government policies to promote conservation. The illegal cutting of trees by villagers is very difficult to control. After

1998, when the forest within which they lived could no longer legally be of any commercial benefit to them, villagers lost any personal interest in both conservation and fire control measures. In the opinion of many villagers forest fires can even be a good thing because after the fire they are able to easily gather fuel wood and mushrooms which they are able to sell. So, whether the villagers may use past experiences to adapt to the new policy and situation are still questions to be answered.

## **V. Major Findings of the Study**

1. Local institutions, including both organizations and rules regulating behavior at local level are crucial for sustainable timber production and community forest management. These institutions lie at the center of explanations of forest use and conditions. This case study has indicated that there is a need for organizations engaged in collective activity to improve the governance of forest resources. It also suggests that the managers of forests and decision-makers in forest management should be people who are actually direct beneficiaries or organizations that can fully represent the interests of these people.

Local organizations and institutions are both mechanisms and tools to empower people for improving capacity and enthusiasm in resource management. If sufficient conditions can be created and maintained, people's participation in forest management could be greatly enhanced and encouraged through organizational and institutional development.

2. Forest tenure is one of the largest and most complex issues in forest resource management. Forests need to be managed in large units, particularly where they are being managed not only for their environmental protection value, but also for timber production. In terms of economies of scale, especially of management costs, the experience of Taohua also argues against fragmentation of forests. Common property regimes might, therefore, be managed collectively as a way to privatize rights without dividing resources into small individual plots. Common property gives resource owners an incentive and an opportunity to manage their forest resources sustainably over the long term.

3. In China, as governments and policies change, as market opportunities or structures change, the effect has generally been to discourage and undermine local forest management. Some common property systems, however, have survived. It is clear that local communities are able to negotiate with central government's rules and, more importantly, they can adapt their own by generating local institutional rules for the use and patterns of activity that operate differently from government expectations. Alternatively they may ask the government for help in protecting their resources.

## **VI. Conclusions and Recommendations**

Although former studies of forest management in China have suggested that the policy of forest tenure had a significant influence on the sustainable management of community forests. This study shows forest resource management problems also result from specific and different conditions of the institutional and community environment. This is why

quite different management regimes for community forests can be found in many places with the same forest tenure situation. Secure and stable forest tenure is the prerequisite of efficient forest management as it creates common property rights to secure access to forests. This study suggests that local community capacity as well as the level of enforcement of rules and security of tenure are critical issues in forestry management. The case provides evidence that supports the view that for successful forest management to be achieved, attention must be paid to both the rules that allocate property rights over forest products and how those rules are enforced. Forest resources are more likely to be sustainably utilized if an effective structure of institutional arrangements exists that gives rise to an authority system meaningful at the local level.

Policy-makers need to be aware of existence importance of local capacity building. Acknowledgement of local institutional arrangements which are responsive to local conditions and which are locally managed should be incorporated in policy and planning. From this case it could be seen that the logging ban policy ignored the differentiation of local communities and the needs of local people, and resulted in some serious problems. The logging ban policy only paid attention to the impacts of a reduction of government revenue and the survival of government timber companies, but paid less attention to the impacts on local people's livelihoods. The villagers in forest areas could not only not get enough wood for household use, but also lost the income from timber production and related activities on which they are dependent for their livelihood. Moreover, the logging ban policy negates use rights of community forest. Local communities which are the owners of community forest could only conserve the forest, but could no longer use the forest for any other purpose.

Institutional adjustment is necessary to create a better participatory environment for establishing rules for resource management. It is necessary to establish decision-making rules and constitutional rules to create better participatory environments and maintain sustainable participation in collective forest management. Policy and administrative leadership from county and township government is necessary to ensure local community that their choices and institutional adjustments are recognized and supported by the government. Nurturing a better policy environment at different levels of government is key to supporting local communities' forest management activities. Some of that policy will take the form of higher levels of government "getting out of the way" and allowing local experimentation. Indeed, sensitive application of policy, based on local conditions and prospects, could protect the future of rural communities as well as the forests upon which they depend.

