



China's Forest Land Tenure Reforms: Impacts and Implications for Choice, Conservation and Climate Change

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SUMMARY

■ Global concern with climate change has brought new focus to the problem of unclear land tenure both as a driver of deforestation and a prerequisite for effective forest protection and restoration. China's recent forest land reforms provide a valuable case study for this global challenge. The reforms have increased forestry's contribution to household income and reforestation. As such, they have improved China's ability to mitigate and adapt to climate change. More reforms are necessary to establish adequate protection for household and community land rights and the regulation of the emerging land market.

deforestation and carbon emissions and to enable local people to adapt to climate change ([Eliasch, 2008], [Chomitz, 2007], [Berkes et al., 2003], [Olsson et al., 2004]). Approximately 1.2 billion of the world's poor rely on forests for their livelihood and are vulnerable to the various changes brought on by climate change (Chomitz, 2007) which could force millions more people into extreme poverty (Stern, 2007).

China's recent forest land reforms are arguably the largest ones undertaken in modern times both in terms of area and people affected. China's collectively owned forest totals approximately 100 million hectares and is home to more than 400 million people (The State Forestry Administration, 2007). The reforms offer important lessons for other developing countries that are legally recognizing the land rights of indigenous peoples and strengthening access and ownership rights of other forest communities and households (Sunderlin et al, 2008). China's situation differs from global trends, however, as 58% of China's forested land has been legally owned by collectives for decades, and the reforms permit the breaking-up of collectively held land and encourage private land markets. The Chinese reforms anticipate the choices that other countries may face in the future, as forest communities and households seek clarity in land rights.

Forest land reforms in China have historically followed those in the agricultural sector, which has been moving towards individual household-based management since the early 1980s. The first wave of forest reforms occurred in the mid 1980s, but

Climate change has brought issues of deforestation and forest land governance to the global forefront. Deforestation and associated forest degradation are responsible for about 17% of global carbon emissions, the vast majority of which come from forest-rich countries where governments claim ownership over most forest lands. Such ownership claims are increasingly challenged by indigenous peoples and other forest communities—often resulting in violence (Stern, 2007, Sunderlin et al., 2008). Besides, there is a growing concern that climate change will exacerbate existing social tensions over land and increase violent conflicts (Sunderlin et al., 2008, United Nations Development Programme, 2007, Timmons & Parks, 2007).

The problem of contested forest property rights and associated weak governance related to land rights must be addressed to effectively reduce

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unstable policies over forest rights and deregulated harvesting and markets led to widespread deforestation (Runsheng, 2003). By the mid 1980s, the government reversed course and discouraged further forest land reforms. Only one province, Fujian, did not to participate in these reforms at the time, choosing to maintain collective management.

Starting in 1998, with the so-called “logging ban”, the Chinese government sharply curtailed commercial timber harvesting in Western and Northern provinces. The government also initiated a forest land-use zoning system that included the category “public benefit forest” where no commercial harvesting was allowed. In parallel, the government dedicated massive investments to tree planting and the restoration of China’s natural ecosystems. China’s forest cover has increased by approximately 40 million hectares since the late 1970s—largely due to the government’s approach of administrative fiat and compulsory land-use zoning. While these programs include payments and incentives to landowners for planting trees and maintaining forest cover, they are widely criticized for lacking due process and adequate compensation (Ping & Zhu, 2008).

By the early 2000s, a political crisis ensued over the forest sector (Su, 2008). It was a result of mounting frustration and protests over government control of forest land, the growing disparity between rural and urban sectors, the increasing incidences of forest fires, and growing global criticism of China for its booming importation of logs. Constrained forest tenure rights were more and more criticized as a key impediment to sustainable forest management, increased timber production, and poverty alleviation (Xu et al., 2002) Around 2003, the State Forest Administration began to encourage provinces to experiment with tenure reform.

The new forest tenure reforms provide an explicit national-level policy framework. They encourage

collective forest owners to reassess and reallocate their forest use rights to households by requiring that reallocations be based on a two-thirds vote of the village assembly or the committee of village representatives.¹ In ethnic minority areas, communities must now consider formally dividing their collectively held forest to households—a step they may not have undertaken before (Xu and Melick, 2007). Although the reforms provide choices to local communities, community decisions remain strongly influenced by local government leaders and forest authorities who do not necessarily represent the interests of poor or ethnic households.

