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FURNITURE INDUSTRY TOUR: SUNSHINE INDUSTRY

LIMITS ON FORMALDEHYDE EMISSION : WHERE DO WE STAND?

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MTIB

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***Cover** :
Furniture produced by Eurospan Furniture Sdn. Bhd. Details on pages 3 and 15.*

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Publisher
MALAYSIAN TIMBER INDUSTRY BOARD
(MINISTRY OF PRIMARY INDUSTRIES)
Level 13 - 17, Menara PGRM, 8, Jalan Pudu Ulu, Cheras,
P.O. Box 10887, 50728 Kuala Lumpur, Malaysia
Tel : 603-9282 2235
Fax : 603-9200 3769/9283 9792
E-mail : info@mtib.gov.my
Website : www.mtib.gov.my

Printer
Gemilang Press Sdn Bhd
No. 16, Jalan S.B. Jaya 12, Taman Industri S.B. Jaya,
47000 Sungai Buloh, Selangor Darul Ehsan
Tel : 603 - 6151 2285
E-mail : gemilangpress2105@gmail.com

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FURNITURE INDUSTRY TOUR: SUNSHINE INDUSTRY

news

YBhg. Dato' Dr. Tan Yew Chong, Secretary-General of MPI (centre) posing with Encik Mohd Kheiruddin Mohd Rani, MTIB Deputy Director-General (extreme left), Encik Antonio Guan from Eurospan Furniture Sdn. Bhd. (second from left) and two other officials from MTIB Butterworth.

Wood had been used for millennia due to its natural properties such as physical and mechanical properties. As green renewable biological raw material, wood is used in numerous applications and is therefore gaining in its importance. The Malaysian timber industry produces a wide range of wood products including sawntimber, engineered woods, pulp, kitchenware, laminated wood and furniture. Furniture products reorded the highest export value.

The furniture industry in Malaysia has come a long way since its humble beginnings in the 1980s. It is believed that the success of the Malaysian furniture industry was due to the introduction of a series of Industrial Master Plans (IMPs) which had a strong focus on value-added products. Hence, on 13 June, MTIB northern region branch organised a tour programme to visit Eurospan Furniture Sdn. Bhd. located in Butterworth which is one of the earliest furniture manufacturing company and now a main furniture exporter in Penang. Joining the programme was YBhg. Dato' Dr. Tan Yew Chong, Secretary-General of Ministry of Primary Industries and Encik Mohd Kheiruddin Mohd Rani, MTIB Deputy Director-General (Development and Commercial). The objective of the programme was to learn the general overview of the Malaysian furniture industry as well to identify its common issues.

Initially operating in 1972 under the name of Sin Bin Furniture, the Eurospan Group of Companies is well-known for its high reputation through world-class "dining set" wood furniture products. The company has three production plants in Malaysia, led by Managing Director, Mr. Guan Kok Beng, all are complying with environmental standards, quality control and systematic solid waste management systems. The company is one of the leading players in the production of exclusive home furnishings in Malaysia as well as being an exporter of fine and quality wood furniture products.

Viewing the rocking test machine.

The Eurospan Group of Companies is also known as "Investment Holding Company" and listed as a "Public Listed Company" in the Second Board of Bursa Malaysia Securities Berhad starting from July 2000. The company working forces are about 450.

The company focuses on producing table and dining sets which are processed from imported wood species namely Beech *(Fagus sylvatica)*. Beech is one of the most important commercial hardwood species for the furniture industry in European countries such as Germany and France. Generally, Beech wood is classified as a medium density hardwood and thus, it is strong, high in

Cont.page 15

AUSTRALIA

Little Logs Get Big Prices

Smaller sized softwood log exports from Australia hit record average prices in March 2019. Averaging FOB AUD162.45 per m^3, prices for softwood logs less than 15 cm diameter hit a new peak, sustaining their recent price advantage over the larger dimension logs.

Exports of the smaller sized logs have fluctuated in recent months, falling in December, rebounding in January, before falling sharply again in February and again rebounding in March 2019. Exports were recorded at 79,357 m^3 in March 2019.

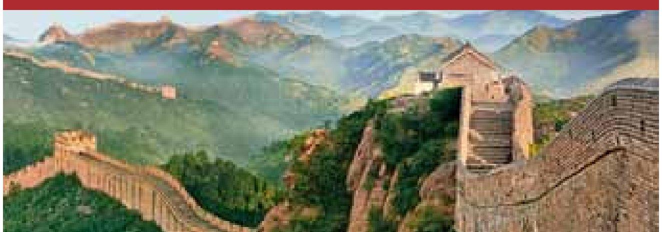
Despite the volumes moving around, the average price of FOB AUD162.45 per m^3 continues a long run of trend price growth for what are traditionally considered to be logs that yield lower value than the larger dimension logs.

Larger dimension (>15 cm diameter at the small end) logs dominate exports volumes, and in March, they accounted for 78.6% of total exports. The reported export volume was 290,667 m^3, at an average price of FOB AUD144.39 per m^3.

Though it cannot be confirmed, Industryedge understands that larger dimension log sales are more linked to contracts than those for smaller dimension logs. Smaller dimension logs are more likely to be sold 'as available 'and as an arising from thinning and harvest where the target product is larger dimension logs.

Overall, higher prices for nominally lower value logs suggests that the value of wood fibre has grown significantly (as we have also experienced with woodchip export prices for instance) and that when the opportunity arises, larger dimension export log prices may well rise.

Industryedge, 4 June



CHINA

Wood Products Trade Continues to Expand

The total value of China's wood products trade rose 6% to USD163.5 billion in 2018. Of the total, the value of wood products exports rose 3% to USD81.6, and imports grew 8% to USD 83.7.

About 27% of the total value of trade in 2018 was non-wood products (USD45.2 billion) a year on year increase of 4%. Of the total, the value of non-wood product exports rose 8% to USD20 billion, accounting for 25% of the total national wood product exports. Imports increased 2% to USD25.2 billion, making up 30% of the total national wood products imports.

China imported wood pulp, logs, sawnwood, paper, paperboard and paper products in 2018. Wood pulp imports were about 25 million tonnes valued at USD19.7 billion, a year on year increase of 4% in volume and 29% in value. China's log imports in 2018 totalled 59.75 million m3 valued at USD10.984 billion, a year on year increase of 8% in volume and 11% in value. 2018 sawn wood imports totalled 36.74 million m^3 valued at USD10.13 billion, a year on year decline of 2% in volume and a slight increase (1%) in value.

China mainly exported wooden furniture, paper, paperboard and paper products, other wood products and plywood. The value of China's wooden furniture exports rose 1% to USD22.9 billion.

The value of other wood products such as flooring exports grew by 12% to USD6.9 billion. China's plywood exports were 11.33 million m^3 valued at USD5.546 billion, a year on year increase of 5% in volume and 9% in value.

ITTO/Fordaq, 26 June

JAPAN

Agonising South Sea (Tropical) Plywood Manufcturers

Plywood manufacturers in Malaysia and Indonesia are in a tough spot with declining orders from overseas markets and the spiralling cost of logs. Since spring of 2017, plywood prices in Malaysia and Indonesia soared to record high level by log shortage while the market in Japan continued sluggish log supply in Indonesia started recovering gradually since fall of 2018 and plywood export prices weakened but the demand in other markets like Korea dropped by the trade conflict between China and the US.

Some plants in Indonesia restarted manufacturing concrete forming panels for Japan since last February and March after the supply of concrete forming panels from Malaysia in the last two years decreased by log shortage in Sarawak.

Malaysian plywood manufacturers continued bullish despite softening trend of Indonesia plywood prices but in last two to three months, export prices of some items are adjusted downward after log prices weakened after the rainy season was over. Log prices of about RM850 per tonne for the last two years are now down to about RM750 per tonne .

Production of plywood mills dropped by lack of orders, so mills profitability has not improved despite lower log cost. Mills continue asking to reduce log prices to log suppliers, but log production cost remains high so the further reduction is unlikely. Mills accept low priced orders from the Middle East market to maintain production, but low operation continues.

Logs, plywood and palm oil are three major items for wood industry in Sarawak, Malaysia but export of logs and palm oil continues slow. Market of palm oil is soft worldwide and log export shifted to Papua New Guinea.

Import plywood market in Tokyo continues weak and warehouses in Tokyo Bay ports are plugged with plywood. Increasing container cargoes results in congestion as unstuffing takes longer. This also influences unloading works of bulk carriers. Shipping companies bear demurrage and they are reluctant to carry plywood now. They are collecting surcharge from plywood manufacturers as they sell cost and freight (C&F) base. Japanese importers face difficult decision to purchase future cargoes since it takes more time from placing orders to delivery to the customers by port congestion.

ITTO TTM, 15-30 June

EUROPEAN UNION

Production in Construction Down by 0.8% in Euro Area

In April 2019 compared with March 2019, seasonally adjusted production in the construction sector decreased by 0.8% in the Euro area (EA19) and by 0.6% in the EU28, according to first estimates from Eurostat, the statistical office of the European Union. In March 2019, production in construction decreased by 0.4% in the euro area and by 0.7% in the EU28.

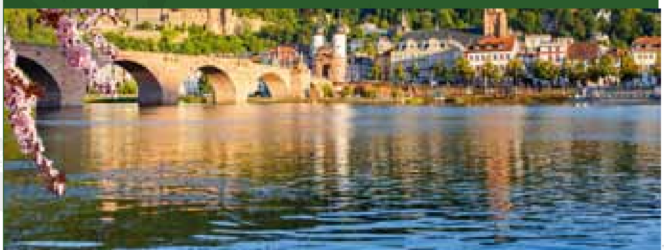
In April 2019 compared with April 2018, production in construction increased by 3.9% in the Euro area and by 4.5% in the EU28. In the Euro area in April 2019, compared with March 2019, civil engineering fell by 2.5% and building construction by 0.5%. In the EU28, civil engineering fell by 2.3% and building construction by 0.4%.

Among the Member States for which data are available, the largest decreases in production in construction were recorded in Slovenia (-7.4%), Hungary (-3.8%) and France (-2.3%). The highest increases were observed in Romania (+6.2%), Belgium (+1.8%) and Spain (+1.6%).

In the Euro area in April 2019, compared with April 2018, building construction increased by 4.0% and civil engineering by 3.4%. In the EU28, civil engineering rose by 5.8% and building construction by 4.1%.

Among Member States for which data are available, the highest increases in production in construction were observed in Hungary (+40.1%), Romania (+31.2%) and Poland (+14.9%). Decreases were recorded in Slovakia (-3.9%) and France (-0.8%).

Eurostat/Fordaq, 27 June



GERMANY

Decreasing Trend in Building Permits

From January to April 2019, the construction of a total of 105,800 apartments was approved in Germany. As reported by the Federal Statistical Office (Destatis), this was 1.3% fewer building permits than in the same period of the previous year. The permits applied to new buildings as well as to construction works on existing buildings.

From January to April 2019, around 92,000 apartments were approved for newly constructed residential buildings. This was 1.4% or 1,300 apartments less than in the same period of the previous year. Only the number of building permits for single-family homes has risen (+ 2.2%). In contrast, the number of building permits for two-family houses fell by 5.2%, while the number of approved multi-family houses fell by 0.5%. Construction work on existing buildings fell by 2.7% to 12,025.

