U.S Markets for Certified and Non-Certified Hardwood Tropical Forest Products

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Overview of the U.S. Tropical Hardwood Products Market

In the 1980s the U.S. was the second largest consumer of tropical hardwood after Japan. At that time, demand was increasing at a higher rate than the country's GDP. This rise was caused by the increasing cost of high quality U.S. hardwoods followed by general interest in preservation of U.S. hardwoods for recreational and aesthetic values. Another important reason was that tropical hardwood plywood paneling could be obtained at low prices from Southeast and East Asia (Myers 1980).

In 1978, U.S. demand for tropical sawnwood was US$ 537 million and was predicted to increase 75 percent by the year 2000. This prediction was based in the fact that tropical forests have a longer growing period, hence encouraging the paper industry to use tropical hardwood pulp for paper production (U.S. and International Institutions 1983). In 2000, the United States' total imports of tropical sawnwood were US$ 493 million, eight percent less than in 1978 (IWPA 2004). During this period there was a notable reduction of imports of primary tropical products and an increase in imports of secondary tropical products (ITTO 2004).

In 1990, 40 percent of all U.S. hardwood lumber imports came from tropical countries, Brazil being the largest supplier (The World Forestry Center 2003). The U.S. is currently the largest importer of secondary tropical hardwood products (STWP) in the world. U.S. imports of tropical hardwood products in 2003 were US$ 16.5 billion accounting for 34 percent of global imports. Twenty-three percent of U.S. imports came from ITTO producer countries which represent 90 percent of STWP producers. The majority of the production was from Mexico, Indonesia, Brazil, Malaysia, and Thailand. U.S.

Imports of STWP were generally from China, Canada, and the EU (mainly Italy). U.S. imports of STWP have multiplied four times within the last ten years. The increase in single housing starts has been the primary driver of demand for wood products, including STWP (ITTO 2004). North American wood product demand was at an all time high in 2003 due to the strong housing construction sector which approached 2 million (mainly wooden) houses (FAO/UNECE, 2004).

By 1992, Latin America supplied 70 percent of the tropical hardwood lumber to the U.S. Brazil and Bolivia supplied 91 million m^3 and 21 million m^3 of hardwood lumber, respectively. Mahogany lumber represented 53 percent of lumber consumption volume and 57 percent of value. Latin America was the second largest supplier of tropical hardwood veneer, contributing 6.1 million m^2 and 31 percent of the volume of tropical hardwood veneer exported to the United States with Brazil being the number one exporter at 5.8 million m^2.

U.S. Imports of Tropical Hardwoods (Certified and Non-certified)

The U.S. imports approximately 1.7 million m^3 of tropical hardwoods annually. Eighty percent are veneer (1.36 million m^3) and sawnwood (0.34 million m^3) (Metafore 2003e). The U.S. market for hardwood sawnwood constitutes 20 percent of the total U.S. wood market, of which 20 percent are tropical hardwoods. Tropical hardwoods compete with U.S. hardwoods for the similar niche markets; i.e. furniture parts and flooring (Metafore 2003d). Some disadvantages of tropical hardwoods are the transportation time, higher costs, and variable quality, an inconsistent frequency of supply. Advantages include unique species not available domestically and durability.

For certified wood products, price and the quality are as important as in conventional non-certified products (Metafore 2003a). The main problem with growth of certified wood products markets is material constraints (Ellis 1999). Demand for certified wood products in the

U.S. market is low; 83 percent of importers sell anywhere from less than 2 to a maximum of 10 percent of their total sales represented by certified wood products. The fact that importers are two to three steps away from reaching the final consumer may explain why demand for certified products is low. Distributors, retailers, and manufacturers all influence demand for certified wood products (Metafore 2003a).

Relative to primary products, value-added tropical wood products imports to the U.S. are increasing. Tropical hardwood decking represents approximately one percent of the total market of decking in the U.S., an equivalent of $US 3 million. Another product is non-treated tropical sawnwood representing 14 percent of the U.S. decking market. The U.S. hardwood flooring market is approximately $US 1,400 million a year of which tropical hardwoods represent an 11 percent share ($US 150 million). Annual U.S. furniture industry value is about $US 75,000. In recent years, China has become the largest exporter of furniture to the U.S. and now represents over 60 percent of domestic consumption (Metafore 2003b). Indonesia and Malaysia are China's two largest suppliers of solid wood products (mainly tropical hardwood) which are remanufactured and exported to the U.S. and Europe (USDA 2000).