Between 2006 and 2007, the Environmental Economics Program of Peking University (EEPC) conducted the first large-scale, quantitative analysis of the forest tenure reforms.² Surveys covered more than 3000 randomly selected households in 288 randomly selected villages in 8 provinces where a majority of the forest is collectively owned. Information was gathered on: social, economic, and political characteristics of the villages, villager allocation of land and forest rights, the level of villager participation in the reform process, and the impacts of these choices on forests, incomes, and local governance.

Research finds that during the reform period, across the eight provinces surveyed, villagers reduced the collectively managed forests by about 2.5% to a total of about 18% of all collective forest

1. The Village Assembly consists of all village members over the age of 18. The Village Representative Committee is a subgroup of the village assembly, in which one person represents between 5-15 village households. See People’s Republic of China Villager’s Committee Organization Law (1998).

2. The research was conducted between March 2006 and September 2007, with funding from the World Bank, Ford Foundation, and Rights and Resources Initiative, and administrative support from China’s State Forestry Administration.

TABLE 1: DISTRIBUTION OF TENURE TYPES IN 2006 AND CHANGE BETWEEN 2000 AND 2006 (SHARE CHANGES IN PARENTHESES)

Province	Individual (Household) (%)	Partnership (%)	Villager Cluster (%)	Contract to Outsider (%)	Collective (%)
Fujian	50.63 (7.0)	7.81 (4.7)	5.61 (1.6)	4.72 (0.4)	31.21 (-14.0)
Jiangxi	62.97 (0.7)	2.77 (0.5)	4.15 (-4.8)	9.95 (4.5)	20.14 (-0.9)
Zhejiang	82.65 (0.2)	1.37 (0.0)	7.48 (0.0)	0.25 (-0.0)	8.23 (-0.2)
Anhui	85.06 (-6.7)	0.39 (-0.0)	3.05 (-0.0)	1.28 (-0.3)	10.19 (7.0)
Hunan	92.43 (1.5)	0.27 (-3.1)	4.46 (2.8)	0.74 (0.4)	2.09 (-1.6)
Liaoning	55.21 (12.3)	7.04 (-0.5)	3.07 (-16.2)	11.89 (10.0)	22.77 (-5.6)
Shandong	54.29 (7.7)	0.00 (0.0)	0.00 (0.0)	7.05 (-1.7)	38.64 (-6.0)
Yunnan	69.87 (10.6)	3.67 (3.7)	16.62 (-15.8)	0.44 (0.4)	9.37 (1.0)
Average	69.14 (4.2)	2.92(0.7)	5.56 (-4.0)	4.54 (1.7)	17.83 (-2.5)

Note: The data for all tables is from the EEPC's forest tenure reform survey conducted in 2006 and 2007. Individual numbers may not add up to total numbers due to rounding errors.

land (Table 1). Individual household management increased in Fujian, Yunnan, Liaoning, and Shandong. No major change occurred in Zhejiang and Hunan, where individual management had already been implemented in most collective forests in the 1980s. In Anhui, individual management decreased, possibly a result of efforts to preserve the tourism value of Southern Anhui, a major tourist destination. In Yunnan, the share of collective management increased, as did individual and partnership management. The village cluster tenure type lost the largest amount of land, averaging 4% of forest land across all provinces. Transfers to collective management tended to occur in places where large areas of forests were affected by the "logging ban" and/or where forest land was zoned as public benefit forest.

In a large, culturally, biophysically, and economically diverse country such as China, these substantial differences in the directions the eight provinces took are no surprise. However, given the government rhetoric, it is surprising that there was not a stronger shift towards individual ownership. While individual tenure increased in 7 of 8 provinces, it did so only at an average of 4% of

collectively owned forest, and only an average of about 7% of collectively owned forest was reallocated to other tenure types.

Generally, the rights of households to access and use of forests (Table 2) were strongest when tenure was shifted to the individual household and weaker as the tenure type moved toward collective management. Farmer income from forestry increased between 4% and 10% in the four provinces where rights were shifted to households (Table 4). Reforestation increased on average by almost 10% across all provinces and tenure types, and reforestation by individual households accounted for the vast majority of this increase (Table 5). In sum, where rights were shifted towards households, the reform had a positive impact on incomes and reforestation, and where rights were shifted back towards the collective, incomes from forestry diminished and increase in reforestation was less pronounced.