**Reference:**

- Anan Ganjanapan.1995. "Will Community Forest Law Strengthen Community Forestry in Thailand?" Chiang Mai, Faculty of Social Sciences, Chiang Mai.
- Baland, Jean-Marie and Jean-Philippe Plateau. "The Ambiguous Impact of Inequality on Local Resource Management". World Development. 1999, Vol. 27, No. 5:773-788.
- Bardhan, P. "Symposium on Management of Local Commons". Journal of Economic Perspectives. 1993, 7(4):87-92.
- Bennett John W.The Ecological Transition: Cultural Anthropology and human Adaptation. Pergamon Press Inc. 1976

- Berkes, Fikret. Common Property Resources: Ecology and Community-Based Sustainable Development. London: Belhaven Press. 1989.
- Besley, T. "Property Rights and Investment Incentives: Theory and Evidence from Ghana". *J. Pol. Econom.* 1995.
- Bromley, David ed. Making the Commons Work: Theory, Practice and Policy. San Francisco: ICS Press. 1992.
- Bruce, J.W and L, Zongmin. "Experimenting with Approaches to Common Property Forestry in China". FAO. 1994.
- Chusak Wittayapak, "Community as a Political Space for Struggles over Natural Resources and Cultural Meaning". A paper in 7<sup>th</sup> International Conference on Thai Studies. Amsterdam, 1999, 4-8 July
- Cleaver, Frances. "Moral Ecological Rationality, Institutions and the Management of Common Property Resources." *Development and Change*. 2000, Vol.31: 361-383.
- FAO. "A Framework for Analyzing Institutional Incentives in Community Forestry." *Community Forestry Note No. 10*. Rome. 1992.
- Fox, Jefferson Ed. *Legal Frameworks for Forest Management in Asia: case studies of community/state relations*. Program on Environment, Occasional Paper No. 16. Honolulu, East-West Center. 1993.
- Guo, Huijun and Christine Padoch. "Patterns and Management of Agroforestry Systems in Yunnan." *Global Environmental Change*. 1995, 5: 273-79
- Hardin, Garrett. "The Tragedy of the Commons." *Science*, 1968, 162: 1243-1248.
- \_\_\_\_\_. "The Tragedy of the Unmanaged Commons". *Trends Ecol. EvoL*, 1994, 9:199.
- Harkness, James. 1998 "Recent Trends in Forestry and Conservation of Biodiversity in China." *China Quarterly*.
- Hirsch, Philip. "Ethnicity, Forests, and Resource Management: Comparative Notes from Mainland Southeast Asia." *The Common Property Resource Digest*. 1998, Vol. 1:5-7.
- James Kai-Sing Kung. "Common Property Rights and Land Reallocations in Rural China: Evidence from a Village Survey". *World Development* 2000, Vol.28, No. 4, pp. 701-719, 2000.
- Johnson, D.G. 1995. "Property Rights in Rural China." Working paper. Department of Economics, University of Chicago.
- Kung, J.K. "Equal Entitlement versus Tenure Security under a Regime of Collective Property Rights: Peasants' Preference for Institutions in post-reform Chinese agriculture". *J. Compar. Econom.* 1995, 21, pp. 82-111
- Laxmi Worachai, Xiang Weihua, et al. 2000. "Market and Policy Impacts on Land Use Systems: Response of Communities and Farmers with Regard to Forest and Tree Management". Paper presented at the International Symposium II on Montane Mainland Southeast Asia (MMSEA): Governance in the Natural and Cultural Landscape.
- Leach, Melissa, Robin Mearns and Ian Scoones, eds. "Community-based Sustainable Development: Consensus or Conflict?" *The Institute of Development Studies Bulletin*. 1997, Vol 28, No. 4, October.
- \_\_\_\_\_. "Environmental Entitlements: Dynamics and Institutions in Community-

