



Forest Products Trade between China and Africa: An Analysis of Import and Export Statistics

Xiufang Sun



With support from



On behalf of

BMZ



Federal Ministry
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April 2014



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Summary

This report is an updated version of Forest Trends' 2008 report, *Forest Products Trade between China and Africa: An Analysis of Import and Export Statistics*. While the first version of this report used China Customs Data for the years 1997–2006, this updated report includes additional data for 2007–2012. This reassessment of the trade in forest products between Africa and China reveals that the impacts of the 2009 global economic downturn on China-Africa timber trade were relatively minimal.

While the global economic downturn affected consumption in many countries, China's trade with Africa remained mostly unaffected. In particular, commodities, such as oil and gas, minerals, and timber, have continued to be imported in record levels by China to fuel its burgeoning manufacturing sector. At the same time, Africa is now a growing market for Chinese goods, with Africans increasingly turning to cheaper Chinese goods instead of European-, United States-, or even African-made products. According to China's customs agency, trade between China and African nations, which stood at US \$40 billion in 2005, grew by 295% to US\$198 billion in 2012.

Key findings include:

- **China's imports of Africa's forest products have been highly variable from year to year.** Imports of African forest products make up only a small proportion (2.8%) of the total volume of China's forest product imports from all around the world. Since 1997, the increase in African timber exports to China has not shown the same rapid growth as China's overall timber imports, and is in fact quite variable from year to year. While Africa's exports to China grew rapidly from a small baseline during 1995–1997, since that time, the trade trend could best be described as fluctuating around a relatively slow and stable growth trend. Given the relatively small scale of traded volumes, sharp drops in import volumes might be the result of just one or two producer/trader enterprises curtailing exports to China.
- **Africa's forest product exports to China command a higher share of China's total imports by value (5.2%) than they do by volume (2.8%),** suggesting the export of higher value timber to China relative to other supplying countries. This comparison is more pronounced in tropical hardwoods: Africa's share of China's tropical hardwood log and lumber imports by value (13.6%) is more than double its share by volume (6.5%).
- **For most major exporting countries in Africa, European markets still dominate.** In 2011, Africa exported 3.6 million m³ of natural (non-plantation) timber products to the EU, compared to 2.7 million m³ sent to China. The relative importance of the EU market as compared to China, however, varies greatly between regions and countries. Important wood producing countries in West and Central Africa tend to export a larger share to the EU markets, with little trade to China.
- **Gabon was historically the leading African supplier of forest products to China before 2010. However, by 2011, Gabon's share dropped greatly as a result of its log export ban.** Regionally, more than one third of China's imports came from Central Africa, possibly due to consumer preference for endemic tree species such as okoumé. Growth in rosewood exports to China was significant in 2011, reflecting to some extent the interests of well-off Chinese in luxuries and precious goods such as rosewood furniture and adornment.

- **Logs still dominate the mix of African forest product exports to China and play an even greater role in this mix than in China's overall forest product imports from all countries.** Sawnwood exports increased substantially in 2011, comprising 16% of total exports, and remained steady through 2012. Pulp and paper are the second largest category of wood products exported to China, with virtually all coming from South Africa and Swaziland.
- **This analysis confirms the speculation that China's manufacturing industry will be able to send cheap manufactured wood products back to supplier countries,** effectively displacing any emerging African manufacturing capabilities. While Chinese exports of manufactured wood products to Africa have been increasing dramatically, they started from a very small base. However, with the exception of South Africa, none of the top ten exporting countries are significant importers of manufactured forest products from China. The greatest volume of these exports (%) goes to North African countries such as Egypt.

With the updated data in this report, it is clear that the strong demand from China for raw resources from Africa has been resilient to the global economic downturn. Forest Trends intends to use these data to cast light on the China-Africa trade relationship to help governments, industry, and civil society understand the role of China in the trade of African forest products.

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Chapter 1: China and the Global Market for Forest Products

Overview

China sits squarely in the middle of the world's wood products commodity chain (Forest Trends 2006b). It is the world's leading importer of logs, and its exports of wood-based products have tripled in volume and quadrupled in value in recent years. In the past decade, China's strong economic growth, large population base, and rapidly expanding processing capacity, coupled with export demands from markets in the United States, Europe, Japan, and increasingly in countries in the Middle East and Africa for low-cost furniture, plywood, moldings, floorings, paper, and other products, has led it to become the wood workshop of the world, capturing almost one third of the global trade in furniture over the last ten years.

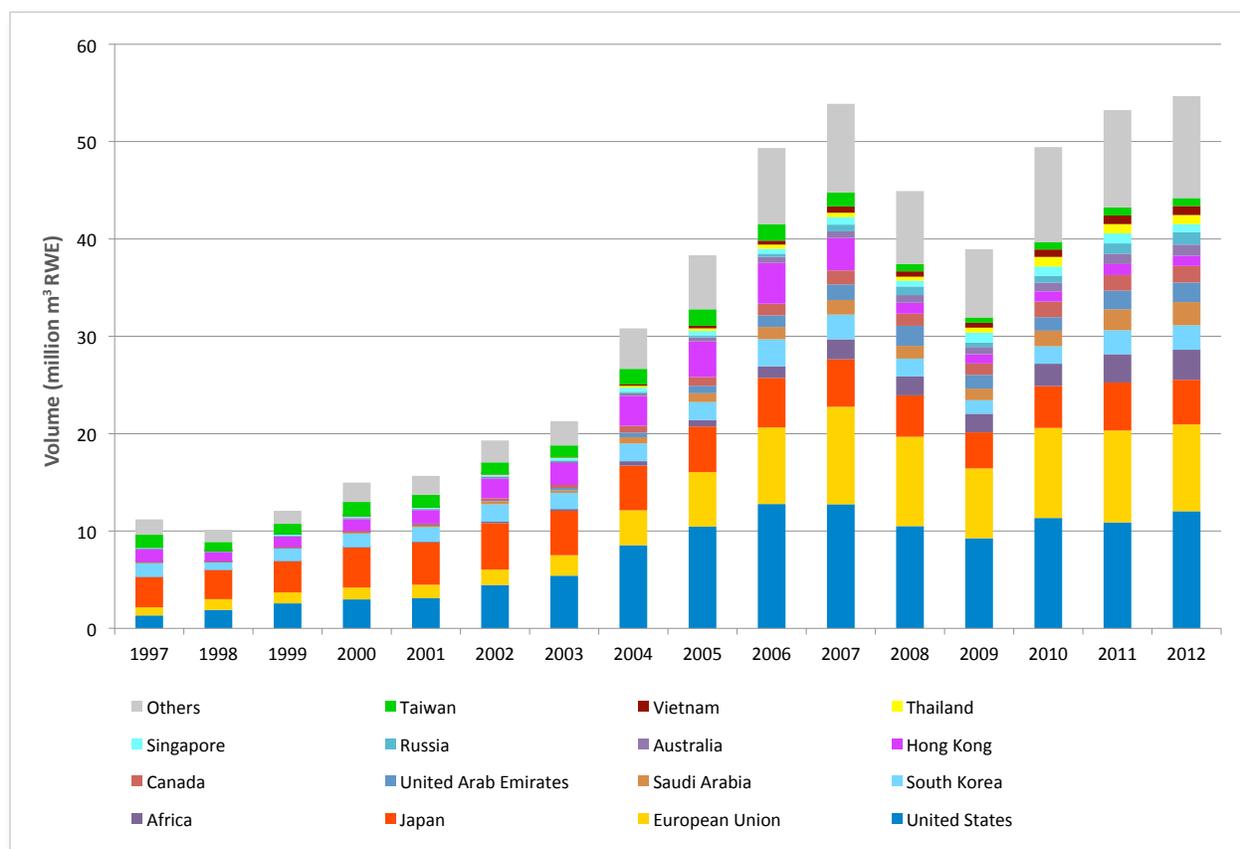
In order to meet this domestic and export-oriented demand, huge amounts of raw wood materials must be either produced domestically or imported from abroad. Domestic supply of industrial wood has failed to keep up with China's industrial manufacturing capacity due to a low level of per-capita forest resources and the government's policies on the protection of natural forests. Instead, China has imported materials. From 1997 to 2012, Chinese imports of forest products increased from 36 million m³ to 159 million m³ roundwood equivalent (RWE), while total domestic production reached 81 million m³ in 2011 and slightly dropped in 2012. China's domestic production capacity is clearly insufficient to meet its growing demand, as the country now imports almost double the amount of forest products and secondary fiber than it produces domestically.

Demand: What Has Changed since 2007

In 2007, China exported nearly the same volume (in RWE terms) of timber products (not including pulp and paper) as it imported — 51.3 million m³ and 52.3 million m³ respectively. By 2012, this import-to-export ratio was closer to 64%, with imports ratcheting up to 85.3 million m³ but exports only amounting to 54.7 million m³ (**Figure 1**).

The faster growth of imports as compared to exports was largely attributed to both increasing domestic consumption within China itself and slow growth in the major export markets such as the United States and European Union. However, 2012 trade data showed a slower growth in both imports and exports compared to 2011, reflecting a decelerated growth in the Chinese economy. This trend may have continued in 2013, with the first half of 2013 showing a mere 5% growth in *both* value of imports and exports of forest products compared to the same period of 2012.

Figure 1: China's Timber Product Exports by Volume and Destination

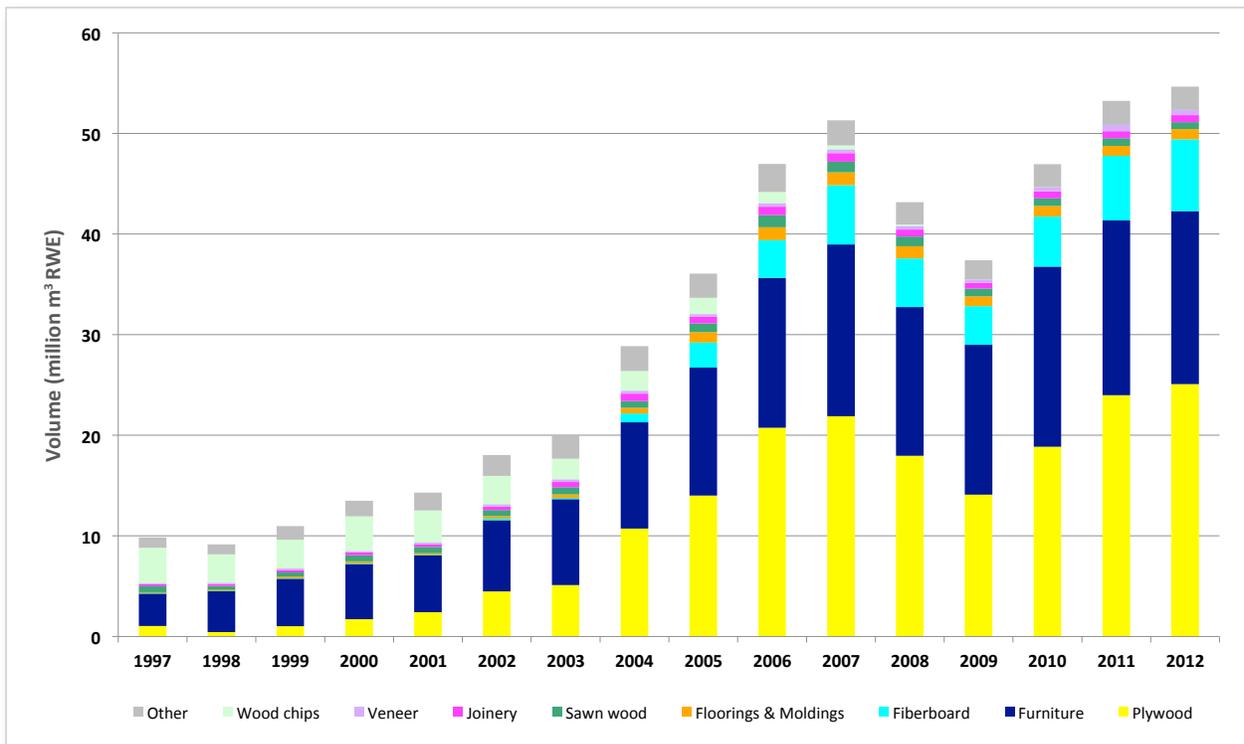


Source: China Customs Data, compiled by Forest Trends.

By 2011, China's exports of timber products were back to pre-global economic downturn highs of 2007. The US was still the largest single importer of Chinese timber products. From 1997 to 2012, both the EU and US markets for Chinese-manufactured timber products had grown by 800%. This dramatic increase was almost entirely driven by large demand for plywood and furniture, although demand for fiberboard and other products comprise an increasingly larger share of this trade (Figures 2 and 3). Between 2007 and 2011, the EU market share of Chinese exports remained almost unchanged at 20% while the US market share shrank from 25% to 20%, suggesting that the impact of the global economic downturn was more severe on US consumption at this time. The economic downturn had a similar effect on exports to other countries. However, 2012 marked a reversal of this trend as the US market share of Chinese exports grew to 22% and the EU market share shrank to 16%. In the long run, a relative decline in the market share of US and EU consumption implies that larger shares of China's exports will go to emerging economies in the Middle East, Africa, and elsewhere in Asia. The rapid increase in timber exports to African countries, Saudi Arabia, and the United Arab Emirates (5.6%, 4.4%, and 3.7% of market share in 2012 respectively) signifies a new trend of increased exports to the Middle East. Individually, these countries' imports have been relatively small in the past decade; however, they are fast becoming an important market for China.

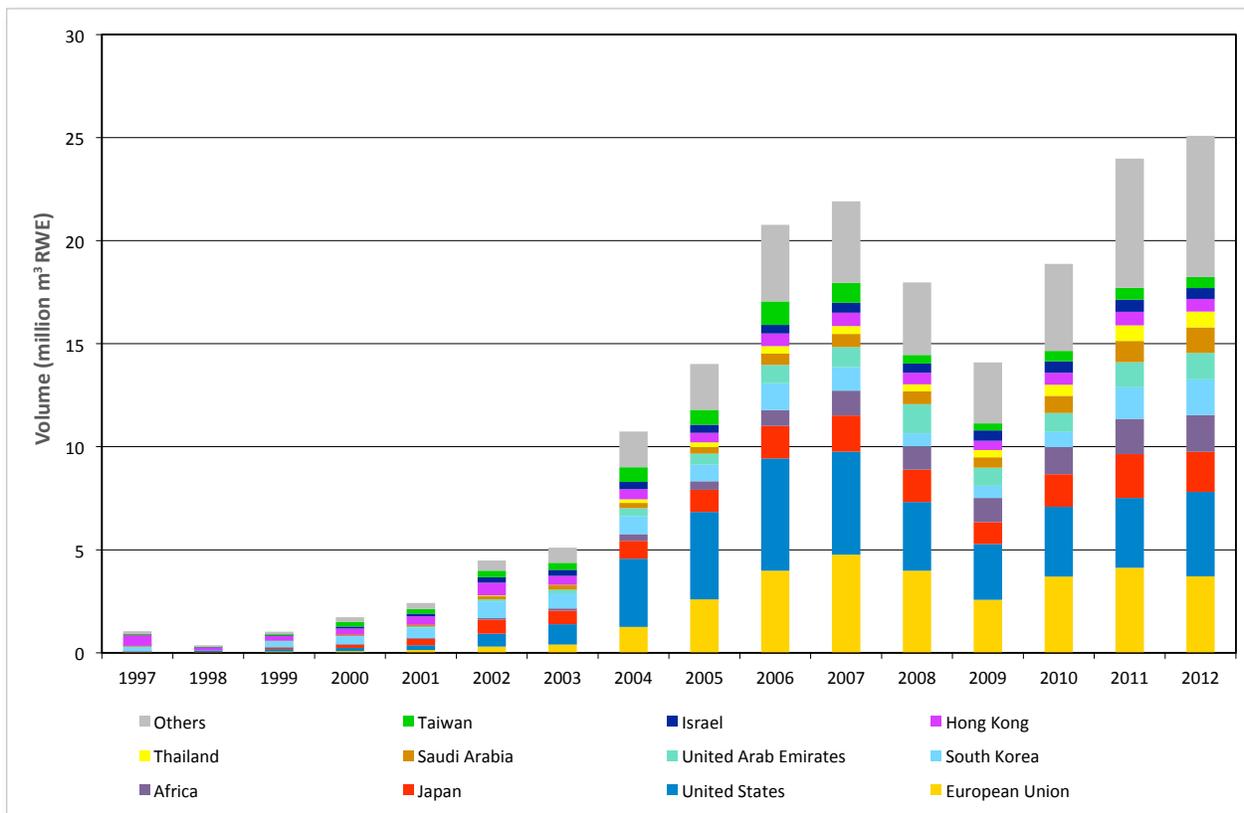
While the EU and US are increasingly sensitive to the trade in illegal forest products, most other countries are less so. This may have implications on the degree of leverage that environmentally sensitive markets such as the EU and US can have, as the increasing market share of other consumer countries combined will likely weaken the overall demand for verified legal and sustainable wood products from China.

Figure 2: China's Timber Product Exports by Volume and Product Type



Source: China Customs Data, compiled by Forest Trends.

Figure 3: China's Plywood Exports by Volume and Destination



Source: China Customs Data, compiled by Forest Trends.

China became a net exporter of plywood in 2001. From 1997 to 2007, plywood exports rocketed from 2.6 to 21.9 million m³ (**Figure 4**). While the economic downturn in China's main export markets caused a severe decline — of 35% to 14 million m³ — between 2007 and 2009, plywood exports had fully recovered by 2011 with record levels at 24 million m³ and continued to increase through 2012 to 25 million m³. China's leading position in the global plywood industry has had severe repercussions on plywood manufacturers globally as they are not only losing their share of the Chinese domestic market, but are also being out-competed in other markets by cheaper Chinese plywood exports.

Meeting the Supply Gap through Substitution, Efficiency, and Imports

As early as 2005, the National Development and Reform Commission's (NDRC) estimate of a 150 million m³ supply gap by 2015 accompanied a State Council *Guobanfa* (State Directive) mandating several initiatives to fill this gap, including boosting domestic production, increasing wood imports, and encouraging substitution and greater efficiency (China State Council 2005). In order to secure the long-term supply of raw wood products for its industry, the government is aggressively pursuing both ambitious domestic plantation programs as well as major trade and development programs with countries that can provide raw materials, including wood, to China.

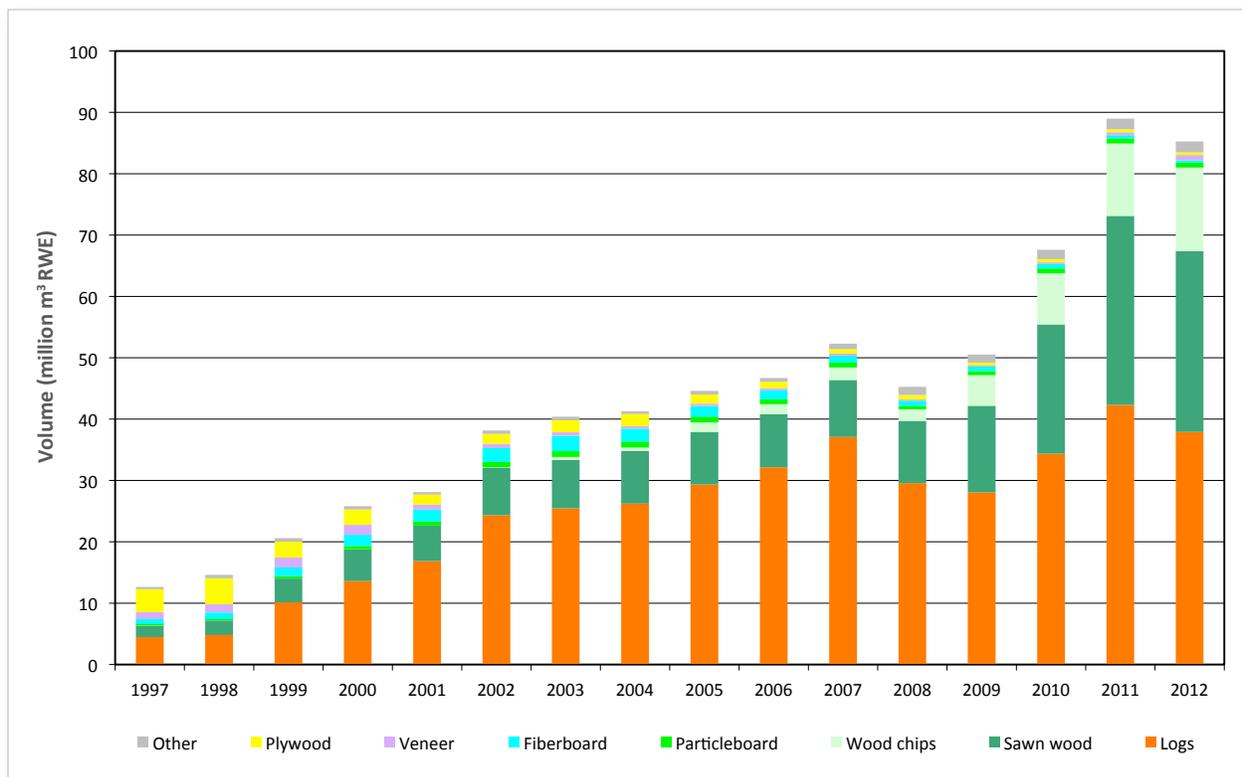
China now has the largest area of planted forests in the world. Over the past decade, the central government has adopted policies which have been shifting timber harvest from natural forests to plantation forests, and this trend is accelerating. In developing countries around the world, government and industry players are becoming more involved in basic development assistance and investment support for major infrastructure projects, including roads and ports, to facilitate the transport and trade of basic commodities such as logs to China-based mills. The supply gap is expected to be narrowed by 2015, at which time domestic plantations will have become mature enough to provide significant volumes of timber (Flynn 2008).

Increased Imports

The majority of timber imports continue to be unprocessed logs or sawnwood, comprising almost 45% of and 34.6% respectively of total imports in 2012. The composition of China's timber imports has changed in recent years. By 2009, China's imports had already increased dramatically over 1997 levels, hovering around 50 million m³ (USD 5.6 billion in value) between 1997 and 2009 — an increase of over 400% in both volume and value. Between 2009 and 2011, however, imports exploded to nearly 90 million m³ — an 80% increase in just 2 years and the largest jump ever recorded (**Figure 4**). China Customs Data for 2012 show a slight decrease in timber product imports, paralleling the slowdown in the Chinese economy. The volume of imports, however, was still the second highest on record.

In the late 1990s, this compositional shift was largely due to China's industry increasing its ability to capture more value from processing in its own manufacturing centers. For example, China imported large quantities of plywood in the late 1990s, but today it imports large quantities of logs and other marginally processed wood to feed its own plywood industry (**Figure 4**). However, this compositional shift is likely due to external factors beyond China's industry control: producer countries are increasingly implementing log export bans or raising log export taxes to drive back some of the value-added processing within its own borders.

