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ILLEGAL LOGGING AND ASSOCIATED TRADE IN MYANMAR:

IMPACTS OF GOVERNMENT MEASURES TO ADDRESS ILLEGAL LOGGING

About Forest Trends

Forest Trends works to conserve forests and other ecosystems through the creation and wide adoption of a broad range of environmental finance, markets, and other payment and incentive mechanisms. This report was released by Forest Trends' Forest Policy, Trade, and Finance program, which seeks to create markets for legal forest products, while supporting parallel transformations away from timber and other commodities sourced illegally and unsustainably from forest areas.

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Acronyms

AAC	Annual Allowable Cut
ASEAN	Association of Southeast Asian Nations
BGF	Border Guard Forces
CMRS	Community Monitoring and Reporting System
CoC	Chain of custody
CLFP	Certificate for Legality of Forest Products
CSO	Myanmar Central Statistics Organization
EAO	Ethnic armed organization
EUTR	European Union Timber Regulation
FAO	United Nations Food and Agriculture Organization
FD	Forest Department
FLEGT	Forest Law Enforcement, Governance, and Trade
FY	Fiscal year
GFW	Global Forest Watch
GoC	Government of China
GoI	Government of India
ITTO	International Tropical Timber Organization
KNPLF	Karenni National People's Liberation Front
MAS	Myanmar Agricultural Services
MCS	Myanmar Central Statistics
MEITI	Myanmar Extractive Industries Transparency Initiative
MFPMF	Myanmar Forest Products Merchants Federation
MoC	Ministry of Commerce
MOECAF	Ministry of Environment, Conservation and Forestry
MONREC	Ministry of Natural Resources and Environmental Conservation
MoU	Memorandum of understanding
MTE	Myanma Timber Enterprise
MTMA	Myanmar Timber Merchants Association
m^3	cubic meters
OA	Other Account
NLD	National League for Democracy
NRPC	National Reconciliation and Peace Center
RWE	Roundwood equivalent
SFM	Sustainable forest management
SoE	State-owned economic enterprise
UGoM	Union Government of Myanmar
U.S.	United States

Executive Summary

Commercial logging has been a significant driver of deforestation in Myanmar; the country has lost 27 percent of its forest since 1990. Much of the logging is unreported, if not illegal. This illicit shadow economy poses a clear risk to Myanmar's forests and the millions of citizens that rely on these ecosystems for their lives and livelihoods. But more broadly, it undermines state revenue (and the funding of government services), rule of law, and peacebuilding. Illegal trade also undermines the ability of Myanmar timber products to access more lucrative, but discerning, markets, such as Europe and the U.S.

To that end, the Union Government of Myanmar (UGoM) has taken several measures intended to improve the management of the forestry sector and address illegal logging. Indeed, the manifesto of the ruling National League for Democracy (NLD) includes the recognition that the rate of timber harvest must be reduced.[1]

This report presents an analysis of the effectiveness of these measures, mainly through an examination of publicly available data released by the Union Government through the Myanmar Extractive Industries Transparency Initiative (MEITI) and the International Tropical Timber Organization (ITTO). These government data are compared with trends in timber production and trade over the past six decades, as reported by the UN FAO and Comtrade, and the customs agencies of India and China. This analysis comes with important caveats: there are large discrepancies among sources and the accuracy of reporting by any organization is unclear. However, the data from Myanmar were generated by government, meaning the trends reflect the way the sector is portrayed by the UGoM through its reporting, and presumably, are also used to inform government decision-making.

FINDINGS

According to Forest Trends' analysis, the most important measures taken by the UGoM to assert improved governance of the sector over the last decade are:

- A gradual reduction in the Annual Allowable Cut (AAC) set by the UGoM's Forest Department (since 2000);
- A ban on the export of 1) raw logs and 2) exports, except through the Port of Yangon (since 2014); and,
- A one-year moratorium on logging across the country (and extended to 10 years in Bago Yoma Region); and a ban on non-competitive sales of timber (i.e., requiring auctions instead) by the Myanma Timber Enterprise (MTE—the state-owned enterprise that manages forestry for the UGoM) (since 2016).

While it is difficult to ascribe the impact of any single intervention, the Union Government reports that:

- **Myanmar is logging at an unsustainable rate.** The AAC has been exceeded for decades.

[1] This promise was in the 2015 NLD election manifesto for the 2015 election (ITTO 20:3 2016); for the 2020 election, the NLD vow that "promises we made during the 2015 election are still on-going." (Shein *et al*. 2020)

The actual state of forest management, however, is undoubtedly much worse than government data indicate because:

- **Much of Myanmar's timber production and trade is not included in government reporting.**

The Union Government is failing to capture many sources of logging, especially illegal logging. For example, the UGoM is allowing non-state actors (like Border Guard Forces) to sell timber that was illegally harvested (and may not all be included in official production data reported by the MTE). Even the MTE itself is selling unreported production—for the four years covered by the MEITI forestry publications, the MTE reported sales that were one and a half times greater than the legal supply available. Furthermore, the customs agencies of Myanmar's largest trading partners, India and China, report that cross-border trade has been seven times higher than exports reported by official Union Government agencies.

- **Illegally felled timber continues to be confiscated at high levels.**

Since 2014, almost a million cubic meters (m^3) of illegal wood has been seized. This confiscated wood is permitted to be laundered into the legal supply chain for domestic use – it was even allowed to be exported until 2017.

- **However, the ban on log exports appears to be working.** The ban extends to all logs (except those from plantations), not just confiscated timber.

Prior to the 2014 log export ban, there was a dramatic spike in sales and exports from Myanmar as traders scrambled to get logs out of the country before trade restrictions came into effect. A few years after the ban, officials report almost no exports of logs.

Despite the ban, domestic buyers have not seen any increase in the availability of logs (especially export grade teak logs), and prices remain high, at least at auction.

- **The moratorium on logging also appears to be working.**

During the one year nationwide ban on logging, almost no harvest was officially reported. Despite the fall in reported supply, however, there was no increase in the price of timber sold from the MTE's stockpiles.

It is not clear what else the moratorium has achieved. The ban was lifted after one year (except in the Bago Yoma region, where it will continue for another nine years), without any clear improvements in the governance of the sector.

- **The MTE has failed to auction the best logs, likely leading to massive government losses.**

Rather than auctioning all logs on the open market, the MTE has 1) processed logs themselves; 2) given logs to the private sector as compensation for sub-contracted work; and 3) sold them directly to preferred, private buyers. While the volume of logs that went to the first two categories are unreported (and thus, losses cannot be calculated), Forest Trends has been able to compare the volume of teak logs auctioned with that of the "direct sales." Given the much higher price achieved at auction, and the fact that direct sales accounted for more than 85 percent of the volume in sales during fiscal years 2014-17, Forest Trends calculated that Myanmar may have lost at least US$1.2 billion in these four years alone, simply because the MTE did not auction the logs.

These findings have five major implications:

1. **The Union Government is vastly underreporting production and trade.** Actual harvests are larger than official reports. Thus, **the state of forest management is much worse than government data suggest**. Forestry in Myanmar has long been unsustainable, and this explains why, for example, teak harvests are declining as forests are over harvested.

2. **This underreporting leads to underestimating the true importance of the forestry sector**, which has broader implications for Myanmar's economy. For example, forestry plays a much greater role in exports than official data suggest.

3. **If the Union Government could capture this unreported trade, it would recover much more revenue** than it currently reports from the sector. This revenue could be used to provide essential services to Myanmar's citizens, such as improved education or healthcare.

4. **Because the government is underestimating the importance of the forestry sector, Myanmar may be underinvesting in sustainable forest management.**

5. **Over the past decade, direct log sales have likely cost the citizens of Myanmar billions of U.S. dollars, allowing a select few private buyers to reap windfall profits.** The most immediate way for the Union Government to increase revenue and address this problem would be for the MTE to auction all production, rather than selling the best quality logs to preferred, private buyers at prices that are vastly below market.

In summary, the evidence published by the Union Government is mixed. There is evidence that government action can impact the sector to reduce unsustainable production and trade. But there is also clear evidence that the government has likely lost billions of U.S. dollars in revenue and allowed the unsustainable exploitation of the nation's forests.

Poor reporting by the Union Government undermines efforts to draw further conclusions. Discrepancies among and within agencies make it impossible to gauge the credibility of reporting. To address these deficiencies, the Union Government should continue to support the Myanmar Extractive Industries Transparency Initiative to publish data on Myanmar's timber sector as timely and accurately as possible.

What is also clear, however, is that the overall picture is a forestry sector rife with unreported activity, foregone government revenue, illegal cross-border trade, and unsustainable exploitation, all of which pose a significant risk to the development of Myanmar's economy, and to peacebuilding itself. It is recommended that the National League for Democracy use their second term to focus on the effective reform of the forestry sector, beginning with better, more transparent information to inform decision-making and hold officials, and cronies, accountable.

1 Introduction

Since 2000, deforestation in Myanmar has been increasing at a rate that is amongst the fastest in the world (FAO 2020).[2] At least one-third of this loss was driven directly by logging (Global Forest Watch 2020). Yet as forest loss has increased, the economic importance of forestry has been declining (MEITI 2020). The contribution of the sector dropped from 10 percent of total government revenue reported in fiscal year 2014 (FY14) to less than 2.5 percent in FY17 (MEITI 2019; MEITI 2020).[3] As analyzed in this report, one of the possible explanations for this apparent contradiction is that much logging appears to be unreported by the Union Government of Myanmar (UGoM), if not illegal.

In 2013, Barber Cho, Secretary of the Myanmar Timber Merchants Association (MTMA), estimated that "illegally harvested timber leaving the country via overland routes could be worth over US$200 million annually and that the extent of the problem has been made worse by an escalation of the conflict between government forces and ethnic groups in the Shan and Kachin states…[Timber is] being 'legalised' through the payment of local taxes where the logs will be processed. Analysts who have visited the area say that, in some cases, mountain sides have been almost totally denuded by illegal operators" (ITTO 17:9 2013). Such illegal timber undercuts the price of legal exports (ITTO 17:7 2013).

To address this illegality, the UGoM has taken measures to improve the forestry sector's governance, especially since the National League for Democracy (NLD) came to power in 2016. These measures include initiatives like a ban on the export of raw logs and a one-year moratorium on logging. This report examines the patterns in timber production and trade over the past 15 years to determine whether these measures have had any measurable impact on the sector. Section 2 lays out the trends in forest cover, timber production, and trade. Section 3 briefly reviews the major forest governance initiatives taken during this period (Text Box 1). Section 4 examines the evidence for any impact(s) of these measures on the patterns outlined in Section 2. The report ends with a discussion of the implications for both Myanmar's forests and its forestry sector.

A consequence of widespread illegal activities, as well as poor government reporting, is that the UGoM figures are vast underestimations of the real, albeit illicit, importance of the forestry sector. This underestimation is likely causing the government to underinvest in the sustainable management of the sector. If the UGoM does not address this shadow economy, then ongoing illegal trade poses a risk not only to Myanmar's forests and the millions of citizens that rely on these ecosystems, but also undermines state revenue, the funding of government services, accountability, rule of law, and peacebuilding.

[2] Myanmar ranks among the top 10 countries worldwide for forest loss, and in the top three of these with the highest rate of forest loss.
[3] According to MEITI reporting, in FY14, the sector contributed 288.3 billion Myanmar kyat (b MMK) directly to government and the MTE retained 408.4 b MMK in their own Other Account (OA), whereas in FY17, the sector contributed only 134.4 b MMK to government and 90.8 b MMK to the MTE OA.

1.1 Data Sources

These analyses focus on publicly available data provided by the Union Government through the Ministry of Natural Resources and Environmental Conservation (MONREC[4]), its Forest Department (FD), and its Myanma Timber Enterprise (MTE), a state-owned economic enterprise (SoE) that controls commercial forestry for the UGoM. In addition to official reporting, MONREC FD/MTE contribute data to publications by the Myanmar Extractive Industries Transparency Initiative (MEITI) and the International Tropical Timber Organization (ITTO). The analyses in this report compare the trends reported by the UGoM with trends in timber production and trade over the past six decades as reported by the United Nations Food & Agriculture Organisation (UN FAO) and the UN's International Trade Statistics Database (Comtrade), as well as the customs agencies of India and China. Analyzing these sources and comparing Myanmar's export data to import country data helps determine the extent of the shadow economy driven by the illegal timber trade in Myanmar.

1.1.1 Caveats

Given the state of available data, these analyses come with important caveats: there are large discrepancies among these data sources, and the accuracy of reporting by any single organization is unclear. However, as official government data, the trends reflect the way the sector is portrayed by the UGoM through its own reporting, and presumably, these are the data used to inform government decision-making.

Regardless, it remains difficult to ascertain the impact of any individual intervention because the UGoM pursued reforms across many policies at the same time, especially after the NLD came to power. Some of the interventions were ad hoc, often in response to international pressure. International actions raise a further source of potential conflation. Over the last decade, many consumer countries passed domestic legislation to ensure only verified legal timber imports: sanctions were placed on Myanmar during the military dictatorship and were only gradually lifted and actions were taken by China and India to address the illegal cross-border timber trade. Furthermore, the forestry sector is affected by macroeconomic trends, like the depreciation of the kyat (ITTO 19:11 2015),[5] fluctuations in the price of timber, and the cost of shipping. While all of these issues likely impact the sector, it may be that some government interventions were sufficiently powerful to detect an impact in the patterns of production and trade.

