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## GLOBAL TEAK TRADE IN THE AFTERMATH OF MYANMAR'S LOG EXPORT BAN



**Cover photo:** Teak logs on the bank of the Ayeyarwady River, Sagaing, Myanmar, December 2014.  
Photo: W. Kollert

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# GLOBAL TEAK TRADE IN THE AFTERMATH OF MYANMAR'S LOG EXPORT BAN

by

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## Preface

Teak (*Tectona grandis*) is an emerging valuable hardwood resource that grows in about 70 countries around the world. It has attracted large investment from the private sector in Africa, Asia and Latin America, and in many countries production and trade have become a major component of the forest economies.

This report was initially presented as a key-note address in the first session of the Third World Teak Conference, held in Guayaquil, Ecuador, on 11–15 May 2015 ([www.worldteakconference.com](http://www.worldteakconference.com)). Upon the request of many participants, this presentation was elaborated into a detailed market report on the global trade of teak roundwood and sawnwood. The data and information provided are based on national customs data published in the Global Trade Atlas by the Global Trade Information Services (GTIS, [www.gtis.com](http://www.gtis.com)) according to the product identification codes of the Harmonized Commodity Description and Coding System (in brief, the Harmonized System, or HS). The report may give policy- and decision-makers, investors and managers a better understanding of the important role that teak resources play in the provision of wood products for the national economies of many tropical countries.

## Acknowledgements

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## Summary and conclusions

1. **Methodology.** The analysis and findings of this working paper are based on national customs data published by the Global Trade Information Services (GTIS, [www.gtis.com](http://www.gtis.com)) according to the product identification codes of the Harmonized Commodity Description and Coding System (in brief, the Harmonized System, or HS). As export data from Myanmar are not available, the global teak trade with Myanmar in terms of volume and value has been assessed and evaluated based on official trade statistics of the teak-importing countries.
2. **Teak and Myanmar.** Myanmar is a teak heavyweight, playing a significant role in the global teak trade. It has the largest area of natural teak forests (almost 50 percent of 29 million ha globally) and is the number one producer of teak logs in the world. Its natural forests produce about a quarter of the globally reported teak log supply, including good-quality teak that sells at comparatively high prices. After India and Indonesia, the country has the third-largest planted teak area in the world (about 390 000 ha), which accounts for more than 40 percent of the global teak trade. However, import volumes vary considerably between countries; for example, Myanmar supplies China and Thailand with most of their teak (81 percent and 99 percent respectively), but provides only a quarter of India's imports.
3. **Global trade volume and value.** Between 2005 and 2014, the global annual trade of teak roundwood was more than 1 million m<sup>3</sup> on average; the imports were valued at US\$487 million a year, which is about 3 percent of the value of the global timber trade (US\$15.5 billion). The three major importing countries were India, importing three quarters (74 percent) of the total trade volume from more than 100 countries, followed by Thailand (16 percent of the total from about 15 countries) and China (10 percent of the total from about 65 countries). Teak imports to Thailand have declined considerably in recent years, from a peak of 6.7 million m<sup>3</sup> in 2004 to only 61 000 m<sup>3</sup> in 2014. China and India, on the other hand, have increased their import volumes.
4. **Global trends.** Since 2000, the global trade in teak logs of the three major importing countries has more than doubled in terms of volume (from 557 000 m<sup>3</sup> to 1.2 million m<sup>3</sup> in 2014), and more than quadrupled in terms of value (from US\$166 million to US\$696 million). This increase was mainly borne by India and China. While imports from Myanmar also increased by 27 percent during the observed period, the country's exports could not keep pace with the rising global demand. Consequently, the significance of Myanmar as a global player in the teak trade declined.
5. **Emerging traders in Africa and Latin America.** Myanmar remains the dominant supplier of teakwood, but China and, in particular, India increasingly meet their growing demand from a number of Latin American and African countries. The emerging teak roundwood traders in Africa are Ghana, Côte d'Ivoire, Benin, Togo, Nigeria and Tanzania (for sawnwood). In Latin America, Ecuador, Costa Rica, Panama, Colombia and Brazil (for sawnwood) have continuously expanded their trade volumes since 2000, reaching a peak in recent years, and this trend is likely to continue.
6. **Teak prices.** In the observed period, the prices of quality teak logs from Myanmar and plantation teak logs from Africa and Latin America showed an upward trend of 3–4.5 percent a year on average. However, the markets and prices for these products are fundamentally different. The unit price of quality teak logs imported from Myanmar is higher than those for imports from other countries, notably in the Indian market. Here, the unit price of teak logs from Myanmar started at US\$615/m<sup>3</sup> in 2005 and reached a high of almost US\$1 000/m<sup>3</sup> in 2014. Imports from Africa and Latin America displayed a slow increase, from about US\$320/m<sup>3</sup> to US\$430/m<sup>3</sup> in the same period.

7. **Demand and supply.** The global demand for teak is expected to grow and will continue to be governed by trends in the Asian market. The exceptional qualities of teak wood, such as appearance, strength, durability and hardness, make it the preferred material for a wide range of applications. The world market – in particular India and China – will continue to absorb the available teak supply, and the rising prices seen from 2000 to 2014 are likely to continue. The growth in international demand for general-utility teak has broadened the traditional supply base from natural forests in Asia to include fast-grown, small-diameter plantation logs from Africa and Latin America. At the current average prices of US\$600–1 000/m<sup>3</sup> for high-quality logs and US\$350–500/m<sup>3</sup> for low-dimension plantation logs, teak is already one of the most expensive hardwoods in the world.
8. **The future belongs to teak plantations.** The supply of quality teak logs originating from old-growth natural teak forests in Myanmar will decline as a result of the log export ban that has been in force since 1 April 2014, the declining harvestable area in natural teak forests and the deteriorating quality of naturally grown teak. This has led to increased interest and investment in establishing and managing teak plantations. It is more than likely that in the future, the world's supply of teak wood will depend on the production of tropical teak plantations. Where good management practices are applied, plantation teak has improved, and there could well be an increasing overlap in quality between natural and plantation-grown teak in future years.
9. The **log export ban** in Myanmar has had a distinct impact on the Chinese and Indian markets; in China, which imports 80 percent of its teak from Myanmar, it triggered a rapid increase in the demand for high-quality logs, coupled with a sharp rise in teak prices from about US\$750/m<sup>3</sup> at the end of 2013 to almost US\$2 000/m<sup>3</sup> in January 2014. India only imports a quarter of its teak from Myanmar – however, it is impossible to ascertain the impact of the ban, and the available data for India does not suggest that it has provided a market opportunity for African or Latin American exporters. This is probably because the end-uses and markets of Burmese and African or Latin American teak are fairly distinct.

## Resumen y Conclusiones

1. **Metodología.** El análisis y las conclusiones de este documento de trabajo se basan sobre datos aduaneros nacionales publicados por el *Global Trade Information Service* (GTIS, <http://www.gtis.com/>) según los códigos de identificación del producto contenidos en la Descripción de los Productos y Sistema de Codificación (en resumen Sistema Harmonizado, HS). En cuanto los datos relativos a las exportaciones de Myanmar no están disponibles en esta base de datos, se ha calculado y evaluado el comercio mundial de teca con Myanmar en términos de cantidad y de valor partiendo de las estadísticas oficiales del comercio de los países importadores de teca.
2. **La teca y Myanmar.** Myanmar es un peso pesado en el campo de la teca, que juega un rol importante en el comercio mundial de la teca. Tiene la mayor superficie de bosques naturales de teca (casi 50 por ciento de los 29 millones mundiales) y es el primero productor de troncos de teca en el mundo. Sus bosques naturales producen aproximadamente un cuarto del suministro de troncos de teca indicado mundialmente, incluso la teca de buena calidad que se vende a precios relativamente elevados. Myanmar tiene la tercera área plantada con teca en el mundo después de la India y del Indonesia – aproximadamente 390.000 Ha. Globalmente, las importaciones provenientes de Myanmar tienen una participación nel comercio de la teca - más de 40 por ciento, pero esta participación varía considerablemente por país. La China y la Tailandia importan desde Myanmar la mayoría de la teca (81 y 99 por ciento respectivamente) mientras que la India importa la teca desde Myanmar por solamente un cuarto (25 por ciento).
3. **Volúmenes y valores del comercio mundial.** En los últimos 10 años (2005-2014), el comercio mundial de madera en rollo representaba mediamente más de 1 millón de m<sup>3</sup> per annum; se evaluaban las importaciones en 487 millones de dólares EE.UU./año - aproximadamente 3 por ciento del valor del comercio mundial de madera de construcción (15,5 mil millones de dólares EE.UU.). El comercio era dominado por tres países importadores importantes: la India importa tres cuartos (74 por ciento) del volumen total del comercio de más de 100 países, seguida por la Tailandia (16 por ciento del total de aproximadamente 15 países), y la China (10 por ciento del total de aproximadamente 65 países). Las importaciones de teca para la Tailandia decrecieron considerablemente durante los últimos años - desde un pico de 6,7 millones de m<sup>3</sup> en 2004 hasta solamente 61.000 m<sup>3</sup> en 2014. Por otro lado, China e India muestran una clara tendencia a un aumento de las importaciones de teca.
4. **Tendencias mundiales.** Desde el año 2000, el comercio mundial de troncos de teca de los tres países principales importadores se ha más que doblado en cuanto al volumen (de 557.000 m<sup>3</sup> en 2000 a 1,2 millón de m<sup>3</sup> en 2014) y se ha más que cuadruplicado en cuanto al valor (de 166 millones de dólares EE.UU. en 2000 a 696 millones de dólares EE.UU. en 2014). Este aumento provenía principalmente de las importaciones crecientes de la India y de China. Mientras las importaciones provenientes de Myanmar también aumentaron del 27 por ciento durante el período observado, las exportaciones del país no pudieron seguir el ritmo con la demanda mundial de teca en aumento. Por lo tanto, la importancia de Myanmar como actor mundial en el comercio de la teca declinó.
5. **Comercio emergente en África e América Latina.** Myanmar continúa siendo el proveedor dominante de madera de teca, pero la China, y en particular la India, satisfacen su creciente demanda cada vez proveniente de países Latino Americanos y Africanos. Los comerciantes emergentes de madera en rollo de teca en África son el Ghana, la Costa de Marfil, el Benín, el Togo, la Nigeria y la Tanzania (para la madera aserrada). En América Latina, Ecuador, Costa Rica, Panamá, Colombia y Brasil (para la madera aserrada) han continuamente ampliado su volumen comercial desde 2000, alcanzando un pico en los últimos años, y es probable que esta tendencia continuará.

