



**CHINA AND FOREST TRADE IN THE ASIA-PACIFIC REGION:**

**IMPLICATIONS FOR FORESTS AND LIVELIHOODS**

**中国与亚太地区国家林产品贸易研究**

**A BRIEF OVERVIEW OF  
CHINA'S TIMBER MARKET**

---

Xiufang Sun

Liqun Wang

Zhenbin Gu



## COLLABORATING INSTITUTIONS

**Forest Trends** (<http://www.forest-trends.org>): Forest Trends is a non-profit organization that advances sustainable forestry and forestry's contribution to community livelihoods worldwide. It aims to expand the focus of forestry beyond timber and promotes markets for ecosystem services provided by forests such as watershed protection, biodiversity and carbon storage. Forest Trends analyzes strategic market and policy issues, catalyzes connections between forward-looking producers, communities, and investors and develops new financial tools to help markets work for conservation and people. It was created in 1999 by an international group of leaders from forest industry, environmental NGOs and investment institutions.

**Chinese Center for Agricultural Policy** (<http://www.ccap.org.cn>): The Chinese Center for Agricultural Policy (CCAP), based in Beijing, is a part of the Chinese Academy of Sciences. CCAP conducts basic and applied research aimed at promoting the ability of China's agricultural and rural economy to produce increasingly efficient and sustainable supplies of food, job opportunities, and other commodities to meet most of China's rising demand. CCAP's efforts are also aimed at promoting economic activity in the rural sector that will contribute to the modernization of the rural economy and of China's transitional economy as a whole. To these ends, CCAP is committed to providing theoretically sound, empirically based, and objective policy recommendations related to agriculture and the rural sector.

**Center for International Forestry Research** (<http://www.cifor.cgiar.org>): The Center for International Forestry Research (CIFOR), based in Bogor, Indonesia, was established in 1993 as a part of the Consultative Group on International Agricultural Research (CGIAR) in response to global concerns about the social, environmental, and economic consequences of forest loss and degradation. CIFOR research produces knowledge and methods needed to improve the wellbeing of forest-dependent people and to help tropical countries manage their forests wisely for sustained benefits. This research is conducted in more than two dozen countries, in partnership with numerous partners. Since it was founded, CIFOR has also played a central role in influencing global and national forestry policies.

**The College of Economics and Management (CEM)** of Beijing Forestry University (BFU) was established in 1987. It has been playing a leading role in forest economics training and research in China. Research projects cover the fields of forest economics, forestry policy, forest resources and environmental economics, forest management and timber trade, forest finance and social or community forestry in China. The college is becoming very active in international cooperation and interaction. Sound relationships have been established between the college and many prestigious universities and important international organizations from more than 10 countries.

## SPONSORING INSTITUTION:



<sup>1</sup> While the Department for International Development has provided financial support for this publication, the findings and views presented do not necessarily reflect UK government policy.

# **CHINA'S TIMBER MARKET: AN OVERVIEW**

*by Xiufang Sun, Liqun Wang, and Zhenbin Gu*

*January 2005*

China's Timber Market System: An Overview  
© 2005 Forest Trends.  
ISBN 1-932928-06-5 Reproduction permitted with attribution.  
Cover photo by Christian Cossalter

## **TABLE OF CONTENTS**

<b>INTRODUCTION .....</b>	<b>1</b>
<b>CHINA'S TIMBER MARKET AND DISTRIBUTION SYSTEM .....</b>	<b>1</b>
<b>TIMBER PRODUCERS .....</b>	<b>3</b>
<b>TIMBER DISTRIBUTORS .....</b>	<b>6</b>
<b>WOOD-PROCESSING INDUSTRY .....</b>	<b>6</b>
Sawnwood Industry .....	7
Wood-Based Panel Industry .....	7
<b>IMPORTS .....</b>	<b>9</b>
<b>END USERS.....</b>	<b>10</b>
Construction and Housing Sector .....	10
Furniture Sector .....	11
Pulp and Paper Industry .....	12
<b>CONCLUSION.....</b>	<b>12</b>
<b>REFERENCES .....</b>	<b>14</b>

## LIST OF FIGURES

Figure 1: General Framework of China’s Timber Market.....	2
Figure 2: China’s Timber Production 1992-2002.....	4
Figure 3. China’s Wood-Based Panels Production .....	8

## LIST OF TABLES

Table 1: Description of Timber Producers.....	5
Table 2: China’s Imports & Exports of Timber Products .....	10
Table 3: Structure of Timber Consumption by End-Users.....	10

## AUTHOR CONTACTS

**Xiufang Sun** (xsun@forest-trends.org) is a market analyst with Forest Trends and lives in Beijing, China.

**Liqun Wang** (wlq@bjfu.edu.cn) is a professor in the School of Economics and Management at Beijing Forestry University.

**Zhenbin Gu** (kkxx2002gu@sina.com) is a graduate assistant in the School of Economics and Management at Beijing Forestry University.

## **EXECUTIVE SUMMARY**

China's timber market has undergone dramatic changes in recent decades and continues to change rapidly. Timber production and distribution were monopolized by the government prior to the 1980s, but a gradual transition from state allocation to market liberalization occurred during the late 1980s and early 1990s. Currently timber producers are allowed to market their timber directly to different buyers, although timber harvest and transport remain heavily regulated by the government.

