Collective Action in China's Recent Collective Forestry Property Rights Reform

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Abstract

China's recent collective forestry property rights reform (CFPRR) is regarded as *the third Land Reform* and has been implemented to accelerate China's rural restructuring. In departing from previous top-down policy changes, the CFPRR has focused on local collective practices and actions. It indicates a shift in China's rural governance, away from direct intervention towards support for local collective actions. Based on a case study of Hongtian Village, the origin of the CFPRR, this article analyzes the process of insinuating collective action and the impact that this has had in creating a new cultural understanding and acceptance of collective forestry property rights. In contrast to the relative insecurity of tenure that can accompany many reforms of the governance of common pool resources, the paper suggests that the success of the 'Hongtian model' mainly lies in high levels of process engagement by local people and effective interaction between villagers and the government. While not addressing all the issues associated with the inefficiency of the previous collective approach to forestry, the paper suggests that there are many transferable lessons to be learnt from the CFPRR, both within and beyond China.

Keyword: collective ownership; collective forests; collective action; forestry property rights; China.

Introduction

This paper seeks to bring into conversation three enduring themes of research in Land Use Policy: the governance and management of common pool resources (Behnke et al., 2016; Rasch et al., 2016; Reyes-Bueno et al., 2016; Vij and Narain, 2016); new approaches to effective forest management (Brandt et al., 2016; Burns et al., 2016); and questions about rural development in China (Long et al., 2012; Rao et al., 2016). This is on the basis that

forestry is probably more important in China than it is in any other country in the World. This is in part because of the sheer diversity of forest ecosystems, in part because China's forests make a significant input to local economic activity and provide a significant proportion of energy for heating rural households, and in part because they are a scarce resource in terms of timber volume per capita (Harkness, 1998; Han et al., 2014). This multiple economic, social and environmental role has meant that there has long been a struggle to achieve a balance between timber production and forest protection. Indeed, the balance has rarely been achieved, with China having experienced several periods of deforestation driven by economic incentives from governments, which has led to serious environmental problems such as soil erosion and increased flooding (Wang, 2002).

Even though the Government has begun to enhance the protection of state-owned natural forests, the demands for timber products have continued to increase in line with the nation's economic growth (White, 2006). This means that the pressure to harvest timber has increasingly been concentrated on collectively-owned forests, which are mainly plantation forests managed by local communities (Sun & Shen, 2001). However, the average output from these collective plantation forests is very low. The typical value of forestry crops from these plantations is only ￥20 per *mu*,[1] compared with ￥686 for arable land. The per hectare stock of collective plantation forests is also low, at around 30M^3, compared to an average of 77 M^3 for China's forests, 100 M^3 globally, and about 150350 M^3 in developed countries such as France and Germany (FRA, 2015). This situation clearly constrains the ability of rural communities to enjoy the economic development that their forests are capable of providing.

Many observers, both policy makers and scholars (such as Huang, 2005; Dai et al., 2002),

[1] Chinese currency, about￥6.5 =$1, 15 *mu* = 1 hectare.

attribute these problems to the ambiguity and inefficiency of collective property rights. Their views seem to be informed by Hardin's (1968) conception of the "the tragedy of the commons" in which self-interested villagers maximize their own benefits from the 'common' forests, which leads to degradation and ruin of the common. Superficially there does seem to be merit in this argument with respect to China, where centralized forestry management has proved to be inefficient by allowing all kinds of government agencies to make decisions that benefit them, while denying a stake to local people and those with management expertise (Liu et al., 2004).

The classic remedy for this situation has been to argue for the imposition of better control, either via the state or the market (Demsetz, 1967; Johnson, 1972; Smith, 1981; Cheung, 1970). However, many empirical studies have found that neither is uniformly successful in constructing a sustainable natural management mechanism because, as Ostrom et al. (1999) have argued, institutions such as the commons are not singularly predisposed to particular management regimes. Instead, there has been much interest in the potential for 'third way' local collective action to address the multiple issues involved in managing China's forest commons by harnessing the claimed benefits of both government control and market solutions (see Hobley & Shah, 1996; Agrawal & Ostrom, 2001; Ostrom, 1990; Wade, 1988; Hanna et al., 1995; Pinkerton & Weinstein, 1995). However, common pool resource-based activities vary a lot due to differences between institutions, community structures, household needs and market opportunities (Marschke et.al, 2012), meaning that there are no 'one size fits all' solutions (Barry & Meinzen-Dick, 2008; German & Keeler, 2010), while little is yet known about the impacts of the actual processes involved in implementing collective action at the local level (Steins, 1999).

While there has been some forestry policy decentralization in China since the 1990s, it is clear that lessons still need to be learned in terms of successful collective action. In this article we look back at the changes that have occurred in Chinese forestry policy, as a context for examining recent efforts to develop a localized market economy in forestry, through a programme of collective forestry property rights reform. Based on a case study in Hongtian Village, Fujian Province, Southern China, we examine the background of the reform, its process and the role of collective action in bringing it to fruition. In particular, we want to explore the extent to which conventional analyses, that place collective approaches as a third solution besides government intervention and privatization (Steins, 1999), transfer to the opposite situation, as found in China, of the decollectivization of an overly bureaucratic and inefficient form of collective forestry. While there is little doubt that collective action does offer an alternative, we seek to argue that this is less about structure and more about the nature of the collective action itself, especially whether the shareholders, such as the local villagers, were able to make their own decisions, deal with their own conflicts, and enhance the bottom up collective decision themselves. From this understanding of the agentive power of collective action we seek to conclude that property rights reforms that support collective action have the potential to be successful in China, in social, economic and environmental terms, and that this finding is significant beyond the Chinese case.

Forestland ownership and management in China

Forest ownership and management in China has very much reflected the country's social and political situation. Before the Revolution, for example, forests were mostly privately owned. After the foundation of the People's Republic of China (PRC), forest lands were confiscated and redistributed to peasants in the *First Land Reform* before being brought into a

collectivized regime in order to intensify timber production (Menzies, 1994). Initially, forest lands remained in individual ownership, although production decisions were made collectively, but after 1956 the ownership of land – including forests - was transferred to a local Collective. Rapid collectivization continued during the *Great Leap Forward Movement (1958-1960),* with about 34 *Advanced (regional) Cooperatives* united into the one *People's Commune* nationwide, which lasted for about 20 years (Liu, 2001; Yang, 2002).

