

MARKET ASSESSMENT:

Review market data and examine trends to understand what bio-composite products are sold today and where are they sold

A paper prepared for CFC/ITTO-USDL

By

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I. INTRODUCTION

This paper provides a review and brief analysis of bio-composite products markets and trade. Bio-composite products defined here are any composite that contains a blend of wood and other lignocellulosic fiber and polymer to produce a material that can be processed like wood and has the best features of wood and plastic. These products can be used in building and construction, interiors, automobiles, mouldings, garden and outdoor, etc. Initially, engineered wood products such as glued-laminated timber, laminated veneer lumber and parallel strand lumber would be included in a review as these products represent emerging markets for tropical timber. However, due to the lack of data on production and trade for those products, the review and analysis are focused instead on wood-composite products such as plywood, veneer sheets, particleboard and fiberboard in ITTO countries for the period 2002-2006. These are known commodities and have been proven in the marketplace. The review and analysis for those products were also conducted for countries such as Indonesia, Malaysia, and Papua New Guinea.

Comparisons with global totals or totals for ITTO countries for wood-composite products are based on statistics from the FAOSTAT database, the latest summary of global forest statistics available. For each product, year and country, apparent consumption was estimated by production + imports - exports. The data on production, imports and exports were obtained from the FAOSTAT database (FAO 2008). Similar data reported in Forest Products Annual Market Review published by United Nations Economic Commission for Europe (UNECE) and in Annual Review and Assessment of the World Timber Situation published by ITTO were also used. In addition, data on production and trade provided by Ministry of Forestry of Indonesia (MOF) and related agencies such as Central Bureau of Statistics of Indonesia (BPS) and Indonesia Wood Based Panel Association (APKINDO) were also used.

There are few data on domestic prices of forest products, and those that are reported are often export or import prices. For countries that have both import/export and domestic price, the two are usually highly correlated, as they should in competitive markets. Therefore, for this study, the unit values of imports

or exports were used to build the price index. Quantities and values, in current United States dollars, of imports and exports have been obtained from the FAOSTAT database. The nominal price in each country, in current United States dollars, was estimated as the weighted arithmetic average of the unit value of imports and exports.

In the case of Indonesia, plywood product includes block board and laminated veneer lumber and particleboard includes oriented strand board (OSB) product. Moreover, as Indonesia's forest products industry facing a wood raw materials deficit and government policy and industry push for innovation and value addition to resources, utilization of small-diameter logs from plantations, logging waste, community forests, and rubber estates by this industry continues to rise.

The review consists of four substantive chapters, which provide an analysis of production, export, import, consumption, trade and prices for each wood-composite products: plywood, veneer sheets, particleboard and fiberboard; in World, ITTO countries, Indonesia, Malaysia, and Papua New Guinea.

II. MARKET AND TRADE OF PLYWOOD

2.1. World

During the period 2002-2006, world's plywood production increased from 59.25 millions m3 in year 2002 to 68.01 millions m3 in year 2006, a 15% increase (Table 1). Table 1 also shows world's plywood export quantity, import quantity, and price increased by 23%, 21%, and 25% over the period 2002-2006, respectively.

Table 1. World production, imports, and exports of plywood in 2002-2006

Item	Unit	Year					Growth (%)	
		2002	2003	2004	2005	2006	Periodic	Annual
Production Quantity	Million M3	59.27	68.79	68.66	69.08	68.01	15%	3%
Imports Quantity	Million M3	20.81	21.80	24.35	24.66	25.08	21%	5%
Imports Value	US\$ Million	7.36	7.88	9.99	10.31	10.83	47%	10%
Exports Quantity	Million M3	20.75	21.49	24.49	25.35	25.52	23%	5%
Exports Value	US\$ Million	6.69	7.42	9.30	10.23	10.50	57%	12%
Price	US\$/M3	338	354	395	411	421	25%	6%

Source: FAO (2008)

Major world's producers were China, United States of America (USA), Indonesia, Malaysia, Brazil and Japan, which together accounted for 77% of world's production (Figure 1). The production increase has occurred mainly in China followed by Malaysia, Brazil and Japan. In Indonesia and USA, production decreased.

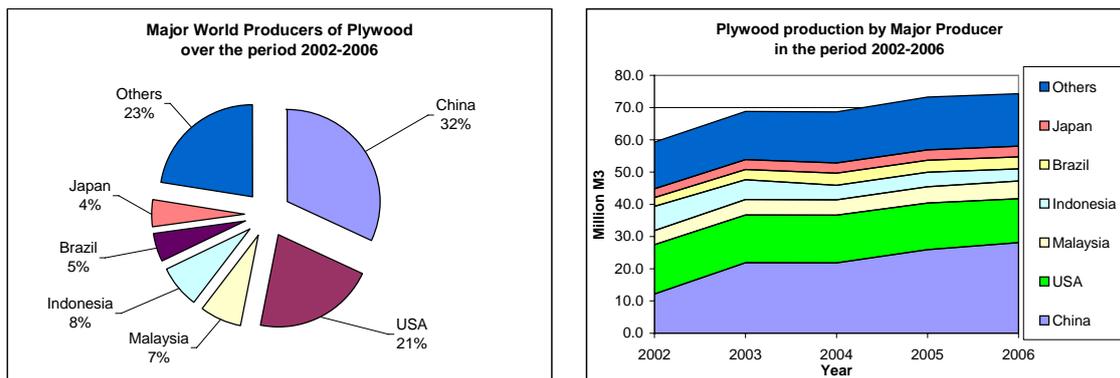


Figure 1. World's plywood production and its major producers in 2002-2006

Major world's exporters were China, Malaysia, Indonesia, Brazil, and Russian Federation, which together accounted for 71% of world's export (Figure 2).

The export increase has occurred mainly in China, Malaysia and Russian Federation, while production decreased in Indonesia.

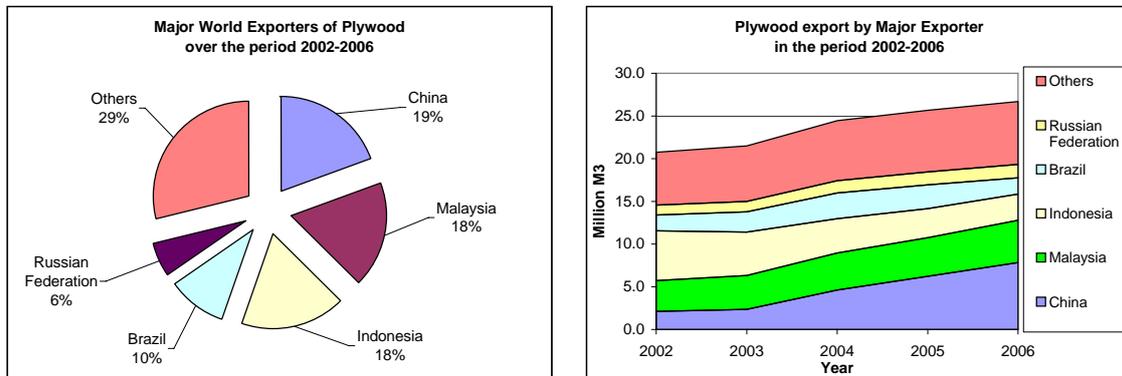


Figure 2. World's plywood export and its major exporters in 2002-2006

In order of importance, major world's importers were United States of America (USA), Japan, China, United Kingdom, the Republic of Korea, and Germany, which together accounted for 68% of world's import (Figure 3). The import increase has occurred mainly in United States of America (USA) followed by Germany and United Kingdom. In Japan, import slightly decreased.

Although United States of America and Japan were two of the largest world's producers, which together accounted for 25% of world's production, they were net importers, which together accounted for 43% of world's import.

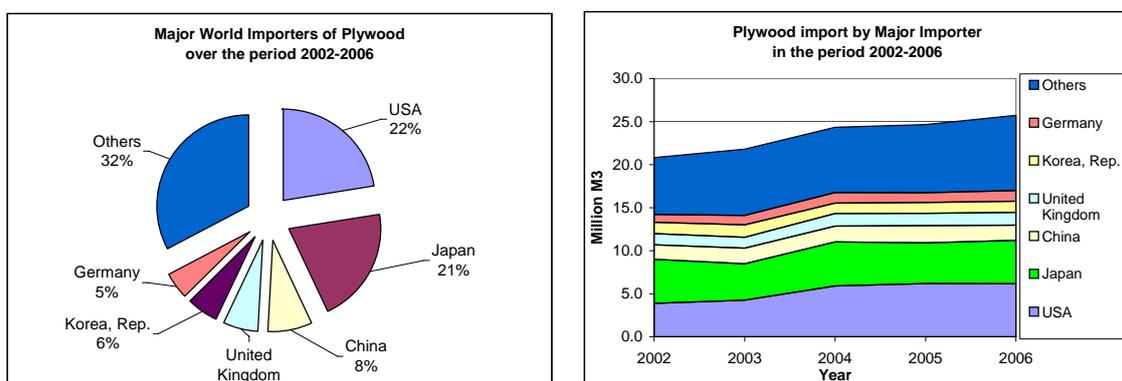


Figure 3. World's plywood import and its major importers in 2002-2006

2.2. ITTO Countries

Plywood production from ITTO producing countries decreased slightly from 17.53 million m³ in 2002 to 16.31 million m³ in 2006, a decrease of 7.0% (Table 2). Over this period, about 84.32 million m³ of plywood were produced which accounted for 25% of the world's production of plywood. Of this 63.19 million m³ (74.9%) was provided by the Asia-Pacific region, 19.30 million m³ (22.9%) by Latin America, and 1.83 million m³ (2.2%) by Africa. The largest single producer was Indonesia, which alone accounted for 31.5% of ITTO producing countries' production. Other important producers were Malaysia (28.8%), Brazil (20.3%) and India (11.3%).

Production grew fastest in the Latin America region followed by Africa, whereas in Asia-Pacific region, production decreased. The production decrease has occurred mainly in Indonesia. In Malaysia, India and Brazil, production increased.

From 2002 to 2006, ITTO producing countries exported about 57.42 million m³ of plywood or about 68.1% of their production (Table 2). The largest share came from the Asia-Pacific region with exports of 43.55 million m³ (75.8%). Latin America and Africa exported about 12.63 million m³ (22.0%) and 1.25 million m³ (2.2%), respectively. The main exporting countries were Indonesia and Malaysia, which together accounted for 74.5% of ITTO plywood exports. Another important, but smaller exporter was Brazil (20.8%). Although Indonesia was an exporter country, its exports declined by 2.76 million m³ between 2002 and 2006.

Further, plywood exports decreased as production decreased (Table 2). This decrease in exports mainly came from Indonesia and Guyana, while in other countries exports increased. ITTO (2007) reported major tropical plywood importers in 2006 were Japan, United States of America, The Republic of Korea, Taiwan and China. A few Western European countries were also important importers, though smaller.

