10 Collective forests and forestland

Physical asset rights versus economic rights

Yaoqi Zhang and Shashi Kant

The critical role of land in human existence has been widely recognized for time immemorial, and that is why in some cultures, specifically Aboriginal culture, land is known as the mother of human existence. Historically, probably due to such importance of land, land reforms have been integral parts of all the world-wide revolutions, including the cultural revolution and the recent reforms in China. In this book, all the previous chapters have focused on land reforms in the agriculture sector of China. However, in the modern era, forest resources have become as important, if not more, as agriculture, and analyses of land reforms of any country without including forestland reforms will be incomplete.

During the 1990s, many global issues associated with forests such as the decline of biological diversity, deforestation and forest degradation, the fate of forest people, climate change, and desertification have dominated the public and political debates at international as well as national levels. China has played a major role in these debates, as well as in the development of new policies and programs to address these issues. China is uniquely placed on many dimensions of the forestry sector and, hence, experiences from the Chinese forestry sector might have important international implications.

China's forestry sector features four critical dimensions. First, in terms of the share of the total global forest area, China belongs to the top five countries (with Russia, Brazil, Canada, and the United States) (FAO 1997). However, in terms of proportional forest cover (percentage of the total land area) China is among the countries which have lowest cover, and the North and Northwest China have the lowest forest cover within China. Second, China is the second largest roundwood producer (only after the United States) and the second largest fuelwood and charcoal producer (only after India) (FAO 1998). Third, China accounts for one of the world’s largest reserves in biodiversity, and the variety of wild plants and animals is greater than that of North America and Europe, equaling one-eighth of all species on the earth (Raun 1995; Harkness 1998). Fourth, China has faced remarkable damages due to forest destruction and deforestation which have led to soil erosion and floods (Lang 2002).
For example, in 1998 the Yangzi drainage area suffered from the largest flood since 1954, which caused an economic loss of 166 billion yuan (20 billion US dollars) (Yin and Li 2001). The increase in sand and dust storms in Northern China, as a result of deforestation and desertification, received worldwide attention after sand was blown over to Japan and even the United States.

In response to these critical problems, China has taken many initiatives in the past 20 years. For example, in 1999 China launched the Natural Forest Conservation Program (NFCP), which bans logging in the upper areas of major rivers. Second, China is a signatory of the United Nations Convention on Biological Diversity (CBD). In 2002 China signed the Cancun Declaration of like-minded high-biodiversity countries, and reaffirmed its commitment to the objectives of the CBD. One of the most important experiments in institutional reform in the Chinese forestry sector started with the proclamation of the “Decisions on the Issues of Forest Conservation and Forestry Development” by the State Council in 1981. This document, popularly known as the “Three Fixes” or San-Ding, was intended to stabilize ownership of forest and forestland, to specify private use rights on collective forestland and to establish a system of management responsibility. In this sense, it effected the de-collectivization of collectively-owned forests or forestlands. As the land reforms of state-owned forests are governed by a different set of rules and deserve a separate discussion, this chapter is primarily concerned with the reforms in the collective forest sector.

Over the past two decades, many scholars have investigated China’s reforms of collective forestland, yet, compared with the agricultural sector, studies in forestry are still limited. Generally, these studies have tried to establish a relationship between de-collectivization (allocation of forest management rights to households) of forestlands and economic efficiency of forest production from these lands (Rozelle et al. 2002; Yin and Newman 1997; Zhang et al. 2000a, 2000b). No doubt the allocation of management rights is an important ingredient to economic efficiency, but it is not the sole determinant. Economic efficiency is measured in terms of the net economic returns to the forest management right holder, which not only depends on his physical assets and/or management rights but also on other factors such as the prices received for the forest products, and the costs paid for the protection of management rights and physical forest products. In western market economies, prices and costs may not be such an issue as they are determined in a competitive market system, but in China, these are still critical determinants for the economic outcome of forest-sector reforms because the state still controls prices and costs either directly or indirectly. Hence, the studies of forest-sector reforms which have focused on de-collectivization only may give some indication of the production efficiency of collective forest sector but cannot provide a comprehensive view of the economic efficiency.
Most of the land reforms studies, including studies on collective forestland, seem to promote, either deliberately or non-deliberately, the Washington Consensus – private property rights are essential for the future of developing countries including China. Such conclusions are based either on an incomplete understanding or a partial use of property rights framework which leads to conclusions that only “ownership of assets” and “prices matter” for economic efficiency. However, as Bromley, in Chapter 1, has argued, it is not only the ownership structure of assets and/or prices that matter but also the whole structure of working rules for economic incentives. In this chapter, we will analyze the structure of property rights for economic incentives in collective forest sector.

In Chapter 1, Bromley emphasized institutions (working rules) for economic incentives. However, as Ho said in the Introduction, the words “institutions” and “property rights” are frequently used side by side – even to the point that the distinction between them becomes blurred. A property right is an institution, yet an institution is not necessarily a property right. Hence, our analysis is limited to a particular set of institutions – property rights – and even in property rights, it is limited to the property rights arising from statutory and customary legal sphere and not from the social and cultural sphere.