The U.S. imports 161 different species of tropical hardwoods, 20 percent from Africa, 43 percent from Asia, and 37 percent from Latin America (**Table 1**). Importers are often resistant to market new tropical wood species as it is difficult to introduce new species that compete with species currently accepted in the market.

Table 1. Tropical timber species imported to the United States

	Number of Species by		
Area of Origin	**Trade Name**	**Scientific Name**	**Percent**
Africa	41	44	20%
Asia	46	95	43%
Latin America	74	81	37%
Total	161	220	100%

Source: International Wood Products Association 2003.

U.S. Tropical Imports by Country and Product

Tropical Lumber Imports

The three top import partners of tropical hardwood lumber to the U.S. are Brazil, Peru, and Malaysia. U.S. imports from Brazil have decreased from 2002 to 2003. Imports from Peru increased from 2000 to 2002 and decreased in 2003. Malaysia decreased lumber exports to the U.S. by an approximately US$ 15 million from 2000 to 2003 (**Figure 1**).

Tropical Hardwood Flooring Imports

The top five import partners of tropical hardwood flooring to the U.S. are Indonesia, Malaysia, China, Thailand, and Brazil. In 2000 China was ranked fifth, and in 2003 it became the number one import partner country, increasing from US$ 7,000 million in 2000 to almost US$ 37,000 million in 2003. Over the same period, Brazil increased exports to the U.S from US$ 10,000 million to almost US$ 20,000 million (**Figure 2**).

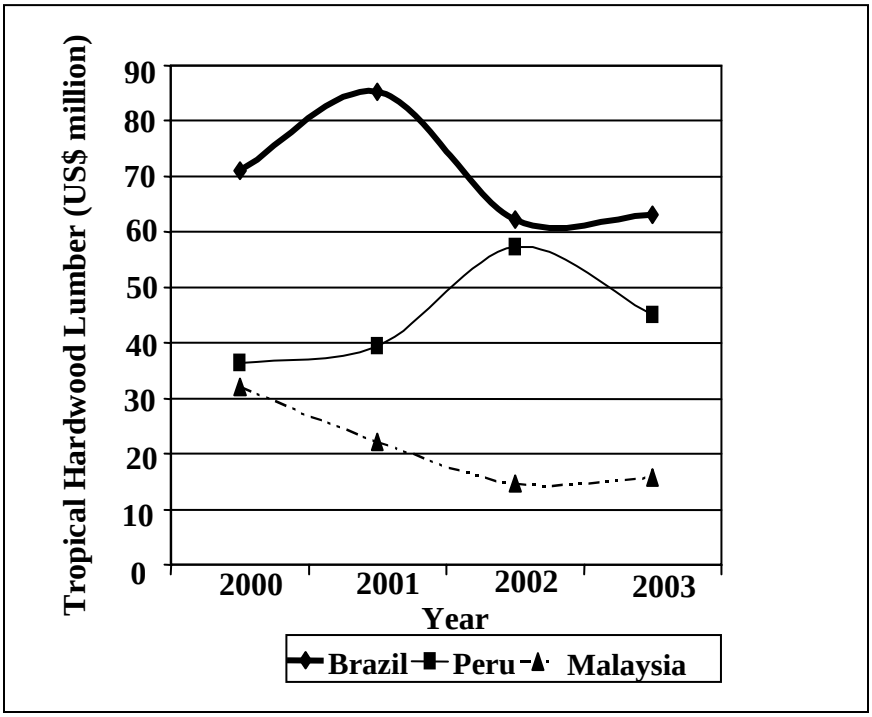

Figure 1. Top 3 U.S. import partner countries of tropical hardwood lumber (2000-2003)
Source: IWPA 2004