Table 2. Production, exports, change, country and regional shares of plywood in the period 2002-2006

Country/Region	Production (million CUM)					Exports (million CUM)				
	2002	2006	Change 2002-2006	Total 2002-2006	Total shares (%)	2002	2006	Change 2002-2006	Total 2002-2006	Total shares (%)
Cameroon	0.04	0.04	0.00	0.20	0.2%	0.02	0.02	0.00	0.08	0.1%
Central African Republic	0.00	0.00	0.00	0.01	0.0%	0.00	0.00	0.00	0.00	0.0%
Congo, Dem Republic of	0.00	0.00	0.00	0.01	0.0%	0.00	0.00	0.00	0.00	0.0%
Congo, Republic of	0.00	0.01	0.00	0.02	0.0%	0.00	0.00	0.00	0.01	0.0%
Côte d'Ivoire	0.08	0.06	-0.02	0.32	0.4%	0.04	0.05	0.01	0.22	0.4%
Gabon	0.10	0.14	0.04	0.42	0.5%	0.07	0.10	0.03	0.52	0.9%
Ghana	0.10	0.12	0.01	0.57	0.7%	0.08	0.10	0.03	0.41	0.7%
Liberia	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Nigeria	0.06	0.06	0.00	0.28	0.3%	0.00	0.00	0.00	0.00	0.0%
Togo	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Africa	0.38	0.42	0.04	1.83	2.2%	0.20	0.28	0.08	1.25	2.2%
Cambodia	0.00	0.00	0.00	0.02	0.0%	0.00	0.00	0.00	0.02	0.0%
Fiji Islands	0.01	0.01	0.00	0.04	0.0%	0.01	0.00	0.00	0.03	0.1%
India	1.60	2.13	0.53	9.56	11.3%	0.02	0.05	0.03	0.25	0.4%
Indonesia	7.55	3.81	-3.74	26.52	31.5%	5.83	3.07	-2.76	21.40	37.3%
Malaysia	4.34	5.43	1.09	24.29	28.8%	3.61	4.96	1.34	21.41	37.3%
Myanmar	0.08	0.11	0.03	0.55	0.6%	0.05	0.05	0.00	0.27	0.5%
Papua New Guinea	0.01	0.01	0.00	0.03	0.0%	0.00	0.00	0.00	0.02	0.0%
Philippines	0.35	0.32	-0.03	1.72	2.0%	0.02	0.02	0.00	0.15	0.3%
Thailand	0.09	0.10	0.02	0.48	0.6%	0.00	0.00	0.00	0.01	0.0%
Vanuatu	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Asia Pacific	14.02	11.92	-2.10	63.19	74.9%	9.54	8.16	-1.38	43.55	75.8%
Bolivia	0.00	0.00	0.00	0.02	0.0%	0.00	0.00	0.00	0.01	0.0%
Brazil	2.70	3.70	1.00	17.14	20.3%	1.87	1.90	0.03	11.94	20.8%
Colombia	0.03	0.05	0.01	0.20	0.2%	0.00	0.01	0.01	0.04	0.1%
Ecuador	0.03	0.04	0.01	0.18	0.2%	0.03	0.04	0.01	0.18	0.3%
Guatemala	0.02	0.01	-0.02	0.09	0.1%	0.01	0.01	0.00	0.04	0.1%
Guyana	0.05	0.03	-0.02	0.25	0.3%	0.05	0.03	-0.01	0.23	0.4%
Honduras	0.01	0.01	0.00	0.05	0.1%	0.01	0.01	0.00	0.01	0.0%
Mexico	0.15	0.05	-0.11	0.79	0.9%	0.01	0.01	0.00	0.06	0.1%
Panama	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Peru	0.10	0.06	-0.04	0.45	0.5%	0.02	0.03	0.02	0.12	0.2%
Suriname	0.00	0.00	0.00	0.01	0.0%	0.00	0.00	0.00	0.00	0.0%
Trinidad and Tobago	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Venezuela, Bolivar Rep o	0.02	0.02	0.00	0.12	0.1%	0.00	0.00	0.00	0.00	0.0%
Latin America	3.12	3.97	0.84	19.30	22.9%	1.98	2.05	0.07	12.63	22.0%
Total ITTO Producers	17.53	16.31	-1.22	84.32	100.0%	11.73	10.49	-1.23	57.42	100.0%
World	59.27	68.01	8.74	333.81		20.75	25.52	4.77	117.59	

Source: FAO (2008)

2.3. Indonesia

MOF (2008a) reported that during the period 2003-2007, Indonesia's plywood production sharply decreased from 4.28 millions m³ in year 2003 to 2.42 millions m³ in year 2007, a 43% decrease (Table 3). This was mainly caused by a huge timber deficit, which downsized Indonesia plywood industry capacity utilization. The Indonesian Panel Wood Producers Association (APKINDO) had a recorded membership of 130 companies on 6 October 2006, but only 68 companies were active. Of which only 19 units were producing at normal capacity.

Table 3 also shows plywood export was also drastically decreased during the period 2003-2007 from 3.31 millions m³ in year 2003 to 1.77 millions m³ in year 2007, a 46% decrease. On the other hand, in terms of value, plywood export value was only decreased by 7%, indicating an increase in Indonesia's plywood export price. Meanwhile, despite a sharp increase of import quantity of more than 63

times, plywood consumption decreased from 0.97 million m³ in year 2003 to 0.72 million m³ in year 2007, a 26% decrease.

Table 3. Production, imports, and exports of Indonesia plywood in 2003-2007

Item	Unit	Year					Growth (%)	
		2003	2004	2005	2006	2007	Periodic	Annual
Production Quantity	Million ton	4.28	3.16	3.17	2.67	2.42	-43%	-13%
Imports Quantity	Million ton	0.00	0.01	0.02	0.06	0.07	6306%	183%
Imports Value	US\$ Million	0.98	3.72	8.87	23.53	32.38	3212%	140%
Imports Price	US\$/ton	842.30	567.12	427.04	401.39	435.51	-48%	-15%
Exports Quantity	Million ton	3.31	2.60	2.21	1.98	1.77	-46%	-14%
Exports Value	US\$ Million	1,662.91	1,576.87	1,374.67	1,506.68	1,543.18	-7%	-2%
Exports Price	US\$/ton	502.93	605.78	620.68	761.29	869.45	73%	15%
Consumption	Million ton	0.97	0.56	0.98	0.75	0.72	-26%	-7%

Sources: MOF (2008a and 2008b)

FAO (2008) also reported that Indonesia's plywood production sharply decreased during the period 2002-2006. That is from 7.55 millions m³ in year 2002 to 3.81 millions m³ in year 2006, a 50% decrease (Table 4). Moreover, plywood export was also decreased during the period 2002-2006 even though its decrease was not as drastic as a decrease of plywood production. On the other hand, in terms of value, plywood export value was only decreased by 21%, a half the decrease of export quantity, indicating an increase in Indonesia's plywood export price. These FAO's production and export figures were much higher than those production figures reported by MOF (2008a and 2008b).

Table 4. Production, imports, and exports of Indonesia plywood in 2002-2006

Item	Unit	Year					Growth (%)	
		2002	2003	2004	2005	2006	Periodic	Annual
Production Quantity	Million M3	7.55	6.11	4.51	4.53	3.81	-50%	-16%
Imports Quantity	Million M3	0.00	0.00	0.01	0.03	0.03	573%	61%
Imports Value	US\$ Million	1.54	0.93	3.72	20.77	20.77	1253%	92%
Imports Price	US\$/M3	324.32	535.55	368.67	652.08	652.08	101%	19%
Exports Quantity	Million M3	5.83	5.09	4.00	3.41	3.41	-42%	-13%
Exports Value	US\$ Million	1748.31	1662.91	1576.90	1374.67	1374.67	-21%	-6%
Exports Price	US\$/M3	300.09	326.58	393.77	403.60	403.60	34%	8%
Consumption	Million M3	1.73	1.02	0.52	1.16	0.44	-75%	-29%

Source: FAO (2008)

MOF (2008b) reported over the period 2003-2007, major importer countries were Japan, United States of America, China, The Republic of Korea and Taiwan, which together accounted for 69% of Indonesia's plywood exports (Figure 4).

Moreover, during that period Indonesia's plywood exports to those countries were also declining.

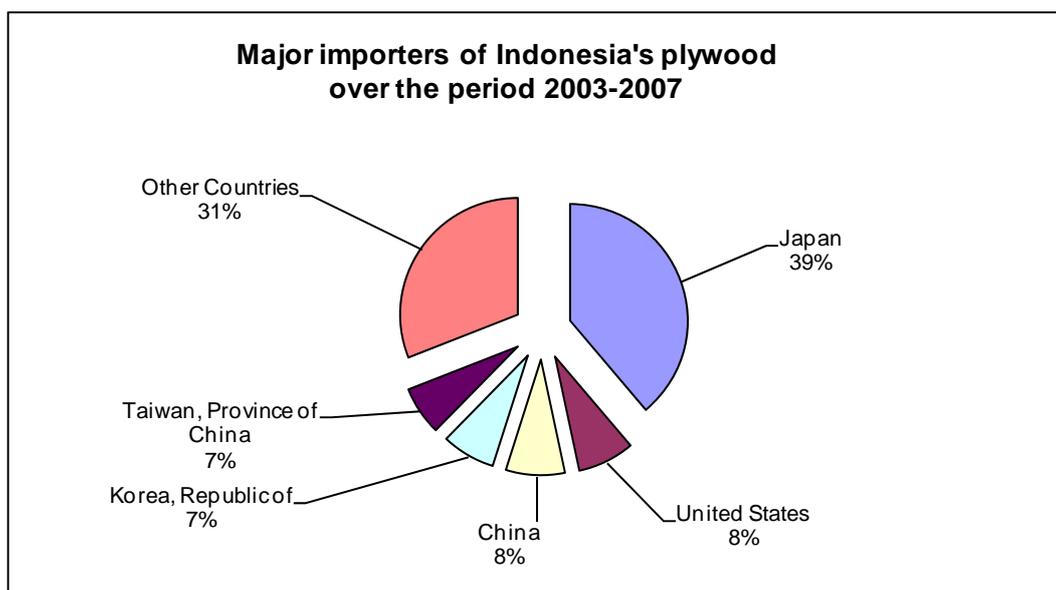


Figure 4. Major importers of Indonesia's plywood over the period 2003-2007

2.4. Malaysia

Over the period 2002-2006, Malaysia's plywood production sharply increased by 25%, from 4.34 millions m3 in year 2002 to 5.43 millions m3 in year 2006 (Table 5). Moreover, although plywood import were drastically increased by 86% and plywood export increased by the same percentage as of production (26%), domestic plywood consumption only increased by 25% because import quantity was negligible over that period.

Table 5. Production, imports, and exports of Malaysia plywood in 2002-2006

Item	Unit	Year					Growth (%)	
		2002	2003	2004	2005	2006	Periodic	Annual
Production Quantity	Million M3	4.34	4.77	4.73	5.01	5.43	25%	6%
Imports Quantity	Million M3	0.02	0.02	0.02	0.03	0.03	86%	17%
Imports Value	US\$ Million	7.00	5.00	5.93	10.70	10.70	53%	11%
Imports Price	US\$/M3	411.76	233.18	257.78	338.27	338.27	-18%	-5%
Exports Quantity	Million M3	3.61	3.95	4.35	4.54	4.54	26%	6%
Exports Value	US\$ Million	1005.49	1094.00	1485.00	1472.10	1472.10	46%	10%
Exports Price	US\$/M3	278.22	276.89	341.46	324.47	324.47	17%	4%
Consumption	Million M3	0.74	0.84	0.41	0.50	0.93	25%	6%

Source: FAO (2008)

On the other hand, in terms of value, plywood export value was increased by 46%, almost double the increase of export quantity, indicating an increase in Malaysia's plywood export price. In contrast, even though import quantity increased by 86%, import value only increased by 53%, indicating a decrease in Malaysia's plywood import price during the period 2002-2006.

