
Discussion paper

***Emerging forest associations
in Yunnan, China***

Implications for livelihoods and sustainability

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Small and medium forestry enterprises for poverty reduction and sustainability

Most international attention in forestry has been given to improving the conditions for large-scale or micro-scale forestry, and much less to the 'messy middle' - which produces a high proportion of forest products and involves huge numbers of people. Ways need to be found by which small and medium-scale forestry enterprises (SMFEs) can better contribute to reducing poverty and improving the prospects for sustainability.

IIED, with partners in Uganda, South Africa, India, Brazil, Guyana and China has been investigating these issues. Country diagnostics show that the SMFE sector is of major significance for livelihoods in these countries – the net effect of myriad small players represents a substantial part of local economies. Yet, these are largely invisible economies, and policy and programme developments almost completely ignore the SMFE sector. Raising the sector's visibility such that its impacts can be better assessed, and then going on to explore how the positive links to sustainability, livelihoods and poverty-reduction can be enhanced, is a major challenge to which this initiative seeks to rise.

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Acronyms and abbreviations

CCICED	China Council for International Cooperation on Environment and Development
GDP	Gross domestic product
ICRAF	World Agroforestry Centre
NBS	National Bureau of Statistics
NFPP	Natural Forest Protection Program
NTFP	Non-timber forest product
SEPA	State Environmental Protection Agency
SFA	State Forestry Administration
SLCP	Sloping Land Conversion Program
SME	Small and medium enterprise
SMFE	Small and medium forest enterprise
SOE	State-owned enterprise
TVE	Township village enterprises
WTO	World Trade Organization
YSB	Yunnan Statistical Bureau

Executive summary

China has been the world's fastest growing economy for more than two decades. Yet, roughly 60 percent of its population — or more than 765 million people — reportedly resides in rural areas, nearly half of whom are classified as 'farmers'. A huge demographic transition is underway, with as many as 300 million people expected to make a transition from rural to urban areas over the next 15 years. Township village enterprises, or businesses located in rural areas, have played an important role in facilitating off-farm labor migration by providing a basis for the more than 110 million rural non-farm jobs created in China since 1985.

Yunnan is one of China's poorest, least urbanized, and most heavily forested provinces, with 73 of its 129 counties (57 percent) below the poverty line. With the largest total area of collectively-owned forest among China's 31 provinces, regions, and municipalities, forestry development plays and will continue to play an important role in Yunnan's rural economic development.

Small and medium forest enterprises (SMFEs) in Kunming and Baoshan municipalities in Yunnan province often blur the lines between household enterprises and more formal businesses. These enterprises are ad hoc organizations where accounting is relatively simple, labor is hired and materials are purchased as needed. Marketing is unsophisticated and low tech, and information is closely guarded as small asymmetries have a comparatively large impact on profitability. These SMFEs will be challenged to endure in a more competitive environment and meet more stringent expectations for environmental performance. Associations to support SMFEs in this challenge are still emerging in Yunnan.

Despite having the institutional structure to support them, active rural associations were largely non-existent during the 1980s and 1990s. But since the late 1990s the number has grown rapidly. Of the more than 11,000 social organizations registered by the Ministry of Civil Affairs in 2002 roughly 5,000 were industry associations.

In 2002, the then Vice Premier Zhu Rongji signaled a major shift by calling for the emergence of industry intermediaries to meet the demands of a market economy, and a more active civil society to respond to the needs of a socialist market society. Supporting the development of associations is now a key part of the central government's agricultural and rural development strategy. As the overwhelming need for employment creation in China leads to continued growth in and diversification of small and medium enterprises (SMEs), associations can provide a means for industry clusters to self regulate, and in doing so to increase regulatory efficiencies at higher levels of government.

One of several examples of a formal forestry association in Yunnan is the Yunnan Provincial Forest Products Industry Association. In 2006, this association will become a more broadly defined Forest Products Business Association. Larger forestry companies will take the lead in, and responsibility for, managing the association. More specialized groups, such as a papermaking subsidiary, will operate under its umbrella.

The perceived functions that such industry associations might provide for SMFEs varies among the government agencies interviewed for this study, but might include: self regulation, including quality control; information access and sharing; capital access; market access; cost sharing; policy feedback; and technical training. Better links might also be developed with wholesale timber markets, for example with Southwest Timber, the largest wholesale market for timber products in Yunnan providing space and limited services for 324 businesses. There is also a need for greater links to informal, and in rare case more formal, networks that exist among farmers. Forestry farmers in Baoshan, for instance, typically sell their logs through regularly frequenting trader networks rather than directly to processors.

To date, forest associations have suffered from four main institutional maladies which need to be addressed:

- *lack of representation* – associations primarily represent state owned enterprises;
- *skewed distribution* – most associations are found in sectors where WTO-related competition is not likely to be an issue;
- *operational ambiguity* – the role and function of associations remains ambiguous; and
- *bureaucracy* – consensus is emerging that government-run associations are not well suited to the demands of the marketplace

In a country constrained by extremely low per capita resources and dominated by small and medium-sized businesses, the need for coordinating intermediary institutions is vast. The Yunnan Forestry Bureau's reorienting of its forest products association into a more independent industry body could provide a new model for SMFE coordination in and around Kunming. In Baoshan and less industrial areas of Yunnan, and particularly at a village level, the development of SMFE associations is likely to be more gradual and require catalysts.

1. Background

Worldwide, small and medium-sized forest enterprises (SMFEs) have increasingly become a focal point in efforts to alleviate poverty, as a significant proportion of the world's poor are dependent on forest resources (Scherr *et al.*, 2004). In China, SMFEs expanded rapidly during the 1990s as the country transitioned away from a centrally planned toward a market-oriented economy (Sun and Chen, 2003). With further rural reforms and greater integration into the global economy, SMFEs will continue to play a role in China's rural economic development, but will be challenged to endure in a more competitive environment and meet more stringent expectations for environmental performance.