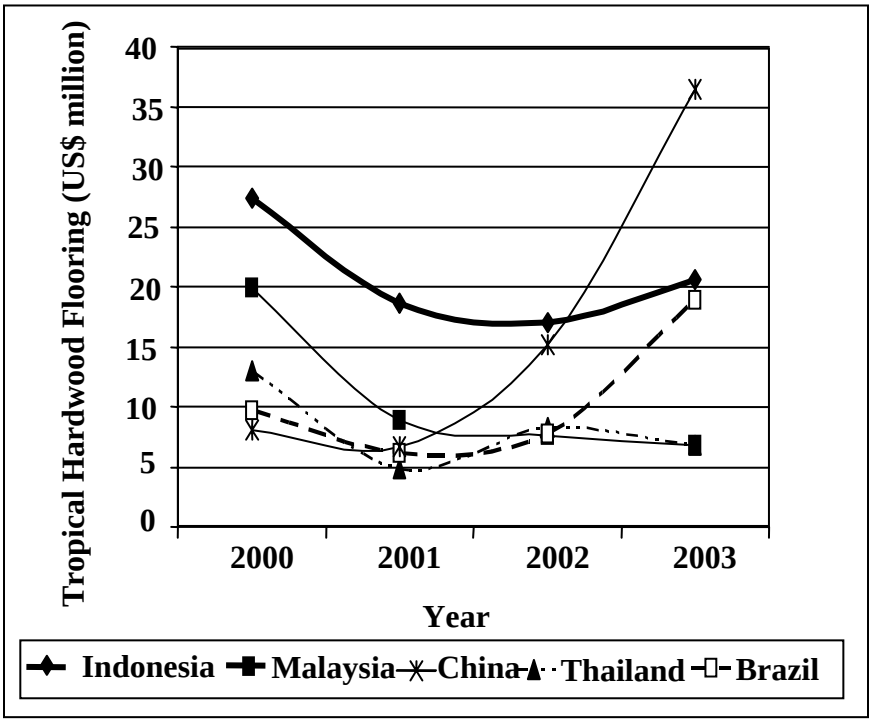

Figure 2. Top 5 U.S. import partner countries of tropical hardwood flooring (2000-2003)
Source: IWPA 2004

Tropical Hardwood Molding Imports

The top six U.S. import partners of tropical hardwood molding are Indonesia, Mexico, Malaysia, China, Brazil, and Chile (**Figure 3**). In the case of tropical hardwood molding, China has taken the lead increasing from US$ 15,000 million on 2001 to almost US$ 45,000 million on 2003. Brazil exports to the U.S. increased from US$ 15,000 million in 2000 to approximately US$ 27,000 million in 2003. Chile went from exporting nearly zero hardwood molding in 2000 to exporting US$ 7,000 million in 2003. In contrast, Indonesia reduced its market from US$ 30,000 million in 2000 to US$ 10,000 million in 2003.

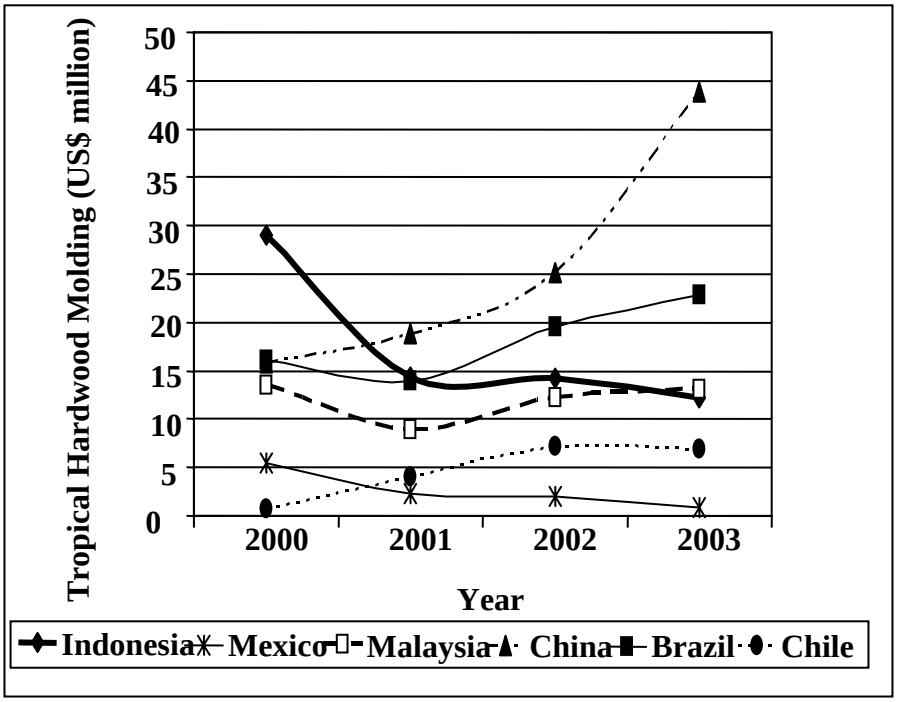

Figure 3. Top 6 U.S. import partner countries of tropical hardwood molding (2000-2003)
Source: IWPA 2004

Tropical Hardwood Plywood Imports

The tropical hardwood plywood market in the U.S. is dominated by Indonesia, followed by Malaysia and Brazil. China is increasing its market presence rising from approximately US$ 30,000 million in 2000 to US$ 130,000 in 2003 (**Figure 4**). Salamone (2002) states that for many years Indonesia has been the primary supplier of tropical hardwood plywood to the U.S. However, over the last five years plywood exports from Indonesia have declined. The decline can be attributed to some extent to the lack of environmental enforcement in Indonesian forest practices.