China's primary wood-processing industry and wood-consuming sectors have experienced rapid growth in recent years. Sectors like sawnwood or plywood manufacturing are changing very quickly with strong trends towards an expansion of small-scale enterprises. Private investment has been encouraged by the government and experienced a high growth in recent years. A lack of data on production, distribution, processing and end-use undermines the understanding of market dynamics and therefore precludes effective policy interventions. The limited amount of domestic resources and strong domestic demand for timber products in industries such as construction, furniture and wood panels have caused China's imports of forest products to increase. While the government has attempted to reduce imports by establishing commercial timber resources through fast growing plantations, the gap between domestic supply and demand is huge and will continue to be filled by imports in the near future.

The functions of wood-processing industry associations should be strengthened so they can be a bridge between the government and wood processing mills. Also, due to their close connection with enterprises, industry association should help the government to provide better data on production, distribution, consumption, etc.

## INTRODUCTION

Since the late 1980s, China has played an increasingly major role in world forestry, both as a producer and a consumer. The booming Chinese economy has led to an ever-increasing domestic demand for high quality value-added wood products. As a result, China has become one of the leading wood-consuming countries in the world. In 2003, the following items had a world ranking as follows: industrial roundwood second, sawnwood fifth, wood-based panels, pulp, paper and paper boards second.<sup>1</sup> At the same time, the Chinese forest industry has grown rapidly to meet the increasing demand of for wood products, both at home and abroad. For example, China's plywood production now exceeds U.S. production, making China the largest plywood-producing country in the world. China has also emerged as one of the most important players in the pulp and paper market contributing more than 50% of the global production growth in paper and board in the last decade, becoming the second largest producer in the world (He and Barr 2004).

Fast-growing demand for wood products in China together with limited domestic timber resources and a rapidly expanding export-oriented forest industry have contributed to increases in imports of wood products. Today, China has become a major net importer of timber and ranks first in log imports in the world.

This paper gives a brief overview of China's timber market and its unique distribution system as well as a description of major actors in this market.

## CHINA'S TIMBER MARKET AND DISTRIBUTION SYSTEM

A simplified description of China's timber market is presented in Figure 1. The following text describes the major components: production, distribution, imports and exports, processing, and end uses. Timber production and distribution in China have gone through three distinct periods: (i) full state-centered procurement and allocation; (ii) the co-existence of state control and market liberalization; and (iii) liberalization under government regulation. The production and distribution of timber from the publicly-owned forests of northern China was completely subjected to state allocation prior to 1985. Between 1985 and 1998, a large proportion was subjected to planned allocation, while a small amount was liberalized. After 1998, the production and distribution of Northern timber was fully liberalized (Zhu and others 2004). Nevertheless, timber harvest and transport remain under state regulation as logging and transport permits are issued by the government. A similar pattern governed timber production and distribution in the southern part of the country where collectively-owned forests predominate. Prior to 1980, timber marketing in Southern China was subject to state-planned allocation. In 1980, the government piloted the liberalization of the timber market in several areas of the country and in 1985 state-planned allocation was abolished, allowing for full liberalization (Zhu and others 2004). These zigzagging changes in policy led to uncertainty over