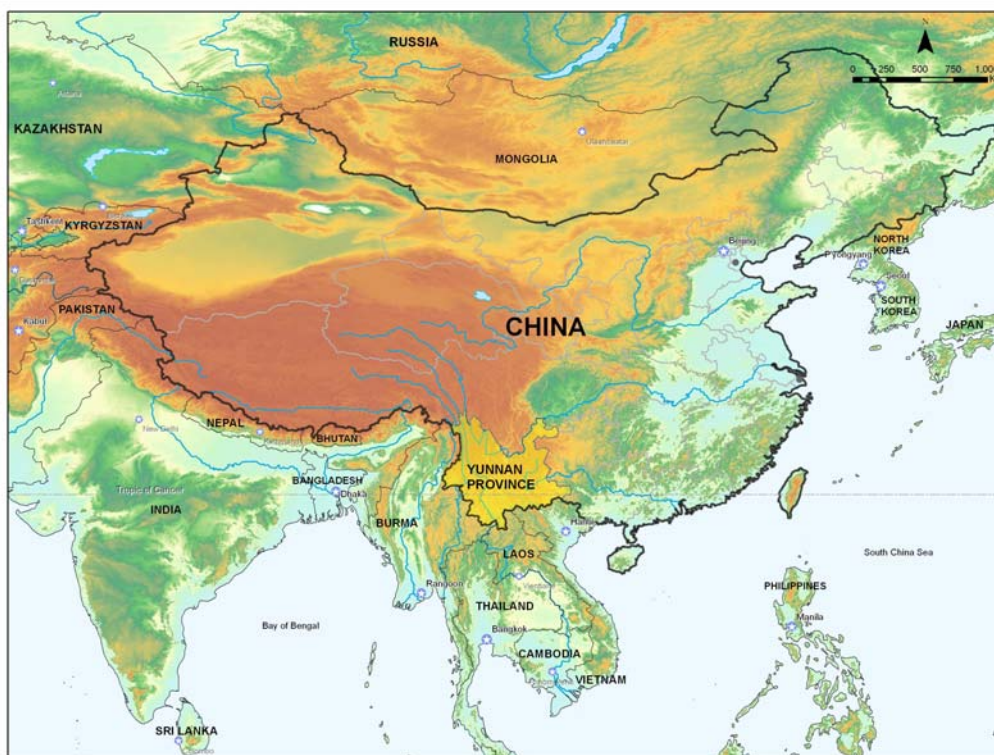
Associations – ranging from rural farmer associations to urban furniture manufacturers' associations – can help to increase the competitiveness and environmental performance of SMFEs by enhancing collective efficiencies (Macqueen, 2005). However, service-oriented associations have not historically been an integral feature of agricultural and industrial production in China, either in rural or urban areas.

Where they do exist, associations typically have their roots in the country's state-owned enterprise (SOE) system and are a functional extension of government agencies. The convergence of entry to the World Trade Organization (WTO) and domestic administrative and industry reforms has prompted the growth of more active manufacturing associations along China's eastern seaboard. However, in less developed southwest China the emergence of associations to support a broad range of SMFEs is likely to be more gradual and, in some instances, require catalysts.

This study provides a preliminary empirical and analytical look at the status of SMFEs and SMFE associations in two contrasting regions of southwest China's Yunnan Province – Baoshan (more rural) and Kunming (more urban) municipalities – with a view to understanding SMFEs' and SMFE associations' potential, the challenges they face, and their implications for livelihoods and environmental sustainability. More specifically, the report examines the trends behind nascent attention to industry associations in China, outlines the context for forestry in China and Yunnan, and describes the current status of SMFEs and SMFE associations in Yunnan, Baoshan, and Kunming.

A variety of primary and secondary sources contributed to this study. A general sense of China's and Yunnan's current forestry conditions and industry environment was gained through a literature and statistical review. General interviews with government and industry experts in Kunming and Baoshan provided depth to these overviews, as did reference to previous and ongoing work by the World Agroforestry Centre (ICRAF) in Yunnan. More specific interviews were conducted with the Yunnan Forestry Bureau, the Ministry of Civil Affairs, and the Bureau of Industry and Commerce.

Figure 1. Location of Yunnan Province, China



Source: ICRAF-China

1.1 China amidst transition

China has been the world's fastest growing economy for more than two decades. WTO accession in 2001 and crossing the symbolic US\$1,000 GDP per capita threshold in 2003 marked two major milestones in the country's path toward a modern, industrial nation. China's government has set an ambitious target for quadrupling the size of the economy and increasing GDP per capita to US\$3,000 by 2020.¹ Despite the country's booming economy and manufacturing prowess, roughly 60 percent of its population – or more than 765 million people – reportedly resides in rural areas, nearly half of whom were classified as 'farmers' (National Bureau of Statistics – NBS, 2004). Small household land allocations² mean that even with substantially higher farm gate prices there are practical constraints to how much income Chinese farmers can generate from selling farm and forestry products. Net per capita rural income was just US\$317 in 2003 (NBS, 2004), and rural development is a priority area for the government's 11th five-year plan (2005-2010).

¹ 16th National Congress of the Communist Party of China, 8 November 2002.

² For instance, average farm size in China is roughly 0.13 hectares (0.32 acres) per household, dipping to 0.04 hectares in Guangdong Province (NBS, 2004).

Sustained reductions in poverty will require a delicate balancing act between the productivity increases necessary to maintain competitiveness and high economic growth rates in a WTO environment, and the need to create jobs on a massive scale. The magnitude of China's coming demographic transition is without historical parallel, with as many as 300 million people expected to make a transition from rural to urban areas over the next 15 years. Labor migration will be of similar scale, and indeed must be for rural residents to see sustained increases in incomes. For instance, under present agricultural conditions raising farmer incomes to US\$1,500 would entail 75 percent of China's farmers finding non-farm employment, requiring more than 230 million jobs (Kahrl *et al.*, 2005).

Township village enterprises (TVEs | 乡镇企业 | *xiangzhen qiye*), or businesses located in rural areas, have played an important role in facilitating off-farm labor migration by providing a basis for the more than 110 million rural non-farm jobs created in China since 1985 (NBS, 2004). However, their continued ability to absorb farmers into the industry and service sectors will rely, in great measure, on China's ability to shift away from export-oriented growth and tap domestic consumption as a source of demand. Of similar importance will be the incremental creation of a business environment more conducive to the growth of the small and medium-sized enterprises (SMEs) that increasingly dominate China's economy. SMEs account for an estimated 60 percent of China's industrial output, employ 75 percent of its urban and semi-urban workforce, account for most new urban jobs, and absorb the bulk of workers laid off from state-owned enterprises.³

As China grows economically it has also grown more unequal, particularly between regions. Average per capita GDP in China's western provinces was more than 30 percent lower than the national average in 2003 (NBS, 2004).⁴ Since its 'Develop the West' (西部大开发 | *xibu dakaifa*) campaign began in 1998, closing the widening income gap between eastern and western provinces has become a high priority for China's central government. At the same time, environmental – and particularly forest – restoration and conservation in western China has emerged as a central government policy priority. In ecologically important Yunnan Province, the focus of this report, priorities for development and conservation have often been juxtaposed. While creating urban manufacturing jobs will serve as a means to promote provincial growth and raise rural incomes along China's eastern seaboard, Yunnan's relative remoteness and poverty, as well as its ethnic and ecological diversity, will likely steer the province on a significantly less traditional development path.

³ 'China's Small and Medium Enterprises: Room to Grow with WTO', U.S. Embassy China Economic Section Report, 2002. Online at: <http://www.usembassy-china.org.cn/econ/smes2002.html> (November 2005).

⁴ China's western provinces include Chongqing (a municipality), Gansu, Guangxi, Guizhou, Inner Mongolia, Ningxia, Qinghai, Shaanxi, Sichuan, Tibet, Xinjiang, and Yunnan.