Diminishing forest resources account for the fluctuations of Malaysian plywood exports. Malaysia and Indonesia supply three-quarters of the U.S. total tropical hardwood plywood imports. “Plywood makes up 80 percent of U.S. tropical hardwood imports” (Keating 1998).

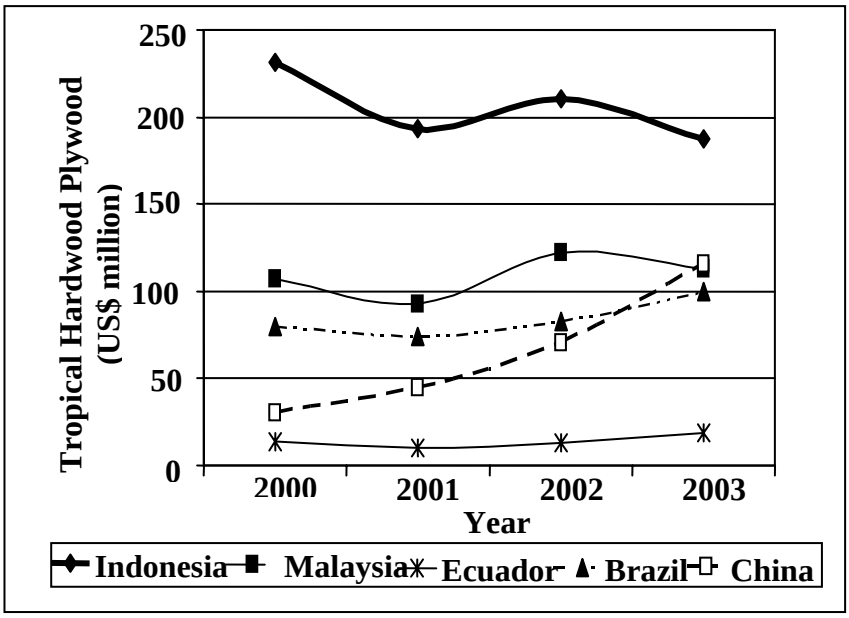

Figure 4. Top 5 U.S. import partner countries of tropical hardwood plywood (2000-2003)
Source: IWPA 2004

Tropical Hardwood Veneer Imports

The top five U.S. import countries of tropical hardwood veneer are Brazil, Ghana, Gabon, Mexico, and China. China has increased exports from US$ 5,000 million in 2000 to approximately US$ 12,000 million in 2003 (**Figure 5**).

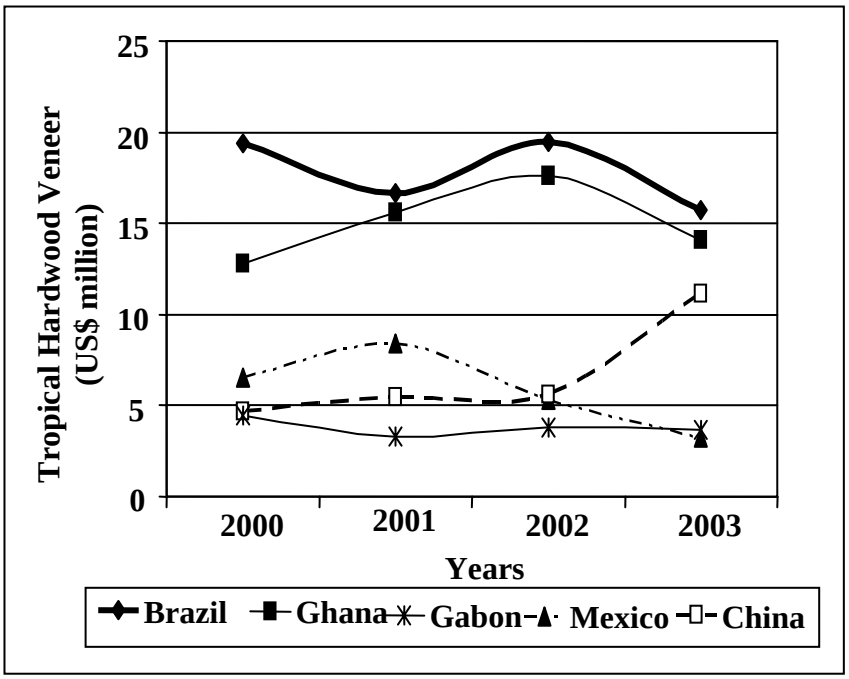

Figure 5. Top 5 U.S. import partner countries of tropical hardwood veneer (2000-2003)
Source: IWPA 2004

Overall, China has dramatically increased its share in the U.S. market in tropical hardwood flooring, molding, plywood, and veneer. “China’s advantages as a low-cost producer and exporter of furniture are fueling imports of hardwood, both temperate and tropical species” (USDA 2000).

