

Reconstructing the History of Forestry in Northwestern China, 1949-1998*

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T

oday, forests are at the forefront of environmental protection and livelihood improvement debates in developing countries, especially in China.¹ It is widely accepted that different policies associated with forests and land have profound impacts on the livelihood of farmers.² Ongoing deforestation and forest degradation globally call into question the effectiveness of exist-



ing legal, institutional and policy frameworks, in particular forest tenure arrangements. Many international agencies, including FAO and World Bank,³ as well as national forestry bodies, have outlined various scenarios towards achieving sustainable forest management.⁴ One widely accepted scenario is “decentralizing management of forest resources”. It is now understood that the forestry issue is complex and no longer solely the prerogative of the forestry sector. Political, social, cultural, economic, environmental, and, more broadly, development aspects are embodied in most forestry-related issues.⁵ Local rural communities have been traditionally regarded as enemies of forests.⁶ Many current policies and legal and institutional frameworks still limit local people’s access to natural resources.⁷

Clearly not all decentralizing measures lead to effective forestry management; some may indeed produce results similar to centralization. Forests are arenas of struggle and conflict, where both the trees and the local forest dwellers usually find themselves on the losing side.⁸

* The author gratefully acknowledges helpful criticisms and suggestions from the editors and the referees.

¹ N.P. Sharma, “A Global Perspective on Forest Policy”, in *Managing the World Forest. Looking for Balance between conservation and development*, N.P. Sharma (ed.), Kendal/Hunt Pub. Co, Dubuque (Iowa) 1992, pp. 17-33.

² L. Ntsebeza “Democratic Decentralization and Traditional Authority: Dilemmas of Land Administration in Rural South Africa”, in *European Journal of Development Research*, 21, 2004, pp. 3-22.

³ FAO, *How Forests Can Reduce Poverty*, FAO and DFID, Rome 2001; World Bank, *A revised forest strategy for the World Bank Group (Draft, 30 July 2001)*, The World Bank, Washington D.C. 2001 (available from www.worldbank.org).

⁴ K.F. Wiersum, M. Ros-Tonen, “The Role of Forests in Poverty Alleviation: Dealing with Multiple Millennium Development Goals”, in *North-South Policy Brief*, Wageningen University, Wageningen (The Netherlands), 2005.

⁵ J. Liu, “Support to Private and Community Farm Forestry in China”, in *Unasylva* 212, 54, 1, 2003, pp. 57-62.

⁶ CIFOR, *Making forests working for the poor, Livelihood and Forest Program 2005*, <http://www.cifor.cgiar.org>.

⁷ J.C. Ribet, *Decentralization of Natural Resources: Institutionalizing Popular Participation*, World Resources Institute, Washington D.C. 2002.

⁸ M. Doornbos, A. Saith, B. White, *Forests: Nature, People and Power*, Blackwell Publishers Ltd., Oxford (UK) 2000.

Governmental intervention in policy reforms can activate “silent” conflicts between the local people and the government, the poor and the rich.⁹ The high visibility of these conflicts has stimulated researchers to develop solid interpretive approaches to understand them and find solutions for them.

An actor-oriented approach could produce valuable results by revealing and describing the various actors (institutional or individual) involved,¹⁰ their dependency on forest resources and the strategies they employ to secure them, and conflicts or accommodations between them in connection with forest policy changes. An actor-oriented approach is based on the centrality of “knowing and acting” individuals and social bodies.¹¹ Actors have the capacity to problematize situations, process information, and make strategic decisions in dealing with one another. The actor-oriented approach focuses on deconstructing the social reality of development projects and interpreting variations in organizational forms and cultural patterns that are the outcome of the different ways in which actors deal, organizationally and cognitively, with problematic situations.

Returning to governmental interventions, all forestry policy changes over the last half century have been marked by increasing emphasis on afforestation and forest protection for environmental purposes, including water and soil erosion control. However, various actors, either communities, or later state-created sectors, have carved out space for behaviors patterned after their own perception of the issue. Thus, these actors make what they consider to be good for the institutions they belong to, or for themselves, an integral part of their own “projects”, which are usually at odds with the objectives of governmental intervention.

⁹ J. Liu, “Forests in the Mist: Livelihoods and Responses to the Natural Forest Protection Program in China’ Long”, Wageningen PhD Dissertation, Wageningen 2006.

¹⁰ N. Long, J.D. van der Ploeg, “Heterogeneity, Actor and Structure: Towards a Reconstitution of the Concept of Structure”, in *Rethinking Social Development: Theory, Research, and Practices*, D. Dooth (ed.), Longmans, Harlow 1994, pp. 62-89.

¹¹ N. Long, *Development Sociology: Actor Perspectives*, Routledge, London 2001.

In 2003 China embarked on a new forest tenure reform centered on the devolution of land and forest ownership rights in collective forest areas to individual households, allowing them to use forestland for income generation and livelihood improvement. The current forest tenure reform process in China reflects a global trend to decentralization of forest management, including the devolution of management rights to communities and individual farmers.¹² This requires new policies and institutional arrangements at different levels of government, and the involvement of local communities and the private sector, as well as funding mechanisms, appropriate extension services, and effective monitoring and evaluation. Decentralization of forest property does not automatically have positive impacts. It depends on how rural people respond to the reform, on whether the changes in their living conditions are conducive to sustainable forestry. Over the last three decades, in many forest regions in China rural people were socially marginalized, with a consequent decline in forest quality and/or quantity. The FAO's studies on forest tenure in Africa and Asia indicate that securing local communities' long-term tenure and rights, promoting enabling policies, and setting up adequate legal and institutional frameworks are fundamental to achieving sustainable forest management and enhancing the role of forests in poverty alleviation. In reality, decentralization of forest property does not usually translate into robust long-term property rights for farmers, and governments and other social entities do not join forces to come up with enabling policies and legal and institutional frameworks to achieve this end.

The present paper aims at reconstructing the history of forestry and changing patterns of forest tenure over the last half century in an area in Hui county, Gansu province, Northwestern China. My purpose is to understand forest policy practices and political struggles, in particular as regards the issue of forest tenure, which is crucial to the developing of enabling forest policy and the creation of forest-friendly livelihood politics.

¹² FAO, Global Forest Resource Assessment 2005, FAO Forestry Paper n. 147, Rome 2006.