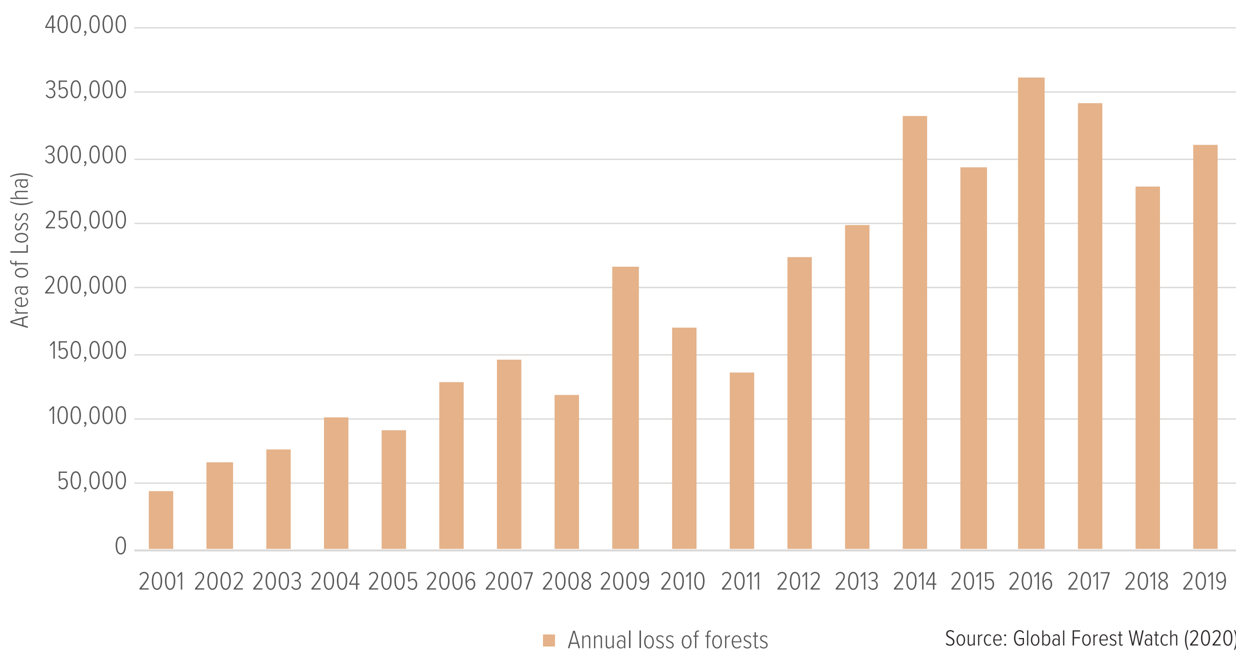
[4] Formerly known as Ministry of Environment, Conservation and Forestry (MOECAF). Name changed in 2011.
[5] As reported in ITTO 19:11 2015 "[t]he exchange rate against the dollar has fallen from MMK 1230 by June 2015. The kyat is currently 1,376.

2 Patterns of Forest Cover, Timber Production, and Trade

This section examines patterns of deforestation, timber production, sales, and exports during the NLD's first term, as well as the ten years prior. It compares UGoM reporting with other sources that try to estimate the entire commercial harvest, both official and unofficial. Unlike the UGoM data, these other sources encompass the use of forest products by industry throughout Myanmar, including regions not currently reported on by the Union Government, such as areas under control of ethnic armed organizations (EAOs). These other sources also include small and medium enterprises, which are often ignored in official government trade data. Importantly, they estimate the amount of wood used by industry in the illicit, shadow economy.

More information on each issue can be found in the appendices.

Figure 1 | Annual loss of forests in Myanmar



Source: Global Forest Watch (2020).

2.1 Forest Cover

Myanmar's almost 29 million hectares (ha) of forest are home to one of the world's 36 hotspots of biodiversity (Conservation International 2020),[6] as well as much of the remaining patches of contiguous natural forests in peninsular Southeast Asia. Despite this importance, 27 percent of Myanmar's forests, or 10.7 million ha, was cleared between 1990 and 2020. Since 2000, the rate has been accelerating (Figure 1) even as the

[6] Hotspots are the 36 threatened areas that comprise 2.4 percent of the Earth's land, yet contain half of all plant and animal species.

UGoM put in place several initiatives to stem the deforestation, including a logging moratorium, reductions in the Annual Allowable Cut (AAC) for industrial forestry, and trade bans (see Sections 3 & 4).

According to Global Forest Watch (GFW), at least one-third of this deforestation was driven directly by logging (Global Forest Watch 2020). Another study found that "[i]nside forest reserves, excessive timber extraction primarily of teak [*Tectona grandis Lamiaceae*] but presumably also other high value species seems to be the major underlying driver of forest degradation" (Treue *et al*. 2016).

2.2 Economic Importance of Forestry

Logging has long been an important source of revenue for the Union Government: the timber sector reportedly fell from 10 percent of government revenue in FY14 to 2.5 percent in FY17 (MEITI 2020).[7] Forestry's official share of exports dropped from 59 percent of merchandise in 1990 (Lebedys and Li 2014) to 0.6 percent by 2017 (MEITI 2020).

2.3 Patterns of Timber Production

2.3.1 Discrepancies in Union Government reporting of production volumes

Over the past 12 years to FY17, the MTE reported production of 9.26 million cubic meters (m^3) of timber, with teak comprising just over 15 percent of this production (Figure 2). However, as discussed in Appendix 1, the accuracy of this data is questionable because there are major discrepancies in production reported by the different agencies of the UGoM, including both the MONREC FD and the Myanmar Central Statistics Organization (CSO). There are even unexplained discrepancies within reporting by the MTE itself. For example, in September 2017, the MTE reported that c.16.7 million m^3 was harvested between 1990-2016 (ITTO 21:18 2017). One year later, the MTE reported that almost exactly the same amount of timber was harvested from 2008 to 2017 (ITTO 22:19 2018). The latter period excludes 18 years from the former report's study period, yet they report almost the same harvest volume – presumably both reports cannot be correct.

While there were discrepancies in reporting, all UGoM sources reported virtually no production for FY16. As will be discussed in Section 4, the halt in production in 2016 coincides with the UGoM's one-year moratorium on logging.

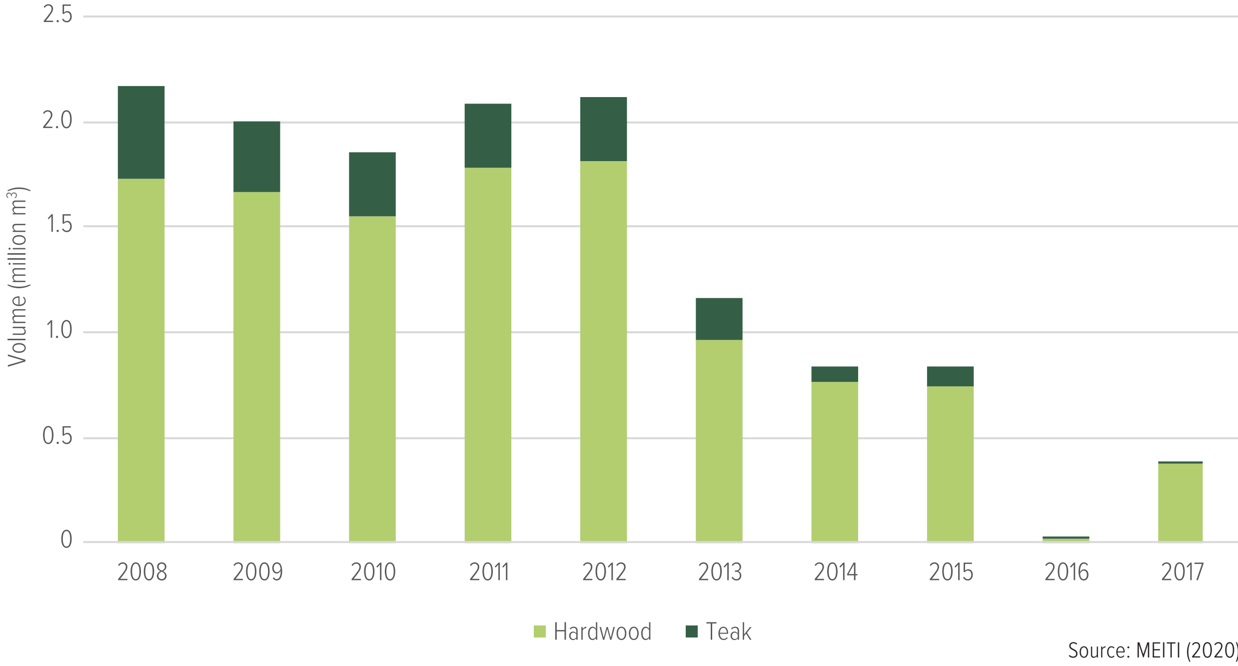
2.3.2 Discrepancy with other official sources of production data

The discrepancies in UGoM data are dwarfed, however, by the difference between Union Government data and data reported by international bodies (see also Appendix 2). Since 1960, UN FAO has reported almost twice the volume of industrial roundwood production as the UGoM (208.9 million m^3 vs. 106.4 million m^3, respectively; Figure 3). Moreover, unlike the Union Government, the FAO reported that industrial roundwood production continued throughout the 2016-17 moratorium period.

A caveat with the FAO data: they do not measure production for Myanmar. Instead they note: "FAO data based on imputation methodology." Despite this, the FAO's industrial roundwood data for Myanmar appears reasonable, as it represents about one third lower production than the per capita average for the rest of Southeast Asia (World Bank 2020a).[8]

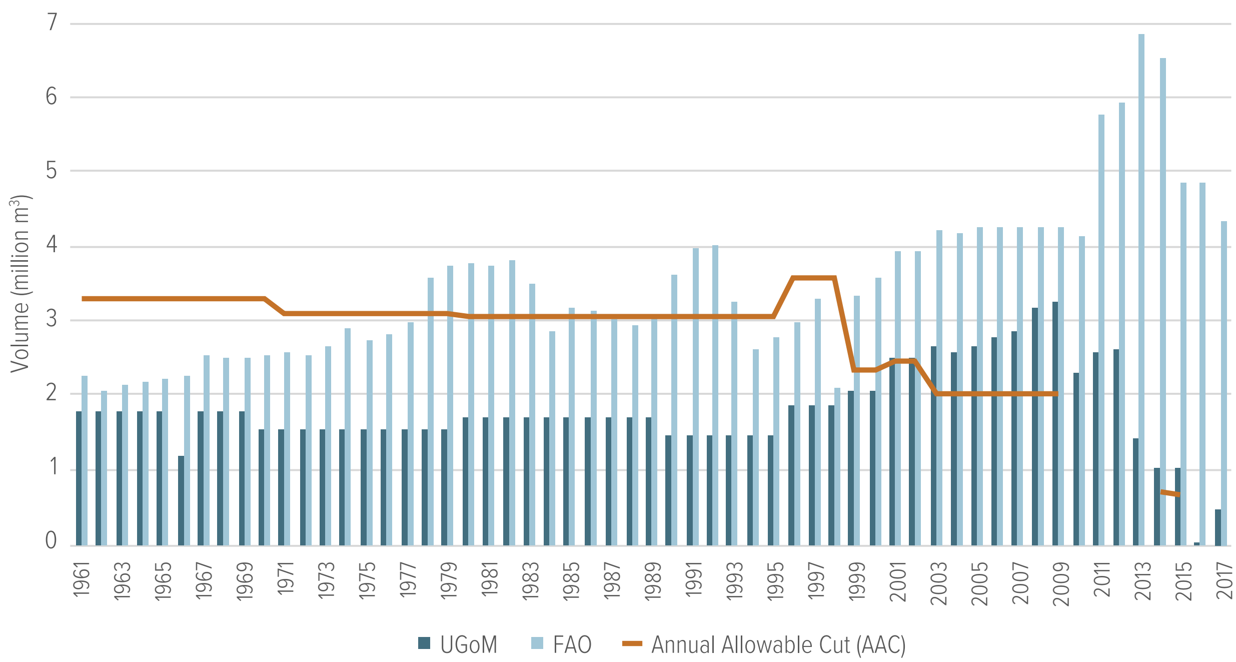
[7] Fiscal year was April 1-March 31, until 2018, when it was changed to Oct 1-Sept 31.
[8] Based on FAOSTAT (2020) data compiled by the World Bank for 2015, consumption in Southeast Asia was approximately 0.16 m^3 per capita industrial roundwood production (excluding fuelwood).

Figure 2 | Timber production, as reported by the Myanma Timber Enterprise *(Hardwoods are represented by light green and teak by dark green)*



Source: MEITI (2020).

Figure 3 | Myanmar Forest Department's Annual Allowable Cut *(AAC; million cubic meters)* **compared to Myanma Timber Enterprise's reported production of timber and FAO's estimated production of industrial roundwood**



Source: Treue *et al.* (2016) and FAOSTAT (2020). Compiled by Forest Trends.

2.3.3 Sustainability of timber production

Around 2000, the MONREC Forest Department reduced the Annual Allowable Cut (AAC), but both FAO and UGoM report that harvesting exceeded the AAC. This over-harvesting is unlikely to have been distributed evenly across Myanmar. Ongoing armed conflict has limited official harvesting by the MTE in many areas, causing some forest areas to suffer much higher levels of overextraction than others. For example, the vast majority (over 60 percent) of logging now reported by the MTE is from forest rich Sagaing Region (MEITI 2019a; MEITI 2019b; MEITI 2020).

Teak harvesting consistently exceeded its AAC during the 1980s (Appendix 1). The annual harvest of teak has reportedly declined since 2014 (Figure 2; Appendix 1). It is likely that this decrease has been driven by a lack of commercially available teak due to past over-harvesting (i.e., many areas are facing commercial extinction), rather than a real move toward sustainability.

2.4 Patterns of Sales

2.4.1 Discrepancies Sn Union Government reporting of sales of primary forest products

Over the past 12 years, the MTE reported US$5.4 billion in sales[9] (Figure 4), which translates to sales prices[10] of c.US$270 per m^3. The MTE has reported a continual decline in sales since 2013 to less than US$140 million in FY17 (ITTO 22:19 2018).

Similar to the discrepancies in the reporting of production mentioned above (Section 2.3.1, Appendix 1), the MTE is responsible for discrepant sales reporting as well. To the MEITI, the MTE reported sales of more than US$1.8 billion between FY14-17, at least US$812 million more than the MTE reported to the ITTO for the same period. These discrepancies undermine confidence in the accuracy of the UGoM's reporting of revenue from its timber sales.