Channels of Distribution

Channels of physical distribution allow the products to be transported from producers to consumers. There are many entities involved in the process of physical distribution. The three main participants are intermediaries who buy and sell the product, temporarily taking title of it, agents that do not take title of the product but provide assistance in negotiations between buyers and suppliers, and facilitators that enagage in marketing activities. Marketing activities include transportation, warehousing, advertising, financing, and guaranteeing delivery of the product. "The basic components of physical distribution include: order processing, inventory control, material handling, transportation, and warehousing" (Juslin and Hansen 2003).

The main components of channels, in addition to intermediariaries, are typically forest landowners, primary manufacturers and secondary manufacturers, retailers and consumers (**Figure 6**). If the product is imported then the distribution channel becomes more complex and can include buyers agents, sellers agents, customs, foreign agents, exporters, importers (**Figure 7**).

Buyer/seller marketing strategies dictate distribution channel complexity. Each member of a distribution channel provides specific services that need to be performed while managing the products through the supply chain. Shorter channels exist when two or more members of the channel consolidate services (vertically integrate). When this happens there is no elimination of processes as members perform multiple channel requirements. The supply chain involves the management of product and information about the most efficient pathways from upstream to downstream and vice versa, in a manner designed to provide the best value to the customer at the lowest cost.

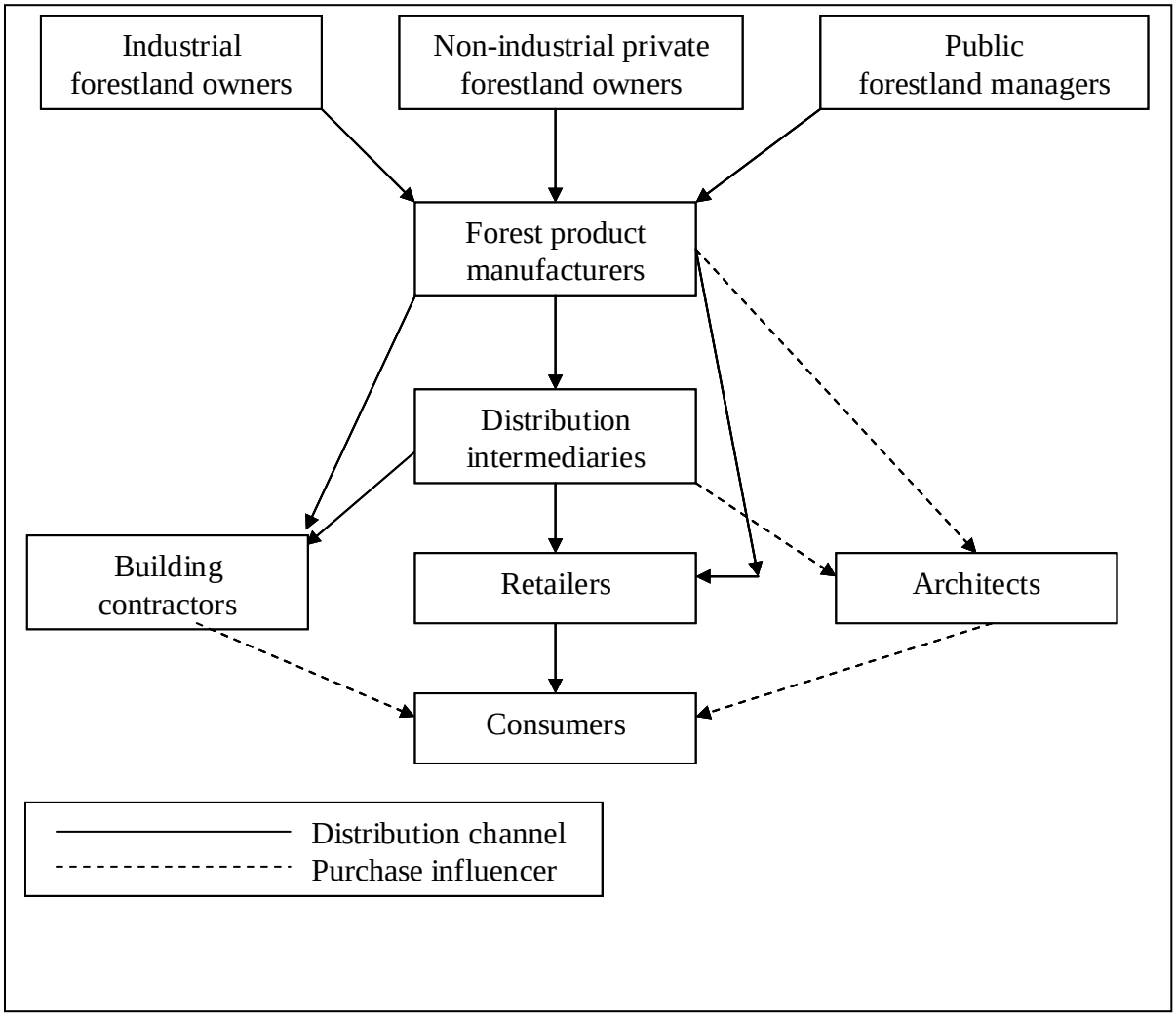

Figure 6. Forest products distribution channels
Source: Vlosky & Ellis 2003

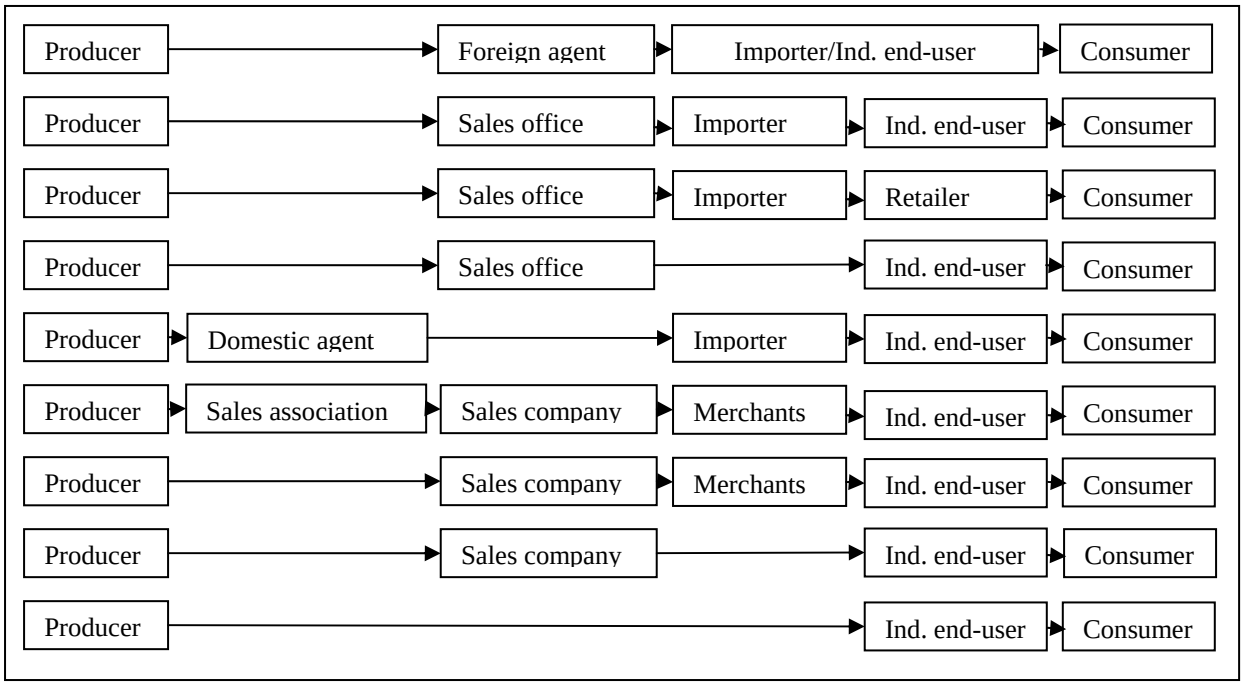

Figure 7. Important marketing channel alternatives
Source: Juslin and Hansen 2003

The two most commonly used agents in the U.S. are brokers and manufacturer's representatives. Neither takes title to the goods; they help to connect buyers with suppliers. Many large companies have decreased use of agents and opened their own sales offices in importer countries. Small companies still find it very efficient to use agents to find markets for their products. One positive aspect of working with agents is that they have an understanding of international markets.

A broker is most frequently used when large volumes of goods are purchased. Brokers also connect buyers with suppliers. Depending on their experience and relationship with the buyer, brokers typically charge a commission fee ranging from 8 to 15 percent of the purchase value (Eid 2006).