1.2 Yunnan Province: Ecology, socio-economy, and forest industry

Ecologically, ethnically, and topographically, Yunnan is one of China's most diverse provinces. Yunnan harbors more than 50 percent of China's plant diversity⁵ and the headwaters of 6 major rivers; nearly 35 percent of its residents belong to 25 of China's 56 officially recognized minority groups; and 84 percent of the province is classified as mountainous (Yunnan Statistical Bureau – YSB, 2004). Yunnan is also one of China's poorest, least urbanized, and most heavily forested provinces, with 73 of its 129 counties (57 percent) below the poverty line (See Table 1).

Table 1. Socio-economic indicators, China and Yunnan Province, 2003

	China	Yunnan Province
Population	1,292,270,000	43,756,000
Rural population	768,510,000	36,624,000
% total	59%	84%
Forested land	158,940,000	12,873,200
% total	17%	33%
Forest land per rural capita	0.21 hectares	0.35 hectares
Net per capita rural income	2,622 yuan (US\$317)	1,697 yuan (US\$205)

Sources: NBS, 2004; YBS, 2004.

Forest production contributed only 3 percent to Yunnan's provincial GDP in 2003 (YSB, 2004), and Yunnan is not among China's major timber producing provinces for most products (see Tables 2 and 3). Although not a key sector on a provincial scale, regionally and locally Yunnan's forests take on greater importance, both for income generation and subsistence. With the largest total area of collectively-owned⁶ forest among China's 31 provinces, regions, and municipalities, forestry development plays and will continue to play an important role in Yunnan's rural economic development (Weyerhaeuser *et al.*, In Press).

Table 2. Forest production in China and Yunnan by sector, 2003

	Primary	Secondary	Tertiary
China	586.0 bn yuan (US\$70.8 bn)	351.8 bn yuan (US\$42.5 bn)	200.7 bn yuan (US\$24.2bn)
Yunnan	14.4 bn yuan (US\$1.7 bn)	12.2 bn yuan (US\$1.5 bn)	2.1 bn yuan (US\$247 mn)
(% total)	2%	3%	1%

Source: State Forestry Administration – SFA, 2003.

⁵ Kunming Institute of Botany website: <http://www.kib.ac.cn>

⁶ China's forests are owned either by the state or by township and village collectives. Both tenure and rural organization are discussed later in the report.

Table 3. Forest production in Yunnan by product, including percentage of Chinese production and state ranking, 2003

	Wood (m³)	Bamboo (poles)	Sawnwood (m³)	Artificial boards (m³)
China	47,588,700	968,665,100	11,268,700	45,533,600
Yunnan	1,797,700 4% 11th	98,180,000 10% 4th	263,500 2% 12th	575,600 1% 11th

Source: SFA, 2003.

Yunnan's forest products industry was once dominated by large state-owned companies, but since the mid- to late 1990s their influence has waned. A combination of collectively managed and private enterprises, both large and smaller scale, has moved to replace them.⁷ Non-state forest enterprises include a wide sphere of organizational types and products, both timber and non-timber based (*see Table 4*). Producers range from village fuelwood retailers, to mushroom and other non-timber forest product (NTFP) traders, to joint stock forest plantations, migrant timber processors in border towns, forest product wholesalers in Kunming, and multinational pulp and paper companies.

Table 4. NTFP production, Yunnan Province, 2003

Product	Production (tons)
Rosin	57,452
Rubber	223,354
Pine resin	76,592
Tung oil seed	18,118
Rapeseed	4,548
Walnut	76,118
Chestnut	17,137
Shellac	1,174
Medicinals	30,538
Edible mushroom	13,819

Source: YSB, 2004.

⁷ In greater China, non-state entities accounted for 76 percent of total timber production by 2000, with village collectives and individual households accounting for 43 percent of total production (Sun and Chen, 2003). Similar figures are not publicly available for Yunnan.

2. Institutional context: Small and medium-sized enterprise associations and regulation in China

Independent associations are a recent phenomenon in China. Despite having the institutional structure to support them, active rural associations, for instance, were largely non-existent during the 1980s and 1990s; supporting their development is now a key part of the central government's agricultural and rural development strategy (CCICED, 2004). Further downstream, China's manufacturing associations have traditionally been quasi-governmental organizations whose primary function is to follow the mandates of higher-level government organizations rather than providing services to member organizations (Sun and Chen, 2003). The ad hoc emergence of independent auto and textile manufacturing associations in areas such as Guangdong Province reflects increasingly widespread recognition of the role associations can play in enhancing the competitiveness of small and medium-sized enterprises (Bi, 2003).

Government recognition, support, and regulation of SMFEs – and SMEs more broadly – has often been hindered by a limited understanding and a historical preference for state-owned industry that has only just begun to subside. As the overwhelming need for employment creation in China leads to continued growth in and diversification of SMEs, associations can provide a means for industry clusters to self regulate, and in doing so to increase regulatory efficiencies at higher levels of government. Phrased differently, industry associations can act as an interface between government and industry in an increasingly complex marketplace.

2.1 Industry associations in China

A combination of three interrelated trends has harkened in a third phase in the development of industry associations in China: China's accession to the WTO and both government and business concerns over industry competitiveness; the formal separation of government and business (政企分开 | *zhengqi fenkai*); and China's incremental transition from a “strong government, weak society” (强政府弱社会 | *qiang zhengfu ruo shehui*) to a more service-oriented model of government complemented by a vibrant civil society.

Momentum behind the second and third trends gathered strength from key administrative and ideological shifts in the early 21st century. Administratively, agency departments managing production and commodity flows were dismantled at all levels of government in 2000, creating a formal administrative demarcation between government and business. Ideologically, in 2002 the then Vice Premier Zhu Rongji signaled a tectonic shift by calling for the emergence of industry intermediaries to meet the demands of a market economy, and a more active civil society to respond to the needs of a socialist market society.

Within this interactive context of socio-political shifts, international competition and the corresponding growth in economy-wide specialization are ultimately the primary drivers behind nascent attention to associations in China. With a lesser role for government, industry increasingly needs to “self serve, self coordinate, self monitor, and self protect” (自我服务, 自我协调, 自我监督, 自我保护 | *ziwo fuwu, ziwo xietiao, ziwo jiandu, ziwo baohu*). According to Bi (2003), salient functions of industry associations in China

include: representation, communication, coordination, monitoring, statistical compilation, and research. Discourse on the appropriate role of industry associations and the full range of functions they might provide remains embryonic.

Registration has emerged as the government's primary means of regulating associations and optimizing their operations. Industry associations are required to meet certain minimum conditions, formally register with the Ministry of Civil Affairs, and pay a minimum 100,000 yuan registration fee.⁸ The number of registered industry associations has grown steadily since the late 1990s; of the more than 11,000 social organizations registered by the Ministry of Civil Affairs in 2002 roughly 5,000 were industry associations (Li, 2003). Associations are governed by the 1998 Circular on Registration and Management of Social Organizations (社会团体登记管理条例 | *shehui tuanti dengji guanli tiaoli*). As a procedural regulation, associations still operate without a firm legal basis and there is a pressing need to create a sounder legal environment for their operation (Li, 2003). In addition to the central government's regulatory framework, a number of cities, such as Shanghai and Shenzhen, have developed their own regulations governing industry associations.