Figure 4: China's Timber Product Imports by Product Type



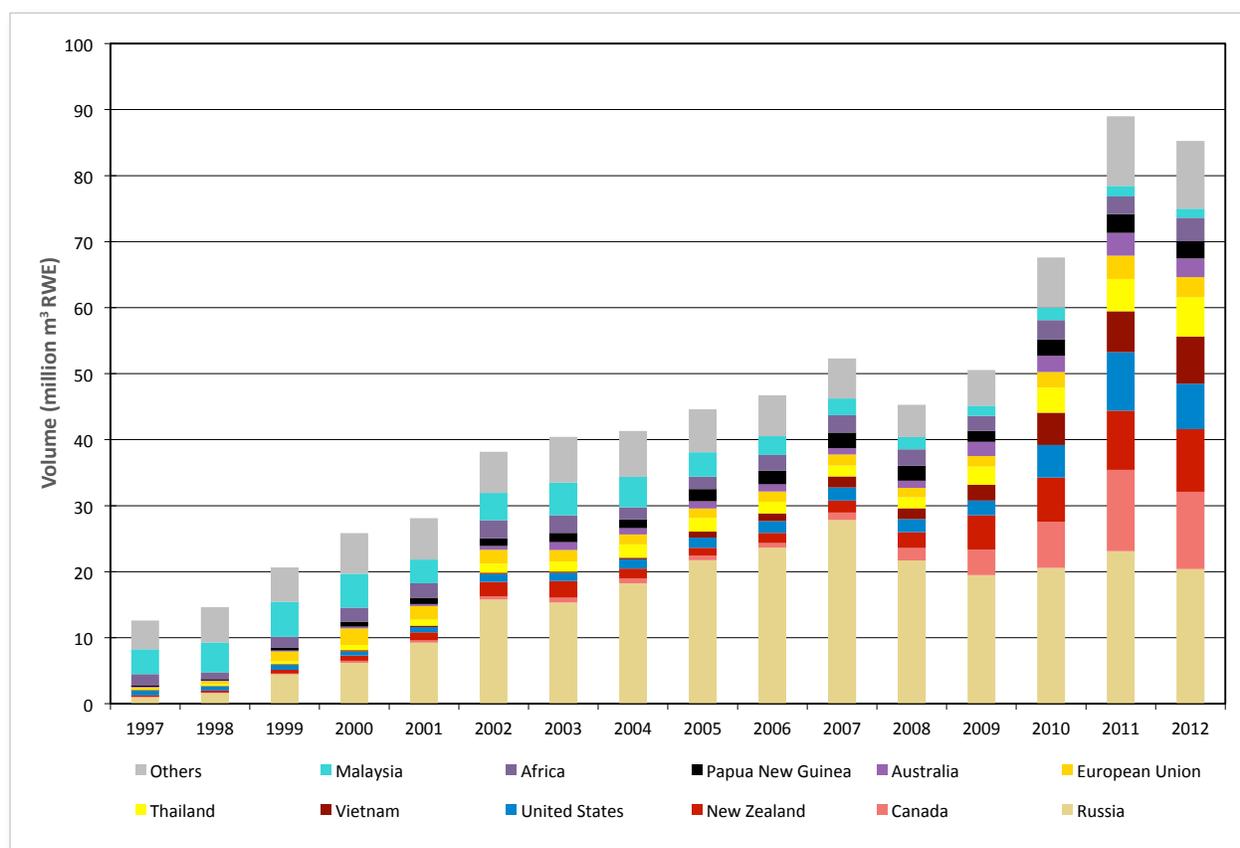
Source: China Customs Data, compiled by Forest Trends.

Russia has been the largest timber exporter to China since 2000, primarily in the form of logs to large industrial towns on the Chinese side of the border. In an effort to promote the investment, technology transfer, and value-added processing within Russia itself, the Russian government dramatically raised the export tax on logs in 2008 from 4% to 25%. This measure initially resulted in a decrease in Russian log exports to China. Slowly, however, Russia has invested in primary processing technologies, and begun to export larger volumes of sawnwood.

The largest trend, however, has been a remarkable increase in imports starting in 2009 from developed countries such as Canada, the US and New Zealand — all of which have boreal tree species with similar characteristics as those in Russia. Overall, Russia's market share has dropped from its peak of 53% in 2007 to 24% in 2012 (**Figure 5**). Most analysts will remark that the increases in the Russian log export taxes caused this market decline for Russian imports. Others like to speculate that it is possible that requirements for the documentation of legal sourcing of wood products sold in the US and Europe have made the purchase of Russian wood materials harvested within Russia too high-risk for those wishing to demonstrate compliance with the US Lacey Act or the EU Timber Regulation.

Another interesting development since 2007 has been the emergence of wood chips as a major wood product import into China. Major expansion of pulp manufacturing within China has led to a dramatic increase in demand for cheap wood chips to supply the new pulp mills. China became the world's largest importer of hardwood chips in 2013 (Wood Resources Quarterly, 2013). Australia, Indonesia, Thailand, and Vietnam are the major suppliers of wood chips, with Vietnam accounting for over 50% of this imported supply. The emergence of Vietnam and Thailand as two of the top five suppliers of Chinese timber products is largely due to this wood chip market.

Figure 5: China's Timber Products Imports by Source Country



Source: China Customs Data, compiled by Forest Trends.

Increased Domestic Production

China's domestic production has remained relatively stable since 2008, hovering near 80 million m³ RWE per year. In an effort to close the supply gap, China has set higher logging quotas for 2011–2015, which will permit the logging of 271 million m³ RWE, or 23 million m³ above the 2006–2010 targets (Figure 6). The increase primarily benefits commercial forests, which account for almost 70 percent of the total quota.

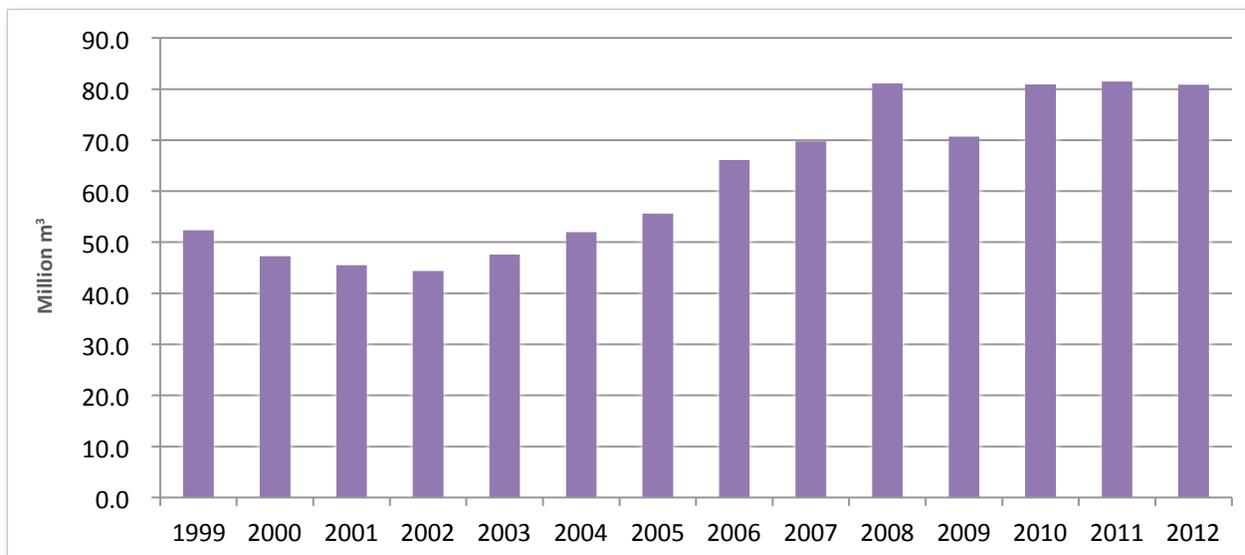
China has made impressive progress in increasing its forest cover and establishing millions of hectares of planted forests over the past decade. However, further expansion of plantations in China will be increasingly difficult due to the strong competition for land. The Chinese government set a target of establishing 13.3 million ha of “fast-growing, high-yield” (FGHY) timber plantations between 2001 and 2015. This program, which is planned to produce 133 million m³ per year of timber harvest, is often cited by government officials as evidence that the country is on its way to self-sufficiency in timber supply. Although “fast-growing” plantations now comprise a large share of timber supply, China is still far away from being self-sufficient. Chinese government officials have reported that the harvest from plantation resources, which was very small just ten years ago, now accounts for 65% to 70% of China's total domestic industrial timber harvest. The gap between the demand for valuable hardwoods (or precious woods) would likely not be affected by this production.

Substitution and Efficiency

From an environmental efficiency point of view, Chinese sawmills (particularly the new export-oriented “supermills” along the Russian-Chinese border and at some ports) are some of the largest and most efficient in the world. Little wood material is lost, and in fact there is great demand in China for the byproducts of log conversion (wood chips, shavings, and sawdust) to support the pulp and paper sectors.

China is the number one importer of the world’s wastepaper, taking in large amounts from the US, EU, and Japan where China’s steady demand has buoyed the global market price of wastepaper and thus has catalyzed greater investment in paper recovery. The ready availability of wastepaper has enabled China to increase its output of packaging material with relatively small investments (compared to the cost of sourcing virgin fiber). Secondary fiber, comprised of locally produced and imported wastepaper, now comprises 62% of China’s papermaking fiber supply (China Paper Association, 2012). Imported wastepaper now makes up 24% of the total papermaking fiber supply, down from 33% in 2006, while imports of wood pulp increased from 12% to 15% from 2007 to 2011.¹ The majority of this secondary fiber is used in packaging for China’s light industry exports. Nonetheless, it should be emphasized that market forces, rather than conservationism, has likely driven the popularity of wastepaper.

Figure 6: China’s Commercial Timber Production per Year



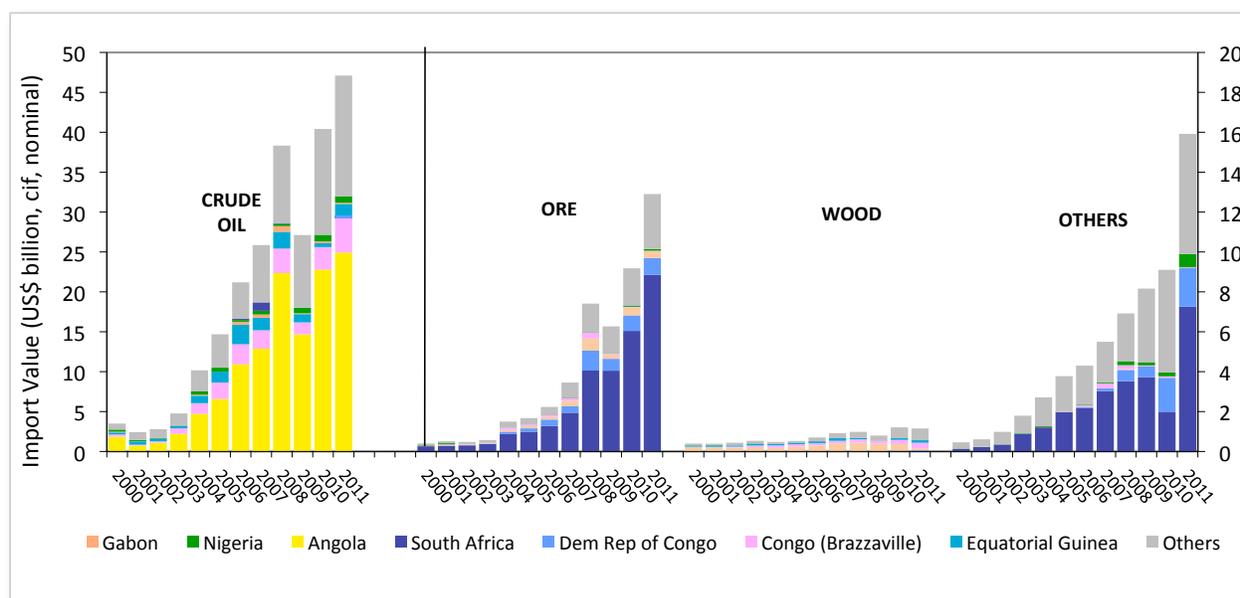
Source of Data: China’s Forestry Statistical Yearbook, Various Years, SFA. 2012 data is cited from China Green Times (3/27/2013).

¹ Some of China’s fiber sources may be environmentally damaging, such as pulp and pulpwood sourced from Russia and Indonesia, typically used to produce high-quality paper. While these sources are a small proportion of China’s papermaking fiber supply, they likely come from natural forests with little guarantee of sustainable — let alone legal — forest management and production.

Chapter 2: Africa’s Forest Product Exports to China

Forest products make up a small amount of China’s overall imports from Africa. Since 2003, China has imported more crude oil from Africa, particularly sub-Saharan Africa, than all other African products combined (**Figure 7**). In 2011, crude oil represented 61% by value of all China’s imports from Africa, after having peaked at 73% in 2006. China may be diversifying the products it imports from Africa, while experiencing overall growth in this sector with only marginal impact by the economic downturn. The brunt of this supply comes from one country, Angola, which produced an average of over 50% of China’s crude imports per year over this period. Most of the other significant oil suppliers, particularly Equatorial Guinea and the Republic of the Congo (Congo-Brazzaville) also export forest products to China, though oil has been a much larger industry. In the past ten years, the annual average growth rate for each product category by value is as follows: crude oil 38%; ore 50%; and wood 13%. In 2011, South Africa accounted for two thirds of China’s imports of African ore, while the Democratic Republic of the Congo (DRC) accounted for 7%. South Africa accounted for most other commodities as well.

Figure 7: China’s Imports from Africa by Type and Value



Source: United Nations Commodity Trade Statistics Database, compiled by James Hewitt.

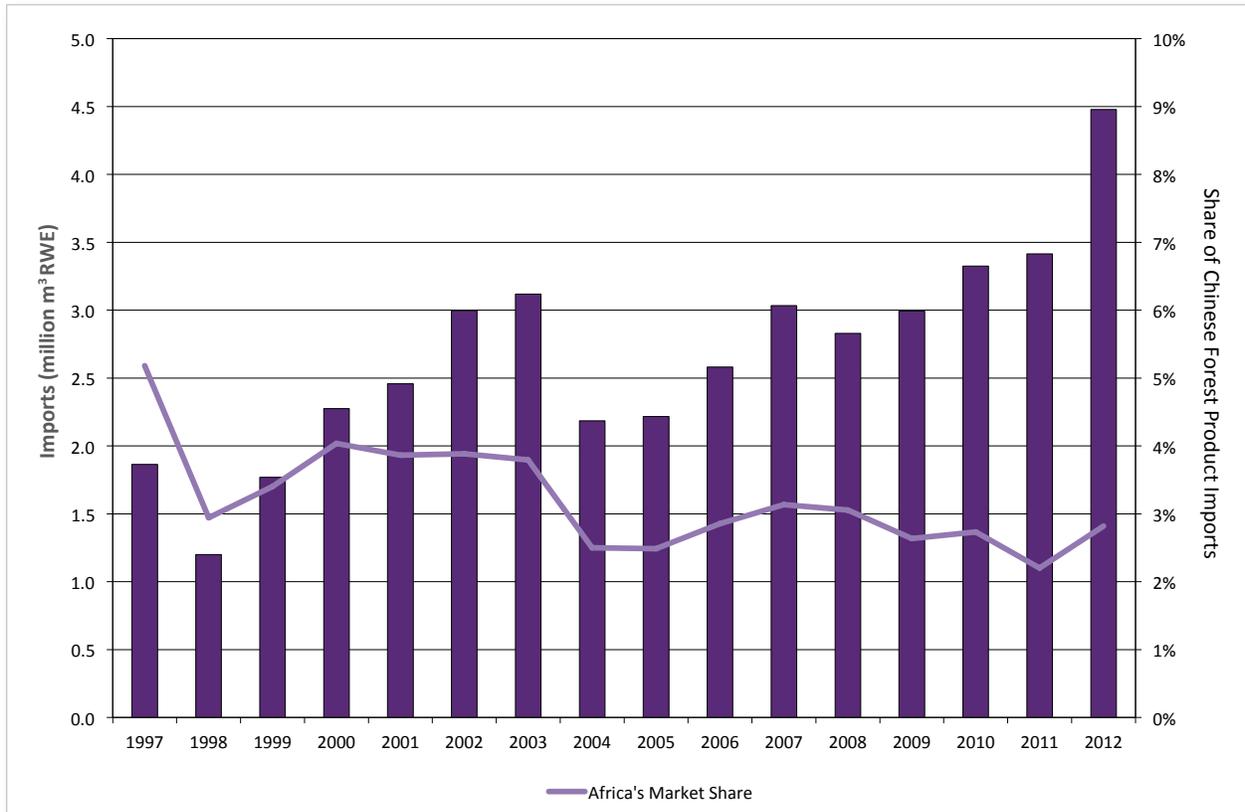
Significant Volume and Value, but Low Share of China’s Total Imports

In 2012, exports of forest products² from Africa to China reached 4.5 million m³ by volume, for a total value of US\$1.6 billion. Export volumes have been variable over the past ten years, with fluctuations and noticeable drops in 1998 and 2004, and exhibited more variation than the relatively consistent growth seen from other supplying countries to China during the same period. This variation is most likely attributable to operational changes of the few multinational timber companies or the policies of the governments authorizing the extraction of timber in key supply countries. Following five years of annual growth and reaching a high of 3.1 million m³ in 2003 (valued at US\$586 million), the volume of these exports fell by 30% in 2004 (**Figure 8**). Value also dropped in 2004, but to a much lesser extent (12%). This was due in small, but significant, part to the cessation of all

² Forest products include pulp imports from South African and Swaziland.

Liberian wood exports in 2004 (of which about 0.5 million m³ were sent to China in 2003). From 2005, imports continued to grow to an all-time high of over three million m³ in 2007. The economic downturn caused only a 4% decline in forest product imports from 2007 to 2008, and imports rebounded during 2009 through 2012 with the volume currently at 4.5 million m³. Africa, however, still accounts for merely 2.8% of China's total forest product imports from the world by volume.

Figure 8: China's Forest Product Imports from Africa by Volume

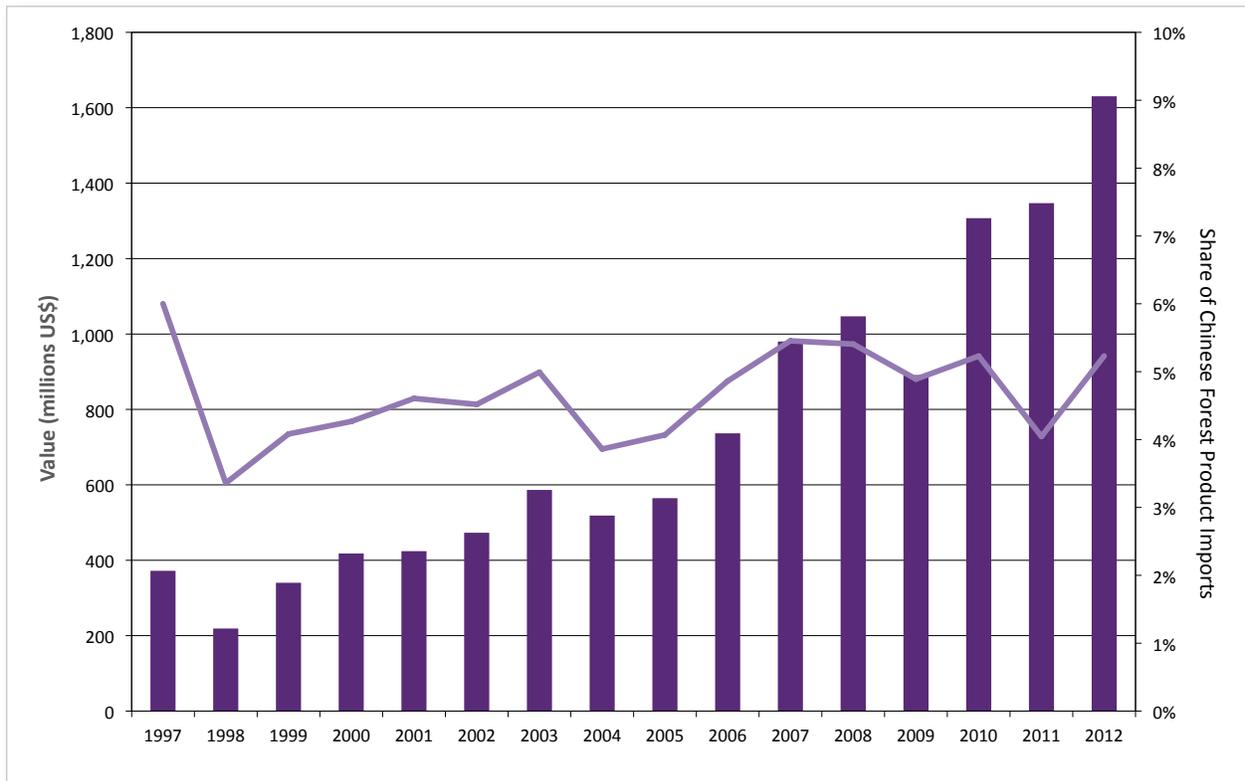


Source: China Customs Data, compiled by Forest Trends.

Note: Light purple trend line displays the percent by volume of Chinese forest product imports sourced from Africa (right axis).

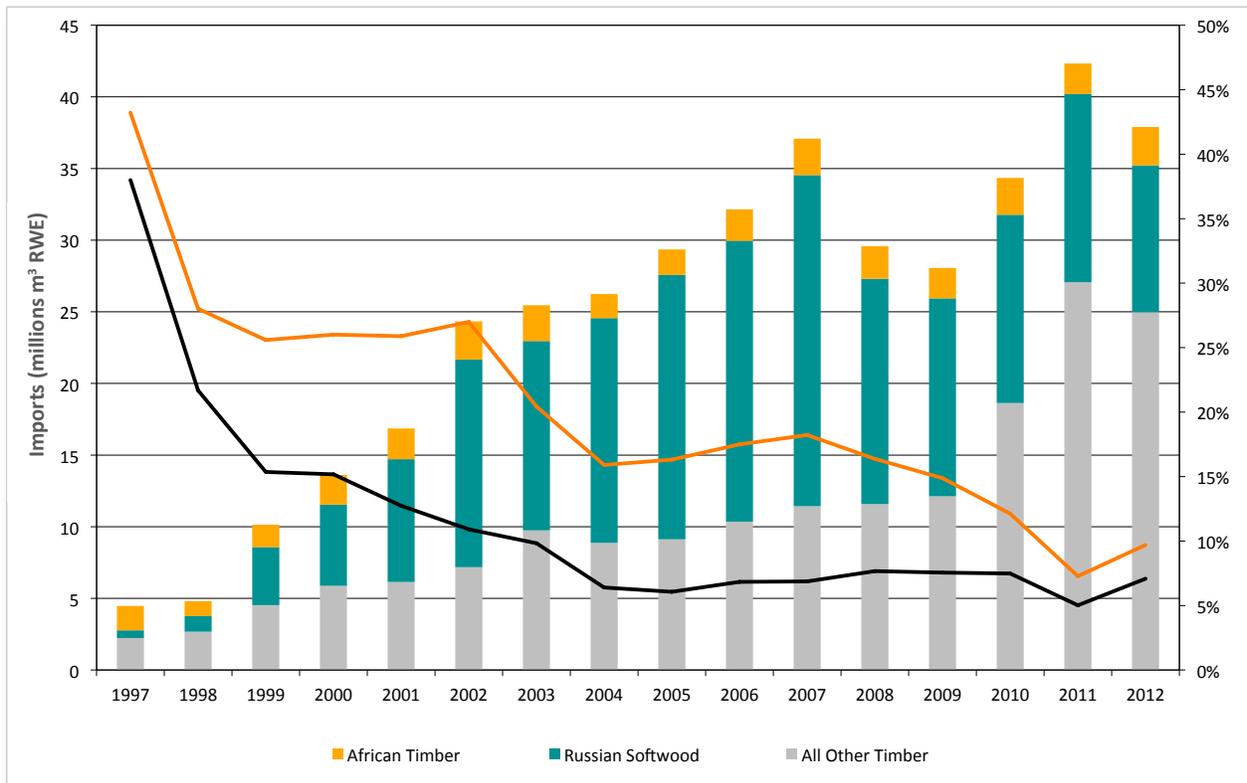
Considering imports from Africa by value reveals a slightly different picture of this trade. **(Figure 9)**. China imports mostly high-value species of timber, making Africa's share of China's imports by value (5.2%) higher than its share by volume (2.8%). China imported over US\$1.6 billion worth of forest products in 2012, an increase of 56% from 2008.