Manufacturer representatives are associated with the purchasing production entity. They generally represent non-competing companies and receive commissions which varies between 1 and 5 percent of the sales value that they facilitate (Juslin and Jansen 2003). Importers buy directly from the producing countries. They take title to the goods and sometimes add value such as drying, storing, and distributing the product. The size of the importer is dependant on the type of market they serve. For example, large importers often sell to large retailers while small importers sell to specialized niche markets or retailers (Juslin and Hansen 2003). Importers may have offices in producer countries where they also manage the export process. According to Metafore (2003c) importing transactions consist of the following steps and documentation:

- Sales conditions (previous agreements between buyers and suppliers)
- Order (the buyer orders the product once terms of agreement with supplier have been settled)
- Shipment (the product is shipped in the agreed time period FOB or SIF)
- Receipt of shipment (the buyer checks the shipment according to the agreement)

- Payment (after at most 30 days the buyer pays the supplier)
- Disputes (if any of the parts has a problem)

In the supply chain manufacturers transform wood into primary and/or secondary wood products. Primary tropical hardwood products include roundwood, sawnwood, veneer, and plywood that are mainly used for decorative purposes in home construction or remodeling.

Examples of secondary tropical hardwood products are furniture, furniture parts, cabinets, flooring, decking, molding, and musical instruments. One of the most important tropical species used in the furniture sector is mahogany. However, in the past few years mahogany has become endangered, leading to a reduction in its use. In 1997, 8 percent of all the bedrooms and dining rooms in the U.S. were made of mahogany. In 2005 this declined to 5 percent. Another major wood species used in the furniture sector is rubberwood. In 1997 rubberwood held less than 1 percent of raw materials used in the U.S. furniture sector but had increased to 6 percent by 2005 (ITTO 2005a).

Although there is a growing trend of furniture consumption in the U.S. the furniture sector has been shrinking as a result of competition from Asian countries that have lower costs of production. China's entrance in the U.S. furniture market has caused a major decrease in domestic production of bedroom and dining room furniture.

Tropical hardwoods are mainly used in the furniture industry, and despite the apparent reduction in U.S. furniture manufacturing, there is an increasing trend in the use of foreign species (**Figure 8**). This trend is driven by changes in consumer preferences. There are unique cases such as the city of San Francisco where there has been a fifteen-year ban on imports of tropical hardwoods (ITTO 2005b).

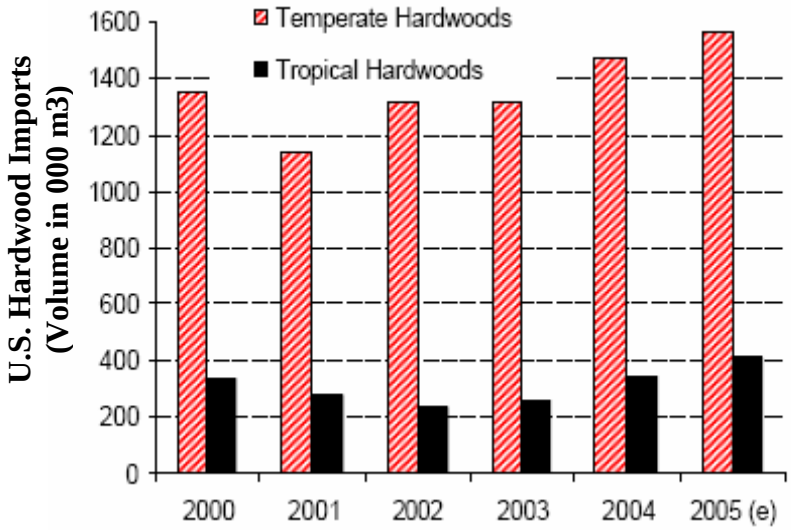

Figure 8. U.S. hardwood imports
Source: ITTO (b) 2005 citing USDA, Aktrin

Wholesalers specialize in matching buyer needs with seller products. They are intermediaries that partition bulk quantities in order to sell smaller quantities to downstream supply chain members. They can sell to other intermediaries, retailers or to the final consumer. Some services wholesalers can provide are remanufacturing, packaging, grading, arranging transportation, and providing credit. A wholesaler can also be an importer. In the case where

wholesalers and importers are separate the only difference among the two of them is that importers buy products from another country and wholesalers buy their products in the importing country. In North America, wholesalers of commodities can gross between 3 to 6 percent of the transaction value (Juslin and Hansen 2003).