Figure 1 Location of the research area



Study area

Today, the forests of Hui county (Gansu province in the Northwest China, Fig. 1) are administrated by two separate units. The larger state forest areas are managed by a state bureau, the “Xiaolongshan State Forestry Experimental Bureau” (XSFEb), under the direct supervision of the provincial government. Collective forests, private forests on collectively owned lands, and a number of small dispersed state-owned forest areas are supervised by the Hui County Forestry Bureau, which answers to the Hui county government.

Hui county has 15 townships and 249 administrative villages, a population of 221,000, and an area of 2722 square kilometers, 30,000 hectares of which is farmland. The average annual income of the rural population is around 1610 yuan per capita (approx. USD 200) at the year of 2004, mainly from farming and seasonal off-farm activities. The main staple crops are maize and wheat. Cash crops include Chinese herbs, chestnut, and Jingo nut. The main industrial activities are mining and processing, as well as a local alcohol industry. The gathering of fuelwoods, herb medicines, walnuts, and lumber is important to the livelihood of local people.

The XSFEB, established in 1962, is the largest state-forest managing unit in China. 21 state forestry farms are affiliated under the bureau, with approximately 8000 full-time employees. The XSFEB administers a total area of 829,000 ha of land, of which 55.7% (or 391,000 ha) has forest coverage. Its standing timber reserves amount to 27.71 million m³.

The research area extends along the upper reaches of the Yangtze and Yellow Rivers, the two longest river courses in China. It encompasses two nationally well-known mountain districts, the Chhin-Ling (Qinling) range¹³ and Longshan Mountain,¹⁴ an area designated by the Chinese government as ecologically fragile due to water and soil erosion. Within this area, altitude ranges from 700 to 3200 meters. The annual rainfall is 380-700 mm, the yearly average temperature 7-12°C. The area lies at the intergradation of the warm temperate and subtropical zones, and between the semi-moisture and semi-arid zones. Thanks to this location and its craggy landscape, Xiaolongshan is blessed with a rich and diverse flora, including 171 families, 847 genera, and 2511 species. The fauna is also

¹³ There is a general agreement that the Chhin-Ling range is the transition belt between the local deciduous and evergreen broadleaf forests. To its south is China's sub-tropical area, to its north China's warm-temperate zone.

¹⁴ China's topography is characterized by gradually higher land as one goes from east to west, from the country's eastern coastland to the Tibetan Plateau. Longshan Mountain is a general term. It refers to the mountainous area in south-eastern Gansu. To the east is the famous Guanzhong Plain, where the capital city of Chang'an stood until the fall of the Tang Dynasty 1000 years ago.

rich: 245 families and 2036 species, including 46 families and 318 species of bird, and 9 families and 31 species of mammals, 13 of which are classified as endangered national fauna.

Methods

From 2001 to 2006, several research projects were implemented in the XSFEB, notably “Support to the Implementing of the Natural Forest Protection Program” (NFPP) and “Piloting Village Forest Management Planning”, respectively funded by the United Nations Development Program and the European Union. These projects included clauses aimed at empowering local community participation in the NFPP and, in general, promoting forest management as a means to improve living standards and protect the environment. During this period, I worked with rural people from ten villages in Hui county to facilitate and implement forest management planning, and promote community-based organizations. Thanks to this five-year study experience and the good rapport I developed with the villagers, I was able to adopt a time-efficient, participatory data collection approach, which I supplemented with data from indirect sources. Thus, in the present study I place a strong emphasis on participatory techniques and ethnographic modes of data collection. I lived in two of the ten villages I worked with, where I had informal talks with the local elders about what was transpiring in these forest-dependent communities. This was the main source for my first-hand data, along with semi-structured interviewing and group discussions.

I also conducted semi-structured interviews with key informants, including:

- 1) two officials from Hui County Forestry Bureau;
- 2) three bureau chiefs and two heads of state forest farms from the XSFEB;
- 3) several retired county forest officials;
- 4) many elder farmers from the ten villages included in this research, mostly from the two villages where I lived;
- 5) several village heads;
- 6) five employees from the XSFEB.

These informants were mostly capable narrators and analysts of natural and historical events involving the local forests.

I also organized group discussions involving elders, men, and women in the villages, for three main purposes: in the first place, to cross-check the data collected from my key informants; secondly, to address major events (including national and local policy adjustments) in the history of local forest resource management and utilization, and their impact on specific locations; finally, to debate the principal constraints and difficulties of forest management, and the countermeasures required. During these group discussions, I used visual tools, including participatory mapping and ranking, for analytical purposes.

Another important data source for my study was the official files I collected from the Hui County Official Files Bureau and the XS-FEB. These include the official yearly work plan, yearly progress reports by local governments, official files on the enacting of new policies or regulations, and individual mission reports. Few of these files have been published. Many are still in handwritten form.

I combined the data from interviews with information derived from situational analysis and case studies for the specific purposes of my research, organizing different bodies of original although sometimes fragmentary data into a format suitable for my research needs. To analyze the data I employed a range of approaches, including comparison, analogy, induction, deduction, reasoning, and summarization – each designed to identify processes in act and themes for further inquiry.

Collectivization of forests

Before the foundation of the People's Republic of China, most of the forests of Hui county were owned by landlords and rich farmers, except for those in high mountain areas and a small proportion of temple-owned forests, Fengshui forests (holy forests), and extended-family forests.¹⁵

¹⁵ Committee of Hui county Annal Compilation (CHAC), *Annal of Hui County*, Shanxi People's Publishing House 1996.

When the Communist Party came to power in Hui county in 1950, the Land Reform Campaign was initiated, and was concluded by 1951. This nationwide campaign led to the confiscation of forests owned by landlords, part of the forests owned by rich peasants, and the common forests.¹⁶ However, this was not the case in Hui county. There is no official document recording the confiscation of private or public forests, or their redistribution among farmers who owned less forestland. The focus of the land reform was on farmland and livestock.¹⁷ After the land reform each household had its own plot of farmland. In 1951 Hui county promoted self-help groups among farmers, under the principle of voluntary organization, involving the exchange of labor among members. In 1955, the focus was on cooperatives. An official document entitled “Suggestions for the Development of Rural Cooperatives and Agriculture” clearly defined a plan for promoting rural cooperatives on the impetus of a movement sponsored by the central government called “Building Socialism in Rural China”. The document cites data about Hui county as an example of progress achieved on the road to the establishing of rural socialism: “There were 38,174 households in Hui county. By the end of 1955, 10.5% had been grouped into cooperatives. By the end of 1956, 1957, and 1958, respectively, households in cooperatives numbered 53.8%, 84%, and 91.8%.”