FAO (2008) reported in 2005, major importer countries were Japan, United States of America, The Republic of Korea, China, and United Kingdom, which together accounted for 81% of Malaysia's plywood exports (Figure 5).

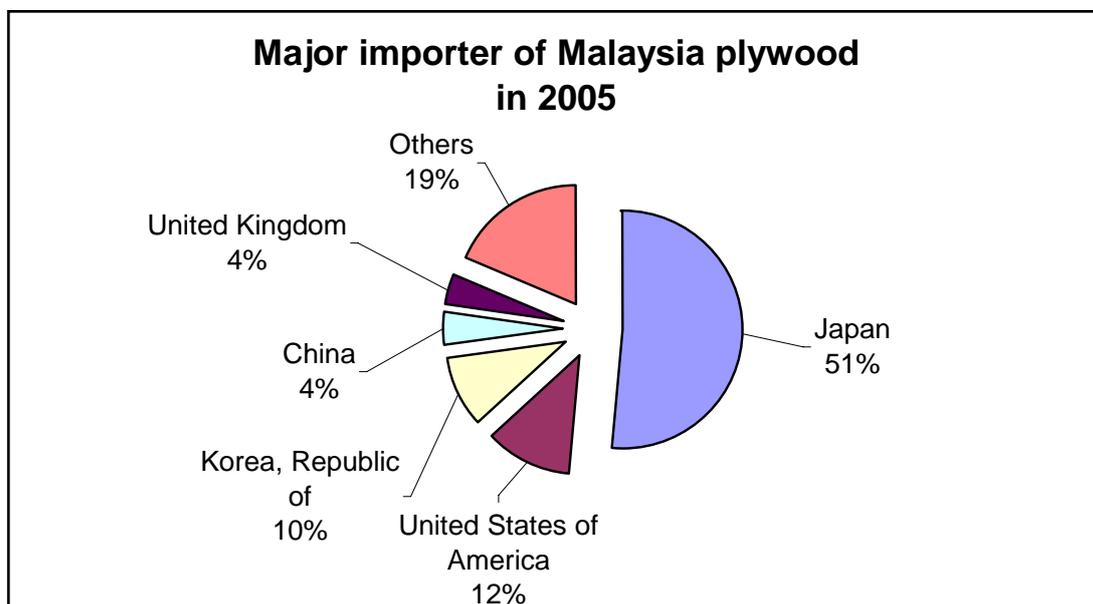


Figure 5. Major importers of Malaysia's plywood in 2005

2.5. Papua New Guinea

During the period 2002-2006, FAOSTAT database did not report statistics data on production and import of plywood, except data on export, which was about 3000 m³ each year with export value of US\$1.05 million. This report was not accurate since FAOSTAT trade database, also reported that Papua New Guinea's plywood export was about 3,870 m³ with export value of US\$2.31 millions in 2005. Country destinations were Australia, New Zealand, and New Caledonia.

III. MARKET AND TRADE OF VENEER SHEETS

3.1. World

During the period 2002-2006, world's veneer sheets production increased from 8.49 millions m3 in year 2002 to 10.07 millions m3 in year 2006, a 19% increase (Table 6). World's veneer sheets export and import quantities decreased by 6% and 20%, respectively, whereas price sharply increased by 61% during the period 2002-2006.

Table 6. World production, imports, and exports of veneer sheets in 2002-2006

Item	Unit	Year					Growth (%)	
		2002	2003	2004	2005	2006	Periodic	Annual
Production Quantity	Million M3	8.49	8.87	9.45	10.31	10.07	19%	4%
Imports Quantity	Million M3	4.22	4.08	4.56	3.61	3.39	-20%	-5%
Imports Value	US\$ Million	2.60	2.90	3.34	3.50	3.70	42%	9%
Exports Quantity	Million M3	4.22	4.06	4.56	3.98	3.94	-6%	-2%
Exports Value	US\$ Million	2.48	2.70	3.19	3.37	3.40	37%	8%
Price	US\$/M3	602	688	716	906	968	61%	13%

Source: FAO (2008)

Major world's producers were China, Canada, Malaysia, Brazil, New Zealand, the Republic of Korea, and Indonesia, and Japan, which together accounted for 60% of world's production (Figure 6). The production increase has occurred mainly in China, Indonesia, Canada, and New Zealand. In Malaysia and the Republic of Korea, production decreased.

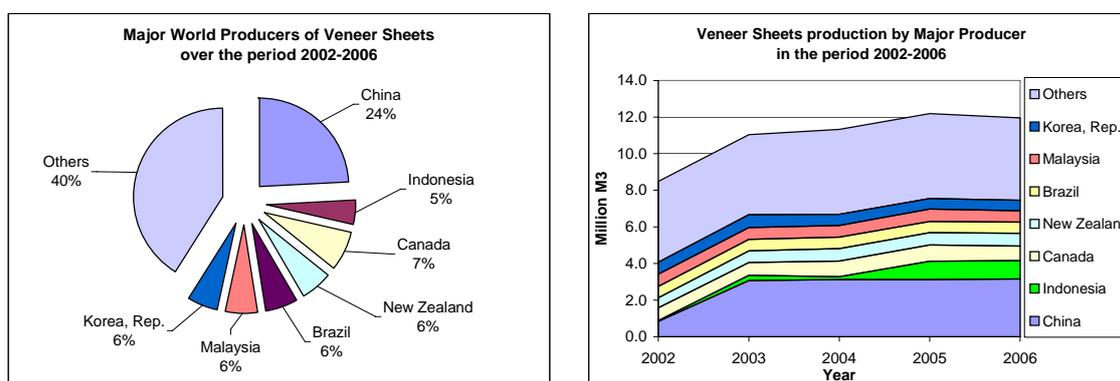


Figure 6. World's veneer sheets production and its major producers in 2002-2006

Major world's exporters were Canada, United States of America, Malaysia, Brazil, Côte d'Ivoire, China, and New Zealand, which together accounted for 69% of world's export (Figure 7). The export increase has occurred mainly in Canada, Brazil and New Zealand, while production decreased sharply in United States of America and Malaysia.

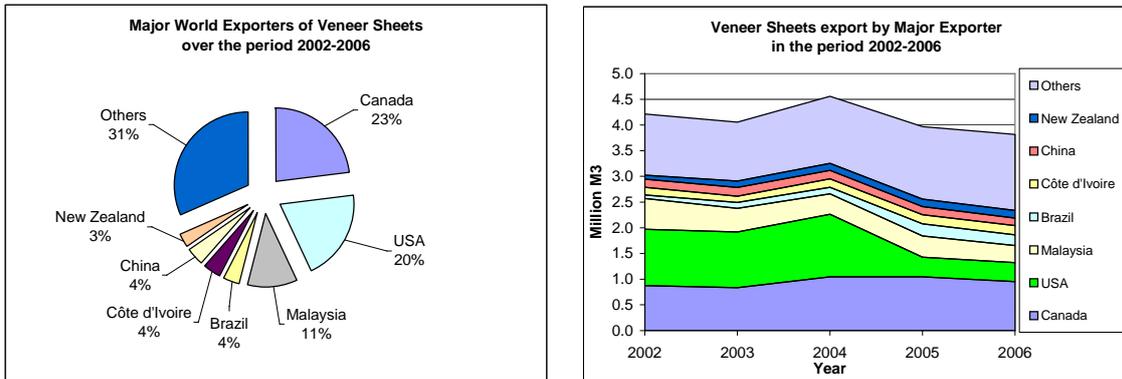


Figure 7. World's veneer sheets export and its major exporters in 2002-2006

In order of importance, major world's importers were United States of America (USA), China, the Republic of Korea, Canada, and Italy, which together accounted for 57% of world's import (Figure 8). The import decrease has occurred mainly in United States of America (USA) followed by China and the Republic of Korea.

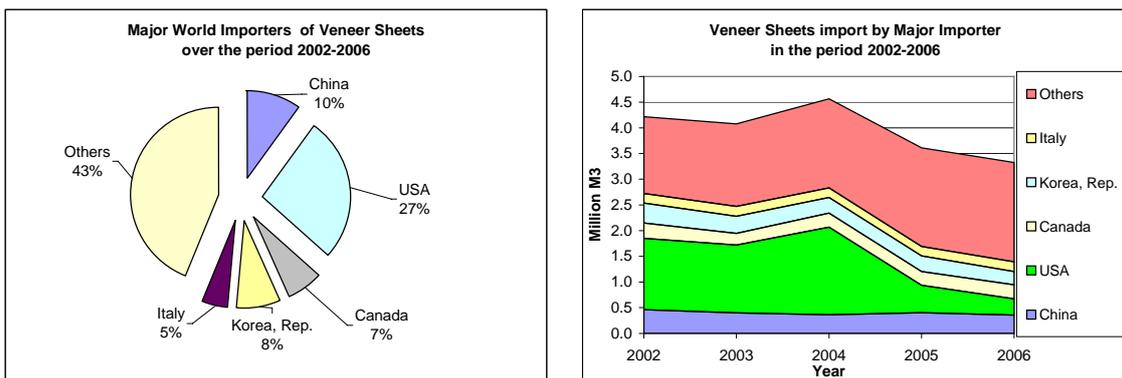


Figure 8. World's veneer sheets import and its major importers in 2002-2006

Although China and Korea were two of the largest world's producers, which together accounted for 30% of world's production, they were net importers, which together accounted for 18% of world's import. On the other hand, although, United

States of America's import significantly decreased, it was still the largest single importer country.

3.2. ITTO Countries

Veneer sheet production from ITTO countries increased sharply from 2.64 million m³ in 2002 to 3.52 million m³ in 2006, an increase of 33.6% (Table 7). Over this period, about 15.78 million m³ of veneer sheet were produced which accounted for one third of the world's production of veneer sheets. Of this 8.57 million m³ (54.3%) was provided by the Asia-Pacific region, 3.83 million m³ (24.3%) by Latin America, and 3.38 million m³ (21.4%) by Africa. Main producers were Malaysia, Brazil, Indonesia, Ghana, India, the Philippines, and Côte d'Ivoire, which together accounted for 87.2% of ITTO production. Other important producers were Gabon, Ecuador, and Papua New Guinea.

Production grew fastest in the Asia-Pacific region followed by Africa, whereas in Asia-Pacific region, production decreased. The production increase has occurred mainly in Indonesia. In the Philippines, Ghana and Malaysia, production decreased.

From 2002 to 2006, ITTO producing countries exported about 5.64 million m³ of veneer sheets or about 35.7% of their production (Table 7). The largest share came from the Asia-Pacific region with exports of 2.74 million m³ (48.6%). Africa and Latin America exported about 2.08 million m³ (36.9%) and 0.82 million m³ (14.5%), respectively. The main exporting countries were Malaysia, Côte d'Ivoire, Brazil, Gabon, Ghana, which together accounted for 85.7% of ITTO veneer sheet exports. Another important, but smaller exporter were Papua New Guinea, Indonesia and Cameroon.