Figure 9: China's Forest Product Imports from Africa by Value



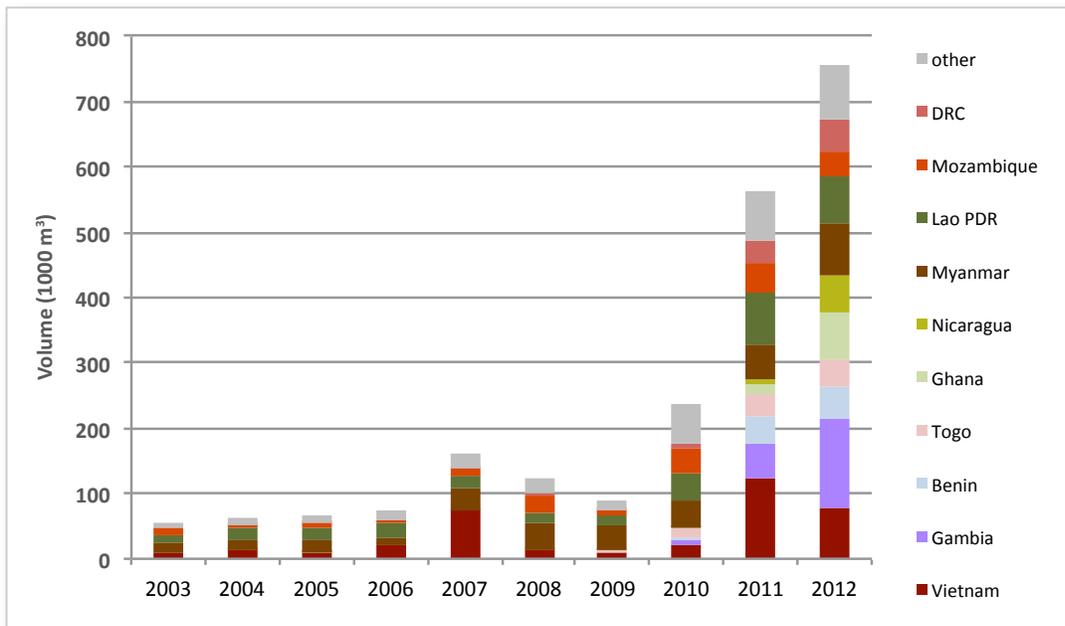
The share of total roundwood imports (logs) coming from Africa was as high as 38% in 1997, before declining to 4-5% in 2004 where it has since remained (**Figure 10**). Russia's and increasingly other countries' softwood dominance in China's import mix belie the importance of African tropical hardwoods for products such as veneer and furniture. US, Canadian, Russian, and New Zealand softwoods are not a substitute for sought-after species of tropical hardwoods, such as okoumé. (**Figure 10** and **Box 1**). Excluding Russian softwood logs, which accounted for approximately 27% of China's imported logs in 2012, the share of Africa's exports shrank to 7% in 2011 from the peak of 43% in 1997. However, in 2012, Africa's exports to China grew to almost 10% of market share.

Figure 10a: Africa's Share of China's Log Imports by Volume



Source: China Customs Data, compiled by Forest Trends.

Figure 10b. China's Imports of Rosewood by Source Country



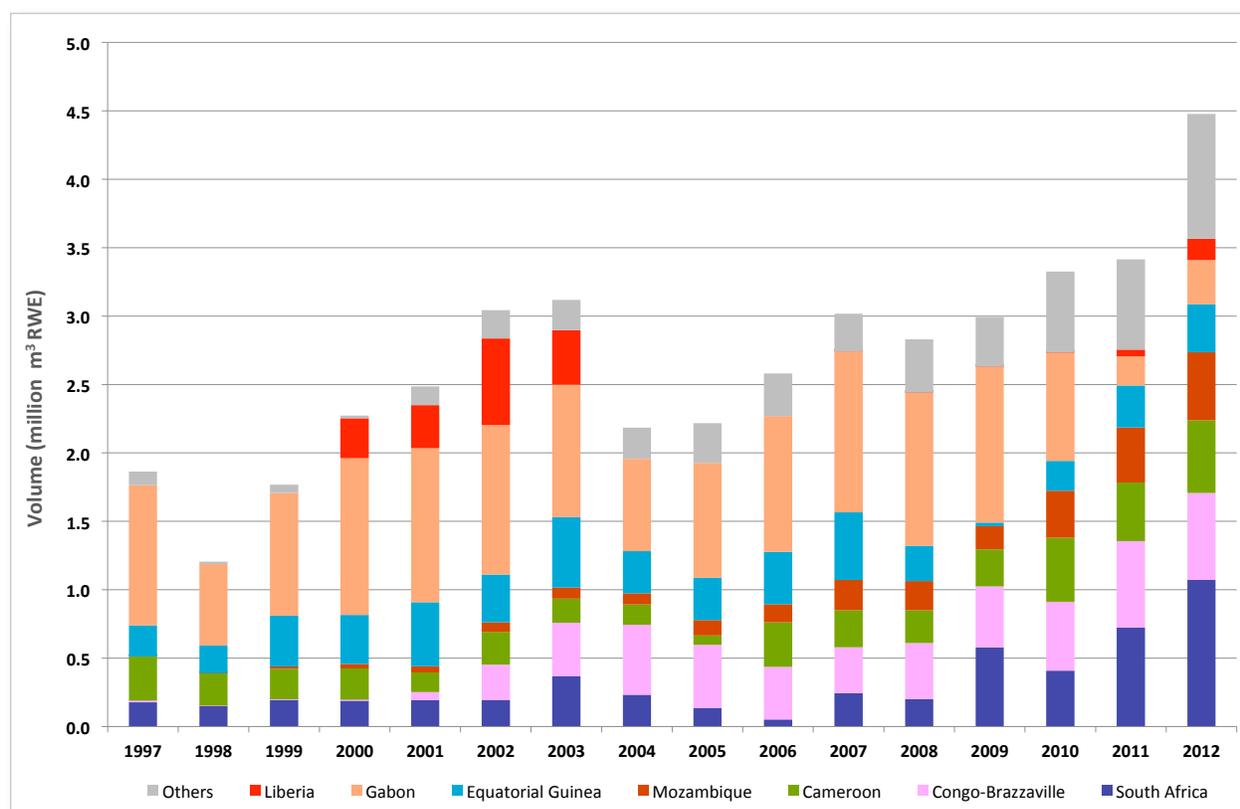
Source: China Customs Data, compiled by the authors.

Comparison of Exports by Country

Before 2010, Gabon, Congo-Brazzaville, and Cameroon were the top African forest product exporters to China (**Figure 11**) and were primarily exporting logs to China. Gabon had historically been the most important African supplier to China and the only African country that occasionally ranked within the top five supplying countries to China. In 2012, South Africa replaced Gabon as the leading export country, as Gabon dropped to only the sixth largest supplier among African countries and dropped out of the top ten overall suppliers to China. This stark drop in exports in 2011 is correlated to the Government of Gabon’s enforcement of a log export ban in 2010 and its decision to require foreign investment in processing mills.

Meanwhile, timber coming from Mozambique and Equatorial Guinea experienced fast growth, indicating a shift of China’s demand for unprocessed wood to other countries. Though not a significant timber exporter, Swaziland used to ship a large amount of pulp to China, while South Africa exports paper and pulp. These two countries made up virtually all of China’s pulp and paper imports from Africa. However, by 2011, South Africa became the only exporter of wood pulp to China. Annex 1 provides more details on the nature and extent of individual African countries’ exports to China.

Figure 11: Major African Exporters of Forest Products to China by Volume



Source: China Customs Statistical Yearbook, compiled by Forest Trends.

Table 1: Top 10 African Forest Product Exporters to China, 2012 (China Imports)

Rank	Country	Volume Share	Value Share
1	South Africa	23.9%	12.3%
2	Congo-Brazzaville	14.2%	16.4%
3	Cameroon	11.9%	12.5%
4	Mozambique	11.1%	12.8%
5	Equatorial Guinea	7.9%	8.1%
6	Gabon	7.2%	7.8%
7	Benin	5.0%	6.1%
8	Liberia	3.4%	2.8%
9	Ghana	3.4%	4.2%
10	Gambia	3.3%	4.8%
	Others	8.7%	12.1%

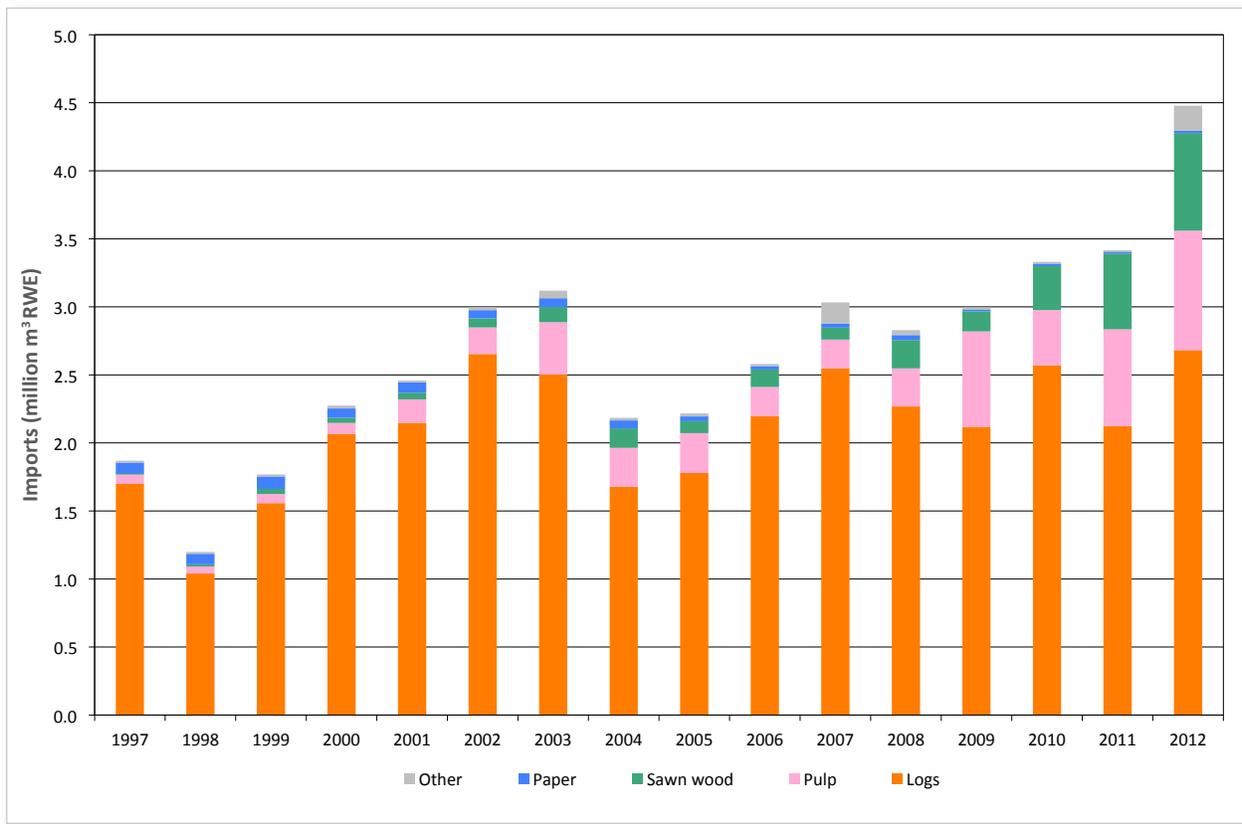
The time series data (**Figure 11**) shows fluctuations in individual countries' forest product export volumes to China over the period studied. The volume of timber products exported to China from individual countries is often relatively small, well within the capacity of one enterprise or trader, leading to the possibility that drops or increases in the overall figures are the result of just a few producer/trader enterprises curtailing or expanding exports to China.

The Mix of African Forest Product Exports to China

Across China's global forest product import mix, China's strong wood manufacturing industry has boosted demand for primary materials such as logs and pulp in lieu of processed goods like veneer and paper (**Figure 12** and **13**). China imports mainly logs from Africa. Before 2009, logs accounted for over 80% of all imported forest products to China. While this figure dropped to 62% in 2011, it rose again to 75% in 2012. Pulp, sawnwood, and veneer account for most of the remainder of China's total forest product imports from Africa. Log shares are unlikely to increase in future years as more timber-producing countries implement log export bans.

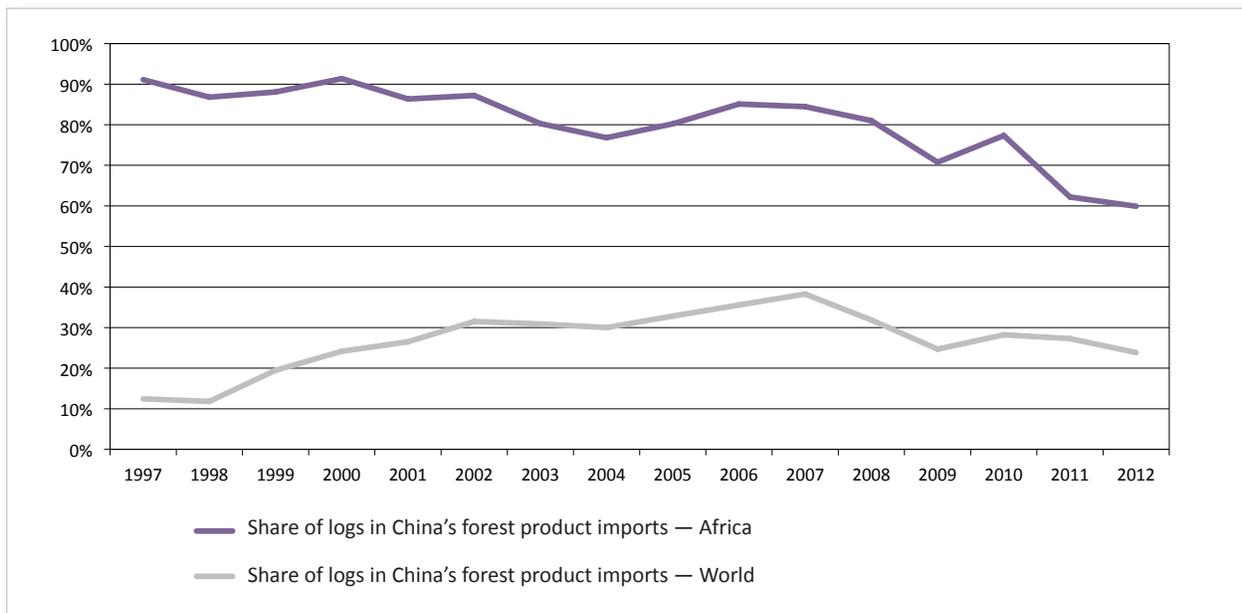
While the big story from 2009-2012 was a significant increase in sawnwood and pulp export volumes, sawnwood this originated from a very small base. In general, the share of log exports has dropped as increases in pulp exports from South Africa are taking up a larger share in the mix of products exported to China. South Africa and Swaziland exported 100% of all African pulp and paper exports to China, with a volume of 892,686 m³ RWE and a value of US\$181.9 million in 2012 (up from US\$32 million in 2006). Exports such as fiberboard and wood chips have been limited over the past 10 years. Paper exports have fallen steadily.

Figure 12: China's Forest Product Imports from Africa by Volume and Type



Source: China Customs Data, compiled by Forest Trends.

Figure 13: Logs' Share of China's Forest Product Imports by Volume



Source: China Customs Statistical Yearbook, compiled by Forest Trends.

Summary and Analysis of Log Exports

With the recent decline in log supply from Gabon, Congo-Brazzaville became the largest log exporter in 2011, taking up almost 30% of total logs exported from Africa to China and decreasing to 22.9% in 2012. Equatorial Guinea, historically a big supplier of logs, introduced a logging ban in late 2008, which drastically reduced exports in 2009.³ However, in 2012 log exports to China increased again significantly, making Equatorial Guinea the third largest log exporter. It would seem either that the ban has been revoked or unenforced, or that the logs are re-exported from other countries — and therefore in contravention of Gabon's 2010 log export ban. Other important supplying countries have included Cameroon, Mozambique, and most recently Benin. As with forest product volumes, however, log export volumes to China from individual African countries have shown strong variations over time.

Table 2: Top 5 African Log Exporters to China, 2012

Rank	Country	Volume Share	Value Share
1	Congo-Brazzaville	22.9%	22.5%
2	Cameroon	14.7%	12.6%
3	Equatorial Guinea	13.1%	11.4%
4	Mozambique	12.0%	12.9%
5	Benin	7.5%	7.9%
	Others	29.8%	32.7%

Source: *Chinese Custom Statistical Yearbook, compiled by Forest Trends.*

Virtually all of Africa's non-plantation log exports are valuable tropical hardwoods. The price per cubic meter of Africa's log exports to China continues to escalate; it reached US\$303/m³ in 2006 (trading 2.2 million m³ of logs for US\$666 million), US\$392/m³ in 2008 (trading 2.3 million m³ of logs for US\$903 million) and US\$430/m³ in 2012 (trading 2.68 million m³ of logs for US\$1,153.9 million). Most, if not all, of the increase in log value is attributable to transportation costs.

³ See <http://www.globaltimber.org.uk/eqguinea.htm> for more information.

Box 1: Okoumé and Rosewood Log Demand from China

Among the African tropical hardwoods sought by China, okoumé is of particular significance. *Aucoumea klaineana* (also known as gaboon or angouma) grows across west and central Gabon, the southern forests of Congo-Brazzaville, and Equatorial Guinea. The International Union for Conservation of Nature (IUCN) has listed okoumé as vulnerable, due primarily to impacts of commercial logging and agricultural expansion (White 1998). The volume extracted each year has more than doubled since 1997, mainly for export markets such as China. Logs of this species are mainly cut into veneers for facing plywood and furniture. As the main source of this valuable wood, concession operators in Gabon, the Congo-Brazzaville, and Equatorial Guinea¹ are heavily focused on exporting okoumé, with 40-68% of all okoumé exports being sent to China (2008). In 2006, some 900,000 m³ or 40% of China's log imports from Africa were okoumé; in 2011, due to Gabon's log export ban, okoumé logs exported from Africa dropped to 675,000 m³ — or 32% of China's log imports from Africa. A further drop was evident in 2012 when China imported 655,500 m³ okoumé logs from Africa, accounting for 24% of China's total log imports from Africa.

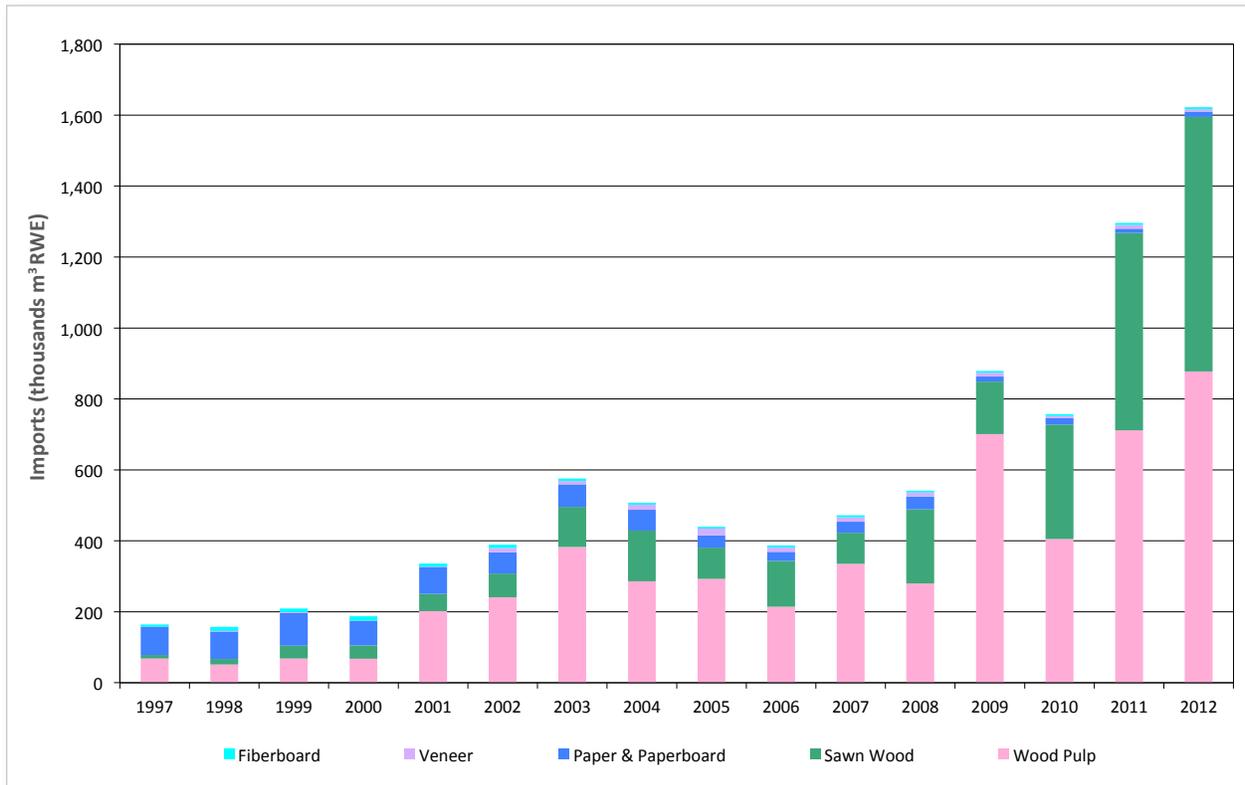
Rosewood imports into China experienced significant growth in recent years. China reports trade in logs of a number of species (predominantly of the Dalbergia and Ebony families) under a unique commodity code 44039930 and describes this group as either “rosewood” or “padauk”. In 2006, China imported merely 10,000 m³ of rosewood logs from Africa. By 2012, it jumped to 431,223 m³, accounting for 57% of China's total rosewood imports. Gambia, Ghana, Benin, the DRC, Togo, and Mozambique were the top suppliers of rosewood in 2012. Trade data for the first half of 2013 revealed the continuous growing trend.

¹ Equatorial Guinea has banned the export of logs since 2008, so okoumé logs are processed into veneer or sawnwood before export.

Analysis of Processed Exports

Among Africa's limited volume of processed (i.e., non-log) forest product exports to China, wood pulp and sawnwood are the two largest classes of export, followed by paper and paper board. Veneer and fiberboard trail behind. Suggestive of increased value-added processing within Africa itself, export volumes of pulp from South Africa experienced substantial growth in 2009, more than double the volume in 2008. After a drop in 2010, wood pulp exports from South Africa in 2011 reached a historical high at 711,000 m³ RWE. History was made once more in 2012 as wood pulp reached a total of 877,700 m³. Sawnwood exports to China have also grown substantially from 9,600 m³ RWE in 1997 to 717,424 m³ RWE in 2012 (**Figure 14**).