Geographical and institutional factors have hindered the growth of industry associations in China. The emergence of independent industry associations has been confined to the country's eastern seaboard (Bi, 2003), and, as discussed below, government intervention has limited their spread further west. Institutionally, associations have suffered from four primary maladies:

- i) *lack of representation* – associations primarily represent SOEs;
- ii) *skewed distribution* – most associations are found in sectors where WTO-related competition is not likely to be an issue;
- iii) *operational ambiguity* – the role and function of associations remains ambiguous; and
- iv) *bureaucracy* – consensus is emerging that government-run associations are not well suited to the demands of the marketplace (Bi, 2003).

Where they meaningfully exist, producers' associations in rural China have operated informally or been integrated into existing institutional structures, often promoted by township governments or village committees. Empirical research suggests that, although relatively few villages in China have functioning associations, their numbers are on the rise in both wealthier and poorer areas (Shen *et al.*, 2005). Nationwide, creating an environment conducive to the development of rural associations will be fundamental to facilitating their growth, and providing a clear legal basis for their operation will be an indispensable component in this process (Sonntag *et al.*, 2005). China's 2002 Agricultural Law takes an initial step in this direction:

'Farmers and farmer production and marketing organizations may establish various kinds of agricultural commodity sector associations, to provide services to members in production, marketing, information, technology and

⁸ Ministry of Civil Affairs website: <http://www.mca.gov.cn> [in Chinese]. Fees vary; the minimum provincial registration fee is 30,000 yuan. Other minimum conditions required for setting up an association include: a minimum of 30 businesses, 50 individuals, a combination of 50 businesses and individuals; a name, a charter, and a corresponding organization; a permanent residence; a professional staff; and independent legal capacity.

training, to bring into play the functions of coordination and self-control, to submit applications for support in agricultural trade related issues, and to protect the interest of members and the sector.’ (cf. Sonntag et al., 2005)

2.2 SMFE classification and regulation

Although, small and medium-sized enterprises include a wide range of disparate groups, for administrative purposes these differences are compressed to a limited number of identifying criteria. In China, small and medium-sized enterprises are classified according to the number of their employees, sales, and assets, listed below in Table 5.

Table 5. Classification of industrial enterprises in China

Criteria	Unit	Large enterprise	Medium-sized enterprise	Small enterprise
No. of employees	Person	> 2000	300-2000	< 300
Sales	Thousand yuan	> 300,000	30,000-300,000	< 30,000
Assets	Thousand yuan	> 400,000	40,000-400,000	< 40,000

Source: Measures for Enterprise Categories, jointly issued by the State Economic and Trade Commission, State Development and Planning Commission, Ministry of Finance, and National Statistical Bureau in 2003.

Information management varies widely by locality in China. In Yunnan, government agencies do not keep systematic records on SMFEs. Their true number, average throughput, number of employees, assets, and liabilities are largely unknown. Although local governments do tend to keep rough tallies on the total number of, for instance, timber processors within their jurisdiction, more accurate information on SMFEs is difficult to maintain because of their small size, high turnover rates, and diversity.

These same properties have made SMFEs difficult to regulate. For forest conservation purposes, regulation has been imposed directly and indirectly through restrictions on logging and shipping. Controls on air and water pollution from TVEs have proved a more complex problem, both in Yunnan and across China (Jahiel, 1998). Difficulties in enforcing national environmental standards can, in part, be traced back to systemic disincentives and China's two-tiered system of administration. In the latter, sub-national State Environmental Protection Agency (SEPA) staff, for instance, are accountable both vertically and horizontally; as local governments ultimately control budgets, horizontal accountability is often the stronger of the two.

The bridging role that associations might play between government and industry to improve regulatory efficiency is gaining increasing agency recognition, both in China and more specifically in Yunnan. Associations might provide a feedback mechanism

whereby the information they disseminate upward to government agencies would help to inform policy design and adjustment.⁹

3. Industry context: Forest conservation and production in China and Yunnan

Forestry and forest policy in China has undergone two constitutive shifts since 1998. First, the SOE system that once dominated China's timber industry has been scaled back, releasing hundreds of thousands of timber industry employees into the job market. Second, a greater focus on forest conservation has emerged to compete with, and in some cases, dominate, production priorities. Competing priorities for conservation and production have emerged within the context of rising demand for forest products in China.

3.1 Conservation

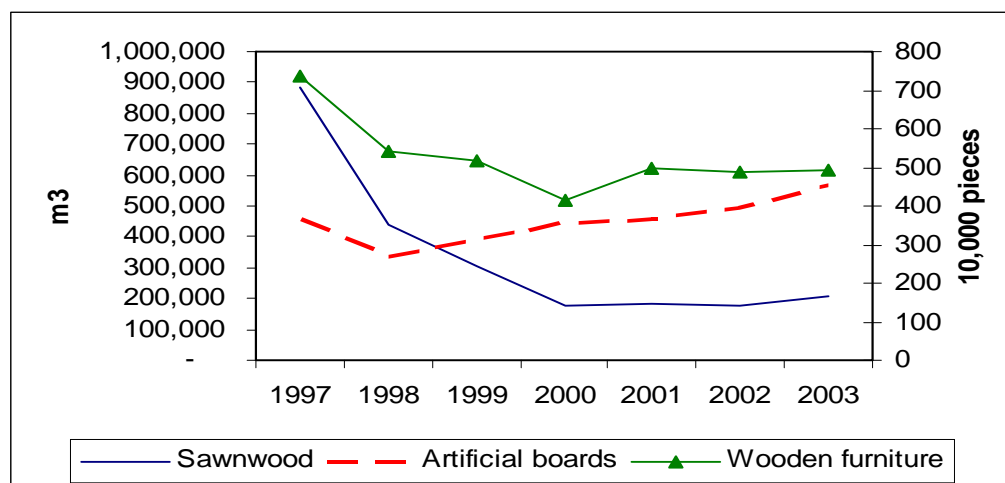
In response to severe drought and flooding in 1997 and 1998, the Chinese central government initiated six major forest conservation programs – including the Natural Forest Protection Program (NFPP) and its concomitant logging ban – intended to transit toward a greater emphasis on conservation forestry and sustainable harvesting. While logging restrictions were targeted at state-owned forests and enterprises, in practice they are often extended to collectively-owned forests and the collectives and households that manage them (Zuo, 2002).

More than 90,000 hectares in Yunnan were included in the NFPP (SFA, 2003); as of mid-2003, collective forests accounted for 74 percent this area (Miao *et al.*, 2004). NFPP implementation and reduced logging quotas have had an obvious impact on village communities that were highly dependent on the timber business, in some cases pushing them back into poverty (Zhao, 2001; Su, 2004). The NFPP has also had a significant impact on Yunnan's timber industry as a whole, although the effects have been uneven across different products (*See Figure 2*).

