Future Direction for the Malaysian Panel & Furniture Industry

By Peter Fitch
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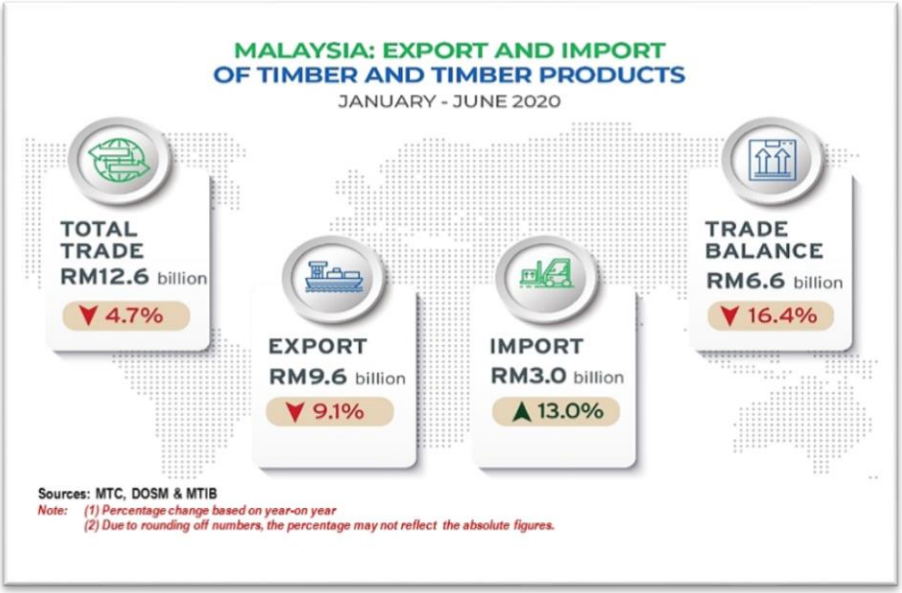
South East Asia and Malaysia in particular has been fortunate enough to benefit from the abundance of raw materials to develop and grow its timber, panels and furniture businesses. Malaysia has drawn upon its pristine tropical rainforests and, more recently, on its abundance of plantation rubberwood to fuel the growth of the timber industry. The latest figures available (January to June 2020) for exports of timber products from Malaysia was MYR 9.6 billion (US$ 2.3 billion). This figure was down 9.1% from the same period in 2019. On the other hand, imports of timber products rose to MYR 3.0 billion (US$ 0.7 billion), which was an increase of 13% compared to last year. Though the COVID-19 pandemic would have affected business from April, we can still see an overall trend where exports are having difficulties in maintaining growth while imports are becoming more necessary to meet local demands.



The furniture manufacturing sector is vitally important for the Malaysian timber industry. Not only does it generate valuable export revenue, it is also considered an important value multiplier being a major customer and consumer of Malaysian lumber and panel products. If we examine the imports of timber products into Malaysia, we find that the majority of items are used as raw materials for furniture manufacturing.

If we break the figures down further, we see that exports of sawn timber, plywood, fibreboard, and joinery & carpentry are in overall decline, being constrained by the availability of raw materials. The only growth area for timber exports is for wooden furniture.

Facilitating the growth of the furniture sector is a challenge we now face in Malaysia. Besides addressing issues associated with investment opportunities, marketing, labour and skill availability, we also need to address the sustainability of raw material supply.

The much-maligned oil palm plantations in Malaysia may provide a sustainable and carbon-friendly answer to this dilemma. We might not realise it yet, but oil palm could potentially be a major source of wood in the years to come, with the waste trunks being turned into value-added wood products. With pressure on timber resources within Malaysia and increasing competition for wood fibre around the

world, new sources of usable raw material could prove very important in the future for not just furniture but for timber-based construction materials.

So why oil palm?

The resource is large and getting larger – the total plantation area for oil palms amounts to almost 10 million acres in Malaysia. Palm oil itself is used in the food and biochemical industries as well as for energy, but the oil yield decreases significantly after a palm tree reaches the age of 20 years.

For this reason, plantations are cleared and replanted any time after 20 years. Based on a planted area of about 10 million acres, an average of almost half a million acres would have to be replanted annually on a long-term basis. As a result, large volumes of oil palm wood accrue during replanting of 'unproductive' plantations in Malaysia, with estimates forecasting 20 million standing trunks being available every year.

The trunks are commonly left to rot or chipped as fertilizer, this could lead to beetle and rat infestation that can destroy young plants. The wood is not being used mainly due to the extreme density distribution within the trunk, the very high moisture content and the significant difference in structure and properties of oil palm wood in comparison to 'normal' wood species.

Earlier studies and pilot projects on the utilisation of oil palm trunks for products have shown high technical and economic potential, but there are no industrial implementations yet due to the reasons outlined above. Until now, no comprehensive solutions and very little information on products, markets and processes have been available to investors and companies who are interested in utilising oil palm wood. Additionally, machines and tools will have to be adapted or optimised for processing oil palm wood. All these results in some unique challenges.

The wood's density, and its physical technological characteristics, vary significantly across the trunk. Density varies from 150kg/m^3 to 700kg/m^3, with the outer trunk being the densest and inner wood being the least dense.

Hard and long woody dark fibres, which when viewed in a cross-section have the appearance of reinforced concrete, can be detected in the wood. These are embedded in a very soft cell matrix and gives the wood its strength. The uniformed quality of the timber due to lack of knots and growth-related defects, while the unique wood grain structure enhances the aesthetic value of the product.

However, oil palm trunks have a very high moisture content (150% - 600% based on the dry mass). Due to this moisture content, as well as the sugar and starch in the wood, fungal decay starts very quickly. Preventing the decay requires special logistics in the supply chain from the logging of the palms to processing — and a very complex drying process.

Some of these drawbacks, and the fact that raw material alternatives are still available from natural forests, have been holding back the industrial development of oil palm wood. It may take a while before palm wood panels and lumber become the material of the future and are available in large volumes in Malaysia, but it is encouraging to know that an untapped stream of raw material is potentially available for the challenging years ahead.

Note:

This marks the final article written by Peter Fitch as the Chairman of the Malaysian MDF Manufacturers Association. Peter has resigned his post and has set up a joint venture with IOI Plantations. The purpose is to develop and exploit the abundance of usable and sustainable biomass, including oil palm trunks available for the production of lumber and timber equivalent materials.