Official records do not provide evidence of any shift in the ownership of private forests in the 1950-1956 period. As Menzies argues, China’s *Chung Nong* (“Emphasizing Agriculture”) policy could be considered a factor.¹⁸ In 1950, a new Forestry Act was enforced in Hui county, which read:

¹⁶ D. Liu, “Tenure and Management of Non-State Forests in China since 1950: A Historical Review”, in *Environmental History*, 6, 2, 2001, pp. 239-263.

¹⁷ The Chinese official policy of “emphasizing agriculture” is one of the reasons why in Hui county the 1950s land reform was very farmland-oriented. The county is located in rich forest regions, but the value of farmland is much higher than that of forests.

¹⁸ N.K. Menzies, “Forestry”, in *Science and Civilization in China*, J. Needham, Cambridge University Press, Cambridge 1996.

“It is essential to protect forests first of all, to conserve water and prevent soil erosion. Setting fire to forests and denuding them is prohibited. Sites for fuel-wood collection and grazing must be clearly defined. Village regulation of forest protection is encouraged. Individual farmers are welcome to plant trees in common uncultivated hilly areas and will receive ownership titles after planting. Clearing forests on hills for farming is prohibited and terrace practices are encouraged on existing slope farmland.”¹⁹

After 1952, access to forest resources was limited. However, official documents reminded the *ganbu* (“cadres”) that they “should safeguard rural people’s livelihoods with a special policy, including free logging for self subsistence purposes – subject to approval – and planned fuel-wood collection and grazing”.²⁰ Private forests could be harvested by thinning; a minimum of 900 middle-aged trees per hectare were required to remain in the forests after logging. Households that made charcoal had to register and sign contracts with the county forestry administration. Households that intended to collect non-timber forest products (NTFPs), such as tree saplings, mushrooms, and bamboo cane, were required to report to the township forest protection authority with an endorsement letter from the village committee.

In 1953, Gansu Provincial Agriculture and Forestry Department enacted a provision for “forest fire prevention, and maintaining closure”. This provision was misinterpreted in its implementation. An official county document reads: “due to... poor implementation of the provision, the masses considered forest protection to equal mountain closure, and mountain closure to equal no access to forests.” To promote this policy, the county forestry administration suggested approaches such as: 1) mass publicity for the objectives of the provision, and patient explanation to, and discussion with, farmers; 2) carrying out social surveys through individual interviews and small-group farmer meetings to understand village situations, gather opinions, and identify “backbone farmers” for the implementing of the

¹⁹ The Forest Act of Hui county, Gansu Province. Approved by Hui County governor. 1950.

²⁰ The yearly progress reports on forestry, Hui County of Gansu Province, 1952.

provision; 3) calling farmer meetings for discussion. The decision as to whether or not to enact mountain closure was left to farmer meetings on community forestry and meetings with owners for private forests. Compulsory closure was prohibited. Village rules regarding forests, closure periods for individual forest plots, grazing periods, and fuel collection were all to be decided on at farmer village meetings. The official report revealed that, due to fear of discontentment among private owners, the promotion of mountain closure focused on community forests, although the majority of forests placed under the mountain closure provision were privately owned.

Official reports from 1953 mention several problems. For example, forests were being greatly destroyed, particularly private forests. Although it had been made clear that private owners had the right to benefit from their forests, they nevertheless worried about their security of tenure and destroyed their forests for cash. Furthermore, competition to meet the great demand for timber at the beginning of the log harvest season led to oversupply at the end of the season. I was told a story of an old family head in need of cash to buy food for his family, who heard that a company was collecting logs in a town ten kilometers away. He thus carried some logs he kept in his yard to the town, but was told that the company only collected newly harvested logs. So he returned and mobilized his family to log oaks in the hills. He went back to the company, but was told that they collected nothing but pine. Again he returned to the forest and this time harvested pines, only to be told that his pines did not fit the company standard. This is how forests were destroyed.

Mass destruction of the forests became even more severe in 1955. As a result of the start of the construction of a railway through the mountainous regions of Hui county, the demand for logs and wood for fuel soared. An official report reveals the case of Jialing Township signing a contract with a railway construction company to supply 6000 logs of cypress of over 60 cm in diameter, for which the township did not have the required harvesting permission. Another case is that of a farmer who signed a contract to supply 330 tons of charcoal to the same railway company.

In China, the period from 1957 to 1963 was one of chaos. Hui

county was no exception, although it lies in an inland mountainous region. Starting from 1957, under the timbering regulations enacted by Gansu Province only the County Timber Collection and Supply Company was authorized to collect timber, to avoid unregulated logging and forest degradation. However, an official document attests to the disastrous failure of forest policy in the first half of 1957:

“In the first half year of 1957, the number of trees destroyed by forest fires increased eightfold compared to the previous year. 90% of the charcoal sold at the fair was made from oak trees with large-diameter trunks, of which 70% were red oak, a high quality timber.”²¹

It is estimated that about 23,000 tons of wood were used for making charcoal in that year. A few other timber collection companies were continuing to collect wood in forest regions, competing with the County Timber Collection and Supply Company. It was estimated that the production of certain kinds of wood artifacts increased during the “Great Leap Forward”; for example, shoulder pole production increased 160 times compared to the previous year.

This chaotic situation led to large-scale cutting of forests. The majority of the county forestry cadres were assigned to the county’s Yushu District to prevent unregulated logging. Even so, it is in this district that forest destruction was most severe and forest fires occurred with the highest frequency. Official reports of mid 1957 suggested the following measures:

“A large campaign meeting will be organized within the next half year. A Hui County Forestry Working Committee will be established to answer the complaints from upper level authorities about the failure of performance of Hui county forestry. A hierarchical forestry administration system will be established with a working committee in each township, a forest protection committee in administrative villages, and a protection group in production teams. Clearly defined boundaries between private and public forests will be established, and different management methods will be employed. Firm and

²¹ Tianshui Prefectural Forestry Bureau, Investigation report on forestry issues at Hui county of Gansu province, 1957.

unified timber protection rules will be set and no company will be allowed to collect timber without permission, except for the Hui County Timber Collection and Supply Company.”²²

The report stated that hunting and the collection of forest products such as mushrooms, bamboo, dead stock for home use, and fuel-wood would be allowed. Charcoal making, the fashioning of shoulder poles for commercial purposes, and mass production of farming and mining tools, however, would not.