In addition to the NFPP, the Sloping Land Conversion Program (SLCP), or Green for Grain Program, has important implications for SMFE development in Yunnan. The SLCP provides grain, cash, and seedling subsidies to farmers for converting marginal cropland into forest, some of which can be 'economic forest' (e.g., fruit trees). In Baoshan's Pingzhang Village, for instance, under the SLCP villagers have planted pear and walnut trees on land formerly cropped with maize.

⁹ Interview with Bureau of Industry and Commerce staff, November 2005.

Figure 2. Production of sawnwood, artificial boards, and wooden furniture, Yunnan Province, 1997-2003



Source: YSB, 1997-2003.

Note: Sawnwood and artificial boards are plotted in m³; wooden furniture is plotted in 10,000 pieces.

3.2 Production, imports, and industry growth

Against a backdrop of policy- and scarcity-induced production declines, demand for forest products in China – both for domestic use and for export – grew substantially over the 1990s; based on one account, the country’s timber shortfall reached 96 million m³, or more than half of total demand in 2003 (Zhu *et al.*, 2003). This shortfall has been met through imports, and China has become the world’s second largest importer of forest products (Sun *et al.*, 2003).

Bordering forest rich Myanmar, Laos, and Vietnam, Yunnan is an important point of entry for overland tropical and sub-tropical timber imports from these three countries. Myanmar is by far the largest source of timber imports for Yunnan; more than three million cubic meters crossed the border from 1997 to 2002, with imports more than tripling during this period (Kahrl *et al.*, 2004). The vast majority of the logging, crude processing, and distribution that sustains timber imports from Myanmar is carried out by Chinese entrepreneurs.

The influx of imported timber from Myanmar, most of which is from natural forests, has created scale effects along the Yunnan-Myanmar border and reduced demand for timber from inland processors; a significant portion of the wood products found in timber wholesale markets in Shanghai and Guangdong labeled as ‘Southwest timber’ (i.e., southwest China) is actually from Myanmar (Kahrl *et al.*, 2005). In addition, many of the logging, processing, and shipping enterprises along the Yunnan-Myanmar border are run by migrants from other areas of China, which has thus far made for flighty capital and has limited multiplier effects for Yunnan.

In addition to increased imports to meet domestic demand, a combination of industry deregulation and low labor costs has spurred the development of a vibrant timber

products export industry in coastal China that is heavily dependent on imported timber (Zhu *et al.*, 2003). Demand pull influences for Yunnan Province have been mixed in terms of income generation and employment opportunities, with a corresponding increase in wage labor opportunities, but less opportunities for collectives and households to sell and process locally grown timber.

4. A brief overview of Kunming and Baoshan municipalities

Positioned along different portions of both the rural-urban spectrum and production chains, Kunming and Baoshan illustrate the different types and roles of and challenges for more active SMFE associations in Yunnan and China. Kunming's forestry sector is more oriented toward downstream manufacturing, while in Baoshan's forestry sector upstream processing plays a greater role and forestry is a significant means of rural income generation. Province wide, forestry associations are currently structured to favor larger, state-owned enterprises, although this situation may soon change.

4.1 Kunming Municipality

Kunming Municipality¹⁰ is the capital of Yunnan Province, and is the provincial center of finance, commerce, and logistics. While it is a manufacturing hub and the province's closest link to domestic and international markets for forest products, Kunming is not well endowed with forest resources. As Table 6 indicates, primary production (agriculture, forestry, animal husbandry, and fisheries) comprises a small share of Kunming's overall economy and forestry's contribution to GDP is negligible.

Table 6. Socio-economic indicators, Kunming, 2003

Socio-economic indicator	Magnitude
Population	5,008,000
Rural population	2,995,000 (59%)
GDP	81.4 bn yuan (US\$ 9.8 bn)
% Primary	7%
% Secondary	46%
% Tertiary	46%
Forestry contribution to GDP	0.4%
Per capita GDP	16,352 yuan (US\$1,975)
Per capita farm income	2,581 yuan (US\$312)

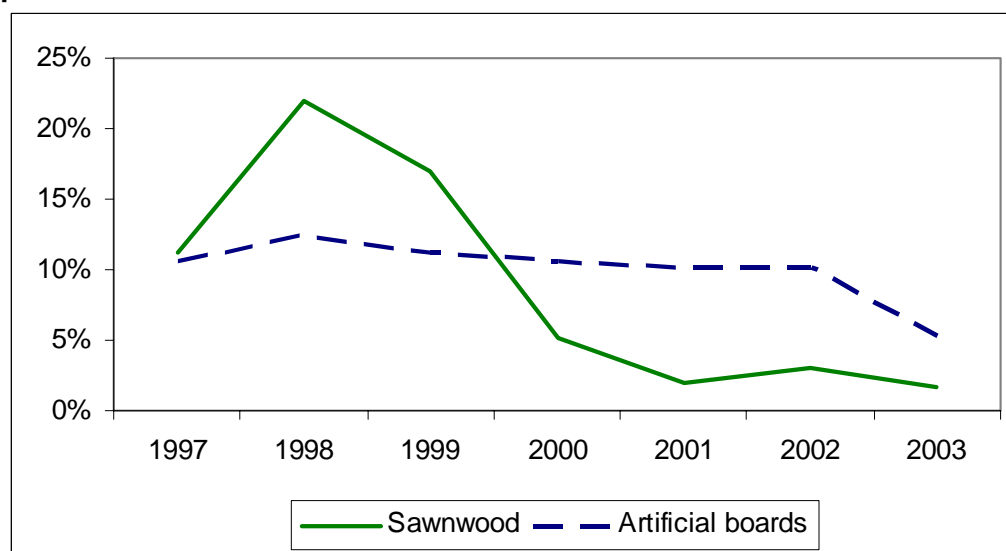
Source: YSB, 2004.

Kunming share of Yunnan's timber manufacturing has fallen significantly since 1998 (see *Figure 3*). While the municipality is less important as a primary and intermediate

¹⁰ Kunming City is part of Kunming Municipality, an administrative unit that includes nine counties and one municipality within its jurisdiction. A mix of urban, peri-urban, and rural areas are brought together under this unit.

producer, it remains Yunnan's largest center for timber distribution and trade. Kunming is also an important producer of chestnuts and edible mushrooms (see Table 7).

Figure 3. Kunming's share of Yunnan Province's sawnwood and artificial board production



Source: YSB, 1998-2004.

Table 7. NTFP production, Kunming, 2003

Product	Production (tons)	% Provincial total
Rubber	-	-
Pine resin	91	0.1%
Tung oil seeds	57	0.3%
Rapeseed	23	0.5%
Walnuts	1,341	2%
Chestnuts	6,298	37%
Shellac	-	-
Medicinals	528	2%
Edible mushroom	2,416	17%

Source: YSB, 2004.

4.2 Baoshan Municipality

Baoshan Municipality is a prefecture-level administrative unit in northwest Yunnan. With extensive plantation and natural forest, Baoshan's forests have both high production and conservation potential. Baoshan is home to a large portion of the Gaoligongshan Nature Reserve, and the Nujiang-Salween and Lancang-Mekong Rivers flow through its borders.