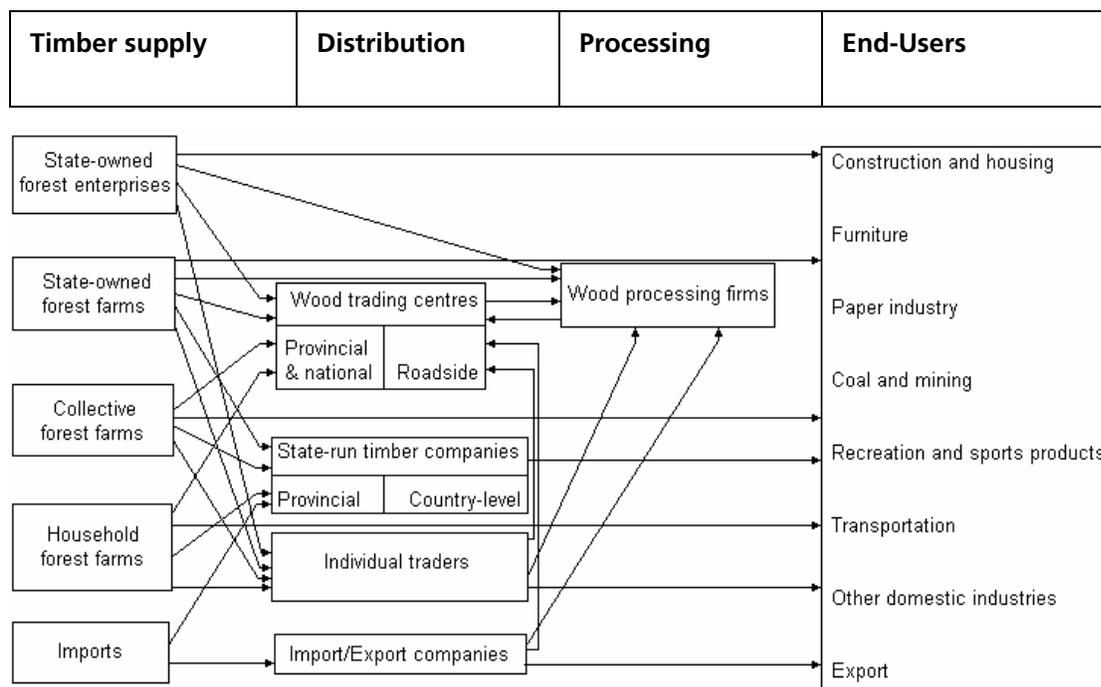
---

<sup>1</sup> These rankings are calculated based on volume. Consumption equals production plus net imports (imports minus exports). Source of data: "FAOSTAT Database," Food and Agriculture Organization of the United Nations (FAO) 2004: Accessed via <http://faostat.fao.org/> on April 3, 2005. "Pulp" refers to "pulp for paper" only.

property rights and subsequently to deforestation in some areas. (Hyde et al. 2003). The government resumed its monopoly in timber procurement for the entire country in 1987. Only in 1998, when China implemented the Natural Forest Protection Program, did liberalization of domestic timber trade begin.<sup>2</sup>

Figure 1 demonstrates the timber production and distribution system in China. Different timber producers use different channels to distribute their products. Wood processing firms receive raw materials directly from timber producers, timber markets, or timber companies and market their products to end-users, individuals that utilize timber to manufacture final wood products, such as furniture. Wood-processing firms are treated as a part of the distribution channel that connects timber producers and end-users.

**Figure 1: General Framework of China’s Timber Market**



Timber markets (once called “wood-trading centers”) are now established as wholesalers. These new players have emerged as results of the market-oriented economic reform. Currently, there are hundreds of timber markets of different size in both major timber-producing regions (e.g. Heilongjiang Province) and timber-consuming regions (e.g. Shanghai, Guangzhou and neighboring provinces). Timber prices are fully determined by markets, and trading volumes have been increasing over the past several years.

<sup>22</sup> There is no documentation from SFA showing this full liberalization and when it started. The information was collected through a series of interviews with SFA officials and industry personnel. The starting dates for full liberalization may vary in different provinces. For example, in Fujian Province, a county called Yongan started the forest tenure reform in 1999 as a pilot, when non-state timber buyers/traders were allowed to buy timber directly from farmers. This indicates that a full liberalization of timber procurement in Fujian Province did not begin until 2000.

State-owned timber companies were once the major distributors of wood under the planned economy. They existed mainly in Southern China and focused on wood procurement within and outside the provinces on behalf of the government. The quantity traded through state-owned companies has dropped, however, since the adoption of the market economy, as individual traders have experienced an increasingly important role in distributing timber in both state-owned and collectively owned forest regions.

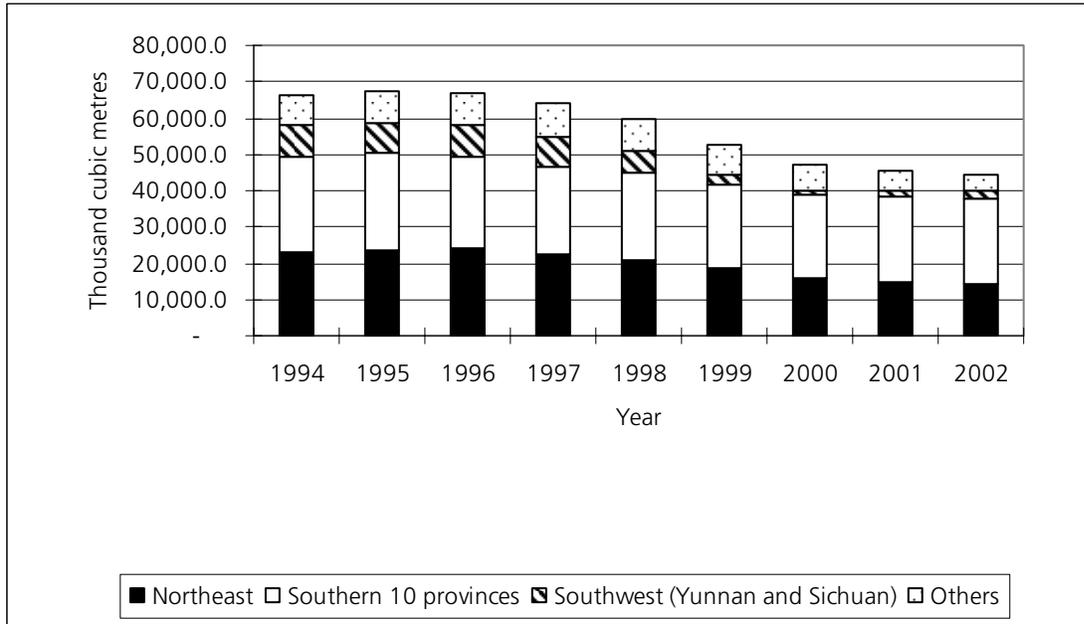
## **TIMBER PRODUCERS**

China's timber resources are distributed in three major areas: the Northeast, including the Heilongjiang Province, the Jilin Province and the Inner Mongolia Autonomous Region; the Southwest, including the Sichuan and Yunnan Provinces; and ten provinces in the South, namely Guangdong, Guangxi, Hunan, Hubei, Fujian, Jiangxi, Guizhou, Zhejiang, Anhui, and Hainan. State-owned forests are mainly in the Northeast and Southwest, while forests in the Southern ten provinces are mostly collectively-owned forests. Figure 2 illustrates China's timber production from 1992-2002 according to official statistics from the State Forest Administration.