Figure 14: China's Processed Wood Imports from Africa by Volume and Type



Source: China Customs Statistical Yearbook, compiled by Forest Trends.

Gabon and Mozambique contributed most of the increases in sawnwood exports to China. Gabon's shift from exporting logs to sawn wood is consistent with the implementation of its log export ban. This quick transition to sawnwood in a country with historically low levels of processing capacity may be an indicator of well-financed Chinese operators assisting with the minimal processing of wood, allowing it to be categorized as sawnwood instead of logs.

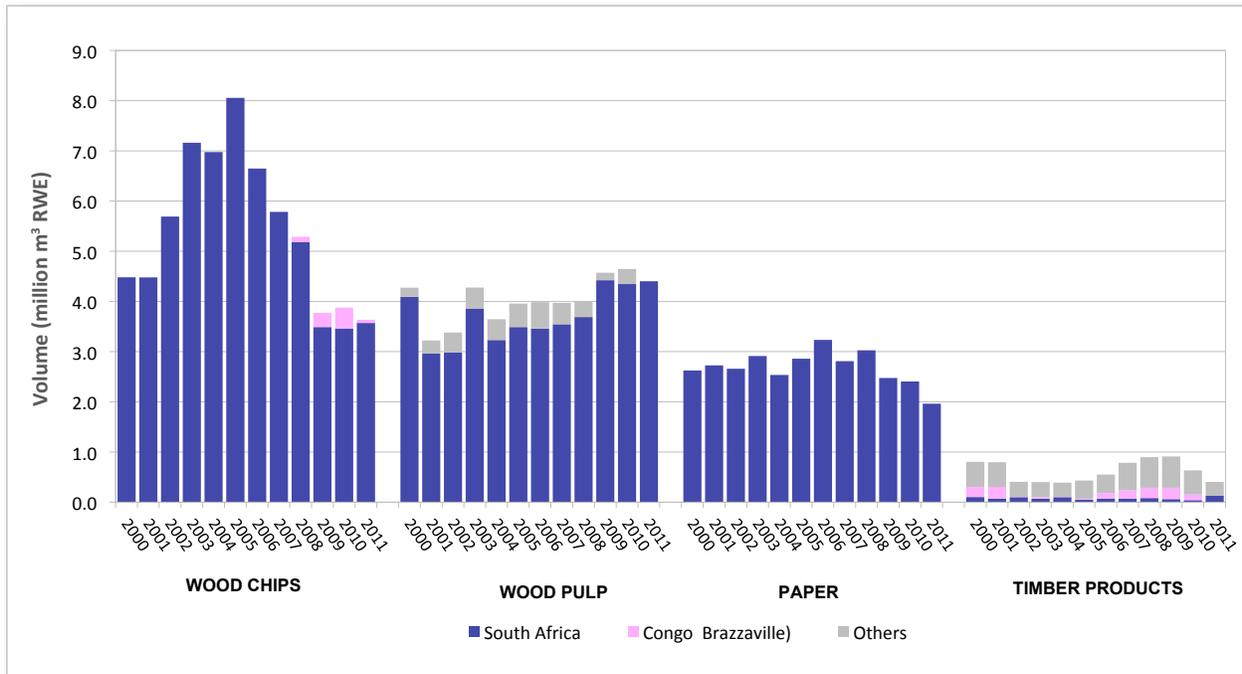
Table 3: Top 10 African Sawnwood Exporters to China, 2012

Rank	Country	Volume Share	Value Share
1	Gabon	39.6%	40.0%
2	Mozambique	24.2%	22.1%
3	Cameroon	19.2%	21.1%
4	Benin	3.2%	3.2%
5	Ghana	3.1%	2.1%
6	Congo-Brazzaville	3.0%	3.3%
7	CDRC	1.4%	1.8%
8	Tanzania	1.3%	1.2%
9	Zambia	1.1%	1.5%
10	Côte d'Ivoire	1.1%	1.0%
	Others	2.9%	2.8%

Table 4: Top 5 African Veneer Exporters to China, 2012

Rank	Country	Volume Share	Value Share
1	Ghana	48.5%	59.1%
2	Cameroon	21.5%	22.7%
3	Gabon	18.7%	7.9%
4	Equatorial Guinea	8.6%	1.6%
5	Côte d'Ivoire	0.5%	0.8%
	Others	2%	8%

Figure 15: Trends in Exports of Plantation-Grown Wood



Source: China Customs Data, Eurostat and UN Comtrade, compiled by James Hewitt.

Note: Timber products include pulplogs, sawnwood, and other wood products. Data are based on statistics reported by importing countries.

China only imported a small share of plantation-grown wood from Africa, mainly in the form of paper and pulp from South Africa. Historically, South Africa is the top supplier of African plantation-grown wood to China, although wood chips from Congo-Brazzaville have also grown (**Figure 15**).

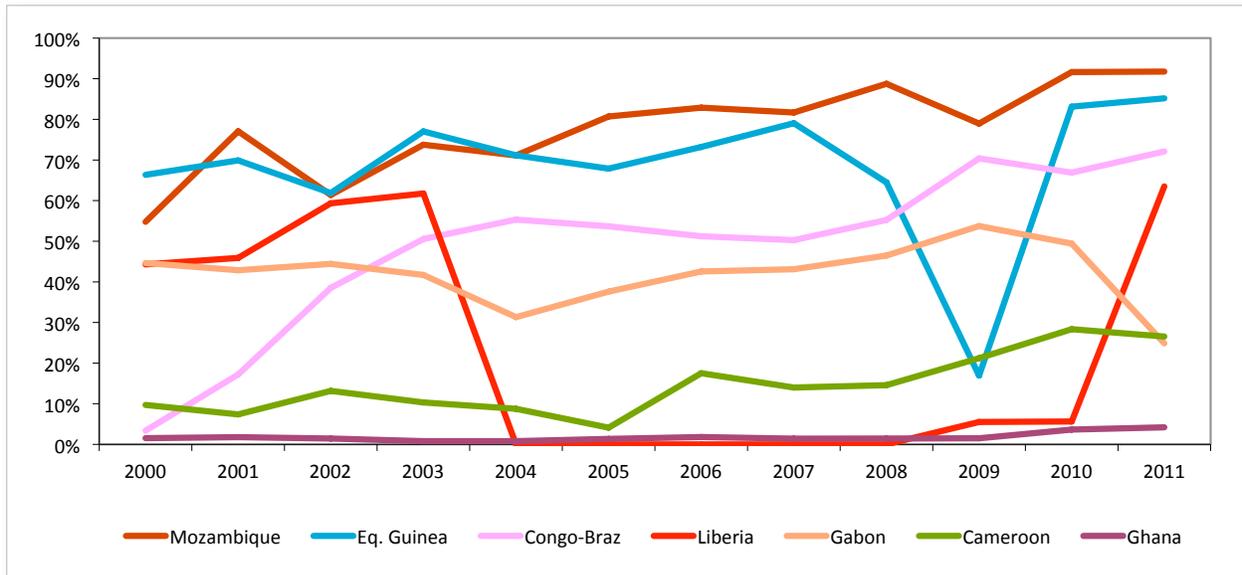
Plantation pulp: In 2011, 23% of Africa's pulp exports were sent to China, a significant increase from 2010. Up until 2001, South Africa was the sole African exporter of pulp to China. Since then, Swaziland's wood pulp exports to China have become quite substantial while South Africa's have dropped. In 2008, Swaziland accounted for 28% of China's pulp imports from Africa, with the remaining 72% coming from South Africa. However, the only pulp mill in Swaziland (SAPPI's mill at Usutu) ceased production in January 2010 and has since then been closed. The last month for which China has recorded imports of pulp from Swaziland is March 2010. Swaziland continues to export timber deriving from plantations, but it seems that none of this is exported out of Africa. Almost all of those exports are supplied to South Africa.

Paper (from plantation pulp): South Africa is the only country in Africa which makes paper from virgin fiber in export quantity, although its exports to China have been small. In 2011, merely 1% of South Africa's total paper exports were bound for China.

African Exporter Country Perspectives

While Africa does not play the greatest role in supplying China's wood products industry, China is a dominant market for several African countries. For example, in 2011, Mozambique exported merely half a million cubic meters of timber, but 92% of these exports went to China (**Figure 16**). Congo-Brazzaville and Equatorial Guinea's export markets also show strong dominance by China — 78% and 85% of their timber exports go to China respectively (2011). Timber sent from Liberia to China surged in 2011, accounting for 63% of its timber exports. This highlights the resilience of China's economy versus other export markets for African timber.

Figure 16: Percent of Countries' Timber Exports to China by Volume



Source: Based on importing countries import statistics, including China Customs Data, Eurostat, UN Comtrade, compiled by James Hewitt. For Ghana, based on Reports on Wood Exports Timber (Industry Development Division) Forestry Commission of Ghana.

Note: Graph shows the percent share of each country's timber product exports that are sent to China, based on estimated roundwood equivalent volume.

Annex 1 provides further detail on the specific trade flows between China and several individual African countries, including countries with high ratios of log-to-total timber exports to China, such as Gabon, Congo-Brazzaville, Equatorial Guinea, Cameroon and Mozambique; South Africa, the main supplier of processed products; and four major forested countries in West Africa that do not export significant quantities to China: Liberia, Côte d'Ivoire, Ghana, and Nigeria. Benin and Togo are included in the annex to reflect their growing exports to China.

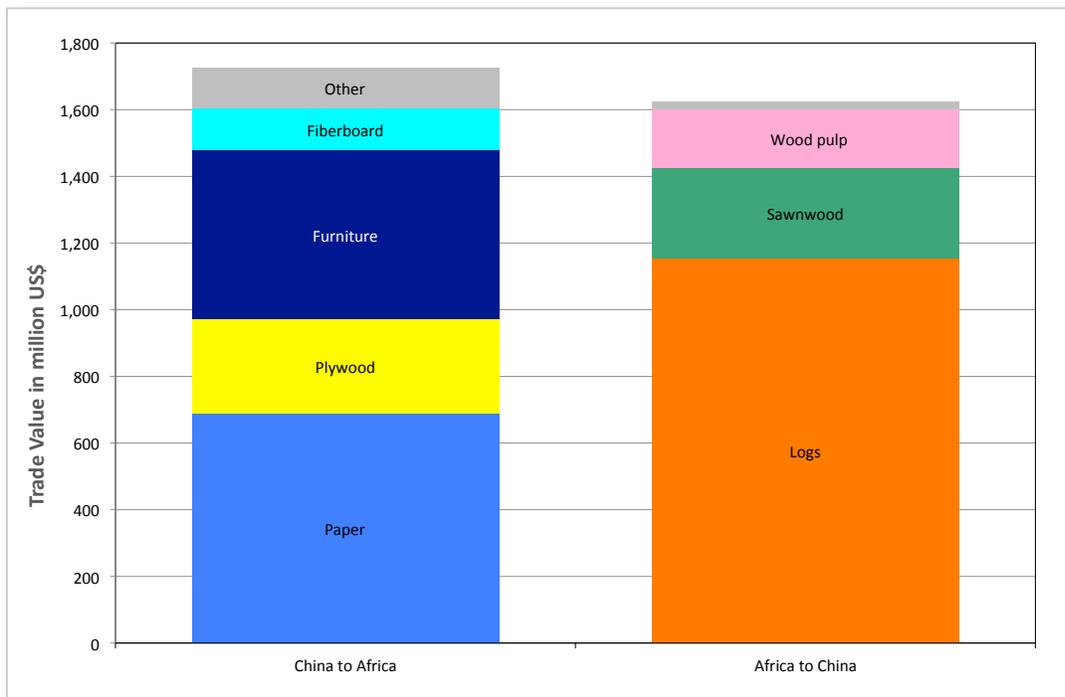
Chapter 3: China's Forest Product Exports to Africa

In past decades, China's imports of forest products from Africa exceeded its exports to Africa. The net trade flow, however, flipped in 2011, and China's exports of forest products to Africa reached its historical high at US\$1.73 billion in 2012. In 2012, Africa imported about 3.07 million m³ RWE of forest products valued at US\$1.73 billion from China, but exported 3.59 million m³ RWE valued at US\$1.62 billion to China.

In 2006, Chinese exports to Africa were still quite small — less than one million m³ RWE and valued at less than US\$0.5 million. However, since 2003, exports increased rather rapidly. Overall, the value of forest product exports to Africa grew at an average annual growth rate (AAGR) of 50% from 1997 to 2012. This contrasts with the much slower AAGR of Africa's forest product exports to China over the same period (13%) and surpasses even China's rapid growth in forest product exports to the world (20%).

The composition of China's forest product exports to Africa is heavily weighted toward processed products, in strong contrast to Africa's log-dominated exports to China (**Figure 17**). African countries importing Chinese manufactured goods, with the exception of South Africa, are quite different from the top African nations exporting forest products to China.

Figure 17: The China-Africa Forest Products Trade Mix by Value, 2012



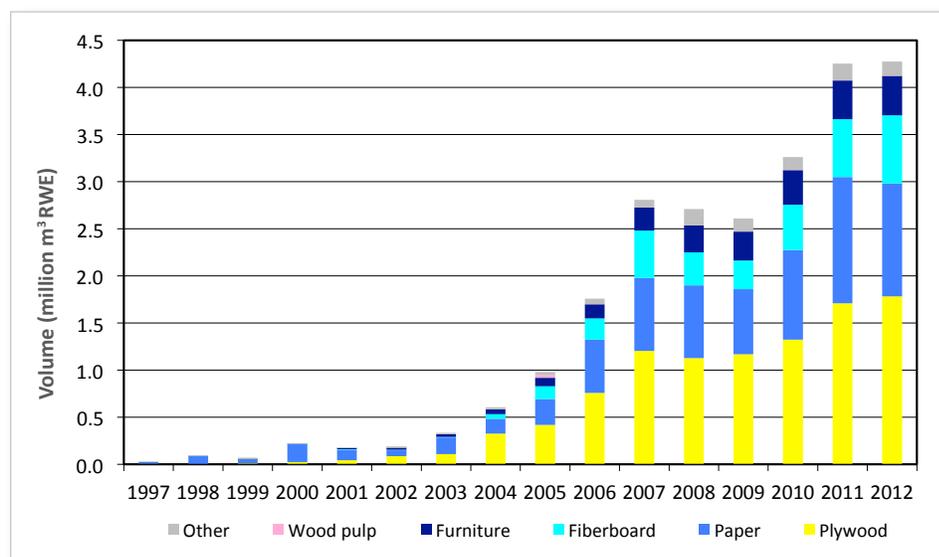
Source: China Customs Data, compiled by Forest Trends.

Note: Grey section at top of each column represents "Other" category.

For every 100 m³ RWE of forest products that Africa exported to China, Africa imported 85.5 m³ from China. With regard to value, for every US\$100 in goods exported from Africa to China, US\$94 worth was exported from China to Africa. Since China's exports are composed of processed products as opposed to the logs it imports, China's exports to Africa have a higher dollar value per cubic meter. The high growth rates of Chinese exports to Africa and the sluggish growth rates of African exports to China will likely continue as China tries to diversify its export markets.

The top product groups exported from China to Africa (in order of declining 2012 volumes) were plywood, paper and paperboard, fiberboard, and wood furniture. Each of these groups has shown growth up to 2012, except for paper, which declined in 2012 after strong growth in previous years. Paper products were the highest volume exported product from 1997 to 2003; however, exports of plywood caught up quickly and became the largest product category in terms of export volume from 2004 to 2011. Plywood (now China’s leading forest product export to Africa) exhibited especially strong growth (**Figure 18**). Throughout the period studied, China did not export any logs to Africa, and exported only negligible amounts of wood pulp and sawnwood, consistent with its global export mix.

Figure 18: China’s Forest Product Exports to Africa by Volume and Type



Source: China Customs Data, compiled by Forest Trends.

Forest-rich areas in Africa that export to China are generally insignificant importers of China’s manufactured forest products. North African countries such as Egypt and Algeria account for 40% of Africa’s total forest product imports from China (by volume), 47% of plywood, 43% of fiberboard, and 45% of wood furniture (**Tables 5-9**).

Table 5: Top 5 African Destinations of Chinese Forest Product Exports, 2012

Rank	Country	Volume Share	Value Share
1	Egypt	17%	12%
2	Nigeria	15%	9%
3	South Africa	13%	20%
4	Algeria	12%	7%
5	Angola	8%	7%
	Others	35%	43%

Table 6: Top 5 African Destinations of Chinese Plywood Exports, 2012

Rank	Country	Volume Share	Value Share
1	Algeria	23%	25%
2	Egypt	18%	21%
3	Angola	14%	16%
4	Nigeria	13%	15%
5	South Africa	4%	6%
	Others	28%	35%

Table 7: Top 5 African Destinations of Chinese Paper Exports, 2012

Rank	Country	Volume Share	Value Share
1	South Africa	22%	23%
2	Egypt	17%	13%
3	Nigeria	13%	8%
4	Kenya	7%	5%
5	Angola	3%	4%
	Others	38%	44%

Table 8: Top 5 African Destinations of Chinese Fiberboard Exports, 2012

Rank	Country	Volume Share	Value Share
1	Nigeria	29%	28%
2	Egypt	23%	26%
3	Sudan	17%	0%
4	South Africa	11%	18%
5	Kenya	6%	7%
	Others	15%	38%

Table 9: Top 5 African Destinations of Chinese Furniture Exports, 2012

Rank	Country	Volume Share	Value Share
1	South Africa	30%	34%
2	Libya	16%	22%
3	Algeria	13%	9%
4	Morocco	8%	10%
5	Angola	5%	8%
	Others	27%	37%

Source: Chinese Customs data, compiled by Forest Trends.

A reciprocal scale of trade does occur between some African countries and China, the most significant of which is South Africa. Reflecting its more developed market, South Africa imported 13% of Africa's total forest product imports by volume and 20% by value from China in 2012. It also received 30% by volume of China's furniture exports to Africa and 34% by value. Central African countries (which in 2011 accounted for 36% and 43% of African exports to China of forest products and logs, respectively, by volume) are not among the top ten importers of the forest products overall, or within specific types of exports from China.

Conclusion

The primary goal of this report has been to provide a timely analysis of the trade in forest products between African countries and China to inform governments, industry and civil society of current trends. The statistical data provided in this report can serve as a starting place to prioritize more in-depth work on the trends and impacts of the forest products trade between China and Africa.

While the trade flows have varied across countries and regions due to differences in forest resources, geography and economic development, a common finding is that the China-Africa forest product trade is significant in some, but not all, of the ways generally assumed. In several instances, trade growth is less than many would have expected, and trends have often been highly variable.

Key findings between China and Africa

- **African share of Chinese wood supply in 2012:** China's imports of Africa's forest products have been highly variable from year to year. Imports of African forest products make up only a small proportion (2.8%) of the total volume of China's forest product imports from all around the world and have been growing more slowly than imports overall.

Examining raw logs only, Africa's share was 7%, demonstrating that logs made a greater proportion of Africa's forest product exports to China than other supplying countries. If one were to remove China's imports of temperate Russian softwood logs from the equation, the share of African imports would register at 9.7%.

- **Growth trends:** Since 1997, the increase in African timber exports to China has not shown the same rapid growth as China's overall timber imports, and is in fact quite variable from year to year. Considering the continent as a whole, Africa's exports to China grew rapidly from a small baseline during 1995–1997. Since that expansion, the trade trend could best be described as fluctuating around a relatively slow and stable growth trend.

Given the relatively small scale of traded volumes, sharp drops in import volumes might be the result of just one or two producer/trader enterprises curtailing exports to China. A drop in exports in 2004 can be partially explained by the cessation of a handful of enterprises' exports from Liberia to China (which totaled approximately 0.5 million m³ RWE in 2003) due to UN sanctions barring Liberian timber exports (Forest Trends 2006a).

Trade statistics from 2007 to 2011 provide a snapshot of the impact of the global economic downturn on China-Africa trade. As with China's total forest products imports, imports from Africa declined in 2008, but soon recovered in 2009 and continued growing until 2011. Trade data in 2012 showed a slower growth in both imports and exports compared to 2011, mirroring decelerated growth in the Chinese economy.

- **Value of African timber in 2012:** Africa's forest product exports to China command a higher share of China's total imports by value (5.2%) than they do by volume (2.8%), suggesting the export of higher value timber to China relative to other supplying countries.

This comparison is more pronounced for tropical hardwoods: Africa's share of China's tropical hardwood log and lumber imports by value (13.6%) is more than double its share by volume (6.5%).

- **Export market orientation:** For most major exporting countries in Africa, European markets still dominate. In 2011, Africa exported 3.6 million m³ of natural (non-plantation) timber products to the EU, compared to 2.7 million m³ sent to China.

The relative importance of the EU market as compared to China, however, varies greatly between regions and countries. Important wood producing countries in West and Central Africa (e.g. Ghana, Côte d'Ivoire, Nigeria, and Cameroon) tend to export a larger share to the EU markets, with little trade to China. Indeed, Côte d'Ivoire and Ghana export virtually no wood to China.

Mozambique represents the other extreme, with more than 80% of its timber product exported to China annually. Approximately 85% of Equatorial Guinea's and 72% of the Republic of the Congo's are exported to China (2011).

- **Major supplying countries:** Gabon was historically the leading African supplier of forest products to China before 2010. However, by 2011, Gabon's share dropped greatly as a result of its log export ban. In order of share by volume, South Africa, Congo-Brazzaville, Cameroon, Mozambique, and Equatorial Guinea made up the "top five" in 2011 and 2012. Regionally, more than one third of China's imports came from Central Africa, possibly due to consumer preference for endemic tree species such as okoumé. Growth in rosewood exports to China was significant in 2011, reflecting to some extent the interests of well-off Chinese consumers in rosewood furniture and other luxury goods.
- **Product mix:** Logs still dominate the mix of African forest product exports to China (60% by volume in 2012) and play an even greater role in this mix than in China's global forest product imports (24% by volume in 2012). Sawnwood exports increased substantially in 2011, comprising 16% of total exports, and remained steady through 2012. One third of these exports came from Gabon, which likely shifted from exports of logs as the result of enforcement of its log export ban. Pulp and paper are the second largest category of wood products exported to China, with virtually all coming from South Africa and Swaziland.
- **Exports of processed wood products from China to Africa:** Many have speculated that China's manufacturing industry will be able to send cheap manufactured wood products back to supplier countries, effectively displacing any emerging African manufacturing capabilities. Comparison of the import/export balance in China-Africa trade in 2011 and 2012 confirms this perception, and may also confirm China's efforts in diversifying its export market. While Chinese exports of manufactured wood products to Africa have been increasing dramatically, it is starting from a very small base. However, with the exception of South Africa, none of the top ten exporting countries are significant importers of manufactured forest products from China. The greatest volume of these exports goes to North African countries such as Egypt (top African importer of paper and paper board, plywood and other panels), Nigeria, and South Africa (paper and furniture). The effect of the economic downturn on these exports was apparent in 2008 and 2009; however, growth in exports was resumed in 2010 and escalated in 2011, before slowing in 2012.