Despite an increase in veneer sheet production, veneer sheet export from ITTO producer countries was only slightly increased. Malaysia's veneer sheet export was even decreased (Table 7). ITTO (2007) reported major tropical veneer sheet importers in 2006 were The Republic of Korea, Taiwan, French, China and Italy. Japan, formerly a major tropical veneer importer, became less significant with imports continuing to decline.

Table 7. Production, exports, change, country and regional shares of veneer sheets in the period 2002-2006

Country/Region	Production (million CUM)					Exports (million CUM)					Total shares (%)
	2002	2006	Change 2002-2006	Total 2002-2006	Total 2002-2006	2002	2006	Change 2002-2006	Total 2002-2006		
Cameroon	0.05	0.05	-0.01	0.25	1.6%	0.02	0.03	0.01	0.15	2.6%	
Central African Republic	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%	
Congo, Dem Republic of	0.00	0.00	0.00	0.01	0.0%	0.00	0.00	0.00	0.00	0.1%	
Congo, Republic of	0.02	0.01	-0.01	0.08	0.5%	0.02	0.00	-0.02	0.06	1.0%	
Côte d'Ivoire	0.25	0.24	-0.01	1.14	7.2%	0.15	0.18	0.03	0.80	14.1%	
Gabon	0.05	0.15	0.10	0.53	3.4%	0.11	0.18	0.07	0.57	10.2%	
Ghana	0.26	0.21	-0.05	1.38	8.7%	0.12	0.07	-0.05	0.50	8.9%	
Liberia	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%	
Nigeria	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%	
Togo	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%	
Africa	0.64	0.66	0.02	3.38	21.4%	0.42	0.46	0.05	2.08	36.9%	
Cambodia	0.00	0.00	0.00	0.01	0.1%	0.01	0.00	-0.01	0.01	0.2%	
Fiji Islands	0.01	0.01	0.00	0.04	0.2%	0.00	0.00	0.00	0.00	0.0%	
India	0.23	0.27	0.04	1.28	8.1%	0.00	0.01	0.01	0.03	0.6%	
Indonesia	0.05	1.01	0.97	2.51	15.9%	0.00	0.05	0.04	0.18	3.1%	
Malaysia	0.66	0.61	-0.05	3.22	20.4%	0.60	0.33	-0.27	2.21	39.2%	
Myanmar	0.00	0.00	0.00	0.01	0.1%	0.00	0.00	0.00	0.00	0.0%	
Papua New Guinea	0.07	0.08	0.01	0.32	2.0%	0.04	0.07	0.03	0.27	4.7%	
Philippines	0.21	0.10	-0.11	1.15	7.3%	0.00	0.01	0.00	0.03	0.5%	
Thailand	0.00	0.00	0.00	0.02	0.1%	0.00	0.01	0.00	0.01	0.3%	
Vanuatu	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%	
Asia Pacific	1.23	2.09	0.86	8.57	54.3%	0.66	0.47	-0.19	2.74	48.6%	
Bolivia	0.00	0.00	0.00	0.03	0.2%	0.00	0.00	0.00	0.01	0.1%	
Brazil	0.62	0.62	0.00	3.10	19.6%	0.07	0.21	0.14	0.75	13.3%	
Colombia	0.00	0.00	0.00	0.01	0.0%	0.00	0.00	0.00	0.00	0.0%	
Ecuador	0.09	0.11	0.03	0.48	3.0%	0.00	0.00	0.00	0.01	0.1%	
Guatemala	0.02	0.02	0.00	0.09	0.6%	0.00	0.00	0.00	0.00	0.1%	
Guyana	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%	
Honduras	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%	
Mexico	0.00	0.00	0.00	0.00	0.0%	0.00	0.01	0.01	0.02	0.4%	
Panama	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%	
Peru	0.01	0.00	0.00	0.03	0.2%	0.01	0.01	0.00	0.03	0.6%	
Suriname	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%	
Trinidad and Tobago	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%	
Venezuela, Bolivar Rep of	0.03	0.01	-0.02	0.10	0.6%	0.00	0.00	0.00	0.00	0.0%	
Latin America	0.77	0.77	0.00	3.83	24.3%	0.07	0.23	0.15	0.82	14.5%	
Total ITTO Producers	2.64	3.52	0.89	15.78	100.0%	1.15	1.16	0.01	5.64	100.0%	
World	8.49	10.07	1.58	47.20		4.22	3.94	-0.27	20.75		

Source: FAO (2008)

3.3. Indonesia

Over the period 2003-2007, MOF (2008a) reported that Indonesia's veneer sheets production slightly increased from 0.20 millions m³ in year 2003 to 0.21 millions m³ in year 2007, a 3% increase (Table 8). Most veneer sheets production were consumed domestically as indicated by a consumption increase of 7% over that period.

Table 8 also shows import quantity increased by 179% during the period 2003-2007, but import value only increased by 95%, indicating a decrease in Indonesia's veneer sheet import price. Meanwhile, veneer sheet export quantity increased by 104% during that period, but veneer sheet export value increased by 399%, indicating an increase in Indonesia's veneer sheet export price.

Although import veneer sheets price as well as plywood production decreased, veneer sheet exports were doubled over that period. Given that veneer

sheets price were much higher than plywood price (Compare Table 8 with Table 3), this indicated that it would have still been more profitable to sell veneer sheets than to process it into plywood and then sold it.

Table 8. Production, imports, and exports of Indonesia veneer sheets in 2003-2007

Item	Unit	Year					Growth (%)	
		2003	2004	2005	2006	2007	Periodic	Annual
Production Quantity	Million ton	0.20	0.11	0.71	0.18	0.21	3%	1%
Imports Quantity	Million ton	0.01	0.01	0.01	0.02	0.02	179%	29%
Imports Value	US\$ Million	14.24	19.33	19.59	25.52	27.76	95%	18%
Imports Price	US\$/ton	1,954.13	1,987.34	1,921.96	1,496.08	1,366.68	-30%	-9%
Exports Quantity	Million ton	0.01	0.06	0.00	0.01	0.01	104%	20%
Exports Value	US\$ Million	2.94	33.10	9.32	19.95	29.98	918%	79%
Exports Price	US\$/ton	544.94	601.16	2,339.86	2,518.93	2,718.79	399%	49%
Consumption	Million ton	0.20	0.06	0.71	0.19	0.22	7%	2%

Sources: MOF (2008a and 2008b)

Meanwhile, over the period 2002-2006, FAO (2008) reported that Indonesia's veneer sheets production drastically increased from 0.05 millions m3 in year 2002 to 1.01 millions m3 in year 2006 (Table 9). Most veneer sheets production were consumed domestically as indicated by a consumption increase of more than nineteen times over that period.

Table 9 also shows import quantity increased by 81% during the period 2002-2006, but import value only increased by 43%, indicating a decrease in Indonesia's veneer sheet import price. Meanwhile, veneer sheet export quantity increased by 975% during that period, but veneer sheet export value increased by 1742%, indicating an increase in Indonesia's veneer sheet export price. As in plywood product, these FAO's veneer sheets production and export figures were much higher than those production figures reported by MOF (2008a and 2008b).

Table 9. Production, imports, and exports of Indonesia veneer sheets in 2002-2006

Item	Unit	Year					Growth (%)	
		2002	2003	2004	2005	2006	Periodic	Annual
Production Quantity	Million M3	0.05	0.29	0.16	1.01	1.01	2149%	118%
Imports Quantity	Million M3	0.01	0.01	0.01	0.01	0.01	81%	16%
Imports Value	US\$ Million	13.73	14.23	19.33	19.59	19.59	43%	9%
Imports Price	US\$/M3	1830.13	1469.89	1400.00	1440.37	1440.37	-21%	-6%
Exports Quantity	Million M3	0.00	0.01	0.07	0.05	0.05	975%	81%
Exports Value	US\$ Million	1.65	2.94	33.05	30.41	30.41	1742%	107%
Exports Price	US\$/M3	375.23	408.78	450.19	642.86	642.86	71%	14%
Consumption	Million M3	0.05	0.29	0.10	0.98	0.98	1934%	112%

Source: FAO (2008)

MOF (2008b) reported over the period 2003-2007, major importer countries were Japan, United States of America, China, The Republic of Korea and Taiwan, which together accounted for 69% of Indonesia's veneer sheet exports (Figure 9). However, during that period exports to China, The Republic of Korea and Taiwan were decreased.

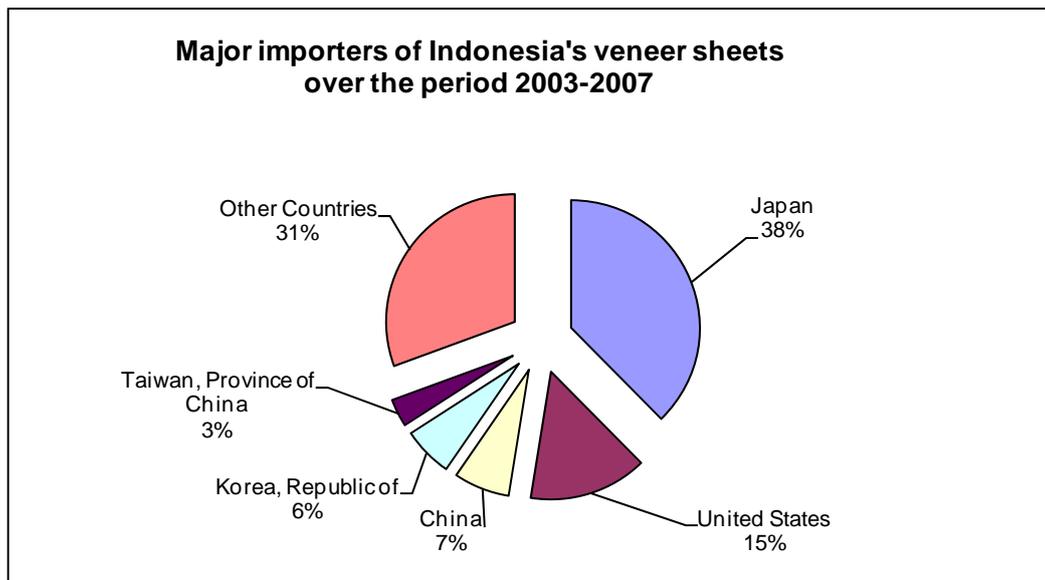


Figure 9. Major importers of Indonesia's veneer sheets over the period 2003-2007

3.4. Malaysia

Over the period 2002-2006, Malaysia's veneer sheets production slightly decreased by 8%, from 0.66 millions m³ in year 2002 to 0.61 millions m³ in year 2006 (Table 10). Veneer sheets import quantity was drastically decreased by 70%, while veneer sheets export quantity was also decreased with a lower rate of 31%. Further, domestic veneer sheets consumption only increased by 11% over the period 2002-2006. On the other hand, in terms of value, veneer sheets export value was decreased by 1%, indicating an increase in Malaysia's veneer sheets export price, while import value only increased by 24%, indicating a sharply increase in Malaysia's veneer sheets import price during the period 2002-2006.