The property rights framework is useful in understanding the differences between ownership and property rights, and provides an insightful classification of property regimes – state, private, common and open access (Bromley 1989, Randall 1975). As per this framework, property is not a physical object, but it is a benefit stream (Bromley 1991). Property rights bring together legal concepts of rights and duties with settings and circumstances (including objects) capable of producing income (ibid.). Hence, in this framework, all property rights are clubbed together as “bundle of rights” as mentioned by Ho in the Introduction. The weakness of clubbing all property rights together as “bundle of rights” is that analysts have focused only on the rights related to the ownership and management of physical assets, and have overlooked other rights related to economic incentives. In Chapter 2, Wang distinguishes between “personal rights” and “real rights,” but this distinction is based on legal position of the rights. Surprisingly, an objective classification of property rights is missing from the literature. The only exception may be the classification by Barzel (2002) who groups property rights into “legal rights” and “economic rights.” He defines legal rights as the claims over assets delineated by the state as the property of particular individual or group, where the assets are all inclusive – physical assets, intellectual creations, and brand names, etc. and economic rights as an individual’s ability, in expected terms, to directly consume the services of an asset, or consume it indirectly through exchange. It should be understood that having legal rights does not necessarily imply having economic rights. A legal right is only a means while an economic right is an end. This classification is very useful.
at least in shedding some light on distinction between the rights associated with physical assets and economic returns. However, the terminology is confusing and may not be appropriate for the discussion of the property rights arising from statutory and customary legal sphere. For example, economic rights may also be legal rights, and all the rights arising from statutory sphere are legal rights. Hence, we propose and use in this chapter a slightly different classification of property rights: (1) physical asset rights; and (2) economic rights.

Physical asset rights are “the claims over physical assets, such as forest land, and forest products, delineated by the government, local, provincial, or federal, as the property of particular individual, household, or group.” Hence, in the context of collective forest sector, physical asset rights will include management and production rights over collective forest-land and ownership rights over forest products. However, ownership does not necessarily mean economic rights. For example, in some situations, a household may own trees on a collective-forest land allocated to them, but cannot harvest trees or sale trees without government permission, and thus cannot enjoy economic returns.

Economic rights are “the claims over economic returns from physical assets, delineated by the government.” Even after allocation of physical assets to households, either ownership or management, the government can constrain economic returns to households by controlling prices and costs and imposing taxes. Hence, similar to Barzel’s argument, having physical asset rights does not necessarily imply having economic rights. A physical asset right is only a means while an economic right is an end. Physical asset rights will contribute to physical production mainly while economic rights will contribute to economic efficiency.

In our case, both types of rights, physical asset rights and economic rights are legal rights, and the rulers of the state (a specialized protector-ruler or the government) are supposed to safeguard all the legal rights. Normally, the state is efficient in safeguarding legal rights merely due to scale of economies in its operations, but on the other hand, the state may also display rent-seeking and self-interested behavior. For this reason, it is imperative to establish mechanisms to control the protectors (the state) from becoming rent-seeking agents. Otherwise the economic rights of civilians and farmers may be at risk when the protectors become the proprietor (Barzel 2002). Therefore, to effectively evaluate the economic performance of collective forestland reforms, we need a property rights framework that distinguishes between physical asset rights and economic rights.

It is not our aim to assess the economic performance of property rights reforms in terms of physical asset rights and economic rights. We wish to highlight the various critical aspects of physical asset rights and economic rights on collective-owned forestland, and their current status. In addition, we examine the changing role of the government from forest owner...
to a specialized protector of rights. The next section provides some facts and figures about China’s forests and forestland. The section is followed by a short historical overview of forest property rights. In the third section, physical asset rights arising from the changes in forest property rights are analyzed, while in the fourth part, economic rights are examined.

Forests and forestland in China

China’s forest area is 158.9 million ha with a stock volume of 11.3 billion m$^3$, accounting for 7 percent of the total land of the globe and 16.6 percent of the total land of China (see Figure 10.1). In 1999, 52 million m$^3$ of timber and 539 million stems of bamboo were produced, while the total output value of forestry was 31.88 billion yuan in current prices (NFAB 2001). In addition, China’s forest are also an important source of forest by-products, particularly in northern China, where agro-forestry systems cover 45 million ha (Huang et al. 1997). The forest sector provides

![Figure 10.1 Forest cover in China.](image-url)
over 3 million job opportunities and many more jobs are related to the forest sector, such as the tourism industry. Currently, China is one of the few developing countries where the trend in deforestation has shifted to forest expansion – mainly due to large-scale plantations (with nearly 50 million ha) (NFAB 2001).  

China’s forests are unevenly distributed across provinces (see Table 10.1 and Table 10.2). The structure of forest ownership also varies across regions. The northeast and southwest are dominated by state ownership, primarily managed by about 130 state-owned forestry enterprises and 4,000 state forest farms (that manage 30 million ha of forests across the whole country). The central, south and southeast are dominated by collective-owned forests. The distribution of forest types according to ownership is listed in Table 10.3. It should be noted that the collective forests account for a substantially larger share in planted timber forests, economic forests and bamboo forests. Currently, the timber from collective-owned forest accounts for 70 percent of industrial timber, approximately 500 million m³ per annum.

**Historical shifts in ownership and control over forest**

Historically, the rights in forests and forestlands in China were recognized and enforced by local communities, not by a central agency, and were governed by informal institutions, such as customary norms, conventions, beliefs, religions and ethics (Zhang 2001). Quasi-governmental organizations, such as a “mountain council” (or “village council”) were quite common as a governing body for forest land in southern China. The mountain council delineated the boundaries of land, designated and regulated hunting rights, harvesting and even output-sharing (Wu 1962).