An official report by a forestry investigation team assigned by prefecture level authority bears witness to the gravity of forest destruction in the chaotic period of the “Great Leap Forward”:

“In response to the call to intensify the production of iron and steel, to meet the energy requirements of the iron and steel industry the ‘rely on the masses, mobilize the masses, organize the masses’ approach has been followed and a great amount of charcoal has been produced with forest timber. The best cases have illustrated that production of charcoal can be increased and the quality of forests improved at the same time. However, there have been many cases where great destruction of forests occurred. For instance, the people of two townships belonging to the Ganguo County Iron and Steel Production Group harvested over 60 ha of forests in 2 days. The largest tree had a diameter of 55 cm. In the areas where new furnaces were constructed for the production of iron and steel, and residences for tens of thousands of people were built, the region no longer looked like a forest region but like an arid one. Farmers started to complain: ‘we protected the forests for decades, but now they have felled our trees in a few days, what did we protect them for?’ and ‘we protected forests, we planted trees, now they have harvested them all’.”²³

By the spring of 1959, the iron and steel craze was over. From the mid-1960’s, official reports no longer express direct criticism of governmental forestry agencies. They simply give for granted that the agencies served the people well. I could not find a single official document after this time criticizing the county’s work, despite the continuing decline of forests.

²² Ibid.

²³ Ibid.

The nationalization of forests: Creating state forest farms

During the chaotic period around 1960, large area of forests were declared to be state-owned. These now make up about 60% of the forests in Hui county. I will now strive to shed light on how state-owned forests came to be.

Under the provision “whoever plants owns”, every year, starting from 1952, Hui County organized cadres to plant trees on uncultivated mountains. However, the areas involved were relatively small – about 30 hectares per year during the 1950s. According to the provisions of the central government, forests that no group claimed ownership of should have been declared state forests. However, as far as I could tell, no official historical documents mention state forests as such in Hui county, although there are a number of references to “public forests”, communal forests, holy forests, or forests owned by religious bodies. No document explicitly states how much forestland was publicly owned and how much privately. Old foresters estimated that about 90% of the forests in Hui county were privately owned. However, as one official document said, no clear boundaries of forest property existed. In the heart of an uninhabited area, a new immigrant would ride his horse in search of a piece of forest and then declare private ownership of it. As inheritance was handed down from generation to generation, or bestowed to friends or relatives, overlapping of boundaries and shared holding of forests became quite common in communities with a long settlement history. Although the need to define forest boundaries and ownership had been voiced, it was never actually addressed until the XSFEB was started. A report released on 30 April 1958 presents a case of controversial ownership examined by the Hui County forestry authorities at the Miling Cooperative (the equivalent of an administrative village):

“Private forests with an overall area of 3130 ha were assigned to the cooperative. 800 ha of forestland unclaimed by private owners should have been designated

as state forest. However, due to a lack of human resources and poor transportation, the management of these forests was delegated to the cooperative.”²⁴

Only a single official report mentions a case of a conservative farmer who resisted the shift from private ownership of forests to state ownership. On 27 March 1958, an old lady was visiting a grave to cherish the memory of her dead and, as custom dictates, burned paper money as an offering to the dead. She thereby caused a fire in forests that used to be in her family’s private ownership, destroying 280,000 trees. Her family had earned a great deal of money from forests before and even after liberation, over 100 yuan.²⁵ In the meeting held to discuss the shifting of ownership to the state, she said: “I will never again make a gain from my forests, but neither will you!”

This report concludes by recommending a procedure for the bringing of private forests into state ownership, and a policy for working with rural people. It emphasizes the principle of transfer of forest ownership as a case of “unified planning and unified management, which can help to reap long-term benefits from forests and protect the farmers’ interests as well as those of the state”. The report implicitly calls for people to stick to the principle of “managing forests and mountains to improve rural livelihoods now and for the future generations as well”. It calls on the masses to manage the forests well, to respect the wishes of farmers, to follow the customs of local people in forest usage, and to help rural communities to diversify their forest-derived income sources. It strives to convince all parties concerned that this new policy is different from the old land reform, and to assuage farmer’s worries by promising that this time local residents would not be classified in the old categories: landlords, wealthy farmers, middle-income farmers, farmers between middle and poor, and poor farmers. The report also declared that henceforth forests would not be registered as privately owned but in the name of cooperatives.

²⁴ Working group from Hui county Forestry Authority, Field investigation report on forestry cooperative development at Hui county of Gansu province, 1958.

²⁵ Equivalent to about one ton and a half of wheat at that time.

In February 1956, a forestry management station was established in Yushu Township, about 50 km from county headquarters. Its purpose was unclear. According to the “Forest Management Station Organizing Act” issued by the Ministry of Forestry, the station was given instructions for the management of state forest areas. However, the official report states that:

“State forest areas are extremely dispersed in their location, the majority being on uncultivated mountains and degraded secondary natural forests of little economic value. The majority of the forests in the region are owned by private individuals or cooperatives.”²⁶

Another official report by Yushu State Forest Station explicitly says:

“A small proportion of our work is in state forests. Most of our work is with farmers. The staff will live in the cooperatives and work with the farmers. Thus, we recommend changing the name of Yushu Forest Management Station to Yushu District Forest Working Station.”²⁷

The change in name and role proposed by Yushu Forest Management Station did not obtain higher approval. Another six forest management stations were established between 1956 and 1959. These stations expanded their business activities by setting up processing industries – resin factories, a factory extracting balmy oil from resin, a sawmill, and two board factories, although all were small scale. Such initiatives marked the start of multi-industry in state-owned enterprises. Nowadays these processing industries no longer exist, as their productions have been taken over by higher-level authorities. The sep-

²⁶ Yushu Township Forest Station of Hui county, Report on forestry issues at Yushu township of Hui county, 1956.

²⁷ A working station’s mission is to work with farmers as a government forestry agency, whereas a management station has to rely on self funding in the long run due to insecurity of government funding. Yushu District at that time comprised a number of townships, including Yushu, Jiangluo, Gaoqiao, Mayan, and the north part of Hui county territory. 4 out of 22 state forest farms depending from the Xiaolongshan state forest Bureau were within the territory of the Yushu forest management station.

aration of rural and urban reflected the distinction made nationally between rural and urban identity and citizenship. Ever since, the economic gap between town and country has been gradually increasing.