FAO (2008) reported in 2005, the single largest country was Japan followed by United States of America, The Republic of Korea, China, and United Kingdom,

which all together accounted for 81% of Malaysia's veneer sheets exports (Figure 10).

Table 10. Production, imports, and exports of Malaysia veneer sheets in 2002-2006

Item	Unit	Year					Growth (%)	
		2002	2003	2004	2005	2006	Periodic	Annual
Production Quantity	Million M3	0.66	0.64	0.64	0.67	0.61	-8%	-2%
Imports Quantity	Million M3	0.16	0.13	0.06	0.05	0.05	-70%	-26%
Imports Value	US\$ Million	35.87	28.17	44.30	44.38	44.38	24%	5%
Imports Price	US\$/M3	222.80	220.05	738.40	924.58	924.58	315%	43%
Exports Quantity	Million M3	0.60	0.46	0.40	0.41	0.41	-31%	-9%
Exports Value	US\$ Million	112.80	109.20	97.57	111.12	111.12	-1%	0%
Exports Price	US\$/M3	187.69	236.36	245.15	268.40	268.40	43%	9%
Consumption	Million M3	0.22	0.31	0.30	0.30	0.25	11%	3%

Source: FAO (2008)

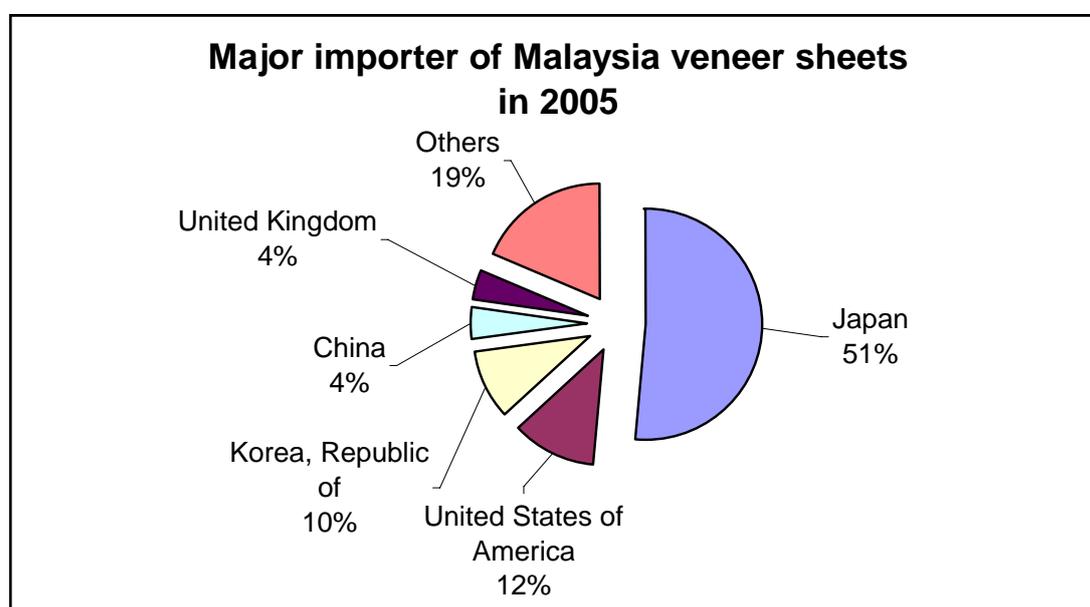


Figure 10. Major importers of Malaysia's veneer sheets in 2005

3.5. Papua New Guinea

Similar to that plywood product, during the period 2002-2006, FAOSTAT database did not report statistics data on veneer sheets, except data on export, which ranged from 36,000 m³ in 2002 to 65,000 m³ in 2006 with export value ranging from US\$6.30 millions in 2002 to US\$12.48 millions in 2006. This report was closed to data provided by FAOSTAT trade database, which reported that Papua New Guinea's veneer sheets export was about 35,043 m³ with export value of US\$11.47 millions in 2005. Country destinations were The Republic of Korea, China, Australia and Japan.

IV. MARKET AND TRADE OF PARTICLEBOARD

4.1. World

During the period 2002-2006, world's particleboard production significantly increased from 85.81 millions m³ in year 2002 to 104.13 millions m³ in year 2006, a 21% increase (Table 11). Table 9 also shows world's particleboard export quantity, import quantity, and price increased by 25%, 25%, and 37% over the period 2002-2006, respectively.

Table 11. World production, imports, and exports of particleboard in 2002-2006

Item	Unit	Year					Growth (%)	
		2002	2003	2004	2005	2006	Periodic	Annual
Production Quantity	Million M3	85.81	92.08	98.44	101.32	104.13	21%	5%
Imports Quantity	Million M3	24.07	25.06	28.51	28.98	30.04	25%	6%
Imports Value	US\$ Million	4.00	5.38	7.19	7.20	6.68	67%	14%
Exports Quantity	Million M3	24.32	25.48	28.72	29.39	30.30	25%	6%
Exports Value	US\$ Million	4.16	5.47	7.43	7.39	7.30	75%	15%
Price	US\$/M3	169	215	255	250	232	37%	8%

Source: FAO (2008)

Major world's producers were United States of America (USA), Canada, Germany, China, and France, which together accounted for 54% of world's production (Figure 11). The production increase has occurred mainly in China followed by United States of America (USA), Canada, and Germany.

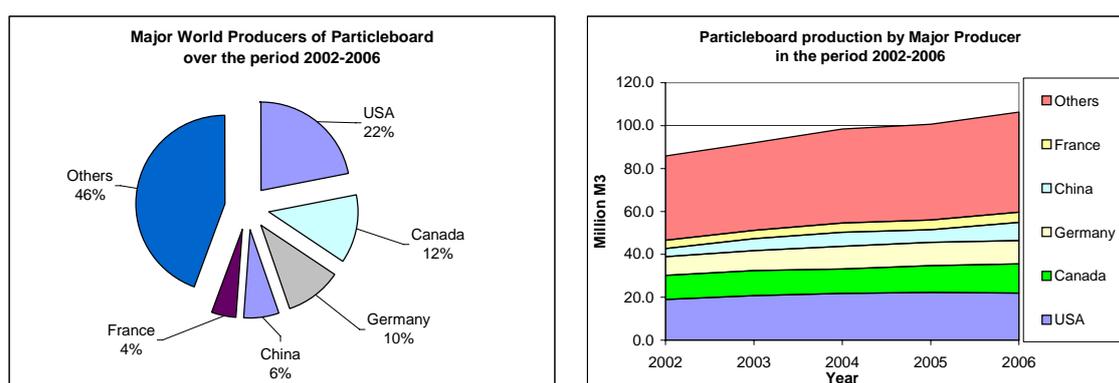


Figure 11. World's particleboard production and its major producers in 2002-2006

Major world's exporters were Canada, Germany, Austria, Belgium, and France, which together accounted for 65% of world's export (Figure 12). The

export increase has occurred mainly in Canada, Germany and France, while production decreased in Belgium.

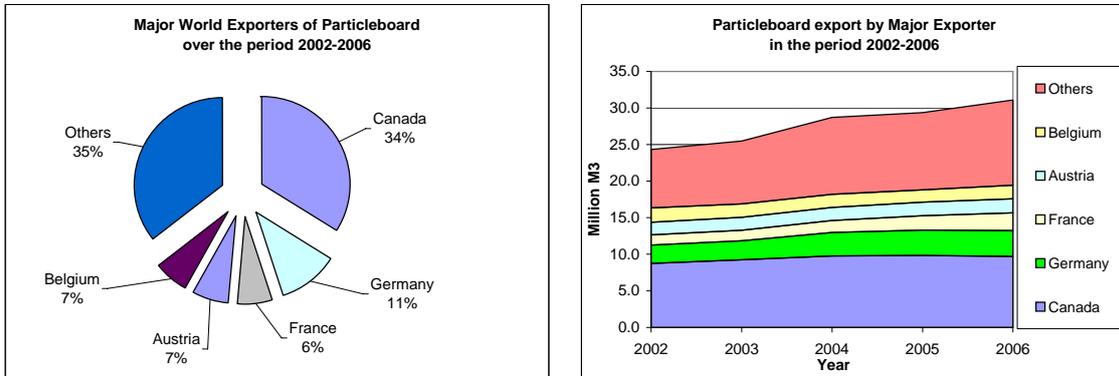


Figure 12. World's particleboard export and its major exporters in 2002-2006

The single largest importer country was United States of America followed by Germany, United Kingdom, China, Poland, and the Republic of Korea, which all together accounted for 57% of world's import (Figure 13). The import increase has occurred mainly in United States of America (USA) followed by Poland and Germany. In United Kingdom, import slightly decreased.

Although United States of America and China were two of the largest world's producers, which together accounted for 28% of world's production, they were net importers, which together accounted for 40% of world's import.

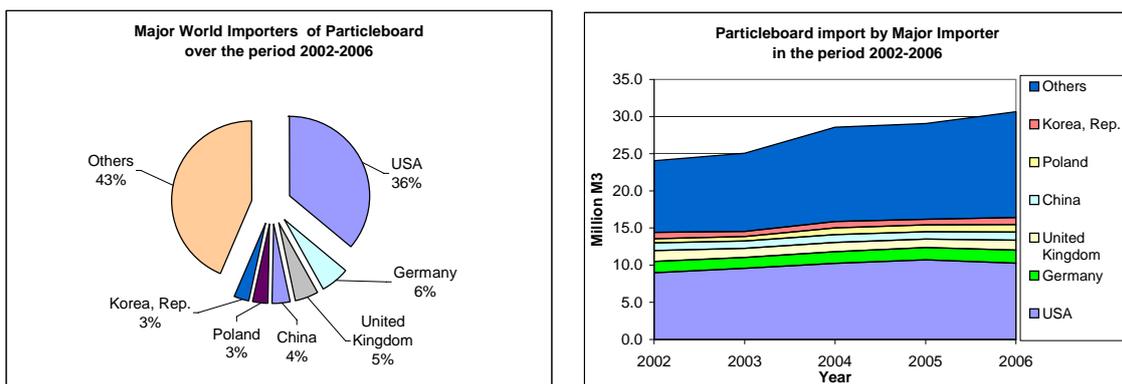


Figure 13. World's particleboard import and its major importers in 2002-2006

4.2. ITTO Countries

Particleboard production from ITTO countries increased slightly from 3.80 million m³ in 2002 to 3.86 million m³ in 2006, an increase of 1.5% (Table 12). Over this period, about 18.96 million m³ of particleboard were produced which accounted for 3.9% of the world's production of particleboard. Of this 13.14 million m³ (69.3%) was provided by the Latin America region, 5.57 million m³ (29.4%) by Asia-Pacific, and 0.24 million m³ (1.3%) by Africa. The largest single producer was Brazil, which alone accounted for 59.0% of ITTO production. Other important producers were Thailand (14.25), Malaysia (8.4%), and Indonesia (6.0%).

