



## **FOREST CONNECT CHINA**

**A case study of small and medium forest  
enterprise development in Zhejiang Province**



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**Rome, 2010**

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## **Acknowledgments**

The authors wish to thank the Department for Planning and Development of the State Forestry Administration, Zhejiang Forestry Department, Zhejiang Forestry Association, the Forestry Bureau of Huzhou City, the Forestry Bureau of Anji County, the Forestry Bureau of DeQing County and the Forestry Office of Nanxun District for their collaboration during the ten-day survey mission in Zhejiang Province. Special thanks also go to the district staff and collectors who shared their valuable time and information.

The team received excellent support and assistance from Dr He of Zhejiang Academy of Forestry, Mr Dong of the Anji Bamboo Association, Ms Zhang of the HuZhou City Forestry Bureau, Ms Liu of the DeQing County Forestry Bureau, Mr Zhang of the Jiashan Plywood Association and Mr Gao of the Jiashan Agriculture and Forestry Bureau.

Thanks additionally go to Ms Qiang Ma and Ms Sophie Grouwels from FAO, for providing the opportunity to more deeply research small and medium forest enterprises in Zhejiang Province.

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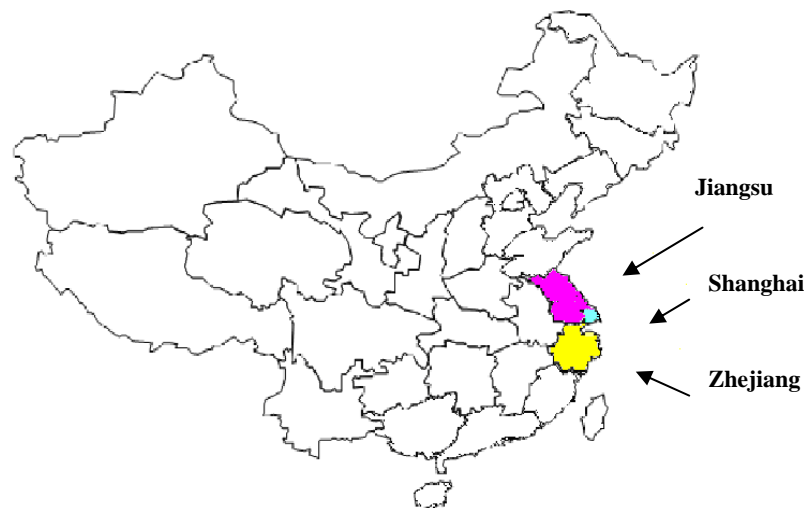
## **Acronyms**

GDP	Gross domestic product
ISO	International Organization for Standardization
OEM	Original Equipment/Entrusted Manufacture
R&D	Research and development
SME	Small and medium enterprise
SMFE	Small and medium forest enterprise

## 1. Background

Zhejiang Province is located in the south wing of Yangtze Delta, on China's southeast coast, with the East China Sea to its east, Fujian Province to the south, Jiangxi and Anhui provinces to the west, and Shanghai and Jiangsu Province to the north. It is one of China's smallest provinces, with a land area of 101 800 km<sup>2</sup> accounting for 1.06 percent of the country's total area. The three provinces of Zhejiang, Shanghai and Jiangsu form the Yangtze Delta Economic Circle (Figure 1), China's most economically developed region, where the potential for additional development is greatest. This region has been a leader in the fostering of a private economy since the outset of China's economic reform, and is highly competitive in the domestic processing and manufacturing market.

**Figure 1. Provinces of the Yangtze Delta Economic Circle**



As shown in Table 1, in 2008 the gross domestic product (GDP) of Jiangsu Province was 3 trillion yuan, the third highest amongst China's provinces; Zhejiang Province came in fourth with 2.1 trillion yuan; and Shanghai seventh with 1.3 trillion yuan. The Yangtze Delta Economic Circle covers a total area of nearly 205 800 km<sup>2</sup>, or 2 percent of the whole country. The region's 136 million people accounts for 10 percent of China's total population. Its total output value of 6.5 trillion yuan contributes 20 percent of GDP; and its exports in 2006 accounted for 40 percent of the country's total GDP. The high degree of economic development in the Yangtze Delta has provided a driving force and space for Zhejiang's economic development.

**Table 1. Economic performance of the Yangtze Delta Economic Circle**

<b>Province</b>	<b>GDP (trillion yuan)</b>	<b>Ranking among China's provinces</b>	<b>Area (km<sup>2</sup>)</b>	<b>Population</b>
Jiangsu	300.24	3	100 000	73 810 000
Zhejiang	211.07	4	100 000	46 470 000
Shanghai	130.80	7	5 800	16 250 000

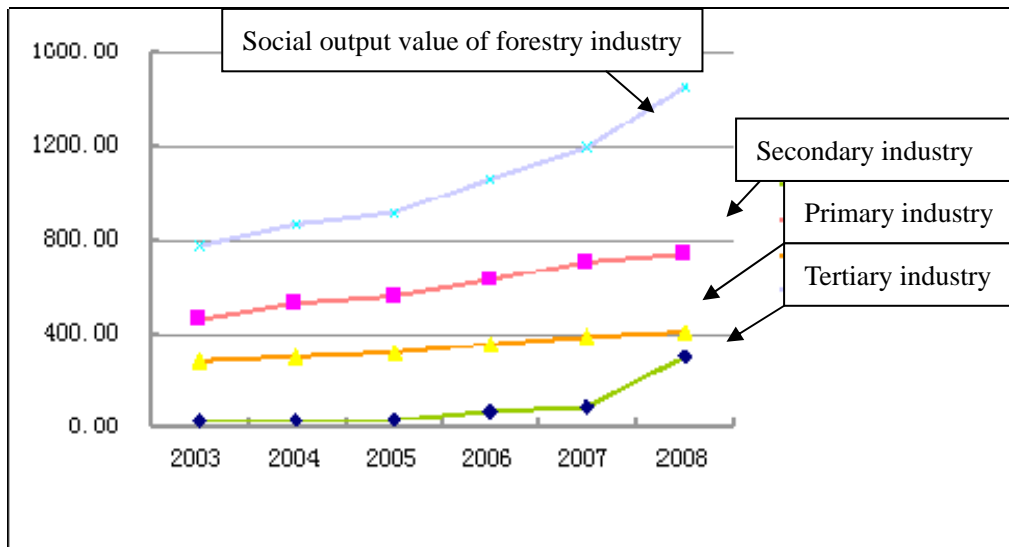
Owing to its resources and environment, Zhejiang is known as “seven mountain, one water and two land”. Mountains and hills account for 70.4 percent of its total area, plains and basins for 23.2 percent, and rivers and lakes for 6.4 percent. The cultivated area is only 2.0817 million ha. Forest land covers 6 688 600 ha, accounting for one-thirtieth of China’s total, while wood storage of 205 million m<sup>3</sup> accounts for only one-sixtieth of the national total. Zhejiang is therefore regarded as having few resource endowments. However, its development of a functioning forest ecosystem, comparatively robust and advanced forest industry and forest cover of 60.5 percent make it a good province in which to study the development of forest industries.

