



Australian Government
Australian Centre for
International Agricultural Research

Teak Value Chain Review





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Why Teak?

- Teak is a high quality hard wood, ideal for furniture, floors and boat building
- Price and consumption of teak has increased over the last decade.
- Diminishing natural forests and teak log bans and value adding policies in some countries is contributing to the way teak is traded around the globe
- Increased demand and price for teak have improved the market opportunities for teak 'thinnings' as well as mature trees

Background

Teak (*Tectona grandis*) is a hard wood known for its strength, durability, and natural beauty of the wood which can be used in furniture and carving. It is highly prized for its quality and excellent for the construction of boats and wood floors.

Teak is a native tree in India, Myanmar, Laos and Thailand and is most commonly found in moist and dry deciduous forests below 1 000 m elevation, growing best in localities with annual rainfall of 1 250 to 3 750 mm, minimum temperature of 13° to 17°C and maximum temperature of 39° to 43°C (Pandey, 2000).

Myanmar is the world's largest supplier of teak with exports valued at \$409 million in 2012. However, the government in Myanmar is proposing to implement a log export ban in April 2014 which will dramatically affect the availability of teak in global markets.

Teak plantations are now common across Asia, Africa and Latin America and total approximately 6.8 M ha with a theoretical capacity to produce up to 30Mm³ of wood annually (Midgley, 2013). Between 2010 and 2012 the data suggested that plantation sourced teak trade grew by 47% by volume and 58% by value, suggesting that the market for these younger plantation teak logs is still emerging (Midgley, 2013).

Teak is not native to the Pacific and the Solomon Islands only promoted small holder teak plantations in the early 2000's. Local growers, processors and exporters are generally unaware of the uses and properties of teak so a commercial industry for export and domestic use is only in its infancy.

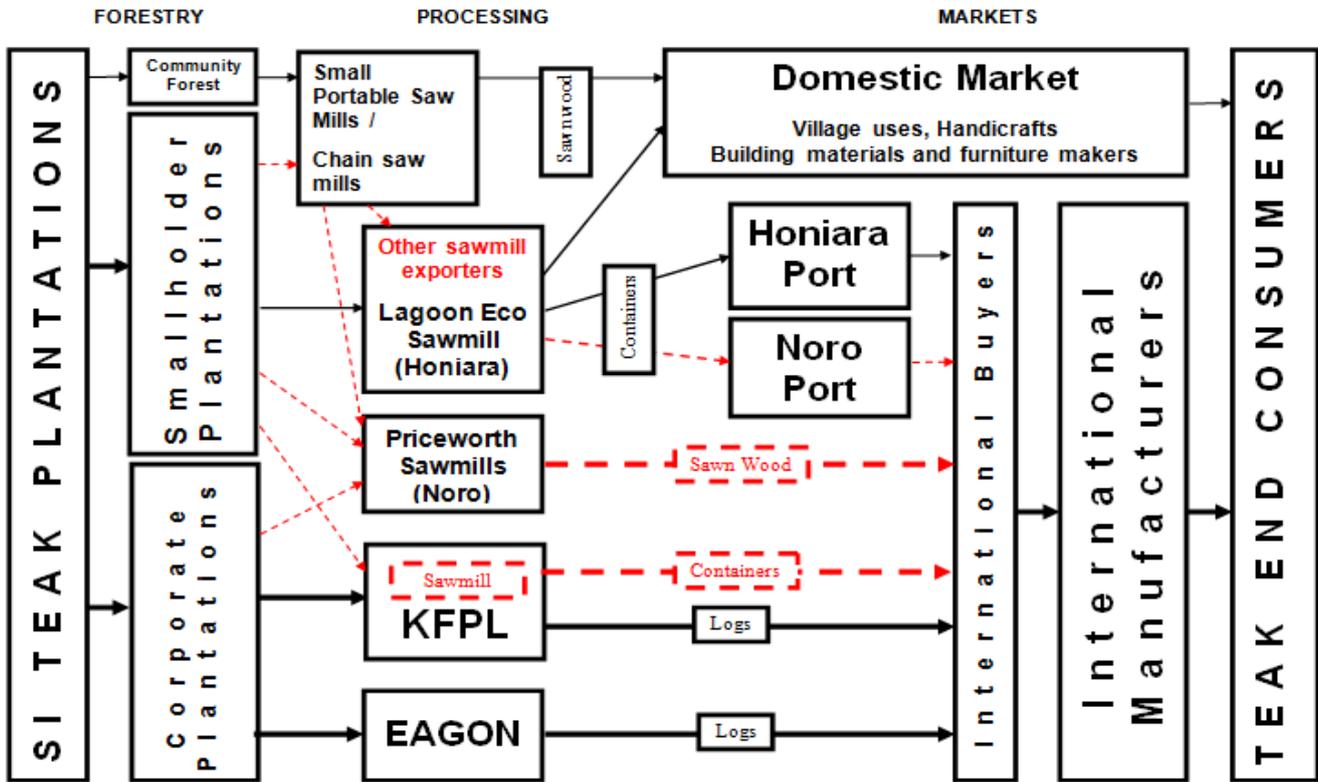
Even with the good germplasm and fast growth rates observed in the Pacific, teak does not reach full maturity until 25 years of age so most of these smallholder plantations are still immature. Most teak tree plantations were initially planted in rows 4 metres apart, with 3 metres between trees. This promotes straight vertical growth of the tree but once the trees reach a certain height, then canopy close over will impede the growth unless 'thinning' of the plantation is conducted. This process is well overdue in a lot of smallholder plantations in the Solomon's which is why it is important to assess the potential markets for teak thinnings as well as mature trees. If a viable market can be found to sell at least some of the thinned trees then this will provide the stimulus to thin the blocks, thereby improving the silvicultural and economic outcomes for the remaining trees.

