

## **CHAPTER V**

### **THE MALAYSIAN TIMBER INDUSTRY**

#### **An Overview of Forestry and Timber Industry**

In the constitution of Malaysia, the legislative and executive authority over forest is a state responsibility (Ministry of Primary Industries, 1988). The Federal Government is responsible for research, the maintenance of experimental and demonstration stations, education and training, and the provision of advice and technical assistance to states. In order to facilitate the adoption of co-ordinated and common approach to forestry, the National Forestry Council was established on 20<sup>th</sup> December 1971, by the National Land Council (NLC). The NLC is empowered under the Constitution to formulate a national policy for the promotion and control of the utilization of land for mining, agriculture, and forestry (Ministry of Primary Industries, 1988).

The total area of natural forests in Malaysia at the end of 1994 was estimated to be 18.88 million hectares or 57.5% of the total land area of 32.86 million hectares. Of this total area of forest, 5.82 million hectares are in Peninsular Malaysia, 4.41 million hectares in Sabah, and 8.65 million hectares in Sarawak (Mahmod and Mohd Som, 1996). The Permanent Forest Estates (PFE) cover 14.04 million hectares or 43% of Malaysia's total land area. Approximately 10.65 million hectares of the PFE are production forests while the remaining are protected forests (Mahmod and Mohd Som, 1996). Besides the PFE, 2.13 million hectares are dedicated to national parks, wildlife sanctuaries, and nature reserves. Figure 1 shows the area of land use while Figure 2 shows the forest land use in Malaysia.

The federal government establishes policies related to regional development areas, industrial estates, and free trade zones with the purpose to promote the wood-based sector (Krutilla, 1988). Investment priorities related to the wood based sector are designed to promote timber complexes, improve waste-wood utilization, and encourage the manufacture of furniture, hand craft items, and joinery products (Krutilla, 1988). The Federal government also formulates export-import regulations and collects taxes and levies imposed on these activities.

Wood-based industries, particularly sawmilling, were among the earliest processing industries established in Malaysia. Sawmilling was followed by plywood, moulding and chipboard industries, which had expanded rapidly during 1980's as a result of increasing demand for Malaysia's timber and timber products in overseas markets. Today, the number of processing mills has increased significantly with the number of downstream processing plants exceeding the primary processing mills. There are a total of 5,241 timber processing mills of which 4,079 are in Peninsular Malaysia (as of January 1995). Table 4 gives the breakdown of these processing mills according to the type of processing in Peninsular Malaysia, Sabah, and Sarawak. Generally, the wood processing industries can be categorized into primary, secondary, and tertiary processing, as shown in Figure 3. The tertiary processing industries such as mouldings, carpentry, joinery, and furniture industries received the most attention efforts from the government in terms of the manufacturing facilities and export incentives.

## **Contribution of Timber Industry to Malaysian Economy**

The Malaysian timber industry is one of the major foreign exchange-earners for the country. Malaysia's total export earnings in 1996 were RM192.34 billion. Timber and timber products contributed RM14.05 billion, or 7.3% of total exports. These amounts include the contribution from furniture, which makes the timber sector the largest foreign exchange earner for commodity products. Export of timber products in 1996 showed an increase of 7% compared to exports registered in 1995. In terms of the employment, the forestry and timber sector provides 212,000 jobs or 2.6% of the total jobs in the country. Comparative contribution of the timber sector to Malaysia's economy in 1996 is given in Figure 4 and Figure 5.

## **Domestic Market**

The domestic market, particularly in Peninsular Malaysia, continues to be an important market for the primary and secondary timber products. The construction sector, which expanded by 12.5% in 1993 and 13% in 1994, served as the largest market for sawn timber and plywood (MTIB, 1998c). This sector continued to grow further in 1995 by 17.3%; however it declined in 1996 to 9% (MTIB, 1998c). The construction sector accounts for nearly 60% of local sawn timber, while the furniture and moulding industries use 29%, and only 4% of the timber consumed is for the packaging industry (MTIB, 1998c). Other minor uses are for boat building and mining. Domestic demand for plywood is used in the construction sector, which absorbs 70% of the plywood, while the furniture industry accounts for 17%, and the packaging industry 4%.