6. **Precios de la teca.** Durante los últimos 10 años, los precios de troncos de teca de buena calidad provenientes de Myanmar y de los troncos de teca de plantación provenientes de África y América Latina han mostrado una tendencia de crecimiento de los 3 a los 4,5 por ciento mediamente per año. Sin embargo, los mercados y precios para estos dos productos son fundamentalmente diferentes. El precio unitario de troncos de teca de buena calidad importados de Myanmar se encuentra arriba de los precios unitarios para importaciones provenientes de otros países, en particular en el mercado indiano. En este país, el precio unitario de troncos de teca proveniente de Myanmar iniciaban de 615 dólares EE.UU./m<sup>3</sup> en 2005 y alcanzaban su nivel más alto de aproximadamente 1.000 dólares EE.UU./m<sup>3</sup> en 2014. Las importaciones provenientes de África e América Latina muestran un lento aumento de aproximadamente 320 dólares EE.UU./m<sup>3</sup> en 2005 a 430 dólares EE.UU./m<sup>3</sup> en 2014.
7. **Demanda y oferta.** Se prevee que la demanda mundial de teca aumentará y continuará riegándose por las tendencias en el mercado asiático. Las excepcionales calidades de la madera de teca tales como belleza, resistencia, durabilidad, dureza, hacen que sea el material preferido para una amplia gama de aplicaciones. El mercado mundial, en particular India y China, continuará absorbiendo la oferta de teca disponible y las tendencias de los precios en aumento experimentadas durante los últimos 10 años probablemente seguirán en el futuro. El crecimiento en la demanda internacional de teca de utilidad general ha ampliado la base de suministro tradicional de teca proveniente de bosques naturales en Asia para incluir troncos de plantación de pequeño diámetro y de crecimiento rápido provenientes de África y de América Latina. En los precios medios actuales de 600-1.000 dólares EE.UU./m<sup>3</sup> para troncos de alta calidad y 350-500 dólares EE.UU./m<sup>3</sup> para troncos de plantación de pequeña dimensión, la teca ya es una de las maderas duras más caras del mundo.
8. **El futuro pertenece a las plantaciones de teca.** El suministro de troncos de teca de calidad provenientes de viejos bosques naturales de teca en Myanmar decrecerá debido al impacto de la prohibición de exportación de troncos en vigor desde el 1° de abril de 2014, el declino de las áreas manejadas en bosques naturales de teca y la deterioración de la calidad de la teca producida de manera natural. Esto ha conducido a un aumento de interés y inversión en el establecimiento y manejo de las plantaciones de teca. Se puede afirmar con un alto grado de certeza que, en el futuro, el suministro de madera de teca del mundo dependerá de la producción de las plantaciones tropicales de teca. La plantación de teca mejorará adónde se aplicarán buenas prácticas de manejo, y se puede esperar que habrá en el futuro un creciente traslapado en términos de “calidad” entre la teca natural y la teca proveniente de plantación.
9. La **prohibición de exportación de troncos** en Myanmar tuvo un impacto distinto sobre los mercados de China e India. En China, que importa el 80 por ciento de su teca de Myanmar, un inminente prohibición de exportación de troncos provocó un rápido aumento de la demanda de troncos de alta calidad, junto a un aumento sostenido de los precios de la teca de aproximadamente 750 dólares EE.UU./m<sup>3</sup> al final de 2013 hasta casi 2.000 dólares EE.UU./m<sup>3</sup> en enero de 2014. La India solamente importa un cuarto de su teca de Myanmar, en este caso un importante impacto de la prohibición de exportación de troncos no se puede verificar. Los datos disponibles para India tampoco no indican que la prohibición de exportación de troncos proporcionó una oportunidad de mercado para los exportadores de África o América Latina, probablemente debido al hecho que las utilizations finales y los mercados de teca birmano y africano o latino-americano son bastante distintos.

## Sumário e Conclusões

- 1. Metodologia.** A análise e as conclusões deste trabalho são baseadas em dados aduaneiros nacionais publicados pelo comércio Serviços de Informações Globais (GTIS, <http://www.gtis.com/>) de acordo com os códigos do produto da Harmonizada Descrição de Comodidades e Sistema de Codificação (Sistema Harmonizado, HS). Como os dados de exportação de Myanmar não estão disponíveis nesta base de dados, o comércio global de teca com Myanmar em termos de volumes e valores foi levantado e avaliado com base nas estatísticas oficiais de comércio dos países importadores de teca.
- 2. Teca e Myanmar.** Myanmar é o principal player no comércio de teca, desempenhando um papel global significativo. O país tem a maior área de florestas nativas de teca (quase 50% dos 29 milhões de ha no mundo inteiro), e é o número um dos produtores de toras de teca no mundo. Suas florestas naturais produzem cerca de um quarto da relatada oferta global de toras de teca, incluindo teca de boa qualidade vendida a preços relativamente elevados. Logo a seguir à Índia e à Indonésia, Myanmar tem a terceira maior área plantada de teca no mundo com cerca de 390.000 ha. Globalmente, as importações provenientes de Myanmar têm uma participação no comércio de teca de mais de 40%, mas esta porcentagem varia consideravelmente por país. A China e a Tailândia importam o maior volume de teca (81% e 99%, respectivamente) de Myanmar, enquanto a Índia importa apenas um quarto (25%) de Myanmar.
- 3. Volumes e valores do comércio global.** Nos últimos 10 anos (2005-2014) o comércio global de madeira de teca em tora era acima de 1 milhão de m<sup>3</sup> em média por ano; as importações foram avaliadas em 487 milhões de Dólares Americanos USD por ano, o que representa cerca de 3% do valor do comércio global de madeira (15,5 bilhões USD). O comércio foi dominado por três grandes países importadores: a Índia importa três quartos (74%) do volume comercial total de mais de 100 países, seguido pela Tailândia (16% do total de cerca de 15 países) e a China (10% do total de ca. 65 países). Importações de teca para a Tailândia diminuíram consideravelmente nos últimos anos, de um pico de 6,7 milhões de m<sup>3</sup> importados em 2004 para apenas 61.000 m<sup>3</sup> em 2014. A China e a Índia, por outro lado, mostram uma clara e expressiva tendência de aumento das importações de teca.
- 4. As tendências globais.** Desde 2000, o comércio mundial de toras de teca dos três principais países importadores mais do que duplicou em termos de volume (de 557 mil m<sup>3</sup> em 2000 para 1.200.000 m<sup>3</sup> em 2014) e mais do que quadruplicou em termos de valor (de 166 milhões USD em 2000 para 696 milhões USD em 2014). Este aumento foi suportado principalmente pelas importações crescentes para a Índia e China. Embora as importações provenientes de Myanmar tenham aumentado também por 27% no período observado, as exportações deste país não puderam manter o ritmo com o crescimento da demanda mundial de teca. Consequentemente, a importância de Myanmar como global player no comércio de teca tem vindo a diminuir.
- 5. Comércio emergente na África e na América Latina.** Myanmar continua sendo o fornecedor dominante de madeira de teca, mas a China e, em particular, a Índia, atenderam a sua crescente demanda cada vez mais a partir de diversos países da América Latina e da África. Os emergentes comerciantes africanos de madeira de teca em tora são Gana, Costa do Marfim, Benin, Togo, Nigéria e Tanzânia (para madeira serrada). Na América Latina Equador, Costa Rica, Panamá, Colômbia e Brasil (para madeira serrada) têm continuamente ampliado o seu volume de comércio desde 2000, atingindo um pico nos últimos anos, o que é muito provável de continuar.
- 6. Preços de teca.** Nos últimos 10 anos, os preços de toras de teca de qualidade, oriunda de Myanmar, e toras originárias de plantações de teca da África e da América Latina mostram em média uma tendência a aumentar na ordem dos 3% a 4,5% ao ano. No entanto, os mercados e os preços de ambos os produtos são fundamentalmente diferentes. O preço unitário de toras de teca de qualidade importadas de Myanmar está acima dos preços unitários de importações de outros países,

notável no mercado indiano. Neste país, o preço unitário de toras de teca de Mianmar começou a partir de 615 USD/m<sup>3</sup> em 2005 e atingiu o seu nível mais alto de quase 1000 USD/m<sup>3</sup> em 2014. As importações da África e da América Latina apresentam um lento aumento de cerca de 320 USD/m<sup>3</sup> em 2005 para 430 USD/m<sup>3</sup> em 2014.

7. **Demanda e oferta.** Prevê-se um aumento da demanda global de teca, a qual vai continuar a ser regida pelas tendências do mercado asiático. As qualidades excepcionais de madeira de teca, tais como beleza, resistência, durabilidade e dureza, tornam-a o material preferido para uma ampla gama de aplicações. O mercado mundial, em particular a Índia e a China, continuará absorvendo a oferta de teca disponível e as tendências de preços crescentes, verificada nos últimos 10 anos, continuarão provavelmente no futuro. O crescimento da demanda internacional por teca de utilidade geral ampliou a base de fornecimento tradicional de teca das florestas nativas na Ásia, para incluir toras de plantações de rápido crescimento e pequeno diâmetro, oriundas da África e da América Latina. Nos preços médios atuais de 600-1000 USD/m<sup>3</sup> para toras de alta qualidade e 350-500 USD/m<sup>3</sup> para toras de plantios de baixa dimensão, a teca já é uma das madeiras mais caras do mundo.
8. **Futuro pertence a plantações de teca.** O fornecimento de toras de teca de qualidade provenientes de anciões recursos de florestas nativas de teca em Myanmar vai diminuir, devido ao impacto da proibição de exportação em vigor desde 1 de Abril de 2014, como também devido ao declínio da área manejável de floresta nativa de teca e da deterioração da qualidade de teca produzida em povoamentos naturais. Isto levou ao aumento do interesse e do investimento em criação e gestão de plantações de teca. Pode-se afirmar com alto grau de certeza que a oferta mundial de madeira de teca vai depender no futuro da produção das plantações tropicais de teca. Teca oriunda dos plantios florestais tem melhorado onde foram aplicadas boas práticas de manejo, e pode-se esperar uma crescente sobreposição em anos futuros em termos de "qualidade" entre teca nativa e plantada.
9. **A proibição de exportação de toras** em Mianmar teve um impacto diferenciado sobre os mercados na China e na Índia. Na China, que importa 80% de sua teca de Mianmar, a proibição de exportação de toras iminente provocou um rápido aumento na demanda de toras de alta qualidade, juntamente com um aumento acentuado nos preços de teca de cerca 750 USD/m<sup>3</sup>, no final de 2013 para quase 2.000 USD/m<sup>3</sup> em janeiro de 2014. Já na Índia, a qual importa apenas um quarto da sua teca de Mianmar, não se verificou um impacto significativo da proibição de exportação. Os dados disponíveis para a Índia nem sequer sugerem que a proibição de exportação de Mianmar tenha aberto uma oportunidade de mercado para os exportadores africanos ou latino-americanos, provavelmente devido ao fato de as utilizações finais e os mercados da teca birmanesa e africana ou latino-americana serem bastante distintos.