### **Forest industry in Zhejiang**

Zhejiang’s socio-economic, environmental and geographic situation has allowed it to achieve rapid growth in the forest industry. In 2008, the output value of forestry was 145.622 billion yuan, with an annual growth rate of 6.06 percent. Of this total, primary industry accounted for 41.183 billion yuan, or 28.28 percent, having increased by 5.6 percent; secondary industry for 74.303 billion yuan, or 51.02 percent, having increased by 4.6 percent; and tertiary industry for 30.135 billion yuan, or 20.70 percent, having increased by 11 percent. Figure 2 shows the output values of forestry in recent years, and the proportions accounted for by these three levels of industry.



**Figure 2. Forestry output value, 2003 to 2008**

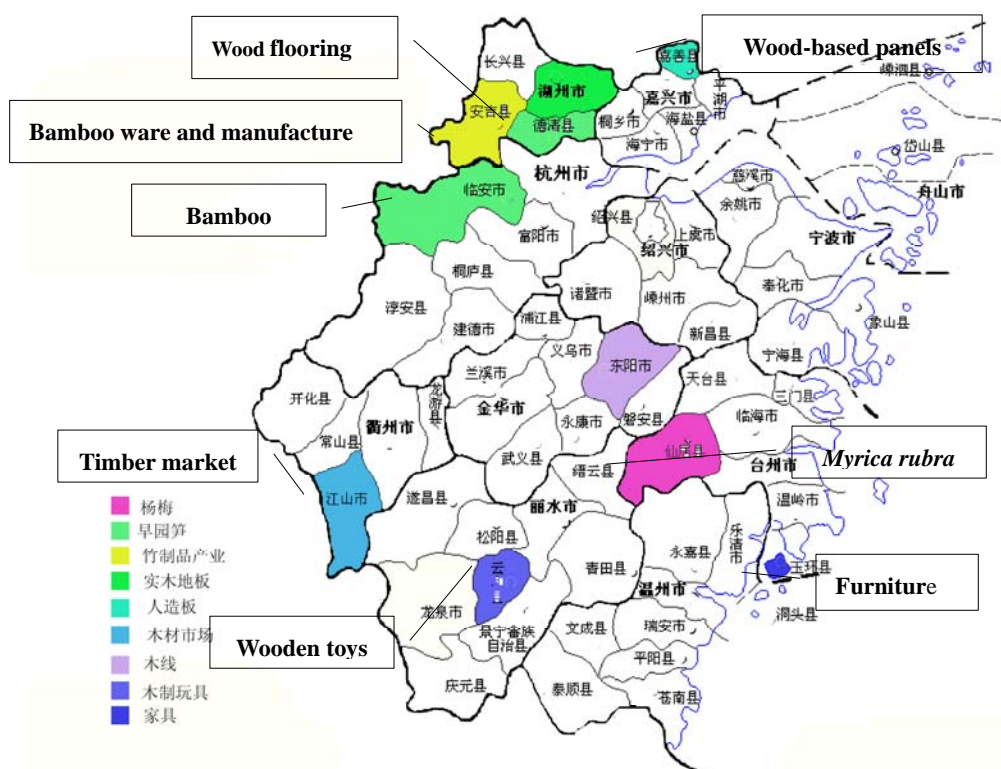


The tropical timber processing industry is of great importance in the Yangtze Delta Economic Circle. Zhangjiagang in Jiangsu Province is China’s largest port of entry, through which one-third of the country’s tropical log imports arrive, of which 60 percent are subsequently transported to Jiangsu, Zhejiang, Shanghai and Shandong (ITTO, 2007). Shanghai is China’s main centre for the manufacturing industry and for consumption. Located in this economically developed area with a relatively mature market economy, Zhejiang’s industries follow the pattern of “one county, one product”, “one township, one product” or even “one village, one product”.

In 2007, 81.3 percent of Zhejiang’s total forest industry output came from a range of forest-related industries: processing and manufacturing of wood and bamboo and rattan palm products accounted for 28.0 percent; harvesting of forest products for 17.9 percent; manufacturing of rattan furniture and handicrafts for 14.9 percent; forest food processing for 5.7 percent; flowers and seedlings for 6.6 percent; and forest tourism for 8.2 percent.<sup>1</sup> Of particular importance is the wood-based panel industry in Jiashan, Nanxun and Deqing; the wood flooring industry in Nanxun and Lishui; the furniture industry in Wenzhou and Jiashan; the wooden toy and handicraft industry in Yunhe County of Lishui; the bamboo products industry in Anji (including bamboo flooring, plywood, handicrafts and crafts) and the flower seedling and forest products industry in Shaoxing and Ningbo. Figure 3 depicts the main forest industries in several cities.

<sup>1</sup> Zhejiang forestry information website: [www2.zjly.gov.cn/gb/html/news/2003/58642.html](http://www2.zjly.gov.cn/gb/html/news/2003/58642.html).

**Figure 3. Forest industries in Zhejiang, by region**



Hangzhou, Ningbo and Shaoxing are centres for flower seedlings, forest products and forest tourism. The primary forest industry in Hangzhou City contributes 20 percent of total provincial forestry output. In Shaoxing, in 2007, the planting and harvesting of forest products contributed 3.623 billion yuan, or 14.8 percent of total provincial forestry output, and the flower seedling industry contributed 1.632 billion yuan, or 17.9 percent.

Taizhou and Wenzhou are the main producers of furniture, toys and handicrafts, producing more than half of Zhejiang’s total output of these products. During the tenth Five-Year Plan, the average annual outputs of furniture, toys, and handicrafts in the two cities were 5.442 billion and 1.459 billion yuan, respectively, accounting for 42.6 of Taizhuo’s and 37 percent of Wenzhou’s total output values from forestry, and 43.3 and 11.6 percent of total provincial output value from furniture, toys and handicrafts. Since 2006, a number of plywood companies have switched to furniture production in Jiaxing and Huzhou. By 2007, the furniture output value of Jiaxing had exceeded that of Wenzhou, and accounted for 16.8 percent of total provincial furniture output.