2.4.2 Discrepancies in MTE reporting of profit

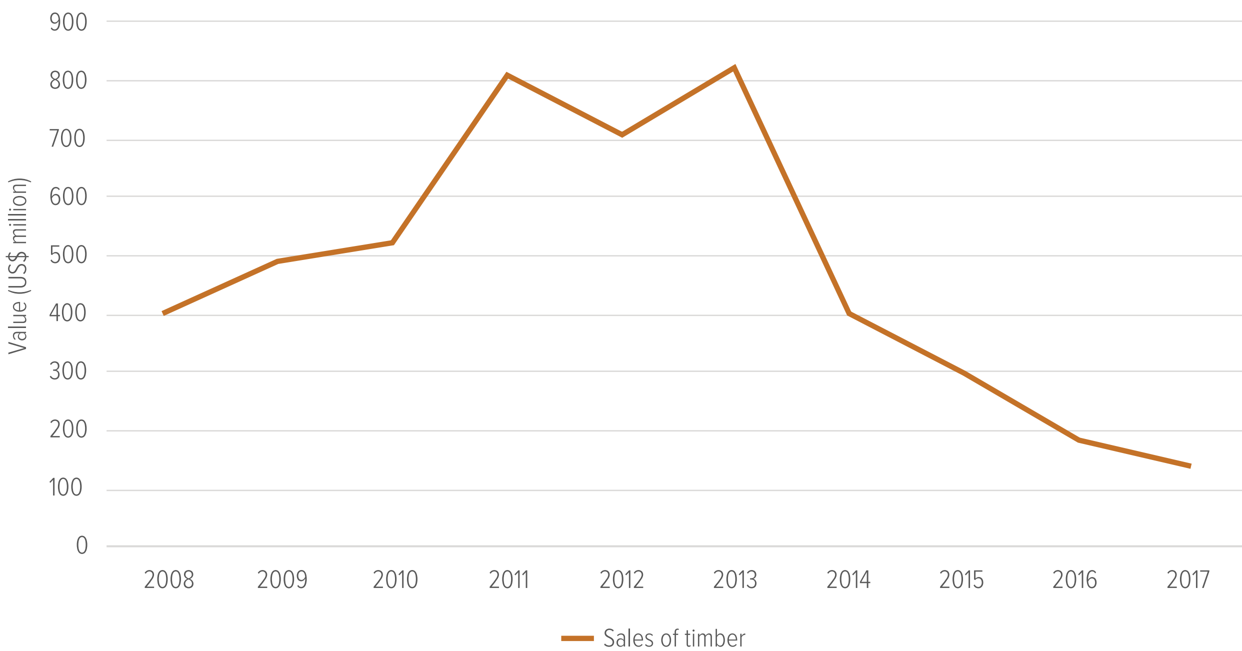
The MTE reported profit levels that are inconsistent, even nonsensical. For example, to the MEITI for FY14 and 15, the MTE reported profits of US$995 million on sales that were reportedly only US$698 million.[11] To add to the confusion, the amount of commercial sales tax reported by the MTE (330 billion MMK) implies gross sales[12] of more than US$6.1 billion, but over the same four years, the MTE reported sales of only US$1.8 billion.[13]

2.4.3 Discrepancies between legal supply and sales

The MTE's reporting of the volume of logs sold shows an additional glaring discrepancy. Between FY14-17, the MTE reported volumes of sales of teak logs that were one and a half times more than the supply

[9] All values in this report, unless otherwise noted, are in US$ and they are not adjusted for inflation.
[10] Between FY08-FY17 only, when production data has been reported by MONREC. For FY18 (+mini) and FY19, MONREC has only reported sales data.
[11] These values were revised in the FY16 & 17 MEITI reports, and profits were reduced to only $350 million, but no explanation for the restatement of profits was given.
[12] Commercial sales tax for timber is five percent of gross sales.
[13] The MTE does not explain the difference in sales reported vs. sales implied by the commercial sales tax reportedly paid.

Figure 4 | Sales of timber, as reported by the Myanma Timber Enterprise *(US$ million, unadjusted for inflation)*



Source: ITTO (22:19 2018), MEITI (2020), and MONREC (2020). Compiled by Forest Trends.

reportedly available (i.e., combined, the volumes of production, confiscations, and stockpiles were lower than the volume of sales) (Forest Trends 2019; Forest Trends 2020b). Presumably, the MTE laundered unreported, if not illegal, logs into their legal supply chain. The MTE does not explain the source of the unaccounted volumes that filled the gaps in supply each year.

2.5 Confiscations and a Lack of Penalty

In addition to the MTE's laundering of unreported wood, another major indication that official reporting understates actual harvest levels is that the UGoM's Forest Department (FD) continues to make a large amount of seizures. Overall, the FD has reported more than 550,000 hoppus tons[14] of timber seizures since 2014 (Appendix 4). Between FY14-17, the FD reported confiscating illegal timber equivalent to 39 percent of the MTE's reported teak production and 9 percent of hardwood production (MEITI 2019a; MEITI 2019b; MEITI 2020). Despite the substantial seizures, no fines were reportedly collected.

The FD did, however, report that less than US$90,000 was received in income from the sale of the timber confiscated between FY14-17, and less than US$2.4 million from the sale of seized forest products. However, it is important to note that this volume of teak would be worth fifty times more (over US$150 million) if it had been sold at auction by the MTE (see Section 4.1.4). This represents a loss in revenue for the Union

[14] Hoppus ton is a unit of measurement unique to the Myanmar forestry sector; 1 hoppus ton = 1.8 m^3.

Government and a windfall for whoever was able to buy the teak at below market rates. It is possible that exporters may have had difficulty finding a market for the confiscated teak in countries such as the EU and the U.S., where legislation requires all imports to be "legal."

2.6 Export Patterns of Primary Forest Products

2.6.1 Discrepancies in Union Government reporting of exports

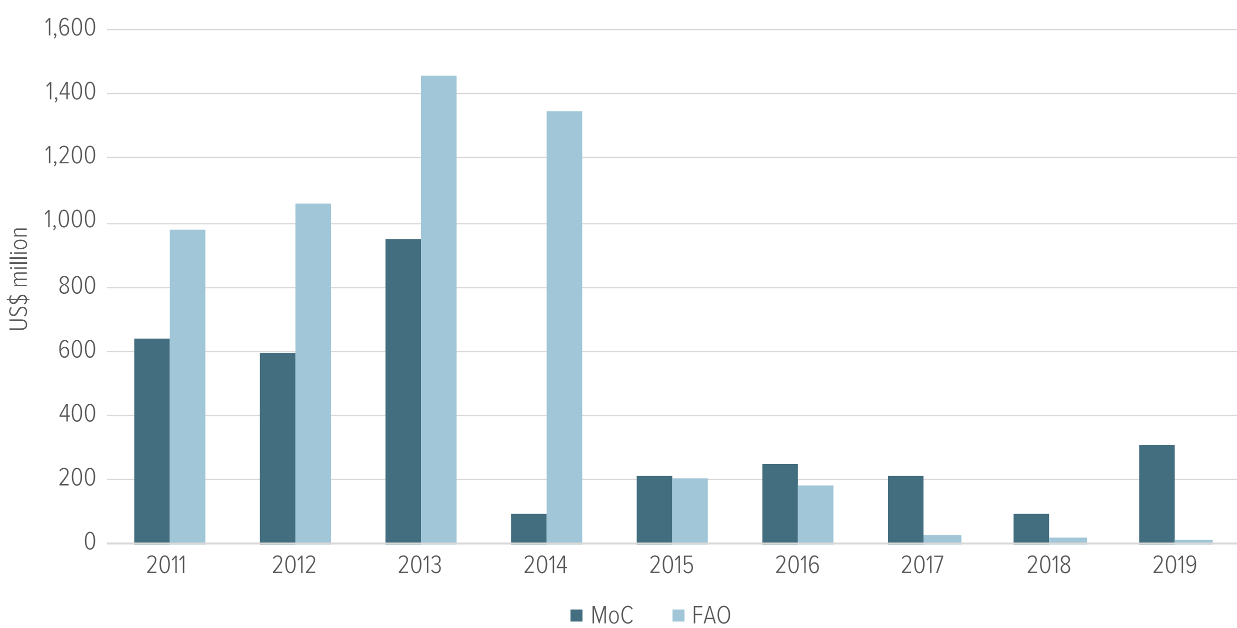
Between FY11-19, the UGoM's Ministry of Commerce (MoC) reported almost US$3.4 billion in exports of forest products (logs and primary processed timber products (Figure 5)) (MEITI 2020).[15] Appendix 3 breaks down these exports by country of import.

Again, discrepancies undermine the accuracy of Union Government reporting. For example, for FY14-17, the MTE reported to the MEITI US$351 million in exports, whereas the MoC reported $766 million in exports for the same period (MEITI 2020).

2.6.2 Comparison with other official sources of sales data

While MoC reported US$3.4 billion, the FAO reported more than US$5 billion in exports, or almost one and a half times more than the MoC during the same period (Figure 5; Appendix 3 details FAO reporting

Figure 5 | Exports of forest products from Myanmar, as reported by the Union Government and the UN FAO
(US$ million, unadjusted for inflation)



Source: ITTO (22:19 2018), MEITI (2020), and MONREC (2020). Compiled by Forest Trends.

[15] Reporting to the MEITI (2020; Figure 4) include exports of: rough sawn; veneer/layers, plywood, finished products, scantlings, S4S, and finished products.

of exports over the past 60 years, totaling more than 43 million m^3, worth more than US$13 billion). Since 2017, however, the pattern has reversed, and the MoC has reported almost ten times the exports as the FAO.

Despite the discrepancies, both the UGoM and FAO report a dramatic drop in exports around the time of the log export ban (Figure 5).

2.6.3 Evidence of non-state actors involved in logging and trade

One explanation for the FAO historically reporting higher exports levels is that they include operations unreported by the Union Government, such as illegal logging and trade run by non-state actors, including so-called "Border Guard Force" affiliated with the Myanmar National Army, the Tatmadaw.[16] In addition to confiscations of illegal logging reported by the Union Government (see Section 2.5, above; Appendix 4), local media report evidence of illegal logs being legalized by local government after the fact. For example, in 2018, the "Karenni State government is officially permitting 10,000 tons of timber to be sold after being harvested illegally from the eastern bank of the Salween River...cut from lands controlled by armed group[s]" (Myar 2019). The volume of this one deal is not trivial; it is equal to about one quarter of all the teak reportedly auctioned by the MTE that same year. In the past, the Union Government would accept timber from conflict areas, classifying it under "modified procedures," but the MTE informed Forest Trends that this is no longer happening.

2.6.4 Evidence of smuggling

Another explanation for the greater reporting by FAO is that their estimates include the high levels of cross-border timber smuggling. For example, for FY14-17, the UGoM reported US$228 million in exports to India and US$56 million to China, the number one and two trading partners over this period, respectively (MEITI 2019a; MEITI 2019b; MEITI 2020). FAO, in contrast, reported almost seven times more imports to these two countries, US$760 million and US$1.2 billion, respectively. Like FAO, the Chinese government themselves reported more than $1.1 billion in imports from Myanmar. If India and China trade were added to the official Union Government trade statistics, then exports for FY 14-17 would be 570 percent larger.

Appendix 3 describes these trends in more detail.

[16] For example, "the Karenni National People's Liberation Front—known as the Karenni Border Guard Force—produced 5,000 tons of timber," (Myar 2019).

3 Evidence of the Impact of Measures to Address Illegal Logging and Trade

Prior to the landslide election of the National League for Democracy (NLD) in 2015, Treue *et al*. (2016) concluded that the failure of the Forest Department (FD) to fulfil its primary responsibility and control illegal logging was driven by a number of "underlying constraints:"

1. "Systematic 'revenue-target' driven over-extraction at the orders of successive central governments… [S]ubstantial illicit practices as well as high wastage have occurred under political favouritism in relation to the MTE and 'crony' subcontractor companies;
2. "Expansion of agriculture and 'land grab' [by] agri-business;
3. "A disempowered and somewhat demoralised FD with inadequate staffing, monitoring capacity, enforcement powers, and inadequate salary necessitating petty corruption;
4. "Unregulated and partly criminalised domestic timber and wood extraction without an effective management or regulatory regime;
5. "Insecure land and tree tenure for local people, marginalising civil society and undermining incentives to conserve, protect and plant trees, and to work with the FD […]"; and
6. "A conflict economy in many upland areas bordering neighbouring countries provoked and maintained by the Tatmadaw Union Military, allowing them to indulge in illegal timber trading and taxation (amongst other sectors) for personal gain."

Despite these challenges, the UGoM has reported that, since 2004, it has confiscated almost one million m^3 of illicit timber (Appendix 4), arrested more than 30,000 individuals, including 300 foreigners (mainly Chinese), and seized more than 11,000 pieces of logging equipment and at least 1,163 chainsaws.

In addition to these enforcement activities, the UGoM have taken a number of measures to improve governance of the forestry sector and reduce the amount of illegal logging and other corrupt activities (Text Box 1). This report primarily evaluates the impact of the major initiatives (Figure 6) identified in the most recent World Bank Country Forest Note (World Bank 2020b):

- The ban on the export of raw logs that started April 1, 2014, and the ban on other timber exports (except through the port of Yangon);
    - The first aimed to increase the domestic processing industry's access to raw material (logs); the second ban aimed to increase the efficiency of enforcement by preventing cross-border trade through everywhere but Yangon;
- The one-year moratorium on logging that started May 1, 2016, which continues for another nine years in the Bago Yoma region;
    - The most basic aim of a moratorium is to stop production (the MTE mainly relied on the sale of stockpiled teak and hardwood logs during this period). But it is not clear what else the UGoM hoped

to achieve. If better governance was the aim, they did not have any criteria that had to be achieved before the ban was lifted; the moratorium was simply time-bound (Jenkins and Blundell 2017).

- The reduction in the AAC (MEITI 2019b).
  - The reduction in the AAC was aimed at reducing production to a more sustainable level – a plank in the NLD's political platform (ITTO 20:3 2016; Shein *et al*. 2020).[17]

Forest Trends also examined how the MTE deals with harvested logs. First, the MTE mills the logs itself and then sells the processed products. Second, the MTE compensates sub-contractors that worked for the MTE in logs, in lieu of cash payments. Third, the MTE sells logs directly to favored buyers. Lastly, the MTE auctions production.

The aim of these analyses is to help the Union Government determine what measures have had an impact on improving governance of the forestry sector. The report also examines the implications—particularly for sustainability and collection of government revenue—of failing to tackle illegal logging, trade, and related corruption.

BOX 1

Recent measures taken to address sustainable forest management (SFM), illegal logging, and associated trade

- A decrease in the AAC since the mid-1960s for teak and, since the turn of the 21st century, for other hardwood species (Appendix 1)
- MOECAF Notification No-26/2013, which included:
  - A ban on all log exports.
    - In 2019, this was modified to allow the export of raw logs from plantations (ITTO 23:11 2019).

  This notification included additional forestry regulations (Cho *et al*. 2017):
  - A ban on the export of certain confiscated products (e.g., hand-sawn timber).
  - A requirement that timber must be "exported only through the Yangon seaport, with a stamp from the MTE."
  - A ban on the "direct sale of inferior quality teak and hardwood logs for domestic purposes."
  - A policy to establish and upgrade "all sawmills and wood-based [value-added] industries."
- In 2013, Minister Win Tun of MOECAF discussed MTE governance, noting the need for "ethical behaviour" among management, but mentioned it would take time to convert this concept into a "culture" in the MTE" (ITTO 17:7 2013).

[17] This promise was in the 2015 NLD election manifesto for the 2020 election, the NLD vowed that "promises we made during the 2015 election are still on-going," (ITTO TTMR 20:3 Feb 2016).