The first Forest Law and Hunting Law in China were enacted by the

**Table 10.1 China’s forest resources, 1973–1998**

<table>
<thead>
<tr>
<th>Years of inventory</th>
<th>Forestry land*</th>
<th>Forest</th>
<th>Forest cover (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Area million ha</td>
<td>Stock bill. M³</td>
<td>Area million ha</td>
</tr>
<tr>
<td>1973–1976</td>
<td>257.6</td>
<td>10.3</td>
<td>121.9</td>
</tr>
<tr>
<td>1977–1981</td>
<td>267.1</td>
<td>10.3</td>
<td>115.3</td>
</tr>
<tr>
<td>1984–1988</td>
<td>267.4</td>
<td>10.6</td>
<td>124.7</td>
</tr>
<tr>
<td>1989–1993</td>
<td>262.9</td>
<td>11.8</td>
<td>133.7</td>
</tr>
<tr>
<td>1994–1998</td>
<td>263.3</td>
<td>12.5</td>
<td>158.9</td>
</tr>
</tbody>
</table>

Sources: China’s National Forest Resources Inventories (1973–1998).

Note

* The concept of forestry land, frequently used in China, refers to the land with a present or potential future forest cover, or the land that is allocated for forestry purposes. So not all forestry land is forested, but may be with some trees.
Republic of China in 1915 (Chen 1982: 71–95). The law stipulated that “All mountains and forests within the country, unless they are owned by private persons and in charge by the local governments, belong to the state and are administrated by the ministry and the local government” (Article 1). A series of comprehensive institutions concerning property rights of trees and land, zoning, timber harvesting and trade were also established shortly after the proclamation of the law. Unfortunately these laws were not effectively implemented, partly due to armed conflicts among contending warlords, the ensuing civil wars and the war with Japan.

Forests and forestland tenure have undergone significant changes in past half-century (see Table 10.4). The Land Reform Law of China was issued in the following year after the establishment of the People’s Republic of China in 1949. Land was allocated to farmers in recognition of their support for the revolution. During land reform all land owned by private landlords was confiscated and mostly redistributed to local farmers, while the remainder in particular remote and large plots, were placed under state ownership.

However, the period of private holding in the collective forest area was to be very brief. In the name of the revolution, the government expropriated the land shortly afterwards. The subsequent Socialist Transformation

<table>
<thead>
<tr>
<th>Region</th>
<th>Characteristics</th>
<th>Ownership</th>
</tr>
</thead>
<tbody>
<tr>
<td>North-east</td>
<td>Rich forest resources and low population density, important timber supplier, providing nearly half of the industrial wood</td>
<td>Dominated by state-ownership</td>
</tr>
<tr>
<td>North/north-central/</td>
<td>(i) The north/north central China is a major timber consumption region and has the highest population density. Land use is dominated by agricultural land, and forestry land is dominated by plantation forests and agroforestry. (ii) North-west China has dry climate and a very low forest cover and population</td>
<td>Largely owned by collective ownership</td>
</tr>
<tr>
<td>north-west</td>
<td></td>
<td></td>
</tr>
<tr>
<td>South/south-east</td>
<td>Important timber supply and consumption region, which is dominated by mountains and forests, and natural and plantation forests co-exist</td>
<td>Dominated by collective ownership</td>
</tr>
<tr>
<td>South-west</td>
<td>Rich natural forest resources, but mostly inaccessible</td>
<td>Dominated by state-ownership</td>
</tr>
</tbody>
</table>

Source: Research by the authors.

Table 10.2 Forest ownership and other characteristics of four forest regions of China
Table 10.3  Distribution of forest types according to ownership

<table>
<thead>
<tr>
<th></th>
<th>Total forest</th>
<th>Timber-forest</th>
<th>Plantation timber-forest</th>
<th>Economic forest</th>
<th>Bamboo forest</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Volume (share)</td>
<td>Area (share)</td>
<td>Volume (share)</td>
<td>Area (share)</td>
<td>Volume (share)</td>
</tr>
<tr>
<td>State</td>
<td>7,641 (68%)</td>
<td>64 (42%)</td>
<td>7,124 (71%)</td>
<td>62 (48%)</td>
<td>378 (37%)</td>
</tr>
<tr>
<td>Collective</td>
<td>3,665 (32%)</td>
<td>90 (58%)</td>
<td>2,961 (29%)</td>
<td>67 (52%)</td>
<td>1,013 (63%)</td>
</tr>
</tbody>
</table>

Sources: NSFB (2000).

Note
Units: Volume in million m³, area in million ha.
### Table 10.4 Forest tenure changes in China

<table>
<thead>
<tr>
<th>Period</th>
<th>Institutional changes</th>
<th>Tenure system</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before 1949</td>
<td>Warlords, landlords, bureaucrats, merchants, self-sufficiency farmers, common and open access (legally by the state)</td>
<td></td>
</tr>
<tr>
<td>1950–1952</td>
<td>Land reform and economic recovery</td>
<td>Government confiscated all forestlands owned by landlords and bureaucrats and evenly distributed to the farmer within the community for the community forests. The rest, mostly in remote and less populated area, such as the North-east and South-west, were claimed belong to the state</td>
</tr>
<tr>
<td>1953–1955</td>
<td>Primary collectivization</td>
<td>Private trees, forest and forestland were allowed, but encouraged to bring the resources and join in the mutual aid teams and elementary agricultural producers' cooperatives</td>
</tr>
<tr>
<td>1956–1958</td>
<td>Advanced collectivization, and towards socialism</td>
<td>-upgraded to higher agricultural producers’ cooperatives and transition to collectively owned and People’s Commune</td>
</tr>
<tr>
<td>1958–1981</td>
<td>People’s commune system</td>
<td>Collectively owned (often shared by commune and village levels for forests, but agricultural land was often owned by the production team, the lowest level of the three-levels of the commune system), state-owned by central, provincial and local (county) governments</td>
</tr>
<tr>
<td>1981–1984</td>
<td>Stabilization and consolidation of ownership</td>
<td>Private held timberland (allocated to individuals), contracted timberland (i.e., the use rights were contracted out to the individual farmers); collective timberland (shareholding system), state-owned</td>
</tr>
<tr>
<td>1985–1992</td>
<td>Privatization and decentralization</td>
<td>Private timberland (the use rights were divided into individual farmers); contracted timberland; collective timberland (including shareholding system), state-owned</td>
</tr>
<tr>
<td>1993–1998</td>
<td>Towards market economy</td>
<td>Longer-term contract for forest and forestland, auction of non-forestland for long-term (up to 100 years) holding, state-owned</td>
</tr>
</tbody>
</table>