## 1. Introduction

Teak (*Tectona grandis*) grows in about 70 countries around the world. It has attracted great investment from the private sector in Africa, Asia and Latin America, and in many nations production and trade have become a major component of the forest economies. However, in countries where it is not an indigenous species, teak is grown in planted, man-made forests; natural teak forests are only found in India, Lao PDR, Myanmar and Thailand.

Myanmar and its major trading partners – in particular India and China – traditionally play a significant role in the teak trade. The global area of natural teak forests is estimated at about 29 million ha, almost half of which is located in Myanmar. Natural teak forests are a particularly precious resource that produces good-quality logs that sell at comparatively high prices. Myanmar is also the primary producer of teak logs; in 2010, its natural forests produced a quarter of the globally reported teak log removals. Last, but not least, Myanmar has the third-largest planted teak area in the world – about 390 000 ha of an estimated total area of 4.35 million ha (Kollert and Cherubini, 2012). On the other hand, uncontrolled and illegal exports of teak and other hardwoods (*Dalbergia* spp. and *Pterocarpus* spp.) from Myanmar have led to increased deforestation and forest degradation, which have raised the stakes of natural disasters. As a consequence, the Government of Myanmar halted log exports on 1 April 2014 to gain greater control over the international timber trade and promote the export of more finished products. Concurrently, the Forestry Department has announced serious action, including prison sentences, to address illegal logging (ITTO, 1–15 October 2014).

The log export ban has had a significant impact on the forestry sector and the local timber market in Myanmar. Immediately before the ban entered force, the country's forestry authorities observed a considerable rise in prohibited harvests, log smuggling and illegal exports. As logs could no longer be legally exported and had to be processed locally, the tenders conducted by the Myanmar Timber Enterprise were hardly frequented by private international buyers, and as a result, the prices for locally produced teak reportedly fell by up to 40 percent (FORDAQ, 19 May 2014). On the other hand, the ban is said to have created a market opportunity for international suppliers of plantation teak from Africa and Latin America to expand sales to India and other countries. In this context, Indian importers were urging plantation teak suppliers to improve plantation tending and management techniques to produce logs of similar quality to those from natural forests (ITTO, 16–30 June 2014). In view of the rising scarcity of high-quality teak logs, international teak prices, for example in the USA, were reported to have risen by 10–20 percent for average-quality produce, while prime-quality teak for yacht building had jumped by up to 30 percent and was expected to increase further as the stock of available raw material continued to dwindle (FORDAQ, 25 July 2014).

This working paper aims to assess and evaluate the available trade and price data on teak to provide quantitative evidence on the impact of the Myanmar log export ban on global trade, the international timber market and the future supply of teak logs from planted forests. The analysis is based on official timber trade and price statistics published by national customs departments.

## 2. Methodology – teak in the Harmonized System (HS)

The Harmonized Commodity Description and Coding System (in brief, the Harmonized System, or HS) is an internationally standardized system of codes and names for classifying traded products. It has been developed by the World Customs Organization (WCO), an independent intergovernmental organization based in Brussels, Belgium. The HS is applied by more than 200 countries as a customs tariff and a means for collecting international trade data. The Global Trade Atlas, operated by Global Trade Information Services (GTIS), provides such data according to HS codes for all member countries of the WCO.

Teak roundwood appears under the six-digit HS code 440349 “other tropical roundwood” and 440729 “other tropical sawnwood”. The major teak-trading countries have expanded this six-digit code to a national eight-digit code for teak (for example, 44034910 is the code for teak roundwood imported to China and India). Unfortunately, the OECD countries and Singapore do not have a distinct HS code for teak, making trade with these countries difficult to assess as it is recorded as “other tropical roundwood” (HS 440349). Further details on the publication of teak products in the HS are given by country in the appendix.

Capturing the international teak trade with Myanmar using official customs data poses a particular problem, as teak export data from Myanmar are not available.<sup>2</sup> Consequently, the global teak trade with Myanmar in terms of volume and value has to be assessed based on official trade statistics of the importing countries.

### 3. Trade volume

#### 3.1 Industrial roundwood

FAO’s database on forest products statistics reports the global trade volume of tropical industrial roundwood in the past 10 years at about 15 million m<sup>3</sup> a year on average. The global trade of industrial teak roundwood was found to be slightly more than 1 million m<sup>3</sup>, which corresponds to about 7 percent of the total trade volume (FAOSTAT and Global Trade Atlas).

Figure 1 provides an overview of the global trade in teak roundwood from the perspective of teak-exporting countries: those that grow teak are marked by a thin black line along the border; those coloured red are major teak exporters; while those in yellow and green trade minor volumes. It is worth noting that many industrialized countries in the northern hemisphere (for example Canada, the USA and European countries) that do not grow teak act as vendors of teak roundwood and export considerable volumes to other countries.<sup>3</sup>

The global teak trade is dominated by three major importing countries: India, which imports three quarters (74 percent) of the total trade volume of teak roundwood from more than 100 countries; followed by Thailand (16 percent of the total from about 15 countries) and China (10 percent of the total from about 65 countries) (see Figure 2). In terms of import value, India’s dominance is even more pronounced, accounting for almost 80 percent of the global teak trade. Teak imports to Thailand have considerably decreased in recent years, from a peak of 6.7 million m<sup>3</sup> in 2004 to only 61 000 m<sup>3</sup> in 2014. China and India, on the other hand, have shown an increase; therefore, from here on in, this report will focus on these two as the main importing countries.

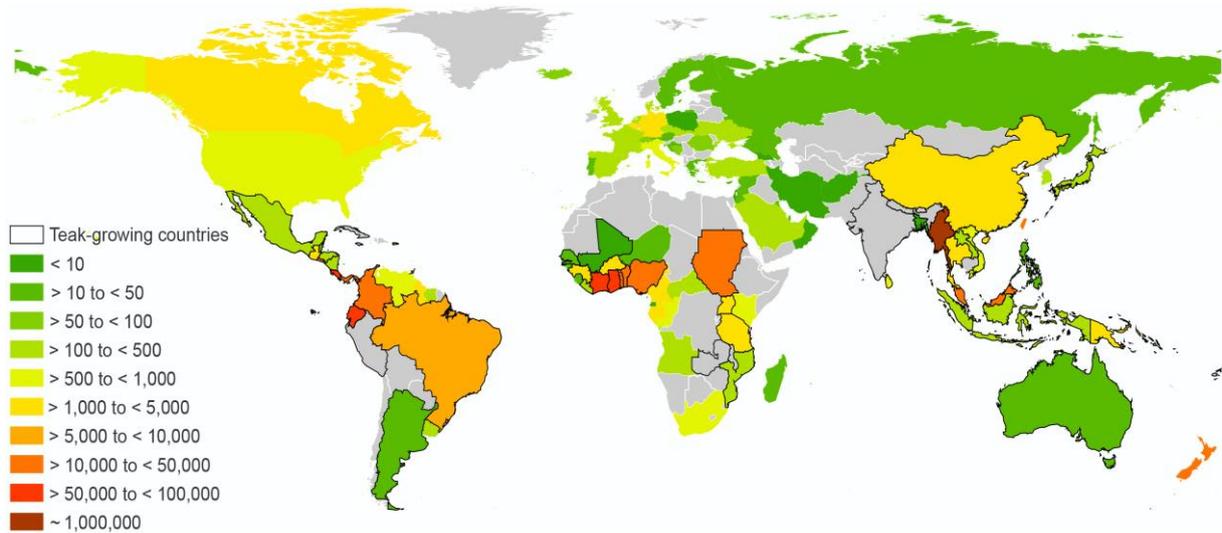
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<sup>2</sup> Myanmar publishes teak export data in ITTO’s Joint Forest Sector Questionnaire (JFSQ), the most recent ones being from 2012 and 2013. According to this questionnaire, 25 percent of exported roundwood is teak, with the remainder being mainly *Dipterocarpus* spp. (In-Kanyin, about 50 percent), *Xylia dolabriformis* (Pyinkado, about 20 percent) and other species (about 5 percent). In terms of value, teak roundwood takes about 66 percent of the export value, *Dipterocarpus* spp. about 18 percent, *Xylia dolabriformis* about 13 percent and others about 3 percent. As for sawntimber, 75 percent of exports is teak and the rest (25 percent) *Xylia dolabriformis*. In terms of value, teak sawntimber takes about 92 percent and *Xylia dolabriformis* 8 percent. (*Xylia dolabriformis* is a typical associate of natural teak forests together with *Azelia* spp., *Terminalia* spp. and *Lagerstroemia* spp.; Soerianegara and Lemmens, 1994: 451).

<sup>3</sup> In most industrialized countries, the trade of teak roundwood is recorded in the HS under “other tropical wood” (code 440349), therefore the exact teak trade volumes of these countries cannot be ascertained. This does not, however, invalidate the observation of teak re-exports from these countries.

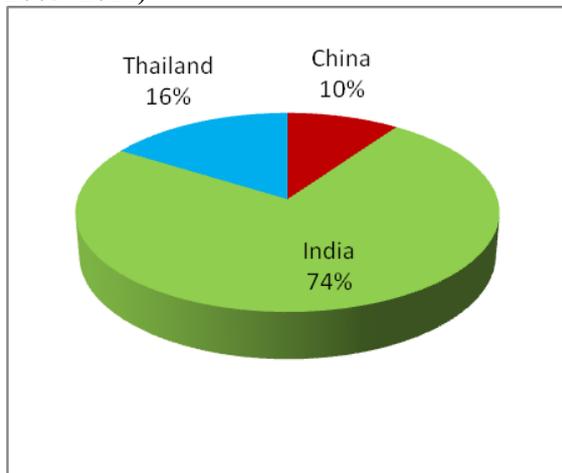
**Figure 1. Teak-growing and roundwood-exporting countries**

Colours indicate roundwood export volumes, 2005–2014, average in m<sup>3</sup>/year; no country was found to be in the 100 000–1 000 000 m<sup>3</sup> range.

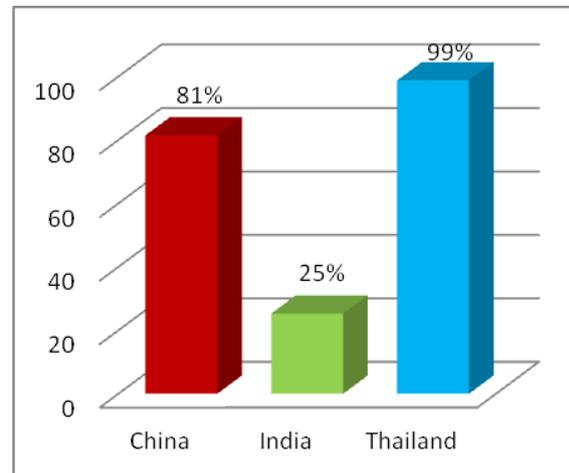


Imports from Myanmar constitute on average 455 000 m<sup>3</sup> (43 percent) of the global teak trade each year, although volumes vary significantly between countries. While only a quarter of Indian teak originates from Myanmar, the country supplies the lion’s share of Thailand’s and China’s imports (99 percent and 81 percent respectively, see Figure 3).