- based Natural Resource Management." *World Development* 1999, Vol. 27, No. 2: 225-247.
- Li, G., 1997. "Land Rights, Tenure, and Leaders in China." Working Paper, Food Research Institute, Stanford University, Stanford, CA.
- Li, Luyun and Du Yong "Review of Chinese Forestry Policies". Community Forest Management in Yunnan Province. China. Yunnan University Press, 1996.
- Li Weichang, He Pikun. ed. *Social Forestry Theories and Practice*. Yunnan Nationality Press. 1998.
- Lin Long Chun, Jefferson Fox, Lu Xing, Gao Lihong, Cai Kui, and Wang Lieru. "State Policies, Markets, Land-Use Practices, and Common Property: Fifty Years of Change in a Yunnan Village, China." *Mountain Research and Development*, Vol.19, No.2, 1999, pp. 133-139.
- Lynch, Owen J. Securing Community-Based Tenurial Rights in the Tropical Forests of Asia: An Overview of Current and Prospective Strategies. Washington. D.C.: World Resources Institute: Issues in Development. 1995.
- Menzies, N. and N. Peluso. "Rights of Access to Upland Forest Resources in Southwest China". *World Forest Resource Management*. 1991, Vol. 6. Pp. 1-20.
- McKean, M.A. "Success on the Commons: A Comparative Examination of Institutions for Common Property Resource Management". *J. Theor. Polit*, 1992(b), 4(3): 247-282.
- Oakerson, Ronald J., "Analyzing the Commons: A Framework" Making the Commons Work: Theory, Practice and Policy, ed. Daniel W. Bromley, 41-62. San Francisco: ICS Press. 1992.
- Ostrom, Elinor. Governing the Commons: The Evolution of Institutions for Collective Action. New York, Cambridge University Press. 1990.
- Peluso, Nancy Lee. "A History of State Forest Management in Java." Mark Poffenberger ed. Keepers of the Forest: Land Management Alternatives in Southeast Asia. Connecticut: Kumarian. 1990.
- Runge, Carlisele Ford. "Common Property and Collective Action in Economic Development." *World Development* 1986, Vol. 14, No 5: 623-635.
- Schlager, E. & Ostrom, E. "Property-Rights Regimes and Natural Resources: a Conceptual Analysis." *Land Ecoa*, 1992.68(3): 249-262.
- Scott, James C. The Moral Economy of the Peasant: Subsistence and Rebellion in Southeast Asia. New Haven: Yale University Press. 1976.
- Sturgeon, Janet. "State Policies, Ethnic Identity, and Forests in China and Thailand." *The Common Property Resources Digest* 1998, 44.
- Sun, Changjin. "Community forestry in Southern China: from People-for-the-Trees to Trees-for-the-People." *Forestry*, 1992, Vol. 90, No.6, June, pp.35-40.
- Su Yufang, "Building Collective Tenure for Sustainable Forest Management in A Multi – Ethnic Community: A Case Study in Taohua Administrative Village of Lijiang, Yunnan Province, China" same title Master Thesis, 2001.
- Tan, Jingzheng. "Strengthening Organizational Capability for Community Forest Management: A Case Study form Lishu Village, Sichun, China". M. A Thesis, Asian Institute of Technology. 1999.

- Uphoff, Norman Thomas. *Local Institution Development: An Analytical Sourcebook, with Cases*. West Hartford, CT, USA: Kumarian Press. 1986.
- Uraivan Tan-Kim-Yong. 1994. "Participatory Land Use Planning: A Method of Implementing Natural Resource Management" Bangkok: Sam Mun Highland Development Project Royal Forest Department.
- Vandergeest, Peter. "Mapping the Nature: Territorialization of Forest Right in Thailand." *Society and Natural Resources* 1996a, 9:159-175.
- \_\_\_\_\_. "Property Tights in Protected Areas" Obstacles to Community Involvement as a Solution in Thailand." *Environmental Conservation* 1996b, 23:3.
- \_\_\_\_\_. "Rethinking Property." *The Common Property Resource Digest*. 1997, 41.
- Wen, G.J., "The land tenure system and its saving and investment mechanism: the case of modem China" *Asian Econom.* 1995, J. 9 31.
- Xu, Jianchu. 1995. "Diversity in transitions: lessons learned from the Yunnan uplands in Southwest China". Pp. 421-431 In *Culture in Development and Globalization: Proceedings of a series of symposia held at Nongkhai, Hanoi and Tokyo*. The Toyota Foundation, Tokyo.
- Yao, Y., 1995. "Institutional Arrangements, Tenure Insecurity and Agricultural Productivity in Post Reform Rural China". Working Paper, Department of Agricultural Economics, University of Wisconsin, Madison.
- Zheng, Baohua. "'Privatization of Use Rights to Collective Forest Lands in China: A case Study of Wasteland Auctions in Yunnan Province/' Forest Land and Tree Tenure and Social Forestry edited by Tang Hongqian, in Chinese. 1995, pp. 254-266.
- \_\_\_\_\_. Study of the Compensated Transfer of Use Right Over Collective Wasteland in Banliu Administrative Village, Yao' An County Yunnan Province, the P.R.China. in Chinese. Yunnan Science and Technology Press. 1998.
- Zheng, Baohua; Mu, Wenchun; Su, Yufang and Zhang, Lichang. 1999. Working paper. "Investigation and Study of Forestland Use Rights in Yunnan P. R. China". In Chinese.
- Zhou, Q., "Land System in Rural China: the Case in Meitan County of Guizhou Province." In: Wen, G.J. (Ed.), The Land System in Contemporary China. Hunan Science and Technology Press, Changsha, China, in Chinese, 1994.
- Zuo, Ting and Xu, Jianchu. "Decentralization Trends of Watershed Management in Yunnan, China: A Case Study of Xizhuang Watershed of Southwest Yunnan". Paper presented at the International Symposium II on Montane Mainland Southeast Asia (MMSEA): Governance in the Natural and Cultural Landscape. 2000.
- Zuo, Ting. "Forestry *Liangshan Daohu* Policy and Its Impacts on Land Resource Management in 1980s, Yunnan, China". Benjavan Rerkasem (editor) *Montane Agriculture in Mainland Southeast Asia*. 1995, Pp. 96-103. Proceedings of a Conference at Chiang Mai University.