Wood-based panels are the main product in Jiaxing and Huzhou, which account for more than half the province’s total production. Most of the wood products used in daily life are manufactured in Huzhou and Jinhua. Nanxun in Huzhou is China’s largest producer of solid

wood flooring, with more than 300 enterprises. In 2007, it produced 18.3763 km<sup>2</sup> of solid wood flooring, accounting for 60.5 percent of the total provincial output. Dongyang in Jinhua City is China's largest producer of wooden toys and handicrafts, with more than 1 000 processing companies of different sizes. Yunhe County in Lishui is the largest producer of wooden toys in China, with 195 processing enterprises, from which 85 percent of production is for export. Longquan City is China's largest producer of wooden umbrellas, with 15 enterprises producing 1.5 million umbrellas per year, worth a total of 324 million yuan.

Although most individual enterprises are not large, there is a clear cluster effect within the region, with many enterprises producing similar products and sharing support services. It should also be noted that Zhejiang has fewer forest resources, so imports most timber for production and processing from outside the province; one-third of the bamboo processed in Zhejiang comes from neighbouring areas. For example, Nanxun District of Huzhou City lacks its own timber resources, but has taken advantage of its position as a trading centre for building materials and now has more than 300 enterprises producing solid wood flooring from imported timber, which it then re-exports. The district's annual production of solid wood flooring is more than 30 million m<sup>2</sup>, or about 40 percent of China's total (Jiang, 2007). The cluster of forest industries in Zhejiang is relatively highly specialized and regionally competitive, and there is a good deal of brand awareness.

### **Conditions for the development of the forest industry in Zhejiang**

The private economy in Zhejiang has developed rapidly from a zero point in the 1970s. This is due to socio-cultural factors and a business development tradition based on hard work and innovation, coupled with effective policy support. Collectively owned enterprises have gradually been converted to a range of different ownership types, leading to a comprehensive and strong private economy (Jin and Yin, 2007). This is the environment in which Zhejiang's forest industry has grown.

The high speed of this growth has depended on effective policy support from the local government. To cope with the problems of "one owner with several mountains or one mountain with several owners" that arose among individual household contractors during the 1980s, Zhejiang Province has promoted a joint-stock cooperative system since the mid-1990s. To stabilize farmers' contracted rights, the forest has been converted into shares, with the proceeds from its management allocated according to the shares held by individual farmers; forestry is directed towards more intensive and larger-scale farming; a joint-stock cooperative must have a mixture of newly developed and longer-established forest farms; and forest farms originally owned by village collectives have been converted to joint-stock management. In

addition, use rights over forest land and the ownership of timber are transferable; use rights over barren hills, slopes and wasteland suitable for forestation can be transferred by auction; the sale of living trees and the transfer of young forests is permitted; and timber enterprises are encouraged in order to create an industry raw material base (Mao, 2009). These policies have promoted the development of various management forms, including contracts, leases, joint-stock cooperatives, forest land auctions, land subletting and contracting by collectives, and foreign investment and management. Not only have these accelerated the flow of financial resources and optimized the allocation of production factors, but they have also facilitated participation in forestry investments, created more job opportunities, increased incomes for farmers, and promoted large-scale development of the forest industry.

The policy of supporting forestry development in Zhejiang Province is also reflected in relatively low taxes. In 2001, Zhejiang removed taxes on special agricultural products in the 25 less-developed regions, expanding this to cover the whole province in 2002. Products with this zero tax for forest management include bamboo shoots and dry and fresh fruits; those with a low tax are bamboo and timber. Zhejiang's forest industry has grown rapidly since the province stopped collecting reforestation fees in 2008.

Along with the development of private forest industries, a robust system of industry associations has also been established. Associations provide information for forest enterprises, enhancing their ability to respond to market changes. The rapid growth of Zhejiang's forest industry is therefore the result of a pro-business economy, socio-economic and environmental conditions, and supportive guidance from the government.

### **Small and medium forest enterprises in Zhejiang**

Owing to a lack of national-level research on small and medium forest enterprises (SMFE), this study is based on data from Zhejiang Province.

At the end of 2004, there were a total of 304 100 small and medium enterprises (SME) in all industries across China, with a total asset value of 3.568381 trillion yuan. SMEs account for 99.6 percent of total business units, 82.6 percent of total assets, 82.7 percent of total employees, and 71.7 percent of total sales revenue, with the private economy accounting for more than 70 percent of SMEs (Wu and Ying, 2006). These SMEs are of high social value and provide substantial employment opportunities. Especially in less-developed areas, SMEs play an important role in balancing income distribution, improving regional efficiency, protecting local cultures, increasing social welfare, and developing human resources.

Zhejiang Province has a large number of SMEs and occupies a pivotal position in the national economy, including an important role in development of the forest industry. Zhejiang's private economy is among the most developed in China, and SMEs have been a key factor in this "Zhejiang miracle" and in development of the forest industry. SMFES follow a basic production model: logs and other raw materials are imported from abroad or purchased domestically by a few leading enterprises, and then assigned to other businesses; and most products are sold throughout the country or exported. Most of the large enterprises with international funding produce high-end products, and smaller businesses depend on large enterprises for the processing or production and sales of some non-standard products. New products are generally developed by scientific research organizations, commissioned by the leading enterprises (Wu, J. and Ying, Y. 2006). Nearly 60 percent of the tropical timber imported through Zhangjiagang is sent to the Yangtze Delta; most of the solid wood flooring and high-grade furniture produced by SMFES in Zhejiang are made from tropical timber. The main sources of tropical timber imports are Papua New Guinea, Malaysia, Myanmar and the Gabon (ITTO, 2007).

Over the past two decades, SMEs in Zhejiang have evolved to form industry districts and clusters. Many forest enterprises with complementary operations and production collaborate in speciality markets, thus creating industry clusters. This process of developing clusters is promoted by supportive policies. It is reported that close cooperation among the different links in the industry help individual enterprises to develop favourable production flows, control their production costs, and work more efficiently. The enterprises in an industry cluster find it easier to overcome disadvantageous market conditions, and the clusters also help disseminate innovations. Industry clusters, along with rapid growth of the market economy and policy support from the government, have been important driving forces for development.

However, SMFES also face challenges, such as a lack of core competitiveness, weak brand awareness, the dominance of production and primary processing, low use of technology, outdated management, and poor information channels. The global financial crisis of 2008 had a serious impact on Zhejiang, which has a high degree of external dependence. For SMEs, the crisis created difficulties in financing (although loans from financial institutions account for only 6.7 percent of total loans in Zhejiang, compared with a national average of 15 percent), sharp reductions in exports, drops in output, and a dramatic increase in bankruptcies. During the first three quarters of 2008, a total of 7 723 SMEs in Zhejiang went out of business,

closed or were transferred, compared with 16 778 SMEs which closed in October alone – more than twice as many as in the rest of the year. More than 50 000 people lost their jobs, and electricity consumption dropped by 24 percent in January 2009, a far larger decrease than those in the other Yangtze Delta provinces and the Pearl River Delta (Jin, 2009). Higher prices of raw materials and labour, combined with a constrictive external market have led several enterprises to cease production or convert to new channels to survive. This obviously had repercussions on the study findings.