Figure 2 shows the decrease in timber production since 1995 with this decline increasing after implementation of the Natural Forest Protection Program (NFPP) or logging ban in 1998. Timber harvesting in state-owned forests has decreased greatly, while the share of timber production from collectively-owned plantation forests has increased.

It should be noted that Figure 2 is based purely on SFA official statistics, which mostly reflect the planned production according the logging quota. A large portion of undeclared production is not taken into account. Industry sources have indicated that the real timber production number is almost double the official level due to a large-scale over-quota logging (FAS 2001a). WWF estimated that 33 million cubic meters of industrial timber production were undeclared in 2002 and 35.7 million cubic meters in 2003 (Zhu et al. 2004). This indicates that undeclared production is almost the same level as the officially declared number.

**Figure 2: China's Timber Production 1992-2002 – Official Statistics**



*Source: SFA, China's Forest Statistical Yearbook (various years).*

Table 1 briefly describes the status of different timber producers. There are two types of timber producers in state-owned forest regions, state-owned forest enterprises and state-owned forest farms. There are 135 state-owned forest enterprises, mainly located in Northeast and Southwest China, where natural forests are the major resources. State-owned forest enterprises have rights to market their timber directly. Timber production of these enterprises dropped greatly after the implementation of the logging ban in 1998. According to the SFA statistics, timber production from these enterprises was 14.56 million cubic meters in 2002 (SFA 2002), a substantial decrease compared to the 30 million cubic meters that were harvested annually before 1997.

**Table 1: Description of Timber Producers**

Timber Producers (Numbers)	Major Locations	Timber Resources & Major Species	Timber Production (2002)
State-Owned Forest Enterprises (135)	Northeast	3.18 billion m <sup>3</sup> (31.52%) Coniferous: Larch, Korean pine, fir Deciduous: Oak, birch, poplar	14.56 million m <sup>3</sup>
	Southwest	2.73 billion m <sup>3</sup> (27.07%) Coniferous: Chinese fir, Yunnan pine Deciduous: Oak, birch	
State-Owned Forest Farms (about 4342)	Nationwide, typically Northwest	0.76 billion m <sup>3</sup> (7.55%)	8.48 million m <sup>3</sup>
Collective Forest Farms	Southern 10 provinces	1.8 billion m <sup>3</sup> (17.79%)**	2.39 million m <sup>3</sup>
Household Forest Farms	South & North plain regions	0.37 billion m <sup>3</sup> (3.65%)**	18.92 million m <sup>3</sup>

*Note: \*\*No data on timber resources by different farm types. The figures showed here represent growing stocks by region, i.e. 1.8 billion m<sup>3</sup> refers to timber resource in the southern 10 provinces, and 0.37 billion m<sup>3</sup> are the resources in the northern plain provinces.*

*Source: SFA (2002); China's Forest Resources Inventory (1994-1998).*

There are over 4000 state-owned forest farms nationwide, the majority of which are located in northwest China. Their total timber production in 2002 reached 8.48 million cubic meters (SFA 2002). State-owned forest farms can market their timber products by selling directly to either end users or timber markets.

Timber producers in regions consist of two major types: collective forest farms and household forest farms. Collective forest farms are mainly located in collective forest regions which are concentrated in the southern provinces such as Fujian and Guangdong. Under the planned economy, timber products from collective forest farms were procured at the county or province level by state run timber companies at government set prices. Since the adoption of the market-oriented economy, fewer timber products go through this procedure.

Household forest farms are most often located in the collective forest regions of southern China and northern China. These regions have a large number of plantations and have experienced rapid growth in timber production. This is consistent with the government's policy to protect natural forests by shifting timber production from state-owned natural forests to collectively owned plantation forests. In 2002, official timber production by household forest farms totaled approximately 19 million cubic meters (SFA 2002).

## **TIMBER DISTRIBUTORS**

The diminishing market share of Chinese state-run timber companies has caused timber markets at regional, provincial and city levels to become China's major timber distributors. According to a recent survey, there are 995 timber markets in China, including 344 wholesale and 651 retail markets. More than 70% of these markets opened during 1990s. Less than 10% (82) of these markets, however, are well established, while the remaining ones are informal markets (FAS 2001b).

Timber markets tend to be differentiated along regional lines that are created by differences in local resources and economies. Traditionally, timber markets in eastern and southern coastal (consuming) regions import more timber products than regions in the north and west. Following the logging ban in 1998, however, a sudden surge of imports of Russian timber turned northeast China into a major timber import centre. As a result, large-scale timber markets were constructed in Suifenhe and Manzhouli, the two largest entry gateways for Russian timber. These two markets are very narrowly focused on importing, processing and distributing Russian logs<sup>3</sup> (FAS 2001b).