Table 12. Production, exports, change, country and regional shares of particleboard in the period 2002-2006

Country/Region	Production (million CUM)					Exports (million CUM)				
	2002	2006	Change 2002-2006	Total 2002-2006	Total shares (%)	2002	2006	Change 2002-2006	Total 2002-2006	Total shares (%)
Cameroon	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Central African Republic	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Congo, Dem Republic of	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Congo, Republic of	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Côte d'Ivoire	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Gabon	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Ghana	0.01	0.01	0.00	0.04	0.2%	0.00	0.00	0.00	0.00	0.0%
Liberia	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Nigeria	0.04	0.04	0.00	0.20	1.1%	0.00	0.00	0.00	0.00	0.0%
Togo	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Africa	0.05	0.05	0.00	0.24	1.3%	0.00	0.00	0.00	0.00	0.0%
Cambodia	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Fiji Islands	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
India	0.03	0.02	0.00	0.12	0.6%	0.00	0.00	0.00	0.02	0.2%
Indonesia	0.30	0.13	-0.17	1.14	6.0%	0.17	0.05	-0.12	0.55	6.1%
Malaysia	0.52	0.22	-0.31	1.59	8.4%	0.37	0.64	0.27	2.20	24.4%
Myanmar	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Papua New Guinea	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Philippines	0.01	0.01	0.00	0.03	0.2%	0.00	0.00	0.00	0.00	0.0%
Thailand	0.54	0.54	0.00	2.69	14.2%	0.38	1.69	1.31	4.58	50.9%
Vanuatu	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Asia Pacific	1.39	0.91	-0.48	5.57	29.4%	0.92	2.39	1.46	7.35	81.7%
Bolivia	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Brazil	1.94	2.50	0.56	11.18	59.0%	0.02	0.20	0.18	0.30	3.3%
Colombia	0.13	0.18	0.05	0.79	4.1%	0.03	0.02	-0.01	0.19	2.1%
Ecuador	0.09	0.09	0.00	0.47	2.5%	0.06	0.04	-0.02	0.27	3.0%
Guatemala	0.00	0.01	0.00	0.03	0.1%	0.00	0.00	0.00	0.02	0.2%
Guyana	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Honduras	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Mexico	0.13	0.10	-0.03	0.53	2.8%	0.02	0.21	0.20	0.72	8.0%
Panama	0.00	0.00	0.00	0.02	0.1%	0.00	0.00	0.00	0.00	0.0%
Peru	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Suriname	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Trinidad and Tobago	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Venezuela, Bolivar Rep of	0.06	0.02	-0.04	0.13	0.7%	0.02	0.01	-0.01	0.15	1.7%
Latin America	2.36	2.90	0.53	13.14	69.3%	0.14	0.48	0.34	1.64	18.3%
Total ITTO Producers	3.80	3.86	0.06	18.96	100.0%	1.07	2.87	1.80	9.00	100.0%
World	85.81	104.13	18.32	481.78		24.32	30.30	5.99	138.21	

Source: FAO (2008)

Production grew fastest in the Latin America region with growth of 22.6% in the period 2002-2006, whereas in Asia-Pacific region, production decreased by

34.5% over that period. The production increase has occurred mainly in Brazil, while the production decrease has occurred mainly in Malaysia and Indonesia.

From 2002 to 2006, ITTO producing countries exported about 9.00 million m³ of particleboard or about 47.5% of their production (Table 12). The largest share came from the Asia-Pacific region with exports of 7.35 million m³ (81.7%). Latin America exported about 1.64 million m³ (18.3%). The main exporting countries were Thailand and Malaysia, which together accounted for 75.3% of ITTO particleboard exports. Another important, but smaller exporter were Mexico (8.0%) and Indonesia (6.1%).

4.3. Indonesia

Table 13 shows during the period 2003-2007 Indonesia's particleboard production sharply decreased from 0.07 millions m³ in year 2003 to 0.03 millions m³ in year 2006 (MOF 2008a). Particleboard export was even decreased more sharply during that period, from 0.13 million m³ in year 2003 to 0.01 million m³ in year 2007 (MOF 2008b). On the other hand, particleboard import was increased by more than twelve times over that period. Furthermore, Indonesia import and export prices were respectively decreased by 32% and 91%.

Table 13. Production, imports, and exports of Indonesia particleboard in 2003-2007

Item	Unit	Year					Growth (%)	
		2003	2004	2005	2006	2007	Periodic	Annual
Production Quantity	Million ton	0.07	0.17	0.09	0.03	NA		
Imports Quantity	Million ton	0.01	0.02	0.04	0.08	0.15	1236%	91%
Imports Value	US\$ Million	3.91	8.28	10.46	20.62	35.41	806%	73%
Imports Price	US\$/ton	344.71	335.16	268.01	244.25	233.61	-32%	-9%
Exports Quantity	Million ton	0.13	0.05	0.03	0.01	0.01	-96%	-54%
Exports Value	US\$ Million	25.84	11.63	5.38	4.62	2.43	-91%	-45%
Exports Price	US\$/ton	203.97	241.63	178.16	395.79	431.99	112%	21%
Consumption	Million ton	-0.05	0.15	0.10	0.10	NA		

Sources: MOF (2008a and 2008b)

Meanwhile, during the period 2002-2006, FAO (2008) reported that Indonesia's particleboard production sharply decreased from 0.30 millions m³ in year 2002 to 0.13 millions m³ in year 2006, a 58% decrease (Table 14). Particleboard export was even decreased more sharply during that period, from 0.17 million m³ in year 2002 to 0.05 million m³ in year 2006. Given that consumption was only slightly decreased of 5%, particleboard import was then

almost triple over that period. Furthermore, Indonesia import and export prices were respectively decreased by 10% and 18%.

Table 14. Production, imports, and exports of Indonesia particleboard in 2002-2006

Item	Unit	Year					Growth (%)	
		2002	2003	2004	2005	2006	Periodic	Annual
Production Quantity	Million M3	0.30	0.30	0.30	0.13	0.13	-58%	-19%
Imports Quantity	Million M3	0.02	0.02	0.04	0.06	0.06	192%	31%
Imports Value	US\$ Million	3.96	3.91	8.28	10.46	10.46	164%	27%
Imports Price	US\$/M3	192.65	224.05	217.84	174.32	174.32	-10%	-2%
Exports Quantity	Million M3	0.17	0.19	0.09	0.05	0.05	-73%	-28%
Exports Value	US\$ Million	24.12	25.84	11.63	5.38	5.38	-78%	-31%
Exports Price	US\$/M3	141.23	133.29	134.17	116.48	116.48	-18%	-5%
Consumption	Million M3	0.15	0.12	0.25	0.14	0.14	-5%	-1%

Source: FAO (2008)

MOF (2008b) reported over the period 2003-2007, major importer countries were The Republic of Korea, Taiwan, Viet Nam, Hongkong and China, which together accounted for 90% of Indonesia's particleboard exports (Figure 14). Moreover, during that period Indonesia's particleboard exports to those countries were also declining sharply

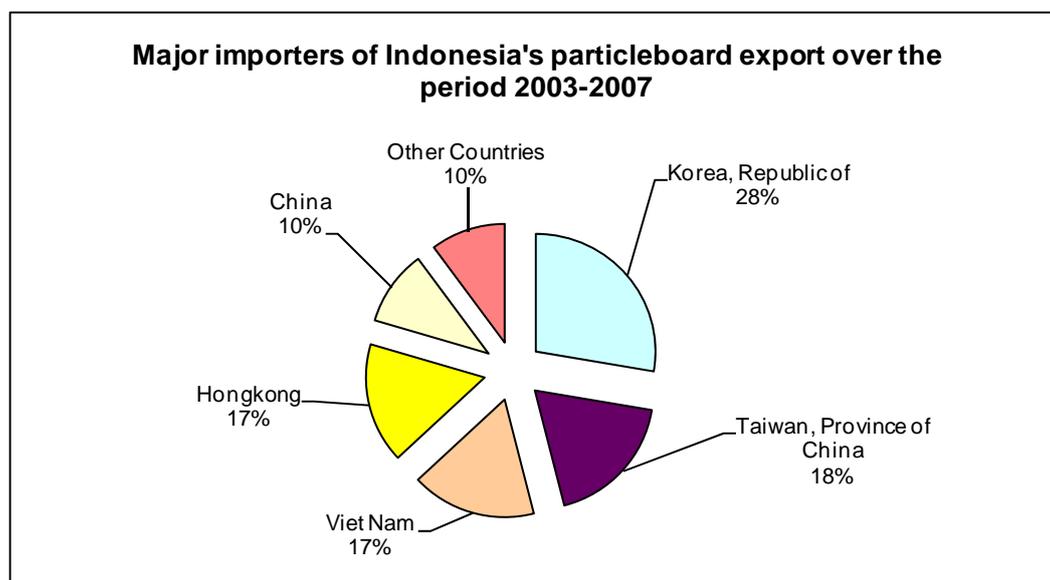


Figure 14. Major importers of Indonesia's particleboard over the period 2003-2007

4.4. Malaysia

Over the period 2002-2006, Malaysia's particleboard production sharply decreased by 58%, from 0.52 millions m3 in year 2002 to 0.22 millions m3 in year 2006 (Table 15). Particleboard import was drastically increased by 288%, while particleboard export increased only by 36%. Domestic particleboard consumption decreased by 138%, however, this consumption was a negligible amount over that period.

Table 15. Production, imports, and exports of Malaysia particleboard in 2002-2006

Item	Unit	Year					Growth (%)	
		2002	2003	2004	2005	2006	Periodic	Annual
Production Quantity	Million M3	0.52	0.12	0.09	0.64	0.22	-58%	-20%
Imports Quantity	Million M3	0.05	0.11	0.16	0.20	0.20	288%	40%
Imports Value	US\$ Million	15.00	21.32	36.26	26.51	26.51	77%	15%
Imports Price	US\$/M3	288.46	201.19	232.95	131.24	131.24	-55%	-18%
Exports Quantity	Million M3	0.37	0.31	0.38	0.50	0.50	36%	8%
Exports Value	US\$ Million	57.87	41.46	51.52	61.43	61.43	6%	2%
Exports Price	US\$/M3	157.67	133.95	134.17	123.10	123.10	-22%	-6%
Consumption	Million M3	0.21	-0.08	-0.14	0.34	-0.08	-138%	

Source: FAO (2008)

On the other hand, in terms of value, particleboard export value was increased only by 6%, indicating a decrease in Malaysia's particleboard export price. Similar to that export, import quantity increased by 288%, but import value only increased by 77%, indicating a decrease in Malaysia's plywood import price during the period 2002-2006.

FAO (2008) reported in 2005, major importer countries were China, The Republic of Korea, Japan, Viet Nam and Indonesia, which together accounted for 89% of Malaysia's particleboard exports (Figure 15).