As shown in Table 8, Baoshan's economy is heavily oriented toward primary production and the service industries, with little manufacturing. Forestry is a relatively substantial contributor to overall GDP, and in some villages comprises the bulk of

farmers' incomes. Baoshan is poor by both provincial and national standards; rural per capita incomes were 6 and 39 percent lower than provincial and national averages, respectively.

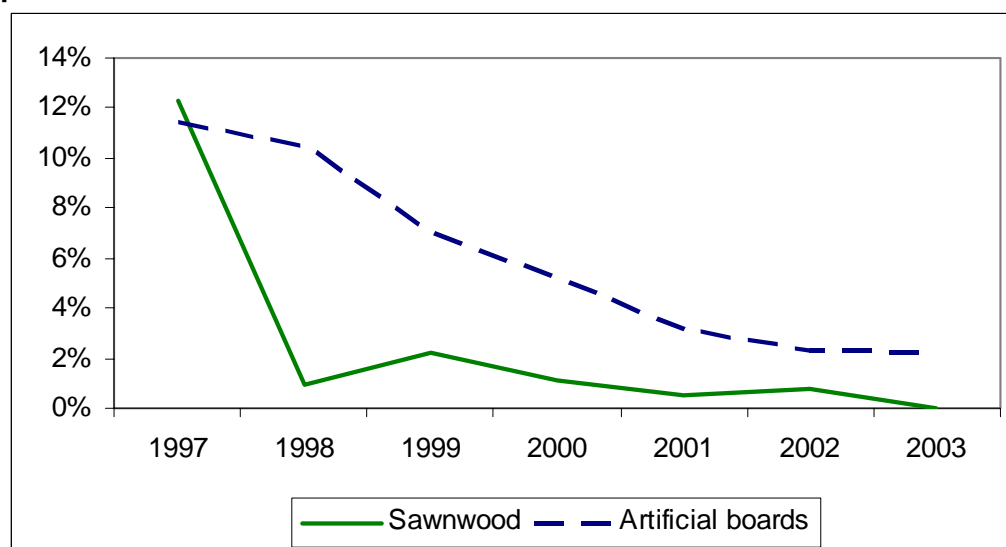
Table 8. Socio-economic indicators, Baoshan, 2003

Socio-economic indicator	Magnitude
Population	2,393,000
Rural population	2,144,000 (90%)
GDP	8.7 bn yuan (US\$ 1.1 bn)
% Primary	37%
% Secondary	20%
% Tertiary	42%
Forestry contribution to GDP	8%
Per capita GDP	3,662 yuan (US\$442)
Per capita farm income	1,601 yuan (US\$193)

Source: YBS, 2004.

Baoshan's timber production has plummeted since 1998, both in absolute terms and in its relative share of provincial production (see Figure 4). Similarly, revenue generated from primary timber-based industries in Baoshan's capital district accounted for 98.6 percent of the district's total 195.2 million yuan (US\$23.5 million) in forestry revenues in 2003. Though no longer a major producer of processed timber products, Baoshan is one of the province's largest producers of shellac and walnuts (see Table 9). Baoshan has roughly 1,145,000 hectares of forest, covering approximately 60 percent of its total land area. The municipality's total forest volume is 72,200,000 m³, with annual growth of about 3,694,000 m³. In 2003, the Yunnan Forestry Department issued 376,400 m³ and 191,459 m³ in logging quotas and certificates, respectively, to Baoshan. Total allowable logging volumes in recent years have witnessed a considerable falloff from their high of more than 2.9 million m³ in 1999.

Figure 4. Baoshan's share of Yunnan Province's sawnwood and artificial board production



Source: YSB, 1998-2004.

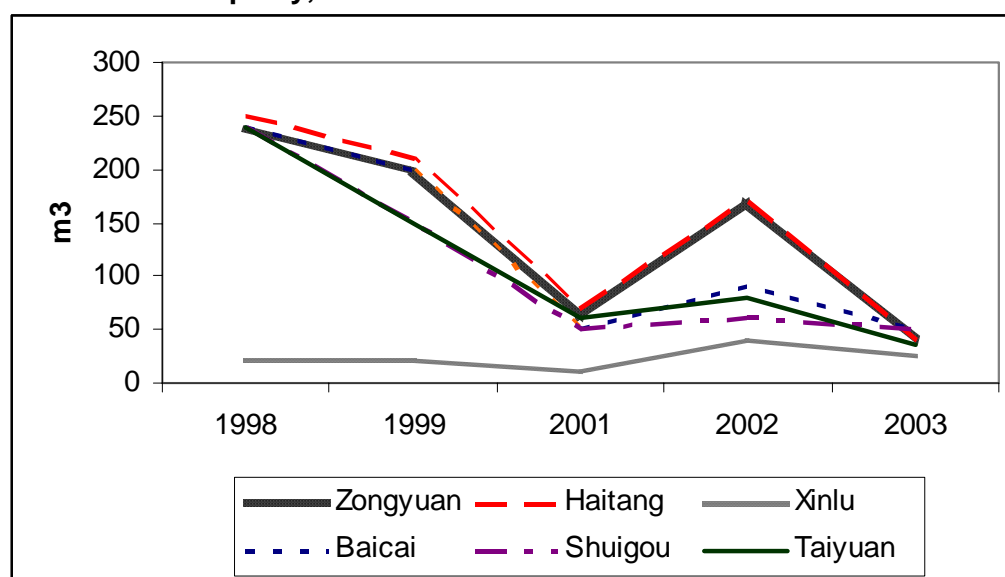
Table 9. NTFP Production, Baoshan, 2003

Product	Production (tons)	% Provincial total
Rubber	-	-
Pine resin	80	0.1%
Tung oil seed	158	0.9%
Rapeseed	34	0.7%
Walnut	5,791	8%
Chestnut	691	4%
Shellac	136	12%
Medicinals	442	1%
Edible mushroom	812	6%

Source: YSB, 2004.

At a village level, reductions in logging quotas have been similarly dramatic, albeit on a smaller scale. In Shuizhai Township's six villages, for example, logging quotas were reduced by more than 80 percent (1,230 m³ to 240 m³) from 1998 to 2003, with a temporary increase in 2002 (see Figure 5).

Figure 5. Commercial logging quotas in six villages, Shuizhai Township, Baoshan Municipality, 1998-2003



Source: Baoshan Forestry Bureau.

Note: Data from 2000 was not available.

In addition to forest resources within its own boundaries, Baoshan is also a major port of entry for timber imports from Myanmar. Three official border crossings — Houqiao, Diantan, and Zizhi — are open for cross-border trade. In 2003, 479,000 m³ of timber crossed the border from Myanmar into Yunnan, the bulk of which was unprocessed logs.