Chinese demand for wood has given a boost to African exporters of logs but has not promoted the development of Africa's domestic processing and manufacturing capacity in the forest sector. Indeed, China's preference for logs has produced similar concerns in nations such as Russia, which recently imposed a steeply rising level of taxes on log exports that resulted in a sharp decline in exports. In many African countries with poor records of forest governance, rising exports of wood products to the rest of the world, often through China, are increasing the stress on fragile governance and law enforcement institutions. This overwhelming demand on forest resources has been shown in other reports to be heavily correlated with increases in unsustainable or illegal harvesting, biodiversity loss, and the abuse of forest communities' rights.

While China's interest in African exports is marginal compared to China's total imports, this trade has become increasingly important within particular African countries, such as Congo-Brazzaville, Equatorial Guinea, and Mozambique. Many African countries increasingly depend on wood imports, having managed their own woodland and forest unsustainably. This dependence tends to reinforce unsustainable forest management (and illegality) elsewhere.

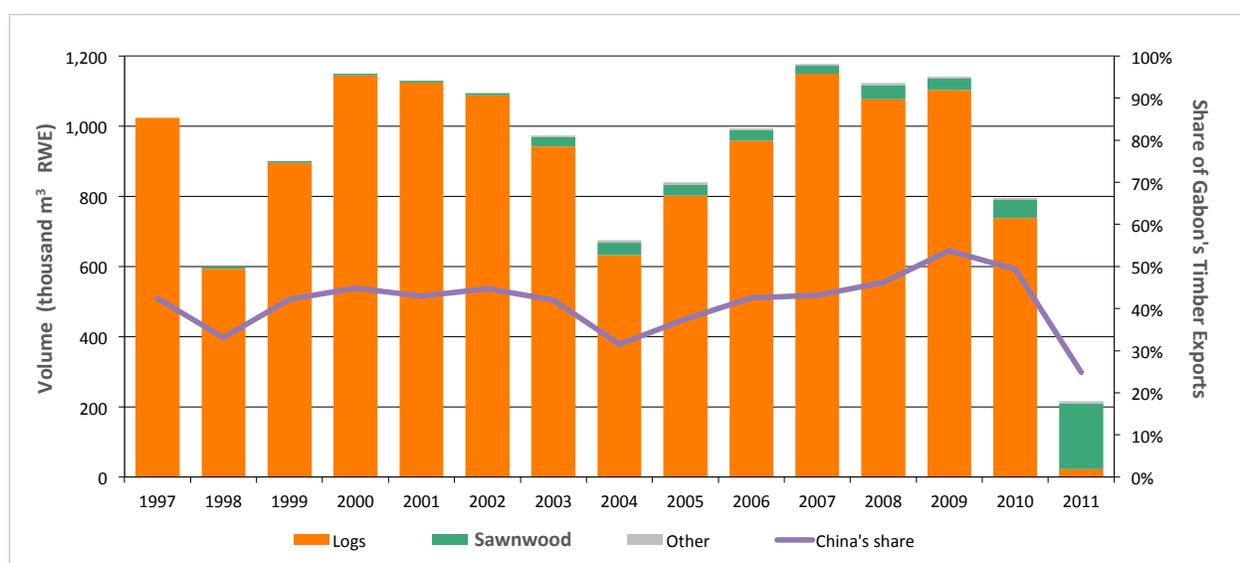
In order to ensure that these growing exports provide economic and livelihood benefits to local stakeholders, particularly forest-dependent communities, such growth will need to operate through sustainable forestry mechanisms. China, as well as the ultimate users of many of China's exports that contain African wood, such as European and North American consumers, should use their market leverage to boost international demand for wood products that support sustainable forestry operations that provide satisfactory livelihood opportunities.

Annex 1: Country Profiles

Gabon

Gabon had consistently been a leading African supplier of logs and sawnwood to China before 2010, when the government implemented its log export ban. However, the volumes of timber exports to China have been relatively variable. After an initial increase in 1996, exports have ranged from 0.6 million m³ to almost 1.2 million m³ (Figure A1). By 1996, China had become as important a market for Gabon's forest products as Europe. In 2008, 54% of Gabon's timber exports went to the EU and 46% went to China. While logs dominated this trade before 2010, the log export ban that took effect May 2010 has had impacts that can be seen in 2011 trade statistics. (Figure A2).

Figure A1: China's Imports of Gabon's Timber Products and Market Share⁴



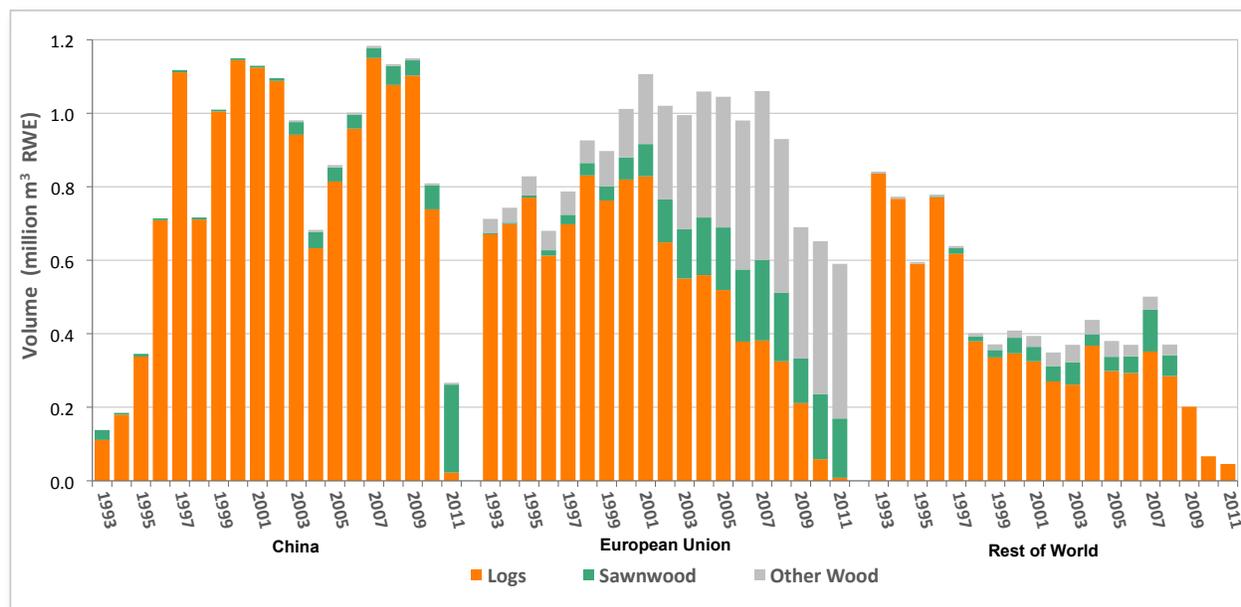
Source: China Customs Data, UN Comtrade, World Trade Atlas, and other data, compiled by Forest Trends.

The great increase in exports to China in 1996 coincides with a change in structure of the logging industry starting in the mid-1990s, when Malaysian and more recently Chinese logging contractors began operating. This implies that Asian enterprises account for most of the logs China imports from Gabon. The Rimbunan Hijau group, a concessionaire and logging subcontractor, appears to account for much if not most of those exports to China. Among the Chinese enterprises that have invested in timber harvesting and processing in Gabon, the dominant players are Chinese: Sunly Office and Huajia Wood Stock Co. Ltd. Sunly Office, a subsidiary of the State-owned China National Cereals, Oils, and Foodstuffs (COFCO), is the largest Chinese exporter of Gabonese logs to China, accounting for 40% of total exports (IUCN, 2009). Implementation of the log exports ban has impacted Chinese investors such as Sunly. Industry sources indicated that Sunly has moved a number of its employees back to China.

⁴ In this annex, graphs showing China's timber imports (e.g., Figure A1, A3, A5, etc.) employ Chinese Customs data for volume amounts (bars, left axis), which includes plantation-grown timber products. The trend lines showing China's percent market share of Africa timber exports (lines, right axis) use James Hewitt's data which is originated from China Customs Data, Eurostat, and UN Comtrade.

Between 1996 and 2010, China imported between 31 and 54% of Gabon's total timber product exports to the world. This figure rises to 85% in 2010 when only tropical logs are considered. The log exports ban has had significant impacts on China's import structure from Gabon. By 2011, 0.24 m³ million cubic meters of sawnwood were exported to China, while exports of logs almost vanished, indicating a shift from exports of raw logs

Figure A2: Gabon's Timber Exports by Destination and Type⁵



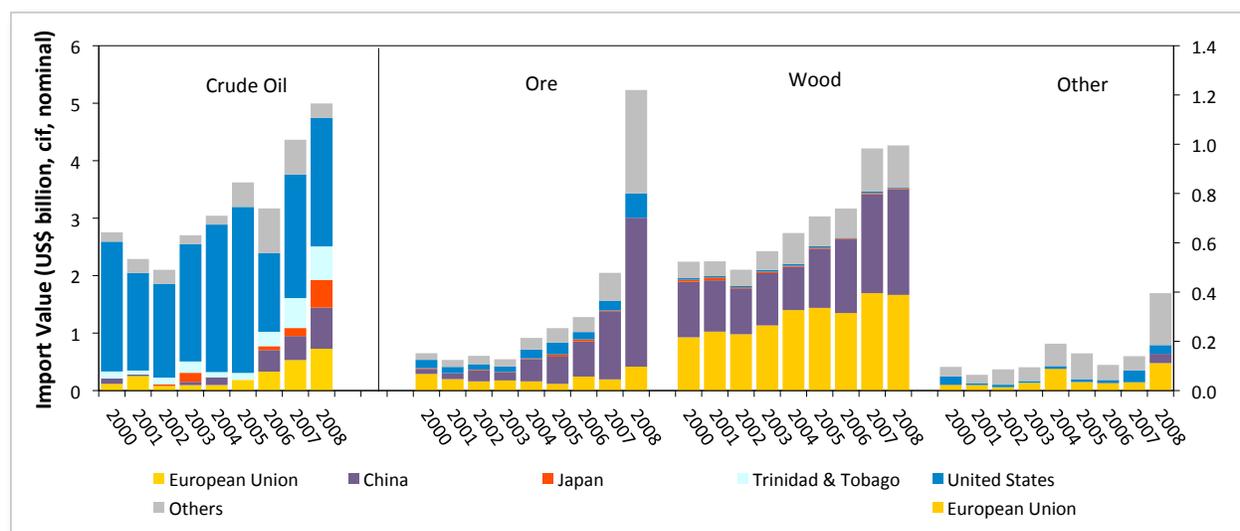
Source: China Customs Data, Eurostat, UN Comtrade, and other data, compiled by James Hewitt.

The trend in China's imports from Gabon is clearly distinguishable from that of comparable European imports. In the past, China's imports of Gabonese timber products have been dominated by logs. Indeed, China did not import any processed wood from Gabon from 1994–2001, while sawnwood made up a small share of timber imports from 2002 to 2010. By 2011, sawnwood accounted for 90%, marking the shift away from imports of logs. Processed exports to Europe (mostly sawnwood, veneer and plywood) have increased robustly from 2000–2008, and account for about 65% of timber products sent to Europe, mainly to France and Italy. The economic downturn in the EU has had some impacts on Gabon timber export growth since 2009, but most drops were in exports of logs, which is consistent with Gabon's goal of gradually reducing log exports' share of total timber exports to 25% by 2012 (ITTO 2007).

As a portion of Gabon's primary commodity exports, wood exports amounted to 9% of exports by value in 2010, or US\$660 million, slightly less than ore exports and only a fraction of crude oil exports at almost US\$5 billion (Figure A3).

⁵ Charts of timber exports by destination market in Annex 1 (e.g., Figure A2, A5, A8, etc.) employ datasets which exclude plantation-grown timber or products made from this wood, such as wood chips and pulp logs, unless where specifically mentioned (Figures A28).

Figure A3: Gabon's Primary Commodity Exports to World by Value

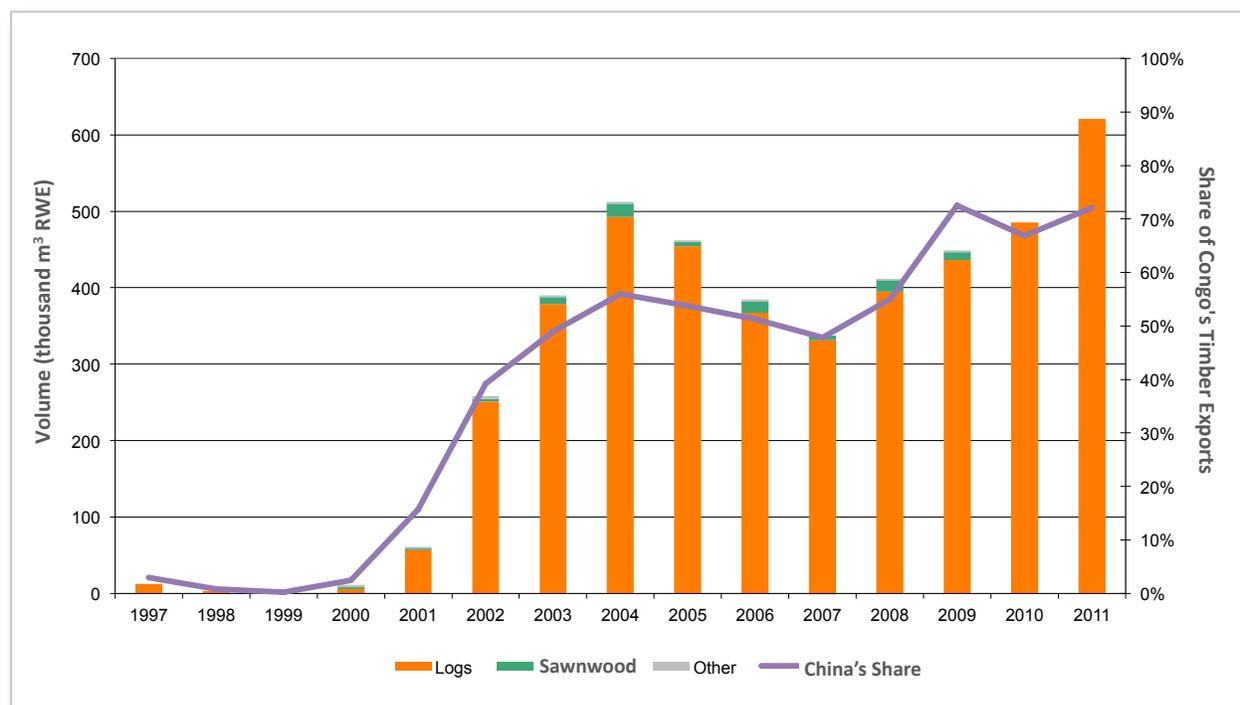


Source: UN Comtrade, compiled by James Hewitt.

Congo-Brazzaville

Congo-Brazzaville's exports to China increased dramatically from 2000 to 2004, rising from 0.01 million m³ to a peak of around 0.5 million m³, before declining to 0.4 million m³ in 2006 where they has remained until to 2008 (Figure A4). Exports grew even faster after 2008, and reached a historical high at over 0.6 million m³ in 2011. Previously negligible, the share of Congolese timber bound for China increased from 2% in 2000 to 72% in 2011.

Figure A4: China's Imports of the Republic of the Congo's Timber Products and Market Share



Source: China Customs Statistical Yearbook, Eurostat, World Trade Atlas, and other data, compiled by Forest Trends.

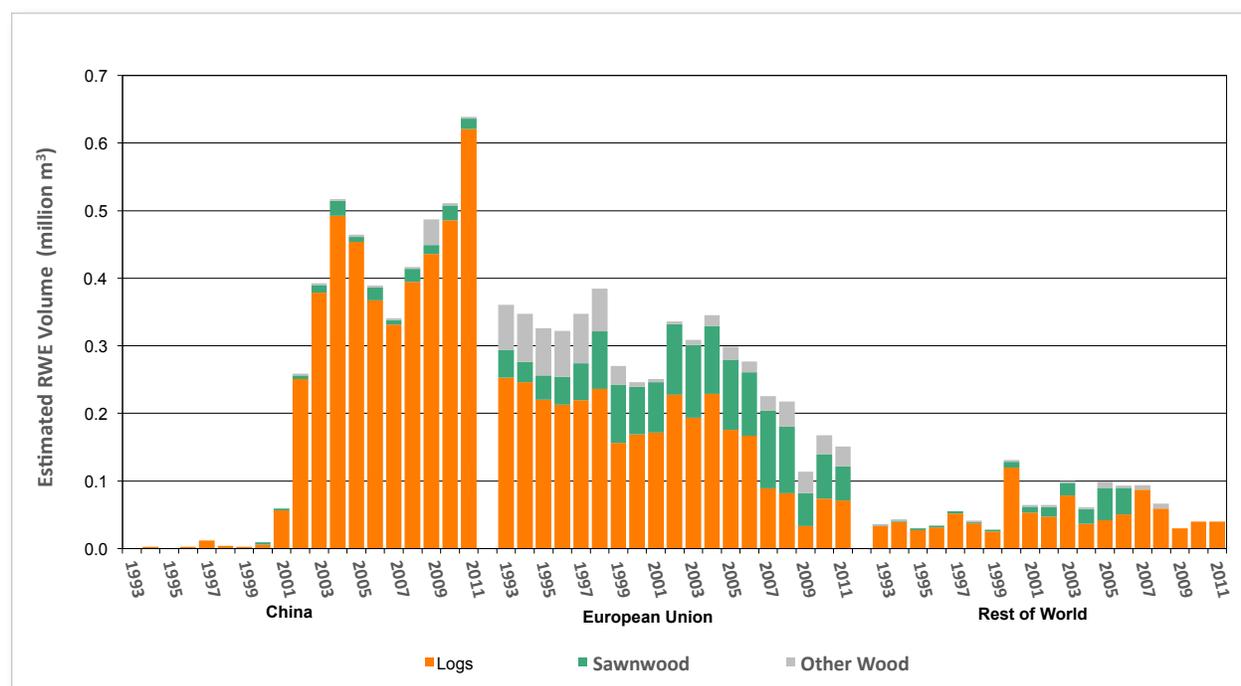
China's imports of tropical logs from Congo-Brazzaville have increased strongly since Gabon's logging ban took effect. Congo-Brazzaville prohibits the export of logs in excess of 15% of a concessionaire's log production. However, the great majority of the timber that China imports from Congo-Brazzaville comprises logs, and China accounts for a large majority of the tropical logs which that country exports. Consequently, on this basis alone, most of the timber that China imports from Congo-Brazzaville is illegal. If those who supply China are not required to process logs prior to export, then this would imply systematic high level corruption — compounding the illegality.

Some of the timber which is exported from Congo-Brazzaville leaves through Cameroon and is reported by importing countries as if from Cameroon. However, most of the logs exported to China derive from forests in the south west of the country and, as a consequence, are supplied directly from Congo-Brazzaville.

In 2011, almost all of China's imports from the Republic of the Congo were logs (compared to 47% for European imports). Aside from Europe and China, the Republic of the Congo also exports logs to Japan, and, in recent years, logs and sawnwood to the United States. While the proportion of logs exported to Europe experienced drops, it remains dominant in China's imports.

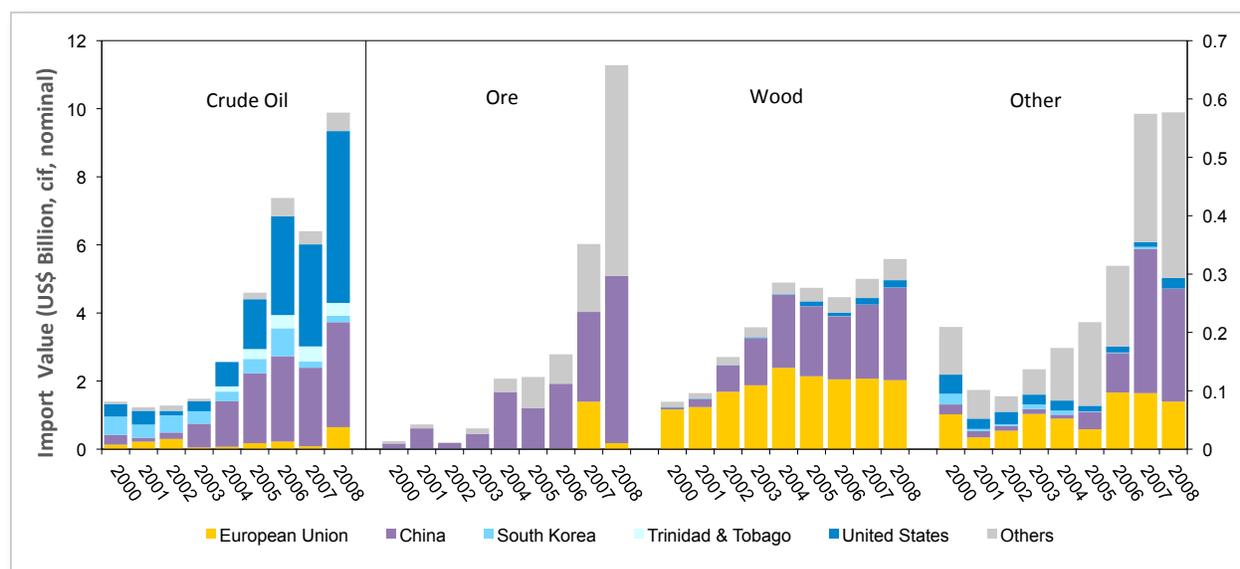
Along with Equatorial Guinea and Mozambique, the Republic of the Congo is one of the few countries in Africa whose timber exports to China now surpass those to the EU (**Figure A5**). The nation's timber exports to China have exceeded those to Europe since 2003 and now account for over two thirds of the nation's non-plantation timber exports.

Figure A5: The Republic of the Congo's Timber Exports by Destination and Type



Source: China Customs Statistical Yearbook, World Trade Atlas and data, compiled by James Hewitt.

As a proportion of primary commodity exports to the world, wood exports represent 3.6% of total exports by value, totaling US\$360 million in 2010 (**Figure A6**).

Figure A6: The Republic of Congo's Primary Commodity Exports to the World by Value

Source: China Customs Statistical Yearbook, Eurostat, World Trade Atlas, and other data, compiled by James Hewitt.

Note: Import value reported by importing countries.