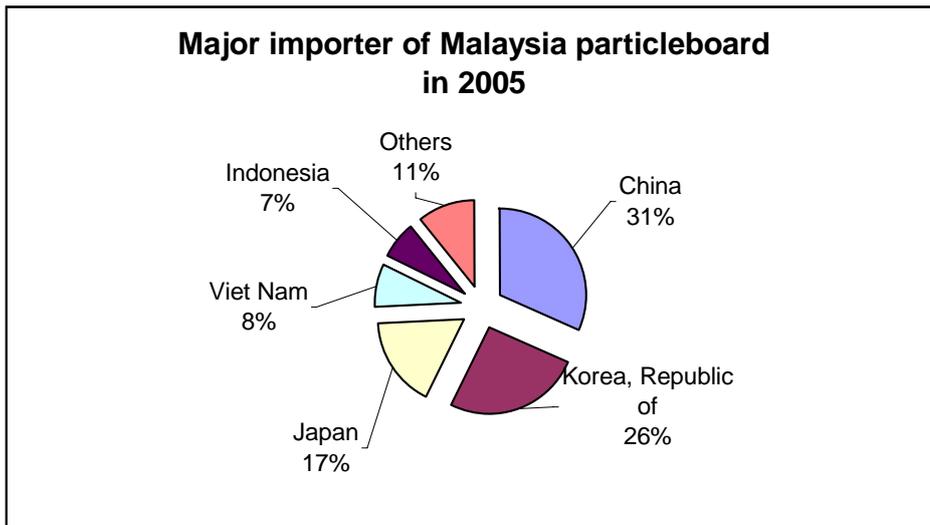


Figure 15. Major importers of Malaysia's particleboard in 2005

4.5. Papua New Guinea

During the period 2002-2006, FAOSTAT database did not report statistics data on fiberboard.

V. MARKET AND TRADE OF FIBERBOARD

5.1. World

During the period 2002-2006, world's fiberboard production increased from 41.14 millions m3 in year 2002 to 59.00 millions m3 in year 2006, a 43% increase (Table 16). Table 12 also shows world's fiberboard export quantity, import quantity, and price increased by 23%, 29%, and 35% over the period 2002-2006, respectively.

Table 16. World production, imports, and exports of fiberboard in 2002-2006

Item	Unit	Year					Growth (%)	
		2002	2003	2004	2005	2006	Periodic	Annual
Production Quantity	Million M3	41.14	47.01	54.51	56.56	59.00	43%	9%
Imports Quantity	Million M3	17.34	18.96	21.45	22.15	22.42	29%	7%
Imports Value	US\$ Billion	4.35	5.31	6.69	7.23	7.50	73%	15%
Exports Quantity	Million M3	16.87	17.58	19.81	21.07	20.82	23%	5%
Exports Value	US\$ Billion	4.44	5.17	6.35	6.79	7.48	68%	14%
Price	US\$/M3	257	287	316	324	346	35%	8%

Source: FAO (2008)

Major world's producers were China, United States of America (USA), Germany, Poland, Canada, and Brazil, which together accounted for 62% of world's production (Figure 16). The production increase was mostly in China. In Canada, production decreased.

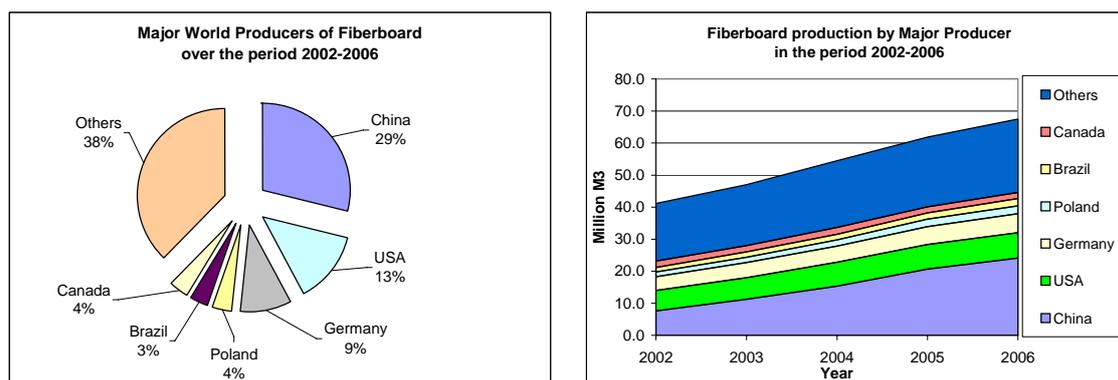


Figure 16. World's fiberboard production and its major producers in 2002-2006

Major world's exporters were Germany, Canada, France, Malaysia, Poland, China, and Spain, which together accounted for 50% of world's export (Figure17).

The export increase has occurred mainly in China, Germany, Poland and Malaysia, while production decreased in Poland.

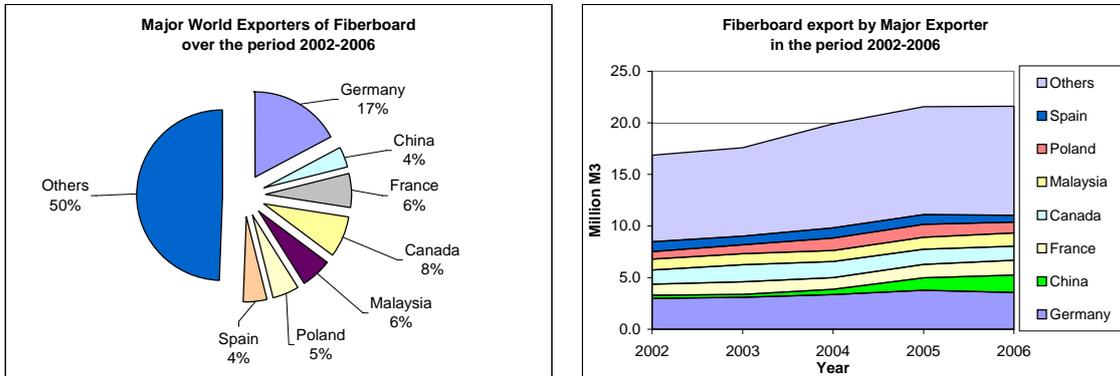


Figure 17. World's fiberboard export and its major exporters in 2002-2006

In order of importance, major world's importers were United States of America (USA), China, Germany, United Kingdom, Belgium, and the Republic of Korea, which together accounted for 43% of world's import (Figure 18). The import increase has occurred mainly in United States of America (USA) followed by Belgium. In China, Germany, United Kingdom, and the Republic of Korea, import decreased.

Although United States of America and China were two of the largest world's producers, which together accounted for 42% of world's production, they were net importers, which together accounted for 26% of world's import.

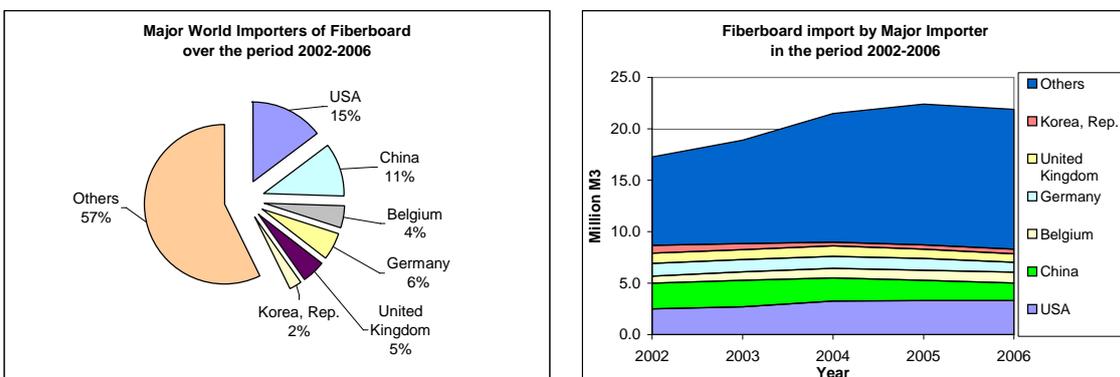


Figure 18. World's fiberboard import and its major importers in 2002-2006

5.2. ITTO Countries

Fiberboard production from ITTO producer countries increased sharply from 4.26 million m³ in 2002 to 5.94 million m³ in 2006, an increase of 39.5% (Table 17). Over this period, about 24.51 million m³ of fiberboard were produced which accounted for 9.5% of the world's production of fiberboard. Of this 13.15 million m³ (53.7%) was provided by the Asia-Pacific region, 11.20 million m³ (45.7%) by Latin America, and 0.15 million m³ (0.6%) by Africa. The main producers were Brazil (37.0%), Malaysia (27.7%) and Thailand (14.8%), which together accounted for 79.5% of ITTO production. Other important producers were Indonesia (8.7%), Venezuela (5.6%) and India (2.5%).

Table 17. Production, exports, change, country and regional shares of fibreboard in the period 2002-2006

Country/Region	Production (million CUM)					Exports (million CUM)				
	2002	2006	Change 2002-2006	Total 2006	Total shares (%)	2002	2006	Change 2002-2006	Total 2006	Total shares (%)
Cameroon	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Central African Republic	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Congo, Dem Republic of	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Congo, Republic of	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Côte d'Ivoire	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Gabon	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Ghana	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Liberia	0.03	0.03	0.00	0.15	0.6%	0.00	0.00	0.00	0.00	0.0%
Nigeria	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Togo	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Africa	0.03	0.03	0.00	0.15	0.6%	0.00	0.00	0.00	0.00	0.0%
Cambodia	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Fiji Islands	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
India	0.11	0.13	0.02	0.61	2.5%	0.01	0.01	0.00	0.07	0.5%
Indonesia	0.43	0.43	0.00	2.14	8.7%	0.25	0.44	0.19	1.69	11.8%
Malaysia	1.22	1.50	0.28	6.78	27.7%	1.06	1.28	0.22	5.67	39.4%
Myanmar	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Papua New Guinea	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Philippines	0.00	0.00	0.00	0.00	0.0%	0.00	0.03	0.03	0.08	0.6%
Thailand	0.73	0.72	-0.01	3.63	14.8%	0.60	1.06	0.46	3.68	25.6%
Vanuatu	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Asia Pacific	2.49	2.78	0.29	13.15	53.7%	1.91	2.81	0.90	11.19	77.8%
Bolivia	0.01	0.02	0.02	0.07	0.3%	0.01	0.01	0.00	0.06	0.4%
Brazil	1.41	2.30	0.89	9.06	37.0%	0.40	0.51	0.11	2.45	17.0%
Colombia	0.02	0.02	0.01	0.10	0.4%	0.01	0.01	0.00	0.05	0.3%
Ecuador	0.02	0.02	0.00	0.09	0.4%	0.04	0.04	0.00	0.22	1.5%
Guatemala	0.00	0.00	0.00	0.00	0.0%	0.01	0.00	-0.01	0.01	0.1%
Guyana	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Honduras	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Mexico	0.10	0.11	0.01	0.49	2.0%	0.01	0.00	-0.01	0.02	0.2%
Panama	0.00	0.00	0.00	0.02	0.1%	0.00	0.00	0.00	0.00	0.0%
Peru	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Suriname	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.01	0.1%
Trinidad and Tobago	0.00	0.00	0.00	0.00	0.0%	0.00	0.00	0.00	0.00	0.0%
Venezuela, Bolivar Rep of	0.18	0.65	0.47	1.37	5.6%	0.03	0.05	0.02	0.38	2.6%
Latin America	1.74	3.13	1.39	11.20	45.7%	0.50	0.63	0.12	3.19	22.2%
Total ITTO Producers	4.26	5.94	1.68	24.51	100.0%	2.42	3.44	1.03	14.39	100.0%
World	41.14	59.00	17.86	258.23		16.87	20.82	3.95	96.15	

Source: FAO (2008)

Production grew fastest in the Latin America region followed by Asia-Pacific region. The production increase has occurred mainly in Brazil, Venezuela and Malaysia, while production decreased in Thailand.