Individual traders are becoming important players in Chinese timber distribution system, particularly in dealing with timber imports. A study conducted on the China-Russian Far East log commodity chain (Song et al. 2005) reveals that there are over 400 individual traders nationwide or located at gateways who have been engaging in importing Russian timber for more than 5 years. Most of them come from Putian County in Fujian province, which resulted in somewhat of a market monopoly. In most cases, individual traders serve as middlemen and locate themselves at major ports of entry, such as Suifenhe in Heilongjiang province and Manzhouli in Inner Mongolia for Russian wood imports, as well Zhangjiagang in Jiangsu province for log imports from other countries. More government intervention might be needed to regulate timber distribution to avoid unfair competition among traders. Trade associations should play more crucial roles in these aspects.

## **WOOD-PROCESSING INDUSTRY**

The wood-processing industry referred to here is the primary conversion industry, including sawnwood and wood chips, plywood, fiberboard, particleboard and other wood-based panel sectors. China's wood-processing sectors vary enormously in sophistication. Pit sawyers operate alongside computer controlled sawmills; family-operated plywood mills using dried veneers coexist with modern particleboard and medium density or high density fiberboard (HDF) plants.

---

<sup>3</sup>Forest Trends has performed an analysis on China's timber imports from Russia and these two major markets ("Meeting China's demand for forest products: An overview of import trends, ports of entry and supplying countries with emphasis on the Asia Pacific region" and "RFE-China softwood log commodity chain and livelihood analysis").

## **SAWNWOOD INDUSTRY**

Mostly data on the sawnwood industry are limited to official sources. However, the sawnwood sector has been experiencing dynamic changes which official data probably does not represent. Traditionally, sawmills were located in forest-rich regions and most of the large sawmills were state-owned. Statistics illustrate that most sawmills are located in the northeast state-owned forest regions and southern collective forest regions. Official 2002 data shows the total sawnwood production from these regions accounted for over 90% of national total (CAF 2004a) since this data focuses on large mills and most certainly underestimates peak production. After implementation of the logging ban in 1998, however, almost all state-owned sawmills were closed due to a lack of resources and many large sawmills are currently operating far below their capacity. Meanwhile, numerous small family-owned sawmills or small sawnwood-processing facilities have emerged, scattered near timber market places. According to the Chinese Academy of Forestry (CAF), there are 10,350 sawmills in China, only 350 of which are considered large with an annual capacity of 30,000 cubic meters or more (CAF 2004a).

Due to the limited domestic timber supply, sawnwood production in China has remained relatively low during the past ten years. Because of this, sawnwood has been strictly limited in the construction sector. Official data illustrates that sawnwood production was 8.52 million cubic meters in 2002 and 11.27 million cubic meters in 2003. Since most sawmills are privately owned and small in scale, it is believed that these figures underestimate actual production. The Chinese Academy of Forestry estimates the real production of sawnwood was as high as 53 million cubic meters in 2002 (CAF 2004a).

## **WOOD-BASED PANEL INDUSTRY**

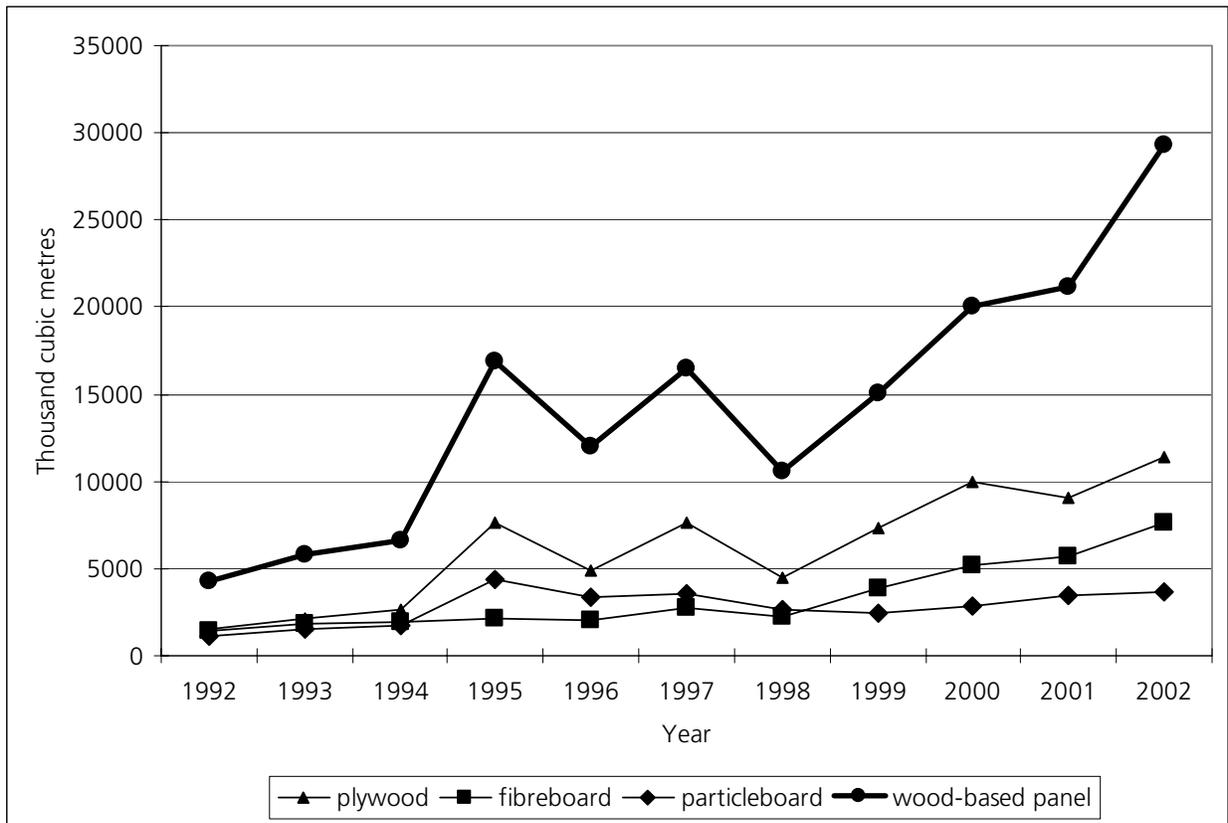
Since the 1980s, the Chinese government has encouraged investment in the wood-based panel industry which resulted in a rapid increase in wood-based panel production. Unofficial sources indicate there are more than 6,000 wood-based panel plants in China, plywood mills account for over 80% of them. The fiberboard sector experienced the second highest growth, particularly MDF (medium-density fiberboard). Industry sources reveal that by June 2003, there were 370 MDF plants in China with a total annual capacity of 14 million cubic meters (CAF 2004b).