## **2. Objective and method**

### **Objective**

This study of SMFEs in Zhejiang Province is based on a review of specific indicators including raw materials, production costs, modes of production and management, funding and staffing. These data were used to identify the enterprises' development status, control of capital and costs, capacity for technological innovation, and commitment to increasing and improving labour opportunities. The study analyses the SMFEs' ability to cope with risk and major obstacles to development, and provides policy recommendations for promoting the development of SMFEs and China's forest industry.

### **Method**

*Data:* Public reports and yearbooks on the development of SMEs provided background data for the study.

*Survey:* The survey was mainly conducted in the field, through individual interviews and questionnaires extended by local agencies, open meetings and relevant reports, such as those from the Zhejiang Forestry Administration and the Forestry Department of Huzhou City. The survey covered enterprises in Anji County in Huzhou, in Nanxun District in Huzhou, and in Jiashan County in Jiaxing (Figure 4), and included large-scale (turnover more than 5 million yuan), small and medium-sized wood processing, bamboo processing, furniture production, and handicraft enterprises. The investigation encompassed raw materials, their sources and costs, cost control, technological innovation, funding and personnel.

**Figure 4. Survey location**



*Discussions with officials and experts:* To develop a picture of overall industry development in the region, the survey involved departments and personnel, as shown in Table 2.

**Table 2. Schedule for interviews with agencies**

Agency	Region	Date (2009)
Zhejiang Forestry Administration,	Hangzhou	12 July
Huzhou Bureau of Forestry	Huzhou	20 July
Association of Forestry Industry of Zhejiang	Hangzhou	12 July
Processing enterprises	Nanxun District, Huzhou	19–20 July
Department of Forestry Management of Nanxun District	Nanxun District, Huzhou	19 July
Association of Jiashan Plywood	Jiashan County, Jiaxing	16–18 July

### 3. Survey results and analysis

#### Survey sites

##### Jiashan

Located at the Shanghai, Jiangsu and Zhejiang junction, Jiashan is known as the backyard of the international metropolis of Shanghai and is an important eastern entry into Zhejiang. Jiashan encompasses an area of 506.6 km<sup>2</sup> and has a population of 380 000 people. Its GDP in 2008 was 21.294 billion yuan, representing a growth rate of 13.5 percent. Based on the number of registered households, per capita GDP was 55 789 yuan, an increase of 13.5 percent from the previous year. Added values from the primary, secondary and tertiary industries were 1.674 billion, 12.799 billion and 6.821 billion yuan, respectively, representing increases of 4.0, 15.3 and 12.6 percent. The structure ratio of the three industries was 7.9:60.1:32.0 (Jiashan Statistics, 2008 and Table 3).

**Table 3. GDP of Jiashan County, 2006 to 2008**

	<b>2006</b>	<b>2007</b>	<b>2008</b>
Billion yuan	15.132	18.144	21.294

*Source:* Jiashan Statistics, 2008.

Jiashan County, surrounded by Ningbo, Hangzhou and Shanghai, is convenient for both water and land transport. Large-diameter timber can be imported by water from Southeast Asia and Europe, which attracts investors to the country. Development of Jiashan's wood processing industry started with the establishment of Zhongxing Wood in 1987. After two decades, wood processing has become one of the county's four backbone industries. In 2005, there were 369 board timber processing companies, with total fixed assets of 1.215 billion yuan and more than 30 000 employees (Industrial Association of Forestry, 2005). In 2007, there were 760 SMEs with an annual turnover of more than 5 million yuan, producing total output values of 5.348 billion yuan from timber processing and wood, bamboo, rattan palm and grass products, and 2.055 billion yuan from furniture. In 2008, wood-based panel production was 618 716m<sup>3</sup> (a decrease of 18.2 percent), solid wood flooring production was 1 313 904 m<sup>2</sup> (an increase of 6.9 percent), laminated flooring production was 56 591 644 m<sup>2</sup> (an increase of 16.9 percent), and furniture production was 4 998 083 pieces (a decrease of 12.2 percent). The wood industry had an annual output value of 5.345 billion yuan, with a growth rate of 8.7 percent.

### Anji

Anji, the home of bamboo, is located northwest of Zhejiang, adjacent to Changxing County, Linghu District of Huzhou Province, Deqing County, Yuhang District of Hangzhou Province, Lin'an City, Ningguo City and Guangde County of Anhui Province, with convenient land and water transport. It is 68 km from Huzhou, 209 km from Shanghai, and 65 km from the centre of Hangzhou. A domestic water route of 48 km reaches Huzhou, Shanghai and Suzhou. The population of Anji is 456 700 people and its GDP in 2008 was 14.24 billion yuan, an increase of 10.9 percent from the previous year. The added values of primary, secondary and tertiary industry were 1.365 billion, 7.202 billion and 5.673 billion yuan, respectively (Anji Bureau of Statistics and Table 4).



**Table 4. GDP of Anji County, 2006 to September 2009**

	2006	2007	2008	2009	
				January – September	Compared with aggregate for 2008
Billion yuan	10.462		14.24	109.50	+ 9.9 percent

Source: Anji Statistics [www.ajtj.gov.cn/](http://www.ajtj.gov.cn/).

Anji encompasses a total area of 1 886 km<sup>2</sup>. A woodland area of 132 000 km<sup>2</sup> accounts for 70 percent of this total, and the bamboo area comprises 67 000 km<sup>2</sup>. Anji is among China’s leading areas for volume of bamboo resources, and for the quality, management, processing and economic benefits of that those bamboo resources. It is said that “World bamboo looks to China, China bamboo looks to Zhejiang, and Zhejiang bamboo looks to Anji”.

As a main production and processing area of Zhejiang, Anji had 1 800 bamboo processing enterprises in 2008. Total sales revenue from wood processing and wood, bamboo, rattan, palm and grass products was 3.685 billion yuan, an increase of 16.2 percent since 2007. When furniture is included, total sales revenue grows to 6.187 billion yuan, 12.2 percent more than the year before. Chair production is a specialized industry whose output value in 2008 was 6.368 billion yuan, having increased by 12.3 percent, while the bamboo industry generated 4.223 billion yuan, an increase of 15.9 percent. In 2008, the 128 chair industry enterprises achieved US\$686.65 million of exports – a year-on-year increase of 34.0 percent – accounting for 61.2 percent of the county’s total export value. Exports by the 93 bamboo and wood product enterprises were US\$240.22 million, representing a 29.6 percent increase and accounting for 21.4 percent of the county’s exports. Products are exported mainly to European countries (US\$424.07 million), the United States of America (US\$381.12 million) and Japan (US\$53.41 million). These figures represent growth rates of 38.4 percent for exports to Europe, 18.9 percent for the United States of America, and 13.1 percent for Japan.