**Figure 2. Share of global teak roundwood imports: 1.07 million m<sup>3</sup>/year (average for 2005–2014)**



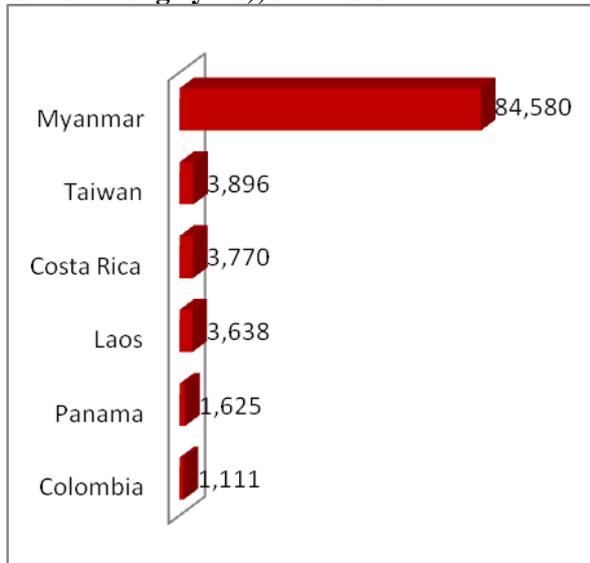
**Figure 3. Share of imports from Myanmar in major teak-importing countries**



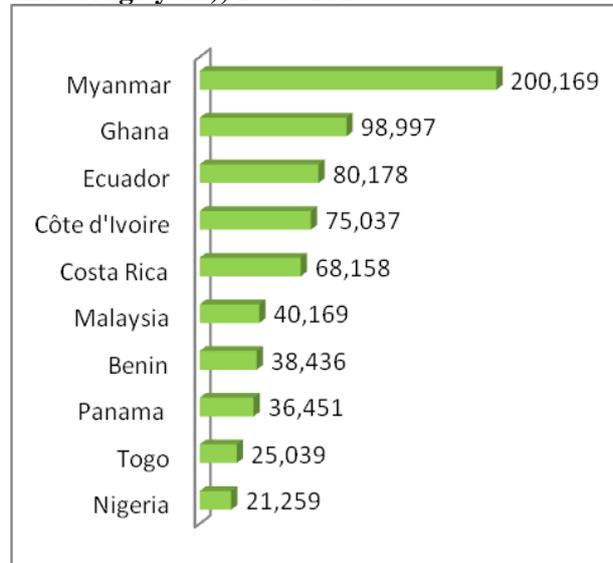
Other Asian countries such as Taiwan, Singapore, Malaysia and Hong Kong also import teak roundwood from Myanmar; however, in these countries (except for Taiwan), teak is classified as “other tropical wood” (HS code 440349) and the exact import volume cannot be quantified. Under the assumption that a quarter of the timber imported from Myanmar is teak, we can estimate that these four countries together imported an annual average of 10 000 m<sup>3</sup> from Myanmar. Countries of the European Union, in particular Italy, Germany and the Netherlands, form the fourth-largest market for teak roundwood; from 2005 to 2013, these countries imported an annual average of 1 000 m<sup>3</sup> from Myanmar, even though levels have been declining since the 2008/2009 financial crisis.

While Myanmar is the dominant supplier of teak roundwood, China and, in particular, India meet their growing demand through importing from a number of Latin American and African countries. Ecuador, Costa Rica, Panama and Colombia are significant exporting countries in Latin America, while Ghana, Côte d'Ivoire, Benin, Togo and Nigeria are major African exporters (see Figures 4 and 5).

**Figure 4. Highest imports to China (> 1,000 m<sup>3</sup> on average/year), 2005–2014**



**Figure 5. Highest imports to India (> 10,000 m<sup>3</sup> on average/year), 2005–2014**



### 3.2 Sawnwood

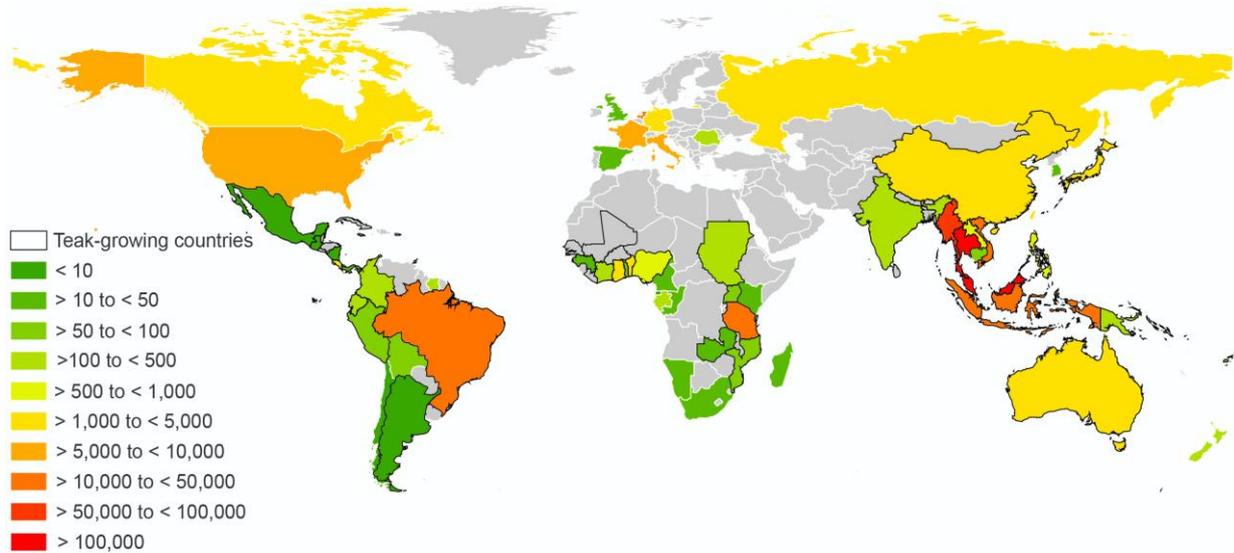
Figure 6 provides an overview of the global trade in teak sawnwood from the perspective of teak-exporting countries: those that grow teak are marked by a thin black line along the border; those coloured red are major teak sawnwood exporters; while countries in yellow and green trade minor volumes. It is worth noting that many industrialized countries in the northern hemisphere (for example Canada, the USA, the Russian Federation and European countries) that do not grow teak act as vendors of roundwood and export considerable volumes to other countries<sup>4</sup>.

In 2005–2014, the average annual global trade of teak sawnwood stood at about 120 000 m<sup>3</sup>, or about US\$75 million. It was dominated by five major importing countries: China (accounting for 46 percent of the total), India (31 percent), Thailand (14 percent), Taiwan (7 percent) and South Korea (2 percent) (see Figure 7). While Myanmar's focus in the international teak trade had been on roundwood in the past, sawnwood exports from this country supplied on average half of the total teak sawnwood trade (74 000 m<sup>3</sup>, or 49 percent). However, volumes varied significantly between countries; China and Thailand, for example, imported more than 70 percent of their teak sawnwood from Myanmar, while the country only supplied 2 percent of India's sawnwood (see Figure 8).

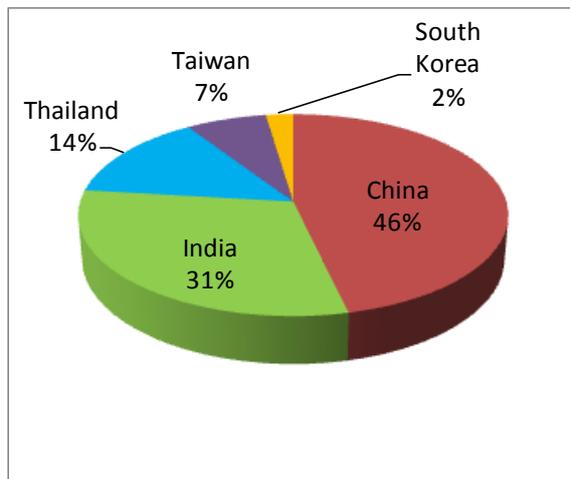
<sup>4</sup> In most industrialized countries, the trade of teak sawnwood is recorded in the HS under "other tropical wood" (code 440729), therefore the exact teak trade volumes of these countries cannot be ascertained. This does not, however, invalidate the observation of teak re-exports from these countries.

**Figure 6. Teak-growing and sawnwood-exporting countries**

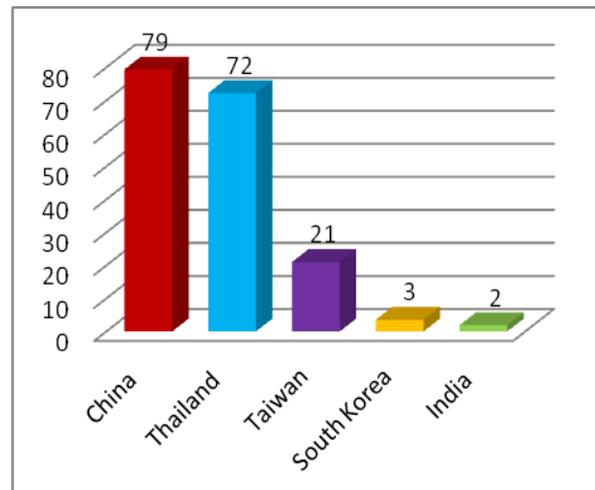
Colours indicate the sawnwood export volume in 2005–2014; average in m<sup>3</sup>/year.