## **Export Market**

In this chapter, the analysis of Malaysia's timber exports will cover all major timber products except for furniture, where the analysis will be covered in chapter VII. The analysis of timber and timber product production since 1990 has indicated an obvious trend toward higher value-added timber products such as mouldings, joinery, and medium density fiberboard. Exports of major timber products for the years of 1990 to 1997 (including furniture) are given in Table 5. Brief analysis for major wood sectors is given below:

### **(1) *Logs***

Log exports, which used to be the primary export earner for timber sector, have declined in importance as the primary earner. In 1990, exports, which totaled RM4.04 billion, had dropped to just RM 2.27 billion by 1996, and further to RM2.20 billion by 1997. In terms of market share, in 1990 logs accounted for 45% of the total export earnings of the sector. Its share dropped to only 16% in 1996 and 15% in 1997. The export of logs is still the primary earner for Sarawak and Sabah; however, Peninsular Malaysia has not exported logs since 1985.

### **(2) *Sawn timber***

Sawn timber exports have decreased from RM3.07 billion in 1990 to RM3.05 billion in 1996. In 1997, sawn timber exports have reduced further to RM2.75 billion. Its contribution to the total export earnings of the sector has also dropped from 34% in 1990 to only 22% in 1996 and to 19% in 1997. Sawn timber exports peaked in 1993 with

an export value of RM4.42 million, due largely to increased sawn timber exports from Sarawak and Sabah, which are shifting their production to processed timber. Exports of sawn timber from Peninsular Malaysia, however, were reduced considerably. In 1994, exports of sawn timber from Malaysia were 4.6 million cubic meters, reduced to 4.27 million cubic meters in 1995, and to 3.66 million cubic meters in 1996, due to a drop in demand from major European markets. The major markets for sawn timber were Thailand, Taiwan, South Korea, Singapore, Japan, and the Netherlands.

### **(3) Plywood**

Plywood exports have recorded significant improvement over the last six years from RM863 million in 1990 to RM4.4 billion in 1996. In 1997, exports of plywood have dropped slightly to RM4.3 billion. The volume of plywood production, particularly in Sabah and Sarawak, has increased, exceeding one million cubic meters per year. Major markets include China, Japan, Singapore, Hong Kong, USA, Taiwan, and the United Kingdom.

### **(4) Veneer**

Veneer exports peaked in 1993 with export value of RM705 million and export volume of 720,000 cubic meters. Veneer exports were reduced to 586,482 cubic meters in 1995 with export value of RM575 million. In 1996 however, exports increased to RM632 million and to RM740 million in 1997. This recent increase in export value is due primarily to increasing imports by both China and the Philippines. As veneer is mainly used as a raw material input for the manufacture of plywood, it is greatly

demanded in markets such as China, Japan, and Taiwan, which have substantial plywood production capacity (MTIB, 1998c). A large proportion of veneer exports, 71%, came from Sarawak. Exports from Peninsular Malaysia declined to a very minimal level due to a timber shortage faced by the plywood sector and to a higher levy imposed on the exports of veneer. Major buyers of veneers are China, Japan, and Taiwan.

**(5) Mouldings**

The increase in the export of mouldings (including builders, carpentry, and joinery) has been greater than that recorded by plywood and sawn timber. Between 1990 and 1996, moulding exports recorded an increase of 120% from RM 488 million to RM1075 million. In 1996, exports of mouldings alone were RM672 million increasing to RM720 million in 1997, an increase of 7%. Exports of joinery and carpentry increased 14% between this period. Major markets for wooden mouldings are Japan, USA, Australia, and Taiwan.