### Nanxun

Nanxun District, to the north of Zhejiang and south of Taihu Lake, is the hinterland of Yangtze Delta and an interprovincial economic and cultural centre on the border of Zhejiang and Jiangsu. Nanxun is about 100 km from Shanghai, Suzhou and Hangzhou and covers an area of 716 km<sup>2</sup>. With the State Council’s approval, Nanxun was made a county in 2003, with a total registered population of 491 300 people. Its location gives it convenient land and water transport, including along State Road 318, the Huyan highway, the Beijing-Hangzhou Grand

Canal and the Changhushen Channel. Water transport allows primary-processed wood products to reach Shanghai in a few hours, for further processing and export, and Nanxun is well known as the source of Jilihu silk and Hu brush. In 2008, this county's GDP was 18.594 billion yuan, having increased by 10.1 percent since 2007. The added values in primary, secondary and tertiary industries were 1.787 billion, 11.81 billion and 4.997 billion yuan, respectively, with growth rates of 4.2, 10.5 and 11.1 percent. The industry structure was 9.6:63.5:26.9 (Huzhou Bureau of Statistics).

Nanxun's wood industry started in the early 1980s, and has experienced a process of market development, scale expansion and restructuring, with production increasing from small- to large-scale. Wood has now developed into a regional cluster industry. The wood industry in Nanxun is led by furniture, flooring and plywood manufacture, and the processing of wooden strips. One-third of China's solid wood flooring and 80 percent of its processed wood floor products are made in Nanxun. In 2005, the county's wood industry involved 1 733 enterprises producing products like flooring, furniture, plywood, doors and decorative wooden strips, and employing more than 40 000 people. The overall industry achieved an output value of 10.46 billion yuan, accounting for 14.5 percent of the county's total. Although it has no forest of its own, Nanxun has developed into China's largest production base for solid wood flooring. In 2006, it was awarded the title of 'China's City of Solid Wood Flooring'. Nanxun has extended its raw material base overseas, and imports large quantities of logs from Malaysia and Indonesia and from several African countries.

## **Results**

Of the enterprises investigated, three produced plywood, three wooden flooring (one solid wood flooring, and two flooring materials), two wooden furniture, three bamboo products, and others produced wooden handicrafts and other products. Table 5 outlines the production costs for the various categories of SMFE.

**Table 5. Comparison of total production costs for different categories of SMFE, 2008**

Product category	No. of SMFEs	Gross assets (yuan)	Cost of wood or bamboo (yuan)	Turnover (yuan)	Labour costs (yuan)	R&D costs (yuan)
Furniture	1	28.84 million	8.25 million	45.00 million	5.14 million	100 000
	2	3.50 million	0.65 million	9.00 million	1.50 million	0
Wood flooring	3	63.00 million	70.00 million	100.00 million	2.90 million	400 000
Plywood	4	0.70 million	0.72 million	1.80 million	0.65 million	0
Bamboo products	5	5.00 million	1.40 million	5.00 million	1.00 million	800 000
	6	1.70 million	4.00 million	5.00 million	0.50 million	0

The following conclusions can be drawn from Table 5:

1. The gross assets of each enterprise range from 700 000 to 63 million yuan.
2. Total labour costs are less than 20 percent of turnover, and only about 10 percent in some cases.
3. Many enterprises invest very little in research and development (R&D).
4. The plywood enterprise surveyed in Jiashan County is a very small one, with total gross assets of only 700 000 yuan. About 70 similar small plywood enterprises are located in one village of Jiashan, where they rely on the industry cluster and use wood waste from larger enterprises as their raw material.
5. Raw materials account for a large share of the turnover of flooring and bamboo enterprises, sometimes reaching 70 to 80 percent. This shows that the added value of these products is quite low. Raw materials for furniture production include leather, metal and fabric, as well as wood, and furniture generates higher profits than other products.

### Wooden furniture

*Yuhuan, Nanxun and Jiashan areas:* Yuhuan has 175 furniture enterprises, producing mainly for export. Of these, 69 enterprises have self-export rights and a total of 50 000 employees. The main impacts of the financial crisis have been:

- (1) significantly reduced orders, difficulties in sales, increased inventories and decreased profits;

- (2) increased uncertainty about orders, with orders from exhibitions accounting for less than one-fifth of normal contracts, leading to concerns about mass production;
- (3) declined production growth; total output for January to May 2009 of 835.6 million yuan represented a drop of 2.04 percent, while exports of US\$90 million registered a reduction of 18.77 percent;
- (4) an increase in the number of foreign trading enterprises, creating more constraints on sales transfers for the short term;
- (5) combined with industry transformation and the upgrading and expansion of furniture enterprises, a shortage of management, technology, design and marketing personnel, creating demands for capacity development that cannot be satisfied;
- (6) difficulties with financing for small businesses, and the risk that a shortage of cash for operating costs will result in bankruptcy.

*Nanxun* has more than 600 furniture manufacturing enterprises, whose products are mainly sold domestically. In 2009, overall production, prices and output value dropped. From January to June, furniture production of 2.1 million sets registered a decrease of 0.9 million sets on the year before; an average price of 137 yuan per set was 1 percent lower; and an output value of 145.03 million yuan represented a slight decrease.

Taisheng Wood Company in *Jiashan*, China's largest furniture maker, produces mainly for export. Since 2008, this company has shown a downward trend in sales, while business is semi-operational and staff and sales have declined by half, with only 4 000 out of 8 000 employees working. In 2009, the company's wooden furniture accounted for 90 percent of the county's total of 300 million yuan.

*Example 1 Deqing HaiTsing Furniture Co. Ltd, Zhejiang (renamed MS Cabinet Co. Ltd in 2009):*<sup>2</sup> Established in 1997, this company is managed by a board of directors. In 2008, its total asset value was 28.837 million yuan, of which net fixed assets were 849 million yuan. All its products are made by OEM and exported directly, with a rebated export tax rate of 15 percent (2009). Total working capital was 15.21 million yuan, with a loan of 9.9 million yuan used to purchase raw materials and maintain cash flow. The company has 310 employees, 50 percent of whom come from other provinces, including Anhui, Guizhou and Sichuan. Only 40 of these employees have college degrees, while 77 percent are educated to below junior high school level. Labour costs have been increasing gradually over the past two years, with 5 percent annual growth in per capita wages. The company has purchased social insurance for

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<sup>2</sup> For the sake of confidentiality, the study uses fictional company names.

its employees, who generally sign two-year labour contracts. Tables 6 and 7 outline the company's changing production and operating conditions.