There was also much variation across the provinces in the degree to which households participated in the decisions and in the manner of consultations (Table 3). A large majority of households expressed

TABLE 2: VILLAGERS’ PERCEPTIONS OF HOUSEHOLDS LAND USE RIGHTS BY TENURE TYPE (% OF TOTAL HOUSEHOLDS INTERVIEWED)

Right	Response	Individual	Partner	Villager Cluster	Outsider	Public Benefit Forest	Collective	Average
Deforest (convert to agricultural land)	Yes (Household Right)	35.0	24.3	11.1	18.6	4.2	3.2	16.1
	Yes with Village Approval	1.7	2.7	3.7	0.0	2.1	0.0	1.7
	No	57.7	70.3	79.6	70.9	87.5	51.6	69.6
	Other Rules	5.5	2.7	5.6	10.5	6.2	45.2	12.6
Convert to other forest type (e.g., orchard)	Yes (Household Right)	67.4	56.8	59.3	50.0	43.7	19.3	49.4
	Yes with Village Approval	4.7	8.1	14.8	4.6	8.3	0.0	6.8
	No	20.3	32.4	20.4	32.6	39.6	38.7	30.6
	Other Rules	7.5	2.7	5.7	12.8	8.3	41.9	13.1
Freely select tree species for reforestation	Yes (Household Right)	74.3	70.3	68.5	64.0	47.9	25.8	58.5
	Yes with Village Approval	3.4	5.4	11.1	4.7	2.1	0.0	4.4
	No	16.0	21.6	14.8	22.1	39.6	32.3	24.4
	Other Rules	6.2	2.7	5.6	9.3	10.4	41.9	12.7
Manage for non-timber forest products	Yes (Household Right)	89.8	83.8	88.9	77.9	81.2	54.8	79.4
	Yes with Village Approval	1.9	0.0	1.8	1.2	2.1	0.00	1.8
	No	3.7	13.5	5.6	9.3	10.4	3.23	7.6
	Other Rules	4.5	2.7	3.7	11.6	6.3	41.9	11.8
Mortgage forest plot	Yes (Household Right)	52.1	43.2	40.7	27.9	41.7	25.8	38.6
	Yes with Village Approval	5.4	8.1	7.4	4.7	8.3	0.00	5.6
	No	35.2	35.1	31.5	47.7	41.7	54.8	41.
	Other Rules	7.2	13.5	20.8	19.8	8.3	19.3	14.7
Transfer plot within village	Yes (Household Right)	66.1	64.9	46.3	45.4	47.9	61.3	55.3
	Yes with Village Approval	15.3	10.8	14.8	3.5	16.7	9.7	11.8
	No	15.5	21.6	27.8	38.4	27.1	29.0	26.6
	Other Rules	3.1	2.7	11.1	12.8	8.3	0.0	6.3
Transfer plot outside of village	Yes (Household Right)	50.2	54.0	38.9	33.7	48.0	48.4	45.5
	Yes with Village Approval	15.1	13.5	5.6	4.6	12.5	22.6	12.3
	No	31.5	29.7	42.6	48.8	31.2	29.0	35.5
	Other Rules	3.3	2.7	13.0	12.8	8.3	0.00	6.7
Harvest trees	Yes (Household Right)	78.2	78.4	79.6	60.5	70.8	45.2	68.8
	No	16.	13.5	16.7	30.2	20.8	19.3	19.4
	Other Rules	5.7	8.1	3.7	9.3	8.3	35.5	11.8

knowledge of the reforms in some provinces and less than 1% in others. The percentage of households whose land rights were affected also varied tremendously—ranging from 85% in Jiangxi to less than 1% in Shandong— and so did the level

of consultation, which appeared low overall, averaging less than 30% of households (Table 6). The number of public meetings was more consistent, and households attended the majority of them.