BOX 1

Recent measures taken to address sustainable forest management (SFM), illegal logging, and associated trade *(continued)*

- In December 2013, Myanmar's Consul-General "requested Chinese authorities act to stop the flow of illegal logs from Myanmar into Yunnan province" (ITTO 17:23 2013).
    - In 2014, the MOECAF Minister noted the "slow response by Yunnan authorities to curb the cross-border trade, despite calls by the Central Government in China to Yunnan authorities to act to end the illegal cross border trade." He admitted "it was not possible for Myanmar's forestry officials to control illegal logging in the border area due to security concerns," and the Director-General of the Forest Department (FD) said "there is a huge demand for [rosewood] in China which is driving the illegal trade" (ITTO 18:21 2014).
- In 2013, the Myanmar Police Force formed two squads of Forest Security Units comprised of 1,700 personnel in Mandalay and Yangon States "to combat the illegal trafficking of timber along the border areas and elsewhere" (ITTO 17:19 2013).
- In 2014, MTE leased 70 of their 80 mills to the private sector (ITTO 18:21 2014).
- In 2014, the Pyidaungsu Hluttaw (Union Parliament) reduced the commercial tax on logs and rough sawn timber from 50 percent to 25 percent (ITTO 18:6 2014).
    - The National Taxation Law 2017 further reduced the commercial tax on the export of sawnwood to 10 percent (ITTO 21:4 2017).
    - In April 2017, Myanmar introduced a 10 percent Special Commodity Tax (ITTO 21:7 2017) on large sawnwood (ITTO 21:15 2017).
    - Royalty rates were increased in 2015, and then again in 2017 (ITTO 22:3 2018).
- A 2015 Memorandum of Understanding (MoU) between China and Myanmar aimed to halt cross-border timber trade (ITTO 20:3 2016).*
    - The MoU led to the Yunnan Provincial Government suspending trade until all imported timber could be confidently confirmed legal (ITTO 19:17 2015). This policy remained in effect until February 2016.
    - In September 2016, the Chinese Government again closed the Yunnan border to timber.
    - In April 2017, another MoU was signed, promoting sustainable forest management (SFM), including, inter alia, jointly combatting illegal logging and associated trade, strengthening law enforcement and governance, and sharing information.
- In December 2015, India restricted border trade to require the use of formal banking systems or the Asian Clearing Union, rather than "informal" barter systems (ITTO 20:5 2016).
- In July 2015, Myanmar began preparations for negotiations with the EU on Forest Law Enforcement, Governance, and Trade (FLEGT).
- In 2016, the Myanmar Police Force added 215 new officers to protect forest rangers from assault by illegal loggers (ITTO 20:16 2016).

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* The MoU also included a joint commitment to prevent forest fires along the border and establish wood processing industries.

BOX 1

Recent measures taken to address sustainable forest management (SFM), illegal logging, and associated trade *(continued)*

- In 2016, MONREC notification 882/2016 prohibited the export of sawnwood and finished products from MTE Domestic Department and Sawmill Department starting May 2017.
  - This was modified to allow exports until September 2017.
- On November 30, 2016, MONREC released order (FD)4(1)/04(d)(4)/(1765/2016) immediately prohibiting the export of confiscated timber.
- In 2016, the MONREC Minister said the "first step in controlling illegal felling will be regulation of the import and sale of chainsaws…[and] to undertake a field resource inventory and follow this up with satellite mapping to be repeated at periodic intervals" (ITTO 20:12 2016).
- In 2016, the UGoM changed the definition of AAC to "Annual Approved Cut," meant to be lower volumes compared to the previous "Annual Allowable Cut" (ITTO 20:7 2016).
- In 2016, the US Treasury Department removed the MTE from its Specially Designated Nationals Lists, thereby lifting sanctions on imports of timber from Myanmar.
  - However, since 2013, members of the International Wood Products Association had been allowed, through a special U.S. government exemption, to trade with Myanmar despite the sanctions (ITTO 20:10 2016).
- In 2016, the UGoM implemented a one-year moratorium on logging throughout Myanmar:
  - The moratorium will continue in the Bago Yoma region until 2026 (ITTO 21:14 2017).
  - Logging was suspended in Kayah State independently of the moratorium in FY15 (ITTO 22:3 2018).
- Under "two-tier pricing," logs purchased from the MTE in kyat can only be marketed locally and their products may not be exported (ITTO 20:17 2016).
- Forestry Regulations require a forestry official to be present at mills to inspect each container of timber before it is sealed. The movement of container trucks is restricted to between 9pm and 6am (ITTO 20:20 2016).
- In 2016, a Swedish court fined a teak importer c.US$1,700 (ITTO 20:19 2016) for failing to satisfy the due diligence requirement of the EU Timber Regulation (EUTR). The FD "admitted that when shipments comprise timber from multiple sources and these sources are not separately identified, then the chain of custody (CoC) can fail" (ITTO 20:20 2016).
  - In response, the FD announced that wood products produced from auctioned confiscated logs will no longer be approved for export. The private sector objected and asked for the deadline to be extended to allow log stocks to be cleared, which the FD did (to May 2017) (ITTO 20:21 2016).
    - "In a departure from previous practices, confiscated timber will be sold to peoples in the region where it was discovered" (ITTO 20:15 2016).
  - The Myanmar Forest Products Merchants Federation (MFPMF, a private sector federation) provided information to assist buyers' due diligence on shipments (ITTO 20:20 2016).
    - The Swedish court deemed the MFPMF "certificate" inadequate (ITTO 20:19 2016).**

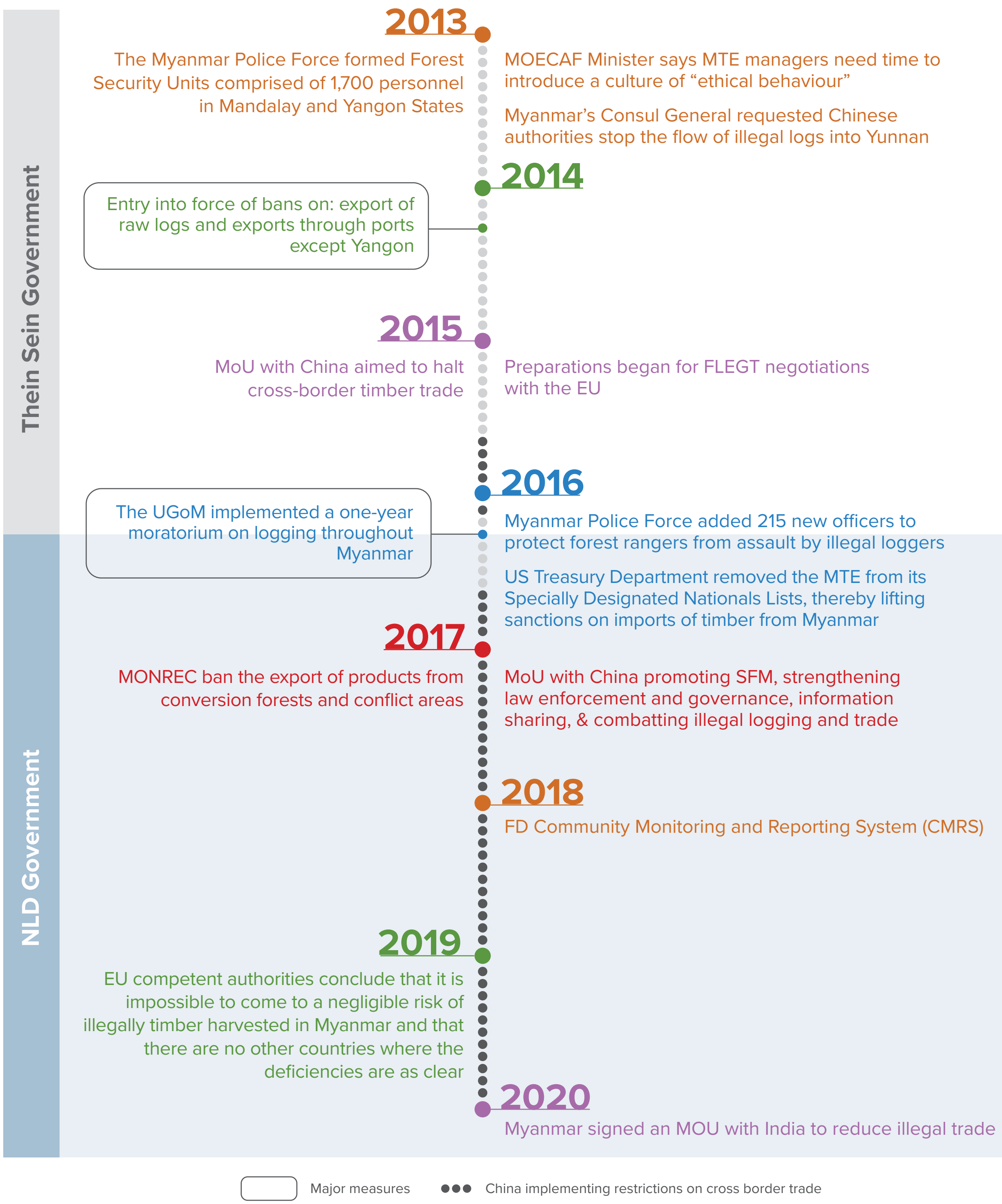
** According to ITTO (20:19 2016), "Local analysts say this decision in Sweden has caused panic in the timber industry in Myanmar and the government is being lobbied to act to protect the export trade."

BOX 1

Recent measures taken to address sustainable forest management (SFM), illegal logging, and associated trade *(continued)*

- In March 2017, the UK Timber Trade Federation warned members that "the authorities in Myanmar are, as yet, unable to offer sufficient evidence of legality…[so] members should cease to trade in teak" (ITTO 21:6 2017).
- In 2017, the Danish Competent Authority asked "companies to strengthen their due diligence systems if they wish to continue to market Myanmar teak" (ibid.).
- In 2017, MONREC promised that parliament and CSOs will "be invited to observe the entire process under MTE management from felling, transport and sale" (ITTO 21:9 2017).
- In 2017, the MTE issued "The Current Situation of the MTE and the Future Plans and Documentation for Myanmar Timber Export."
- In April 2017, MONREC issued an ordinance "banning the export of wood products manufactured from logs sourced from conversion forests and conflict areas…intended to reinforce the Myanmar Timber Legality Assurance System" (ITTO 21:8 2017).
- In 2017, MONREC announced a system where citizen-informants reporting illegal logging would get 20 percent of the auction price obtained for seized timber, 30 percent if the information leads to the arrest of the illegal loggers (ITTO 21:13 2017).
- In 2018, the FD opened a hotline for the public to report illegal logging through a "Community Monitoring and Reporting System" (ITTO 22:3 2018).
- As of March 2018, the Myanmar Ministry of Commerce (MoC) requires licenses for all exports of forestry products (ITTO 22:5 2018).
- In 2018, the FD "suspended the sale of confiscated low-quality, hand hewn timber in a move to ensure illegal timber does not enter the supply chain. However, confiscated timber of high quality is being sold by the MTE" (ITTO 22:1 2018).
- In 2018, parliament passed a new Forest Law to replace the 1992 revision of the 1902 law
    - Myanmar's Protection of Public Property Law No. 3 carries a minimum 10 years in prison for illegal logging and trade (ITTO 19:22 2015).
    - In 2019, new penalties were introduced, including 15-year prison terms, and that "officials can also be punished for accepting bribes or for being involved in the extraction, transfer or possession of illegally harvested logs or products manufactured from such logs" (ITTO 23:9 2019).
- In February 2019, EUTR Member States' competent authorities concluded that: "it continues to be impossible to come to a negligible risk of illegally harvested timber or derived products being placed on the EU market" for timber harvested in Myanmar and that "there are currently no other cases of countries with a significant trade volume into the EU, where the deficiencies in the national systems are as clear," as in Myanmar (World Bank 2020a).
- In 2020, Myanmar signed an MoU with India to reduce illegal trade (ITTO 24:4 2020).

Figure 6 | Timeline of major events that may influence governance of the forestry sector in Myanmar, between 2013-2020, covering the last years of the Thein Sein government and the first term of the National League for Democracy (NLD) government *(Compiled by Forest Trends)*



4 Evidence of the Impact of Measures to Address Illegal Logging and Trade

This section examines the evidence in the production and trade data (from Section 2 and Appendices 1-3) for any impacts of the measures taken by the Union Government and others to address illegal logging and trade. As mentioned in Section 1.1.1: Caveats, this evaluation was made difficult by the poor reporting by the UGoM. However, for a few major initiatives, their influence appears to be strong enough to detect an impact—at least in the official government reporting.

4.1 Impact of the Log Export Ban

4.1.1 Impact on volumes in trade

On April 1, 2014, a ban on the export of raw logs came into effect in Myanmar. Prior to the ban, exports spiked as traders rushed to move logs out of the country (Figure 5, Appendix 4). Trade plummeted immediately afterwards. According to the UGoM's Ministry of Commerce, over these three years, exports of forest products increased from US$596 million two years before the ban to US$948 million the year before the ban, then dropped to less than US$95 million after the ban (Cho *et al*. 2017). Overall, all exports fell from 8.5 percent before the ban to 0.8 percent after.

Prior to the ban, raw logs exported to India, Myanmar's major trading partner, represented 95 percent and 99 percent of the total volume and value of imports, respectively, and teak was the preferred species (Appendix 3) (Maria-Sube and Woodgate 2019). After the ban, "India-Myanmar timber trade plummeted. Roundlogs are now being transformed into plywood or veneer by mills in Myanmar" (Cho *et al*. 2017). By 2019, India imported no logs from Myanmar as buyers shifted their supply chains: (a) Indian importers began to substitute logs from other countries such as Brazil, the Solomon Islands, Suriname, and Ghana (Forest Trends 2020a); (b) this change was further facilitated when Association of Southeast Asian Nations (ASEAN) reduced import duties on sawn timber from ASEAN countries; and (c) Indian companies began to invest in sawmilling operations within Myanmar itself (Moe 2014). Imports of Myanmar decorative hardwood sawn timber to India jumped from almost zero to US$50 million in 2015.

China, Myanmar's second most important timber trading partner, showed similar patterns. Chinese government data indicate a drop in the trade of raw logs from Myanmar after the ban, although not as abrupt as that reported by India (Appendix 3). A year after the ban came into effect, officials in Myanmar "expressed surprise when [a] Chinese delegation appeared to be unaware that Myanmar has imposed a log export ban" (ITTO 19:18 2015). But by 2017, the official trade in logs between the two countries was virtually eliminated. Interestingly, unlike India, where imports of sawnwood and plywood jumped after the log ban, sawnwood imports to China reportedly fell along with log imports, and they continue to stay low (Appendix 3).[18]

[18] In contrast to sawnwood and logs, there has been no reported decrease in charcoal imports into China; by volume, charcoal imports remain high at more than 150,000 m^3 per year (Figure A10).