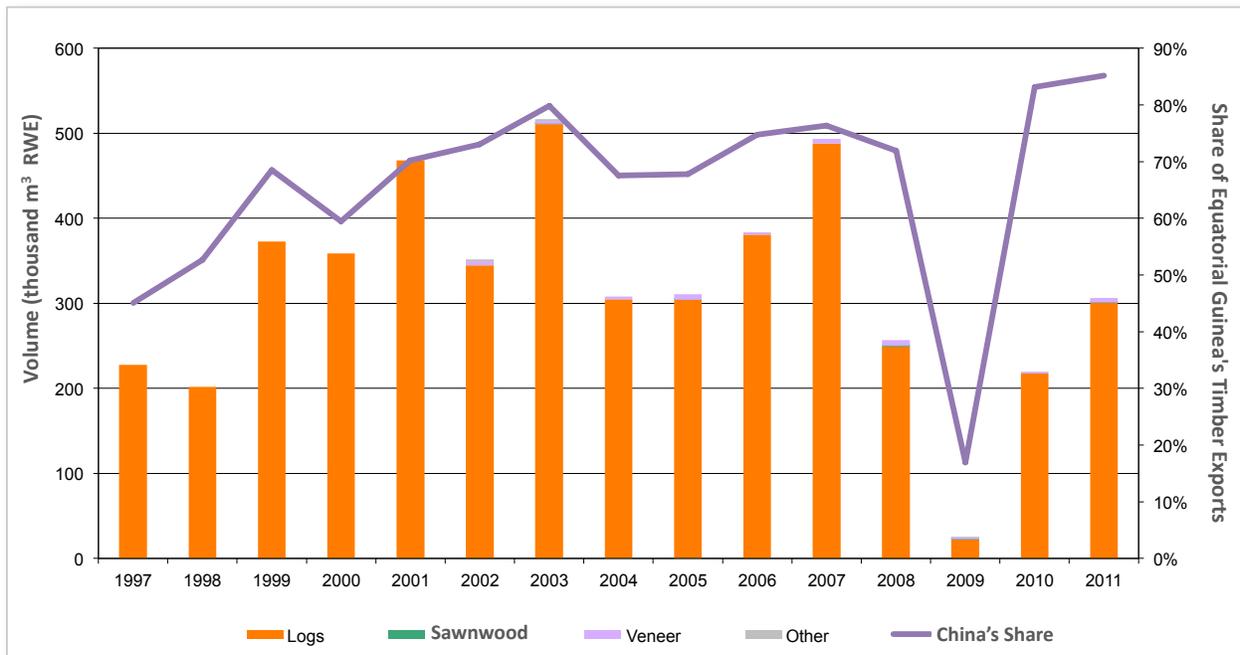
Equatorial Guinea

Since 1997, Equatorial Guinea has exported the majority of its timber to China, almost exclusively as logs (**Figure A7**). The volume of this trade has fluctuated over time, up from zero in 1994 to anywhere between 200,000 and 500,000 m³ since 1997. In late 2008 a logging ban came into effect, which greatly reduced log exports (from 487,000 m³ in 2007 to 249,000 m³ in 2008). In 2009, log extraction and exports dropped significantly, and exports to China were around 22,000 m³. Log exports to China have resumed in 2010 and 2011, apparently in contravention of the logging ban.

China has accounted for between 60-80% of Equatorial Guinea's forest product exports since 1999. In contrast, the volume exported each year to the EU has remained more or less constant at around 100,000 m³ up to 2007, followed by a 28% drop from 2007 to 2008, and further drops in 2009 and 2010. By 2011, exports to the EU were less than 50,000 m³ (**Figure A8**). The weak European economy may have contributed to the drops. While logs comprise the vast majority of timber exports — averaging 88% from 1993–2008 — the remainder constitutes mainly veneer exports to Europe.

With this tremendous increase in exports, almost all of the country's commercially productive forests are now under concessions. Shimmer International, a subsidiary of Malaysian logging conglomerate Rimbanan Hijau, now executes most logging in the country both as a concessionaire and as a logging contractor to others (Karsenty 2007: 17). Shimmer's operations in Equatorial Guinea began during the mid-1990s and account for almost all of China's log imports from that country. Okoumé accounts for the great majority of those imports.

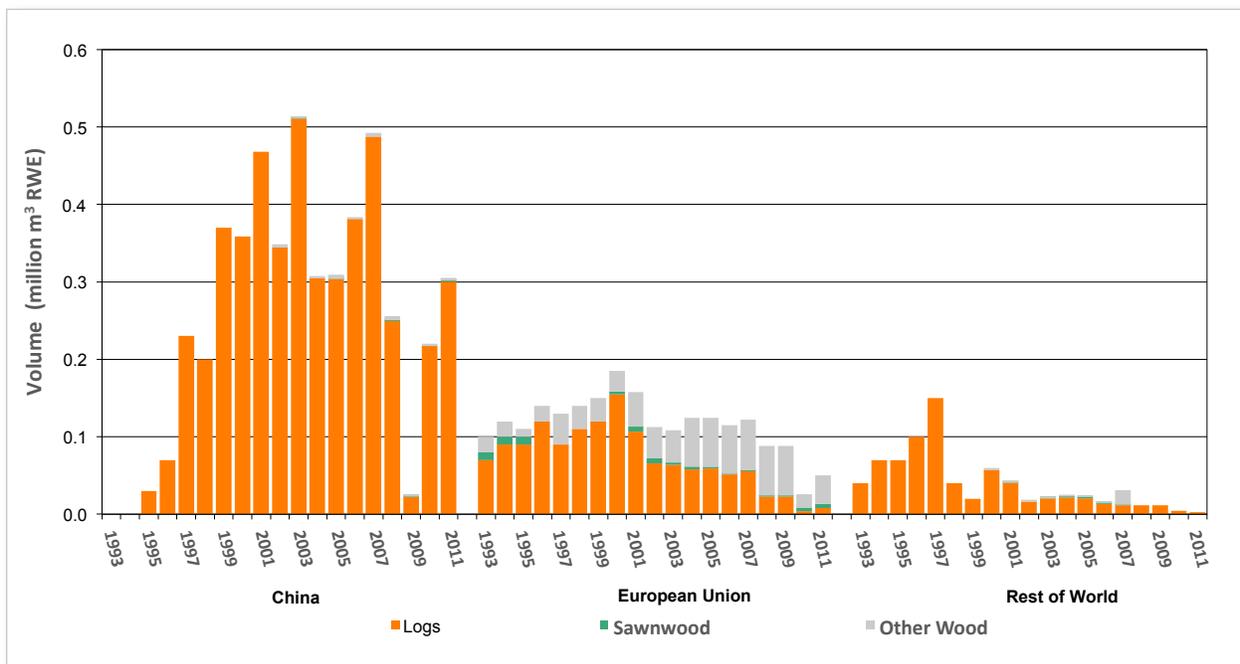
Figure A7: China's Imports of Equatorial Guinea's Timber Products and Market Share



Source: China Customs Statistical Yearbook, Eurostat, World Trade Atlas, and other data, compiled by Forest Trends.

Given that the annual allowable cut for all species has been 450,000 m³ since the mid-1990s and earlier, it seems reasonable to conclude that the country's forests are being rapidly depleted of their most sought-after species: okoumé. As the volume of exported logs per hectare of concessions operated by Shimmer is roughly five times greater than that of most other concessions, China's imports are likely contributing to the rapid exhaustion of Equatorial Guinea's forests.

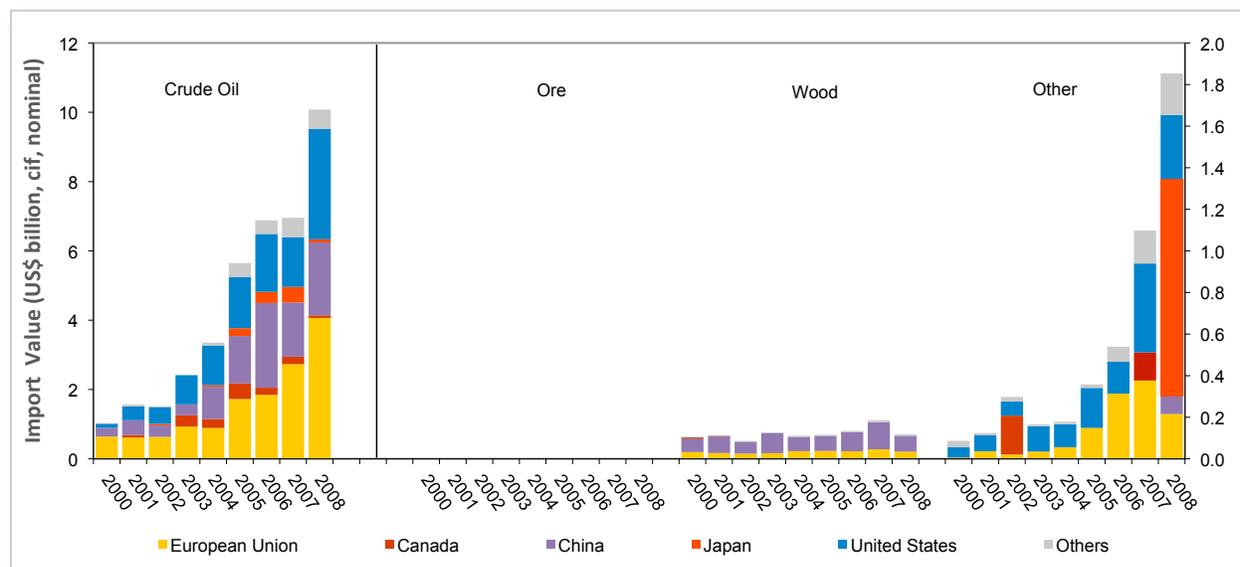
Figure A8: Equatorial Guinea's Timber Exports by Destination and Type



Source: China Customs Statistical Yearbook, Eurostat, World Trade Atlas, and other data, compiled by James Hewitt.

For Equatorial Guinea, wood exports amount to only 1% of total primary commodity exports by value, or US\$100 million (**Figure A9**). The explosion of exports to Japan in 2008 in the “other” category is due to a surge in liquid natural gas (US\$1.1 billion) and methanol (US\$0.2 billion) production.

Figure A9: Equatorial Guinea’s Primary Commodity Exports to the World by Value



Source: UN Comtrade, compiled by James Hewitt.

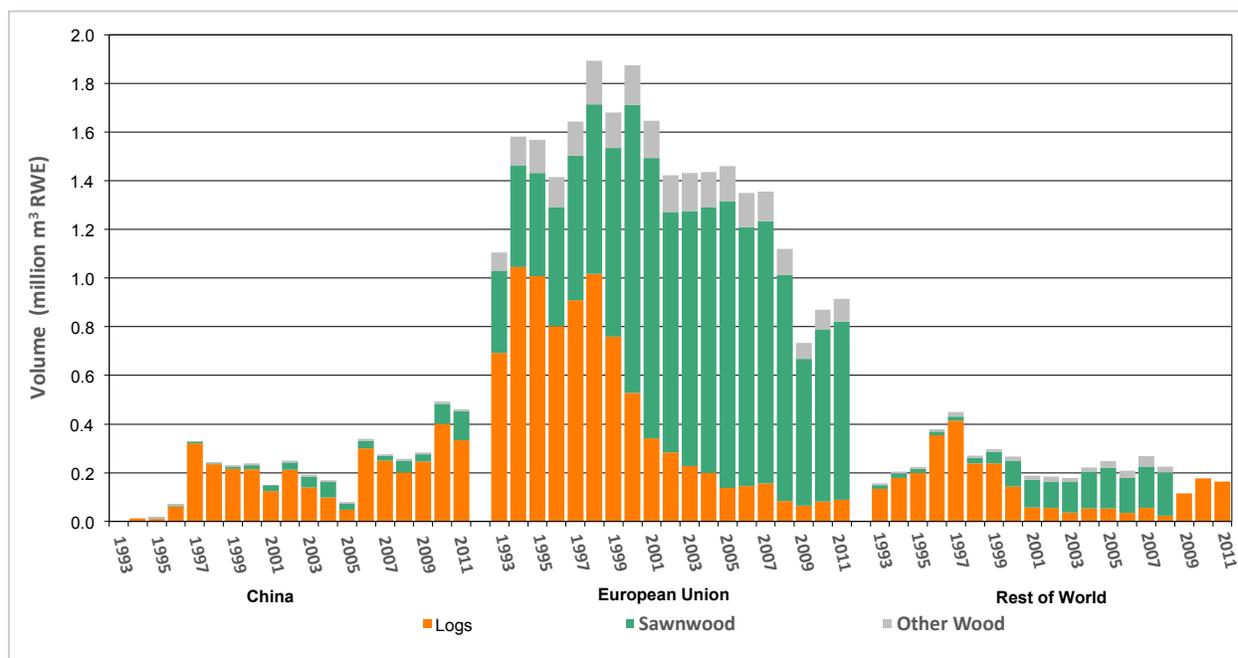
Note: Import value reported by importing countries.

Cameroon⁶

Cameroon’s exports to China constitute only a small portion of its total timber exports; 27% went to China in 2011, while 54% went to the EU. Logs are not the dominant export of the country, and the species mix is also different from that of Gabon, the Republic of the Congo, and Equatorial Guinea. Rimbunan Hijau has withdrawn from Cameroon’s forests and the leading logging contractor is now Vicwood, a Chinese company also active in the Central African Republic and the Republic of the Congo. From 1993–1999, an average of 65% of Cameroon’s exports were logs (**Figure A10**). In 2000, however, European markets began importing more sawnwood instead of logs. Logs composed 27% of Cameroon’s timber exports on average from 2000–2011. This is partly the result of a log export ban imposed in 1999 for many species. However, the government exempted two of the main commercial species from the ban: ayous (*Triplochiton scleroxylon*) and azobé (*Lophira alata*) (Cerutti and Tacconi 2006:6). Instead, export quotas are allocated separately for these species (Karsenty 2007: 13). China’s imports also reflect this trend although much less dramatically; from 1993–1999, virtually all of Cameroon’s exports to China were logs, but by 2011 sawnwood made up 26% of the product mix in terms of RWE volume (**Figure A11**).

⁶ It is likely that the data used in this report overestimates Cameroonian exports somewhat, and correspondingly underestimate those of Central African Republic and the Republic of the Congo. Some of the latter’s exports leave Africa via Cameroon, and, at ports of import, some of these are declared as Cameroonian timber. Differences between import and export declarations for these three countries might reflect inconsistency rather than an illegality.

Figure A10: Cameroon's Timber Exports by Destination and Type



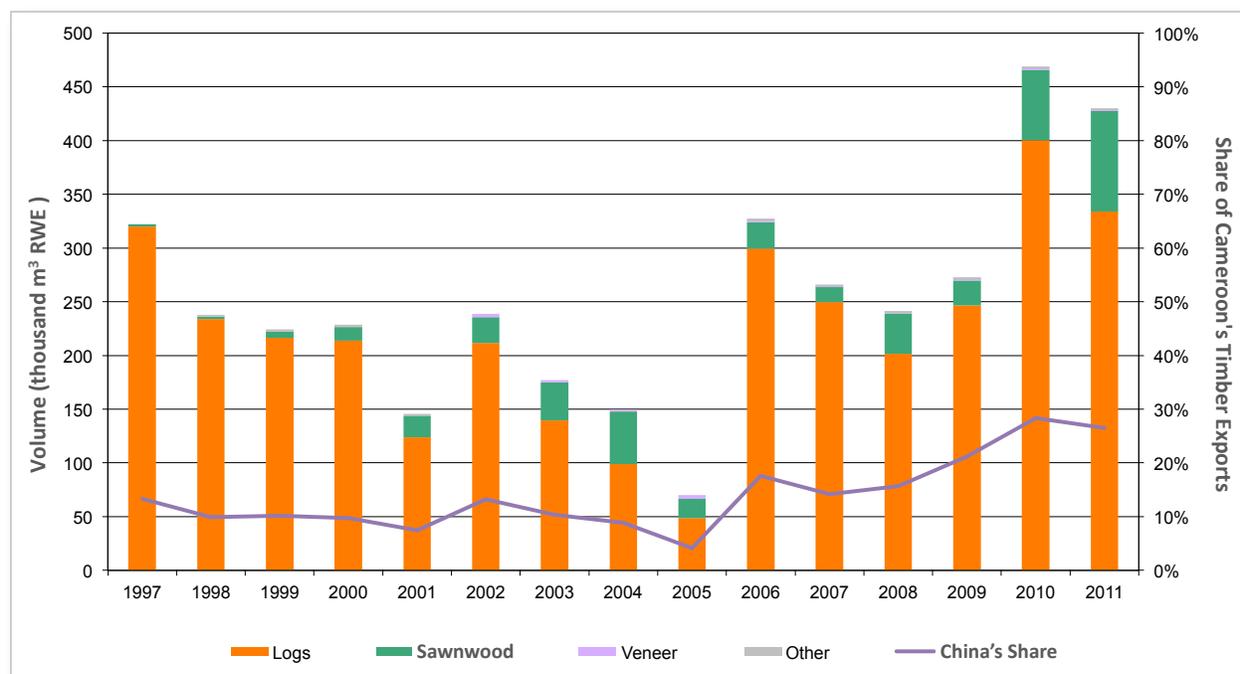
Source: China Customs Statistical Yearbook, Eurostat, World Trade Atlas, and other data, compiled by James Hewitt.

Cameroon's log exports to China fell considerably from 2000, eventually falling to 15% of their 1997 level by 2005, but rising to record levels in 2006, and have steadily declined since. A surge in exports of logs took place during 2009 when Cameroon relaxed the requirement that certain species be milled prior to export — ostensibly in order to ensure that logging groups maintain cash flow during the first year or more after the bursting of the global credit bubble of the last decade. Ironically, that relaxation will have penalized Cameroon's saw milling industry for the benefit of their competitors in China.

Despite the surge, China's purchasing activity in Cameroon cannot compare to that of the EU. Italy is a particularly significant importer among the Europeans, and Italian companies account for much of Cameroon's processed timber outputs from mills and concessions.

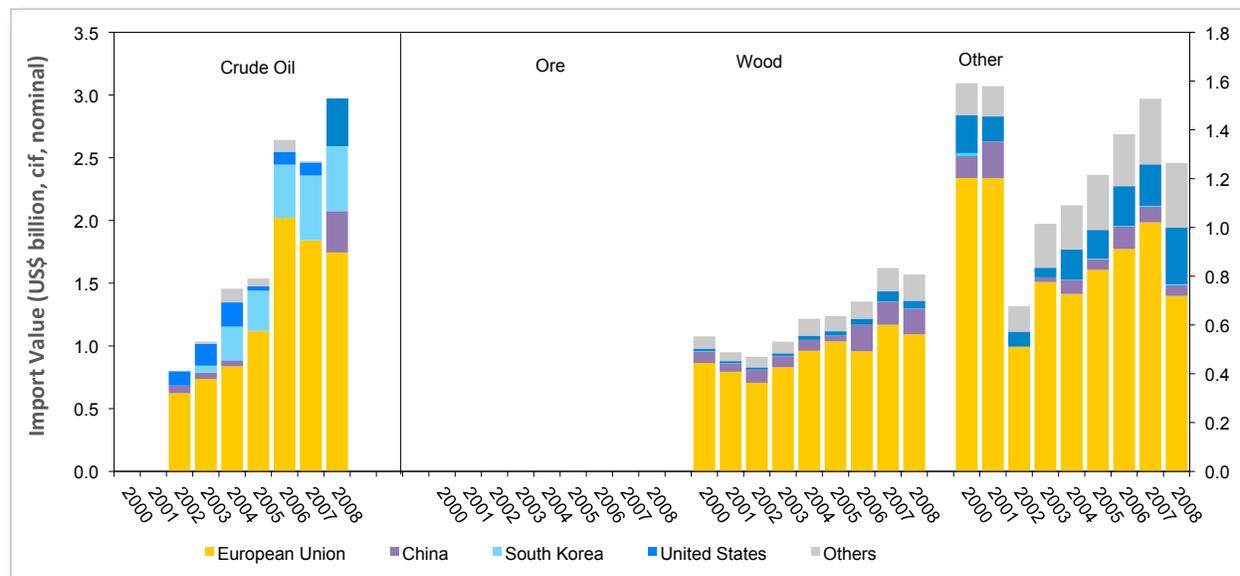
A substantial (but not large) proportion of the timber which China (and other countries) report as imports from Cameroon derive from neighboring countries (predominantly the Central African Republic and Congo-Brazzaville). The quantities involved are not published, despite several years of effort to improve transparency under FLEGT initiatives.

Figure A11: China's Imports of Cameroon's Timber by Volume and Type



Source: China Customs Statistical Yearbook, Eurostat, World Trade Atlas, and other data, compiled by Forest Trends.

Figure A12: Cameroon's Commodity Exports to the World by Value



Source: UN Comtrade, compiled by James Hewitt.

Note: Import value reported by importing countries.

Wood exports from Cameroon amounted to 17% of all commodity exports by value in 2010, or US\$670 million (Figure A12). The bulk of exports across all commodity categories go to the EU, with aluminum, bananas, cocoa, coffee, cotton and rubber making up the bulk of products in the "other" category.

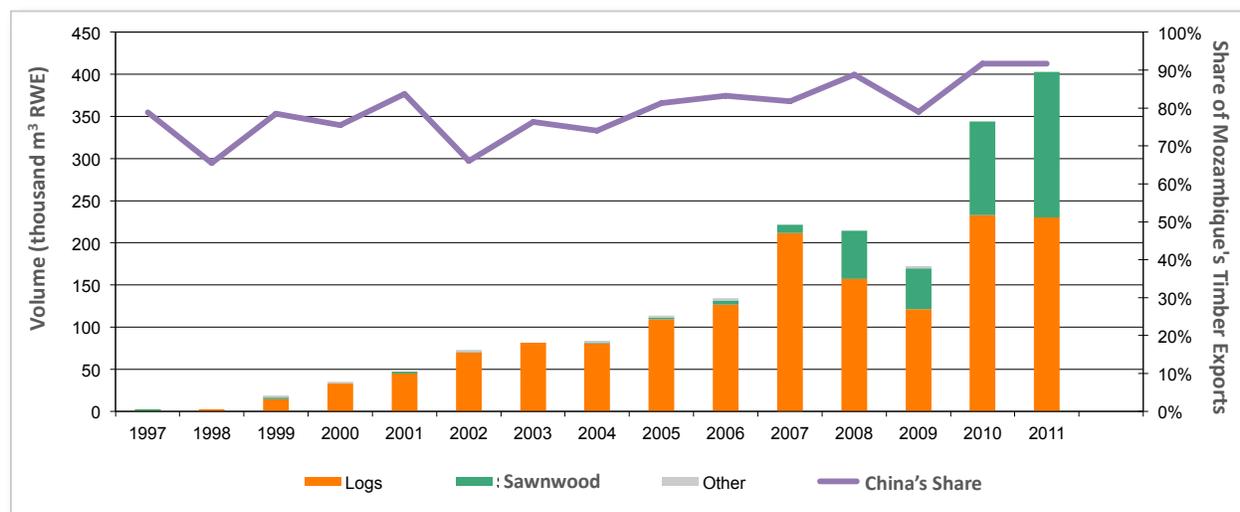
Mozambique

Mozambique's timber exports were roughly 0.45 million m³ RWE in 2011. Virtually all of these exports, however, go to China (**Figure A13**), placing Mozambique among the leading suppliers of African wood to China. Since 1997, China and Hong Kong⁷ combined have received an average of 80% of Mozambique's annual timber exports; the share was as high as 92% in 2011. Still a relatively low-volume, Mozambique's log exports to China have grown continuously over the period studied and have dominated the mix of exported products. However, sawnwood exports to China have grown rapidly since 2008. By 2011, sawnwood accounted for almost half of the export mix. This is likely due to the implementation of a law that requires the processing of Class 1 species prior to export (sometimes referred to as a log export ban), a classification that has grown to include a broader range of species since 2007. While this trend toward exporting sawnwood appears to be a move toward capturing more value from processing logs in Mozambique, nearly 100% of exports classified as processed are processed only minimally.

While many Chinese large-scale investors have recently entered Mozambique to invest in timber plantations, the presence of Chinese firms and markets is only seen in timber harvested from natural forests. The value of Mozambican timber imports reported by China were found to far exceed the value of exports reported by Mozambique to all trade partners, suggesting a significant loss of tax revenue in trade with China. Furthermore, irregularities in the operations of concessionaires and merchants of both Chinese and Mozambican origin point to significant weaknesses in law enforcement (German et al. 2011).

⁷ Normally insignificant compared to China and the EU, Hong Kong was a major importer of Mozambican wood until 2005, importing more than China from 1996–2000. Much of this might have been re-exported to mainland China.