In the case of the new non-residential buildings, which were approved from January to April 2019, the area under construction fell by 7.8 million m^3 compared to the same period of the previous year, to -10.9%.

Destatis/Fordaq, 20 June

LAO PDR

Lao PDR and EU Closer to Agreement on Forest Law Enforcement

The EU and Lao PDR concluded the third formal negotiation towards an agreement on a Voluntary Partnership Agreement (VPA) on Forest Law Enforcement, Governance and Trade (FLEGT). The talks took place in Brussels, Belgium from 17-21 June 2019.

The Agreement aims to establish a system to verify the legality of timber products harvested and exported by Lao PDR. This helps to promote trade in legal timber products, improves forest governance and contributes to combatting illegal logging.

"The Government of Lao PDR is committed to further develop our forest sector into a sustainable resource for our country," said Dr. Phouangparisak Pravongviengkham, Vice Minister of Agriculture and Forestry, the Head of the Lao PDR negotiating team.

"Our negotiations with the EU are part of this, as the implementation of the VPA will help to enhance the robustness of our timber supply chain and the responsible management of our forests."

Since the second face-to-face negotiations in June 2018, Laos has made several revisions, especially to its Forest Law, its Land Law and a new decree on environmental impact assessments. These changes provide further clarification on what will be considered legal under the VPA between Lao PDR and the EU.

During their talks, the EU and Lao PDR reviewed the timber legality definitions, which will be used to indicate legality of timber. Lao PDR made progress on defining the legality of timber from conversion areas and imported timber. Work on natural production forests and labour obligations in forestry, wood processing and trading operations progressed significantly as well. The Lao PDR also provided updates on how communities can now use forests for commercial purposes under the Forest Law, potentially allowing for additional livelihood income for these communities, and providing an additional source of raw materials for SME and household production. And Lao PDR gave further insight into the institutional arrangements to implement the VPA and the timber legality assurance system.

"We welcome the progress Laos has made on developing its VPA timber legality assurance system," said Jorge Rodriguez Romero, Deputy Head of Unit, European Commission Directorate General for Environment.

"We look forward to the testing and implementation of the system, which is an important step in furthering good forest governance and trade in legal timber and will have positive impacts on Lao PDRs' forest sector."

Following the negotiations, work will continue to develop and clarify the timber legality definitions and of the timber legality assurance system. The VPA process has created an unprecedented opportunity for Laos to join a coalition of countries that are fighting illegal logging and improving forest governance around the globe. Currently, 15 countries worldwide are negotiating or implementing VPAs with the EU.

Timberbiz, 27 June

MYANMAR

Log Harvest Target Revisited

On 21 May 2019, the Permanent Secretary of Ministry of Natural Resources and Environmental Conservation said that log extraction will be reduced gradually. It was proposed that teak log harvests will be 10,000 tonnes in 2019-20, 8,000 tonnes in 2020-21 and 6,000 in 2021-2022. For other hardwoods, harvests will be 300,000 tonnes in 2019-2020; 250,000 tonnes in 2020-2021 and 220,000 tonnes in 2021-2022.

ITTO TTM, 15-30 June

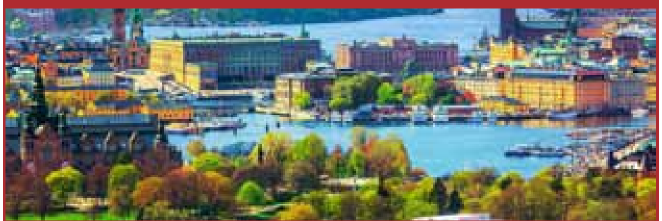
RUSSIA

Lumber Exports from Russia to Japan Jump 20.2%

Lumber exports from Russia to Japan soared 20.2% year-on-year to 80.6 thousand m³ in April 2019, export value expanded 21.1% to USD29.3 million, according to Customs and Tariff Bureau of Japan. Total lumber imports to Japan increased by 8.35% to 528.0 thousand m³ with import value was up 4.60% to USD192.9 million.

Canada's lumber exports to Japan slid 2.21% to 140.0 thousand m³ with export value dropped 6.3% to USD54.2 million. Japan lumber imports from Sweden jumped 23.4% to 71.5 thousand m3, import value increased 15.0% to USD21.4 million.

Globalwood, 11 June



SWEDEN

Softwood Lumber Exports to Egypt Soar 68.2% and to China Fall 34.5% in First Quarter

Sweden increased softwood lumber exports to Egypt by 68.2% year on year in the first quarter 2019 to 365.6 thousand m3, export value jumped 46.2% to USD62.9 million, according to Statistics Sweden. Exports to China declined 34.5% to 163.4 thousand m3 with export value was down 40.0% to USD34.5 million.

Softwood lumber exports to Netherland from Sweden dropped 18.8% to 218.1 thousand m³ with export value decreased 18.4% to USD61.4 million. Exports from Sweden to the UK expanded 1.95% to 680.3 thousand m³, export value was up 10.6% to USD194.7 million.

In the first three months of 2019, total softwood lumber exports from Sweden slid 3.66% to 3.1 million m³ with export value dropped 6.12% to USD806.2 million.

Global wood, 14 June

VIET NAM

Timber Imports Almost 10 Million Cubic Metres

Viet Nam is increasing its imports of primary wood products, especially hardwoods, from over 100 countries to meet the demands of the rapidly expanding processing sector in the country.

In 2018, Viet Nam's wood processing industry imported the roundwood equivalent nearly 10 million m³ of timber that provided around 25% of the total input required by the domestic industries. The value of this wood raw material was USD2.34 billion in 2018 up by 7% compared to 2017.

The EU-Viet Nam VPA/FLEGT is to be implemented soon according to analysts who say this is expected to generate many export opportunities for domestic manufacturers. However, implementation will challenge the sourcing of wood raw materials as Viet Nam still depends on imports from so-called 'high-risk' countries in terms of verification of legality.

Most of Viet Nam-made finished wood products are exported to developed markets such as the US, EU, Japan and South Korea so must meet the legal and technical requirements in these countries. This can be achieved by utilising domestic plantation material such as Acacia, Eucalyptus and Rubberwood and importing verified legal timber raw materials.

Among the top 15 raw wood supplying countries there are seven high risk sources in terms of legality and these currently account for a high proportion of Viet Nam's timber imports. The implementation of the VPA will also impact imports of high value precious species used mainly for domestic consumption and imported from countries with weak forest management and law enforcement.

ITTO TTM, 15-30 June

Morocco: Giant Port is Inaugurated in Tangier

Source: Transport och Logistik

Tangier's port opens new terminals on Thursday, making it larger than the Mediterranean's largest ports, in Valencia and Algeciras. The port was already Africa's largest before the expansion and will have the capacity to handle 9.5 million twenty-foot equivalent units (TEUs) per year. The world's largest port in Shanghai, can handle 32.5 million TEUs.

China: Orient Overseas (International) Ltd. (OOCL) Acquisition Boosts Cosco's Q1 Revenue and Profit

Source: Asian Shippers

CHINA's state-owned Cosco Shipping Holdings has reported an increase in first-quarter revenue and profit, reflecting its acquisition last July of a majority stake in OOIL the parent company of Orient Overseas Container Line (OOCL). In the first quarter of 2019, Cosco moved 5.88 million TEUs, an increase of 42.6 per cent from the first quarter of 2018. That big increase reflects the addition of 1.61 TEUs from OOCL.

Hamburg: Hamburg Volume Up 6.4pc in First Quarter to 2.3 Million TEU

Source: Asian Shippers

Germany's big box port has posted 6.4% year-on-year growth in first quarter container throughput to 2.3 million TEUs. Both general cargo throughput at 23.9 million tonnes up 5.4% and bulk cargo throughput at 10.7 million tonnes up 7.5% rose substantially. A total of 121,000 TEUs for container transport with the US represented an almost fourfold jump, catapulting the America into second place among Hamburg's top trading partners. Twelve liner services now link the Port of Hamburg directly with 29 ports in the US, Mexico and Canada.

Shipments of Timber and Timber Products Through Ports in Peninsular Malaysia, May 2019

Products	Port Klang		Kuantan		Pasir Gudang		Tanjung Pelepas		Penang		Total all Ports m^3	% Change May 2019/ April 2019
	m^3	% Change May 2019/ April 2019	m^3	% Change May 2019/ April 2019	m^3	% Change May 2019/ April 2019	m^3	% Change May 2019/ April 2019	m^3	% Change May 2019/ April 2019		
Sawntimber	71,233	-2	5,042	-71	1,302	-6	480	43	8,557	-7	86,613	-14
MDF	22,911	-16	129	-67	7,523	33	4,045	52	16,480	34	51,088	6
Mouldings	13,220	5	131	-33	2,085	-9	716	-10	859	-36	17,011	-1
Plywood	5,023	54	0	-100	64	100	377	27	13,914	-12	19,378	-1
Veneer	517	5	276	211	0	0	75	-9	4,343	19	5,212	21
Particleboard	27,151	-1	131	-50	1,632	-35	905	52	4,285	-4	34,105	-3
TOTAL	**140,055**	**-3**	**5,709**	**-69**	**12,606**	**6**	**6,598**	**38**	**48,438**	**4**	**213,407**	**-6**

Source : MTIB

United States: US to Inject USD 292 Million into Its Ports

Source: PortNews

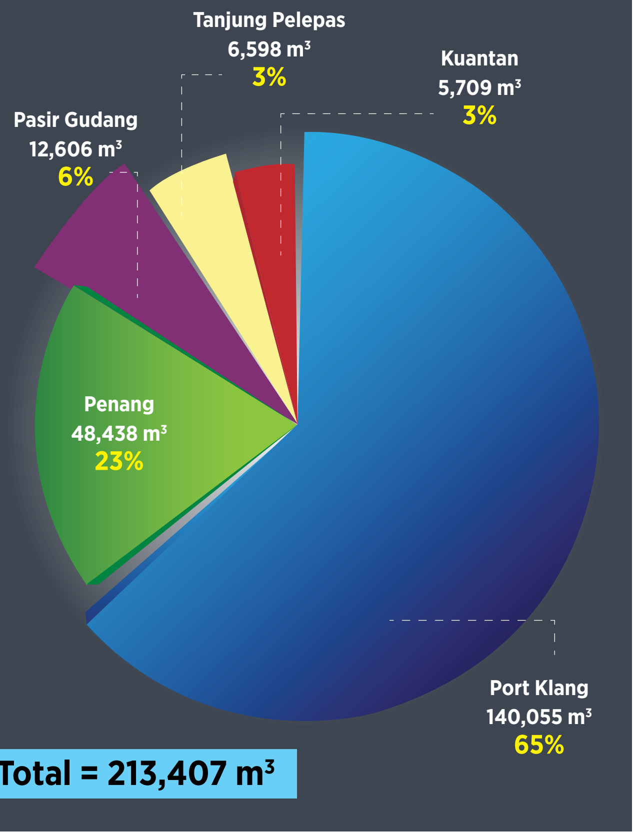
The US has decided to invest USD292.7 million through the new Port Infrastructure Development Programme with the aim of developing the country's ports. The new program aims to support public coastal ports by improving the safety, efficiency or reliability of goods movement into, out of or within a port. The USD292.7 million funding includes USD92.7 million to be invested in 15 coastal seaports that handled the greatest number of loaded foreign and domestic TEUs.