5. Small and medium-sized forestry enterprises in Kunming and Baoshan

SMFEs in Kunming and particularly Baoshan often blur the lines between household enterprises and more formal businesses. These enterprises are ad hoc organizations where accounting is relatively simple; labor is hired and materials are purchased as needed; marketing is unsophisticated and low tech, and information is closely guarded as small asymmetries have a comparatively large impact on profitability. Particularly for smaller enterprises, enterprise heads are responsible for overseeing all aspects of business management; there are no clear divisions of labor. The head of an enterprise will be active at all stages of business, contacting suppliers to purchase raw materials; doing or directly overseeing the accounting; negotiating with buyers for higher prices; and dealing with government regulatory and tax requirements.

The amount of labor used by different enterprises varies considerably. Timber processing companies, for instance, can employ anywhere from two to three to dozen or even hundreds of employees. Often, seasonal laborers greatly exceed full time employees by a significant margin, as seasonal workers are hired when business picks up and released as business slows. Medium-sized enterprises tend to have more full-time staff and a more specific division of labor.

5.1 Small and medium-sized manufacturers in Kunming

Kunming's SMFEs are largely downstream processors, a large number of whom are concentrated in the city's largest timber wholesale market — Southwest Timber Market (西南木材市场| *Xinan Mucai Shichang*). Southwest Timber houses 324 timber companies, which in turn provide employment to more than 600 skilled and unskilled laborers. Employees are lower to average urban wage earners, grossing monthly salaries of about 800 yuan (US\$97) for lower skilled workers and as much as 1,800 yuan (US\$217) for technical staff. Industrial migrants make up a large share of both business owners and employees in Southwest Timber; businesses are often run by migrants from Fujian Province, while workers come primarily from an array of provinces in south and southwest China, in addition to Yunnan.

In addition to Southwest Timber, a number of timber-based manufacturers have operations in peri-urban and rural areas around Kunming. These range in scale from comparatively large to tiny (see Table 10).

Table 10. Range of initial investment and number of Workers, timber manufacturing companies, Kunming

Company size	Initial investment	Workers
Large	1 million-5 million yuan (US\$121,000-604,000)	100-500
Small and medium-sized	200,000-1 million yuan (US\$24,000-121,000)	7-50

Source: Kahrl *et al.*, 2005.

5.2 Small processors and forestry farmers in Baoshan

At the end of 2003, there were reportedly 83 enterprises for timber trade and 872 timber processing enterprises in Baoshan, the bulk of which were small and medium-sized.¹¹ Some of these businesses sell logs, some primary processed timber, and some secondary processed timber products. The decision where to specialize along the production chain depends on their sense of market demand, expertise, and access to capital. A number of smaller-scale timber processors in Baoshan are former employees of state-owned forest enterprises, and their collective industry knowledge is an important factor shaping Baoshan's timber industry. Because of lower logging quotas within the municipality, a majority of Baoshan's timber processors are located in Tengchong County along the Myanmar border.

Outside of state-owned plantations and nature reserves, much of Baoshan's forest land is managed by village collectives and individual households. In the wake of China's forestry reforms in the early 1980s, in some areas of Yunnan use rights for forest and barren land were allocated to individual households; in other areas sub-village, village, and township collectives retained management authority. The result is a diverse patchwork of institutional arrangements for forest management that differ even within the same village committee. These arrangements, and the village institutions that underpin them, play a pivotal role in determining the environmental and socio-economic impacts of village-level SMFEs.

Nowhere is this tension more apparent than in the central government's emphasis on conservation vis-à-vis local priorities for development. As mentioned previously, for Baoshan the result has been reduced logging quotas. Although at a village level total quota reductions are relatively small, the effects of logging restrictions on villagers' income has in some cases been significant. In Baicai Village, for instance, timber revenues from its joint stock forest plantation fell from as much as 30,000 yuan before 1998 to as little as 400 yuan after (Weyerhaeuser *et al.*, In Press).

Extension continues to play an important role in Baoshan's rural timber industry. Farmers often plant seedlings provided by the forestry bureau, in many cases through central or provincial government reforestation programs. Traditional line agency enthusiasm for "silver bullet" crops has at times given rise to boom and bust cycles. For example, in 2003 323,000 mu (21,533 ha) of walnut trees were planted in Baoshan's Changning County, with another 6,000 mu (400 ha) of walnut plantation in Longyang District, in order to solidify Baoshan's status as a walnut base.

Restrictions on logging have also led to reductions in allowable fuelwood harvest in Baoshan. In part, this has precipitated the increasing emergence of small-scale rural markets for fuelwood in the municipality. In Baoshan's Yangliu Village, for instance, one of the village's five forestry households plants fast-growing, small diameter wood that caters specifically to the fuelwood market. In addition, residents living near timber processing enterprises are increasingly frequenting timber markets to buy scrap wood for cooking.

Other rural forest products' processing industries exist outside the timber industry in Baoshan. Small-scale household and collective processing of walnuts, tea,

¹¹ Interview with Baoshan Forestry Bureau staff, June 2005.

mushrooms, and eucalyptus oil (see *Box 1*) are found in both townships and villages. Much of this processing is labor- rather than capital and technology intensive.

Box 1. Eucalyptus oil extraction in Baicai Village

Baicai is a village (or village committee, a cluster of physical villages) located west of the city of Baoshan at an altitude of 2,130 to 2,520 meters above sea level. With nearly 20 times more forest land than crop land, a number of the village's 370 households have begun to engage in eucalyptus oil extraction. Start-up costs are limited mainly to the boiler, which costs about 2,000 yuan (US\$248). In addition, a muddy stove is needed that takes two days for two people to build. Some fuelwood is necessary to start the process.

Five kilograms of eucalyptus oil can be extracted from 500 kilograms of fresh eucalyptus leaves. The price of fresh leaves is usually 0.16yuan/kg, with a high of 0.2 yuan/kg and a low of 0.4 yuan/kg in 2002. The price of eucalyptus oil is 30-35yuan/kg, ranging from a high of 40yuan/kg in 2002 to a low of 17yuan/kg in 2003. With normal input and wholesale prices, villagers do quite well at 70-85 yuan/kg; when input prices are high and wholesale prices are low eucalyptus oil is a loss-making venture.

Villagers typically sell eucalyptus oil to a middleman in Banqiao, a township close to Baoshan city. The buyer decides procurement prices based on the information he gets and the price he can sell at. Once villagers know eucalyptus oil prices from the middleman they can negotiate the price of leaves; usually villagers collect leaves from their own eucalyptus trees or buy leaves from nearby farmers in bulk.