The shift to state ownership did not stop the destruction of forests. A report entitled “Investigation into the massive destruction of forests in the communes of Jianguo and Shuiquan”²⁸, denounced many cases:

“First, there was organized action by cadres. Jianguo commune leaders arranged to cut trees on both sides of roads, sending a wrong message to lower-level officials. The party secretary of the Huangzhu production brigade (hierarchically equivalent to a present-day administrative village) told foresters from Jianguo Forest Management Station that ‘the Party Committee had taken a collective decision allowing the harvesting of all mature trees, whether privately or state-owned, whether grown in private yards, on the outskirts of villages, or on mountains, except for cash-crop trees.’ Secondly, timber consuming units, including schools and the iron and steel company, were responsible for massive destruction. And individual farmers followed in the wake of this massive destruction of forests. As a farmer said: ‘we did not dare to cut trees, and were requested to protect trees year by year, but look, it was nearly finished, so why not cut some before they were totally cleared?’”

The setting up of the XSFEB was proposed by a team of experts from Western countries. It was intended to be a center for studies and research on the technology of forest management – especially forest rehabilitation and the improvement of secondary natural forests – inspired by North European forestry management models. The bureau was officially created in 1962, and seven forestry management stations were established in Hui county, which was now placed under the authority of the XSFEB. Around 1962, Huicheng County was again divided into the two counties it had originated from – Hui County and Cheng County.

²⁸ A commune was a level of administration under the authority of a county in the period after the “Great Leap Forward” (1958) and before the rural administration system reform (around 1984).

Decollectivization of forests

In the 1964-1974 period, forestry did not appear to have been a contentious issue. Official documents are silent on the matter except for recording the year's planting ordered by the higher-level authorities, usually 133-200 ha. The species to be planted were cash trees, such as chestnut, walnut, apple, persimmon, mulberry, ginkgo, and *Bunge pricklya*. Individual farmers were allowed to plant trees around their homes and on their subsistence plots (which had been granted after the terrible famines that followed the "Great Leap Forward"). All forestry sectors, including the state-owned forestry enterprises, were responsible for assisting farmers and collectives in tending for the forests as well as the gathering of NTFPs. Clearing forests for farming and the destruction of forests were prohibited.

In 1975, the Hui County Revolutionary Committee (which governed Hui County at the time) issued an official document entitled "Resolve to promote forest protection and establish inspection stations", some 15 years earlier than the similar "timber transportation inspection station" policies enacted by the central forestry authority. Five such stations were established, with three employees for each, selected by the farmer commune party committee. Besides promoting forest policies and issuing regulations for forest protection, these stations daily registered and checked all incoming and outgoing vehicles. The staff's salary was paid by the state forest farm, and all that was confiscated from illegal transporters was handed over to the county forestry bureau. This document shows that the county authority still had tangible control over the state farms existing in the county at that time.

After a long period of absence from official records, the Hui County forestry bureau jumped back to the fore in 1980, and since then forestry has remained an important issue in the county's official documents. In that year, the Hui County government issued a number of policy documents, including "Resolve to settle issues of tree and land tenure in non-forest regions", "Resolve to reinforce forest protection", "Resolve to protect and prohibit the destruction of forests". These policy documents allowed individual farmers to own forestland if the trees were planted on previously uncultivated land; established a hierarchy of or-

ganizations – county-township-village – to control forest fires; placed the transportation of timber and timber-related products under strict control; and required individuals and businesses to apply for written permission for the selling of timber or timber-related products. Timber buyers could now purchase raw materials only from the County Timber Supply Authority. The making of charcoal was prohibited. No enterprise or government unit could collect timber without an authorization to transport timber issued by the county or higher authorities. Forest protection and inspection stations were granted the power to confiscate the forestland of whoever violated fire regulations.

From late 1981 to early 1983, following the adoption of the household responsibility system in rural China, the Three Fixes policy was implemented in Hui county.²⁹ However, the local government broadly reinterpreted the policy, taking actions such as the issuing of official certificates of collective land ownership, delimiting the boundaries of state and collective forests, granting individual use rights on the so-called “three uncultivated lands” (uncultivated mountains, river banks, and flatland), establishing forest household responsibility, and punishing forest destruction. This provided an opportunity for the county authority to even out the occupation of forest lands among villages and, for the first time, to work jointly with the XSFEF. Youlong Township used to claim about 0.8 ha per capita of forest land, which was reduced to 0.18 ha per capita. The rest was claimed by the XSFEF. In villages located in areas with less forestland, such as Jianguo Township, all state-owned forestland that was scattered within the village area, and hence hard to manage, was transferred to collective ownership and shared out among individual households. In densely forested areas, the principle agreed upon by the state forest farms and the townships, and endorsed by the county, was to transfer 6.5% of the state forests to collective ownership. In official documents, contracts to individual households for forest management were encouraged, but few were actually applied for. The masses viewed such contracts with skepticism. Common objections were that it was “too late to clarify

²⁹ “Fixing” ownership of forests, forest management roles, and the household responsibility system of forest management.

forest ownership, as the forests have gone”, or “this is useless work, as there is no way to transfer forest ownership back to the cooperatives”. Some commented that “now that farmland has been distributed to individual households, the same should be done with forests”.

However, forestry policy took a turn towards restricting production and transportation in late 1987. An official file by the Hui County Communist Party Committee entitled “Provision for implementing the ‘Urgent prescription to stop the destruction of forests’ by the Central Committee of the Communist Party (CCCP) and the State Council”, affirms that party leaders would be held responsible for any forest destruction. The “three uncultivated lands”³⁰ were to be planted within three years and a fine of 300 yuan per ha per year was imposed for land left “lying waste”. Every plot of forestland was to be allocated to a household or group of households who would be responsible for its maintenance. Any destruction would be fined accordingly. Harvesting required approval from the county forestry bureau with endorsement from the village and township. All markets for free timber and related products in the county were to be closed. Households with a member employed in government or related institutions should heat and cook with coal instead of charcoal. Timber or related products being moved without an official transportation document would be confiscated.

All these strict regulations were never implemented. They quickly became outdated when China jumped on the high-speed train of economic development, under the slogan “development is the final objective”. Overall, 1982 was a turning point, marking a shift from state and collective to private forest use rights.