Source: Research by the authors.
vested the ownership of private forestland into the collectives (villages) during the first phase of collectivization from 1952 to 1955. During this period, individual farmers were still allowed to hold some forestland. In the second phase since 1956, however, private forests and forestland, except for a small number of dispersed trees, were gradually forced under collective ownership – initially, in the Agricultural Producers’ Cooperatives, later in the People’s Communes (usually several villages within one commune).

Since then, private forestland has completely disappeared. In its place came a large number of collective forest farms, which amounted to 8,000 in 1960 (MoF 1987). For the majority of collective forests and forest land, both the ownership and use or management rights are controlled by three levels of collectives: People’s Communes, a group of villages, and villages. In many cases one village had been broken down to several groups. It was often that forestland was kept more centralized than the agricultural lands. This structure had been unchanged throughout the 1960s and the 1970s even though some specific structure might slightly differ from time to time and region to region.

Comparatively, the nature and management of state-owned forests and forestland were not changed. The reform of property rights is characterized by the decentralization of authority from the central government to provincial governments and the enterprises, which involves increasing commercialization of forest operations (Zhang 2000, 2002). In addition, profound changes in property rights have occurred in the collective-owned forests. These changes will be examined in the following two sections, respectively, from the perspectives of physical asset rights and economic rights.

**Physical asset rights**

After de-collectivization ownership was retained by the collective (usually at village or township levels), but management rights were transferred to households or individuals. Hence, households obtained physical asset rights in terms of use and management rights over the forests and forest products and ownership rights over forest produce. The two key aspects of physical asset rights are, first, the right of ownership versus the right of use, and, second, the right of transfer of forests and forestlands. However, having use rights does not imply having full rights of use for which reason we must examine the limitations on these two aspects – use rights and transfer rights.

*Ownership versus use right over forests and forestland*

As discussed above, prior to 1980, the ownership and use rights of forest and forestland were not separated, either in the private forest between
1949 and 1953, or later in collective forests. But the land reform of China since 1978 separate of the management right of land from the ownership of land, and categorized forests into “state-owned, collectively managed” and “collectively owned, privately managed.” The 1982 Constitution and the Land Administration Law both determined that the administrative villages that succeeded the ownership of the land were allowed to allocate the land to smaller units or households for management. In the forest sector, the “Three Fixes” document (1981) declared that: (1) for all the forest stands and forestland with clear ownership, the government, at or above the county level, should issue a property certificate to the owner to recognize the property right and guarantee its stability; (2) in accordance with the needs of the local forest farmers, plots of forestland, including waste hills, river sites or beaches, should be allocated to the farmers for the purpose of long-term planting of trees and grass; and (3) the trees, planted by the farmers around their houses, on allocated land and on the land designated by the village committee, shall be everlasting property of the farmers and can be inherited. Note, the main purpose of this policy was not only to allow private holding forest management rights, but to further clarify the ownership of the collective forestland to whom (e.g., which villages or communities).

The “Three Fixes” schedule was implemented during the following four years after 1981. With the exception of Shanghai and Tibet, 1,781 counties or 77.5 percent of all the counties that participated in the implementation of the “Three Fixes,” had completed their duties. Private management certificates were issued, covering about 100 million ha of forestland for confirmation of their rights, while approximately 1.3 million disputes on forest and forestland were settled (90 percent of all disputes). The main reason for the dispute was less clearly defined property resulted from historical changes. The disputes often led to trees being cut or even fighting between villages or communities. A total area of 31 million ha of collective land was re-allocated to about 56 million households under the household responsibility system with an average of 0.56 ha per household (MoF 1987). It is relatively difficult to know the exact figures of the various household holdings that are generally classified as (1) responsibility land; (2) contract land; and (3) allocated lands (ziliudi). According to the former Ministry of Forestry (MoF 1987), these three types of land accounted for about two-thirds of the total collective forest land in the mid-1980s. But these figures vary from province to province, for example, Jiangxi and Guangdong Provinces had the highest share (about 90 percent), while Fujian was at the lowest (less than one-third because it had also adopted a share-holding system, a more moderate restructuring of forest tenure (see Zhang et al. 1999)).

During the implementation of the “Three Fixes,” the government had intended to expand private use and management rights of forestland, via lease or allocation to the local farmers. For instance, in 1983 it stipulated
that: (1) the plots of land allocated to the farmers should be enlarged; (2) the acreage of wasteland under a contract should not be limited and the term of contract could amount to 30 or 50 years; and (3) the contracts could be transferred to other persons. At the time, the consequences of, and even the political debates on such “privatization” were not clear at all. There was no one in the central government who could provide clear direction on the forestland reforms. The actual implementation was very much dependent on the local understanding and perception of officials, which resulted into huge regional variations in the system. Simultaneously, the de-collectivization of forestland was frequently accompanied by forest destruction because of farmers’ uncertainty over future policies. However, this situation occurred only in the initial few years of forest tenure reforms (Zhang et al. 2000b). However, throughout the reform process, the government never officially claimed to change the nature of the ownership of forestland.