China: Port of Shanghai (China) throughput Remained Flat in January-April 2019

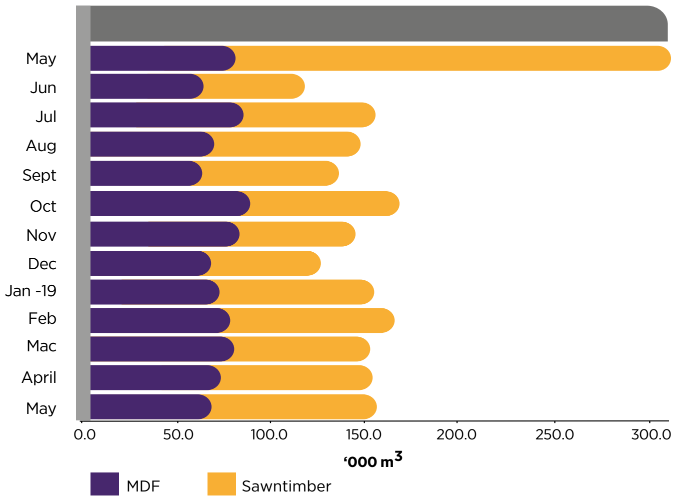
Source: SteelGuru

In January - April 2019, port Hong Kong (China) handled 178.59 million tonnes of cargo having remained flat, year over year. According to the port authority, container throughput of the port grew by 5.6% to 14 million TEUs.

Timber Shipment through Ports in Peninsular Malaysia, May 2019



Malaysia : Export of Sawntimber and MDF
(May 2018-May 2019/Volume ('000m³)



Total export of Malaysian timber and timber products in May 2019 increased 11% valued at RM2.0 billion over the previous month. Similarly, cumulative export for the period of January to May 2019 increased 2% valued at RM9.1 billion over the previous corresponding period.

SAWNTIMBER

Total export of sawntimber in May 2019 both have increased in volume and value by 2% and 3% to 178,096 m^3 with a value of RM329.6 million as compared to the previous month. Cumulative export for the period of January - May 2019 decreased 0.4% in volume but increased 1% in value to 799,739 m^3 totalling RM1.5 billion over the previous corresponding period.

Export of sawntimber to the EU for the month decreased 18% to 8,061 m^3 from the previous month as a result of declining demand from major countries in the region. Export to the France and Germany declined 53% and 42% to 579 m^3 and 748 m^3 followed by the Netherlands at 17% to 3,391 m^3 and UK at 12% to 1,327 m^3. Meanwhile, Italy improved purchases by 64% to 591 m^3.

Total exports to West Asia decreased 20% to 29,181 m^3 from 36,466 m^3 recorded in the previous month. Export to Qatar decreased 72% to 532 m^3 from 1,865 m^3 recorded in the previous month followed by Oman with 55% to 1,698 m^3 and Yemen 35% to 11,048 m^3. On the other hand, export to Bahrain and the UAE increased 25% to 10,546 m^3 and 25% to 10,564 m^3 respectively.

Buying from ASEAN also declined slightly to 53,824 m^3 from 54,033 m^3 registered in the previous month. Export of sawntimber to Thailand, a major buyer of sawntimber from Malaysia decreased 21% to 27,869 m^3 from 23,116 m^3 in the previous month followed by Singapore 8% to 8,029 m^3, Viet Nam 13% to 2,053 m^3 and the Philippines 26% to 21,419 m^3 respectively.

In the meanwhile, shipments to East Asia increased 26% to 55,308 m^3 from 44,018 m^3 in the previous month. Export to South Korea increased by 89% to 3,302 m^3 followed by China 32% to 40,215 m^3. However, export to Hong Kong decreased 34% to 341 m^3 from 514 m^3 in the previous month followed by Taiwan with 15% to 5,863 m^3. Elsewhere, exports to the US decreased 42% to 902 m^3 whilst intake by Australia increased 111% to 840 m^3. Demand from South Africa decreased 4% to 3,408 m^3 from 3,550 m^3 in the previous month.

The average FOB price of sawntimber decreased 1% to RM1,851 per m^3 from RM1,825 per m^3 in the previous month. Meanwhile, price of Dark Red Meranti to the Netherlands decreased 3% to RM3,512 per m^3 from RM3,399 per m^3 in the previous month. Keruing was traded at RM2,244 per m^3, a decrease of 1% from RM2,244 per m^3 in the previous month.

MEDIUM DENSITY FIBREBOARD (MDF)

Export of MDF in May 2019 both have decreased in volume and value by 7% and 1% to 72,762 m^3 totalled RM90.5 million compared to the previous month. Cumulative export for January to May 2019 also recorded a decrease in volume by 9% to 392,098 m^3 and in value by 3% worth RM471.4 million over the previous corresponding period.

In ASEAN, total export decreased by 7% to 10,537 m^3 from 11,345 m^3 in the previous month. Export to Viet Nam has increased by 30% to 5,008 m^3, followed by Indonesia 9% to 2,589 m^3 and the Philippines 45% to 2,523 m^3. Meanwhile, Singapore does not make any purchase this month.

Exports to East Asia registered an increase of 5% to 13,783 m^3 from 13,129 m^3 in the previous month. Japan as the largest buyer in the region has increased its intake by 3% to 12,021 m^3, followed by South Korea 64% to 686 m^3 and Taiwan 35% to 633 m^3. Meanwhile, export to China including Hong Kong has decreased by 14% to 443 m^3 for this month.

However, export to South Asia countries recorded a decrease of 16% to 11,536 m^3 from 13,759 m^3 in the previous month. Export to Pakistan has decreased by 16% to 2,721 m^3 followed by Bangladesh 2% to 1,639 m^3 and Sri Lanka 77% to 642 m^3. However, export to India has increased by 7% to 6,534 m^3 for this month

Similarly, exports to West Asia region decreased by 18% to 21,177 m^3 from 25,917 m^3 in the previous month. Export to the UAE has decreased by 15% to 10,715 m^3, followed by Saudi Arabia 57% to 1,150 m^3 and Oman 47% to 971 m^3. Similarly, exports to Qatar and Jordan have decreased by 63% to 515 m^3 and 94% to 32 m^3 respectively. In contrast, exports to Kuwait and Bahrain have increased by 751% to 2,741 m^3 and 83% to 621 m^3 m^3 respectively. However, Iran, Lebanon and Syria did not make any purchases this month.

Elsewhere, exports to Australia, the UK, South Africa and Mauritius have increased by 17% to 2,534 m^3,56% to 359 m^3, 53% to 810 m^3 and 12% to 150 m^3 respectively. However, export to the US has decreased by 14% to 2,105 m^3 for this month.

The FOB price of MDF has reduced to RM1,243 per m^3 from RM1,164 per m^3, an increase of 7% from the previous month.

PLYWOOD

Export of plywood in May 2019 both have increased in volume and value by 49% and 54% to 171,515 m^3 totalled RM357.1 million compared to the previous month. However, cumulative export for the period of January - May 2019 showed a decrease in volume by 16% to 785,238 m^3 and in value by 13% worth RM1.6 billion over the previous corresponding period.

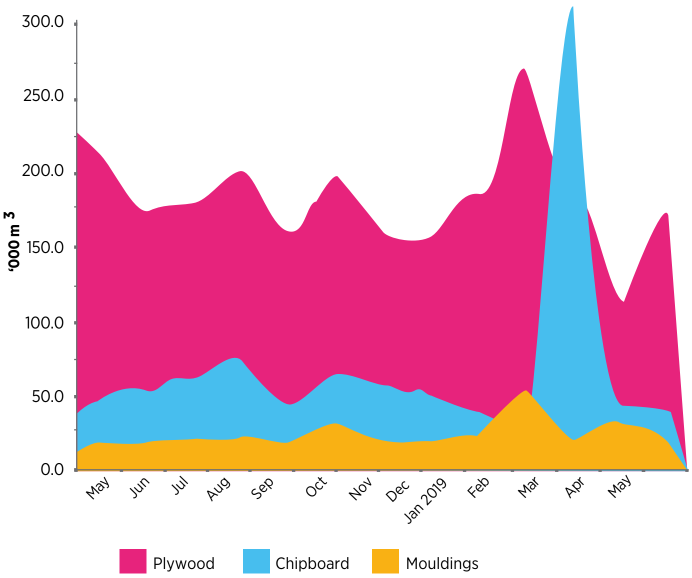
Total export of plywood to the EU countries have increased by 9% to 7,174 m^3 and export to the UK as the main buyer from the region also increased by 12% to 6,185 m^3. Ireland and Italy also have increased its buying by 82% to 273 m^3 and 121% to 86 m^3 respectively. However, exports to Belgium and Denmark have decreased by 14% to 263 m^3 and 6% to 281 m^3 respectively. Meanwhile, France, Germany and the Netherlands did not make any purchases this month.

Exports to ASEAN and East Asia region recorded an increase of 52% to 124,626 m^3 compared to the previous month. In East Asia region, Japan as the main importer of Malaysian plywood increased its intake by 89% to 89,152 m^3. Similarly, export to South Korea has increased by 8% to 13,920 m^3, followed by Hong Kong 19% to 2,121 m^3 and China 26% to 1,659 m^3. On the other hand, Malaysia's plywood trade with its ASEAN partners generally showed mixed trend this month. Exports to the Philippines, Singapore and Brunei have reduced by 22% to 663 m^3, 27% to 1,496 m^3 and 34% to 623 m^3 respectively. However, export to Thailand has increased by 2% to 3,377 m^3 and Indonesia does not make any purchase this month.

Exports to West Asian countries recorded an increase of 35% to 15,176 m^3 as compared to the previous month. Yemen as the biggest buyer of Malaysian plywood in the region has increased its import by 59% to 11,066 m^3. Similarly, exports to Bahrain has increased by 85% to 426 m^3, followed by Qatar 123% to 212 m^3 and Kuwait 155% to 107 m^3. Contrarily, exports to Saudi Arabia and the UAE have decreased by 30% to 806 m^3 and 78% to 235 m^3 respectively.

Export of plywood to the Americas region has reduced by 90% to 18,347 m^3 as compared to the previous month. Our main buyer in the Americas region, the US has increased its intake of plywood by 150% to 14,740 m^3. Similarly, export to Canada has increased by 17% to 754 m^3. However, export to Mexico has decreased by 8% to 2,853 m^3. Moving to Oceania region, Australia recorded a decrease in its intake of plywood by 3% to 2,424 m^3, but export to New Zealand has increased by 2% to 64 m^3.

Malaysia : Export of Plywood, Chipboard and Mouldings
(May 2018-May 2019/Volume ('000m^3)



For the month of May 2019, export to African continent showed negative growth whereas export to South Africa has decreased by 66% to 43 m^3 whilst Algeria and Mauritius didn't make any purchase this month. Meanwhile, Turkey has increased its intake by 549% to 279 m^3.

The FOB price of plywood has increased by 3% to RM2,082 per m^3 from RM2,013 per m^3 in the previous month.

MOULDINGS

Exports of mouldings for the month decreased by 41% in volume and 8% in value to 18,398 m^3 and RM74.7 million respectively. However, cumulative exports for the period of January to May 2019 increased by 4% in volume and 5% in value to 106,182 m^3 and RM380.7 million respectively as compared to the previous corresponding period in 2018.