From 2002 to 2006, ITTO producing countries exported about 14.39 million m³ of fiberboard or about 58.7% of their production (Table 17). The largest share came from the Asia-Pacific region with exports of 11.19 million m³ (77.8%) followed by Latin America of 3.19 million m³ (22.2%). In order of importance, the main exporting countries were Malaysia, Thailand, Brazil and Indonesia, which together accounted for 93.8% of ITTO fiberboard exports.

5.3. Indonesia

During the period 2003-2007, Ministry of Forestry of the Republic of Indonesia did not report Indonesia's fiberboard production, but it did report exports and imports of fiberboard as shown in Table 18, which shows that export quantities were higher than import quantities even though export growth was slower than import growth over the period 2003-2007.

Table 18. Production, imports, and exports of Indonesia fiberboard in 2003-2007

Item	Unit	Year					Growth (%)	
		2003	2004	2005	2006	2007	Periodic	Annual
Production Quantity	Million ton	NA	NA	NA	NA	NA		
Imports Quantity	Million ton	0.03	0.05	0.06	0.06	0.06	95%	18%
Imports Value	US\$ Million	10.20	17.30	20.32	20.79	23.61	132%	23%
Imports Price	US\$/ton	317.75	324.09	313.78	328.92	377.73	19%	4%
Exports Quantity	Million ton	0.17	0.20	0.23	0.20	0.21	26%	6%
Exports Value	US\$ Million	34.55	47.22	55.09	49.35	70.80	105%	20%
Exports Price	US\$/ton	202.22	235.30	234.65	240.80	329.46	63%	13%
Consumption	Million ton							

Source: MOF (2008b)

Meanwhile, during the period 2002-2006, FAO (2008) reported that Indonesia's fiberboard production was relatively unchanged (Table 19). Meanwhile, fiberboard consumption and import price were decreased by 24% and 22%, respectively. Coupled with import quantity that was doubled over that period, Indonesia fiberboard export quantity was increased by 57%. However, export value increased only by 25%, indicating a decrease in Indonesia fiberboard export prices.

Table 19. Production, imports, and exports of Indonesia fiberboard in 2002-2006

Item	Unit	Year					Growth (%)	
		2002	2003	2004	2005	2006	Periodic	Annual
Production Quantity	Million M3	0.43	0.43	0.43	0.43	0.43	0%	0%
Imports Quantity	Million M3	0.08	0.05	0.11	0.16	0.16	102%	19%
Imports Value	US\$ Million	12.95	10.20	17.54	20.32	20.32	57%	12%
Imports Price	US\$/M3	166.66	188.23	161.21	129.61	129.61	-22%	-6%
Exports Quantity	Million M3	0.25	0.22	0.35	0.39	0.39	57%	12%
Exports Value	US\$ Million	44.14	34.87	47.52	55.09	55.09	25%	6%
Exports Price	US\$/M3	178.51	160.90	137.27	141.47	141.47	-21%	-6%
Consumption	Million M3	0.26	0.26	0.19	0.19	0.19	-24%	-7%

Source: FAO (2008)

MOF (2008b) reported over the period 2003-2007, major importer countries were China, Saudi Arabia, the Republic of Korea, Taiwan and Syria Arab Republic, which together accounted for 66% of Indonesia's fiberboard exports (Figure 19). Moreover, during that period Indonesia's fiberboard exports to China, Saudi Arabia, and Syria Arab Republic increased, while to the Republic of Korea and Taiwan decreased.

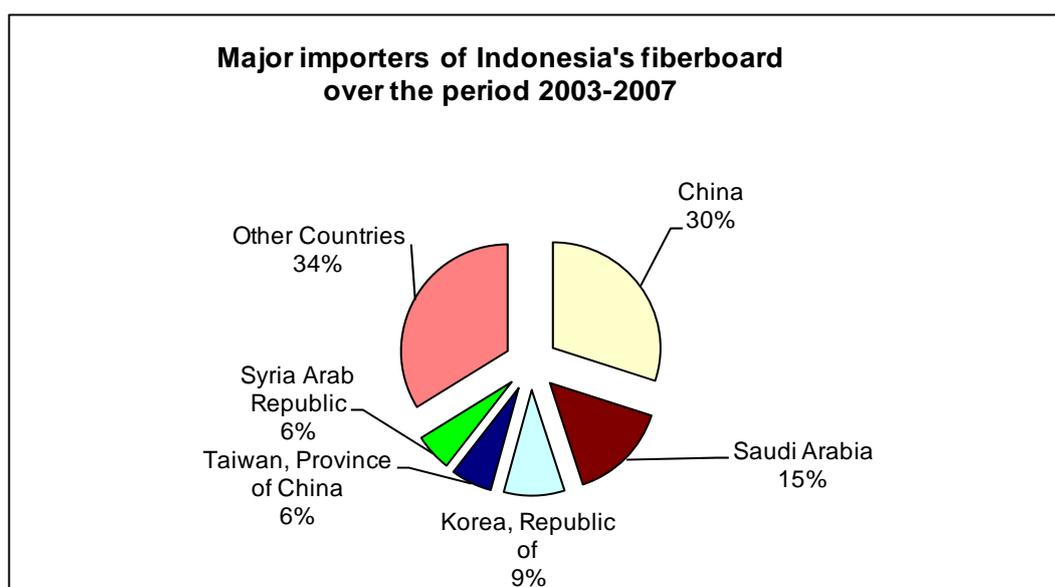


Figure 19. Major importers of Indonesia's fiberboard over the period 2002-2006

5.4. Malaysia

Over the period 2002-2006, Malaysia's fiberboard production sharply increased by 23%, from 1.22 millions m3 in year 2002 to 1.50 millions m3 in year 2006 (Table 20). Fiberboard import quantity was drastically increased by 77%,

while export quantity only increased by 10%, as domestic consumption increased by 95%.

Table 20. Production, imports, and exports of Malaysia fiberboard in 2002-2006

Item	Unit	Year					Growth (%)	
		2002	2003	2004	2005	2006	Periodic	Annual
Production Quantity	Million M3	1.22	1.24	1.45	1.36	1.50	23%	5%
Imports Quantity	Million M3	0.07	0.03	0.11	0.12	0.12	77%	15%
Imports Value	US\$ Million	9.47	6.37	16.56	23.55	23.55	149%	26%
Imports Price	US\$/M3	141.31	214.97	145.24	198.59	198.59	41%	9%
Exports Quantity	Million M3	1.06	1.08	1.09	1.17	1.17	10%	3%
Exports Value	US\$ Million	228.12	265.29	244.01	284.67	284.67	25%	6%
Exports Price	US\$/M3	215.82	246.44	224.18	243.93	243.93	13%	3%
Consumption	Million M3	0.23	0.20	0.48	0.31	0.46	95%	18%

Source: FAO (2008)

On the other hand, in terms of value, fiberboard export value was increased by 25%, 2.5 times the increase of export quantity, indicating an increase in Malaysia's fiberboard export price. Similar to that export, import quantity increased by 77%, but import value increased by 149%, indicating an increase in Malaysia's fiberboard import price during the period 2002-2006.

FAO (2008) reported in 2005, major importer countries were Japan, United States of America, The Republic of Korea, China, and United Kingdom, which together accounted for 81% of Malaysia's fiberboard exports (Figure 20).

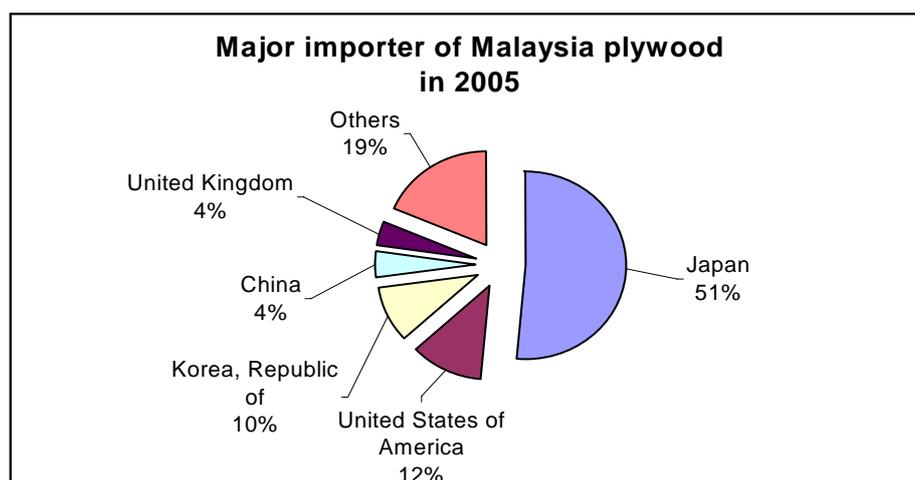


Figure 20. Major importers of Malaysia's fiberboard in 2005

5.5. Papua New Guinea

During the period 2002-2006, FAOSTAT database did not report statistics data on fiberboard.

VI. SUMMARY

Plywood production from ITTO producer countries decreased by 7.0% over the period 2002-2006. Over that period, about 84.32 million m³ of plywood were produced which accounted for 25% of the world's production of plywood. The Asia-Pacific region provided 74.9%, the Latin America region 22.9%, and the Africa region 2.2%. The largest single producer was Indonesia, which alone accounted for 31.5% of ITTO producer countries production. Other important producers were Malaysia (28.8%), Brazil (20.3%) and India (11.3%). Major tropical plywood importers in 2006 were Japan, United States of America, The Republic of Korea, Taiwan and China. A few Western European countries were also important importers, though smaller.

Veneer sheet production from ITTO producer countries increased sharply by 33.6% during the period 2002-2006. Over this period, about 15.78 million m³ of veneer sheet were produced which accounted for one third of the world's production of veneer sheets. Of this 54.3% was provided by the Asia-Pacific region, 24.3% by the Latin America region, and 21.4% by the Africa region. Main producers were Malaysia, Brazil, Indonesia, Ghana, India, the Philippines, and Côte d'Ivoire, which together accounted for 87.2% of ITTO producer countries production. Major tropical veneer sheet importers in 2006 were The Republic of Korea, Taiwan, French, China and Italy. Japan, formerly a major tropical veneer importer, became less significant with imports continuing to decline.

Particleboard production from ITTO producer countries increased slightly by 1.5% during the period 2002-2006. Over this period, about 18.96 million m³ of particleboard were produced which accounted for 3.9% of the world's production of particleboard. The Latin America region provided 69.3%, the Asia-Pacific region 29.4%, and the Africa region 1.3%. The largest single producer was Brazil, which alone accounted for 59.0% of ITTO production. Other important producers were Thailand (14.25%), Malaysia (8.4%), and Indonesia (6.0%).

Over the period 2002-2006, fiberboard production from ITTO producer countries increased sharply by 39.5%. Over this period, about 24.51 million m³ of fiberboard were produced which accounted for 9.5% of the world's production of fiberboard. Of this 53.7% was provided by the Asia-Pacific region, 45.7% by the

Latin America region, and 0.6% by the Africa region. The main producers were Brazil (37.0%), Malaysia (27.7%) and Thailand (14.8%), which together accounted for 79.5% of ITTO production. Other important producers were Indonesia (8.7%), Venezuela (5.6%) and India (2.5%).

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