TABLE 3: EXTENT AND TYPE OF PARTICIPATION AND CONSULTATION IN FOREST TENURE REFORM

Province	Villages Conducting Reform (%)	Households knowing of reforms (%)	Households' with changed use rights (%)	Households with right to choose forest plot (%)	Households consulted in reform (%)	Number of villagers' representative committees convened to discuss reform	Number of times household member attended villagers' representative assembly	Number of villagers' assemblies convened to discuss reform	Number of times household member attended villager assemblies
Fujian	95.0	76.2	64.0	37.1	38.8	3.3	1.8	1.4	1.2
Jiangxi	100.0	95.3	85.0	21.3	59.0	2.8	1.6	1.5	1.3
Zhejiang	80.6	61.4	41.9	12.8	16.9	1.4	0.9	0.5	0.5
Anhui	20.0	18.7	7.7	3.0	7.3	3.1	1.5	2.3	2.1
Hunan	53.3	49.9	5.3	2.7	5.0	2.1	1.4	1.6	1.6
Liaoning	100.0	85.0	59.7	36.7	56.7	4.5	2.7	3.5	3.3
Shandong	23.3	0.7	0.7	0.00	0.3	7.0	7.0	3.5	3.5
Yunnan	86.7	72.8	32.3	18.2	30.0	2.6	0.7	1.7	1.7
Total	72.8	62.9	38.1	18.5	28.4	2.9	1.5	1.7	1.6

In conclusion, forest tenure reforms are evolving differently among the eight provinces—most are demonstrating a small shift towards individualized (household) tenure, others are shifting towards more collective management. The variation in allocation decisions across the provinces is due in large part to history; provinces that changed the least in the 1980s are changing the most now. The policy reforms were in effect a verification and consolidation of the existing distribution of land rights. The flexibility which is now officially condoned will allow collectives and households to adjust to future changes in markets and policy. They will also be able to respond more quickly to the shifts in land productivity and value that are likely to accompany climate change.

The clarification and strengthening of rights at the collective and household level will also challenge the established practice of policy edicts and regulatory takings to control land use, as local owners are likely to challenge such actions. In this emerging context, public programs designed to reimburse forest owners for income lost due to regulations and zoning, and schemes to

compensate owners for forest ecosystem services will increase in importance.

Our analysis suggests that the reform process fell short of the emerging global standard of obtaining free, prior, and informed consent (FPIC) of households and communities before their land rights are altered. The consolidation of household rights and formalization of processes to shift land to households is a major step towards a private market for forest land and will result in hundreds of millions of new forest owners. The limited amount of participation and consultation in the allocation of land rights raises concerns that the forest land market is being liberalized before a regulatory environment is in place which clearly guides land allocations and contracts and ensures adequate judicial processes for grievance and redress. Establishing this framework and informing landowners of their rights and duties as well as establishing legal options have become a priority in the rural sector. A next generation of reforms will not only be necessary to protect households against more powerful actors, but also to enable them to access credit markets, allowing them to increase their production and incomes.

In sum, while a large part of the developing world is still struggling with rapid deforestation and degradation, China, which had already undergone rapid deforestation during the Cultural Revolution, is moving forward boldly to clarify local land rights and to encourage local collective choice over allocation of those rights. China's reforms offer the promise of increasing forestry's contribution to incomes and the restoration of forests, and potentially the reduction of conflict and social tension. However, their full effects on land ownership, livelihoods, and local governance are not yet known. It is likely that with greater market integration, there will be a consolidation of small farm holdings, more contract farming, and exit of marginal producers to other pursuits. There is a risk that the more powerful actors at the local level will control land allocations and benefit disproportionately. There is also still inadequate information regarding the effect of these reforms on the ethnic peoples who traditionally own and manage their forests collectively—a critical issue that merits further research and attention.

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TABLE 6: PARTICIPATION AND CONSULTATION IN FOREST TENURE REFORM

Province	Villages Conducted Reform (%)	Households knew of the reform (%)	Households' use right has changed (%)	Household has right to choose a forest plot (%)	Household was consulted in the reform (%)	Number of villagers' representative assemblies convened to discuss the reform (Times)	Number of times a household member attended the villagers' representative assembly (Times)	Number of villagers' assemblies convened regarding the reform (Times)	Number of times a household member attended the villager assemblies (Times)
Fujian	95.00	76.20	64.03	37.09	38.75	3.28	1.75	1.36	1.24
Jiangxi	100.00	95.33	85.00	21.33	59.00	2.76	1.58	1.48	1.32
Zhejiang	80.56	61.39	41.94	12.78	16.94	1.42	0.88	0.48	0.45
Anhui	20.00	18.67	7.67	3.00	7.33	3.05	1.54	2.31	2.10
Hunan	53.33	49.88	5.30	2.65	4.97	2.12	1.35	1.60	1.55
Liaoning	100.00	85.00	59.67	36.67	56.67	4.45	2.68	3.54	3.33
Shandong	23.33	0.67	0.67	0.00	0.33	7.00	7.00	3.50	3.50
Yunnan	86.67	72.83	32.17	18.17	30.00	2.62	0.74	1.73	1.66
Total	72.83	62.87	38.14	18.51	28.36	2.93	1.45	1.67	1.55

Data Source: Forest tenure reform survey conducted by EEPC in 2006 & 2007.