Exports to the EU for the month recorded at 6,774 m^3, an increase of 21% compared to the previous month. Germany, Belgium and the Netherlands decreased their purchases by 47%, 22% and 11% to 474 m^3, 695 m^3 and 4,299 m^3 respectively. However UK increased its purchases by 16% to 578 m^3 compared to the previous month. Meanwhile, Italy resumed its purchases by 95 m^3 for the month.

Exports to ASEAN region decreased as Singapore and Viet Nam decreased its purchases by 11% and 1% to 904 m^3 and 810 m^3 respectively. Meanwhile, Indonesia did not make any purchases.

Cont.page 14

MAY 2019

LOGS

The supplies of logs were reported to be sufficiently available. The average domestic prices of logs for most of the species for the month under review remained at last month's level.

Log prices for the species of Chengal, Balau and Red Balau stood firm at RM4,545 per tonne, RM3,200 per tonne and RM2,200 per tonne respectively. Similarly, the prices for Keruing, Kempas and Kapur continued to be traded at RM1,400 per tonne, RM1,900 per tonne and RM1,680 per tonne respectively. Meanwhile, the price for Tualang increased slightly by 1.8% to RM1,425 per tonne over the previous month. The prices for Dark Red Meranti and Red Meranti remained at RM2,080 per tonne and RM1,800 per tonne respectively. On the other hand, logs prices for Mixed Heavy Hardwood and Mixed Light Hardwood remained at RM1,000 per tonne and RM925 per tonne respectively.

SAWNTIMBER

The average sawntimber prices for most of the species in the domestic market continued to be firm.

The sawntimber prices of Chengal and Balau maintained at RM6,850 per m^3 and RM3,390 per m^3 respectively. Similarly, the prices for Keruing and Kempas stood at RM1,303 per m^3 and RM2,542 per m^3 respectively. Meanwhile, the prices of Kapur and Dark Red Meranti increased by 0.3% and 0.2% to RM1,751 per m^3 and RM2,041 per m^3 compared to the previous month. The prices for Red Meranti and Yellow Meranti remained at RM2,013 per m^3 and RM1,568 per m^3 respectively. On the other hand, sawn timber prices of Mixed Heavy Hardwood and Mixed Light Hardwood continued to chart at RM1,024 per m^3 and RM953 per m^3 respectively.

PLYWOOD

The supply of plywood to the domestic market remained adequate for the month under review. The prices of plywood for 4 mm, 6 mm, 9 mm and 12 mm of thicknesses were continued to be traded at RM14.60, RM22.00, RM38.00 and RM48.00 per piece respectively.

MEDIUM DENSITY FIBREBOARD (MDF)

Domestic supply of MDF remained stable as prices continued to chart at last month's level. The MDF prices of 4 mm, 6 mm, 9 mm and 12 mm of thicknesses were sold at RM13.00, RM16.24, RM21.96 and RM28.64 per piece respectively.

INTRA-MALAYSIA TRADE * - MAY 2019

The shipments of logs from Sabah to Peninsular Malaysia for the month charted in volume to 1,470 m^3 worth at RM490,000. Trade of sawntimber increased tremendously by 100% in volume from 224 m^3 to 449 m^3 worth at RM689,000. Likewise, trade of plywood increased by 50% in volume to 6,366 m^3 worth at RM11.3 million. Trade of Veneer resumed in volume to 35 m^3 worth at RM77,000.

Trade of logs from Sarawak to Peninsular Malaysia for the month charted in volume to 80 m^3 worth at RM21,000. Trade of sawntimber increased by 24% in volume to 1,693 m^3 worth at RM2.9 million. Meanwhile, trade of plywood drop by 9% in volume to 3,236 m^3 worth at RM4.3 million. Trade of veneer increased by 57% in volume to 6,060 m^3 worth at RM4.9 million.

No intra trade from Peninsular Malaysia to Sabah and Sarawak was recorded in May 2019.

** Source: Malaysian Timber Industry Board (MTIB) and Department of Statistics, Malaysia*

*AVERAGE DOMESTIC PRICES OF LOGS, SAWNTIMBER, PLYWOOD AND MDF IN PENINSULAR MALAYSIA RINGGIT MALAYSIA MAY 2019

SPECIES	LOGS/tonne	SAWNTIMBER/m³		
	18" UP	GMS	STRIPS	SCANTLINGS/m³
HEAVY HARDWOOD				
Chengal	4,545	6,850	5,438	7,451
Balau	3,200	3,390	3,178	2,754
Red Balau	2,200	2,966	2,613	3,249
Merbau	3,250	4,661	3,814	3,955
Mixed Heavy Hardwood	1,000	1,024	812	1,028
MEDIUM HARDWOOD				
Keruing	1,400	1,303	1,215	2,203
Kempas	1,900	2,542	2,401	2,684
Kapur	1,680	1,751	1,423	1,766
Mengkulang	1,300	2,048	1,081	2,126
Tualang	1,425	2,472	2,331	2,493
LIGHT HARDWOOD				
Dark Red Meranti	2,080	2,041	1,709	3,016
Red Meranti	1,800	2,013	1,730	2,189
Yellow Meranti	1,200	1,568	1,236	1,271
White Meranti	1,480	2,472	1,412	2,260
Mersawa	1,730	1,836	1,695	2,048
Nyatoh	1,325	1,589	1,201	1,271
Sepetir	1,350	1,695	1,003	1,730
Jelutong	1,100	1,780	1,215	1,801
Mixed Light Hardwood	925	953	742	978

	LOGS/tonne	SAWNTIMBER/m3			
		1" X 1"	2"X2"	3"X 3"	4" X 4"
MALAYSIAN RUBBERWOOD *Hevea brasiliensis*	160	1,045	1,174	1,315	1,529

PLYWOOD 4' X 8' *(RM per piece)*	**4 mm**	**6 mm**	**9 mm**	**12 mm**
	14.60	22.00	38.00	48.00
MDF 4' X 8' *(RM per piece)*	**4 mm**	**6 mm**	**9 mm**	**12 mm**
	13.00	16.24	21.96	28.64

Note: Log prices ex-batau. Sawn timber, plywood, MDF and Malaysian Rubberwood (Hevea brasiliensis) prices ex-mill
** Prices are only indicative*

INTRA-MALAYSIA TRADE - MAY 2019

From	Product	Apr 2019		Apr 2019		% Change in Value May 2019/Apr 2019	% Change in Volume May 2019/Apr 2019
		Vol (m³)	Val (RM' 000)	Vol (m³)	Val (RM' 000)		
SABAH	Logs	1,470	490	1,470	490	0	0
	Sawntimber	224	509	449	689	100	35
	Plywood	4,237	8,646	6,366	11,327	50	31
	Veneer	0	0	35	77	100	100
SARAWAK	Logs	0	0	80	21	100	100
	Sawntimber	1,362	2,299	1,693	2,885	24	25
	Plywood	3,565	4,819	3,236	4,338	-9	-10
	Veneer	3,863	4,657	6,060	4,881	57	5

Source :- Department Of Statistic, Malaysia

Cont. from page 11

Meanwhile, China, Taiwan, South Korea and Japan decreased their intake by 71%, 15%, 11%, and 2% to 171 m³, 121 m³, 1,490 m³ and 1,489 m³ respectively. However, Hong Kong increased their intake by 2% to 346 m³ compared to the previous month.

Elsewhere, export to Australia and Canada decreased by 83% and 58% to 2,119 m³ and 46 m³ respectively. However, the US increased its intakes by 31% to 2,931 m³ compared to 2,239 m³ in the previous month.

FOB unit value increased 56% to RM4,061 per m³ compared to RM2,598 per m³ in the previous month.

VENEER

Export of veneer for May 2019 reduced by 48% in volume and 33% in value to 6,291 m³ at RM11 million as compared to the previous month. Exports to China and Taiwan have decreased by 37% and 72% to 1,156 m³ and 2,096 m³ respectively. In the meanwhile, Australia has increased its intake of veneer by 273% to 112 m³.

South Korea has reduced its intake of veneer by 82% to 168 m³. Contrarily, the Philippines have increased their intake of veneer by 45% to 1,366 m³. On the other hand, Italy, Viet Nam and Chile did not make any purchases this month.

The FOB price of veneer recorded at RM1,749 per m³, an increase of 28% from RM 1,367 per m³ on the previous month.

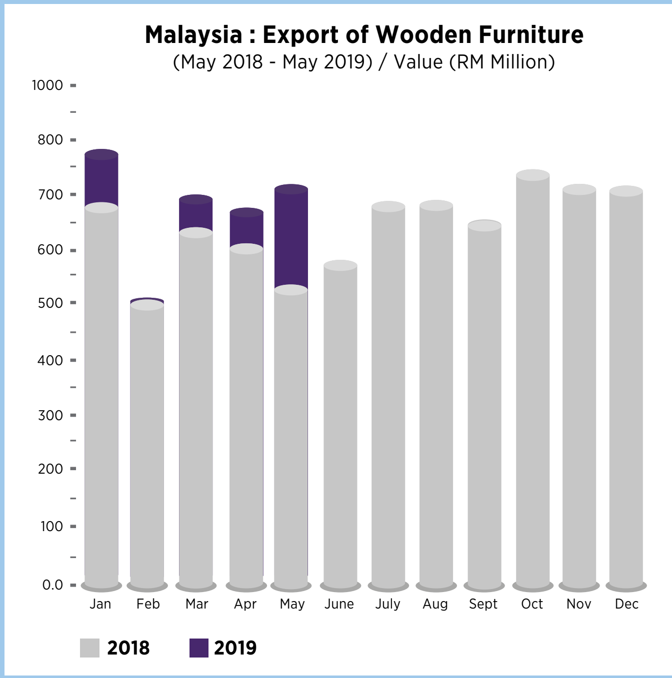
BUILDERS JOINERY AND CARPENTRY (BJC)

Total BJC cumulative exports for the period of January to May 2019 decreased 9% to RM403.2 million as compared to RM443.3 million in the corresponding period last year. Export to the EU decreased 22% to RM161.2 million. Export to Sweden and Germany increased by 217% and 34% to RM1.6 million and RM9.3 million respectively. Meanwhile, export to Turkey, France, Italy, Denmark, the UK and Belgium decreased by 95%, 42%, 37%, 32%, 31% and 22% to RM1.2 million, RM18.6 million, RM3.2 million, RM15.1 million, RM68.9 million and RM23.4 million respectively.

In Asia, exports to South Korea, Saudi Arabia, the UAE, Thailand, India and Japan increase by 136%, 53%, 41%, 28%, 14% and 7% to RM361.2 thousand, RM665.0 thousand, RM2.9 million, RM7.4 million, RM13.8 million and 26.5 million respectively. However, exports to the Viet Nam, Pakistan, Singapore and Taiwan decreased by 41%, 33%, 16% and 2% to RM19.3 million, RM1.9 million, RM35.4 million and RM4.0 million respectively. Meanwhile, Qatar and Bahrain did not make any purchases.

Exports to Mauritius, South Africa, the US and Australia increased by 352%, 18%, 14% and 5% to RM70.0 thousand, RM7.1 million, RM44.0 million and RM83.7 respectively. Meanwhile, Reunion Island resumed its purchases.

MAY 2019



FURNITURE

Export of wooden and rattan furniture for the period of January to May 2019 increased 13% to RM3.4 billion from RM2.9 billion in the previous corresponding period.