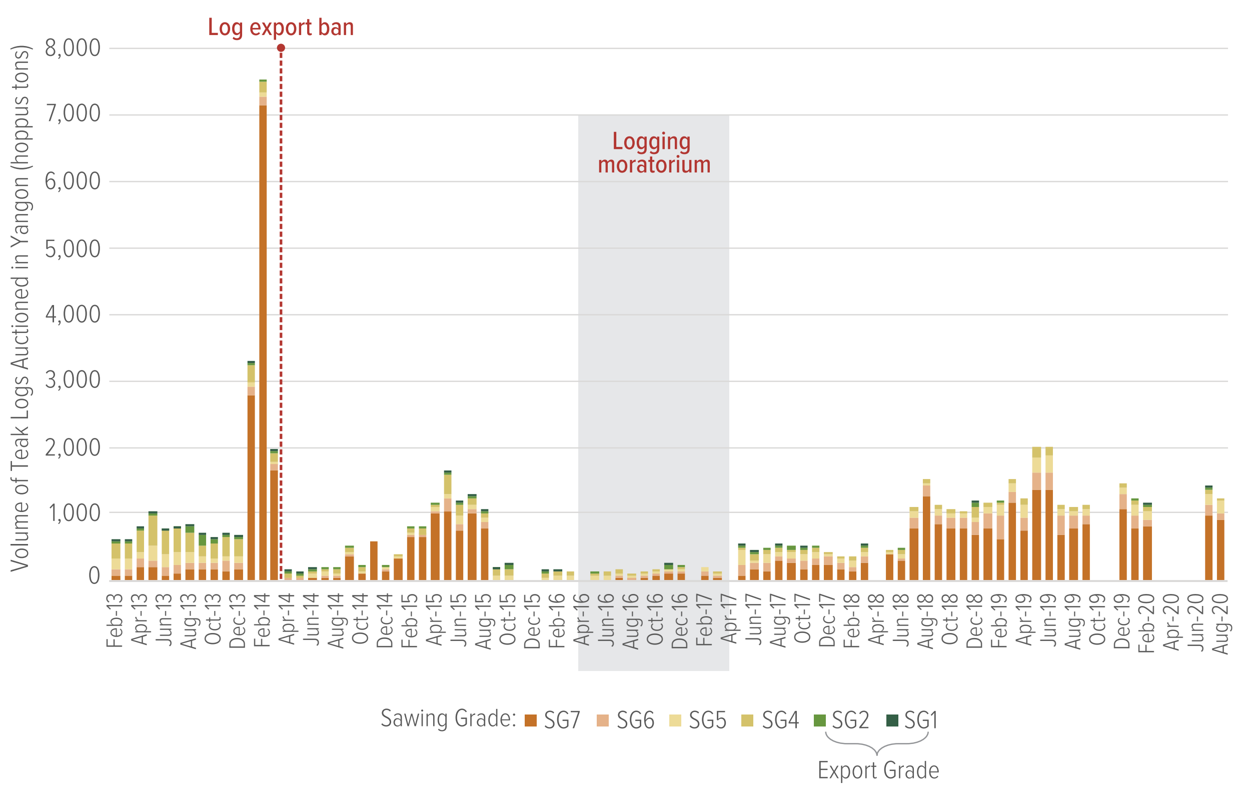
4.1.2 Impact on investment

Ministry of Commerce officials noted that foreign direct investment in veneer factories increased from six wood-based processing facilities to 12, and from 217 factories owned by Myanmar citizens to 321, attributing the increase to the ban's effect on increasing availability of timber for domestic factories that no longer needed to compete with foreign buyers for raw logs (Cho *et al*.2017).

4.1.3 Impact on auctions

While the MTE has sold most of its production directly to favored buyers, the same 2013 MOECAF Notification that banned log exports also reportedly included FD "regulations to stop the direct sale of inferior quality teak and hardwood logs for domestic purposes" (ibid.). Coincident with the log export ban, there was a jump in the volumes of teak logs auctioned in Yangon that spiked even more dramatically than reported export volume (Figure 7). It is not clear whether this spike in auctions was because of the prohibition on direct sales or because traders wanted to buy as many logs as possible for export before trade restrictions came into effect. Given that the auction volumes in FY14-17 represent only c.15 percent of the volumes of direct sales, it is likely that the MTE was responding to market demand rather than complying with the requirement against direct sales.

Figure 7 | Volume of teak logs auctioned by the Myanma Timber Enterprise in Yangon *(hoppus tons). Orange and yellow represent the lowest quality logs, green represents the highest quality at auction that month. The colors of the various grades are consistent with those in Figure 8.*



Source: ITTO (2013-2020). Compiled by Forest Trends.

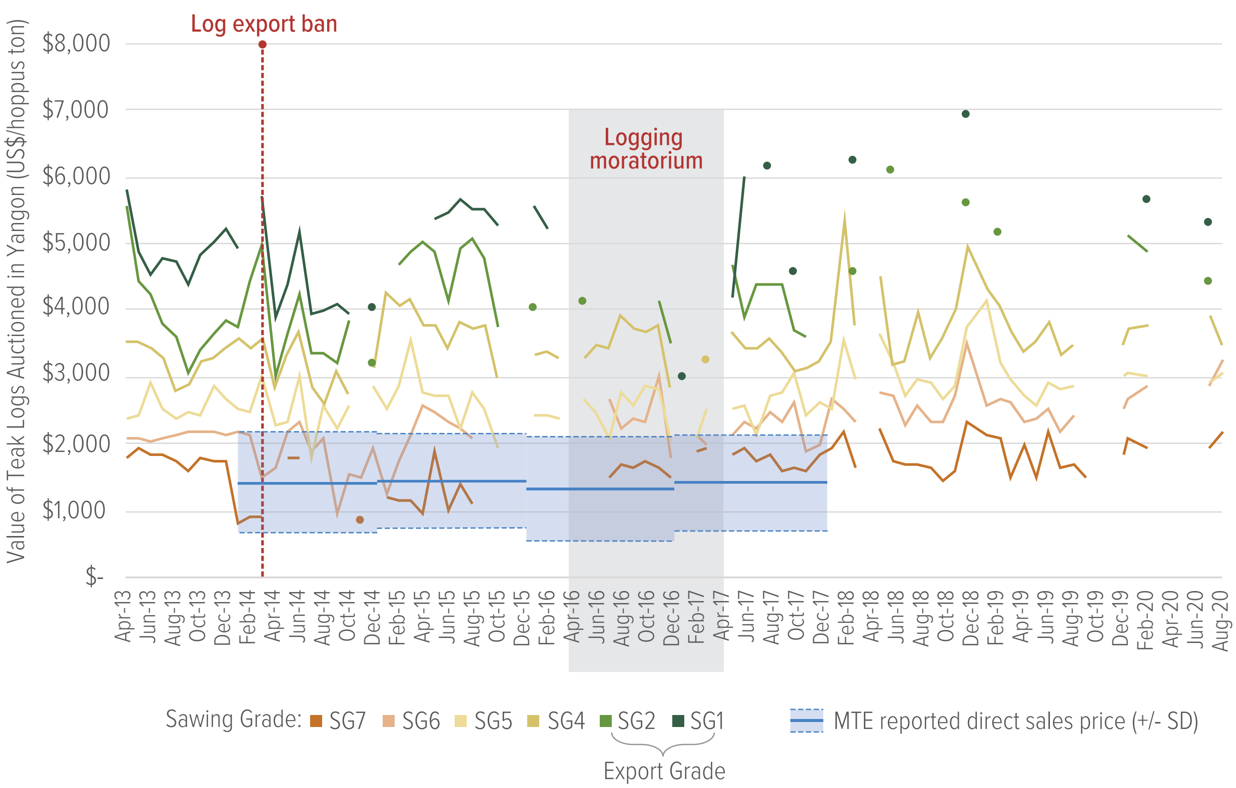
Conventional wisdom would have predicted that more logs should be available to the domestic market after the ban on exports—and presumably, this was the point of the ban. However, after the ban, auction levels slumped. While auctions did recover somewhat, they are not dramatically higher than the levels the year before the trade ban. And the volumes auctioned now are much more dominated by the low-quality grades (Figure 7). Almost none of the auctioned logs are export quality, despite the export ban. Presumably, all the high-quality teak is either used in the MTE's own mills or sold directly to favored buyers.

4.1.4 Impact on teak log prices

While volumes in trade have defied conventional wisdom—the export ban has not led to an increase in the volume of export-quality logs at auction, for example—the changes in sales prices have also defied prediction.

In October 2012, when the export ban was first announced, the ITTO reported that the price of teak logs increased by about 20 percent (ITTO 17:11 2013), presumably as foreign buyers scrambled to purchase and move as many logs out of Myanmar as possible before the ban came into effect. Then, after the ban, and as predicted, auction prices dropped. However, contrary to predictions, the prices rose again and have never dropped substantially (Figure 8), despite the aim of the ban to reduce the demand for logs from foreign

Figure 7 | Auction prices for teak logs auctioned by the Myanma Timber Enterprise in Yangon *US$/hoppus tons, unadjusted for inflation. High quality export grades are green, lower quality grades are orange and yellow. Blue sections indicate the MTE's direct sales prices of teak logs (+/- 1 standard deviation).*



Source of auction data: ITTO (2013-2020); Source of direct sales data: MEITI (2019 & 2020). Compiled by Forest Trends.

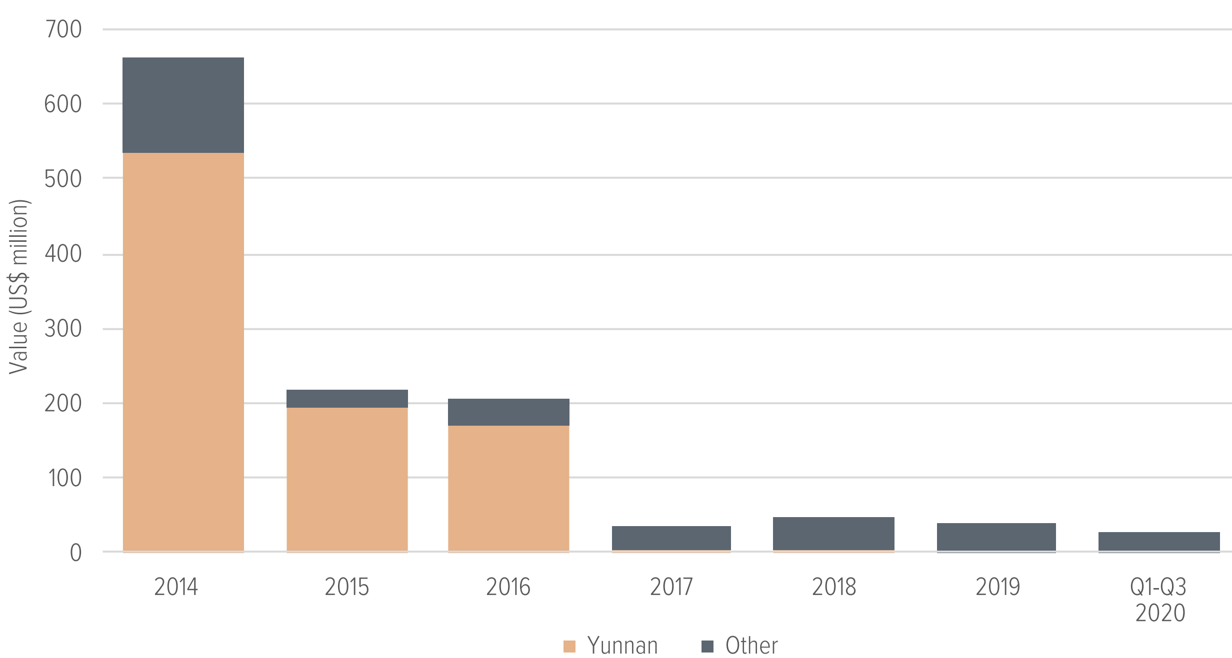
buyers, which should have led to a drop in domestic log prices. Indeed, "[m]ost analysts expected a sharp decline in the price of teak logs sold by the MTE after the export ban, [but] they were wrong as prices [were] sustained" (ITTO 19:1 2015).[19] In fact, the MTE itself reported that prices in their direct sales increased by about 5 percent after the export ban, to US$1,235 per hoppus ton.

4.2 Impact of the Requirement that All Exports Go Through the Port of Yangon

The evidence is mixed whether or not the 2013 requirement that all exports go through Yangon worked. According to the FD, in 2016 "there are 39 main routes along which illegal timber is transported across Myanmar's borders. Amongst these, 25 are suspected as leading to China, 6 to Bangladesh, 2 to India and another 6 to Thailand" (ITTO 20:15 2016).

Up until 2017, the Customs Department in China reported that almost all (over 90 percent) its imports were overland through Yunnan province, across the border from northeast Myanmar (Figure 9). But these trade routes appeared to have closed by 2017—at least to the official timber trade. Since then, China has reported almost no overland imports through Yunnan. However, there are reports that some illegal trade has continued (Lindsay 2020). The illicit charcoal trade appears to continue overland into China, violating not only the notification prohibiting overland trade, but also the notification prohibiting the export of charcoal (Appendix 3).

Figure 9 | Imports of forest products from Myanmar into China *US$ million, unadjusted for inflation. Divided between Yunnan and all other ports of entry*



Source: Chinese Customs. Compiled by Forest Trends.

[19] Cho *et al*. (2017) did report a 40 percent "fall in the price of locally produced teak" after the implementation of the log export ban, but other data presented herein contradict this.

India has never reported large overland imports from Myanmar, apparently because of the poor quality of roads connecting the two countries. However, there are some reports of organized groups moving illegal timber across the border (including to Bangladesh) (EU FLEGT Facility 2020). This trade may increase as India pushes ahead with several projects aimed at improving infrastructure and trade links between India's underdeveloped northeastern region and Myanmar, such as the India-Myanmar-Thailand trilateral highway, India-Myanmar rail connections, and a proposed Myanmar-India-Bangladesh pipeline (The Economist Intelligence Unit 2014; Chatterjee and Sharma 2020).

4.3 Impact of Reducing the Annual Allowable Cut

MONREC production data, for the past two decades (Figure 3; Appendix 1), indicates that Myanmar has harvested well above the sustainable limits set by the FD through their Annual Allowable Cut (AAC). Reality is likely much worse. Union Government data underestimate production for several reasons. MONREC production may not include harvest that either occurred: 1) illegally in government-controlled areas, 2) in areas controlled by ethnic armed organizations (EAOs), and/or 3) entered the legal supply chain via other non-state actors. For example, "Border Guard Forces" (BGF) affiliated with the Tatmadaw, apparently in exchange for permission to indulge in illicit activities, such as narcotics production and trade, land grabbing, illegal wildlife trade, and illegal logging (Smith 2007). Moreover, the MONREC production data does not include timber unaccounted for by the MTE itself. For example, between FY14 – 17, the MTE reported more sales of teak logs than it reported available in legal supply (Forest Trends 2019; Forest Trends 2020b), selling almost 400,000 hoppus tons, or one and a half times the volume of teak logs legally available.