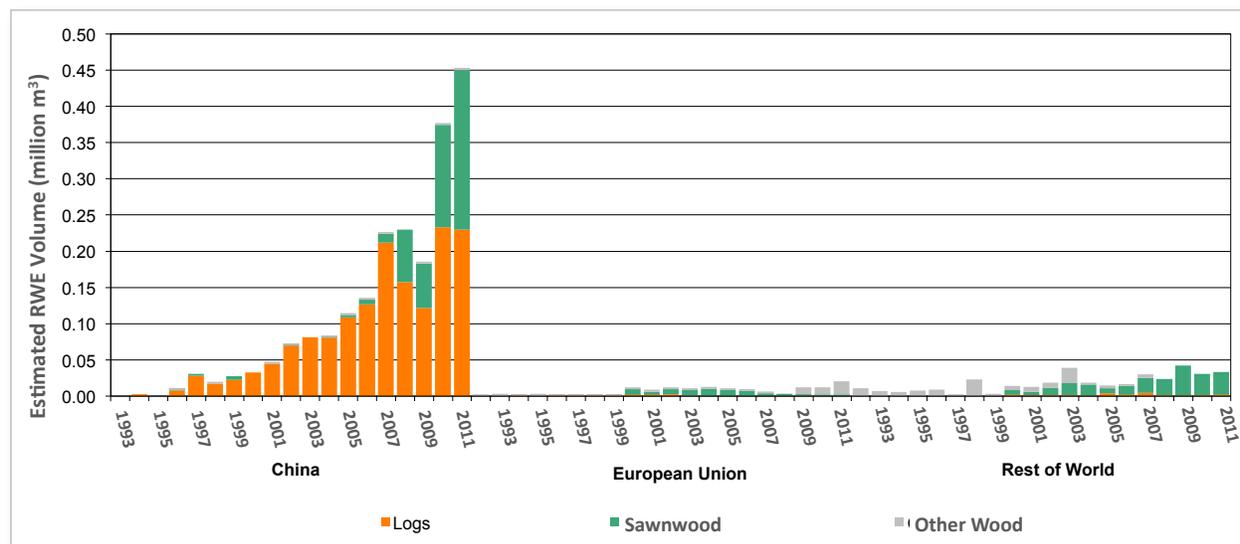
Figure A13: China's Imports of Mozambique's Timber by Volume and Type



Source: China Customs Statistical Yearbook, Eurostat, World Trade Atlas, and other data, compiled by Forest Trends.

While Mozambique's exports to China rose strongly since the mid-1990s, those to the EU (mostly destined for Italy) have remained consistently less than 0.02 million m³ RWE (Figure A14).

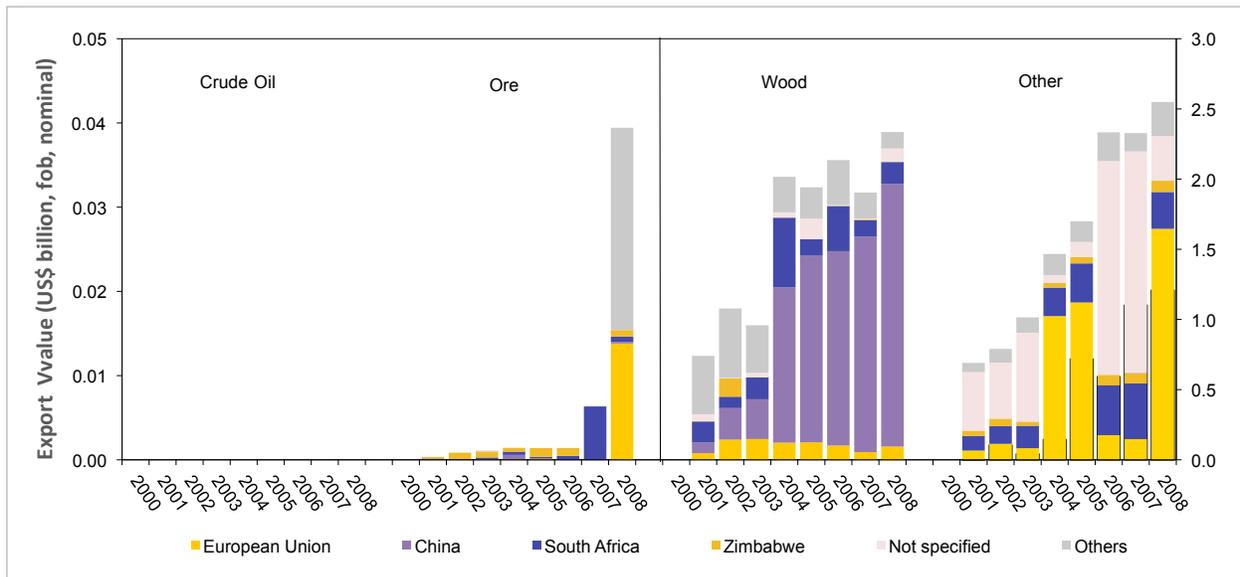
Figure A14: Mozambique's Timber Exports by Destination and Type



Source: China Customs Statistical Yearbook, Eurostat, World Trade Atlas, and other data, compiled by James Hewitt.

As a percentage of total commodity exports by value, Mozambique's wood exports are a small but growing fraction. Wood exports accounted for 4.3%, or US\$150 million in 2010, compared to 2.4% or US\$60 million in 2006. The bulk of exports in the "other" category include aluminum (US\$1.5 billion to the EU), tobacco (US\$0.2 billion) and electricity (US\$0.2 billion) (China Customs Data, 2008).

Figure A15: Mozambique's Commodity Exports to the World by Value



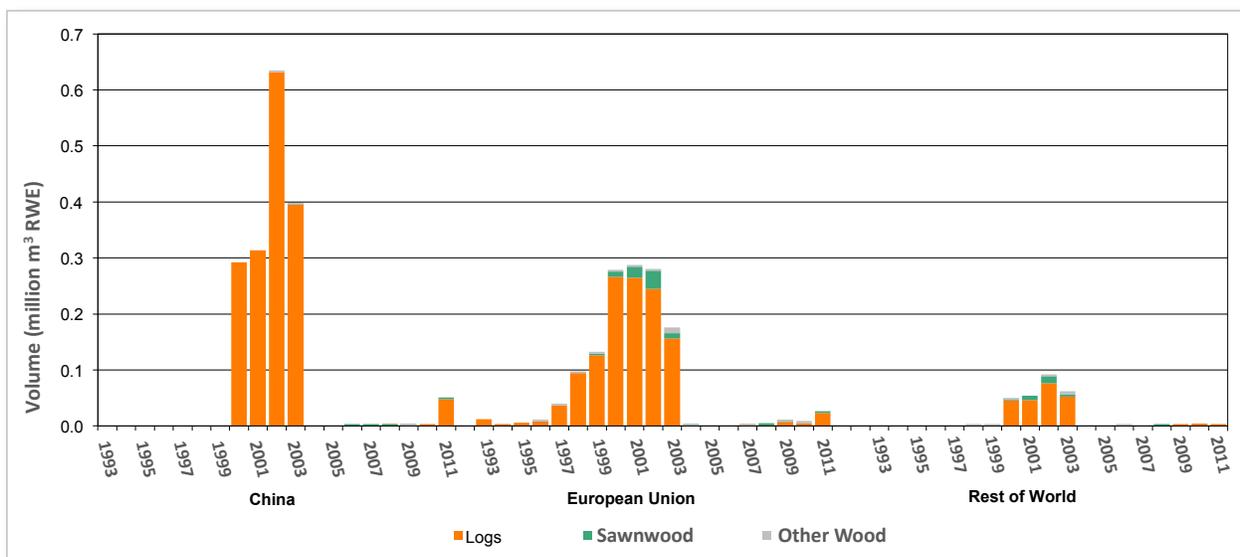
Source: China Customs Statistical Yearbook, Eurostat, World Trade Atlas, and other data, compiled by James Hewitt.

Note: Import value reported by importing countries.

Liberia

From 1999-2002, Liberia's timber exports to China rose faster than any other African nation's, from 0 to 0.6 million m³ RWE in just three years (**Figure A16**). Its exports briefly made the country the sixth greatest exporter of logs to China worldwide. By 2002, one million m³ was exported, with almost 60% going to China and 28% going to the EU (mainly France), though the exact amount is unknown due to poor reporting.

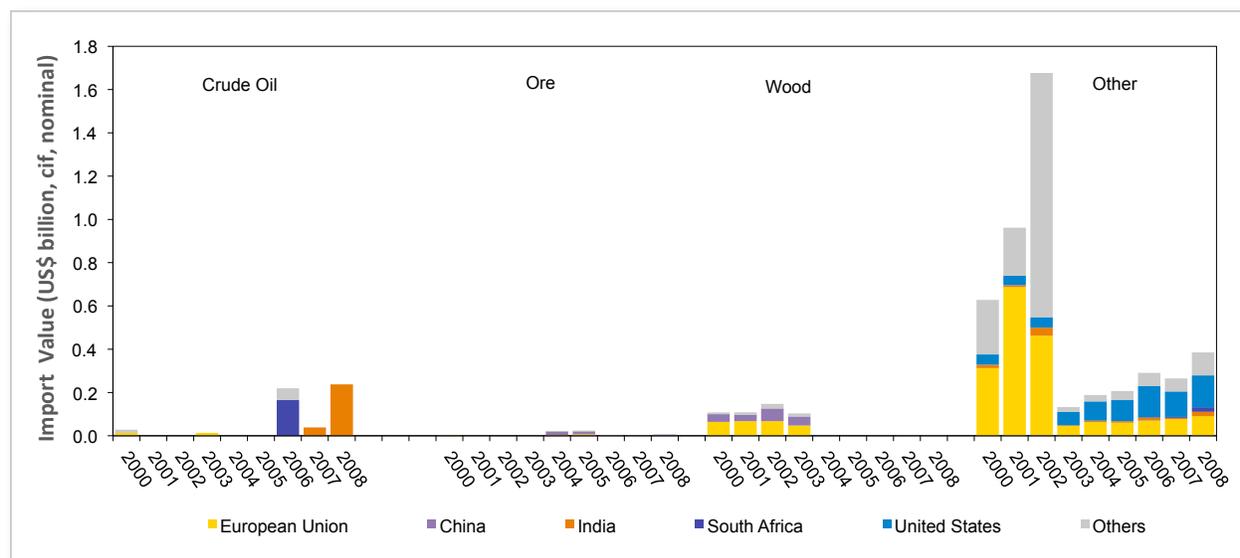
Figure A16: Liberia's Timber Exports by Destination and Type



Source: China Customs Statistical Yearbook, Eurostat, World Trade Atlas, and other data, compiled by James Hewitt.

All exports stopped abruptly at the end of 2003 when the UN Security Council placed sanctions barring the international trade of timber from Liberia. Logging revenues were financing the purchase of weapons used in a brutal civil war, and therefore fueling regional conflict. The period of rapidly expanding exports coincided with this brutal civil conflict. As the Liberian economy foundered, the exploitation of diamonds and timber had created a revenue stream that funded the war. Liberian President Charles Taylor allocated forest concessions to allies in exchange for weapons, while these factions used the profits from exports of this “conflict timber” to purchase arms. The Indonesian Oriental Trading Company (OTC) was the major, and perhaps only, supplier of Liberian logs to China. The OTC Director of Operations in Liberia, Guus Kouwenhoven, aided Taylor with the acquisition of arms in exchange for control over forests. Kouwenhoven was convicted in June 2006 at The Hague and sentenced to eight years of imprisonment (Forest Trends, 2006).

Figure A17: Liberia’s Commodity Exports to the World by Value



Source: UN Comtrade, compiled by James Hewitt.

Note: Import value reported by importing countries.

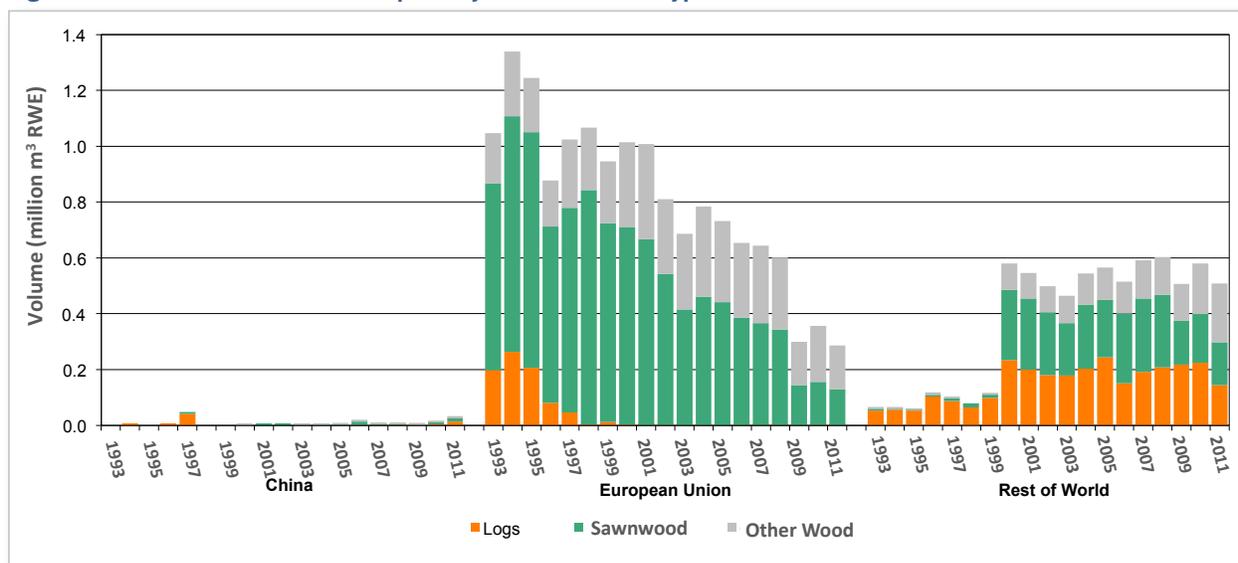
Unable to operate in the midst of the growing war and fearing looting of their equipment, logging companies fled Liberia in 2003 and the U.N sanctions prevented their return once the war ended. The sanctions were lifted in June 2006 after the Government of Liberia instituted a series of regulatory reforms. Early in 2008, industrial logging was set to recommence in Liberia, and small amount of log exports were evident in 2009. By 2011, Liberia exported 0.05 and 0.02 million cubic meters of logs to China and the EU, respectively.

Liberia exports a much higher value of “other” products than it does crude oil, wood, or ore (Figure A17). Prior to 2003, the bulk of exports in this category were boats. Since 2003, exports in the “other” category have primarily been rubber-based products.

Côte d’Ivoire

Until the 1990s, Côte d’Ivoire was one of Africa’s leading exporters of timber. Unsustainable harvesting from commercial timber exploitation and land conversion for agriculture seriously degraded their forests, leading many logging companies to leave and pursue ventures in Cameroon and the Congo Basin.

Figure A18: Côte d'Ivoire's Timber Exports by Destination and Type

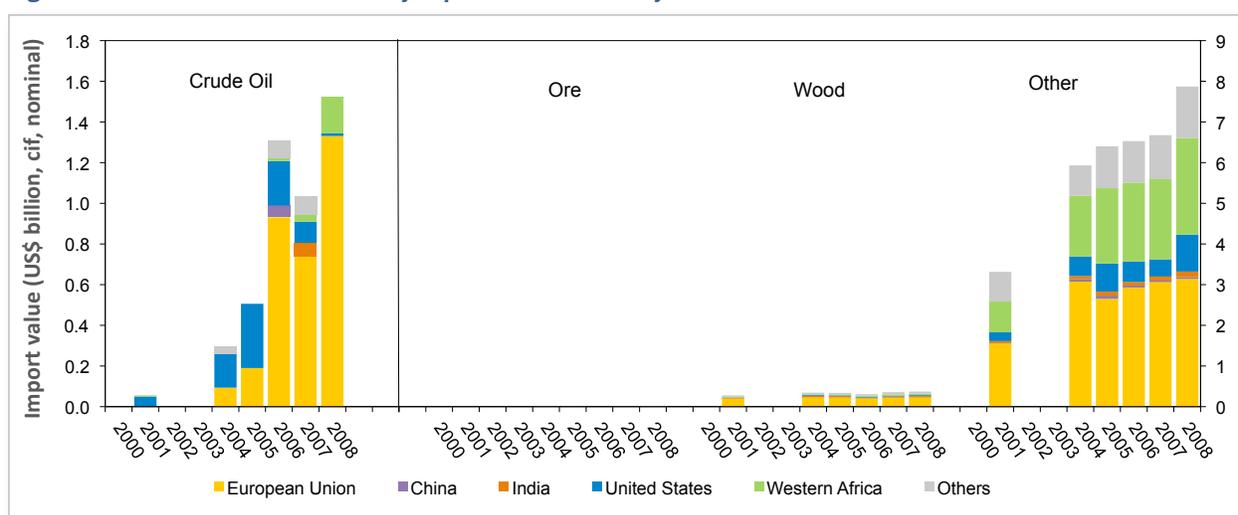


Source: China Customs Statistical Yearbook, Eurostat, World Trade Atlas, and other data, compiled by James Hewitt.

Although Ivory Coast has prohibited the export of tropical logs for many years, China's imports of logs from that country have become substantial since 2011. So-called "Rosewood" (which may or may not legally be rosewood species) accounts for roughly one third of the total. Nonetheless, most of Côte d'Ivoire's exports are sawnwood and veneer, and virtually nothing is exported to China (Figure A18). Exports to the EU have been in steady decline over the past decade, from a peak of 1.34 million m³ RWE in 1994 to 0.29 million m³ RWE in 2011. Within the EU, Italy, and Spain are the major destinations. In the late 1990s, Côte d'Ivoire instigated a ban on non-teak log exports, the effects of which are clearly visible for the EU. Almost all of the nation's teak is destined for India, accounting for the steady flow of log exports to the rest of the world.

Relative to other commodity exports, wood exports amounted to 3.8% of all commodity exports by value in 2008, or US\$300 million (Figure A19). Cocoa exports are the most significant product in the "other" category, with exports totaling US\$2.8 billion in 2008.

Figure A19: Côte d'Ivoire's Commodity Exports to the World by Value

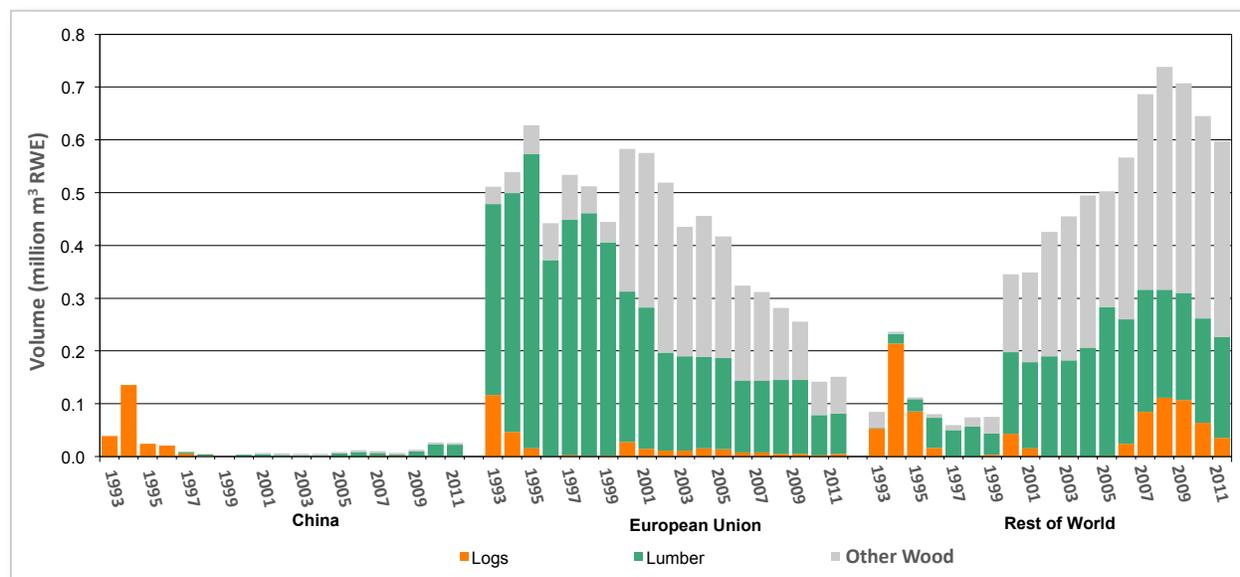


Source: China Customs Statistical Yearbook, Eurostat, World Trade Atlas, and other data, compiled by James Hewitt.

Ghana

Ghana ranks high among African countries in timber export volumes, though its log export ban makes the country unappealing to Chinese markets. Until recently, China has imported little timber from Ghana. When Ghana relaxed this prohibition during the early 1990s, the change prompted such an unsustainable increase in the supply of logs for export (predominantly to China and South Korea) that the ban was re-imposed. China did, however, import large quantities of logs in 1994 while the ban was temporarily lifted (**Figure A20**).

Figure A20: Ghana's Timber Exports by Destination and Type



Source: China Customs Statistical Yearbook, Eurostat, World Trade Atlas, and other data, compiled by James Hewitt.

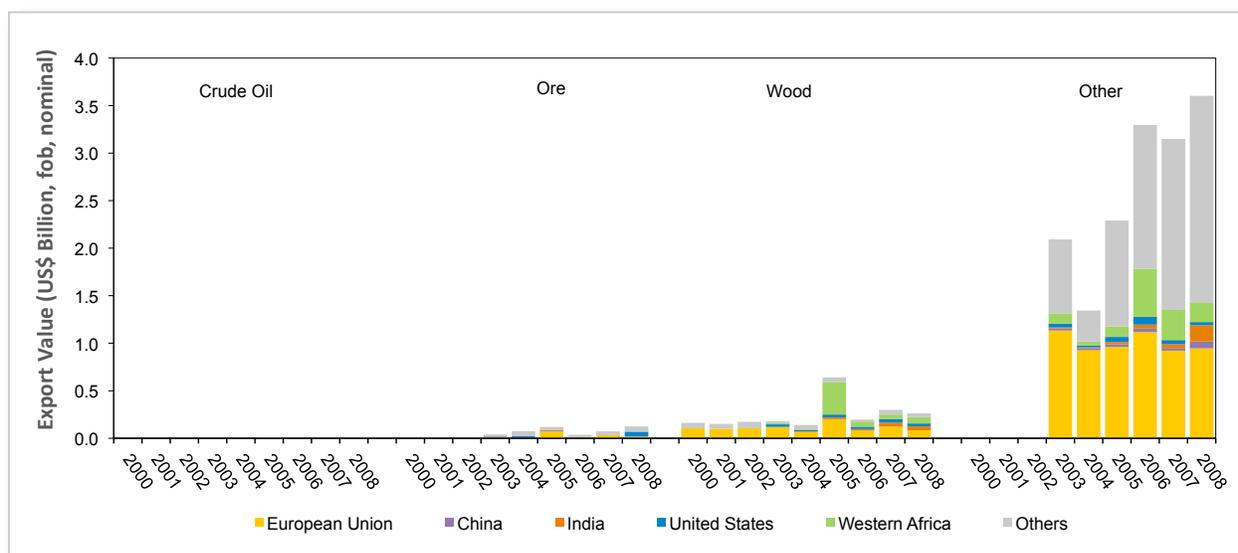
Exports from Ghana have slightly increased since 2000, increasing from 0.93 million m³ RWE to 1.04 million m³ RWE in 2011.