Imports of wooden furniture by the US increased 26% to RM1.4 billion from RM1.1 billion in the previous corresponding period of 2018. Demand from Canada also increased 25% to RM124.1 million whilst export to Australia declined 9% to RM190.2 million. In Europe, shipment to the UK increased 37% to RM215.5 million followed by France 7% to RM27.4 million, Belgium 43% to RM22.4 million, Poland 21% to RM16.0 million and Sweden 5% to RM13.9 million. Meanwhile, export to Russia decreased 19% to RM11.3 million over the previous corresponding period.

In East Asia, China reduced consumption by 16% to RM79.8 million from RM95.3 million in 2018. Export to South Korea also declined 16% to RM34.3 million whilst Japan increased 11% to RM242.7 million from RM218.2 million in 2018. Export to India declined 3% to RM79.5 million from RM81.8 million in the previous corresponding period.

In ASEAN region, export to Singapore increased 7% to RM185.1 million followed by the Philippines 11% to RM89.9 million compared to the previous corresponding period. Export to West Asia saw growth as the UAE increased intake by 11% to RM60.5 million followed by Saudi Arabia with 52% to RM78.1 million and Kuwait 5% to RM22.9 million.

Rattan furniture shipments for the period of January to May 2019 decreased 74% to RM605.2 thousand from RM2.3 million in the previous corresponding period. Export registered only for Japan with RM65.6 thousand followed by Singapore with RM42.0 thousand, Australia RM388.7 thousand and China RM5 thousand.

Cont.from page 3

Seats and tables from Beech wood.

resistance to shock, heavy, and hard. A total of approximately 500 m^3 of Beech wood sawntimber was imported per month by the company with a daily production of seats and tables of 2,000 and 300 units respectively.

The company is focusing on the production of dining set products with diversified design production to fulfill a wide range of demand from its customers. Before large-scale production of products takes place, a sample will be made for product testing. This is to ensure that all products meet certain requirements by the customers.

The company has expanded its business into approximately 160 export market countries including United Kingdom, Russia, USA, Canada, Central and South America, Australia, New Zealand, Africa, Japan, Korea, Hong Kong, Taiwan, Singapore and West Asian countries. The company had recorded an approximately, USD15 million/RM60 million of sales revenue in year of 2018. The company also participated in numerious international fair and exhibition such as Malaysian International Furniture Fair (MIFF), China International Furniture Fair (CIFF) and Cologne Fair, Germany.

The company carries out business with small-sized importers to avoid the influence of buyers or retailers in making decision which affected on the domination of business. The products are exported differently according to region to avoid competition between distributors and same products designs.

The company also implements a partial mechanisation and automation policy where the production process is less dependent on the use of labour. The company depends on important raw materials, as opposed to local sources, which is in line with The National Timber Industry Policy (NATIP) 2006-2020.

Improving Malaysian Higher Education Knowledge Towards Wood and Furniture Industry 4.0

Participants of the seminar.

Dr. Mohd Nor Zamri Mat Amin from MTIB presenting a paper on Timber and Furniture Industry in Malaysia.

MAKING 4.0 is part of the European Union's ERASMUS+ under Capacity Building in Higher Education. MAKING 4.0 has established collaboration between European-Malaysian consortium with the objective to develop an innovative Master Degree for professionals/engineers/skilled manpower of furniture smart factories by focusing on the ICTs skill needed in order to increase competitiveness of the timber and furniture industry of Malaysia.

The second meeting of Improving Malaysian Higher Education Knowledge Towards Wood and Furniture Industry 4.0 (MAKING 4.0) was held from 29 June to 7 July at Warsaw University of Life Sciences (WULS) in Warsaw, Poland. The Malaysian delegates were involved in a series of seminars and meetings with their European counterparts, a tour of the Wood Technology Department facilities in WULS and a courtesy visit to the Malaysia Embassy in Warsaw, Poland. The delegates were also able to participate in a historical tour of Warsaw, Poland, organised by WULS on 6 July.

The European and Malaysian delegation had learnt from Poland as a third ranking furniture exporters in the world on how the Polish academicians worked closely with its furniture industry. This include furniture companies such as Madom Pro and woodworking machineries supplier like Homag from Germany for their practical students in WULS and to exchange their knowledge and expertise among others such as industrial training, woodworking machinery promotion centre and technical consultation for quality improvement.

Dr.Mohd Nor Zamri Mat Amin, Director of Wood Industry Skills Development Centre (WISDEC) of MTIB presented a paper on "Timber and Furniture Industry in Malaysia". The first meeting (Kick of Meeting-KoM) was held in Malaysia in December 2018, and a third meeting will be held in Malaysia in December 2019. The duration of the project is three years (2018 – 2021)

During the meeting, the delegates discussed on the gaps analysis based on the findings of questionnaires on comparison among Europe and Malaysia students awareness programme on Industry 4.0 revolution and proposed a new curriculum on industry 4.0 for the Malaysian education system based on the practicality and industry market needs in the highest education in Europe. This survey findings were compiled by Universiti Putra Malaysia, Universidad Politecnica de Cartagena (Spain), and Centro Technologico del Mueble y la Madera (Italy).

A visit to Furniture Restoration Class in Wood Technology Faculty at WULS.

Briefing by a representative from Mardon Pro company.

At Mardon Pro company.

The Malaysian timber industry has been one of the major sources of foreign exchange earnings for the country for decades, and it continues to contribute significantly towards its economic growth through revenue earnings and employment. In 2018, the export value of timber and timber products was RM22.3 billion. The export target for furniture products is over RM10 billion by 2020. Since Malaysia's timber and timber products are being exported to more than 160 countries, this industry needs to address various issues and challenges such as technology and human capital development.

European-Malaysian cooperation between higher education institutions is essential for the development of human capital. Erasmus+ is one of the European Commission's Programme which focuses on education, training, youth and sport, and to provide opportunities for mobility of learners and staff and cooperation across in these fields.

The consortium combines the expertise of four European Higher Education Institutions/ Organisations such as Polytechnic University of Cartagena-UPCT (Spain), Technical Research Centre of Furniture and Wood of the Region of Murcia-CETEM (Spain), Karlsruhe Institute of Technology-KIT (Germany) and Warsaw University of Life Sciences-WULS (Poland). Meanwhile, the Malaysian higher learning institutions/organisation were represented by Universiti Kebangsaan Malaysia (UKM), Universiti Putra Malaysia (UPM), Universiti Teknologi MARA (UiTM), Universiti Sains Malaysia (USM) and MTIB.

Twenty-five delegates attended the second meeting on Improving Malaysian Higher Education Knowledge Towards Wood and Furniture Industry 4.0 – Making 4.0 in Warsaw, Poland. MTIB was represented by Dr. Mohd Nor Zamri Mat Amin and Encik Mohd Amin Kadir.

LIMITS ON FORMALDEHYDE EMISSION : WHERE DO WE STAND?

Formaldehyde – The Hidden Threat

Formaldehyde is a type of colourless and reactive volatile organic compounds (VOCs) that exists as pungent smelling gas at room temperature. Formaldehyde can be manufactured as a liquid (formalin) or a solid (paraformaldehyde). It is an important industrial chemical used to make other chemicals and various types of products including home furnishings, household cleaners, paints, textiles, landscape and yard products, medicinal and personal care products and pesticides. Based on sufficient evidence of carcinogenicity in humans and in experimental animals (IARC 2006), formaldehyde is classified under Group 1 - chemicals that are carcinogenic to humans.

The amounts of formaldehyde found in both indoor and outdoor air are normally quite low. For instance, the levels in outdoor air are generally below 0.001-0.02 mg/m^3, but higher levels can be found in some homes which range from 0.02 to 0.06 mg/m^3. Common sources of human exposure to formaldehyde include vehicle emissions, work place, paints and varnishes, foods and cooking, release from wood-based panels and similar building materials, carpets, tobacco smoke, and disinfectant.

Formaldehyde from Wood-based Panel Products

Amino plastic resins are the most prevalently used adhesive in the production of wood-based panels. Through the reaction of formaldehyde (F), urea (U) and/or melamine (M), a wide variety of adhesives could be produced, for example, urea-formaldehyde resin (UF), melamine-formaldehyde resin (MF), melamine-urea-formaldehyde condensation resin (MUF) and melamine-urea-phenol-formaldehyde condensation resin (MUPF, PMUF). Among these adhesive, UF resin is the most common adhesive used in the manufacturing of wood-based panels owing to their cheaper price and high reactivity, which requires shorter pressing time.

Nevertheless, the major drawback of UF resin is that they are highly instable when exposed to high relative humidity along with elevated temperature. Thus, unlike phenolic resins which are quite stable once cured, both UF and MUF resins are the main sources that contributes to the formaldehyde emitted from wood-based panels (He et al. 2012). The sources of formaldehyde (i.e. unreacted free formaldehyde or partially cured resin in the panels), temperature, humidity level and ventilation rate in a building decides the formaldehyde concentration in indoor air. Wood-based panels is the main sources of indoor formaldehyde emission in the residential houses and educational facilities (Campagnolo et al. 2017).

Survey carried out at a factory.

Formaldehyde and its Impact to Human's Health

The major effects following a critical inhalation exposure to formaldehyde is irritation and burning of the mucous membranes of the nose, mouth and upper respiratory tract. Acute inhalation exposure to large amounts of formaldehyde may also give rise to weakness, headache, nausea, vomiting, pneumonia, dyspnoea, wheezing, coughing, laryngeal and pulmonary oedema, bronchospasm, laryngeal spasm, respiratory depression, obstructive tracheo-bronchitis, central nervous system depression, convulsions and coma. Symptoms such as headaches, dizziness, sleep disorders, and memory loss can be related to the chronic exposure to formaldehyde. Users have around 30-60% higher risk in getting headache and dizziness if the exposure persisting for a long period of time.

There is sufficient evidence for a linkage between formaldehyde exposure and nasopharyngeal cancer, nasal and paranasal cancer, and leukemias. Among all the formaldehyde-related cancers, occurrence of myeloid leukemia is the most common among patients.

Formaldehyde Regulations Around the World

Several countries in the world has already developed their own regulatory in limiting the formaldehyde emission from wood-based panels. **Table 1** lists out the country/region that have imposed formaldehyde emission limit on their wood-based panels.

Table 1- Formaldehyde Emission Limits for Imported and Domestic Wood Products Adopted Different by Countries and Regions

Country	Formaldehyde emission limit	Remark	Reference
Europe	E1 (≤ 6.5mg/100g)	Since 2006, emission class E1 became obligatory for panel production of European Panel Federation (EPF) members	Ruffing et al. (2011)
USA	CARB Phase 2: Plywood – 0.05 ppm MDF – 0.11 ppm Particleboard – 0.09 ppm	Regulated products must meet the emission standards beginning 1 June 2018	Ruffing et al. (2011)
Australia and New Zealand	E0 (≤ 0.5mg/L) E1 (≤ 1.5mg/L)	Only low formaldehyde-emitting pressed wood products that meet the Australian Standards for formaldehyde emission limits (E0 and E1) shall be used indoor	The National Industrial Chemicals Notification and Assessment Scheme (NICNAS) (2016)
Japan	F**** (≤ 0.3mg/L) F*** (≤ 0.5mg/L)	F*** boards are used restrictedly within a room depending on air exchange and room size while F**** is used unrestrictedly	Ruffing et al. (2011)
China	E1 (≤ 1.5mg/L)	China has started regulating E1 as the maximum allowable level of formaldehyde emission from wood-based products in May 2018	GB 18580 (2017)
Korea	E1 (≤ 1.5mg/L) and E2 (≤ 5.0mg/L) for plywood E1 (≤ 1.5mg/L) for particleboard and MDF	The emission limits are imposed to keep up with the increasing stringent international standard such as CARB phase 2 (NIFOS)	Personal communication with National Institute of Forest Science, Republic of Korea
Malaysia	No limitation	-	-

Discussion at a plywood mill

Where do Malaysia Stand?