While MONREC's data already indicates unsustainable harvest levels, the true harvest levels are much higher when this unreported wood is included, and thus, more unsustainable than the Union Government data suggest.

4.4 Moratorium on Logging Throughout Myanmar

The clearest indication that Union Government policies had an impact on the forestry sector is the UGoM's moratorium on logging.

4.4.1 Impact on price

"When the announcement of the logging restrictions became known, the price of teak logs made available to the market by the MTE almost doubled to US$1,600 per hoppus ton and from US$200 to US$500 per hoppus ton for hardwoods" (ITTO 20:11 2016). In contrast, the MTE itself recorded a 10 percent drop in the direct-sales price for teak logs to US$1,328 during FY16. While almost no teak was reportedly harvested during the moratorium, the MTE claims they sold 42,482 hoppus tons of logs from their stockpiles (MEITI 2020).

Despite the moratorium, auction prices also declined (Figure 8), even though almost no teak was available at auction (Figure 7). Given the restriction in supply, the drop in prices may seem contrary to conventional wisdom that scarcity of supply should drive up prices. However, the lower prices may reflect other factors, such as the sales from the stockpiles were of very low-quality logs. In addition, if the provenance of the stockpiles were difficult to trace, the auctioned logs may not have been attractive to exporters worried that the logs would fail the due diligence test of legality necessary for the EUTR. Indeed, some of the Competent Authorities in Europe enforcing the EUTR considered all timber harvested prior of 2017 to be non-compliant (UNEP-WCMC 2018).[20]

4.4.2 Impact on production

While the trends in prices are not easily explained, the variation in the pattern of teak and hardwood production, as reported by the UGoM (see Appendix 2), was mostly clear (barring some discrepancies in reported volumes):

- In FY15, production dropped from 979,000 m^3 to 19,470 m^3 in FY16, before rising back up to 662,310 m^3 in FY17, according to MTE reporting to MEITI.
- However, when MTE reported to ITTO, they stated that production dropped from 833,286 m^3 in 2015, to 21,824 m^3 in 2016, and then back up to 388,347 m^3 in 2017.[21]

There has been no explanation from the MTE for their different reporting between the MEITI and ITTO.

The FAO also report (Appendix 1) a drop (of 10 percent) in industrial roundwood production for Myanmar during the moratorium, but not until 2017.

4.5 Impact of Auctions on Revenue for the Union Government

4.5.1 MTE Sales

The MTE reports that they sold logs in three ways:

1. Given to sub-contractors as compensation for work conducted for the MTE, such as harvesting;
2. Direct sales to preferred customers; and,
3. Competitive auctions on the open market, with sales allocated to the highest bidder.

Compensation to sub-contractors

The MTE did not—and apparently still does not—have the capacity to conduct all logging operations, so they contract private companies (sub-contractors) for various steps in the timber extraction process. For example, in FY14 and 15, MTE reported that more than 60 percent of harvesting was completed by the private sector (MEITI 2019a). As compensation for their work, the MTE allowed sub-contractors to retain a proportion of logs they harvested. The sub-contractors received sales documents for these logs and were allowed to process and sell or export the timber. However, the MTE does not report how they determined the amount of compensation that a sub-contractor was due for the work completed. Nor does the MTE report how

[20] The Union Government had reportedly said it could "provide documentation for stockpiled timber harvested in the 2015-2016 season, [but] it may not be possible to do the same for older stockpiled log."

[21] Originally cited in cubic tons: from 737,421 cubic tons in 2015, to 19,313 cubic tons in 2016, then back up to 343,670 cubic tons in 2017. In Myanmar, cubic tons are used, especially when reporting processed forest products. Hoppus tons and cubic tons are actually units of volume (not weight): 1 hoppus ton = 1.6 cubic tons = 1.8 m^3. Note: this report uses MEITI conversion rate for cubic tons (2019; Forestry Report FY14; footnote 2, p. 89; 1 cubic ton = 1.415 m^3. Other references cite 1 cubic ton = 1.13 m^3 [see: https://www.convert-me.com/en/convert/volume/?u=timbercubicton&v=1#lumber for MEITI conversion rate].

that amount was translated into the equivalent volume of logs of different species and grades. They also do not report the total amount, nor quality, of logs given to all sub-contractors through this compensation-payment plan. Therefore, it is not possible to calculate the total volume of logs given to the private sector as compensation, nor to calculate what losses, if any, this represents (compared to, for example, if the logs were sold on the open market and the contractors compensated in cash).[22]

The MTE does, however, report data in the MEITI forestry reports for FY14 and FY15 that give some indication of how compensation might have been calculated. The MTE reported a "production value" for teak and hardwood logs to the MEITI. What this represents is not clear – it could represent a reference price that the MTE used when calculating compensation for sub-contractors. If so, then the MTE gave away these logs at far below market value. For example, the reported production value of teak logs was less than 10 percent of the auction price obtained by the MTE, even for the lowest grades of teak. If teak was valued using the production value of US$169 per hoppus ton when calculating compensation, then sub-contractors were grossly overpaid, representing a windfall profit and a substantial loss to the government (Treue *et al*. 2016).[23] As mentioned above, without knowing the volumes by species and grades of logs given as compensation, it is impossible to calculate the total amount of these losses to the Union Government.

Direct sales to favored buyers

The MTE's reported sales price for teak logs sold to private sector buyers was also dramatically lower than the auction prices. Because auctions reflect the confluence of true market price between buyers and sellers, there should be no price difference for any given quality of log. Thus, it is not clear why auctioned teak would be worth more than teak logs sold by the MTE directly to select private buyers, especially given that they were almost entirely low quality: 60 percent were grades SG-7 or worse (the bottom lines in Figures 7 & 8); only 4 percent of the logs auctioned were export-quality. In contrast, most of the direct sales were presumably of the highest quality – at least 88 percent were reportedly exported between 2011-2017 (Appendix A3.2).

It may be that auction prices were high, even after the log export ban, because so little export-quality teak was put up for auction (ITTO 19:1 2015), (i.e., as mentioned above, the demand for auctioned teak was effectively kept high by a restricted supply; Figure 7). Indeed, after 2014, domestic buyers saw no increase in the volume of teak logs sold at auction, despite the log export ban.

The direct sales at below-market prices appear to be a trend with the MTE, as the MTE's "reference prices" for processed teak were also below the price of export-grade teak logs obtained at auction. For example, the reference price noted for processed teak in 2017 was US$1,690 to US$3,250 per m^3, whereas the average price paid for export-grade teak logs at auction that year was more than US$2,600 per m^3 (ITTO 21:9 2017).[24] Normally, logs should not be worth more than processed material, unless the processing is very poorly done.

[22] The MTE claims that compensation of sub-contractors is now in cash only, although the rates and total amounts of compensation are still not being disclosed.

[23] Treue *et al*. (2016) report that "[s]pecific details and evidence of how the shadowy system has precisely worked is not easy to come by, but the overall picture is clear. MTE needed sub-contractors because MTE did not have enough capacity itself for the level of extraction they wanted. In return for award of concessions they are said to have paid very large bribes to senior military and MTE staff. In conjunction with the MTE the timbers have been sold off at low prices to neighbouring countries. Windfall profits to subcontractors from "mining" the forests, free grants of timber as patronage for loyalty and in return for substantial bribes and timber allocations – all kept the dysfunctional system generating huge profits for those unethical enough to plunder the nation's heritage."

[24] Reference prices for processed teak: 300-1750 mm = $1,690 - $2,330 per m^3, and >1800 mm = $2,540 – 3,250 per m^3.

4.5.2 Gain in government revenue when logs are auctioned

The decision by the MTE to sell export-quality logs directly to select buyers in the private sector, rather than through auction, likely resulted in large losses in revenue to government. Forest Trends estimates this loss could have been at least US$1.2 billion in FY14-17 alone. Presumably all of this US$1.2 billion would be profit, aside from the cost of holding the auctions.

If direct sales have always been set at below-market prices, and if logs used to compensate sub-contractors were similarly undervalued, then losses to government over the last 20 years would be several billion dollars. If further corruption was involved and logs were deliberately mis-graded (i.e., graded as poor quality when they were, in fact, high quality[25]), then losses would be even greater (Treue *et al*. 2016). This also represents a huge windfall to the select private sector buyers able to take advantage of preferential treatment by the MTE.

[25] Traders have apparently admitted to underinvoicing in the past.

5 Implications

The MONREC Forest Department reports more than 550,000 hoppus tons of timber confiscations between 2014-2020 (Appendix 4). It is not clear whether this represents all enforcement activities by the UGoM, nor how much this enforcement affected illegal logging and associated trade. However, some of the recent steps taken by the UGoM appear to have had substantial effects on the forestry sector of Myanmar overall. While it is difficult to ascertain how much impact policies have had, it appears that at least the 2014 log export ban did have a substantial impact. Prior to the ban, the MTE reported a rise in teak log prices, the MTE auctioned extraordinarily high volumes of teak logs, and traders also exported high volumes of teak and hardwood logs. A few years after the export ban, both India and China report almost no log imports, suggesting the ban is working, at least through official channels. Likewise, the moratorium in 2016-17 appears to have had impact, given that production reportedly dropped during the year-long logging ban.

What was unexpected was that there was no drop in auction prices when the log export ban came into effect (the ban should have increased the supply available to the domestic market) and no rise in prices during the moratorium (which should have reduced supply). Perhaps some of this should come as no surprise because, rather than an increase in supply, the volume at auction actually fell to almost zero after the log export ban. The lack of increase in auction prices during the logging moratorium, however, is more difficult to explain. Part of the reason may be the relatively poor quality of logs available at auction. The vast majority (over 95 percent) of teak logs were not of export quality. The domestic market simply may not have been interested in these inferior logs, even when domestic supply was limited.[26] In addition, sanctions by foreign markets (mainly the EU and U.S.) may have reduced log prices because logs sold during the moratorium from stockpiles may have been of unknown, potentially illegal origin. Traders may have been unwilling to buy logs out of fear they would not comply with trade regulations, such as the EUTR or the Lacey Act in the U.S.

Even these explanations are lacking, because the price paid for the few poor-quality logs sold at auction was still much higher than the price paid in other sales reported by the MTE (Figure 8). These direct sales contracts between the MTE and preferred buyers were not trivial—between FY14-17, they made up 85 percent of the MTE's reported teak sales. But it is not clear how these contracts were formed.[27] Presumably, not every potential buyer had access to purchase logs through the direct sales, meaning buyers not favored by the MTE could only obtain logs through auction. Otherwise, it is inexplicable why the open market paid more at auction for poorer quality logs in comparison to export quality logs bought through the MTE's direct sales. It should also be noted that these direct sales of export logs were against a Ministerial notification from 2016 and in violation of government regulation since 2014 (see Section 4.1.3).

[26] The weak prices at auction may also reflect a lack of interest from buyers while they were reacting to regulatory changes. Interviews with individuals in the private sector indicate that at the same time they were having to change from exporting raw logs to having to figure out how to process the logs before export, some said that they were also beset with a confusing and unfriendly bureaucracy. Therefore, it took some time to adjust to the new regulations before they were ready to operate at scale and resume buying large volumes of logs.

[27] Under the EITI's international standards, contract disclosure and reporting of beneficial ownership is required—presently, the MTE is not in compliance with these transparency requirements.

Regardless of explanation, a major impact of the MTE's failure to auction all logs is the loss of revenue. Because of the low prices reported through the direct sales, the government was forced to forgo what is likely billions of U.S. dollars in extra income, which could have been used to support Myanmar's citizens through healthcare or education.

5.1 The Need for Better Data

Without accurate data, Myanmar will be less able to improve governance, implement sound management of its forests, and protect the 38 million people that rely on forest ecosystems for their lives and livelihood (Forest Department 2002). It also makes it impossible for all citizens to hold their government accountable.

It is clear that Myanmar has chronically overharvested its forests. In fact, the level of harvest is likely much greater than the government data imply. But the lack of complete, reliable data makes it difficult to evaluate how unsustainable Myanmar's sector is (and has been).

Incomplete reporting underrepresents the true importance of the forestry sector and has likely led to the Union Government underinvesting in the forestry sector. This distracts from the need to democratize the sector and for more equitable benefits-sharing from the forestry sector, especially with communities affected by commercial logging.

Therefore, this briefing concludes with a call for more high-quality information. One clear recommendation is for the Myanmar Extractive Industries Transparency Initiative to continue to publish as timely and accurate data as possible on Myanmar's timber sector. The MEITI and the ITTO, while imperfect, have been the main sources of the Union Government data in this report.

Given that conflicts over forest management and timber rights have played a central role in unrest in Myanmar, and continue to be a point of contention during peace negotiations between the Union Government and the ethnic armed groups, a successful peace process demands that the forestry sector be considered. It is recommended that the National League for Democracy use their second term to focus on the effective reform of the forestry sector, beginning with the need for more transparent information for decision-making and holding officials, and cronies, accountable.

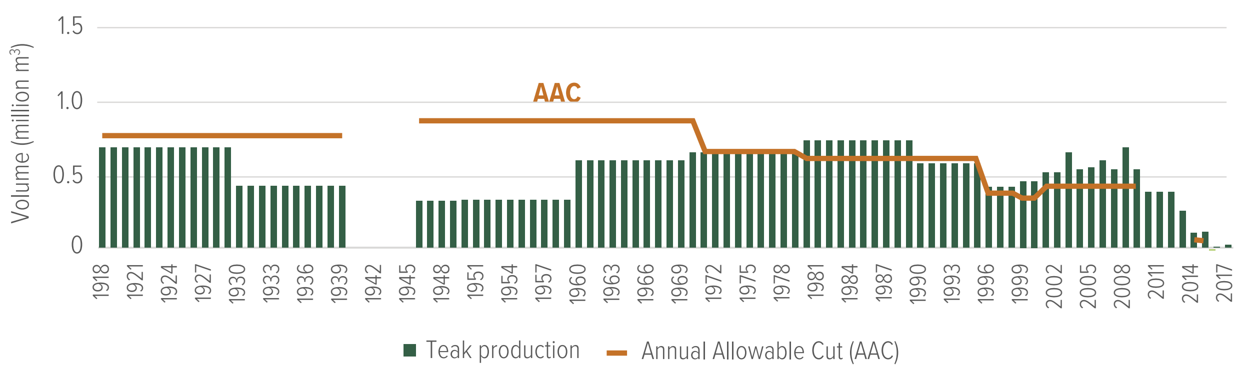
A1 Appendix 1: Historical Patterns in Union Government Reporting of Production

A1.1 Production Data from the Union Government of Myanmar

Based on official UGoM ministry data,[28] Myanmar has produced almost 50 million m^3 of teak over the last 100 years (Figure A1).

Over the same period, Myanmar reported more than 105 million m^3 of hardwood production, with annual production more than doubling between the 1990s and 2000s (Figure A2).