At the beginning of the economic reforms, the separation of ownership and use rights was in all likelihood a political and ideological compromise to avoid a full-fledged privatization. As Ho (2001) pointed out, “to avoid an escalation of land disputes between the various levels of collective ownership, the law maintains a deliberately vague definition of collective ownership.” However, over time, it appears that the privatization of land property rights has become more acceptable. In this sense, the revised Forestry Law, effective since 1998, reflects the rising legal status of private property rights compared to the Forest Law of 1985. The 1998 Forest Law clearly recognizes the rights of the owners and users of the forests, trees and forestland, and includes provisions for the protection against and control of infringements on these rights (Article 3, Forestry Law of China, 1998).

Forest and forestland transfer rights

An important step in the tenure reforms, after the implementation of the “Three Fixes”, was to allow forest ownership (note that it is the ownership of trees only and not of the forest land) and forestland use right to be legally transferable by contracting for a fixed period of time. By 1988, forest transfer (lease) had become widely practiced, particularly in the provinces of Guizhou, Fujian, Guangdong, Hunan, and Sichuan. The young and middle-aged forests are traded in the market, while the mature forests are open to enterprises, such as paper mills. Some of the wood-based panel factories have also bought forests to establish their own raw material bases. The transferred land included forested and non-forested, state-owned as well as collective-owned land in Sichuan Province (Zhang, L., Wu and Zhu 2000). The prices of the land use rights ranged from 7.5–7,500 Yuan/ha, depending on the land quality and the length of contract. Usually the governments only charge some re-registration fees, varying from 1–10 percent.
The negotiated lease price should not be less than 50 percent of the appraisal value determined by the local authorities. The lease terms range from 30 to 100 years with an average of 50–70 years. In general, the impacts are positive, reflected in increased forestation and forest protection on transferred land, and a change to higher value use. For instance, in Ya’an County of Sichuan Province, a company for eco-tourism purchased 50 years use right on 400 ha of state-owned forestland with a commitment of additional investments of 140 million Yuan to be paid off within three years (ibid.).

The introduction of forestland transaction by auction has been another important development. The auctions seem to have been developing. Almost a decade ago, more than 10 provinces made use of auctions, and over 730,000 ha have come under a new management authority in the first few years of the auctions (Ai 1995). In Shaanxi Province, the use rights for over 267,000 ha of wasteland were transferred by auction between 1992 and 1995 (Wang and Jian 1996). In Lüliang Prefecture in Shanxi Province, about 200,000 ha of wasteland were auctioned during the same period (Yao 1996; Hanstad and Ping 1997). To date, no national survey has been conducted on such auctions. A study by the Ministry of Water Resources (1997) is probably the most comprehensive report (see Table 10.5).

Table 10.5 “Four Wastelands” auction until 1996

<table>
<thead>
<tr>
<th>Province</th>
<th>Area (1000 ha)</th>
<th>Price (US $)</th>
<th>Number of households purchasing</th>
<th>Area planted in (1000 ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shanxi</td>
<td>990</td>
<td>–</td>
<td>315,000</td>
<td>327</td>
</tr>
<tr>
<td>Shaanxi</td>
<td>498</td>
<td>6,867,470</td>
<td>180,000</td>
<td>134</td>
</tr>
<tr>
<td>Yunnan</td>
<td>482</td>
<td>14,615,663</td>
<td>426,061</td>
<td>198</td>
</tr>
<tr>
<td>Inner Mongolia</td>
<td>396</td>
<td>1,781,253</td>
<td>234,500</td>
<td>104</td>
</tr>
<tr>
<td>Hebei</td>
<td>347</td>
<td>6,144,578</td>
<td>208</td>
<td>–</td>
</tr>
<tr>
<td>Heilongjian</td>
<td>333</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Henan</td>
<td>200</td>
<td>4,819,277</td>
<td>39,360</td>
<td>–</td>
</tr>
<tr>
<td>Liaoning</td>
<td>145</td>
<td>7,313,976</td>
<td>105,000</td>
<td>100</td>
</tr>
<tr>
<td>Shandong</td>
<td>133</td>
<td>–</td>
<td>–</td>
<td>64</td>
</tr>
<tr>
<td>Gansu</td>
<td>140</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Guizhou</td>
<td>92</td>
<td>2,336,627</td>
<td>12,550</td>
<td>–</td>
</tr>
<tr>
<td>Niningxia</td>
<td>1</td>
<td>47,880</td>
<td>24,092</td>
<td>–</td>
</tr>
<tr>
<td>Sichuan</td>
<td>7</td>
<td>301,205</td>
<td>4,000</td>
<td>–</td>
</tr>
<tr>
<td>Jiangxi</td>
<td>10</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Heilin</td>
<td>5</td>
<td>7,700</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

auction has become more popular in recent years (Xu and Huang 1999; Ho 2000). The auction and transactions have been further formalized by the 1998 Forestry Law (Article 15):

The use rights of the following types of forests, trees and forestland can be legally transferred to other owners, as well as valued as inputs for share or as initial input conditions to start joint venture, co-operative plantation and forest management. But the forestland cannot change to other purpose of use: ... The felling quota permits are legally transferable after being legally transacted, or shared, or meeting the conditions of joint venture, co-operative plantation and forest management. However, the two sides of transaction must still follow the regulations of forest, tree harvesting and reforestation stipulated in this law.

**Limitations on use rights and transfer rights**

The rights of ownership and management, and forest and forestland transfer rights are subject to many limitations, unlike property rights over agricultural land and other properties. Most of these constraints are due to increasing environmental and ecological concerns, although at times these concerns may be used as an excuse for controlling the private property rights of individuals or households. The first constraint is that forestland cannot be used for any other purpose, such as for agriculture or construction, while some types of forest and forestland (for example, protection forest) cannot even be altered into any other types of forests (Forestry Law, Article 15). Second, in many cases, even the tree species to be planted are determined by the government. Third, rights holders do not have free harvesting rights, and they can only harvest a limited quantity of timber after receiving a logging license from the local forest authorities. An annual logging quota, which sets the maximum forest harvest during a given year in a given region, is calculated and approved by relevant authorities. Logging licenses are issued to different farmers in the region so that the total annual logging does not exceed the logging quota, and reforestation must be enforced following logging. Fourth, timber can be transported only after receiving a transportation license from the local authorities.