**Figure 7. Share of global teak sawnwood imports: 120 000 m<sup>3</sup>/year (average 2005–2014)**

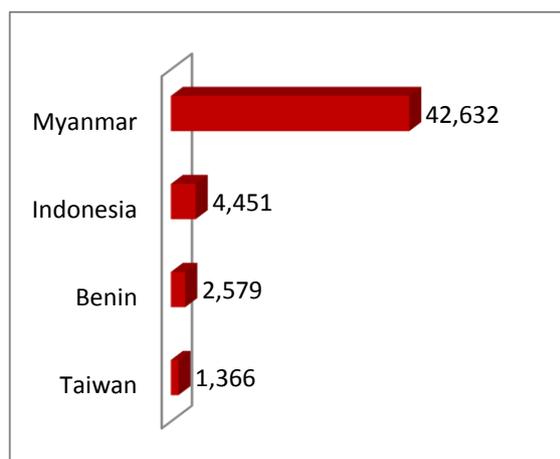


**Figure 8. Share of Myanmar teak sawnwood imports to major importing countries**

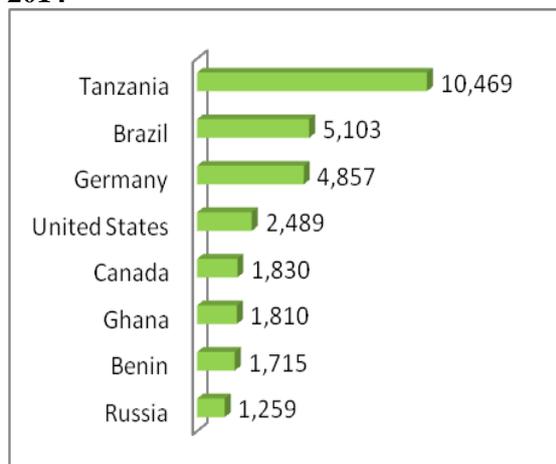


While Myanmar is the dominant supplier of teak sawnwood for China, India meets its growing demand by importing from elsewhere – mainly African, but also European and North American countries, which purchase teak sawnwood from producer countries and re-export them (see Figures 9 and 10). Thailand, the third-largest importer, procures its teak sawnwood mainly from neighbouring countries Myanmar (11 600 m<sup>3</sup>/year, or 72 percent) and Laos (3 500m<sup>3</sup>/year, or 22 percent), while smaller amounts are imported from China, Indonesia and Malaysia.

**Figure 9. Imports to China from four major countries (> 1,000 m<sup>3</sup> on average/year), 2005–2014**



**Figure 10. Imports to India from eight major countries (> 1,000 m<sup>3</sup> on average/year), 2005–2014**

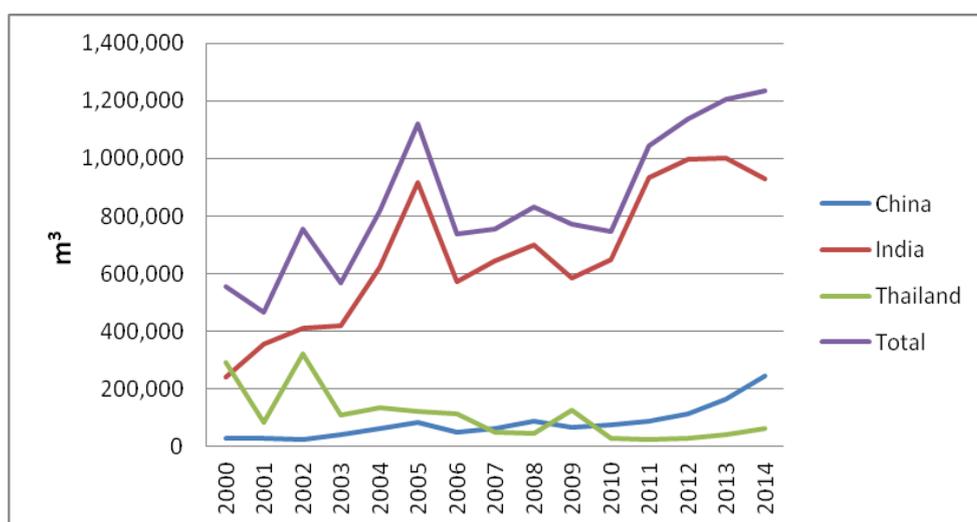


## 4. Market trends (time series analysis)

### 4.1 Industrial roundwood

The global trade of industrial teak roundwood, measured by import volumes to the three major importing countries (China, India and Thailand), more than doubled between 2000 and 2014, from 557 000 m<sup>3</sup> to 1 237 000 m<sup>3</sup>. This increase was mainly borne by India and China, although imports to India declined in 2014. Imports to Thailand decreased significantly from 2002 (see Figure 11).

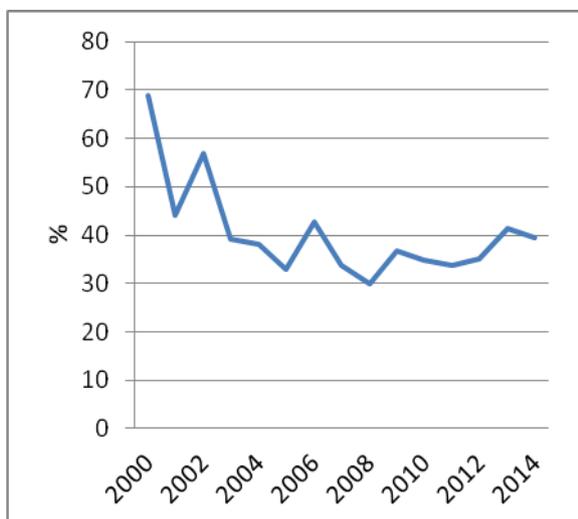
**Figure 11. Global teak roundwood imports to China, India and Thailand**



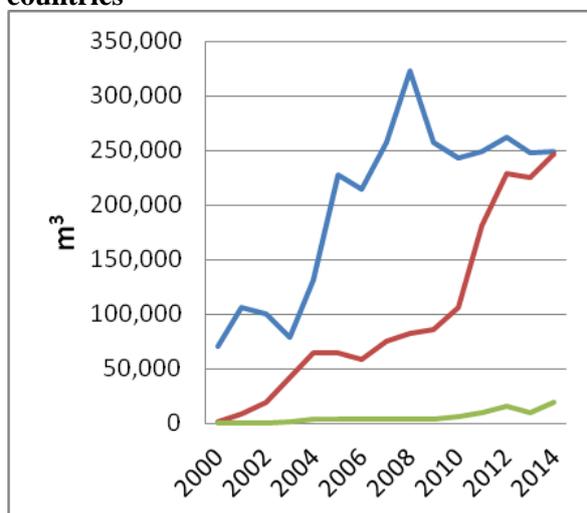
While total imports from Myanmar increased during the observed period, from 383 000 m<sup>3</sup> to 489 000 m<sup>3</sup> (an increase of 27 percent), Myanmar's exports could not keep pace with the global demand for teak roundwood. Hence Myanmar's significance as a global player in the teak trade declined, with its share of global exports falling from 69 percent in 2000 to 40 percent in 2014 (see Figure 12). Since 2000, other countries have increasingly taken over Myanmar's role, securing a

considerable market share by exporting teak plantation logs; African supply peaked at 323 000 m<sup>3</sup> in 2008, but declined considerably thereafter, while Latin American countries showed a more or less continuous increase in exports, marked by a steep rise since 2010. In 2014, imports from Africa and Latin America were almost equal (see Figure 13).

**Figure 12. Share of teak exports from Myanmar to China, India, Thailand**

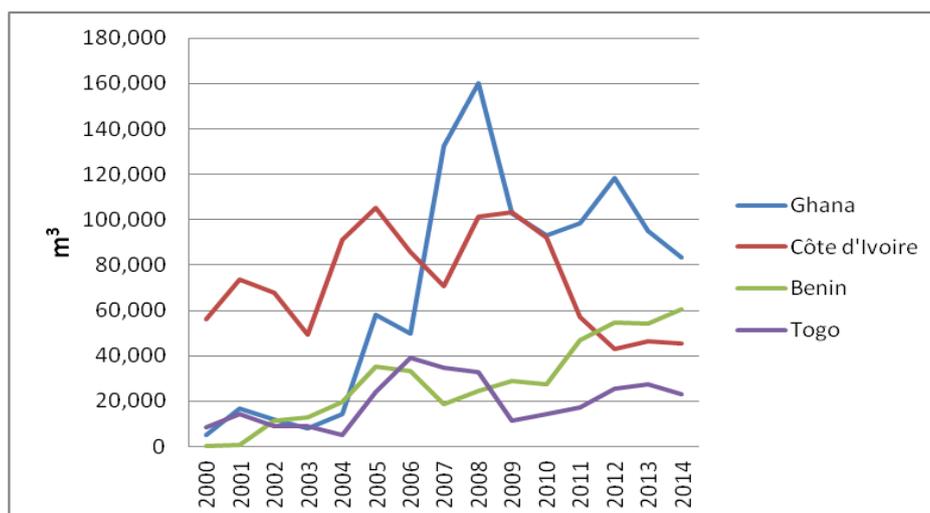


**Figure 13. Teak imports to China and India from African, Asian and Latin American countries**

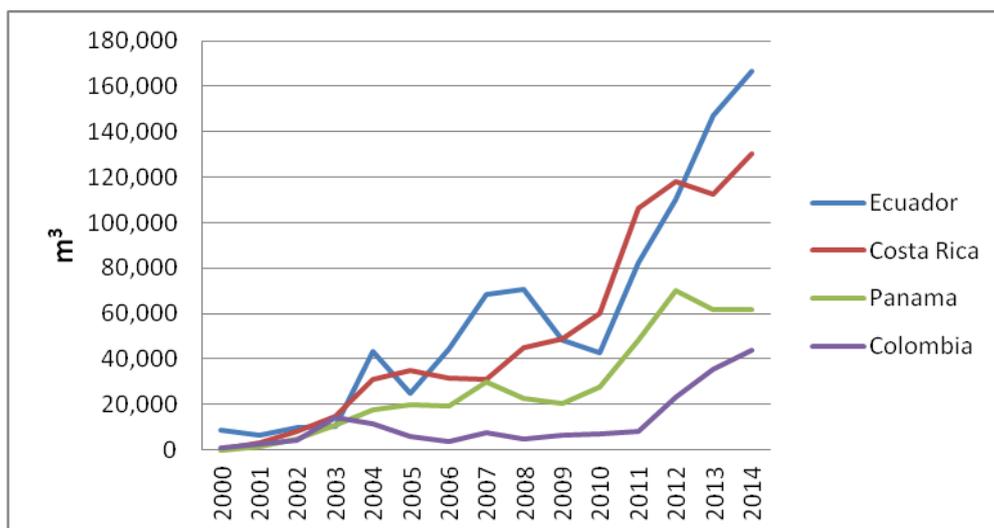


The emerging teak roundwood traders in Africa are Ghana, Côte d'Ivoire, Benin and Togo. Imports from Ghana and Côte d'Ivoire peaked from 2008 to 2009, but have considerably declined since then, while exports from Benin have been on the rise (see Figure 14). In Latin America, Ecuador, Costa Rica, Panama and Colombia have managed to continuously expand their trade volume since 2000, reaching a peak in recent years – a trend that is likely to continue (see Figure 15).