During the early stages of the industry assessment in the Solomon Islands, a number of key constraints and opportunities were identified;

- The two major key constraints in the Solomon Islands teak industry seem to be accessing enough suitable end-buyers and the logistics of transporting a very fragmented resource to a major port facility.
- A lack of overseas buying options means there is little to no competition for the wood, which is an unhealthy circumstance for prices along the chain. Smaller local processors and smallholder growers have virtually no understanding of where their wood might end up or the most valued attributes for different customers in different markets. The good news is there is a significant global demand for teak, so this project should be able to shed some light on markets and buyer options that are most suitable for the current situation in the Solomon's.
- The logistics of transporting logs or sawn timber to either Honiara or Noro will not be easy and will depend on two different criteria:
 - The first is overseas buyers' requirements (which will be influenced by the end product and end consumers who ultimately will purchase the teak).
 - The second will depend on how fragmented the resource is, how many trees are situated where, quality and ownership.
- There needs to be a better understanding of 'capacity to supply' and 'buyer requirements' before a clear assessment is made of the best ways to link the chain together.
- Encouragingly, the review highlighted that there are a number of small and larger operations not previously considered that could be suited to forming links to export buyers or even a new domestic teak market. Some of the existing links in the industry are represented in the Industry structure diagram below.

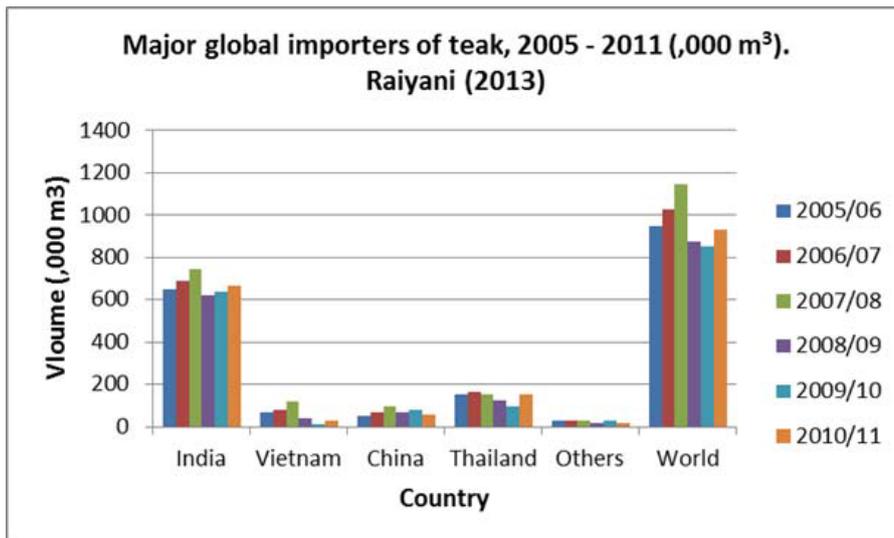
Process Flow & Industry Structure

Solomon Islands Teak Plantation Industry Value Chain Map



Priority Markets

In 2012 there was 1.3 Mm³ teak logs and sawn timber traded globally, worth an estimated US\$723 million. The below graph highlights that India is responsible for 75% of the global demand for teak, followed by Thailand, China and Vietnam (adapted from data from Raiyani 2013)



India's imports have increased by 54% since 2010 due in part to a boom in household construction where teak is favoured for doors and windows. India's wooden furniture manufacturing sector is also growing steadily with domestic sales and exports worth \$592 million in 2012 (Midgley, 2013). Manufacturers in India tend to be medium or small in size and prefer teak to be imported in log form rather than sawn timber which is further encouraged by the higher tariff rates for sawn timber (Midgley, 2013).

Thailand plays a significant role across the whole teak value chain. Thailand is a grower of native and plantation teak, an exporter of teak products and an importer of teak logs and sawn wood worth US\$31 million in 2012. Traditionally Thailand logged native teak but now rely on Myanmar imports for mature logs and have provided support for domestic smallholder teak plantations (Midgley, 2013)

China is the world's largest importer of wood and its imports of teak logs and sawn timber are increasing (US\$41 million in 2012). This teak is predominantly used for the manufacture of wooden furniture for export which means Chinese manufacturers are becoming increasingly sensitive to being able to demonstrate the wood has been legally sourced (Midgley, 2013).