6. SMFE associations in Kunming and Baoshan

There are currently more than 6,000 registered industry associations in Yunnan Province. However, as the separation of government and business remains incomplete in Yunnan, government interference in the operations of these associations has thus far limited their effectiveness. Yunnan's industry associations remain trapped between socio-economic models; with greater independence they could play a more substantial role, but without government support they would be unable to sustain themselves.¹²

Formal forestry associations in Yunnan include the Yunnan Provincial Forestry Accounting Association (云南省林业会计协会 | *Yunnan Sheng Linye Kuaiji Xiehui*), the Forest Products Industry Association (林业工业协会 | *Linchan Gongye Xiehui*), the Wildlife Protection Association (野生动物保护协会 | *Yesheng Dongwu Baohu Xiehui*), the Wild Flora Protection Association (野生植物保护协会 | *Yesheng Zhiwu Baohu Xiehui*), and the Bamboo and Rattan Products Association (竹藤产业协会 | *Zhuteng Chanye Xiehui*).¹³ Aside from annual meetings, these groups perform only limited functions.¹⁴

Yunnan's Forestry Bureau is currently amidst preparations to make the province's forestry associations more meaningful. In 2006 the more narrowly construed Yunnan Provincial Forest Products Industry Associations will become a more broadly defined Forest Products Business Association (林业工业协会 | *Linchan Chanye Xiehui*). Larger forestry companies will take the lead in, and responsibility for, managing the association. More specialized groups, such as a papermaking subsidiary, will operate under its umbrella.¹⁵

Forestry associations have thus far not played a role in SMFE development in Yunnan, and there are currently no organizations that could provide business services to township and village level SMFEs. In the current environment, industries must fend for themselves and rely on the government to provide support and training. However, from the State Forestry Administration to SMFEs themselves, there is a growing awareness of the benefits of associations for enterprise development. The current stage is one of discussion and experimentation, and, as noted in the preceding paragraph, changes are on the horizon.¹⁶

The perceived functions that industry associations might provide for SMEs varies among the government agencies interviewed for this study, but can be summed as:

- Self regulation, including quality control;
- Information access and sharing;
- Capital access;
- Market access;
- Cost sharing;
- Information dissemination;

¹² Interview with Bureau of Industry and Commerce staff, November 2005.

¹³ Interview with Bureau of Civil Affairs staff, November 2005.

¹⁴ Interview with Yunnan Forestry Bureau staff, November 2005.

¹⁵ Ibid.

¹⁶ Ibid.

- Policy feedback; and
- Technical training.

Some of these functions are presently provided to SMEs to greater and lesser degrees. Current forms of delivering these functions include, for instance: government agencies, local government associations, wholesale markets, trader networks, informal farmers networks. Examples of each are described briefly below.

6.1 Government agencies

In Baoshan's Tengchong County, the Chamber of Industry and Commerce is working on the registration of a brand for local timber products — Tengchong Muye (Tengchong Timber Industry). In Longyang District, the Chamber of Industry and Commerce, in cooperation with local internet providers, helped to develop websites for SMEs.

The small and medium-sized enterprise arm of the Yunnan Economic Committee is responsible for providing technological, financial, and business support to SMEs. The agency also runs a program entitled Silver Training Plan, which provides training on enterprise development, management, and fundraising to entrepreneurs. In addition, the agency operates a three billion yuan annual investment fund to support the growth and development of small and medium-sized enterprises. The fund is targeted toward enterprises specializing in agricultural products processing that have high job creation potential.

6.2 Local government associations

Initiated and run by local governments, township and village government associations are expanding throughout China, and to some degree within Yunnan. Although their functions vary widely, coordinating production and linking farmers to markets have been common themes (see *Box 2*).

6.3 Universities

Universities are playing a growing role in providing rural extension and agricultural and forestry research services in China. As China's universities grow and mature, this role will grow both intensively and extensively.

6.4 Wholesale markets

Established in 1996, the afore-mentioned Southwest Timber is the largest wholesale market for timber products in Yunnan and provides space and limited services for 324 businesses. A committee of six staff is responsible for the market's overall management, including leasing space, maintaining security, and providing certificates for timber shipping. More than 30,000 m³ in timber products passed through Southwest Timber in 2003, generating total revenues of roughly 4 billion yuan (US\$483.1 million).

Box 2. Zhaijiawa Village's Persimmon Association

In Zhaijiawa Village, there are 210 households (860 villagers) that grow fruit, on a combined total area of 700 mu (47 ha). Households earn anywhere from 300 yuan to 10,000 yuan per year from their fruit trees, in addition to income from fish ponds built amongst the trees. Among the five main fruits grown in the village, Zhaijiawa's persimmons were singled out for a national award because of their flavor.

A persimmon association was created in Zhaijiawan in 2003. The association is comprised of farmers; any farmer with persimmon trees is eligible for membership. The association invites forestry professionals to provide on-site training and services to member farmers. Services include fertilizer and pesticide application, pruning, and other maintenance. In addition, the association holds regular meetings so that farmers can address emerging problems.

Most of Zhaijiawa's fruit was previously sold at markets in Baoshan city by individual households. The association has allowed villagers to access new markets, both physically and by segment through value added technologies like packaging. Information about the association was posted in the Baoshan Forestry Bureau's publications and attracted attention from businessmen as far away as Shanghai.

6.5 Trader and informal farmer networks

In many instances, small-scale traders have filled the gap between markets and producers (see *Box 1*). Forestry farmers in Baoshan, for instance, typically sell their logs to regularly frequenting traders rather than directly to processors. Informal, and in rare cases more formal, networks exist among farmers and provide a range of functions, from cost sharing to revolving credit. Importantly, as Shen *et al.* (2005) note in their study of farmer associations, most well functioning rural associations in China are formal.

7. Conclusions

Small and medium-sized enterprises will be an important component of China's transition to an urban, industrial society. In poor provinces where forestry plays a disproportionately larger role in local economies, such as southwest China's Yunnan Province, small and medium-sized forestry enterprises have significant potential as a means of creating non-farm income generation and stimulating rural economic growth.

Although industry associations – and particularly associations for SMFEs – have historically not played a major role in SME development in Yunnan or in greater China, throughout China there is a growing recognition of the benefits of associations as an interface between members and markets and members and government. WTO entry and associated concerns over competitiveness have been a primary impetus behind both government and industry interest in associations.

Awareness and concern have prompted efforts to create an environment more conducive to the formation of independent urban industry and rural producers associations, but associations and the environment in which they operate are still in their formative stages. In particular, strengthening the legal framework that protects and governs their operation remains a top priority. In a country constrained by extremely low per capita resources and dominated by small and medium-sized businesses, the need for coordinating intermediary institutions is vast.

Associations can help enterprises and governments overcome the economic and regulatory disadvantages traditionally perceived to be inherent in smaller scale. In the former, smaller scale tends to mean higher input prices; more difficult access to credit (and subsequently lower investment); higher shipping costs, and higher transaction costs associated with marketing. In the latter, millions of small-scale enterprises make meaningful regulation difficult for national and local governments. In both instances, associations can enhance the effectiveness and efficiencies of coordination and regulation.

In Yunnan, SMFE associations can support the sustainable growth of a small-scale logging and processing industry that has been constrained by resource limitations and driven by short-term profits. The Yunnan Forestry Bureau's reorienting of its forest products association into a more independent industry body could provide a new model for SMFE coordination in and around Kunming. In Baoshan and less industrial areas of Yunnan, and particularly at a village level, the development of SMFE associations is likely to be more gradual and require catalysts.

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