One of the impacts of these changes was serious deforestation, due to the intensifying of production and a lack of incentives and foresight to replant and maintain the plantations (Yin, 1998; Ho, 2006). This eventually led to a further adjustment in property rights, with a three-level ownership regime established around the *People's Commune*, regional *Production Brigades* and local *Production Teams*, with the last of these forming the basic unit of management (Wang, 1998; Ho, 2001). This regime lasted from 1961 to the early 1980s, during which time some *production teams* developed very strong communal oversight of their land, effectively bringing together a form of collective ownership as well as management.

After China's Reform and Opening up in 1981, *the Second Land Reform* took place under which arable land was distributed to households under a form of private land tenure known as the *Household Responsibility System*. The *People's Commune* was dismantled rapidly and was replaced by *Xiang* (the same as townships), while the *Production Brigades* were realigned into *Administrative Villages (AV)*. The *Production Teams* either remained as part of the AV, or were changed into *Villager Groups*, although in many cases they lost control over their lands, with the legal power of the collective vested in the *Administrative Villages* (Ho, 2001). The same reforms did not apply to forestlands, however. Forestry property rights were

largely kept unchanged, with households allowed only a small piece of freehold forestland (about 1 *mu*[2] per capita). The remaining forestlands were held through existing contracts and tenure regimes, with the Government extracting most of the financial benefits from the forests, principally in terms of taxes and fees. These routinely accounted for over 50% of the timber price (Xu et al., 2006), and in some regions up to 70% (Li, 2000). Government also regulated timber harvesting and sales. A logging ban was placed on natural forests in 1984 and, under the Centrally Determined Allowable Cutting Quota System introduced in 1987, all non-government organizations had to apply for a cutting quota before undertaking any commercial harvesting. In complying with other regulations as well, the net benefit to forest owners of harvesting their timber was probably negative if the labour input was calculated at opportunity cost.

Unlike agrarian reform, the interpretation of forestry policies varied across China. Provinces such as Hunan, Guangdong and Jiangxi attempted to introduce agricultural contract systems into forestry, by releasing the management of collective forests to individual households. However, this resulted in mass illegal and premature cutting of over 1 million ha of forests in Southern China, as these households sought to realise the value of the timber under their control before the policy was modified or changed (Liu and Ping, 1990). Other provinces, such as Fujian for example, tried to modify collective management arrangements by establishing a new system, called 'Share Holding Integrated Forest Tenure' (SHIFT) (Song et al., 1997). Under SHIFT, a *Forestry Board* was elected within every AV and was responsible for collective forest management. Villagers held shares and received a share of net profits. The SHIFT was successful in maintaining the stability of collective forests, and was soon extended to other provinces and became the most popular regime in China (Song et al.,

[2] mu, Chinese unit, 1 ha= 15mu.

2004). However, despite its popularity the SHIFT system was far from efficient in terms of the operation of property rights. This was because the legal boundaries of the rights were often unclear, while the cost of establishing physical boundaries was high compared to the value that could be generated from harvesting the timber. As a result, many unofficial agreements were reached about the boundaries between different households, or even among AVs, and many boundary conflicts were reported, including 55 in 2004 alone (Yong'an Forestry Bureau, personal communication).

Table 1 Summary of the property rights shift in China's forest lands

Historical Periods	**Forestry land**	**Forestry crops**
Before 1949	A mixed economy of private ownership (for both investment and occupation) and public forestlands, mainly owned by national and local governments, and rural communities.	Broadly the same pattern as land ownership, although the private investment land was rented to farmers who planted and owned the trees, while the landlords owned the land.
the First land reform (1949-1952)	A dual economy of State forests, which were in national ownership and were run by State forestry farms, and small private forests owned by farmers. The main difference from the previous regime was thus that private investment lands were taken from landlords and distributed to individual farmers	There was no longer any separation between the ownership of the land and of the crops growing on the land
The collective economy （1953-1981)	The ownership of the State forests remained unchanged. However, the forests in private ownership gradually shifted from individual farmers to the collective (tothe Production Team at first, and then gradually to the People's Commune)	No change from the First land reform: the land and crops were treated as a single ownership.

the second Land Reform (19812-1998)	Very little change in ownership structure, although as the dismantling of rural communities took hold, control over the collective forestland was less effective	The situation with the State forest land and crops remained unchanged. However, management of some areas of collective forest was distributed to households in some provinces, leading to serious deforestation. Thus the collective land ownership remained but with much worse collective management and uncontrolled (and often unstoppable) illegal logging.
The CFPRR （1999-）	No change in the structure of land ownership -.	State forests remain unchanged. -The timber in the collective forests has been distributed among villagers with various localized plans and levels of villager participation.

By the 1990s, the desire for a new approach to forest management had become clear. The importance of forestry property rights had been widely accepted by the Chinese Government, which was eager to introduce a market mechanism into forestry, and then to develop an advanced forestry industry to meet the demand for timber. Therefore, the goal was to establish a forestry property rights regime fit for a market economy and, specifically, to clarify the property rights between the collective and villagers. There was, however, no established model of how to achieve this institutional shift within the type of centralised regime found in China. This was largely because the application of collective action in previous research had mainly focused on setting up effective regimes rather than de-collectivizing them in favour of new common property rights regimes (Ostrom, 1990; Agrawal and Gibson, 1999; Gibson et al, 2000; Agrawal and Ostrom, 2001).