Figure A1 | Teak production in Myanmar and the Annual Allowable Cut (AAC) set by the Forest Department, 1918 - 2017. *AAC denoted by orange line. Notes: no harvesting reported during World War II (1940-1945); the AAC in FY16 was zero due to the moratorium on logging; no AAC data found for FY10-12*



Source: MOECAF/MONREC, ITTO, MEITI. Compiled by Treue *et al*. (2016) & Forest Trends.

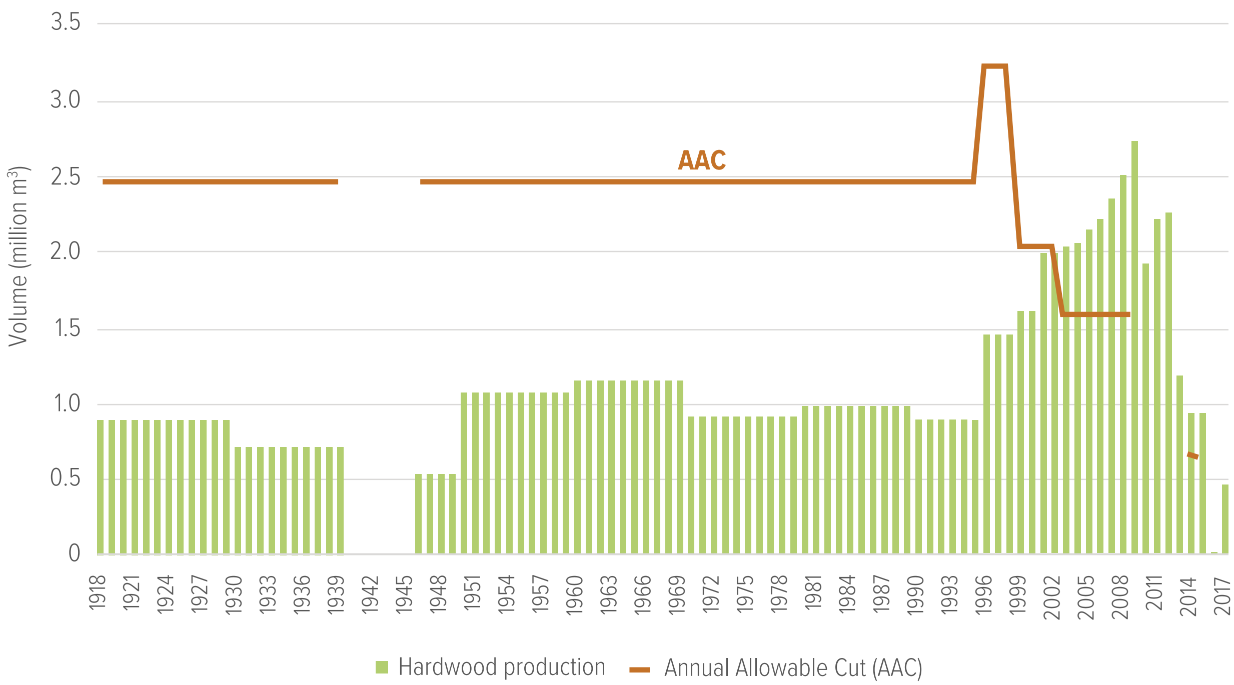
A1.2 Discrepancies in Recent Reporting by the Union Government of Myanmar

The discrepancies among Union Government data undermine confidence in the accuracy of the reporting, thus undermining the credibility of the data. For example, there were substantial differences between reporting by the various agencies of the Ministry of Natural Resources and Environmental Conservation (MONREC; Figure A3). For FY14 and 15, their FD reported[29] about one and a half times the production as did the MTE and the Myanmar Central Statistics Organization (CSO). Note: the FD did not report production in the most recent MEITI reports covering FY16 and 17.

Even the MTE itself is inconsistent in its reporting of production. To the MEITI, the MTE reported greater production levels than it reported to the ITTO (Figure A3, left panel compared to middle panel). Moreover,

[28] Data from MOECAF to 2009, and then the MTE from 2011 (as reported in MEITI 2020).
[29] The FD did not report production in MEITI (2020) Forestry reports FY16 and 17.

Figure A2 | Hardwood production in Myanmar and the Annual Allowable Cut (AAC) set by the Forest Department, 1918 - 2017. *AAC denoted by orange line. Notes: no harvesting reported during World War II (1940-1945); the AAC in FY16 was zero due to the moratorium on logging; no AAC data found for FY10-12*



Source: MOECAF/MONREC, ITTO, MEITI. Compiled by Treue *et al*. (2016) & Forest Trends.

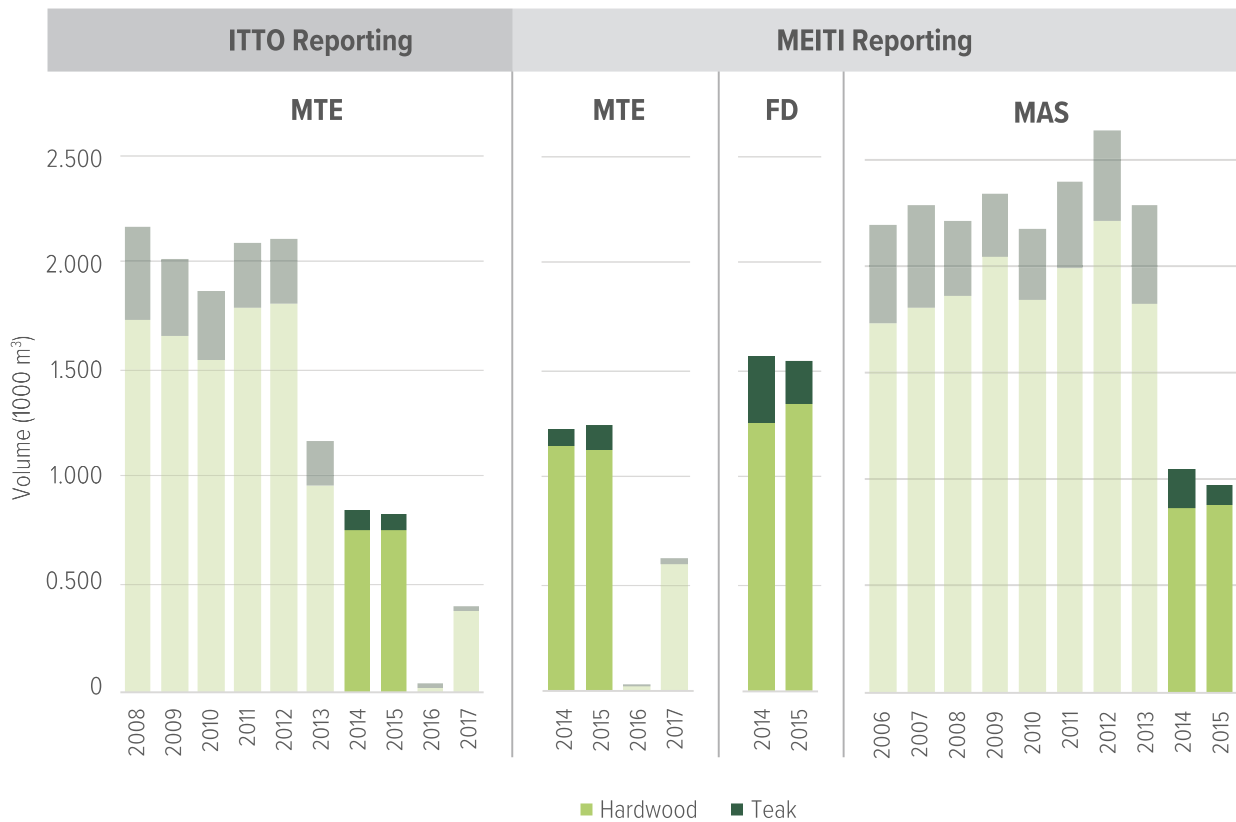
the MTE's reporting was even inconsistent to the ITTO. In September 2017, the MTE reported that c.16.7 million m^3 was harvested between 1990-2016 (ITTO 21:18 2017), whereas one year later, the MTE reported that between just 2008-2017, c.16.8 million m^3 was harvested (Figure A3, left panel) (ITTO 22:19 2018). Both reports cannot be correct.

A1.3.1 Implications of Forest Department reporting greater production levels

There are two clear implications of the FD reporting of high levels of production (Figure A3). First, unlike the MTE reporting, the FD levels of production exceed the AAC (Forest Trends 2019). This indicates that MONREC's FD judged the levels of production to be unsustainable.

Second, royalties should be paid based on production (not sales), and had the MTE reported production volumes similar to the FD reporting, then the MTE's payments of royalties (known as stumpage in the forestry sector) would have been half as much as they reportedly paid. For Myanmar, however, this would not have made much of a difference in total revenue, because the stumpage rates are so low: for the two years, a 50 percent increase in stumpage payments by the MTE would have only yielded an additional US$3 million in revenue. But for individual tax evaders, these savings may have been motivating.

Figure A3 | Production of teak and hardwood timber in Myanmar as reported by the Union Government of Myanmar: the Myanma Timber Enterprise (MTE), the Forest Department (FD), and the Myanmar Agricultural Services (MAS) of the Central Statistical Office *Teak is dark green, hardwoods are light green. The area of overlap in all four panels is highlighted*



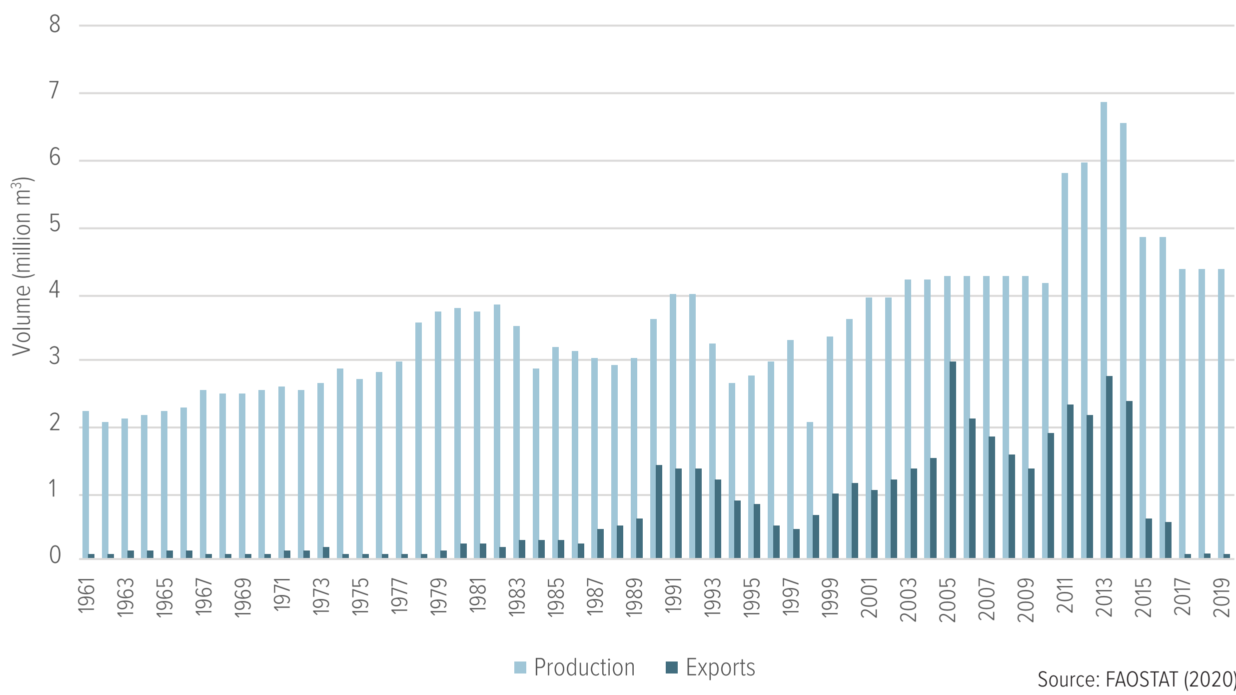
Source: ITTO (2017 & 2018) and MEITI (2019 & 2020). Compiled by Forest Trends.

A2 Appendix 2: Historical Patterns in FAO Reporting of Production

FAO reported[30] substantially greater timber production (Figure A4) than the Union Government. Throughout the 1990s, FAO reported at least double the production: 2 to 4 million m^3 of industrial roundwood[31] per year (FAOSTAT 2020). During the 21st century, production reportedly rose even more, to almost 7 million m^3 in 2013.

It may be that the FAO reports production levels that exceed the Union Government because the FAO tries to base their estimates on: 1) all industrial uses of roundwood, including small and medium-enterprises that are often ignored by government reporting; 2) the entire forest area, including areas outside of Union Government reporting, like areas operated by ethnic armed groups and Border Guard Forces' (BGF) affiliated with the Tatmadaw; and 3) the FAO estimates are informed by reporting from importing countries (like India and China), some of which is the result of illegal cross-border trade (smuggling) and other illegal sources (Appendix 3). Moreover, there is evidence of unaccounted (or at least unreported) logs being laundered into the UGoM's official supply chain—as outlined in Section 4.3, it is clear that the MTE is selling unaccounted for logs through its legal sales. While this trade is not included in Union Government production, it should contribute to the FAO's estimates of production.

Figure A4 | Production and exports of industrial roundwood from Myanmar *(million m^3)*



Source: FAOSTAT (2020).

[30] According to FAOSTAT (2020), "statistics are provided by countries through an annual survey conducted by FAO Forestry Department in partnership with the International Tropical Timber Organization (ITTO), the Statistical Office of the European Union (Eurostat) and the UN Economic Commission for Europe (UNECE). In the cases where countries have not provided information through the questionnaire, FAO estimates annual production and trade based on trade journal reports, statistical yearbooks or other sources. Where data are unavailable, FAO repeats historical figures until new information is found."

[31] Industrial roundwood "includes all industrial wood in the rough (sawlogs and veneer logs, pulpwood) and, in the case of trade, chips and particles and wood residues."