TABLE 4: DISTRIBUTION OF INCOME IN 2006 AND CHANGE BETWEEN 2000 AND 2006

Province	Forestry (%)	Agriculture (%)	Livestock (%)	Off-farm (%)	Other (%)
Fujian	8.98 (3.71)	10.28 (0.06)	9.21 (-4.08)	65.14 (-0.88)	6.36 (1.17)
Jiangxi	12.62 (9.95)	19.85 (3.01)	12.78 (-7.71)	46.48 (-8.27)	8.24 (2.99)
Zhejiang	9.45 (3.04)	4.68 (0.3)	2.79 (-0.64)	69.59 (-7.08)	13.46 (4.36)
Anhui	17.82 (-19.55)	5.28 (-1.83)	25.57 (19.91)	42.27 (-2.77)	9.05 (4.21)
Hunan	3.95 (0.01)	22.81 (7.01)	11.96 (-6.09)	44.75 (-6.05)	16.51 (5.1)
Liaoning	15.45 (10.3)	14.93 (-6.68)	10.71 (-6.77)	46.44 (-0.01)	12.45 (3.14)
Shandong	4.99 (0.48)	21.2 (-9.65)	21.37 (8.57)	43.89 (-2.44)	8.52 (3.02)
Yunnan	4.49 (1.44)	40.2 (27.16)	10.8 (-1.16)	37.39 (-28.91)	7.09 (1.44)
Average	9.72 (1.17)	17.4 (2.42)	13.15 (0.25)	49.5 (-7.05)	10.21 (3.18)

Note: Share Change (2000-2006) in parentheses.

Data Source: Forest tenure reform survey conducted by EEPC in 2006 & 2007.

TABLE 5: REFORESTATION RATES IN 2006 AND CHANGE 2000-2006 BY TENURE TYPE (HA PER VILLAGE)

Province	Individual	Partnership	Villager Cluster	Contract to Outsider	Collective	Total
Fujian	7.15 (5.30)	2.71 (1.22)	1.35 (0.72)	2.55 (2.22)	9.53 (4.82)	23.28 (14.28)
Jiangxi	7.51 (1.80)	0.00 (0.00)	0.00 (0.00)	0.27 (0.27)	0.33 (-0.22)	8.11 (1.84)
Zhejiang	9.29 (6.13)	0.00 (0.00)	0.74 (0.37)	0.00 (0.00)	0.09 (0.09)	10.12 (6.60)
Anhui	1.85 (1.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	1.64 (1.27)	3.50 (2.6)
Hunan	5.33 (4.03)	0.00 (0.00)	0.00 (0.00)	1.11 (1.11)	0.22 (0.11)	6.66 (5.25)
Liaoning	25.38 (7.30)	0.69 (0.44)	0.36 (-1.58)	1.18 (0.96)	2.71 (1.31)	20.32 (8.44)
Shandong	2.27 (0.87)	0.00 (0.00)	0.00 (0.00)	0.53 (0.53)	2.05 (1.61)	4.86 (3.01)
Yunnan	57.52 (41.30)	0.00 (0.00)	0.11 (0.00)	0.00 (0.00)	0.00 (-6.91)	57.63 (34.39)
Average	14.54 (8.47)	0.42 (0.21)	0.32 (-0.06)	0.70 (0.64)	2.07 (0.26)	18.06 (9.51)

Note: Average area change (2000-2006) in parentheses.

Data Source: Forest tenure reform survey conducted by EEPC in 2006 & 2007.

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The Rights and Resources Initiative is a global coalition to advance forest tenure, policy, and market reforms. RRI is composed of international, regional, and community organizations engaged in conservation, research, and development. For more information, visit www.rightsandresources.org.

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