Presently in Malaysia, no regulation on maximum formaldehyde level for domestic use has been imposed. All wood panel products, either manufactured locally or imported from other countries, are not required to be inspected for formaldehyde emission level. Nevertheless, some importers may specify certain levels of formaldehyde emission for their products. Consequently, the domestic wood-based panels market is flooded with panels with unknown formaldehyde content.

To keep up with the increasing demand for environmentally friendly and sustainable wood products, as well as to meet the stringent international standards on limits of formaldehyde emission, it is utmost important to limit the maximum formaldehyde emission from the wood-based panels products for domestic use in Malaysia. However, imposing technical regulation also implies

Group photo at one of the mills.

the increment in cost of production which may affect the small-to-medium-sized panel mills, furniture operators as well as the consumers.

What Happen if Technical Regulation on Formaldehyde Limit is Not Imposed?

As awareness of the other countries is increasing over the years, Malaysia has no time to lose in keeping up with the international standard. Had the neighbouring countries imposed their regulations successively, Malaysia will eventually fall victim to the plywood dumping activities if no action was taken as Malaysia will be treated as a dumping site for the non-compliance plywood by those regulated countries. If the dumping situation continues or worsens, domestic manufacturers will be eventually drove out of business due to the unfair competition with the dumping imports. As a result, domestic factories may have to close down which would negatively affect the employment rate of the country. Low employment rate inevitably triggers a chain of social problems. The consumers will also suffer as the lasting manufacturers face less competition and can enjoy market monopoly.

If the price of the wood-based panels in the local market decreased, the production cost of the locally produced products would also be lower. As a result, the importing countries will impose anti-dumping measures to Malaysia products in order to maintain same price-level in both domestic and foreign market. Different level of duties will be levied on the Malaysian imports. A recent example is the Republic of South Korea who has imposed anti-dumping on imports of plywood from Malaysia, where the rate of duty is between 3.96% and 38.10%. The anti-dumping measures might be extended to other wood-based panels if we do not treat this issue carefully.

Development of Technical Regulation on Formaldehyde Emission Limit from Wood-based Panels

Since 2016, the Malaysian plywood industry was flooded by the presence of imported plywood which were claimed to have high formaldehyde content. Hence the Malaysian Panel Products Manufacturers Association (MPMA) has requested the Ministry of Primary Industries (MPI) to implement a regulation on the limitation on the maximum level of formaldehyde emission to all plywood used in the domestic market, both for the imported and locally manufactured plywood.

In response to this request, MTIB initiated consultation series with various stakeholders to obtain consensus in regulating formaldehyde level in domestic market. Hence a study on formaldehyde awareness among the plywood mills stakeholder, plywood mills workers, agents/importers, intermediate users and public were conducted by MTIB in 2016-2017. Following this, further study was initiated to determine and establish data on the formaldehyde emission from Malaysian plywood in 2017-2019.

From 2016 to 2019, MTIB together with Institute of Tropical Forestry and Forest Products (INTROP), Universiti Putra Malaysia (UPM) and Forest Research Institute Malaysia (FRIM) have visited the plywood mills in Peninsular Malaysia, Sabah and Sarawak. Survey on formaldehyde emission awareness was conducted on factory management team, workers, agents. furniture factories, professionals and public. Plywood samples were collected from the mills for formaldehyde tests to assess its' compliance to emission level claimed by the plywood mills.

The key objective of this study is to determine the actual formaldehyde emission level emitted from local and imported plywood, MDF and particleboard. While study on plywood has been completed, studies on MDF and particleboard are on-going. Based on the results of earlier study, and after taking the capability of the local wood-based panel factories into consideration, imposing a technical regulation on maximum formaldehyde emission limit of ≤ 1.5 mg/L (F**/E1 class) to the imported and locally produced wood-based panels products is seen to be a reasonable move. Majority of the local wood-based panel manufacturers have shown their capability in producing panels with low emission level. Nonetheless, it is also important to consider the small-to-medium sized mills that may have less capability in achieving this level. Both MTIB and MPMA should work together to assist these mills in achieving the required limits.

***Note** : Article was extracted from technical report written by Prof. Dr. Paridah Md Tahir (UPM), Dr. Lee Seng Hua (UPM), Dr.Juliana Abdul Halip (UTHM), Dr. Rafaedah Rusli (FRIM), Encik Hashim W Samsi (FRIM),Tuan Hj. Mahpar Atan (MTIB), Puan Syafinaz Abd Rashad (MTIB) and Puan Nor Shahira Mat Nasir (MTIB)*

Malaysian Wood
Standing on Excellence

TIMBER VERIFICATION SERVICES

Timber has always been a preferred material in homes and other buildings as it creates warmth and coziness, and also highlighting elegance. While it is widely used in developed countries, Malaysian consumers tend to avoid timber based on perceived quality and maintenance problems.

Defects such as splitting, delamination, decay and insect attacks can be easily avoided if the right quality and correct specification of timber is selected and used from the outset.

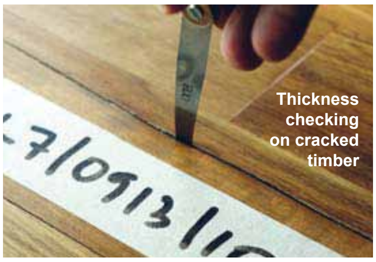
The Malaysian Timber Industry Board (MTIB) offers timber verification services that can assist you to ensure the timber you choose is of the right quality and correct specification for its intended usage and application. The services include timber grading, identification of species, determination of moisture content, determination of preservatives and other services.

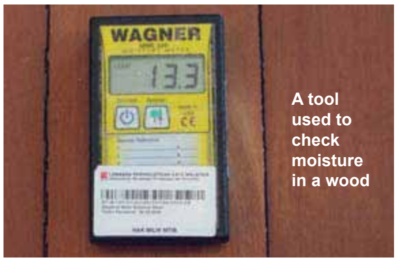
You can be rest assured that your products meet quality standards and hence extend the lifespan with minimal maintenance cost if it is verified to specification.


Checking moisture content

Services

1. Timber Grading
2. Identification of Species
3. Determination of Moisture Content
4. Determination of Preservative


Thickness checking on cracked timber



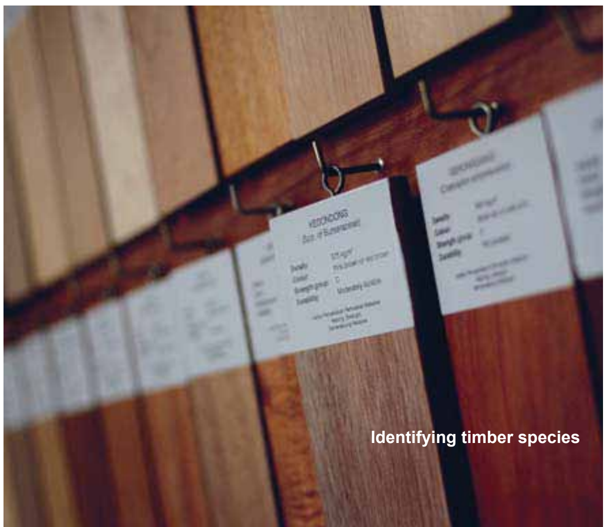
A tool used to check moisture in a wood

For more information and enquiries:

MTIB

Malaysian Timber Industry Board
Level 13-17, Menara PGRM,
No.8, Jalan Pudu Ulu, Cheras,
P.O.Box 10887, 50728
Kuala Lumpur,
Malaysia.
www.mtib.gov.my

Tel : +603 9282 2235
Fax : +603 9200 3769
Email : verifikasi@mtib.gov.my


Identifying timber species

UPCOMING EVENTS
(NOVEMBER 2019)

NOVEMBER 2019

1–10 November

KOUJINA EXPO BAIN 2019
The 8th Equipment and Kitchen Furniture and Bathroom Fair

VENUE : The Gardens of El Menzah
2094 El Mnihla, Tunisia
ORGANISER DETAILS : CTFEXPO
Tel : + 216 70 734 290
E-mail : marketing@ctfexpo.com
Website: www.ctfexpo.com

MB MEUBELBEURS BRUSSEL 2019
International Furniture Fair

3–6 November

VENUE : Brussels Expo,
Place De Belgique 1, 1020 Brussels, Belgium
ORGANISER DETAILS : Brussels Furniture Fair
Alle Hof Ter Vleest 5 b7
Brussels, Belgium
Tel : +32 (0)2 558 97 20 E-mail: adm@meubelbeurs.be

5–10 November

FURNITURE ISTANBUL 2019
Istanbul Furniture Fair

VENUE : CNR EXPO
Yesilkoy Istanbul, Turkey
ORGANISER DETAILS : CNR Holding A.S.
Cnr Ekspo Fuar Merkezi Yesilkoy – Bakirkoy, Istanbul
Tel : +90 212 465 74 74 Fax : +90 212 465 74 76
E-mail: murat.saroglu@cnr.net

AMBIENT LJUBLJANA 2019
International Furniture Fair

6–10 November

VENUE : GR-LJUBLJANA EXHIBITION AND CONVENTION CENTRE
Slovenia
ORGANISER DETAILS : Tel : 00 386 1 300 26 00 Fax : 00 386 1 300 26 28
E-mail: pohistvo@gr-sejem.si

16–18 November

SALONE DEL MOBILE BERGAMO 2019

VENUE : FIERA BERGAMO,
24125 Bergamo, Italy

ORGANISER DETAILS : Ente Fiera Promoberg
Tel : +39 035 3230911 Fax : +39 035 3230966
E-mail : mobile@promoberg.it
Website: www.bergaofiera.it

MEBEL 2019

31st Internatonal Exhibition for Furniture, Fittings and Upholstery

VENUE : EXPOCENTRE, MOSCOW
123100 Moscow, Russia

ORGANISER DETAILS : Tel : +7 (499) 795 37 99
E-mail: centr@expocentr.ru

18–22 November

21-24 November

IIFF INDIA INTERNATIONAL FURNITURE FAIR 2019

Trade exhibition for furniture manufacturers, new products and innovative ideas on show

VENUE : Mumbai, India

ORGANISER DETAILS : Consumex Productions Private Limited
30 Bella Vista, Apoorva Layout
Nagarabhavi, Bangalore, India
Tel : +917760880533
E-mail : khalid@iiffmumbai.com

KAFF 2019

Korea Architecture Fair and Festival

VENUE : HALL B, COEX
South Korea

ORGANISER DETAILS : Korea Institute of Registered Architects (KIRA)
317, Hyoryeongno, Seocho-Gu, Seoul, o6643, Korea
Tel : (02) 3415 6867Fax : + 82 2 3415 6899
E-mail: kaff2019@naver.com

27–30 November

28 November - 1 December

VIVA HOME 2019

Vietnam Furniture and Home Furniture Fair

VENUE : PHU THO PHU THO SPORT
No. 1 Lac Gia, Ward 15, District 11, Ho Chi Minh City, Viet Nam

ORGANISER DETAILS : HAWA CORPORATION
185 Ly Chinch Street, Ward 7,
District 3, Ho Chi Minh City,
Viet Nam
Tel : +84 28 3526 4714Fax : + 84 28 3526 4718
E-mail: info@hawacorp.com.vn

MYANMAR : PLANTATION LOGS EXPORT ALLOWED

Overview

The Republic of the Union of Myanmar (or more commonly known as Myanmar) has an area of 676,578 square kilometres, making it the second largest country in Southeast Asia. It shares borders with Bangladesh, China, India, Lao PDR and Thailand. Naypyidaw is the capital of Myanmar and Yangon, as the former capital, is the country's most important commercial centre. Myanmar's 2,800 kilometres coastline provides access to sea routes and deep-sea ports and the country is rich in natural resources including arable land, forests, minerals, natural gas, and freshwater and marine resources.