Despite the lack of research, the forest property rights reform started in 1998, in Hongtian Village in Fujian Province, Southern China. In common with the *Second Land Reform*, it was a based on a bottom-up approach to allocating rights, but with support from the government of Yong'an City (the local authority) from the start. This support included authorizing

villagers to make their own plans for distributing property rights as part of a deliberative process that was designed, implemented and monitored by the villagers themselves. This was completely at odds with the processes used elsewhere and by higher government authorities. Different kinds of villager meetings were held, with many villagers volunteering to follow the whole process of implementation. Although no official monitoring was put in place, some academics have taken an interest from the start (see Dai and Xu, 2002), meaning that there is now some evidence of both the process and the outcomes of implementing the reforms. Given that the process used in Hongtian Village has been considered successful enough to be replicated elsewhere in China, our research question examines the extent to which the 'Hongtian model' represents a new approach to common property rights that facilitates an element of decentralisation and exposure to conventional markets while maintaining suitable environmental and social safeguards. In selecting this research question we wish to build on Ostrom et al.'s (1991) claims about the potential for adopting new regimes for managing common pool resources such as China's state forests:

> Participants are more likely to adopt effective rules in macro-regimes that facilitate their efforts than in regimes that ignore resource problems entirely or that presume that central authorities must make all decisions. If local authority is not formally recognized by larger regimes, it is difficult for users to establish enforceable rules. On the other hand, if rules are imposed by outsiders without consulting local participants, local users may engage in a game of "cops and robbers" with outside authorities. (Ostrom et al., 1999: p.281)

While being specific to forest policy in China, this research question has a wider application in considering how new forms of community-based collective action may be able to offer a bridge between state control and market innovation. Of particular significance here is the challenge that this case offers for conventional approaches to co-operative collective action, which are based on an assumption that, over time, the commons will be replaced by private property rights (Thompson, 1991; Ostrom et al, 1999; Krier, 2008). While this may have been

the dominant outcome in many previous attempts to improve the efficiency of property rights, both Krier (2008) and Ostrom et al. (1999) have argued that it is equally possible for new legal conventions to emerge from individual and community actions – that rights in property can take multiple forms that may combine the commonality of the old system with new individualized conventions that facilitate more efficient resource use. For Krier (2008), such approaches are based on an expectation that these legal conventions will be recognized, such that the expectation gives rise to particular forms of (social and management) practice, which further underpin the expectations. This implies a level of stability and gradual change that avoids the denial of common claims but allows individual initiative to be insinuated into new forms of social practice and governance.

Methodology

A single case study approach was used to generate the data. This approach was chosen because the reforms were implemented through a politico-spatially referenced programme that was rolled out one village at a time. Hongtian Village was selected as the case study because it was one of the first in the reform programme, and the most successful case that a community-based bottom-up approach was taken to collective forestry property rights reform. Not only did this mean that there was a substantial time-series of data available, but it also meant that there were a lot of official documents and reports, while key villagers were also used to being interviewed and researched.

Hongtian Village is located in Yong'an City, in the middle of Fujian Province, one of the most forested provinces in China. It comprises seven villager groups in three natural villages, with 821 villagers in 223 households. In common with other villages in Yong'an City, it is highly forested: total farmland was only 1017 *mu* (about 68 *ha*), while the collective forestland was

about 18908 *mu* (about 1260 *ha*). Around half of the forestland in Hongtian Village comprises plantation forestry under collective control and used for timber production. Approximately one-third of the forestland is state-owned and has been designated by local government as ecological forest that cannot be harvested. Most of the remaining forest area is owned by the collective but is protected from any kind of utilization. There are also some bamboo forests and fruit forests where the land is owned by the collective and the bamboos and trees are owned and managed by private individuals.

The document collation was undertaken in collaboration with the Forestry Bureau of Yong'an City, and included archival material from both local and upper level governments and transcripts of meetings, workshops and symposia that had taken place as the reforms were being implemented. All documents and transcripts were subject to deep reading by one of the authors, with key themes used to inform a series of 48 face to face semi-structured interviews that took place between April and August 2005. The sampling frame for the interviews was drawn up according to three principal criteria: to include people who were known to have been instrumental in the reform process; to include those who had been identified from previous field investigations; and to include those recommended by the local government. Interviewees included village cadres and reputable old farmers who were active during the initial reform period, current village leaders, government officials and officers of the Forestry Bureau. In addition, interviews were undertaken with a random sample of villagers. The lead author has returned to the village at regular intervals since the original work, to build up a longer-term picture of the impact of the reforms.

Findings

Benefit distribution was at the core of the reform, complicated by the fact that some logging contracts (signed in the 1980s for about 20 years, due in 2003) remained in place, for some villagers, while other villagers needed new contracts. Few villagers felt any association with the collective forests, or were prepared to take care of the forests, as described by one village leader:

> [At that time] ... the collective forest was badly managed; [it] would have been completely lost if no change took place. ... [for example] when there was a forest fire, we called the villagers to help raise the alarm. But few responded. They moved lackadaisically, and asked for payment before doing anything. (Lai, Head of the Village Committee)

As this suggests, many villagers were disinterested in the forests and felt that they needed an incentive to get involved. This dissociation led to other problems, as described by another village leader:

> There was so much illegal logging at that time. It was impossible to stop them. Many villagers were involved. It was embarrassing for the Village cadres to catch them, as they were blamed privately ... Finally, the cadres refused to chase, leaving [two of us] constantly on guard and with little effect. If this continued, all of the forest would have been lost very soon. (Deng, Village Secretary of CPC)

This combination of apathy and illegal activity meant that many people had little interest in supporting the reforms. Many conflicts thus arose in the reform process, particularly between those with current contracts and those wanting the new ones. These were the most serious conflicts to be resolved throughout Yong'an City because both sides - households with many forests and households with few forests - had legal authority to support their claims. In addition, the poor distribution of contracts in the 1980s and varied management quality thereafter led to many conflicts about the physical boundaries of contracted areas, which made the situation more complicated. Some villagers appropriated large areas of good forest

illegally, while some old village cadres got larger shares mainly because they picked up the worst land at that time in order to benefit others and managed the forest land much better than other villagers:

> Most of our collective forests are bamboos, with three different periods of allocation. The first one was distributed to households in the 1980s. At that time there was little profit, thus few conflicts arose. [As the prices of forest products increase rapidly], some people wanted to reallocate when previous contracts ended. … there was serious conflicts between two villager groups: one grew bamboo on the other's forestland, and both claimed the ownership of the land. … there have been group fights several times, and even the Police can't stop them. The second allocation involved the collectively managed forests. They used to be distributed to each village group via 10-year contracts. … The forests were divided into 11 parcels by their natural boundaries, from 100 mu to 300 mu, and randomly distributed to 11 village groups by lottery. … Our village group, with a population of more than 160 - the second largest in the Village, picked the smallest parcel. The conflicts were intense. (Villager from nearby village, male)

Hongtian's attempt at reform started from the grass roots, based on questions about the distribution of use rights (see Figure 1). Benefit distribution among the villagers was thus focused on three aspects: whether to divide the use of the forests or to sell the rights and divide the money; how to divide the land or money among the villagers – who qualified for a share; and what provision should be made for future population change? In addition, decisions had to be made about the allocation to those with existing contracts. To start with, the reform proposals were made during informal meetings between villagers and village cadres, and launched by the *Village Committee*. Then detailed information was collected at the Village scale. *Villager Representative Meetings* (VRM) were held to negotiate the allocation of the forests; these included the leaders of production teams, thus ensuring that the interests of the villagers were protected. After a draft or a modification was made, a *Household Representative Meeting* (HRM) would be held with the relevant community or production team at which the modification could be agreed, or alternatives proposed. This circular process would continue until a modified plan was accepted by all the village

communities or production teams.

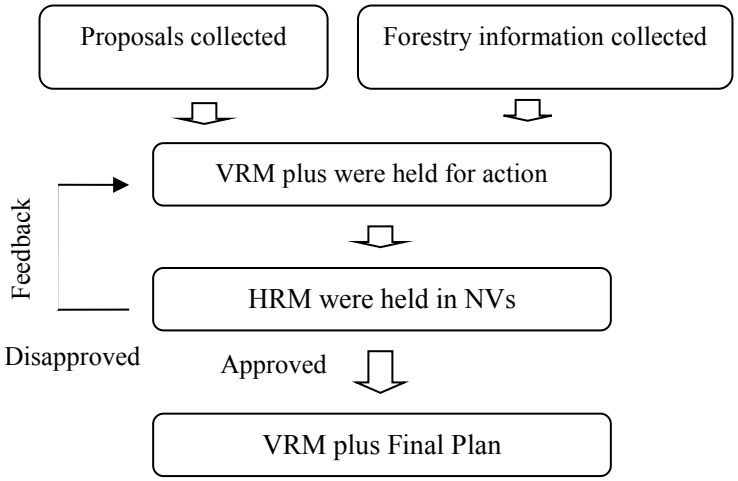

Figure 1 Process of Collective Action

In addressing the conflicts raised between those with and without existing contracts, it was recognised that the conflicts in Hongtian Village were not as serious as in some other AVs, largely because the distribution of use rights in the collective forests in the previous contracts had been relatively even and little had changed since, while the contracts had almost expired by the time the process started. In addition, it was clear that the degradation of the forests caused by illegal logging was so serious that if nothing were changed, the whole village would lose huge profits. Therefore, it was agreed that all previous contracts would be terminated, with compensation of ￥7.5-15 per hectare paid according to the quality of management in each of the contracted areas.

With the contractual issue addressed, the most significant conflict encountered in the reform was about the redistribution of rights, which focused on who qualified for a share - a problem that had hardly happened in the past. According to China's Household Registration System (*Hukou*), an individual's membership of an AV is justified by his or her *Hukou*. In the past, the *Hukou* System prevented people from migrating, meaning that AV membership was

stable. However, due to the impact of urbanization and decentralization, the *Hukou* System had loosened rapidly, and residential conditions in an AV had become more diversified. For example, some households had moved to an urban area but had retained their village registration. In other cases, women had married and moved into a new household without transferring her *Hukou*. Since only *Hukou* members qualified for a share of the use of the forests, the question of who should be regarded as a qualified member became a major issue. Some of those who had moved some time ago returned to claim their shares, while others who left for higher education or military service faced a loss of their share because they had moved their *Hukou* away (as was required by law).

These issues were exacerbated by a feeling that those returning from the cities were already wealthy and now wanted to deprive those who had stayed of what should rightly have been theirs. This certainly encouraged villagers to get involved in the allocation process, through which they managed to secure certain concessions that meant that people living in the village, even without *Hukou*, qualified for a share, whereas those who had left lost their share, even if their *Hukou* remained in the village. The exception to this was that those who moved their *Hukou* for education or military service did not lose their share, and remained qualified.

A good indicator for the villagers' involvement might be the frequency of the VRMs. Even though no one maintained a record of how many meetings they had, many villagers reported that there were more meetings in the first year of the process (1998) than in the previous 20 years. It was estimated that at least 14 meetings were held specifically to decide the final plan, including 3 Villager Meetings, 3 VRMs, 3 meetings of leaders of natural villages or production teams, 4 meeting of village cadres, and 1 meeting of members of the Communist Party. Informal meetings and other negotiations were countless. One community member

remembered it thus:

> In 1998, we held more than 20 Village committee meeting and villager group meetings, to find a solution. Some suggested that the collective forest be divided by household, in the same way as the farming land. Some were afraid because there were no supporting laws. Some denied the process because they preferred illegal logging and didn't want things to change. I was stubborn and said 'nobody can leave without a consensus.' Finally, with the final vote, about 80% of the village cadres and villager representatives agreed to divide the collective forests between households. (Deng, Village Secretary of CPC)
>
> (After the decision to reform was made) Rough plans were made by the Village Committee, and the leaders of the villager group and villager representatives were responsible to take it back to their villager group, and to organize household meetings for discussion. All villagers' opinions were taken back to the Village Committee for discussion. There were many rounds like this…. The final plan was passed in the Villager Representative Meetings (with at least 2/3 of representatives' support) (Deng, Village Secretary of CPC)

Although time-consuming, this process was felt to have been a success, in bringing all groups into the decision process. As the Reform was closely linked with the villagers' personal benefits, most of them wanted to participate, to ensure that their opinions were widely known, and that they could gain support for their views from others. For example, when the evaluation and distribution of collective forests was going on, almost every household followed the whole process. It was not only the first time that the villagers had a clear understanding of the quality of the forests, but it was also their chance to make sure that they would not lose out in the distribution. Hongtian's bottom up collective action experience was also supported by the government and was emphasized as a suitable process throughout the Reform. Of course, much remained to be done in terms of implementing the new benefit distribution. Given the past top-down policy failures, the implementation of reforms had always been distorted by different interest groups seeking to secure benefits for themselves. Implementation was thus understood to be the key to ensuring equality and fairness.