**Table 6. Production and operations at Deqing HaiTsing Furniture Co.**

Year	Lumber for production		Other consumption (million yuan)			Total sales revenue (million yuan)
	Value (million yuan)	Volume (m <sup>3</sup> )	Electricity	Machinery	Others	
2008	8.25	2500	0.96	0.50	3.60	45
2007	9.90	3000	0.96	0.50	4.00	50

**Table 7. Changes in production and operations at Deqing HaiTsing Furniture Co. (percentages)**

Year	Investments	Total sales	Profits	Raw material costs	Wages	Export sales
2009/2008	+ 11.8	+ 10	+ 5	0	+ 5	+ 10
2008/2007	+ 2	- 10	- 10	0	+ 5	- 10

New products are developed via in-house R&D and by accepting materials for processing from customers. The company makes annual R&D investments of about 100 000 yuan, and its products are certified under the International Organization for Standardization ISO 900 quality system. It has its own website and eight computers, but lacks an information management system for new or patented products. Currently operating at more than 80 percent of its production capacity, the company has optimistic expectations for future development.

*Example 2 Anji HuangWei Revolving Chair Factory:* In 2008, this self-employed business had total assets of 3.5 million yuan, of which net fixed assets were 150 million yuan. The raw materials for production are veneers, with a total value of 650 000 yuan, and other consumables (electricity, machinery, plastic and paint), amounting to 1.66 million yuan. In terms of average production costs, 70 percent are primary materials, 16.7 percent are labour, 10 percent are depreciation, and the rest are taxes. All the company's 80 employees are educated to high school or junior high school level. Apart from work related injury insurance,

employees have no other insurance, welfare or even contracts from the factory owner.

**Table 8. Changes in production and operations at Anji HuangWei Factory (percentages)**

Year	Investments	Total sales	Profits	Raw material costs	Wages	Export sales
2009/2008	+ 20	+ 5	0	+ 10	+ 10	-----
2008/2007	+ 15	+ 5	+ 2	+ 5	+ 10	-----

Products are based on imitation or designed by the company. Sales revenue in 2008 was 9 million yuan, representing an increase of 5.88 percent since 2007; 10 percent of the products are sold within the province, and the rest in other provinces. This company does not have its own website or office automation system, and believes that quality system certification is unnecessary. Set-up and operating are fully self-financed, without loans. However, the company's expectations for future development are not optimistic, and 11 to 20 percent of these kind of enterprise are estimated as being at risk for bankruptcy.

#### Wooden flooring

*Nanxun and Jiashan areas:* Nanxun is one of Zhejiang Province's main production areas for wood flooring. Production in January to June 2009 was good, at 14.75 million m<sup>2</sup>, an increase of 0.08 percent. Prices remained the same as in 2008, averaging 148 yuan per square metre. Production volume and value increased slightly. *Jiashan* is another production area for wood flooring. Production and sales saw an upward trend in the first half of 2009, with sales reaching 600 million yuan, but from mid-June clear increases in the prices of raw materials had a major impact. Dehua Group Co. in Deqing is the largest company producing wood products in Zhejiang. Its wood flooring production in the first half of 2009 was 1.038 million m<sup>2</sup>, showing a slight increase in volume and stable prices compared with the same period in 2008.

*Example Zhejiang DanYu Wooden Co. Ltd:* Established in 2004, this corporation has limited liability and is supervised by a board of directors. Its assets and production figures are shown in Table 9.

**Table 9. Production and operations at Zhejiang DanYu Wooden Co.**

Year	Total assets (million yuan)	Net fixed assets (million yuan)	Production materials		Other consumption (million yuan)			Total sales revenue (million yuan)	Sales	
			Value (million yuan)	Volume (million m <sup>2</sup> )	Electricity	Machinery	Other		Domestic	External
2008	63	43	70	0.4	1	0.3	2.5	100	60%	40%
2007	50	35	60	0.35	1	0.3	2.5	100	60%	40%

**Table 10. Changes in production and operations at Zhejiang DanYu Wooden Co. (percentages)**

Year	Investments	Total sales	Profits	Raw material costs	Wages	Export sales
2009/2008	+ 10	+ 10	- 5	0	+ 10	-----
2008/2007	+ 10	+ 15	+ 1	0	+ 10	-----

The company designs its own wood flooring products, based on in-house R&D. In 2008, it invested 0.4 million yuan in R&D, developing ten new products. The company has its own website and an office automation system, equipped with more than 20 computers. In 2008, its running capital was 20 million yuan, with a loan of 8 million yuan for temporary cash flow. It employs 85 people, 15 of whom are educated to college level, and five of whom have higher education degrees. According to management, the main hindrance to company development is high taxes, and it benefits from very few preferential policies. Managers estimate that 5 percent of wood flooring enterprises risk bankruptcy, and they do not have optimistic expectations for their own development over the next three years.

#### Wood-based panels

*Jiashan, Nanxun and Deqing areas:* In *Jiashan*, Zhejiang's main production area for wood-based panels, domestic sales in 2009 were the same as in the previous year. Owing to the financial crisis, exports were sluggish and declining, forcing a number of enterprises into semi-operational status. From January to June 2009, the output value was 1.6 billion yuan, with production and sales decreasing by 33 percent compared with the same period in 2008. In a slowing general economy, employment declined by 30 percent and prices by 15 percent.

The wood-based panels produced in *Nanxun* are mainly sold domestically. From January to June 2009, production was 283 000 m<sup>3</sup>, an increase of 0.06 percent, at an average price of 797 yuan per cubic metre. Production and value remained much the same as in the previous year. Plywood production was 38 000 m<sup>3</sup>, an increase of 0.05 percent, at an average price of 2 530 yuan per cubic metre, 12 percent lower than in 2008.

*Deqing* has the largest bamboo and plywood production enterprise in Zhejiang. During the first half of 2009, total production was 28 500 m<sup>3</sup>, an increase of 370 m<sup>3</sup>. Production value declined by 14.92 million yuan, to 95.32 million yuan, because the price had dropped by 576 yuan per cubic metre, reaching 3 344 yuan.

*Example Jiashan JiaZong Plywood Factory*: Founded in 2000 and located in the Weitang township, Jiashan, this enterprise is a partnership. Its production and operations are shown in Table 11.

**Table 11. Production and operations at Jiashan JiaZong Plywood Factory**

Year	Total assets (million yuan)	Net fixed assets (million yuan)	Lumber for production		Other consumption (million yuan)			Total sales revenue (million yuan)	Sales	
			Value (million yuan)	Volume (m <sup>3</sup> )	Electricity	Machinery	Others		Domestic	External
2008	0.7	0.4	0.72	6 000	0.04	0.005	0	1.8	50%	50%
2007	0.7	0.4	0.96	8 000	0.05	0.01	0	2.0	50%	50%

### Bamboo products

*Anji area*: In 2009, the output value and sales of bamboo products, as well as the profits from them, declined by 30 percent compared with the same period in 2008. Output value and sales returned to their 2007 levels, and profit margins were the lowest for the past decade. Between 30 and 50 percent of SMEs and rough processing enterprises closed down. Bamboo products are exported mainly to European and American markets, and exports account for 70 to 80 percent of production. The main export products include flooring, blinds, floor coverings and table-mats, while bamboo mats are mainly for home markets. The economic crisis had a large impact on bamboo flooring, blinds and floor coverings, but reconstituted bamboo flooring and bamboo pulp were less affected, and even registered a degree of growth in some cases.