Retailers are the part of the supply chain that sells a broad range of products (from lumber to furniture) to the final consumer, remodelers, or to smaller industrial end-users. Retail stores that sell building materials typically sell to do-it-yourself (DIY) consumers or contractors. The U.S. retailer market is dominated by large retail-store chains like Home Depot and Lowe's. These large chain-retail-stores, because of their buying power, can buy at lower prices than small stores. Some retailers have merged many steps of the supply chain by vertically consolidating services and activities. Large retail-stores can also create their own brands. For smaller retailers, competition from major national chains has been fierce. Many have formed buying or marketing cooperatives that allow many small companies to act like a large entity.

Architects do not purchase wood products but they strongly influence the planning, designing, and oversight of building construction and hence, products that are ultimately used. They design and provide advice about the functional, aesthetic, and technical requirements of construction. “In the broadest sense, an architect is a person who interfaces between the end user of a planned structure and the builder. The architect translates the user's needs into the builder's requirements” (Wikipedia 2006). In general architects buy or specify the required materials from providers in the country. Commonly, if a project is large, architects specify materials from wholesalers, while for smaller projects, they rely on retailers (Eid 2006).

Architects specify tropical hardwoods their durability and beauty, e.g. colors and patterns for finishing floors, doors, moldings, cabinets, and decking. Architects are more open to specifying lesser-known species if they come with technical specifications.

Certification trends in distribution channels

The U.S. has been experiencing a trend of green building, using energy efficient designs and materials, non-toxic materials, and sustainably produced wood products. This trend makes the use of tropical hardwoods less favorable due to lack of accountability in the sustainability of the forests from which they come (Environmental Building News 2001). Similarly, if architects can document that they buy certified wood products, they receive a credit towards the green building certification (Metafore 2003a).

There are 73 primary manufacturers and 198 secondary manufacturers in the U.S. that provide FSC certified forest products (Forest Certification Resource Center 2004).

Vlosky and Ozanne (1998) studied U.S. manufacturer perceptions of certified wood products and found that larger companies tend to be more committed to environmental principles. In the same study, manufacturers were not predisposed to certification. The main concerns of manufacturers were the costs of managing the chain of custody for certified products and certification costs.

The Collins Company in Oregon is a good example of a manufacturer committed to certification. After becoming involved in certification over a decade ago, certified wood products constitut 20 percent of the company’s annual sales. Musical instruments are a more recent market in the certified wood product industry (Miller 2002). Almost 10 years ago, in 1998, a study of potential certified markets was conducted in the Pacific Northwest (Washington, Oregon and California). The results showed that wholesalers in Washington had a high degree of confidence in the growth of certified product markets (Ellis 1999). Generally, it seems that

certification is driven by business-to-business market participants, but has not yet reached the final consumer (FAO/UNECE, 2004).

Some retail stores have been promoting green products for almost a decade catering to consumers are look for products that make them feel that they are contributing to environmental health by buying products that come from sustainable sources.

However, there is no clear evidence that the market is willing to pay premium prices for green products. Since the industry does not have common standards on what green is, retailers decide on their own what a green product is (Beck 2006).

Retailers in Oregon and California have envisioned the future of the certified products market as Economically Healthy (Ellis 1999). Home Depot is the largest retailer in the U.S. selling $5 billion of wood products annually. In 1999, Home Depot adopted a new wood policy of only buying wood products from suppliers committed to environmentally friendly logging and lumber practices (Jacobs, 2003). There are currently 36 retailers sell FSC certified wood products (Forest Certification Resource Center, 2004).

Even though most architects and builders are not familiar with certification, many are open to purchasing certified wood materials only if they are the same price and quality as the non-certified materials (Eid 2006).

Summary

The U.S. market for hardwood sawnwood constitutes 20 percent of the total U.S. wood market, of which 20 percent consists of tropical hardwoods. Tropical hardwood products compete for the same niche market as temperate hardwoods. The U.S. imports approximately 1.7 million m^3 of tropical hardwoods and is the largest importer of secondary tropical hardwood products in the world. In 2002, one quarter of these secondary products came directly from tropical countries; the rest came mainly from China, Canada, and the EU (Italy). The main tropical wood imports are lumber, flooring, molding, plywood, and veneer. By 2003 Brazil was the largest U.S importer partner of tropical lumber and veneer, while China led in tropical hardwood flooring and molding, and Indonesia is the main partner for tropical hardwood plywood.

In order to commercialize wood products there are many players that must work together in the supply chain to bring the product from the forest to the consumer. Marketing channels can have different structural alternatives that consist of producers, foreign agents, sales office staff, importers, industrial end users, retailers, and consumers. Each plays an important role in bring wood products from the source country to the U.S. market.

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