India is the destination for almost all of Ghana's exports of plantation-grown logs, predominantly teak. The USA has become almost insignificant as a destination for Ghana's timber. In the 2000s the proportion of the roundwood equivalent volume of timber exported to the EU from Ghana declined from about 60% to roughly 20%.

An increasing majority of Ghana's exports of timber is destined for Ghana's neighboring countries, particularly in the form of sawnwood and plywood. If cheaper, better quality alternatives are available in the EU and USA (previously Ghana's leading export markets) and/or the risks associated with the products available for export from Ghana deter prospective importers in the EU and USA, these factors might explain at least some of this trend.

Wood exports as a percentage of total commodity exports reached 4.7% or US\$200 million in 2010 (**Figure A21**). The majority of commodity exports in the "other" category include cocoa and gold, which was exported to South Africa.

Figure A21: Ghana's Commodity Exports to the World by Value



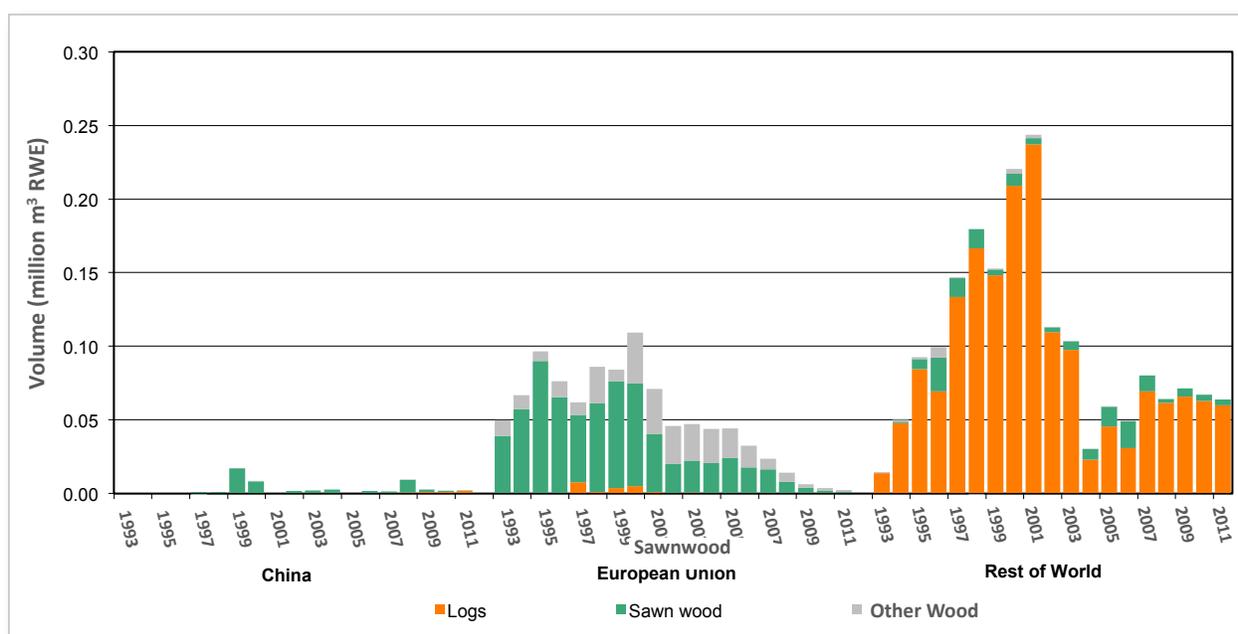
Source: China Customs Statistical Yearbook, Eurostat, World Trade Atlas, and other data, compiled by James Hewitt.

Note: Import value reported by importing countries.

Nigeria

Nigeria exports small volumes averaging 0.1 million m³ RWE of natural forest products, but virtually none are exported to China (Figure A22). Over 70% of these forest products are logs. Despite a log export ban, India imports most of Nigeria's logs, while nearly all sawnwood heads to Italy. Export volumes to Europe, mainly of sawnwood, peaked at just over 1 million m³ RWE in 2000–2001, but have since fallen to almost none by 2011. Over the years, Nigeria has become a net importer of timber, contributing a mere fraction of a percent of Africa's tropical timber exports to the world.

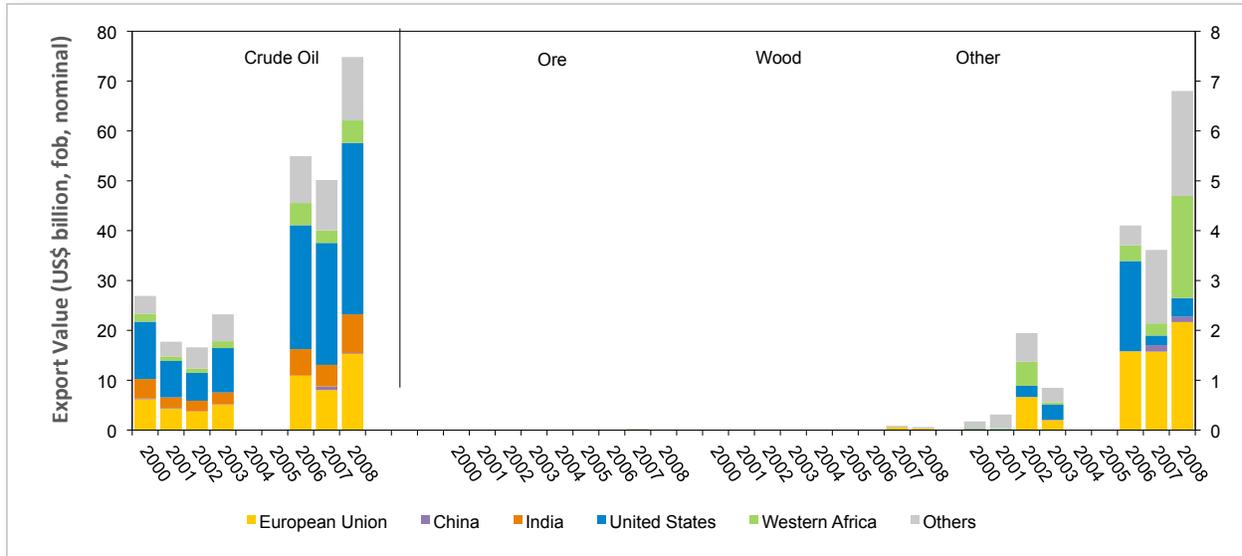
Figure A22: Nigeria's Timber Exports by Destination and Type



Source: China Customs Statistical Yearbook, Eurostat, World Trade Atlas, and other data, compiled by James Hewitt.

Wood is a negligible commodity export for Nigeria, comprising only 0.05% or US\$50 million of total exports in 2010 (Figure A23). Crude oil exports are by far the biggest share of exports by value, worth US\$69 billion.

Figure A23: Nigeria’s Commodity Exports to the World by Value

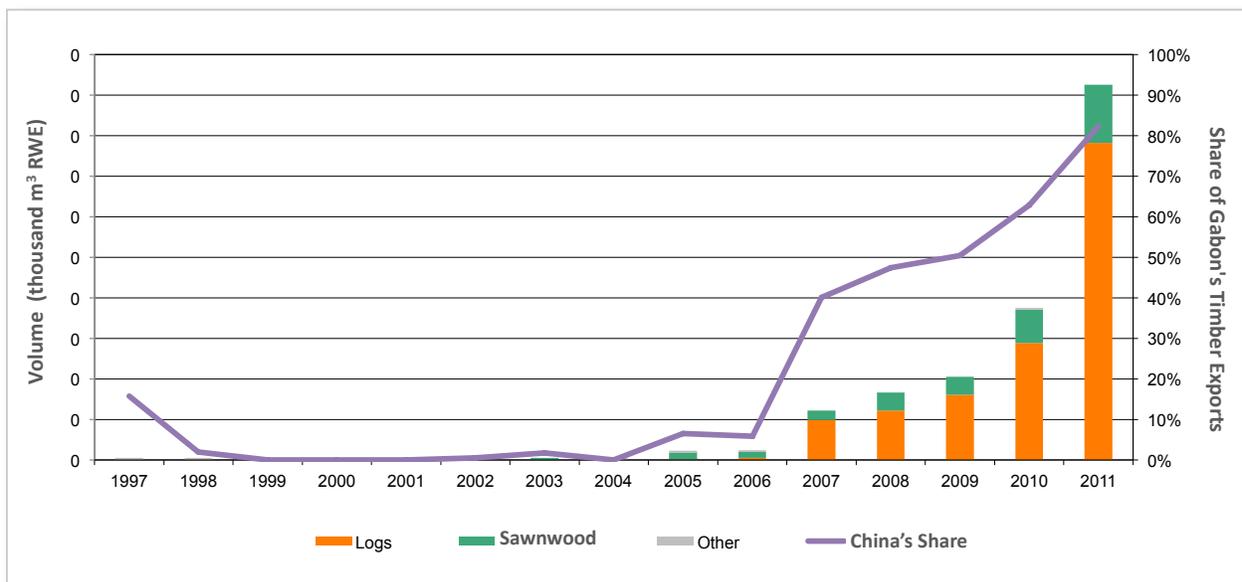


Source: UN Comtrade, compiled by James Hewitt.
 Note: Import value reported by importing countries.

Benin

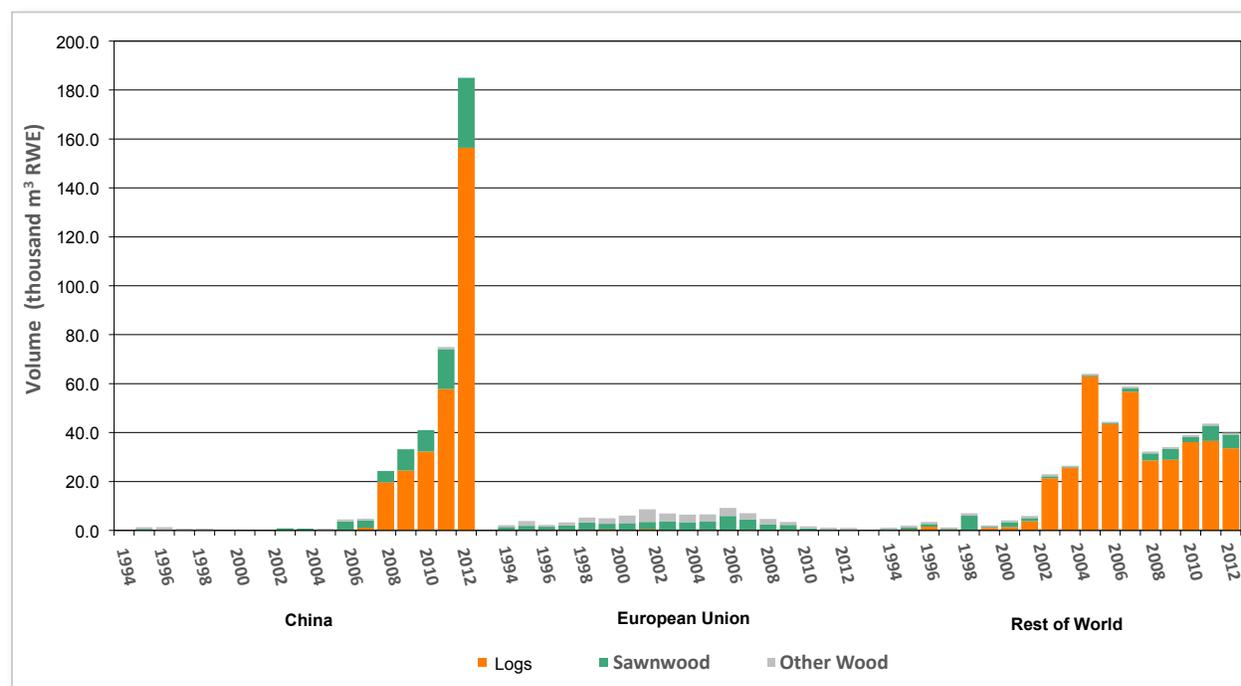
Until recently, Benin did not export substantial quantities of tropical timber — its timber exports comprised plantation-grown teak destined for India. However, as the charts below indicate, China’s imports of tropical logs have rapidly increased since 2011. “Rosewood” comprises a large majority of the total.

Figure A24: China’s Imports of Benin’s Timber by Volume and Type



Source: China Customs Statistical Yearbook, Eurostat, World Trade Atlas, and other data, compiled by Forest Trends.

Figure A25: Benin's Timber Exports by Destination and Type



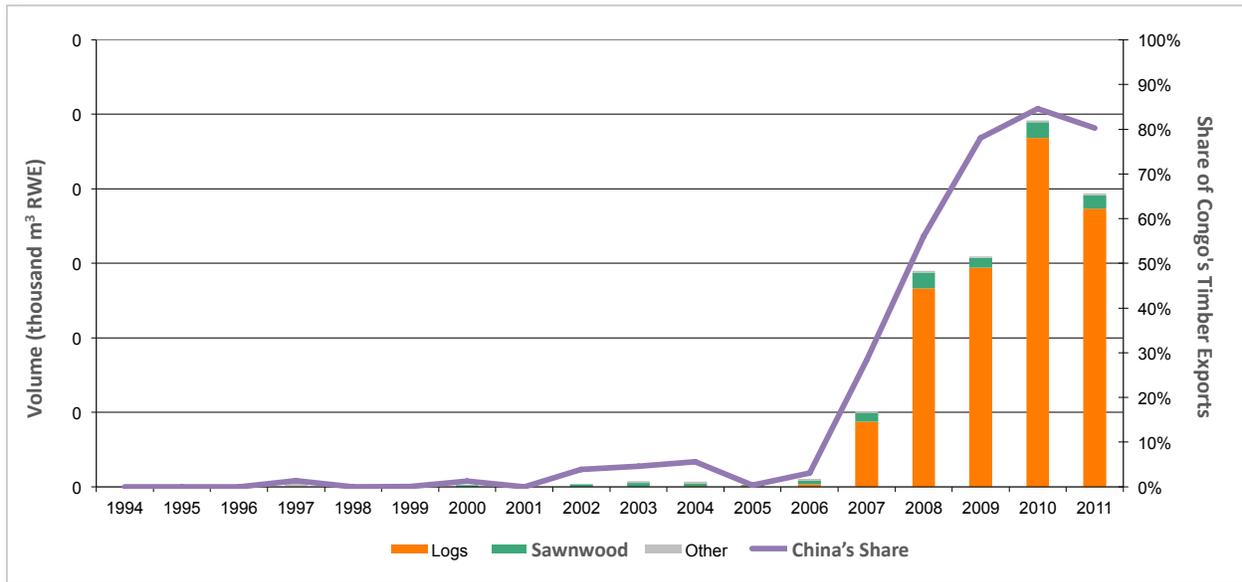
Source: China Customs Statistical Yearbook, Eurostat, and UNComtrade, compiled by James Hewitt.

Togo

China's imports from Togo have been substantial since 2007 and now dominate Togo's exports of tropical logs (**Figure A26**). Europe has not been a major market for Togo's timber and India is the probable destination for almost all of the plantation-grown teak exported from Togo (**Figure A27**).

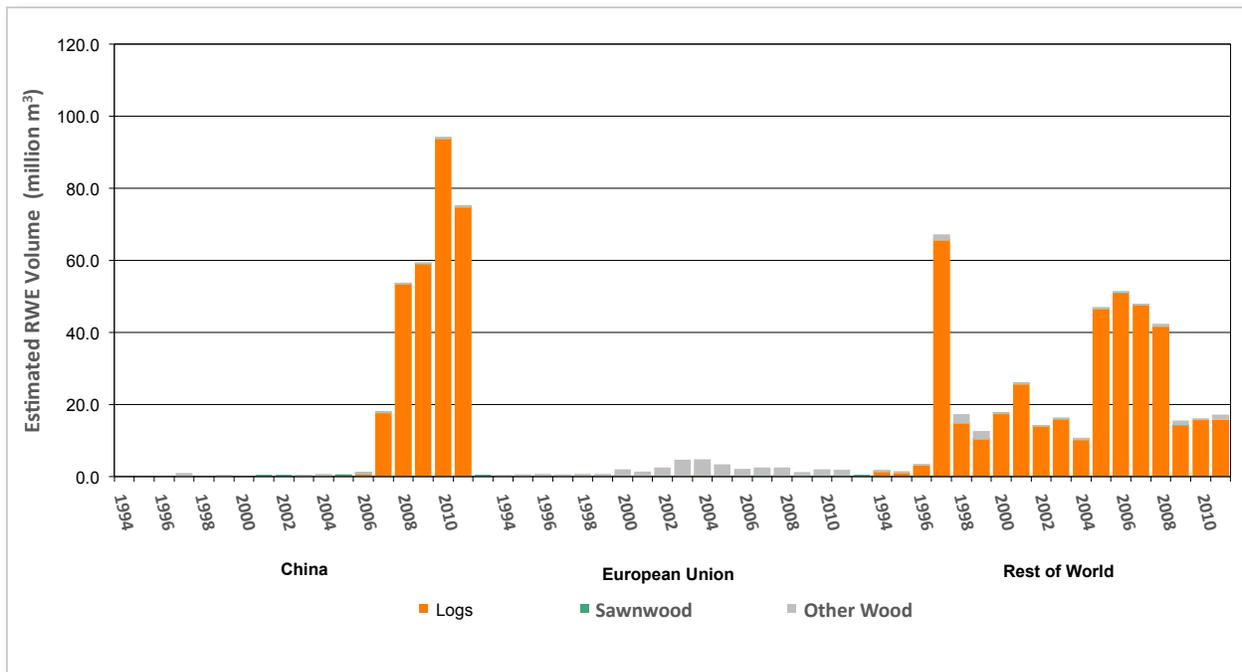
The supply chains for the large volume of logs that Togo (and several other countries that do not have a well-established timber industry) exports to China for the last few years are unclear. In this context, it might be significant that the Chinese diaspora in these countries has greatly expanded or become more powerful during recent years.

Figure A26: China's Imports of Togo's Timber by Volume and Type



Source: China Customs Statistical Yearbook, Eurostat, World Trade Atlas, and other data, compiled by Forest Trends.

Figure A27: Togo's Timber Exports by Destination and Type

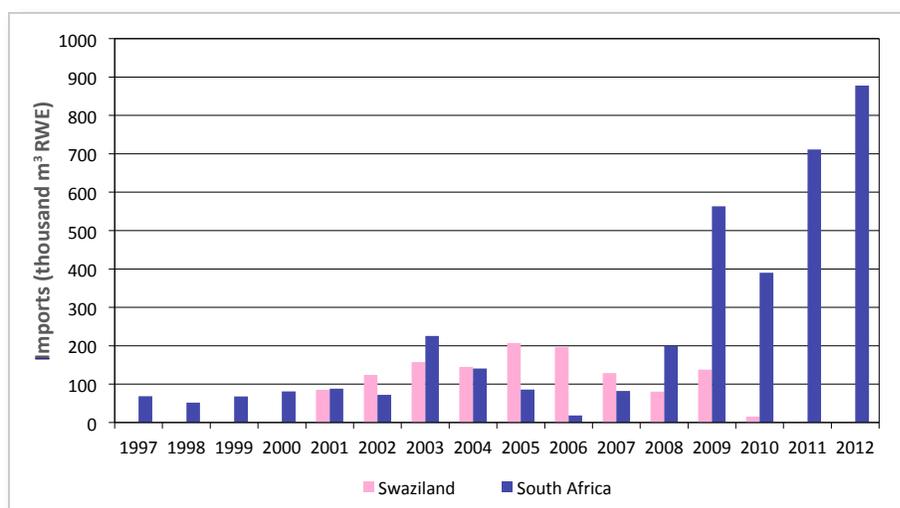


Source: China Customs Statistical Yearbook, Eurostat, and UN Comtrade, compiled by James Hewitt.

China's Pulp and Paper Imports from South Africa

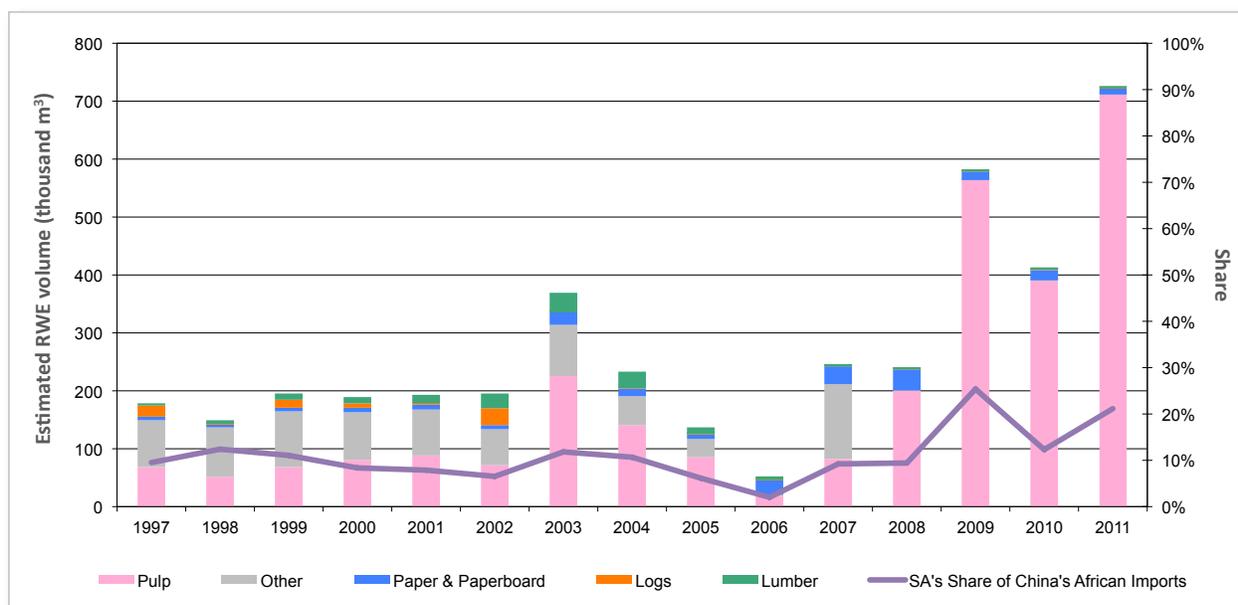
Significant increases in pulp exports from Africa to China have been evident since 2008. In 2012, China's imports of pulp from Africa amounted to 877,700 m³ RWE, more than ten times as much as in 1997. At the same time, paper imports grew slowly, reflecting a strong Chinese paper industry. Swaziland did not report any pulp and paper exports in 2011 or 2012, though it used to be one of the two major African suppliers of wood pulp to China (Figure A28).

Figure A28: China's Pulp Imports from Swaziland and South Africa by Volume, 2012



Source: China Customs Statistical Yearbook.

Figure A29: China's Forest Product Imports from South Africa by Volume and Type



Source: China Customs Statistical Yearbook.

South Africa was Africa's sole exporter of pulp to China until 2001, when Swaziland began to rival South Africa's pulp production, most likely due to plantations. Apart from a surge of exports from South Africa in 2003, Swaziland was the dominant exporter of pulp from 2004 to 2007 and in 2006 exported the majority (91%) of pulp. In 2008, Swaziland's relative export amount declined to 29% and South Africa again became the largest pulp exporter (71%). By 2011, no exports were reported from Swaziland to China, but it likely exports a significant amount of pulp to South Africa before it is exported to China.

China's imports of paper from South Africa shrunk to only 25,000 m³ in 2006 and grew slowly to 36,000 m³ in 2008, but then dropped to merely 11,000 m³ in 2011.

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