Similarly, the introduction of sustainable forest management criteria and indicators, and forest management certification imposes new constraints on forest property rights. The Natural Forest Conservation Program (NFCP) bans logging in the natural forests and restricts silvicultural practices in these areas. Although the natural forests are mostly located in state-owned territory, some are situated in collective-owned land. In those areas, the NFCP imposes major constraints on the physical asset rights of forest owners or forest use right holders. These constraints
mean a reduction on the physical assets rights, and consequently, a reduc-

tion on economic rights of a household.

Economic rights
Economic rights of the land, as mentioned earlier, are essentially the
rights to economic benefits from the land. The difference between the
physical asset rights and economic rights can be illustrated by a simple
example. Suppose a farmer is given all the management rights on a forest
in addition to all the rights to the final product except that the final
product must be sold to a government agency at a price fixed by the state.
In such a case, the farmer has physical asset rights over forestland and his
final product, but his economic rights are curtailed. Being an economic
rights holder mean that he is able to claim benefits of the product. But,
the proportion of the residual value available to the right holder will
mainly depend on three factors: (1) the cost of exercising physical asset
rights or the costs for the protection of physical asset rights; (2) the avail-
ability of competitive market prices for the products; and (3) the share
from the residual value that is extracted by government agencies. These
three aspects of economic rights will be discussed in the following section.

The costs of exercising physical asset rights
Forest that is not under (or lacks) active management is often interpreted
by economists to be lacking well-defined property rights (a situation of
open access). This is true for many cases. However, a common situation in
China is that households are given the rights of ownership or manage-
ment, but they fail to exercise the economic rights when it is too costly to
implement their management rights, which leads to open access. Unlike
the great successes in the agricultural reforms, forestry reforms have met
with more problems and the positive effects are more limited (Yin and
Newman 1997; Zhang 2000; Zhang et al. 2000a). This is due to the nature
of the forests, which is significantly different from agricultural crops. For
example, the location of agricultural crops is closer to human habitation
while forestland is generally situated far away from human settlement.
This implies that the threat from timber theft is higher, while also the
costs for protection and supervision are higher. In addition, the threat of
theft of agricultural crops is only during a very short period when it has
ripened, whereas trees face a threat all year.

In addition, trees are in general considered to be a product from
nature, and not resulting from human labor and intensive inputs, in con-
trast to agriculture. Hence, the crime for timber theft is considered less
serious compared to the theft of agricultural crops. Organized illegal
logging by one community in another village community’s forest is not
uncommon. An example of this is provided in the account of village
communities in Yunnan by Yeh (2000). Even though the “Three Fixes” scheme provided the _de facto_ rights with _de jure_ documentations, it could not reduce the costs for protecting the right holders. In fact, due to the economic reforms and large-scale decentralization of management rights, the governmental supply for policing forces has grown weaker.

It is generally believed that the early economic reforms in forestry were the third greatest cause for the destruction of forests, apart from the Great Leap Forward in 1958 and the Great Proletarian Cultural Revolution (1966–1976). Scholars have attributed political uncertainty about management rights as one of the factors leading to large-scale deforestation, yet, exposure to theft (illegal access) and the high costs of protection are other important factors in deforestation. The costs for the protection of management rights are substantial. According to MoF (1992) and Wang (2000), one million people were engaged in the prevention of illegal logging and resource monitoring. The cost hovers around 1 to 3 billion yuan. These are huge costs in comparison to the silvicultural investments of 10 billion yuan per annum. Moreover, these costs are mainly borne by the forestland users, rather than by the local government budget (Chen, G. 2001), which results in reduced economic rights to physical asset right holders.

Several studies (e.g. Kant and Chiu 2000; Ruiz-Peres et al. 1999) have reported a positive impact of the economic reforms on forestry, but these primarily concern the economic forests (such as for fruits and nuts) and the bamboo forests in southern China. According to the MoF (1994), economic forests account for 36 percent of the total area of plantation forests. In fact, the physical asset rights of these non-timber forests are not much different from the timber forests. However, the enforcement of these rights is easier (economic forests, like bamboo and fruit trees, are more similar to agriculture than timber forest), while the residual value per unit land area available to the management right holder of these forests is greater than in the case of other forest types. As Bruce and other authors have noted, farmers’ rational response to the erosion, of economic rights to the other categories of forests is not to invest (see Bruce _et al._ 1995; Rozelle _et al._ 2002; Yin and Newman 1997; Zhang, L. _et al._ 2000).

**Competitive market prices and government price control**

A second critical factor for economic rights is the availability of a free market and market prices. In 1950, the timber trade for collective forest enterprises was monopolized by the central government that controlled timber production, prices, and distribution. This means that although the collectives were the owners and management right holders over collective forestland, they did not enjoy significant economic rights, whereas the state did not hold management rights, yet did enjoy major economic rights. During this period, the central government kept timber prices low,
and the price differences between the variations in species, quality, location, and size were small. The economic reforms since 1978 did increase the procurement price significantly. In 1985 the central government issued the “Ten Policy Issues for Promoting Rural Economy Development,” which abolished the state monopoly for timber trade in southern China. Unfortunately, the overnight liberalization of the market caused much economic disruption and led to the biggest episodes of deforestation since 1949. In reaction, the government reactivated in 1987 the traditional government timber procurement agencies and re-imposed its monopoly on the market in major timber-producing counties. As market mechanisms and the socio-economic environment improved, all price controls were finally lifted and free competition has been practiced since 1993.