The Hongtian villagers managed, as part of the reform process, to make detailed requirements about the way in which the decisions would be implemented. Figure 2 illustrates the implementation process.

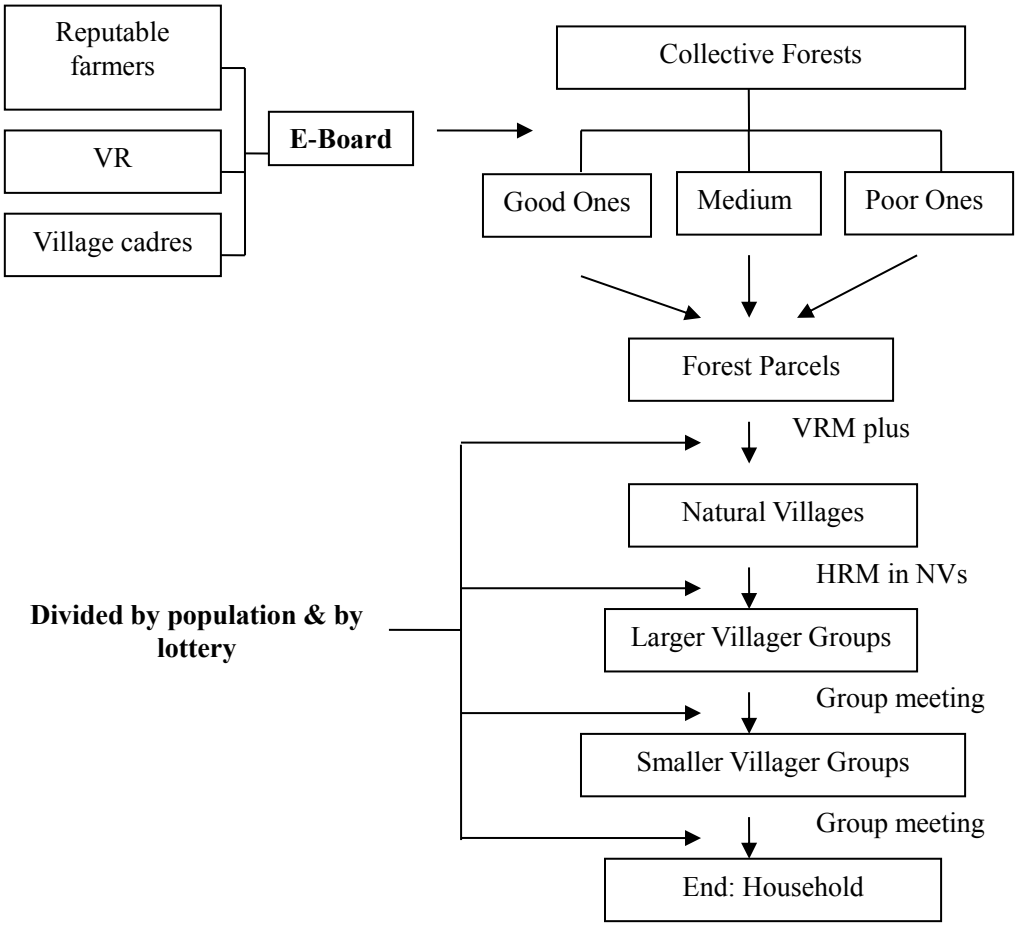

Figure 2 Process of Distributing Collective Forests

The first stage was to establish an *Evaluation Board* (*E-Board*) consisting of reputable and experienced farmers, village cadres and village representatives, which was responsible for classifying the quantity and quality of the forests. With the help of technicians from the Town Forestry Station, the E-Board managed to clarify all the boundaries of the collective forests. Afterwards, all the available collective forests were classified into good, medium and poor ones. Then large parcels of forest were divided into smaller pieces, and a bundle of each in

the good, the medium and the poor categories was combined to make sure that the average value of each lot was the same. The actual distribution of the lots was decided by a lottery, which avoided any lingering suspicion that some people were favoured over others.

With the allocation of the forestlands sorted, the reform next had to consider how to allocate the remaining collective responsibilities, which included the development and maintenance of infrastructure and the maintenance of the ecological forests. At the core of the reform process was a commitment to balancing rights and responsibilities, to ensure that the forests would be effectively managed in the future. Thus, even though the collectives were authorized to keep up to 10 per cent of the use rights of the collective forests as a means of generating income, their leaders knew that the collectives would face serious deficit after the distribution, if there were no corresponding distribution of responsibilities. Following many discussions, it was decided that Hongtian's need for public finance would be considered in both the short and longer terms.

The availability of short term finance depended on the division of benefit between the collective and the villagers. Provision for this had previously been made in the original forest contracts, and these provisions were extended to the new contracts. These provisions meant that the proceeds of the harvest of current forests under individual management would be divided according to a ratio of 3 (the collective):7 (the villager); for new forests, the ratio would be 2 (the collective):8 (the villager). The dividends were calculated according to the volume of timber harvested, with the financial value based on timber prices at the time of sale. In addition, both the collective and the villagers agreed on conditions to ensure that they received a fair share of the benefits. These conditions included basic requirements for output, according to the quality of forestland. If the output achieved was lower than the basic

requirement for the quality of the forest, the dividend to the collective would be calculated according to the fixed output instead of the output achieved, thus penalizing poor management and harvesting practices. To balance this, it was agreed that the forests would not be reallocated again in the short to medium term, with the new contracts having a duration of 30 years. Provision was made, however, to adjust the villagers' share of dividends should the need arise. It was also agreed that the AV's finances should be open to public inspection, that surplus public finance should be redistributed every 5 years, and that large expenditures should be formally approved in the VRM.