By 2002, wood-based panel production in China totaled 29.3 million cubic meters, making China the second largest wood-based panel producing country in the world (CAF 2004b). 2003 data shows a sudden surge in wood-based panel production, which reached 45.53 million cubic meters, a 55%-increase over 2002. The major wood-based panel products in China are plywood, particleboard and fiberboard, as shown in Figure 3. In 2003, the production of plywood, fiberboard and particleboard totaled 21.02 million cubic meters, 11.28 million cubic meters and 5.47 million cubic meters respectively and increased by 85%, 48% and 18% respectively from 2002.<sup>4</sup>

---

<sup>4</sup> Besides plywood, fibreboard and particleboard, other wood-based panel products include block board and veneer.

**Figure 3. China's Wood-Based Panels Production – Official Statistics**



*Source: SFA, China Forestry Statistical Yearbook (various years).*

In 2003, China's plywood production exceeded U.S. production and China became the largest plywood-producing country in the world. The fast development of China's plywood industry coincided with the rapid development of China's fast-growing forests, especially the poplar base, which provides adequate raw material to meet the expanding international market.

Wood-based panel production is concentrated in four provinces: Hebei, Shandong, Jiangsu and Zhejiang. Production of wood-based panels from these four provinces totaled 31.18 million cubic meters, accounting for 68% of the national total (SFA 2004).

Non-state enterprises are playing a more important role in China's wood panel industry. For example, there are four plywood manufacturing bases in China, namely Pizhou in Jiangsu Province, Jiashan in Zhejiang Province, Linyi in Shandong Province and Zhengding in Hebei Province. All plywood mills in these manufacturing bases are privately owned and have experienced rapid growth in the past several years. Most of these mills are small family operations. One of the four plywood manufacturing bases in China, Pizhou, hosts 2,913 plywood mills that produced 3 million cubic meters (15% of China's total) and exported 750,000 cubic meters (40% of China's total) of plywood in 2003. The biggest competitive advantage these mills have is the low price of their product due to the abundance of local, fast-growing poplar timber (FAS 2004).

## IMPORTS

In the late 1970s, the Chinese government applied very strict mechanisms for approving imported commodities and required companies to be licensed. Under this mechanism, only a few state-authorized trading companies were allowed to trade for forest products. During the 1980s, regulation of the import trade was gradually loosened, and by 1999, import permit requirements for wood products were abolished, resulting in a significant increase of companies with import authorization. Currently, any company that has legally registered for international trade is allowed to import wood products.

Nearly half of China's total commercial timber has been supplied by imports in recent years (SFA 2003).<sup>5</sup> For example, in 2003, imports of timber products accounted for 44% of China's total timber supply (SFA 2004). Table 2 shows the volumes of wood products China imported in 2003. Although China imports more pulp and paper products, imports of logs have experienced rapid growth during the past several years. On the other hand, a substantial share of the wood grown or imported into China is exported in the form of processed timber, paper and finished or semi-finished manufactured products. Currently, exports account for nearly 10% of China's total forest product consumption. Growing investment in China's furniture industry and the rapid development of its paper and plywood industries have boosted furniture, paper products and plywood exports and approximately 50% of all timber imports, by volume, are exported in finished product form. Furniture exports have increased considerably over the past several years. Export furniture, paper and plywood was 32%, 25% and 19% respectively of total exports of wood products in 2003.