**Industry's major challenges**

In further promoting the value-added processing industries, various challenges facing the timber industry have to be addressed. These include:

**(1) Raw material supply**

In line with measures taken to manage the national forest resources on a sustainable basis, the annual allowable cut (AAC) has been reduced gradually (Forestry Department, 1996). Under the Seventh Malaysia Plan (1996-2000), the AAC for the

Permanent Forest Estate has been set at 46,000 hectares for Peninsular Malaysia (Forestry Department, 1996). The Mean Annual log production for Peninsular Malaysia is projected to be 6.27 million cubic meters. This harvest will consist of 3.39 million cubic meters from Permanent Forest Estate, 1.54 million cubic meters from state land forest, 0.12 million cubic meters from forest plantations and 1.22 million cubic meters from rubberwood plantations (Forestry Department, 1996). The total annual installed capacity of mills in Peninsular Malaysia is 13.20 million cubic meters (Thai, 1995). Based on this figure, it is anticipated that Peninsular Malaysia will face a deficit of logs. Therefore the future supply of raw material will depend on forests plantation (particularly rubberwood), import sources, and inter-movement of logs from Sabah and Sarawak.

Timber supply is a very critical factor for companies' expansion programs and may retard company intentions to invest in downstream processing facilities. Therefore companies successful in their expansion programs are those that have assured sources of supply and the ability to processing their logs into top-quality finished products inexpensively (Atsbury, 1993). According to Garcia et al. (1997), the supply of lumber is also a function of lumber prices, wood cost, other manufacturing cost, other wood product revenues, and lumber milling capacity.

## **(2) Price**

The shortage of logs has resulted in the increased cost of raw materials, whether as logs to primary processing industries or as sawn timber and plywood to the secondary and tertiary processing industries. Table 6 shows the increase of the log prices of dark red meranti, the most popular species in Peninsular Malaysia for construction, door,

window frames and moldings. These prices were compared to rubberwood, the popular species used in furniture making. Comparing the price of dark red meranti and rubberwood between 1990 and 1995, both timbers have shown an increase in price of about 42%. However for the periods from 1990-1992 to the period 1993-1995 the price increase for rubberwood is gradual as compared to dark red meranti. The price increase of dark red meranti is 56%, while for rubberwood is 18%. This makes rubberwood a very popular timber not only for furniture but also for fibers and veneer.

To overcome the price increase, many sawmills have started to utilize lesser known species and other plantation timber. However, the supply of these alternative timbers are not regular and there appears to be need for marketing efforts to enhance the commercial value of this timber. Faced with a shortage in log supplies from the natural forest, and the resultant rise in log prices, the export performance of the sawmilling and plywood milling sectors in Peninsular Malaysia has been adversely affected (Chew and Hashim, 1996). This is shown by the export performance of sawn timber and plywood from Peninsular Malaysia between 1990 and 1995. Between this period, export of sawn timber, which was 3 million cubic meters, decreased by more than 55%, while export of plywood, which recorded 713,000 cubic meters, decreased by 42%.

### **(3) *Anti-Tropical Timber Campaign***

The anti-tropical timber campaign is one of the major challenges faced by the wood-based industries in Asia. Campaigns against the use of tropical timber products are being waged by the environmental non-governmental organizations (NGO's) in consumer countries centered on the issue of clearing the tropical rain forest (Tham, 1998). The



attacks have been very aggressive, to the extent of getting major consuming countries to apply trade and other sanctions on tropical timber. These intense pressures may possibly force particular export sectors in Malaysia, most likely sawn timber, to look for other markets (Chew and Hashim, 1996). It is anticipated that over the next ten to fifteen years imports of tropical timber by industrial countries will show a declining trend as these countries use other substitute timber products (World Bank, 1994). However, this rate will taper off with time as substitution has its limits and sustainable levels of tropical timber consumption are realized (World bank, 1994).

#### **(4) *Sustainable Forest Management***

According to the International Tropical Timber Organization (ITTO), less than 1 percent of tropical forest are managed in such a way that harvesting is sustainable (World Bank, 1994). However, many log producing countries have realized the need to adopt policies to sustain the level of timber supply for the long run. Malaysia, for example, will cut down the log production from 39 million cubic meters to 32 million cubic meters by the year 2000 (Forestry Department, 1996).