Myanmar is also one of the world's most diverse countries, with a rich history and a wealth of cultural and religious traditions and as many as 135 different ethnic groups. Current population estimates vary widely, from 48 million to over 60 million people. While the country's population density is among the lowest in South East Asia, this masks a wide variation with two-thirds of the population living in rural areas and the larger urban populations concentrated in Yangon and Mandalay.

Administratively, Myanmar is divided into seven states, seven regions and one union territory (Nay Pyi Taw). The states are Chin, Kachin, Kayah, Kayin, Mon, Rakhine and Shan that covers mainly the upland areas and are largely populated by national races/ ethnic communities. The regions are Ayeyarwady, Bago, Magway, Mandalay, Sagaing, Tanintharyi and Yangon which are situated mainly on the plains with a population of predominantly Bamar origin.

Economy

Myanmar's economy is supported by abundant natural resources and commodities. Its largest export is natural gas, which is providing an increasingly important revenue stream. The World Bank estimates that the country's gross domestic product (GDP) will expand by 6.7% in 2018, followed by an annual growth rate of 6.9% for the next two years. The most productive segments of the economy are currently the extractive industries, in particular oil and gas, mining, and timber. Other areas, such as manufacturing and tourism, which represent a small share of economic activity, are largely accounted for by state industries. Foreign direct investment (FDI) was largely channelled into telecommunications, oil and gas and manufacturing.

Government policy makers taking office in April 2016 have committed to continuing reform, which is necessary if Myanmar is to achieve its growth potential. The new administration is expected to press for more transparency and deregulation, less red tape, improved education and training and more effective and efficient government services.

The relaxing of foreign exchange controls is expected to propel imports upward and contribute to a widening of the current account deficit. Easing of economic sanctions imposed on Myanmar by industrial countries should lead to higher levels of trade and investment, as well as the resumption of assistance and concessionary financing, both from these countries and from international financial institutions. Myanmar has an economic and trade agreement with Turkey, China, Cuba, Kuwait, Bangladesh, India, Israel, Korea (Republic of), Pakistan and Sri Lanka.

Myanmar is also a member of the ASEAN Free Trade Area (AFTA), a signatory to the ASEAN Framework Agreement on Services (AFAS), and a party to the Framework Agreement on the ASEAN Investment Area (AIA). The AFTA provides for a particular schedule on duty reduction/exemption among ASEAN members (i.e. ASEAN Trade in Goods Agreement). As a member of ASEAN, Myanmar is a party to the ASEAN-China Free Trade Agreement, the ASEAN-Korea Framework Agreement on Comprehensive Economic Cooperation, the ASEAN-Japan Agreement on Comprehensive Economic Partnership, the ASEAN-India Framework Agreement on Comprehensive Economic Agreement, and a free trade agreement between ASEAN and Australia and New Zealand.

Forest Resources

Myanmar has one of the highest proportions of forest cover in Asia and the Pacific. According to the FAO, Myanmar has around 29.0 million hectares of forested land, which constitutes to 44.2% of the total land area. Around 28.1 million hectares are primary or otherwise naturally regenerated forest and around 944 thousand hectares are planted forest. The full 100% of the forest area is owned by the state, but certain management rights can be granted to communities or private companies. There are about 41 000 hectares forest areas are brought under community forests owned by the local people with long-term lease permission of the government.

Myanmar has labeled approximately 7% of its land area (about 4.5 million hectares) under the Protected Areas System Working Circle, which covers National Parks and Sanctuaries. According to the National Forest Action Plan the country aims to have 10% of the total land area under protected areas in 2030. Myanmar is well known for its natural Teak (Tectona grandis) forests, which are classified among the mixed deciduous forests. Of the world's 19 million hectares of natural Teak forests, more than 16 million are found in Myanmar. Forest genetic resources play a major role in socio-economic development and forest product exports are an important source of foreign exchange.

Timber Production

According to the latest FAO forest statistics on Myanmar, the country produced around 446,000 thousand m^3 of major timber products in 2017. Details of production are as follows:

Myanmar: Production of Timber and Timber Product, 2013-2017

(Volume : m^3)

PRODUCT	2013	2014	2015	2016	2017
Sawntimber	80,000	80,000	80,000	80,000	80,000
Veneer	36,000	64,000	166,000	216,000	216,000
Plywood	116,000	116,000	116,000	150,000	150,000
Total	**232,000**	**260,000**	**362,000**	**446,000**	**446,000**

Source: FAOstat

Timber industry

The exports of Myanmar's timber industry are dominated by the valuable Burmese Teak *(Tectona grandis),* although many other species are harvested both the country's natural forests and forest plantations. These species include Pyinkado *(Xylia dolabriformis, X. kerri),* Padauk *(Pterocarpus macrocarpus),* Htauk kyant *(Terminalia tomentosa),* Rubber tree *(Hevea brasiliensis)* and Gmelina *(Gmelina arborea).* The latter two species are principal plantation species.

While much of the timber is harvested and transported by private Myanmar companies, in cooperation with the state-owned Myanmar Timber Enterprise (MTE) under the Ministry of Natural Resources and Environmental Conservation (MONREC) and all timber must be shipped out through designated Yangon timber ports with MTE markings.

Myanmar's Export of Timber and Timber Products

Myanmar's export of timber and timber products in 2018 increased 34% to USD305.5 million over the previous corresponding period. Myanmar export mainly veneer, logs and mouldings totalled USD62.4 million, USD22.3 million and USD14.0 million respectively. Myanmar export sawntimber and veneer mainly to India amounting USD36.8 million and USD56.7 million respectively. Meanwhile, logs are mainly exported to the China which amounted USD19.0 million.

Myanmar : Export of Timber and Timber Products, 2014-2018

(Value: USD'000)

PRODUCT	2014	2015	2016	2017	2018
Sawntimber	15,284	60,286	40,919	64,104	158,154
Veneer	612	11,119	27,436	42,830	62,352
Logs	359,482	61,191	65,287	9,006	22,280
Mouldings	49	72	256	670	13,997
Furniture	2,058	2,644	2,336	1,387	6,283
Plywood	24,983	53,128	76,582	78,351	5,436
BJC	287	10,733	22,032	29,560	3,041
Particleboard	1,129	3,111	1,634	0	121
Fibreboard	0	0	0	3	4
Wooden frames	0	0	10	0	3
Others	6,757	2,204	1,750	2,683	33,867
TOTAL	410,641	204,488	238,242	228,594	305,538

Source: UN Stats.

Myanmar's Import of Timber and Timber Products

According to the latest UN Comtrade statistics, Myanmar's import of timber and timber products in 2018 increased 51% to USD157.3 million over the previous corresponding period. Myanmar imported mainly furniture, plywood and fibreboard totalled USD100.0 million (an increase of 60%), USD29.1 million (an increase of 83%) and USD11.9 million (an increase of 19%) respectively. The major import sources for Myanmar import of timber and timber products is China, followed by Viet Nam and Thailand. Malaysia ranked 5th.

Myanmar : Import of Timber and Timber Products, 2014-2018

(Value: USD'000)

PRODUCT	2014	2015	2016	2017	2018
Furniture	39,701	35,299	44,598	62,333	100,017
Plywood	3,696	10,091	11,253	15,870	29,128
Fibreboard	4,287	5,403	9,464	10,038	11,899
Particleboard	7,269	7,403	5,463	2,155	3,993
Builders Joinery and Carpentry	2,081	1,985	1,809	3,165	2,703
Veneer	1,144	4,073	2,565	3,261	2,431
Mouldings	253	243	422	656	251
Sawntimber	20	45	101	82	204
Wooden Frames	10	16	40	150	145
Logs	171	99	38	56	112
Others	4,454	5,880	6,133	6,708	6,421
TOTAL	63,086	70,537	81,886	104,474	157,304

Source: UN Stats.

Malaysia's Export of Timber and Timber Products to Myanmar

Myanmar has always been a important timber trade partner for Malaysia in ASEAN region. However, in 2018, export of Malaysian timber and timber products to Myanmar registered a decrease of 42% to RM13.1 million from RM22.5 million in 2017. Wooden furniture was the main product exported with a total value of RM6.2 million, followed by particleboard at RM4.4 million and fibreboard at RM825.7 thousand.

Malaysia : Export of Timber and Timber Products to Myanmar, 2014-2018

(Value: RM)

PRODUCT	2014	2015	2016	2017	2018
Wooden Furniture	7,101,637	8,619,183	11,819,023	13,118,628	6,160,727
Chipboard/Particleboard	9,596	79,877	0	4,407,417	4,413,691
Fibreboard	4,270,100	3,579,395	4,770,296	1,458,044	825,739
Plywood	0	1,079,952	375,004	239,813	581,221
Builders Joinery & Carpentry	638,571	324,043	2,379,051	1,876,091	380,292
Wooden Frame	614,980	618,454	953,985	0	9,395
Sawntimber	0	95,935	0	48,609	0
Mouldings	0	83,308	27,400	106,420	0
Rattan Furniture	81,692	433,380	15,270	557,753	0
Others	366,506	24,199	144,203	735,012	726,387
TOTAL MYANMAR	**13,083,082**	**14,937,726**	**20,484,232**	**22,547,787**	**13,097,452**

Source: MTIB & DOSM

Malaysia's Import of Timber and Timber Products from Myanmar

In 2018, import of Malaysian timber and timber products from Myanmar show a decrease of 52% to RM22.3 million from RM46.2 million in 2017. Myanmar ranked 26th with 0.4% of Malaysia's total import market share. Sawntimber was the main product imported with a total value of RM14.3 million followed by mouldings at RM6.1 million and BJC at RM1.3 million.