In response to the crisis, the majority of enterprises adopted such measures as reducing labour, operating hours and production. Some small-scale businesses stopped operating, consolidated or converted to other activities. Large enterprises were less affected, with declines of no more than 20 percent, and some leading enterprises remained at more or less the same level as in the previous year. Owing to timely adjustments in their marketing and production strategies, a few companies even maintained some degree of growth. Leading enterprises were less affected, mainly because they are more competitive and risk resistant.

*Example Deqing JinYu Bamboo Charcoal Products Factory:* This is an individual-owned enterprise producing a variety of bamboo charcoal products. Its production and operations are outlined in Table 12.

**Table 12. Production and operations at Deqing JinYu Bamboo Charcoal Products Factory**

Year	Total assets (million yuan)	Net fixed assets (million yuan)	Semi-finished bamboo materials		Other consumption (million yuan)			Total sales revenue (million yuan)	Sales		
			Value (million yuan)	Volume (tonnes)	Electricity	Machinery	Others		Domestic	External	Export
2008	5	4	1.40	5 000	0.023	0.01	0.28	5	8%	72%	20%
2007	3.5	2.5	0.90	5 000	0.023	0.01	0.18	3.5	8%	72%	20%

Export sales refer to products produced by OEM.

**Table 13. Changes in production and operations at Deqing JinYu Bamboo Charcoal Products Factory**

<b>Year</b>	<b>Investments (million yuan)</b>	<b>Total sales (million yuan)</b>	<b>Profits (%)</b>	<b>Raw material costs (%)</b>	<b>Wages (%)</b>	<b>Export sales (%)</b>
2009/2008	+ 0.40	+ 1	0	+ 30	+ 20	- 10
2008/2007	+ 1	+ 1	+ 20	+ 20	+ 10	+ 5

The enterprise has 60 employees, 90 percent of whom are from Zhejiang. Seven of the employees have college degrees or above, and the rest are educated to high school or junior high school level. Eighty percent of employees are men. The company provides its workers with pre-service and follow-up technical training and medical insurance. In 2008, wage expenses totalled 1 million yuan.

All the company's products are based on independent R&D, in which the company invested 800 000 yuan in 2008, and obtained one patent. The government provided an additional 200 000 yuan for technology transfer. This company has full office automation and its own website. Its products are certified under the ISO 900 quality system.

In 2008, the enterprise's working capital was 1 million yuan, with a loan of 1.35 million yuan for purchasing equipment. It does not have large funding gaps at present, and loans are the usual solution for short-term shortfalls.

Current productivity is 20 percent. The absence of effective government support is seen as a major obstacle to development. An estimated 20 percent of enterprises in this industry face bankruptcy as a result of the financial crisis, but this company is fairly optimistic about its own prospects for development over the coming three years, which it defines as "relatively smooth".

## **4. Conclusions and recommendations**

### **Challenges and major problems facing SMEs**

#### Challenges facing enterprises

*Declining economic growth:* Economic growth has suffered a significant decline due to changes in the international economic environment and cyclical adjustments to the domestic

economy, coupled with factors such as the serious negative impacts of the international financial crisis on the industry economy of Zhejiang. In 2008, the added value of the Zhejiang industry was 1.03598 trillion yuan, with that from large-scale industry reaching 808.3 billion yuan. Both of these figures represent increases of 10.1 percent compared with the previous year, but this was less than the growth rates in that year, by 6.3 percent for all industry and 7.8 percent for large-scale industry added value.

*Declining growth of foreign trade and exports:* In 2008, Zhejiang Province achieved a total import and export value of US\$211.15 billion, up 19.38 percent from 2007, but representing a 7.7 percent decrease in growth rate. Total exports were US\$154 295 billion, which represented an increase of 20.28 percent, but a decrease in growth rate of 6.87 percent. Imports totalled US\$56 855 billion dollars – an increase of 17.01 percent, but a decrease in growth rate of 9.88 percent.

A major reason for this export situation is the pressure of yuan appreciation, which affected exports, reduced profit margins, and reduced the opportunities for price competition in international markets. Another factor is the substantial adjustment of the rebate on export tax that was made in 2007 to strengthen the leverage of export tariffs and the management of export licences. Trade policies have also been regulated. The rebate policy affected the 75 percent of Zhejiang's SMEs that export their products, particularly those producing traditional export products such as clothing, furniture, shoes and plastic goods, while suitcases, fasteners, bedding, lamps, tools and other commodities have also been influenced (Jin, 2008). In July 2007, the central government decreased tax rebates suddenly, cutting the rebate on plywood from 11 to 5 percent (Ministry of Finance, 2007). Many exporters have sales contracts stretching for six, nine or even 12 months, so had to pay the increased tax rates without being able to increase their sales prices on signed contracts, particularly following the global financial crisis of 2008 when international demand slumped. Exporters' sales profits therefore decreased by about 6 percent for the remaining period of their sales contracts (Luo, 2009). Exporters were also confronted with lower labour costs in countries such as Myanmar and Viet Nam, which resulted in fewer orders for Chinese manufacturers, particularly of textiles, clothing, handicrafts, toys and furniture (Jin, 2008). Finally, the global economic crisis created further difficulties for exporters because the response to the crisis by many countries resulted in increased trade barriers.

## Major problems

*Increased labour costs:* These are exacerbated by an unstable labour supply and a shortage of qualified personnel. In almost all the enterprises investigated, wages have increased by between 5 and 20 percent. This leads to greater labour mobility, as most enterprises are labour-intensive and require skilled employees, who move to where the wages are higher. To maintain their mobility and reduce the opportunity cost of changing jobs, most employees are therefore reluctant to sign contracts and pay into companies' social insurance schemes. The low education level of most employees also creates difficulties for management.

*Increased prices for raw materials:* Most of the raw materials used in Zhejiang's forest industry come from other provinces, and more than 60 percent of tropical timber for processing is imported. Global interest in protecting forest resources and restricting harvesting lead to higher prices for forest resources, which has become a major problem for SMFEs, including most of the enterprises surveyed. Concern about energy resources also led to increased prices in 2008, although the global crisis led to drops in the prices of many raw materials such as logs and sawn wood in 2009. Overall, however, the trend is for raw material prices to increase, especially as there are signs of economic recovery. Higher electricity and steel prices also increase production and operating costs. Owing to these increased costs, the margin for increased profits is extremely limited.