In addition to the apportionment of harvest proceeds, it was also decided that the public finances would be underpinned in the longer term by the collection of forestland rents because of course the lands were still in collective ownership. However, the system for deciding on rental levels and payment mechanisms has not yet been developed in a comprehensive sense. This is because the current Village Committee has enjoyed a more substantial income from harvest dividends than it did prior to the reform, meaning that it has not needed the rental income. When asked about the future of the rental collection, a member of the village cadre admitted that there would be considerable trouble if one villager refused to hand in the rent, because others would follow and there is currently no agreed method of enforcement. However, he did not worry about this, because he was in charge for only 3 years.

Another responsibility was about how to share the maintenance cost of the ecological forests, which were still kept in collective ownership and management because no one would take on the management of these forests due to the strict logging ban. Before the Reform, the collective paid for the management of the ecological forests, including employing forest

guards. In keeping with the balance being sought between rights and responsibilities, it was decided that responsibility for the ecological forests should be assigned to those who received shares in the collective forest, with the level of commitment based on the number of shares owned. If there was any loss in the ecological forests, the collective forest share owners had to compensate the loss from the proceeds of their timber forests. For example, those taking 10 shares of collective forests have the responsibility to take care of 10 shares of the ecological forests. If the ecological forests were illegally harvested by 1 M^3 of timber, the person in charge had to pay the collective 10 M^3 of timber from their share of the collective forest. By this mechanism, the maintenance of the ecological forests was continued after the Reform.

The Success of the Hongtian Village scheme came as a surprise to the local government and other AVs, largely because it was built on the agency of local people rather than relying on bureaucratic structures and rigid commands. Soon the 'Hongtian model' was widely adopted by all the AVs in Yong'an, with more than 95 per cent of the county's collective forests being brought into the reform process by the end of 2004. In 2005, the State Forestry Administration (SFA) expanded the model nation-wide, with the same reform initiated in state forestry the year afterwards.

As this suggests, public confidence in forestry policy has improved, in all sectors of society, which has underpinned a growth in new planting as well as in forestland maintenance. Perhaps even more importantly, illegal logging has all but vanished in areas subject to the reform, and has apparently ceased completely in Hongtian Village. Although it is not clear why this has happened, villagers claim that it has come about as a result of better management and protection of forests by share owners, allied to the greater possibility for individuals to earn income legitimately through the operation of the forest contracts. Better

forest management and greater income potential from well-managed forests has also led to better fire prevention and fire fighting. Once the reform was underway, the Hongtian villagers voluntarily formed a Forest Protection and Fire Prevention Association to shoulder the responsibility for all kinds of fire fighting. This was replicated elsewhere, with 15 associations formed by 2006 (4 at township level and 11 at AV level).

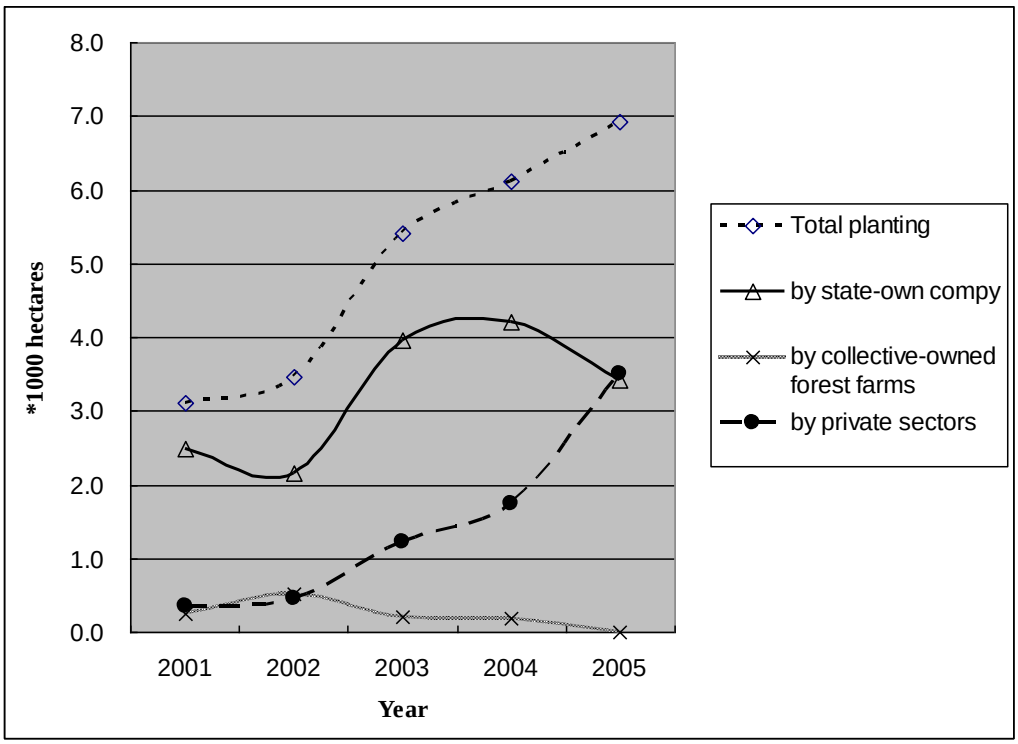

Figure 3 Investment on collective forestry indicated by new planting areas (2001-2005)