**Figure 14. Emerging African traders**



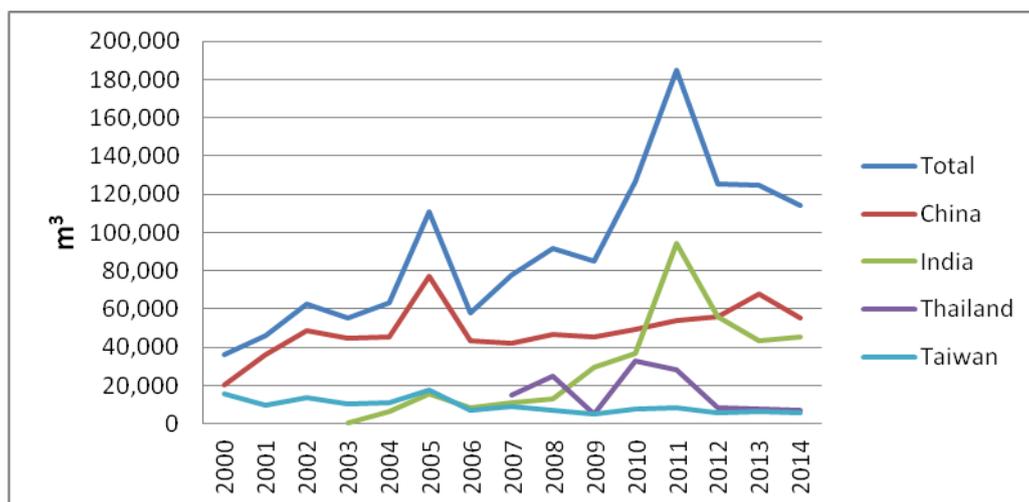
**Figure 15. Emerging Latin American traders**



#### 4.2 Sawnwood

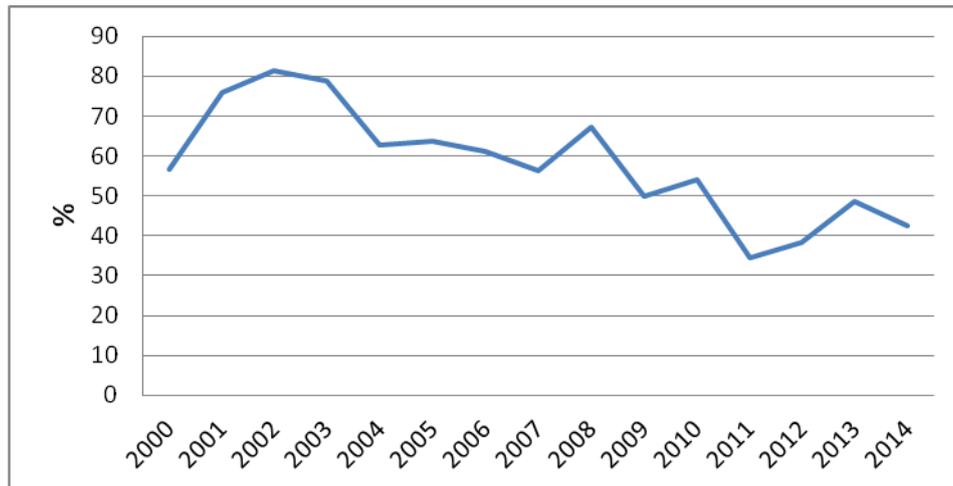
The global trade of teak sawnwood measured by import volumes to the four major importing countries (China, India, Taiwan and Thailand) has more than tripled since 2000, from 36 000 m<sup>3</sup> to 114 000 m<sup>3</sup> in 2014, peaking at 185 000 m<sup>3</sup> in 2011. This increase was mainly borne by India and China (see Figure 16).

**Figure 16. Global teak sawnwood imports**



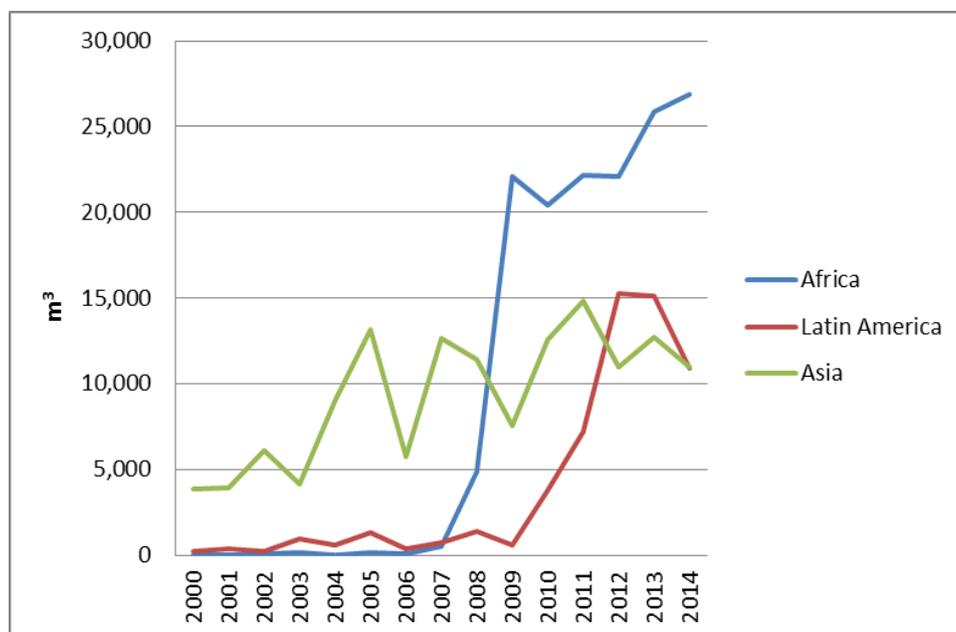
Myanmar's contribution in terms of volume more than doubled during this period, from 21 000 m<sup>3</sup> in 2000 to 48 000 m<sup>3</sup> in 2014 (an increase of 230 percent). However, despite this increase, the country's exports could not keep pace with the rising global demand for teak sawnwood; its relative share of exports to India, Thailand and Taiwan fell from a high of 81 percent in 2002 to only 42 percent in 2014 (see Figure 17).

**Figure 17. Share of teak sawnwood exports from Myanmar to China, India, Taiwan and Thailand**



The countries that have taken over Myanmar’s leading role in the global trade of teak sawnwood are predominantly from Africa, where exports have increased since 2008, and from Latin America, where they have risen dramatically since 2010 (see Figure 18). The emerging exporters are Tanzania (2014: 18 000 m<sup>3</sup>) and Benin (2014: 9 000 m<sup>3</sup>) in Africa, and Brazil (2014: 10 000 m<sup>3</sup>) and Costa Rica (2014: 1 000 m<sup>3</sup>) in Latin America. Asian countries – in particular Indonesia and Laos – have also contributed to the increasing trade volume.

**Figure 18. Teak sawnwood imports to China, India, Taiwan and Thailand from countries in Africa, Asia and Latin America**



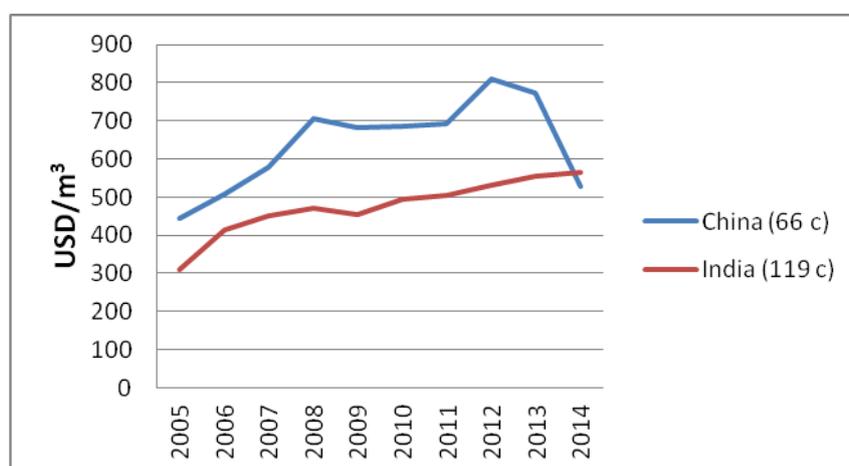
## 5. Trade value

### 5.1 Industrial roundwood

In terms of value, teak roundwood trade accounts for 12 percent of the global annual tropical timber trade (US\$487 million of about US\$4 billion a year on average between 2005 and 2014), which has slightly increased in recent years. In 2013, the global imports of teak roundwood were valued at about US\$720 million, while the total import value of tropical industrial roundwood was reported at about US\$5.4 billion, equivalent to a share of 13.4 percent (FAOSTAT and Global Trade Atlas).

The average unit value of teak roundwood imported to China from 66 countries in 2005–2014, including high-quality veneer logs and plantation logs, was US\$641/m<sup>3</sup>. The corresponding value for India from 119 countries amounted to US\$478/m<sup>3</sup>. Under the assumption that quality is linked to price, India appears to import more low-quality logs than China. During this period, import values displayed a slight increase, although in China they dropped in 2014 (see Figure 19).

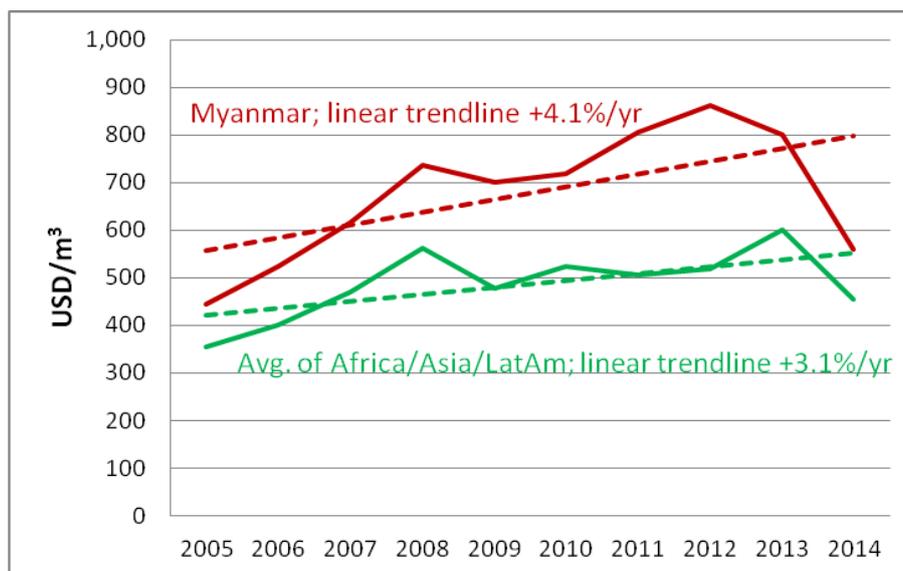
**Figure 19. Unit prices of teak roundwood imports to China (from 66 countries) and India (from 119 countries)**



The amount of quality teak available on the world market is reported to have declined in the observed period. Myanmar, for example, has four grades of veneer logs and three grades of sawlogs. By 1998, first- and second-veneer grades were no longer available for export at depots in Yangon. By 2000, third- and fourth-veneer grades were at 1 percent and 10 percent of the volumes available at the beginning of the 1990s, respectively (Coillte Consult, 2006). Balooni (2011) reports that the share of top-quality A-grade teak in Indian timber auctions has been declining steadily for many years.