---

<sup>5</sup> For more analysis on China's imports, please check "Meeting China's demand for forest products: An overview of import trends, ports of entry and supplying countries with emphasis on the Asia-Pacific region" and "China's forest product import trends 1997-2002: Analysis of customs data with emphasis on Asia-Pacific supplying countries." Both papers are, or will soon be, available on the Forest Trends website at <http://www.forest-trends.org>

**Table 2: China's Imports & Exports of Timber Products**

	2003 Imports (RWE m <sup>3</sup> )	2003 Exports (RWE m <sup>3</sup> )
<b>Forest Products<sup>6</sup></b>	<b>106,923,273</b>	<b>26,777,117</b>
<b>Timber Products</b>	<b>40,379,153</b>	<b>11,457,848</b>
Logs	25,455,970	9,397
Lumber	7,874,210	721,084
Plywood	1,994,455	5,105,000
Veneer	558,487	266,668
Particleboard	935,999	101,226
Fiberboard	2,509,554	114,227
Wood Chips	503,536	2,046,506
Wood Furniture	52,635	8,545,555
<b>Pulp</b>	<b>47,927,090</b>	<b>73,202</b>
Wood Pulp	23,414,740	14,952
Paper & Paperboard	18,556,521	6,699,791

Source: China's Customs (2003). Source data has been converted to estimate roundwood equivalent volume. For the conversion factors used, please see "China's Forest Product Import Trends 1997-2002: Analysis of Customs Data with Emphasis on Asia-Pacific Supplying Countries."

RWE = Roundwood Equivalent Volume.

## END USERS

Continued rapid economic development, coupled with current low per-capita consumption of wood products, indicates there is the potential for a substantial increase in Chinese demand for wood products. Studies show that construction, furniture and paper-making are the top three timber-consuming industries. Table 3 shows the structure of industrial timber consumption estimated by SFA.

**Table 3: Structure of Industrial Timber Consumption by End-Users**

Industries	Timber Consumption 2002 in million m <sup>3</sup> (%)
Total Timber Consumption by Domestic Industries	123.76 (100%)
Construction and Housing	88.38 (71.4%)
Furniture	14.02 (11.3%)
Paper Industry	9.63 (7.8%)
Coal and Mining	7.35 (5.9%)
Vehicle, Ship and Boat Manufacturing	2.69 (2.2%)
Others	1.69 (1.4%)

Source: SFA (2003).

<sup>6</sup> Forest products include timber products plus pulp & paper. Timber products include all commodities in Chapter 44 of China's Customs HS system plus wooden furniture.

Other than industrial consumption, a quite large portion of Chinese domestic timber is for fuelwood and farmers' household uses. FAO estimated that fuelwood accounts for nearly half of China's total wood consumption (FAO 2003), while SFA's report showed that China's total wood consumption (industrial plus non-industrial) in 2002 was 183 million cubic meters, including fuelwood and household consumption of 49 million cubic meters (SFA 2003). SFA's number seems much lower than FAO's estimates, raising again the issue of the reliability of data from different sources.

## **CONSTRUCTION AND HOUSING SECTOR**

Although the Chinese government encourages the use of non-wood materials in construction, the high demand for wood in the housing sector makes construction the largest wood consumer among all industries. In 2002, 88 million cubic meters of timber were consumed by the construction sector (SFA 2003).<sup>7</sup> The government's aim to improve Chinese living conditions by building affordable apartments will only increase wood consumption in the sector.

In China, most urban buildings are concrete. Wood for structural use in urban construction is prohibited by the government as a major wood-saving policy. Instead, wood is used for concrete forms, windows, doors, joists, beams and rafters as well as for interior decorations, such as kitchen cabinets, flooring, molding and wall panels (Zhu et al. 2004). High economic growth has caused a surge in the construction of housing, luxury hotels and office spaces. Increased standards of living and the emergence of a wealthy class of consumers, particularly in large cities such as Beijing, Shanghai and Guangzhou, have translated into an increased demand for high-quality wood for home and office decoration and furnishing. According to China's Building Decoration Association, China's interior decoration market will grow at a rate of 20% annually over the next few coming years (FAS 2003).

## **FURNITURE SECTOR**

After twenty years of rapid development following economic reform and "opening to the outside", China's furniture industry has achieved considerable scale and vigor, accounting for nearly one tenth of world's total furniture output in 2002 (Zhuang and others 2003) and ranked fifth in the world (Anonymous 2004). The annual growth of Chinese furniture industry has maintained an average of 15% for the last 20 years.

The total output value of the furniture industry in 2003 reached US\$24.7 billion, an increase of 22% compared to 2002. Currently, there are over 50,000 furniture-manufacturing enterprises in mainland China that employ 5 million people, putting China at the top of the world's furniture industries (Anonymous 2004).

Among the furniture-manufacturing enterprises, privately-owned enterprises are most predominant, with foreign-funded enterprises and civil-run enterprises occupying major roles. Furniture manufacturers from Taiwan, Hong Kong, Singapore and other Southeast Asian countries relocated their facilities to China to take

---

<sup>7</sup> In urban areas, construction companies mainly use wood for non-structural applications, such as interior decoration and furnishing. In the countryside, farmers use wood for both structural and non-structural applications.

advantage of low business costs. Most furniture-manufacturing enterprises are small-scale, have distinctive regional characteristics and are mainly found in south China, east China, north China and northeast of China. Concentration is very high in the Guangdong province in southern China, where there are more than 6000 enterprises accounting for 12% of the total. Guangdong is home to 30% of the country's overall furniture production (by value). Its exports make up an even higher percentage (50.5%) of the nation's total furniture export value (Xu, Cao and Hansen 2003), followed by the provinces Zhejiang, Fujian and Jiangsu.

SFA statistics show that 14 million cubic meters of timber were consumed by the furniture industry in 2002 (SFA 2003). The increasing demand for Chinese-produced furniture both domestically and internationally suggests timber consumption will grow in the coming years.