Another indicator of long term confidence in the new arrangements was the investment that took place. This was especially clear in terms of the new planting, given the lapse of time between planting and harvest. According to the statistical data from Yong'an City, before the Reform, both the private sector and the collective farms were reluctant to invest in planting on collective forestry lands, even in cases where they were under a legal obligation to do so following the harvest of timber. In 1999, the overall size of the privately-owned plantations was only 1965 *mu*, about 27.6% of the total area of collective forestry land. The state-owned company, which used to rent over 200,000 mu of collective forestland at a very cheap price,

undertook most of the new planting on the collective forestland. However, this changed after the reform. As illustrated in Figure 3, investment in new planting by the private sector increased rapidly after the Reform; by 2003, for example, it had reached 16821 *mu*, equivalent to about 90.5% of the total plantation on collective forestry lands. In addition, the value of the collective forestry lands also increased substantially, with the average annual rent increasing from ￥5 per *mu* in 1998 to ￥20 per *mu* in 2003. Many villagers subsequently expressed their regret that they did not bid a higher rental price in order to secure some of the forestland:

> I saw the Notice for bidding of the forestry land…There were about 20 villagers joining the bid, and the bottom price was ￥9 per mu annually…I knew clearly that the rent used to be ￥5 per mu, so I bid for ￥10 per mu and thought it was high enough for me to win, as local people used to be unwilling to invest (on collective forests). However, the win price was as high as ￥12 per mu, from a coalition of local villagers. (Deng from Hongtian Town, male, forest business man.)

With strong investment and improved management, the output from and value of collective forestry increased. For example, the annual output from the bamboo forests in the area increased from ￥100 per mu to ￥1100 per mu over this period. In addition, 16 new bamboo and wood processing enterprises were started in this period, where previously there had not been any. These enterprises provided 130 new jobs, which further boosted local economic activity. Based on these new productivity levels, it has been estimated that the bamboo industry at Yong'an alone has a capacity for 44, 360 jobs annually, from planting to processing. This increases to nearly 58,000 jobs if the whole of the new timber industry is included, which amounts to approximately 55%of rural labor capacity in Yong'an City (Dai et al 2006).

Another major change brought about by the reform is that both farmers and the collective have received improved incomes. Before the Reform farmers earned very little from collective forests. In Hongtian Village for example, from 1997 to 2007 the average income increased from ￥2878 to ￥6400 per capita, with approximately half of this comprising income from work in the collective forests. ;Over the same period the annual collective income increased from ￥153,000 to ￥450,000. The rapid increase in collective forestry income was common throughout Yong'an City, where annual farmer incomes from collective forestry increased from slightly more than ￥1000 per capita, to ￥2200 per capita, and the average collective income of AVs was increased from almost nothing before the Reform to ￥163,000 in 2004 (Dai et at. 2006). The impact of the reform was thus sufficient to mean that forestry contributed significantly to the economy of Yong'an City, amounting to over 20 per cent of its GDP in 2004[3].

Discussion

Our research question concerned the extent to which the 'Hongtian model' represents a new approach to the distribution of common property rights that facilitates what Krier (2008) has described as the convergence of new conventions of behaviour towards that property. As the case study illustrates, there is evidence that this has indeed happened. In contrast to the collective approaches more commonly used to undermine the commons in favour of private property rights (Bell & Parchomovsky, 2007), the experience of decentralisation to individuals and exposure to conventional markets has provided a stable environment in which new behaviours can flourish. Quite apart from the more entrepreneurial behaviours

[3] Figures all based on official reports and local statistical book.

encouraged by access to timber markets, there is also evidence of pro-environmental behaviours with respect to the ecological forests, and pro-community behaviours with respect to fire preventing, logging practices and boundary disputes. In contrast to conventional views that common pool resources are only really suited to the needs of land-poor people who have limited access to private capital (Chattopadhyay, 2008), the Hongtian case suggests quite the opposite: that in a supportive environment, common pool resources can release people from poverty rather than consigning them to it.

What makes for successful collective action has been widely discussed, particularly by Ostrom and colleagues (Ostrom, 1990; Ostrom et al., 1999; Agrawal & Ostrom, 2001). The experience of Hongtian Village is generally in accordance with the key issues identified in Figure 1, such as clearly defined property rights boundaries and sufficient authority for those exercising the rights. However, what should be emphasized is that there are no pre-designed standards for specific outcomes from collective action. Rather, the case study findings do suggest that more attention should be paid to the process of transformation. This is partly because there can be all sorts of hidden costs that can render apparently simple standards unworkable (Demsetz, 1983), and partly because processes that offer stability and gradual change allow cultures to shift organically, with those involved having the time and incentive to adapt. This was particularly apparent in Hongtian Village, where the villagers were willing to meet regularly to discuss and agree changes. As Krier (2008) has suggested, this process of gradual change allows even fundamental transformations – such as the overlay of individual rights on common pool resources – to happen in a performative way in which practice and experience underpins people's expectations about the potential benefits of change. There are limits to this, of course, related to the extent to which the process leads to improvements; Krier (2008) does observe that convergence of pro-community behaviours of the type seen in

Hongtian Village generally only occur in the transformation of simple systems in cases of abundance. There can be little doubt that the Hongtian model reflects this.

In terms of the advantages of the Hongtian model over conventional collective management, collective action of the type experienced in Hongtian Village is efficient in reducing the information asymmetry between policy makers and the local villagers. The failure of the previous top-down approach to forest management does not necessarily mean that it was not good enough, per se, but that it has proved impossible for policy makers to secure relevant information in varied local settings. This has tended to mean that top-down policies are insufficiently detailed and aware of local issues, particularly in preventing privileged elites from securing benefits for themselves. In addition, governments face high costs of plan implementation and monitoring without villagers' involvement. In contrast, collective action can avoid these kinds of information and cost asymmetry. In Hongtian's case, the villagers knew every claim that might be utilized by others, and they were able to place detailed enough requirements on those claims to prevent them from impeding the process of change. It was also found that once villagers are authorized to make their own decisions they automatically become part of the monitoring system. Finally, it was clearly important that the collective action mechanism provided a platform for the villagers to negotiate with each other, and to make changes to the implementation plan where required.