As a consequence of the scarcity of good-quality teak, prices of roundwood are expected to have increased in the past. Figure 20 compares the prices of teak roundwood imported to China from Myanmar and from African (Benin, Ghana, Côte d'Ivoire and Togo), Asian (Indonesia, Laos, Malaysia and Thailand) and Latin American (Colombia, Costa Rica, Ecuador and Panama) countries. In 2005–2014, the development of unit prices displayed a comparable trend; however, the unit prices of Myanmar teak were higher than for teak from other countries. In addition, both unit prices showed an upward trend, which is displayed in Figure 20 as a linear trendline. The value of teak roundwood imported from Myanmar to China rose from 2005 at an average annual rate of 4.1 percent. From African, Asian and Latin American countries combined, the annual rate of increase was 3.1 percent. However, it should be noted that in 2013 and 2014, prices dropped to 2006 levels.

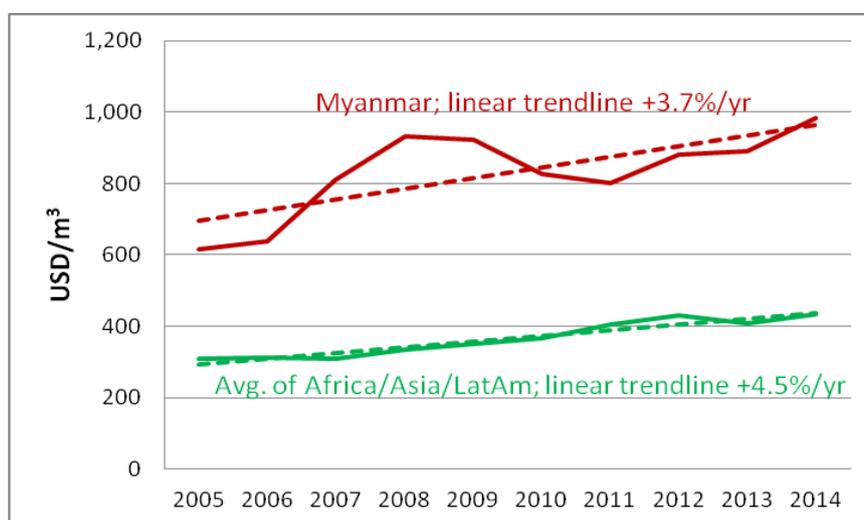
**Figure 20. Development of unit prices of teak roundwood imports to China**



The trends observed for China were even more pronounced in the Indian market. ITTO reported at the beginning of 2015 that there was firm demand for teak in India. More than 20 000 m<sup>3</sup> of teak logs was sold at Central Indian depots (for example Timarni, Khirakia, Ashapur, Narmadanagar and Betul), as sawmills needed to replenish their stocks. Buyers reported that the quality of logs was very good, which was reflected in higher-than-average prices (ITTO, 2015).

In India, the value of teak logs from Myanmar was far higher than that of logs from other countries starting from US\$615/m<sup>3</sup> and reaching its highest level of almost US\$1 000/m<sup>3</sup> in 2014, the year of the log export ban (see Figure 21). Values achieved for imports from African, other Asian and Latin American countries were considerably lower, from about US\$300/m<sup>3</sup> in 2005 to an average of US\$430/m<sup>3</sup> in 2014. As for India, both unit prices showed an upward trend, which is displayed in Figure 21 as a linear trendline. Imports from Myanmar displayed an annual price increase of 3.7 percent on average since 2005; this rise is even higher, at 4.5 percent, for imports from other countries. Although a decline in prices for Chinese imports was observed in 2014, no trend could be established with regard to imports to India.

**Figure 21. Development of unit prices of teak roundwood imports to India**



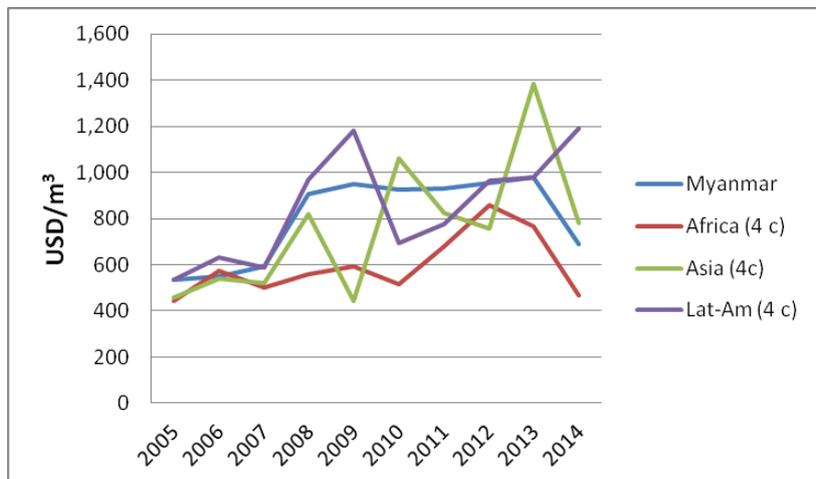
## 5.2 Sawnwood

Only a few countries in Africa and Latin America process teak logs into semi-finished or finished products prior to export. Most traders tend to export roundwood to feed the Indian demand for teak. In India, local wood-processing mills apply artisanal manufacturing procedures, work at lower costs, and are technically and organizationally well-suited to working with small-diameter logs. Under these circumstances, teak growers in Latin America claim that the export of teak to India as roundwood yields a higher return than processing it into and exporting finished or semi-finished products (Camacho, 2011).

The average value of all forms of teak sawnwood imported to China from 72 countries during 2005–2014 was US\$760/m<sup>3</sup>. The corresponding value for India from 78 countries was US\$437/m<sup>3</sup>. It is striking that the reported sawnwood unit price is below the calculated roundwood average price of US\$475/m<sup>3</sup>. As with roundwood, China appears to import higher-quality sawnwood than India.

Sawnwood prices, although highly volatile, display a slightly increasing trend in all major teak-exporting countries. The unit prices of teak sawnwood imports to China originating from Myanmar and a number of countries in Africa (Benin, Côte d'Ivoire, Nigeria and Tanzania), Asia (Indonesia, Laos, Malaysia and Thailand) and Latin America (Brazil, Bolivia, Costa Rica and Ecuador) are displayed in Figure 22. Myanmar prices do not show a marked difference compared with imports from other countries. In fact, Myanmar prices are average, with a marked decline to 2006/2007 levels in recent years. The prices for imports from African, Asian and Latin American countries increased from 2005, although again declined in Africa and Asia in 2013 and 2014.

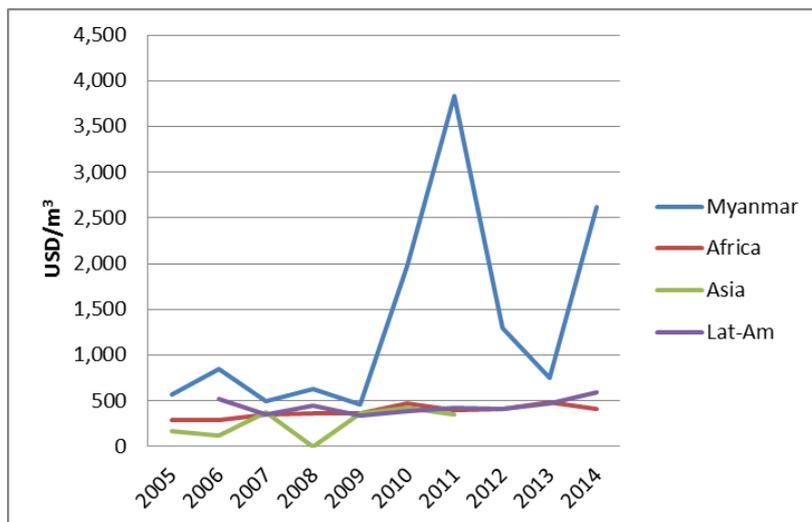
**Figure 22. Value of teak sawnwood imports to China from Myanmar and major exporting countries in Africa, Asia and Latin America**



Sawnwood imports to India originate from a fewer number of countries, mainly Benin, Ghana, and Nigeria in Africa; Malaysia in Asia; and Brazil and Ecuador in Latin America. Since 2005, the unit value of teak sawnwood imported from Myanmar has been above the unit values of other countries, ranging from US\$574/m<sup>3</sup> in 2005 to US\$2 618/m<sup>3</sup> in 2014, and peaking at US\$3 829/m<sup>3</sup> in 2011 (see Figure 23).

Unit values achieved for imports from African, Asian and Latin American countries were lower and did not show such a dynamic development over the observed period; rather, they displayed a slow and steady increase. The declining price trends of Chinese imports in 2013 and 2014 cannot be ascertained for imports into India.

**Figure 23. Value of teak sawnwood imports to India from Myanmar and major exporting countries in Africa, Asia and Latin America**

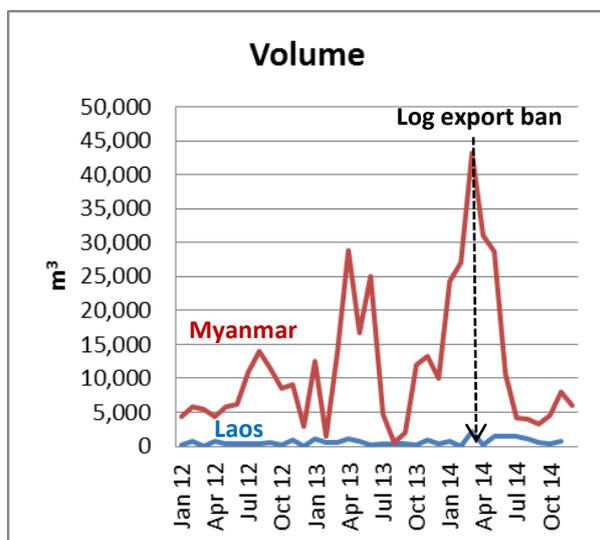


## 6. The log export ban

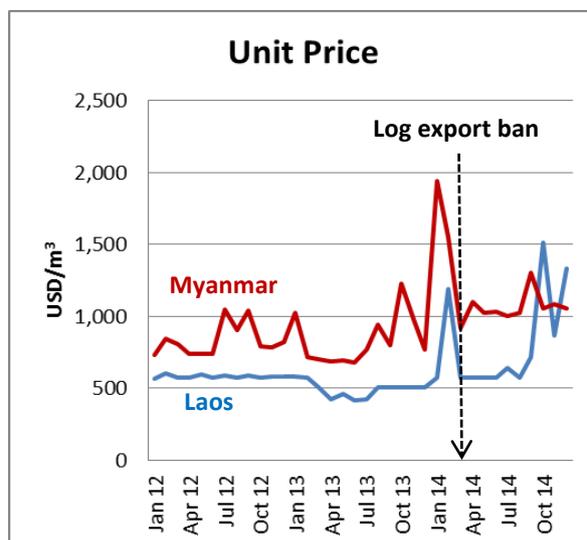
Market reports claim that Myanmar’s log export ban had a significant impact on the price development of teak logs, in particular those exported from Myanmar. Observers report that large stocks of logs had piled up that could not be shipped before the ban; however, they claim that these logs were of poor quality, as buyers shipped the better-grade logs before the ban came into force (FORDAQ, ITTO). In order to assess the impact of the ban, monthly changes in trade volumes and values taken from the Global Trade Information Service database have been analysed and evaluated.