*A shortage of working capital and difficulties with obtaining loans:* Among the enterprises surveyed, temporary shortages of cash flow are very common and are usually resolved by obtaining a loan. However, many companies find that loan applications are cumbersome, and a lack of the necessary documents can increase transaction costs. Some enterprise owners take out personal loans to solve cash flow problems and purchase raw materials and equipment. SMFEs in the survey tended to borrow from relatives or friends rather than from banks, because they lacked credit or found the procedures for getting loans from banks too complex. Many small family business owners believe that banks are suspicious about their credit and repayment capacity, making them unwilling to offer loans. The managers of larger-scale enterprises consider that the loans granted are usually too small and the procedures too complicated to make them a viable option for solving cash flow problems.

*Lack of innovation:* Most enterprises are weak in technological innovation and lack competitiveness and brand awareness. Most of the small enterprises surveyed copy other companies' products and only a few design their own through internal R&D. Although many of the survey enterprises emphasized their technological innovation, very few of them had

actually developed their own products, patents and markets through cooperation with research institutes. Industry clusters are made up of many small businesses producing similar products (Wu and Ying, 2006), which brings economies of scale and increases profit margin. However, this approach also results in fierce competition and discourages innovation, reducing the potential for development. Very few enterprises have their own brands, and most process OEM for others. They are, therefore, not concerned about lacking brand awareness and core competitiveness.

*Outdated management:* Many managers of enterprises lack modern management skills and knowledge about industry upgrading. Among the survey enterprises, the low education level of many managers has hampered modernization, particularly in those enterprises managed as family businesses. Most small businesses have little understanding of industry upgrading, and even the managers of larger-scale enterprises seldom have more than a vague idea about the concept.

### **Recommendations for the development of SMFEs**

Since the global economic crisis of 2008, more enterprises are gradually becoming aware of the importance of technology and core competitiveness in their products. As pressures increase, many small-scale, family companies with outdated technology and equipment cannot survive and face closure. To deal with the financial crisis and develop, they are introducing more advanced technologies; modern management models are replacing the older family style of management, and innovations are being integrated into development of the forest industry. However, the forest industry structure needs to be optimized further, and to some extent the crisis also represents an opportunity for this. Seizing this opportunity and meeting the challenges will require attention to the following three areas:

#### **Strengthened government support and guidance**

Policy support and guidance from the government play a crucial role in industry development, particularly when the economy is vulnerable. First, government departments should focus on developing enterprises, reducing the burden on them, and building their confidence in their own development. Second, to support industry development in the face of growing global competition, it is important to encourage enterprises to invest in technological R&D, and to expand the range and strength of technological subsidies from the government. Third, relevant departments should ensure that their policies for protecting against risk are practical, appropriate, timely and adjustable. And fourth, a range of financing channels should be developed to address and solve SMEs' financing challenges.

### Development of industry associations

The survey found that the industry associations that have been converted from or affiliated with government departments are often awkwardly positioned and unable to effectively function. Well designed and established industry associations can take over some of the economic functions currently managed by government departments, such as efficiency improvement, coordination of internal prices, collection of industry data, and standardization of industry activities. Associations can also help companies respond to lawsuits and participate in the establishment of anti-dumping warning systems. They can also increase industry self-regulation and improve enterprises' access to credit, including for local enterprises (Wang, 2004). The development, promotion and improvement of forest industry associations and their functions are therefore beneficial for development of the forest industry.

### Enterprise development

Enterprises should introduce new technology, enhance cooperation with scientific research institutes, attract and retain well-qualified staff, improve the quality of their products, focus on product differentiation, build brand awareness, improve their core competitiveness, upgrade their management systems, increase pre-service and follow-up technical training for their employees, and improve the overall quality of their enterprises. In doing so they should pursue horizontal and vertical integration, to strengthen their capacity to face risks and to upgrade and optimize the forest industry.

As an international project, Forest Connect – in cooperation with research institutes, local industry associations and similar bodies – can provide SMFEs with help in:

- understanding the importance of sustainable production and related policies and regulations;
- technical innovation;
- market information; and
- improved management and technology, employee skills and staff training.

## Annex

The raw materials used by a small plywood enterprise come from a large furniture enterprise in the same industry cluster.



Small Plywood enterprises' in Jiashan County showing that their raw materials are big enterprises' waste of wood. Picture 1 and 2 above showing two different plywood enterprises' raw materials.



Plywood made of waste wood is good packing material. Photos 3 and 4 show the finished products made from the materials shown in Photo 1; Photo 5 shows the finished products made from materials in Photo 2.



Photos 6 and 7 show raw materials and finished products at a small furniture enterprise in Anji County.

## References

- Industrial Association of Forestry.** 2005. *Fourth Workshop on China's Wood-based Panel Industry: Proceedings, 1 September 2005.*
- Jiang, W.** 2007. Research on the cultivation and development of Zhejiang's forestry industrial clusters. *Forestry Economics*, 5.
- Jiashan Statistics.** 2008. *The Jiashan Statistic Communique of National Economy and Social Development in 2008.* <http://www.jiashan.gov.cn/col/col231/index.html>.
- Jin, J.** 2008. Problems and solutions for the development of SMEs in Zhejiang Province. *Friend of the Head*, (5): 82–83.
- Jin, L. & Yin, Q.** 2007. The future development of Zhejiang private economy. *Commercial Research*, 357 (January).
- Li, D.** 2009. *The 2008 report on Zhejiang industrial development and trade frictions.* [www.acs.gov.cn/sites/aqzn/jrkd.jsp?contentId=2482121120918](http://www.acs.gov.cn/sites/aqzn/jrkd.jsp?contentId=2482121120918). (accessed 23 November 2009).
- Luo, X.** 2009. An analysis of main forestry products export trend in China. *Forestry Economics*, 8: 9.
- Mao, J.** 2009. An analysis and discussion on Zhejiang Forestry industry development, *Great Green World .Green Technology*, 2009, 6:10.
- Ministry of Finance.** 2007. *A Note from Ministry of Finance, State Administration of Taxation on decreasing some products export tax rebate rate.* FT[2007]NO.90 MOF,SAT.
- Wang, K.** 2004. Industrial associations: Inevitable for marketization – case analysis of Shanghai and Zhejiang Province. *China Economist*, 1: 288.
- Wu, J. & Ying, Y.** 2006. The development report of the SMEs in Zhejiang. *PC and Application*, 25(6): 85.
- ITTO,** 2006. International Tropical Timber Organization, Transparency in Trade Flows and Distribution of Tropical Wood Products in China, Project Report, PD 171/02Rev.(M),55], 55-56.