The case study also suggested that collective action of the type undertaken in Hongtian Village is flexible enough to maximize the value of the common pool natural resources. For instance, the distribution of the use rights to the collective forests was much more complicated than the earlier process of distributing rights to arable lands. The first point is that the physical characteristics of the land are more variable in the forests than one the flatter

arable lands. Also, while the arable lands could easily be divided into pieces with clear boundaries, the small forest lots (of typically less than 1/3 hectares in Hongtian Village) could not be marked out with such clarity, particularly where there were mature trees growing on the plots. Finally, all the growing crops could be removed before the distribution of arable lands, but the distribution of forest lands had to include the timber, which made the boundary issue much more controversial. The approach to collective action used in Hongtian allowed these issues to be addressed, particularly where the distribution of the forest lands was focused on the *Production Team* level or the *Villager Group* level. Indeed, in many cases the E-Boards preferred to sell the rights to harvest and to distribute the benefits in terms of cash rather than getting into protracted boundary disputes. This indicates both the villagers' ability to judge the cost and benefits among different options and chose the best one for them, and also the flexibility of the distribution system that gave them the option to choose.

However, successful collective action will not automatically succeed, even in Hongtian's case, without some macro political conditions. As we found out, Hongtian was not the first one to distribute forest use rights by collective action. As early as 1992, Gaoping Village in Yong'an City secretly distributed the rights to its forests to local households. Even though the illegal logging stopped, this distribution did not bring great changes in forestry development, largely because the management culture had not had time to change and those involved felt that they still had to worry about the safety of their properties. Therefore, governments, especially local government, played a key role in the collective action witnessed in Hongtian Village. Having been a pioneer forestry county authorized by State Forestry Administration, the local government had implemented an increasingly decentralized policy since the beginning of the 1990s. Regulations on timber transport, transactions, and so on were loosened gradually. Associated taxes and fees were greatly reduced, which provided enough

profits for villagers to work in the forests. During the Reform, the government also provided strong support via interaction with the collective and villagers, such as technical support (e.g. locating forests boundaries), conflict resolution (both informal and official), and official certification, all of which were vital for efficient collective action. As this suggests, experience from Hongtian Village indicates that government should alter the way in which it sees its role in common natural resource management, from direct intervention to effective interaction with local villagers.

Despite the overall success of the Hongtian model, there have been some unintended consequences caused by the collective action. In particular, there may well be a discrepancy between social and economic sustainability brought about by the small scale of household enterprise. Following the distribution of rights, the average household in Hongtian Village manages about 3 hectares, often located in more than 3 plots, meaning that it is impossible to generate any economies of scale. This means that most villagers are reluctant to invest in these small scale forestlands because of their low return. Those who did invest tended to plant fast-growing high-yield trees in order to make faster returns. However, these trees do not provide as much ecological service as local indigenous species, and may also cause considerable environmental problems in the future. This suggests that appropriate regulation is necessary to ensure the direction of collective action and that the Hongtian model requires improvement before it is effective in economic and environmental, as well as social, terms.

Conclusions

As Long et al. (2012) have observed, rural restructuring in China has been both dynamic and disruptive, with successive governments criticized for intensive intervention in economic

development, especially at the local level. Even though the collective was authorized to have its own autonomy, the Village Committees acted as an extension of government agencies more than as an autonomous organization. Many conflicts in rural areas could not be resolved efficiently, and rural development was seriously lagging behind its urban counterpart, as well as the rural economies of other countries (see Long et al., 2012). While there are many factors involved, it is certainly clear that, with regard to forest lands in particular, the common pool status of collective forests allied to poor collective management practices contributed to the lack of rural development.

From a national view, therefore, the application of a new approach to managing common forest resources, via a bottom-up collective community response, can be regarded as a seminal moment for China's rural policy, certainly in social - and probably also in economic and environmental – terms. While being far from perfect, the 'Hongtian model' of slow-paced, equitable, community-level reform has delivered what Krier (2008), in other contexts, has referred to as a series of individual actions that have converged to form new conventions of forest management behaviour. And it is this that is significant – that reform has been far less about changing the structure or direction of control than it has been about facilitating the agentive performance of individual families and communities in developing a new cultural approach to collective forest management. This is particularly significant given the continuing insecurity of tenure that has been widely experienced in China's rural restructuring (Rao, et al, 2016). As our case study has illustrated, collective action of the type fostered in Hongtian Village is efficient not only in rebuilding common management of natural resources, but also in the distribution of management power. And the essence of this has been to authorize villagers, encourage them to get involved and to provide a frame of reference for their individual actions such that their expectation of success gives rise to

cultural practices which underpin this expectation. Within this new culture, governments become facilitators of what are essentially private actions that support the continuation of a form of collective action – the essential bottom-up approach that has been so strongly advocated by those studying rural restructuring in China (see Long et al., 2012).

However, there are still some challenges for the application of collective action in China. Due to rapid urbanization, rural communities are on the edge of survival. In some rural areas, farmers depend more and more on urban job opportunities and will only be willing to re-engage with traditional occupations such as forestry if the rewards are high enough. Without the sustained participation of highly skilled farmers, the collective forest management reforms will not be sustainable, leading again to the possibility of unsustainable and illegal practices being resumed. And even where farmers are engaged, as in Hongtian Village, the reforms are incomplete, with most families trying to cope with small dispersed parcels of mixed quality woodland. Yet these problems should not detract from the lessons that have been learned, particularly about the significance of understanding the collective management of common pool resources as a predominantly cultural activity. In echoing Ostrom et al.'s (1999) findings, as well as those of recent studies (Behnke et al., 2016; Rasch et al., 2016; Vij & Narain, 2016) there is no single best way to organize the management of common pool resources. However, this paper has shown that there are ways of approaching the organization that allow individual agency to work within a supportive administrative structure such that the identity of the property rights being deployed is secondary to the culture of practice that is established between those who participate in the scheme. While implying, in a conventional property rights sense, growing insecurity (see Rao, et al. 2016), the culture of practice has become so strongly engrained that it is this, rather than the rights claims themselves, that provides the security and continuity needed by the villagers. This finding has certainly had

traction within China; it is equally a lesson to be learnt in addressing the future administration of common pool resources under any political or cultural regime.

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