Imports to China from Myanmar peaked at more than 40 000 m<sup>3</sup> in March 2014, the month before the ban came into force (see Figure 24a). Concurrently, the unit prices of logs imported from Myanmar and Laos have increased since the beginning of 2014 and reached a peak in January/February of that year (see Figure 24b). This suggests that the ban triggered a rapid increase in demand for high-quality logs, coupled with a sharp rise in teak prices from about US\$750/m<sup>3</sup> to almost US\$2 000/m<sup>3</sup>.

**Figure 24a. Monthly volumes of teak roundwood imports to China**



**Figure 24b. Monthly unit prices of teak roundwood imports to China**

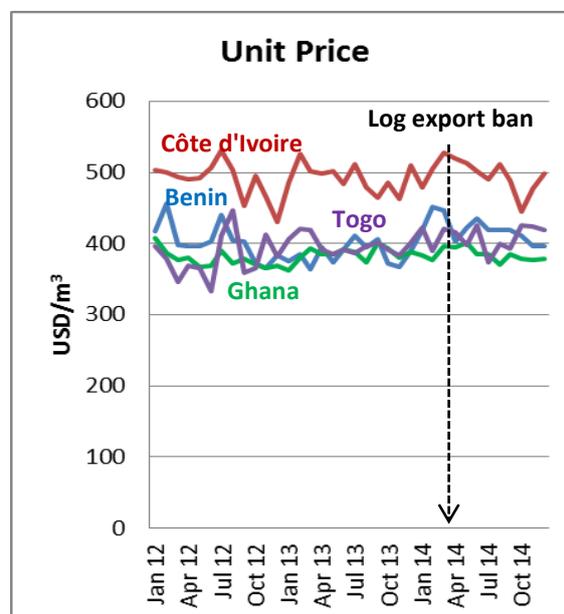
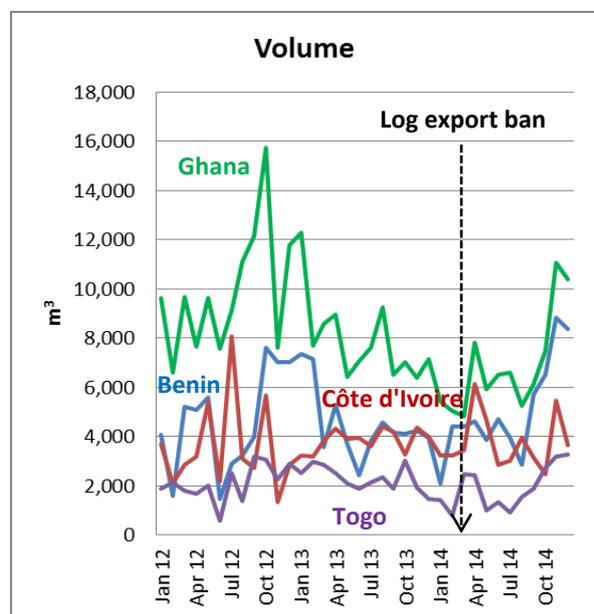


The impact of Myanmar’s log export ban on imports into India from African countries is less pronounced. Basically imports tended to decrease in the past 3 years with a notable recovery after the log export ban (Figure 25 left side). Unit prices in all 4 observed African countries actually declined after the log export ban came into force (Figure 25 right side). These data do not suggest that the log export ban in Myanmar provided a market opportunity for African teak in India, probably due to the fact that the end-uses and markets of Burmese and African teak are fairly distinct.

The impact of the ban on imports to India from African countries was less pronounced; imports decreased between 2012 and 2014, with a notable recovery after that, though the ban in Myanmar was still in force (Figure 25a). Unit prices in all four African countries actually declined after the ban came into force (Figure 25b). These figures do not suggest that the ban provided a market opportunity for African teak in India, probably because the end-uses and markets of Burmese and African teak are fairly varied.

**Figure 265a. Monthly volumes of teak roundwood imports to India from Africa**

**Figure 275b. Monthly unit prices of teak roundwood imports to India from Africa**



Latin American imports to India displayed a rather erratic trend from 2012 to 2014. After the ban came into force, imports from Ecuador decreased sharply, with a notable recovery after July 2014. Imports from Costa Rica increased, but fell shortly thereafter (Figure 26a).

Unit prices of imports from Latin America appear unaffected by the ban, while those of imports from Costa Rica and Colombia increased from November 2013, and from Ecuador remained steady since January 2012 (Figure 26b). These figures do not suggest either that the ban provided a market opportunity for Latin American exports to India.

Figure 286a. Monthly volumes of teak roundwood imports to India from Latin America

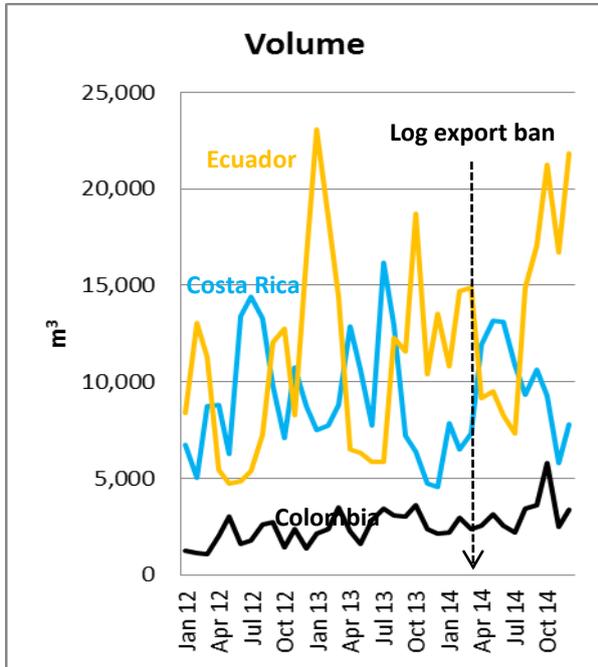
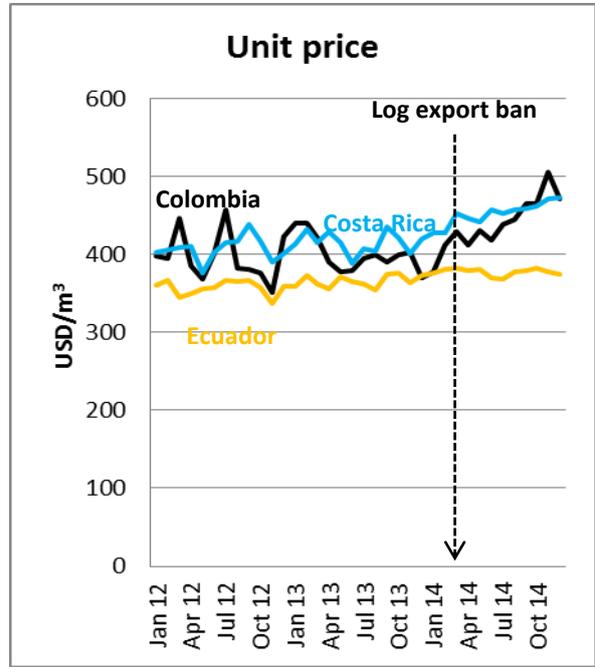


Figure 296b. Monthly unit prices of teak roundwood imports to India from Latin America





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## 8. Appendix

Imports and exports of teak roundwood and sawnwood are recorded in the Harmonized System (HS) by country as follows:

### Roundwood

HS code	HS description
4403	Wood in the rough, whether or not stripped of bark or sapwood, or roughly squared
440349	Other tropical wood in the rough, whether or not stripped of bark or sapwood, or roughly squared, not treated, not elsewhere specified or indicated (nesoi).
<b>Countries in which teak roundwood has a distinct HS code</b>	
44034910	China
4403490013	Côte d'Ivoire (no imports recorded from Myanmar)
44034901 (until 2003), 44034910 (since 2003)	India
440349600	Indonesia (no imports recorded since 2002)
440349291	Japan
4403492010 (until 2013)	South Korea
4403490105 (until 2006), 44034910001 and 44034990001 (since 2007)	Thailand
<b>Countries in which teak is merged with seven other tropical species (Keruing, Ramin, Kapur, Jongkong, Merbau, Jelutong, Kempas) under one HS code</b>	
4403490003 (until 2008), 4403490010 (since 2009)	New Zealand
4403492000 (since 2014)	South Korea
4403490020	Taiwan
<b>Countries in which teak is merged with 13 other tropical species</b>	
44034901	Mexico
<b>Countries in which teak is traded under HS code 440349</b>	
	Australia, Belgium, Germany, Hong Kong, Italy, Malaysia, Mauritius, Netherlands, Poland, Serbia, Singapore, Spain, Sri Lanka, Turkey, USA.

## Sawnwood

HS code	HS description
4407	Wood sawn or chipped lengthwise, sliced or peeled, more than 6 mm thick
440729	Other tropical wood sawn or chipped lengthwise, sliced or peeled, more than 6 mm thick (applied for sawn teakwood with up to 10 digits in 47 countries)
<b>Countries in which teak sawntimber has a distinct HS code</b>	
44072910	China
44072910	India
440729215	Japan
4407292000	South Korea
4407290030	Taiwan
44072961001 (planks), 44072961002 (boards), 44072961003 (scantlings), 44072961004 (decks), 44072961005 (other): 44072969001 (planks), 44072969002 (boards), 44072969003 (scantlings), 44072969004 (decks), 44072969005 (other):	Thailand
<b>Countries which have a distinct HS code for teak sawntimber, but for which no data are recorded under these codes, and countries in which teak sawntimber is traded under HS code 440729</b>	
	Argentina, Australia, Austria, Belgium, Brazil, Canada, Croatia, Denmark, Finland, France, Germany, Greece, Hong Kong, Iceland, Indonesia, Israel, Italy, Malaysia, Mauritius, Mexico, Netherlands, New Zealand, Norway, Poland, Russia, Serbia, Singapore, Spain, Sri Lanka, Sweden, Switzerland, Turkey, Ukraine, United Kingdom, USA.



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