## **PULP AND PAPER INDUSTRY**

There are roughly 3,500 paper mills in China that produced about 37.8 million tons of paper and paperboard in 2002 (China Technical Association of Paper Industry 2003). Almost all the paper mills source their pulp from their own integrated pulp mills. Most paper mills are located in eastern and southern China.

For decades, the Chinese paper industry has relied heavily on imports to meet the growing domestic and re-export demand. Historically, the industry was characterized as “small-scale,” with “low processing technology,” “insufficient wood fiber” and a “minimum capacity for producing high-grade paper” (Zhu et al. 2004). Non-wood fiber (agricultural residue) has been the major raw material and continues to account for some 80% of total pulp consumed by Chinese paper mills. These traditional agriculture-based mills are known to cause severe water pollution. Currently, wood pulp accounts for over 20% of total pulp consumed by Chinese paper mills. However, demand for high-grade paper (e.g. coated white paperboard, kraft linerboard), which requires more wood fiber, has increased. As a result, imports of wood pulp continue to grow while large paper mills begin to secure their own raw material bases by establishing large-scale plantations. He and Barr (2004) estimated that China's annual consumption of fiber will grow from 40 million tons in 2003 to reach nearly 60 million tons by 2010. Of this, approximately 58% will come from recovered paper, 25% from wood based pulp and 17% from non-wood pulp, made largely from bamboo and agricultural residues.

## **CONCLUSION**

Although the government regulates domestic timber production by such means as logging quotas and harvesting permits, China's timber market has gradually changed as a result of market liberation. Government has loosened timber procurement and pricing. However, local administrative procedures such as requiring harvesting and transportation permits could become disincentives for timber producers to adjust harvesting and pricing according to market demand. The existence of logging quotas has caused an unintentionally large

portion of undeclared production, since local officials try to not to report production in excess of logging quotas. Policy reforms will be needed to address such problems. China's primary wood-processing industry has experienced a fast growth in past years. Privately owned small-scaled enterprises account for a large portion in the industry, particularly in sectors like sawnwood and plywood. Non-public investments in the sector are encouraged by the government, a trend that will continue. However, lack of quality data about the industry undermines informed understanding of market dynamics and therefore precludes effective policy interventions. Industry associations should play an increasingly strong role in providing government with more accurate and reliable data related to the industry.

Timber markets and individual traders are playing an important role in China's timber distribution. More government intervention might be needed to regulate timber distribution to avoid unfair competition among traders. Trade associations should play more crucial roles in these aspects.

China's strong demand for timber products will continue to grow in the coming years, driven by the rapidly developing construction, furniture and panel sectors. More wood fiber will be consumed by the paper-producing industry, driven by the increasing demand for high-quality paper and paper products. The gap between domestic supply and demand will grow and timber products will continue to be imported to fill this gap.

## REFERENCES

- Anonymous 2004. Brief summary of major furniture-producing countries in the world.  
<http://www.forestryeb.com/news/shownews.asp?newsid=136>
- CAF (Chinese Academy of Forestry). 2004a. Overview of China's sawnwood sector. Forest Trends/CIFOR working paper. Washington, D.C.: Forest Trends.
- CAF (Chinese Academy of Forestry). 2004b. Overview of China's wood based panel sector. Forest Trends/CIFOR working paper. Washington, D.C.: Forest Trends.
- China Technical Association of Paper Industry 2003. Almanac of China paper industry.
- FAO (Food and Agricultural Organization of United Nations) 2003. State of the World's Forests, Rome.
- FAS (Foreign Agricultural Service). 2001a. China, Peoples Republic of Solid Wood Products Annual 2001. GAIN Report #CH1032. <<http://www.fas.usda.gov/gainfiles/200107/120681273.pdf>>
- FAS (Foreign Agricultural Service). 2001b. Timber markets in China. GAIN Report #CH1071. <<http://www.fas.usda.gov/gainfiles/200111/135682796.pdf>>.
- FAS (Foreign Agricultural Service) 2004. China, Peoples Republic of Solid Wood Products Annual 2004. GAIN Report #CH4024. <http://www.fas.usda.gov/gainfiles/200410/146117843.pdf>
- He, D., and C. Barr. 2004. China's pulp and paper sector: an analysis of supply-demand trends and medium projections. International Forestry Review Vol. 6(3-4), 2004.
- Hyde W.F., Belcher, B., and Xu, J. 2003. China's forests – Global lessons from market reforms. Washington D.C.: Resources for the Future; Bogor, Indonesia: CIFOR.
- SFA (State Forestry Administration). 2002. China forestry statistical yearbook 2002. Beijing: China Forestry Publishing House.
- SFA (State Forestry Administration). 2003. China forestry development 2003. Beijing: China Forestry Publishing House.
- SFA (State Forestry Administration). 2004. China forestry development 2004. Beijing: China Forestry Publishing House.
- Xu, M., X. Cao, and E. Hansen. 2003. China's wood furniture industry. *Asian Timber* (September/October): 35-39.
- Zhu, C., R. Taylor, and G. Feng, G. 2004. China's wood market, trade, and environment. Monmouth Junction, NJ: Science Press USA Inc.