There are a lot of implications that must be addressed for a country to achieve sustainable forest management, particularly of raw material supply for down stream processing and increased of production costs (Abdullah, 1995). This issue is very related to timber certification systems, which can be a tool of measuring the sustainability of forest management. Currently, various national and regional certification plans are being developed, but as yet no international organization has been identified for the purpose of accrediting them (Chew and Hashim, 1996).

Major consuming countries have required timber certification, particularly for the products made from tropical timber. Without certification that these products are from sustainably managed forests, prohibitive actions or even financial penalties could be imposed on users of tropical timbers (MTC, 1997a). According to the Malaysian Timber Council, this requirement has created a competitive disadvantage for the tropical timber industry. Certification will entail additional costs to the tropical timber producer unless the end-users are willing to pay for the price increase that is needed for certification (MTC, 1997a).

**(5) *Processing efficiency and productivity***

In order to gain a competitive edge, the timber processing industry has to be efficient and highly productive. It is estimated that the recovery rates for sawn timber production are still in the region of 67%, while plywood production is 57% (Thai, 1995). In view of the increasing cost of raw material, there is a need for improvement especially in terms of better recovery rates and reduced waste of raw material (Chew and Hashim, 1996). Particularly in rubberwood processing, there is a need to improve the current level of recovery rates of sawn timber, which is between 30 and 36%. In the downstream processing sectors, such as furniture manufacturing, the efficiency can be further improved through the use of modern production management practices more suited for mass production (Chew and Hashim, 1996).

**(6) *Increased labor cost and shortage of skilled workers***

Many sectors of the timber industry are still labor intensive. Shortages of local workers and increasing labor cost require the timber industry to depend on foreign labor (Chew and Hashim, 1996). In view of this, the industry is faced with a shortage of skilled, well-trained workers. This shortage is faced particularly in the furniture and moulding sectors, and at the supervisory and operator's level (Chew and Hashim, 1996). The worker's salary has gone up with the purpose to retain workers to work in mouldings or furniture mills. As a result, production costs have also increased. In the furniture industry, for example, labor cost accounts for 20% of the production costs (MTC, 1997b.) Turning towards automation of production processes would provide a solution to the labor problem, but requires a high capital investment (Chew and Hashim, 1996).

**(7) *Technology and techniques***

The use of automated equipment and machinery incorporating CNC, CAD, or CAM is becoming more widespread as access to technology is more readily available (Chew and Hashim, 1996). From a recent survey carried out by the Malaysian Timber Industry Board (MTIB, 1996a) the level of technology used currently in several sectors, particularly in the medium density fiberboard, chipboard and moulding, was found to be at par compared to developed countries. However, not all of the technology in developed countries is suitable for use locally due to the different nature of logs (tropical hardwoods vs. softwoods), thus some aspects of technology applications require local adaptation. To optimize the utilization of timber, it is anticipated that technological developments in

small log processing, finger-jointing, lamination, and re-constituted panel manufacture will become increasingly important (Chew and Hashim, 1996).

In line with increasing level of technology used in wood processing, importation of wood working machinery and machinery spare parts has been increasing. Importation of machinery helps to overcome the problem of shortage of skilled workers and rising wages (Star, 1998b). More Malaysian timber companies are now investing in new automated wood working machinery. In addition to reducing labor costs, this investment is necessary to achieve higher productivity as well as to meet the strict quality requirements of the export market. Most of the woodworking and furniture manufacturing machinery is imported from Germany, Japan, Italy, and Taiwan (MTIB, 1998b). Currently, import duties are levied on machinery and spare parts for the timber industry ranging from 5%-35% (MTIB, 1998b). The annual imports of this machinery are estimated in the region of RM500 million (Malaysian Woodworking Machinery Association, 1998).