Malaysia : Import of Timber and Timber Products from Myanmar, 2014-2018

(Value: RM)

PRODUCT	2014	2015	2016	2017	2018
Sawntimber	53,886,462	36,339,056	29,992,076	26,320,598	14,265,855
Mouldings	0	3,029,994	4,108,987	4,476,456	6,149,958
Builders Joinery & Carpentry	814,955	237,478	0	516,521	1,291,037
Veneer	458,021	0	37,704	109,114	234,325
Logs	28,573,174	5,931,508	3,124,532	14,538,703	228,781
Wooden Furniture	134,467	113,812	193,893	33,399	99,756
Plywood	241,650	0	58,657	167,082	0
Rattan Furniture	0			5,195	0
Others	111,559	36,196	131,807	18,914	0
TOTAL MYANMAR	**84,220,288**	**45,688,044**	**37,647,656**	**46,185,982**	**22,269,712**

Source: MTIB & DOSM

Import Tariffs

The Myanmar's import duties on timber and timber products under MFN and ATIGA are as follows:

Products	MFN (%)	ATIGA (%)
Logs	9.2	0
Sawntimber	15.0	0
Veneer	15.0	0
Mouldings	15.0	0
Particleboard	5.0	0
Fibreboard	5.0	0
Plywood	15.0	0
Wooden Frame	15.0	0
BJC	8.5	0
Seat and Part There of	16.7	0
Furniture and Part There of	19.5	0

Source: WTO/ASEAN

Prospects

In fiscal year 2017, Myanmar's economic growth rose to 6.8% from stronger agriculture, growth in exports, robust private consumption, with investment continuing to soften. Inflation eased to 5.3% while the current account surplus widened to 5.0% of GDP. With continued economic reform, growth should accelerate to 7.2% in 2019. By pursuing reform to improve the business environment, policy makers can sustain the sizable foreign direct investment needed over the medium term to finance the current account deficit.

In April 2014, Myanmar banned export of raw timber logs to slow deforestation and boosts its own production. However, the ban was lifted at the end of March 2017. At the present, the authorities in Myanmar have officially announced that logs, poles and posts harvested from plantations can be exported without further processing. Private plantations were first allowed in 2016 and some are now at the stage of first thinning. According to the official website of the Forest Department, 143,000 acres of Teak and 104,000 acres of other hardwoods have been planted by the private sector. This move by the Forest Department appears intended to allow those who have invested in plantations to secure some early cash flow. The Forest Department will apply strict export control of plantation timbers which are clearly distinguishable from natural forest timbers.

Meanwhile, the Myanmar Timber Enterprise (MTE) will reduce the annual limit for logging of Teak and hardwood by up to 50% and produce only enough timber to meet the cost of production during the 2019-2020 logging season. MTE will reduce logging activities in natural forests as far as it can and will only cut down trees aged 30 years and above in Mandalay and Sagaing regions, in accordance with the rules set by the Forest Department. It is to ensure the natural environment is not damaged during the logging process and to block old timber production routes for prevention of illegal logging.

Malaysia, which has always been an important trading partner with Myanmar in timber, is also facing strong competition from China and Indonesia. Therefore, in order to sustain and improve trade as well as market share in Myanmar, Malaysian exporters need to be competitive in terms of price and quality together with effective marketing and promotion strategies.

Malaysian manufacturers also need to enhance their presence in the Myanmar market to create demand for Malaysian value added timber products in the market. Through those activities, Malaysian timber exporters would be able to further develop their networking with Myanmar's timber importers while at the same time undertake market research on Myanmar's current updates on their timber industry. Therefore, it is envisage that with the above opportunities, timber trade for both countries especially in terms of export and import activities and investments in timber and timber products will be increased in the coming years.

Myanmar's Teak settee and chair with woven rattan seat.

Myanmar's antique hand carved console table.

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WOODEN FURNITURE MARKET IN TRINIDAD AND TOBAGO

Introduction

Trinidad and Tobago (T&T) is a twin island country that is located at the southernmost nation of the West Indies in the Caribbean. T&T has a relatively small wood and wood furniture industry. The local industry has been considered by some to be underperforming and is marked by challenges in efficiency, quality control and sub-standard processes.

Market Trend

According to market observer, the domestic furniture market is mostly supplied by imports. Based on the T&T Department of Statistics, the domestic market for wooden furniture in T&T is estimated at USD18.7 million for the year 2018.

The furniture industry required a dedicated supply of wood from local forests. However, a recent figure indicates that production quantities of local wood stock are comparatively low. This led to increase in imports of furniture from other countries to fulfil the local demand.

In any case, traditionally, T&T has been a net importer of wooden home and office furniture. In 2018, import of furniture was valued at USD21.4 million. Among the imports, bedroom wooden furniture (HS940340) was valued at USD5.2 million, wooden kitchen furniture (HS940330) at USD1.4 million and wooden office furniture at USD1.6 million.

USA is the largest imports source of wooden kitchen furniture and wooden office furniture. While Viet Nam was the largest source for wooden bedroom furniture. Malaysia was ranked 2nd as the import source of wooden bedroom furniture, 7th for the wooden kitchen furniture and 6th for the wooden office furniture.

Source: Trinidad &Tobago Department of Statistics

Conclusion

In view of more competitive markets and the need to reduce costs, an increasing number of medium and large sized Trinidadian companies are now sourcing furniture from Asia, mainly China and Viet Nam. Some furniture is also being sourced from Panama and Miami.

T&T has no specific legislation regulating representatives, distributors or franchisers. Agreements for appointment of agents are governed by common law principles under which relevant parties are virtually free to form their own contractual terms. There are no statutory restrictions or regulations governing the length of appointment, the period of notice required for termination or the level of commission to which an agent is entitled.

Visiting the market and making personal connections with local partners, agents and distributors or clients and trade associations is an optimal strategy to enter the T&T market. Many businesses are family run and are well-established over several years with significant goodwill in the local community. A local partner may be required to apply for government procurement projects.

For further information and enquiries, please contact MATRADE Miami at Miami@matrade.gov.my

***Note** : Article was contributed by MATRADE.*

JELUTONG – SUITABLE FOR CARVING

Wood colour and texture.

INTRODUCTION

Jelutong

Way back before rubber tree was introduce from Brazil for latex production, our local forks were going into the forest to tap latex from the Jelutong tree which grow well in our tropical jungle. The tree trunk are wounded using the machete to obtain the white latex and it is used to make chewing gum. Now a day, Jelutong is used as a timber source.

Tree

Jelutong is the standard name for the tree, latex, and timber of *Dyera costulata* and *Dyera polyphylla* species belonging to the *Apocynaceae* family. They grow up to 60 meters with straight cylindrical stems without buttresses and can be easily be identified by the end branching of its leaves known as the “terminalia” characteristic. The trunk can reach 2 meters in diameter and the colour of bark ranging from grey to dark grey. Jelutong grows at a fast rate thus its timber is quite soft.

Wood Characteristics

The timber of Jelutong is very light and its density in air-dry condition is about 435 kg/m^3 and in the green condition, its density is about 575 kg/m^3. The wood is cream white when freshly sawn. The heartwood cannot be distinguished from the sapwood, but when dried, the heartwood fades to a yellow-brown colour and the sapwood becomes a light greyish-yellow, can often be distinguished. The grain is straight, shallowly interlocked; the texture is fine and even. The timber has no figure, but planed surfaces usually possess a good natural lustre. Large latex canals are a common feature of this timber.

Wood Anatomy

Growth rings are absent. The vessels are medium-sized and with simple perforations. They are distributed mostly in radial groups of two and three and are free of tyloses and deposits. Wood parenchyma occurs moderately abundant in narrow meta-tracheal layers and these are barely visible to the naked eye but are distinct with a lens.

The rays are moderately fine or medium-sized, very low, and distinct to the naked eye on end and radial surfaces. The rays are not conspicuous on the radial surface, except for those which contain latex canals. Large timber pieces usually have latex traces which occurs in whorls. Ripple marks cannot be seen on Jelutong.

Mechanical Properties

The strength properties of Jelutong are presented in table below. Based on the compressive strength parallel to grain, Jelutong is classified under a lower strength grouping. Jelutong is placed in the same strength group along with timbers like Damar Minyak *(Agathis borneensis),* Pulai *(Alstonia spp.)* and Sesendok *(Endospermum malaccense)* based on the basic and grade stresses for strength groups.

Test Condition	Modulus of Elasticity (Megapascals)	Modulus of Rupture (Megapascals)	Compression Parallel to to Grain (Megapascals)	Compression Perpendicular to Grain (Megapascals)	Shearing Strength (Megapascals)
Green	7,900	38.0	21.0	1.9	5.0
Air-dry	8,100	50.0	27.0	2.7	6.0

Durability

Standing Jelutong tree are generally free from defects. Undamaged and reasonably quickly extracted logs are defects-free, including all forms of borer hole. However, if the trees were tapped or left in the jungle for some time after the tree has been felled, it is liable to become infected with “blue stain” and longicorn beetles or the ambrosia beetles. Logs contain a small area of brittle heart and the logs easily develop checks and splits. Large latex canals commonly occur in rows about 2 feet apart.

The timber of Jelutong is classified as non-durable timber as it is easily attack by termite. Freshly sawntimber are also prone to mould, blue stain and insect attacks. In some instances, the attack may occur within few hours after sawing. Preservative treatment protection for the newly cut timber is recommended.

Seasoning Properties

The timber has a low shrinkage property and as such it dries well using either the air drying technique or the steam-heated kiln drying process. The common drying defect is splitting although this is very minimal. Blue stain can also develop if the timber are sent late for drying.

Working Qualities

When logs are sawn, the saw teeth become “gummed up” easily. Further processing of the Jelutong timber are consider very easy to work with both hand and machine tools. This is attributed by its low density property. A very smooth surface can be obtained after planing, boring, turning and other machining operations provided the edges of the cutting tools are kept reasonably sharp.

Jelutong cuts very cleanly with sharp hand tools and as the fibres do not pull out, it does not crumble. This make it an excellent wood for hand carving. The finished surface is very smooth and the quality of finish and lamination are good.

Test Condition	Sawing		Planning		Boring	
	Resawing	Cross	Ease	Quality	Ease	Quality
Green	Easy	Easy	Easy	Smooth	Easy	Smooth
Air-dry	Easy	Easy	Easy	Smooth	Easy	Smooth

Uses

The strength of the Jelutong timber is not encouraging, but it has other positive properties such as the low density, uniform colour, soft, straight grain and fine texture. These features makes the timber popular for the manufacture of picture frame, matches, pencils, toys and sandal. It is also suitable to be used for model making, carving and also the karate kicking board.

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- *http://pibgskjelutongpp.blogspot.com*

YB Tuan Wong Tack, Chairman of MTIB (front row, sixth from right) with MTIB personnel during the Hari Raya Celebration and Retirement Ceremony held on 24 June 2019 at MTIB, Kuala Lumpur.

Strategic Planning Division and FIDEC won 1st Prize for the Best Decoration Booth during the event on 24 June 2019.

Representatives from Strategic Planning, Licensing and Inspectorate, Director-General Office and FIDEC posing with VIPs during prize presentation for the Best Decoration Booth during Hari Raya Celebration and Retirement Ceremony held on 24 June 2019. (**Note** : 1st Prize – Strategic Planning Division/ FIDEC, 2nd Prize-Director-General Office and 3rd Prize-Licensing and Inspectorate Division).

Dr. Loh Yueh Feng, Deputy Director of FIDEC briefed the group from various agencies under the Ministry of Primary Industries on the production of woven fabric from Kenaf yarn using weaving machine. The visit took place on 19 June 2019 at Fibre and Biocomposite Centre (FIDEC) 3 in Banting, Selangor.

Officials from MTIB and STIDC posing at MTIB booth during Sarawak Timber and SME's Expo held on 27-28 June 2019 at Borneo Convention Centre in Kuching, Sarawak.

Working Group Retreat on the Standard Development for Kenaf on 17-19 June 2019 in Kota Bharu, Kelantan.