Conflicts between two owners over the same piece of forestland

Over the past two decades, China has been on the march towards a market-oriented economy and a society governed by the rule of

³⁰ Hills, banks of water courses, and slope lands.

law.³¹ During the 1980s the forest authority lost control over the marketing of timber and timber-derived products. More recently, it has begun to regard private commercial forests as totally independent from government control.³² Yet, despite ongoing reforms, the government remains the most important entity involved in the forestry sector. It is responsible for enacting new laws and regulations, and controlling almost all forest management activities, including pest and disease control, forest fire control, the growing and distribution of seedlings, forest maintenance, harvest quotas, forestland turnover, log quality and quantity checking, etc. Forestry laws, however, permit significant flexibility of interpretation in that, with the approval of the the State Forestry Administration (SFA), provincial regulations may be introduced to allow for specific local conditions.³³

Over the last two decades, China's economy has made great progress. However, Hui County, like many other counties in western China, shows a different side to the story of economic progress. Pressure to achieve economic growth and obtaining government revenue to pay for the constant growth of staff in the government sector has been continuously rising. The people feel that there is a second government in the county, viz., the forestry hierarchy, which has authority over 60% of the county's territory and controls valuable resource assets for the acceleration of economic progress and the increasing of local governmental revenue.

From 1986 onward, some ten different forestry taxes and fees were levied on forest products, including the Afforestation Fund Tax.³⁴ In those years, a large proportion of governmental revenues was collected by local governments in the form of various levies, with official approval or illegally. According to the provision for forest fee collection, the XSFEB, being subordinated to the Gansu Provincial Forestry Department, was authorized to collect forest fees and report back to the

³¹ Liu, "Support to Private and Community Farm" cit., pp. 57-62.

³² W. Lu, N. Lan-Mills, J. Liu, J. Xu, *Getting the Private Sector to Work for the Public Good*, International Institute of Environment and Development, London 2002.

³³ S. Li, Q. Qu, *Study on China's Rural Grassroots Institutions* (in Chinese), China's Agriculture Publishing House, Beijing 1994.

³⁴ Liu, "Support to Private and Community Farm" cit., pp. 57-62.

Department. Thus, backed up by the provincial authority, the XSFEF could issue a legal receipt for harvest and transportation fees, after which the county authority could not levy those same charges again. This undermined the XFSB's relationship with the county government, causing additional difficulties to the state forest farms.

In late 1974, the first national forestry inventory was drawn up in Gansu Province. To avoid overlaps or omissions in the inventory, the Hui County authority and the XSFEF needed to determine the boundaries of forestland areas. The Hui County authority found a significant discrepancy between its own and the XSFEF's claims to forestland. The county argued that the XSFEF only had authority over the forestland indicated in an official document of June 20, 1963, approved by the Ministry of Forestry. Thus, the county requested the XSFEF to give up all claim to forest areas not listed in the approved official documents. Most of the disputed area was located in the communes of Liulin, Youlin, and Lichuan. This is relevant to an event that occurred during the early stages of the cultural revolutionary period.

In June 1967, at the peak of the chaos and power struggles, insurrectionists from several state forest farms under XSFEF joined forces to threaten County Governor Huang, to get him to sign official documents certifying that the forests within the territory of the Liulin, Youlong and Lichuan communes had been transferred from collective to state ownership, and were to be managed by the XSFEF.

The Hui County authorities appealed to the prefecture three times between late 1974 and mid-1975, maintaining that:

“1) The XFSB's claims to forest areas were unacceptable, since the interests of the rural people of Hui county had to be taken into account. 2) Forest ownership, which had been claimed by the state forestry farm in 1967, should be returned to Liulin, Youlong and Lichuan townships. 3) Those forests that used to be in private ownership before the land reform of the early 1950s', and were subsequently designated as state forests, should be returned to their respective collective owners.”

But Hui County failed to win its case, which was blocked at prefecture level. In any case, the prefecture has no authority over the XSFEF, which answers to Gansu Provincial authority.

On December 15, 1984, the Hui County authority appealed to the Gansu provincial government over this same ownership dispute, copying the appeal to the provincial forestry authority and the prefecture. Three more arguments were added to the appeal. Firstly, no official procedure for changing the ownership of forests in Liulin, Youlong and Lichuan townships had been enacted. Secondly, the repairing of the errors of the “cultural revolution” should include rectification of misjudged cases. Lastly, since the state farms had never planted trees in the territory of these three townships, the disputed areas should be classified as uncultivated land, not forest. According to the “Provision for policy to perfect the household responsibility system and secure forestry development” enacted by the Gansu Provincial Forestry Department, “uncultivated mountains owned by state forestry farms that did not have the capacity to afforest them should be transferred to local government, to be contracted out to individuals or joint households to be afforested.” Again, no response came from the central authorities to end this dispute.

This appeal reflected a general trend to reallocate state forests to individual households designated by a high-level official. However, it was strongly against the interests of the local state forest sector. Thus, as a compromise solution, local authority approved a local policy that required the XSFEB to transfer the forest property rights of 7% of its unforested land, and 4% of its forestland. At the beginning of the 1980s, when the “Three Fixes” policy was implemented, the XSFEB had actually distributed some of the state-owned forest to the people as collectively-owned forest, but in the documents the boundaries are not clearly defined; the extension of the areas being allocated is simply expressed using the phrase “*Si Zhi*”, “from this place to this other place”.

At any rate, it was inevitable that the two owners would eventually have to work together. On April 28-29, 1987, delegations from both authorities gathered for a two-day meeting in Hui county to discuss “causing the forest to thrive and the farmers to prosper”. The meeting was concluded with agreements to collaborate in joint forest protection, cooperative planting, joint administration of the collecting of non-timber forest products, and the granting of privileged

access to timber for self-subsistence uses. The state forest sector engaged itself to develop the road and schooling infrastructure, while the county offered help in granting access to water, communication, and electricity. The two-day meeting was concluded with the creation of a new coordinating body called “Coordination Group of Hui County and XSFEB for causing the forest to thrive and promoting farm cooperation”, signed and sealed by leaders from both parties.

The minutes of these meetings reveal that institutional coordination between the XSFEB and Hui County was far from harmonious. Notably, they highlight disagreements over resource management. Mistrust and conflict dominated the rural reform era, leading to massive destruction of forests, until the NFPP intervened. The following are cases picked up from official documents and oral accounts by village elders.

In 1992, the Hui County forestry bureau implemented a project called “grafting good varieties of walnut onto wild walnut trees”, which was to involve 400,000 wild walnut trees. Most of the grafting was done on wild trees in the area claimed by the state forestry farm, without prior notice. This action was strongly supported by local community leaders and farmers. But the state forestry farm declared that these were not wild trees, having been planted years ago, and were already of a good variety. The farm raised a case against the Hui County Forest Bureau. A joint meeting involving the county authorities and the XSFEB was called to settle the dispute. The minutes of the meeting record that the county bureau admitted their mistake and promised to discuss any future actions involving state forests with the state farm. Both sides agreed that they should help communities with their economic development. For the grafted walnut trees owned by the forestry farm but contracted out to the community for management and benefits, farmers would pay a fee.