The trends in timber prices, as well as the difference between the controlled price and the free market price, are shown in Figure 10.2. For this comparison, four provinces were selected. Two provinces – Anhui and Henan – were selected because, although they were less important for the timber supply, the relatively small timber production in these provinces was not subject to government-controlled prices. Hence, there are market timber prices available from these two provinces. The other two provinces, Fujian and Jiangxi, were chosen because the timber prices were controlled by the government in these provinces until 1993. From the figure, we can see that there were substantial differences between government-controlled prices and market prices, while these differences persisted during the entire period 1978–1993. However, after 1993 the difference in timber prices among the four provinces started to decrease. We can conclude

![Figure 10.2 Trends in timber prices in four provinces.](image)
that even though forestry land reforms granted physical asset rights (management rights) over collective-owned forestlands to the households, the government-controlled timber prices still restricted the economic rights of these households.

Forest taxation and fees

Another important constraint over economic rights of forests is the system of government taxes and fees. Economically non-neutral taxes not only affect farmers’ (the physical asset right holders) share in the residual value of forest products, but they also introduce economic inefficiencies in resource allocation. Even before the liberalization of the timber market, farmers suffered from arbitrary and high taxes and fees, which withdrew a large amount of the economic rights from the farmers. Many investigations have been undertaken on the forest-related taxes and charges, which vary over place and time. A summary of these studies is given in Table 10.6. Although the data are at times not fully accurate, we can safely assume that the reported figures are underestimated because the data for some fees was not available at all. As indicated, the physical asset right holders usually only receive around 10–30 percent of the sale price.

The government has taken major steps to transfer and allocate the physical asset rights over collective-owned forest lands, and to reform the timber market. However, due to the high costs for the protection of the interests of physical asset right holders, and high forest taxes and fees, physical asset rights holders enjoy only a fraction of their economic rights. As the economic reforms progress, the price issue that used to be a traditional barrier (see Li et al. 1988), and even the problem of protection costs, are becoming less prominent. On the other hand, however, the lack of progress in the reform of the taxation and fees system is becoming a serious bottleneck for forestry development. One important reason for

<table>
<thead>
<tr>
<th>Location (county/province)</th>
<th>Tax and charge ( % of retail price)</th>
<th>Farmer held as ( % of retail price)</th>
<th>Data sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jiangzhou/Hunan</td>
<td>62</td>
<td>38*</td>
<td>FEDRC (1999)</td>
</tr>
<tr>
<td>Shanming/Fujian</td>
<td>76</td>
<td>6.8</td>
<td>Zhang, Z. (2000)</td>
</tr>
<tr>
<td>Fujian</td>
<td>70</td>
<td>30</td>
<td>Zhang et al. (1999)</td>
</tr>
<tr>
<td>Jingpin/Guizhou</td>
<td>–</td>
<td>7.5</td>
<td>Hou (1993)</td>
</tr>
<tr>
<td>Shaowu/Fujian</td>
<td>70</td>
<td>30*</td>
<td>Zhou (2000)</td>
</tr>
</tbody>
</table>

Note
*Including logging cost.
the disproportionately high taxes and fees is the inefficiency in the collection system: there are too many different taxes and fees – in many cases, there are more than 20 types of taxes and fees imposed on a single product (see Zhang et al. 1999); different authorities collect different taxes and fees; and, finally, significant efforts are wasted in the actual tax collection. It was estimated that over 50 percent of the manpower and resources are assigned to collection and management (Chen 1995). In more extreme but not too uncommon cases, the collected revenues are insufficient to cover the costs.

The amounts of taxes are often not predictable and less transparent since they are changeable across time, and measuring how much timber is harvested on the mountains and transported across the checkpoint is very much dependent upon how much you are willing to bribe the officers or your connection with the authority. Such a system in forestry provides more opportunities for local governments and officials to practice rent-seeking behavior and to exercise arbitrary taxes, fees and corruption. It was suggested adopting a more simplified taxation system, e.g., the more neutral land productivity tax that had been used in Finland for several decades and also used in China agricultural system.

The worst thing is the misuse of the revenue generated from the taxes and fees. Officially it is usually claimed the revenue be finally used for forestry development. In reality, the majority of the revenue has been channeled to higher level forestry administration bodies, to non-forestry sectors as general expenditure, such as governmental running, infrastructure development, education, health, and so forth.

Conclusion: the government as owner versus specialized protector

In the previous sections, we have discussed the current status of physical asset rights and economic rights associated with the collective forestland, and we are inclined to conclude that there has been a sufficient progress on the front of physical asset rights. However, the progress on economic rights front is very slow and is falling behind the progress on physical asset rights, and such non-synchronized collective forestland reforms will continue to contribute to economic inefficiencies in the forest sector of China.