Vietnam is similar to China in having an export oriented furniture industry. Over 90% of production is exported and 53% are directed to USA or Europe which makes manufacturers even more sensitive to legality and even certification requirements of retailers and end consumers.

Opportunities in Research for Development

So far the industry review has identified significant opportunities for PARDI to help value add in the Solomon Islands. Key findings have shown that PARDI could assist the local industry to tap into new value chains through:

- Production of teak supply information covering location, quantity, quality and ownership details.
- Global market research covering target markets and market segments and buyer options and requirements.
- Investigation into suitable models for linking smallholder growers with markets best suited to the Solomon's. These models would address the physical and logistical challenges along with consistency of supply, cost efficiencies and certification (depending on market and participant's requirements).

Appendix

Associated ACIAR projects:

- FST/2004/057 Enhancing on farm incomes through improved silvicultural management of teak plantations in Luang Prabang Province of Lao PDR
- FST/2010/012 enhanced planted timber value chains and FST/2011/003 systems for the payment of environmental services and land use changes by smallholders in Laos
- FST/2007/020 Selected wood properties and potential uses for plantation teak and poumuli

References

#	Title	Author	Year	Publication	Comments
1	Markets for plantation teak from the Solomon Islands	Midgley, S. J.	2013	PARDI report, unpublished	- Market and value chain study of the 4 key markets most relevant to plantation teak from the Solomon Islands (India, China, Vietnam and Thailand)
2	Development of a market mechanism for Teak and other high value timber in the Western Province of the Solomon Islands	Dr Tim Blumfield	2011	PARDI PRA, unpublished	- PRA: objectives, outcomes, milestones and strategy for the development of the project.
3	Field trip to Solomon Islands, the Teak industry 2011	Craig Johns	2011	Unpublished	- Report with key findings, constrains and recommendations for the teak industry in Solomon Islands 2011
4	Improving Rural Livelihoods in Lao PDR through Payments for Environmental Services and Planted Timber Products	Midgley, S. J.	2012	Australian Centre for International Agricultural Research Technical Report	- This paper describes the complex wood industry in Laos, the Institutional framework and the details of environmental services and how are these structured. - Also describes the market prospects from northern Laos.
5	Teak: a global overview	D. Pandey	2000	FAO, Unasylva	- Interesting overview about the Teak in the World, characteristics, growth patterns, yields and trade in teak.
6	Silviculture and management of teak plantations	B. Krishnapillay	2000	FAO, Unasylva	- This article looks at the potential of teak as a plantation species, focusing on management strategies, ecological requirements, growth performance, wood quality and availability of planting materials, with examples drawn particularly from the Malaysian experience
7	INTERNATIONAL TEAK REPORT	H.S. Anantha, Padmanabha	2006	Market report for Rewards Project Ltda.	- Overview of the Teak in the world by an experienced academic on the field, prices, production levels and trade on Teak internationally.

8	Elders Solomon Islands Teak report	Geoff Smith and Max Grimbacher	2011	Unpublished	<ul style="list-style-type: none"> - Some findings and recommendations for the teak industry in Solomon Islands. - Logistics, thinning and development of local processing are explained and discussed as part of the report during their trip.
	Development of a market information system for Solomon Islands timbers.	Midgley, S. J.	2009	<i>Secretariat of the Pacific Community</i>	<ul style="list-style-type: none"> - This report offers a foundation of knowledge as the basis for a market information system for Solomon Islands timbers through the identification of sources of price information; evaluation of value-adding options; providing information on markets and prices for plantation grown teak, and; exploration of new market opportunities for wooden handicrafts blocks of speciality timbers.
10	Options for Teak Industry Development in South-East Sulawesi, Indonesia.	Midgley, S. J.	2007	ACIAR	<ul style="list-style-type: none"> - This report assesses the market prospects for teak in South-East Sulawesi, and commercial potential for expansion of smallholders in the industry. It identifies social, economic and technical constraints to higher economic returns from the teak industry in South-East Sulawesi. It also provides recommendations, and, identifies appropriate South-East Sulawesi partners for any new activity suggested.
	Towards Improving Profitability of Teak in Integrated Smallholder Farming Systems in Northern Laos.	Midgley, S. J.	2006	ACIAR	<ul style="list-style-type: none"> - This study examines the socioeconomic and technical constraints to the incorporation of teak planting into farming systems in northern Laos. It evaluates the economic prospects for integrated systems involving interplanting of teak with other species, based on the premise that harvest of the non-timber component could provide an early return to the farmer. - The study also identifies research challenges relating to increasing the profitability of teak smallholdings in Laos.
12	Economics, Market & Price Plantation Teak	Raiyani, D.	2013	Unpublished	<ul style="list-style-type: none"> - This presentation was given at the World teak conference in Bangkok, Thailand in July 2012 by the vice president of the Olam trading company - It gave a concise summary of global teak trends, supply, markets, imports and exports and market segments in India
	Teak resources and market assesment	Kollert, W.	2013	Unpublished	<ul style="list-style-type: none"> - This presentation was given at the World teak conference in Bangkok, Thailand in July 2012 by the head of the FAO forestry department - It was based on a global teak resources and market assessment conducted in 2010
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