In the 1990s, mining developed very fast in Hui county. Most of the mining sites were located in state-owned forest areas. In 2004, 60%-70% of Hui county’s state and local tax revenue came from the mines and associated processing industries. When a new mining site was discovered at Luoba village, the village committee declared that this site was owned by the village collective. But Yushu State Forest

Farm insisted that this was state forest area. While it appeared that the dispute was between the village collective and the state forest farm, it was actually between the local government and the XSFEB. In practice, collectives cannot make claims on a mining site without the unofficial support of local government. A joint meeting was called by senior leaders from Hui County and the XSFEB, and representatives of all parties involved. The discussion was heated, with the village committee insisting that the borderlines of collective forests should be those indicated in land certificates. A director of the forest farm did not accept this and argued that:

“If such is the case, where is the forestland owned by the state? I am responsible for managing a certain area of state forests. I would not dare to report to my superior that my forestland was missing, or had moved to the moon.”³⁵

The meeting ended without any solution or compromise between the county and the XSFEB. Later, however, a high-level official visited Hui county and came up with a compromise proposal: the XSFEB would be granted ownership of most mining sites, but Hui County would manage them. Since there are many sectors involved in the application process and the collection of mining site operation fees,³⁶ mines opened around 2000 seldom made a profit. This hindered local economic development, with great concern of the county government, which therefore invited public bidding for all controlled mining sites and shared out the income between the relevant departments proportionally. However, control of mining by the county government did not do much for the interests of villagers.

³⁵ From my field investigation.

³⁶ To obtain a concession to work a mineral site one had to deal with the following state departments: 1) Forestry, which accepted applications for forest occupation and collected forest recovery fees; if the forest belonged to the collective, the county forest bureau would collect this fee, if it belonged to the XSFEB, the bureau would, and 70% of the income would be shared with the provincial forestry department; 2) Environment; 3) Traffic; 4) Taxes; 5) Industry, as well as other departments placed under the authority of the county. Besides, the mining company or investors had to pay an exploitation rights fee to the county government.

Competition also arose between the XSFEB and Hui County over the “Ecological Compensation Fund”. Both the XSFEB and Hui County applied, but when the forestry investigation and design team checked the data, they declared a ten percent overlap, giving as proof readings from newly introduced GPS and GIS systems. A high level official from the XSFEB said to me: “There can be no compromise over ownership of forestland.” A coordination meeting was called to settle the disputes. The XSFEB invited the Gansu Provincial Forestry Department and the institution responsible for checking SFA assignments to attend. Hui county lost the game again, as they always did over official tables.

Hui county may never have won a battle over official tables, but its farmers and communities managed to do so under the table, as the following story, made up of small cases and disputes, will show.

Yushu Forestry Farm decided to log near a village. To be delivered, the logs had to be transported through the village. Before logging started, the village head asked for money to repair the village school, but the farm refused. When the logs were ready for delivery, the loggers found the road out of the forest cut off by a ditch dug across it. The farm assigned people to fill the ditch up in the daytime, but it was dug again at night. The farm was thus unable to deliver any logs until it made the requested donation for repairing the village school. Farm employees unofficially commented that “the farmers would not dare to do this without the backing of township officials.”

In the period of mass forest destruction, before the NFPP was established, senior XSFEB officials often visited county officials to discuss issues, but were greeted with statements such as: “Farmers here do not have money to buy salt and oil for their everyday needs, so what does it matter if they cut down a few trees?” In extreme cases of unwillingness to help stop the destruction, a township official might be called by the state forestry farm to resolve the problem and would visit the village involved with representatives of the forestry farm. They would call a farmer meeting and talk loudly about the importance of forests for environmental protection, and their responsibility to protect such an important state asset, and request a stop to “illegal” logging. However, when the forestry staff later re-

turned to the farm, they would realize that their recommendations had been completely ignored.

As for the case of mining mentioned above, villagers have their own way to protect their interests. Take, for example, the mining site near Xiakou Village, where I lived for about half a year. In 2004, Xiakou village spent about 260,000 yuan to build a new school and village committee office. The village head managed to obtain 70,000 yuan in donations from three different mining companies. The village head, Mrs. Wang, told me: “We cannot collect any more money from the companies this year. We will do so next year.”

Preventing illegal forest destruction

During my research stay in the Xiaokou and Jiangkou villages of Hui county, Mr. Tang Hongwei, one of the lay employees of the Yushu State Forest Farm, was among the staff at the local station. The following is the story he told me about his experiences in 1992-1998, supplemented by oral accounts by other farm employees and village elders in the research area.

The most severe forest destruction usually took place before the spring festival. At that time, people habitually sold corn and pigs to make some extra money to build houses and purchase furniture. At the spring festival, the forest farm gave leave to many of its employees to visit their families for the celebrations, leaving the forest with only lax protection. At that time, two logs suitable for making rafters were worth the equivalent of a month's salary. It was also easier back then for villagers to gather young people and team them up for illegal cutting,³⁷ as people had not yet started to take off-farm jobs. Since the forest farm took full responsibility for its own profits and losses, the employee's salaries mostly depended on income generated from production. Every employee had his or her assigned tasks, but only by levying twice their salaries' worth in fines for stealing or other

³⁷ In the late 1960s, the growth of Chinese population reached its highest peak in history. Therefore, from that time until the 1990s a large majority of the population was between 20 and 30 years old.

violations could they earn a full income. The aim of linking profits from production to employees' salaries was to motivate them to work hard. The farm managers realized that it was not easy to prevent the farmers from logging for most of their self-subsistence needs, except for house building. It was very difficult, for instance, to prevent the harvesting of wood for making furniture or charcoal. Thus, the farm managers focused on preventing commercial logging activities.

According to the "Forest Law", anybody caught stealing or cutting timber would not only have the wood confiscated but would be fined three to seven times its value. In order to collect fines and thus round out their income, employees would go into the forest at 4:00 AM to catch timber thieves, sometimes going into the forest in groups of four to set up ambushes at several likely spots. Mules were used to carry timber. Each could transport 0.2 m³ of oak, valued at about 100 yuan. If villagers were caught with timber on a mule cart, the staff would usually give the mule back to the villager, but take the cart. A cart was worth 300-400 yuan and villagers would usually be willing to pay 200 to 300 yuan to get it back. In 1996, illegal loggers started to use trucks to transport the timber. A truck can usually carry some 10 logs, with a value of 500 yuan. The vehicle itself was worth 6000 yuan. The farm employees would seize the wood and vehicle, take them back to the station, and wait for the culprits to pay their fines, amounting to about 2-3000 yuan, which at the time equaled twice the monthly salary of four employees.