In countries like China, which are on the path of transformation from planned economies to market economies, the fundamental question associated with collective forestland reforms, and probably with other land reforms also, is the transformation of the government’s role in economic activities associated with land-based production. In the pre-reform era, the government not only was an owner of land, but it was in control of all land-based production activities. In the post-reform era, the government, whether local, provincial, or central, can play the role of an owner of land...
or a specialized protector of the interest of households responsible for land-based production. The economic behavior of the government, with respect to land-based production activities, will depend upon the role identified by itself. The government as owner means all final residual rents created from land belong to the government, while the government as a specialized protector means government is hired by the land managers to protect their property rights, not necessarily ownership rights, and from this aspect, there is no difference between the government and other third-party enforcement agents (Barzel 2002). The government may continue to be the owner of land, but it can play the role of a specialized protector of the property rights, use and management rights in the present case, of households. On other hand, government may not be the owner of land, but it still can play the role of an owner of land. Hence, in the land reforms in China, ownership of land is not a major issue, as Bromley, in Chapter 1, pointed out, that private ownership of land is both necessary and sufficient for wise and sustainable use of natural resources is a particularly widespread fiction. The current household responsibility system, in which ownership remains with the local government and only management and use rights are transferred to households, may be as good as transfer of ownership to households, and this type of land tenure satisfies the condition of “do no serious harm” proposed by Bromley in Chapter 1. However, the critical issue, associated with forestland reforms, is the role of government in land-based production activities.

The analysis of forestland reforms in terms of physical asset rights and economic rights is useful in understanding the role of government in forest production activities on collective forestlands. The gradual reforms and current form of physical asset rights indicate that the government is trying to change its role from the owner of land to a specialized protector of the interests of households. For example, prior to reforms, the local government, together with its higher level of government, was the owner as well as manager of collective forestland. But, in the de-collectivized system, even though land ownership is with the local government, all management rights are with the households. However, the analysis of economic rights provides no evidence of the seriousness of the government about transformation in its role from an owner to specialized protector. In the new property right arrangements, management right holders pay taxes to the government that should provide protection services. However, it is universally acknowledged (by farmers, forestry administration officers, and academia) that the taxes and charges are excessive and misused, and are the most serious barrier to improving investment and forest management. The tax payers have no voice in the determination of tax types and tax levels, and in the use of tax revenue. Even after such high taxes, the government is unable to provide adequate protection services to forest produce from collective forestlands. As a result, households get too little a share and the government gets the major share of land residual. It seems
that efforts made by various level governments are not primarily to
provide services, but to intervene in the forest management and claim the
major share of land residual. Apparently, an observation by Barzel (2002)
– “the specialized protectors will gradually retreat back into proprietors
again if no rules are established to prevent the specialized protectors
becoming owners in the first place” seems to a be true reflection of the
collective forestland reforms in China.

The central government is aware of this situation and has attempted to
reduce farmers' tax burdens. The 1998 Forestry Law (Article 7) states:

To protect the legal rights of the forestry-based farmers and ease the
economic burden, it is prohibited to illegally charge any fine on the
farmers. It is also prohibited to arbitrary raise and collect fund from
the farmers.

The legal rights of the collectives and individuals who contracted
and plant trees are protected by the state. Any institutions and indi-
viduals cannot infringe the rights on the trees and other legal prop-
erty owned by the collectives and individuals who contract and plant
trees.

However, due to various sources of inefficiencies in government, it is very
difficult to reduce the cost of enforcement and taxes and fees, specifically
when the local governments have not given up the ownership of these
lands, and when they face lack of financial resources due to inefficiencies
in other sectors. For instance, for a short period of time in 2001, the
government attempted to change various arbitrary fees system to a single
taxation system, but gave up finally because that made the local govern-
ments face lack of financial sources for basic services, including rural edu-
cation. More importantly, since the farmers have no voice in determining
the use of tax revenue, there is no incentive or pressure on local govern-
ments to improve their governing and administration system.

The results of an inefficient governing system, specifically of local gov-
ernments, and total freedom of local governments in terms of provision of
protection services and tax imposition and collection are the conversion
of “de jure private property rights,” allocated under collective forestland
reforms, into “de facto open access” system. Normally, open access termi-
nology is used in the context of individuals and households. In this case, it
is an open access to governing and/or political agencies. As pointed out
earlier, not only various levels of governments, but also various administra-
tion agencies at the same level jump into claiming the residuals with dif-
f erent names of taxes and fees. That is why often more than two dozen
taxes and fees can be observed on a single product. In addition, the
high cost of enforcement and the low share in the residual reduce the
incentives to the right holders to exercise their management rights, and
this reinforces conversion of de jure “private rights” into an open access
situation, this time by individuals and households. Hence, the net effect of inefficient governing system is double-sided pressure on the de jure “private management and use rights” allocated to households on collective forestlands.

In conclusion, land reforms, in countries like China, should be followed by political and governance reforms and the focus of these reforms should be on (1) synchronization of economic rights with physical asset rights; (2) identification and enforcement of the government’s role as a specialized protector of the interest of households responsible for land-based production; and (3) jurisdictional demarcation of powers, duties and responsibilities of governments at various levels.

Notes

1 Prices and costs, associated with forest production, are also controlled in Western market economies but the degree of control and the methods of control are different than in China. For example, prices of standing timber on government forestlands in Canada are fixed by respective provincial governments and not through the market. Similarly, import taxes used by the USA for Canadian lumber affect timber prices in the USA.

2 In fact, “The Principles of Land Law” had already been developed and enforced in the regions controlled by the Communists since 1947.

3 There are some differences between administrative villages and natural villages. Usually, the ownership is devolved to the natural villages based on the ownership prior to collectivization. However, due to vague ownership problems, conflicts and fights have erupted over land, see also the Introduction.

4 This figure depends on the definition. According to the National Forestry Bureau, it was estimated that about 0.2 million people were engaged in the forest law enforcement (NFAB 2001).


6 In addition to household responsibility system, three other forms of physical asset rights are present (i) township or village forest farms; (ii) joint-forest farms; and (iii) the share-holding system. Under these forms, the land use rights belong to the collective, collective, households, and some other institutions; and a group of households, respectively. Hence, except township or village farms, in other two forms, management rights are being shared by households and other groups.

7 For a recent study, see Li (2003).

References