The villagers used all possible means to avoid being fined. They chose times when the farm was not very strictly guarded, such as the harvest period, and nights, especially moonless ones, between 12 PM and 4:00 or 5:00 AM. Villagers would team up and divide up tasks. One or two would explore the road ahead with torches and use secret calls to give the alarm. The villagers also had access to insider information. Spies inside the forest farm would let them know when the farm would be unguarded and when patrolled. The spies would share in the profits. A spy would leave a message in an appointed crevice in a rock to inform villagers about the farm's arrangements for catching thieves and villagers would retrieve these messages regularly.

In response, the forest farm adopted increasingly strict measures. The staff was armed with sticks to defend themselves from the thieves. The farm supervisory department would constantly move staff members from one location to another to cut the links between them and the local communities. A supervising division was established and equipped with a patrol car.³⁸ The patrolling followed a random schedule. Serious punishment was decreed for spies among the staff, who if discovered would lose their jobs and salaries.

After the establishing of the NFPP, the forest was much easier to manage, since the villagers now knew clearly what the policies were. The county would pass on the information to the township and the township to the next lower management level, and so on. Moreover, some of the adult villagers were now migrating out for work and had hence found alternative ways to make an income. This was very different from the past. Tang Hongwei, the Yushu State Forest Farm employee mentioned above, said that since the NFPP had been established they could finally all sleep peacefully at night.

Conclusion

Forest policy has shifted frequently since the founding of the People's Republic of China in 1949. Each shift was followed by a new turn of the screw in the mass destruction of forests, and local communities have always been on the losing side in terms of access to forest resources. Before 1949, the forestland in the Hui county of Gansu province was mostly owned by private households and religious and community institutions. A process of centralization and collectivization followed, which went on until the early 1980s.

³⁸ The affiliated organizations (the working station and the checkpoint) of the farm shared the responsibility for catching the thieves. The farm set up an administrative department dealing with stealing and covert cutting. In 1997, with the support of the NFPP and approval of the Gansu Provincial Government, the XSFEF established a police department. Previously, thieves who could not pay the fines were sent to the local police substation. The substation, however, would usually set them free. After 1997, the Bureau itself was given the right to arrest thieves and sentence them to jail.

This process was concluded with the canceling of private ownership of forest land, a drastic reduction of private forest use rights, and the transferring of about 60% of the forestland into state ownership. In the early 1980s, the tide shifted towards de-collectivization and de-centralization of forest use and management. This started a trend to reestablishing some degree of private rights of access to forest resources. Concomitantly, collective rights played an increasingly minor role in forest management, and rural economy in general. Nevertheless, farmers' access to forestland continued to be limited, and benefits from forestland were allocated to support the soaring numbers of state employees. As a consequence of the major social and political changes of the last 50 years, the redistribution of power and benefits has become increasingly unequal. Local people and communities have experienced more and more restriction of their rights of access to forestland. Local government and state sectors interpret central government policy to reinforce their own powers and increase their slice of the forest cake. Somewhat paradoxically, however, regardless of whether collectivization or de-collectivization prevailed, the outcome has always been the same: forest destruction, as many sad stories bear out. That is at least part of the reason why China finally ended up undertaking massive and largely centralized interventions in forests, such as the establishing of the NFPP to control soil and water erosion.³⁹ This suggests that the best policy for the restoration of forestland would be the restoring of the strong link between local people and forests.

There have been dramatic changes over the last 50 years in the interrelations between people, communities, and forests as a reflection of changes in the macro political, economic and social context, as well as changes at the micro level in terms of power relations, knowledge, and livelihood struggles. Frequent mutations of the macro and micro contexts have resulted in concomitant shifts in forest management and land use. This has brought at least one negative consequence, namely that short-term planning has caused

³⁹ SFA, *China Forestry Development Report*, China's Forestry Publishing House, Beijing 2001.

the loss of local communities' endogenous forest managing practices and possibly undermined the relatively harmonious power relationships that existed between the different actors in villages.

Forest use and management is a critical arena for struggle and conflict between stakeholders. Access to trees and their products galvanizes the interests of both outside groups – the state and authoritative non-state actors – and inside groups such as forest residents and groups of users. This gives rise to many disputes that are often difficult to predict and find a solution for, as the many changes in policy illustrated above demonstrate. This article shows the extent to which unresolved issues keep raising their heads. The high visibility of these unresolved conflicts has spurred theoretical reflection, policy interventions, and institutional changes. Local communities who have lived with their forests for many generations have created their own customary legislative and institutional arrangements for the managing of their forest resources.⁴⁰ As I have demonstrated here, in the research site the centralization process (1950 to ca. 1980) and the increasing role of the state in forest resource management has led to the breakdown of customary collective forest management practices. The subsequent rise of individualism and the free market has also contributed to forest destruction and degradation.⁴¹ We need to find better ways to use and manage forests, as environmental as well as economic resources. We need intervention. But we should build it from the ground up.

Since 2004, China forest policy has entered a new phase, where community-owned forests are being assigned to individual house-

⁴⁰ M.A. Knox, R. Meinzen-Dick, P. Hazell, *Property Rights, Collective Action and Technologies for Natural Resource Management: A Conceptual Framework*, SP-PRCA working paper n. 1, International Food Policy Research Institute, Washington D.C. 1998.

⁴¹ J.A. Swaney, "Common Property, Reciprocity and Community", in *Journal of Economic Issues*, 24, 2, 1990, pp. 451-462.

⁴² J. Liu, "Critical Issues Related to the Collective Forest Tenure Reform in China and Highlighted Research Agenda for these Issues" (in Chinese), in *Forestry Working Study*, 2, 2009, pp. 24-29.

holds. The aim is to allocate all collective forests scheduled to be eventually managed by a household or other private subject (58% of the total) by 2013.⁴² Garrett Hardin's "tragedy of the commons" has stimulated China's policy makers to try to put a stop to de-collectivization and privatization, to prevent selfish individuals from overusing common resources. However, there is much more to the issue than that. The fundamental question we should ask is whether local knowledge systems, power structures, and cultures will be able to coexist and integrate with external capital invasion and privatization.⁴³

⁴³ P.C. Baumann, "Historical Evidence on the Incidence and Role of Common Property Regimes in the Indian Himalayas", in *Environmental History*, 3, 4, 1998, pp. 323-342.