A3 Appendix 3: Historical Patterns in Reporting of Exports

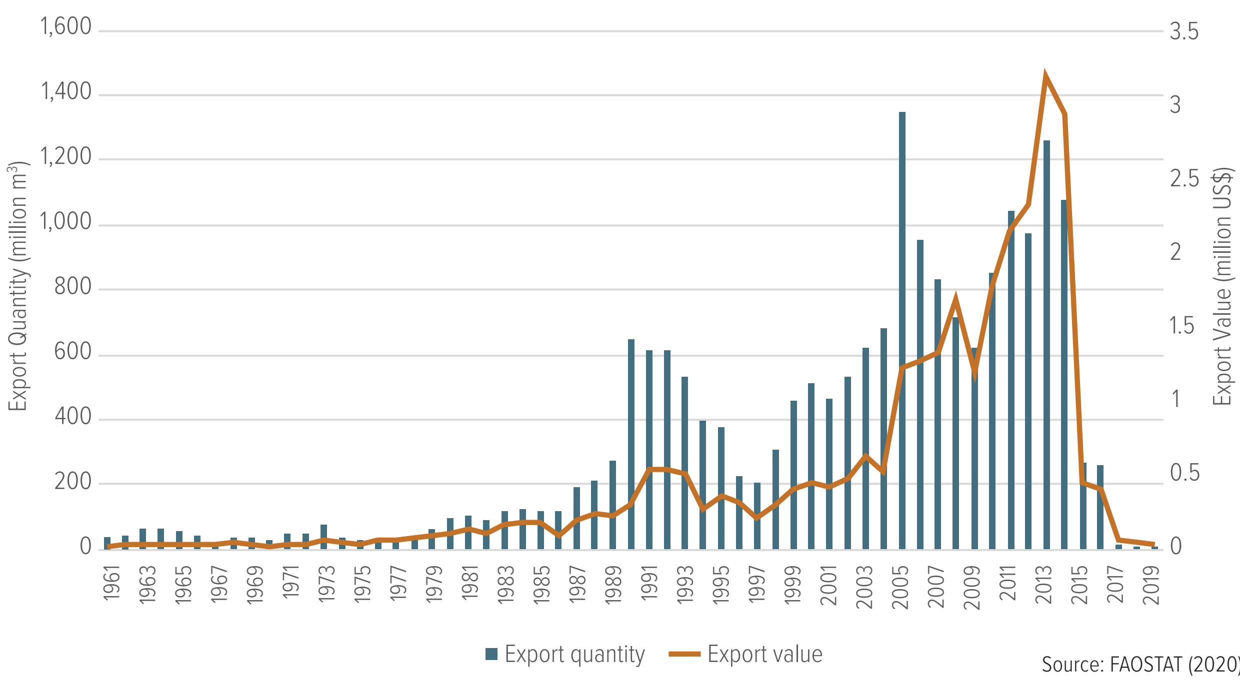
As with patterns of production, there are major discrepancies across all sources in the pattern of sales and exports. Historically, there has been substantial cross-border trade with neighboring India and China, with very little of the trade reported by the Union Government of Myanmar. This illegal trade, if included in official Union Government statistics, would dramatically increase the volume and value of production and sales in the forestry sector.

A3.1 Trends in Exports Reported by FAO

Over the past 58 years, FAO estimated more than 204 million m^3 of industrial roundwood was produced, of which 43 million m^3 (21 percent) was exported (Figure A4). There were large fluctuations in the volume of exports between 1960 and 2017 (Figure A5). However, exports reportedly dropped dramatically, starting in 2015.

The value of these exports followed a similar trend (Figure A5). Over the 58 years, more than US$13 billion (unadjusted for inflation) in industrial roundwood was reportedly exported. Cho *et al*. (2017) report that in 2012, "Myanmar's share of the world trade in tropical hardwood logs reached 35 percent…with annual growth in value 9 percent between 2008 and 2012…accounting for three-quarters" of the world's teak market. Peaking in 2014, the value of exports has since dropped dramatically, officially to almost nothing, according to FAO.

Figure A5 | Exports, by volume and value of industrial roundwood from Myanmar *(US$ million, unadjusted for inflation)*



Source: FAOSTAT (2020).

A3.2 Trends in Exports as Reported by the Union Government of Maynmar

Prior to the log export ban, the UGoM's Ministry of Commerce (MoC) reported lower exports than the FAO (Figure A6; Figure A5). However, both the MoC and FAO reported a similar drop, starting around 2014. Since 2015, however, the MoC has reported more than three times the exports as FAO.

Between FY11-19, MoC reported almost US$3.4 billion in exports of forest products (Figure A6), of which 2 percent was reportedly across a land border. For FY11-17, exports were c.US$3 billion, or about US$400 million below the total production reported by MTE during the same period (US$3.4 billion), implying 88 percent of all timber production was exported (at least by value).

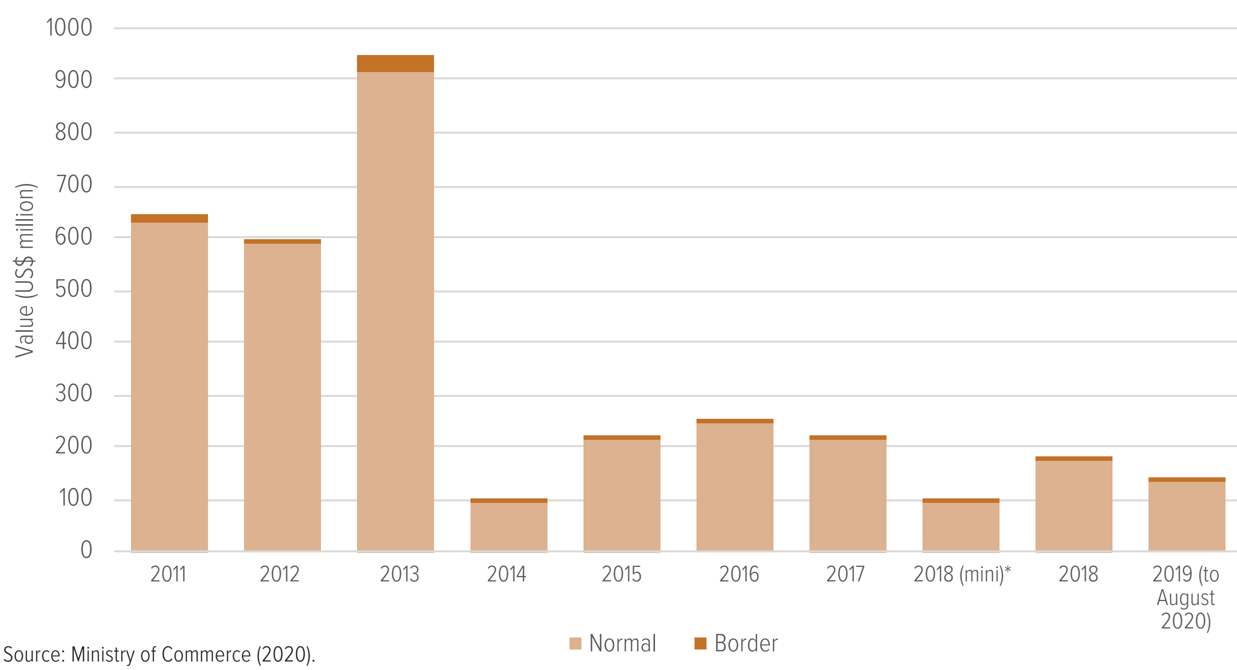
A3.3 Trends in Exports as Reported by Importing Countries

Over the past six years, UN Comtrade and importing countries customs agencies (Figure A6) reported almost US$4.5 billion dollars more in trade of forest products from Myanmar than the UGoM MoC reported as exports (Figure A6). The discrepancy suggests a vast illegal cross-border trade.

A3.3.1 Trends in exports as reported by importing countries, India and China

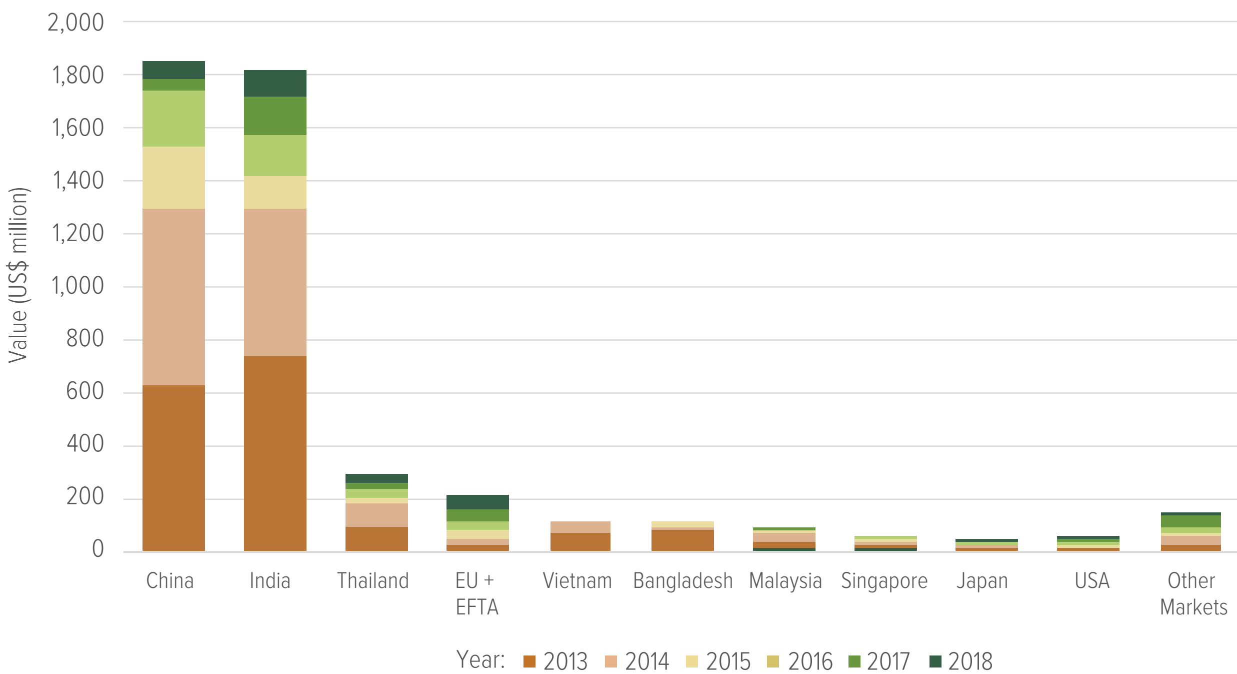
In FY14 and 15, the UGoM Customs reported that India represented 53 percent of exports, Singapore 14 percent, and China 10 percent. By contrast, both UN Comtrade and the FAO reported that India and China comprise the top two trading partners for Myanmar timber, or more than 80 percent of all trade (Figure A7). As explained below, it is highly likely that Myanmar is vastly underestimating cross-border trade, with China especially.

Figure A6 | Export of forest products from Myanmar *(US$ million presumably not adjusted for inflation)*



Source: Ministry of Commerce (2020).

Figure A7 | Imports of forest products from Myanmar *(US$ million, unadjusted for inflation)*



Source: General Administration of Customs, PR China; Vietnam Customs (analyzed by VIFORES, FPA Binh Dinh, BIFA); UN Comtrade. Compiled by Forest Trends.

Like UGoM data, UN Comtrade data report large drops in exports of forest products to India and China but starting in 2015 (Figure A7). FAO reports similar drops in trade to China and to India (Figure A8, orange and grey lines, respectively), with the decline for China reportedly also beginning in 2015, four years after India (perhaps as supplies for the illegal overland trade dwindled and enforcement began to increase).

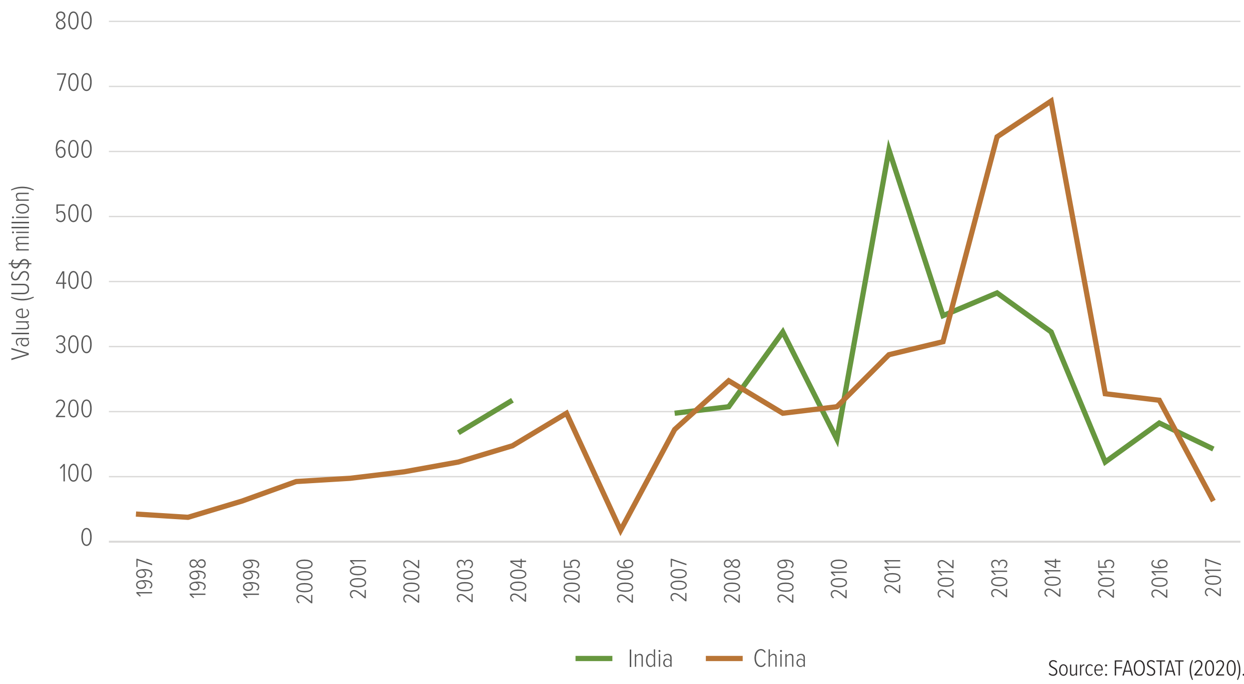
For India, using Comtrade data, Maria-Sube & Woodgate (2019) reported imports of 11.86 million m^3 Round Wood Equivalent (RWE) from Myanmar, or on average, 42 percent of Myanmar's global timber exports between 2000 and 2015.[32] Imports since 2015 reportedly contained almost no logs, whereas in 2014, the US$550 million in timber imports were almost all logs (Figure A9).

Maria-Sube & Woodgate (2019) then compared these data to the import data from the Government of India's (GoI) Directorate General of Commercial Intelligence and Statistics, of the Ministry of Commerce and Industry.[33] For 2015, GoI reported US$159 million in imports in wood products from Myanmar, 22 percent were through Cochin and about 15 percent through each of Kolkata and Mundra. These GoI import data were about one- third more than reporting by FAO, suggesting that the FAO data in Figure A8 may be an underestimate. Likewise, for FY15, the GoI import data exceeded reporting by Myanmar Customs Department of only US$120 million in exports to India, suggesting that Union Government data are also an underestimate of Myanmar's export trade.

[32] Reportedly little of this trade was overland because of higher transports costs, security issues, and inadequate road infrastructure throughout the border region.

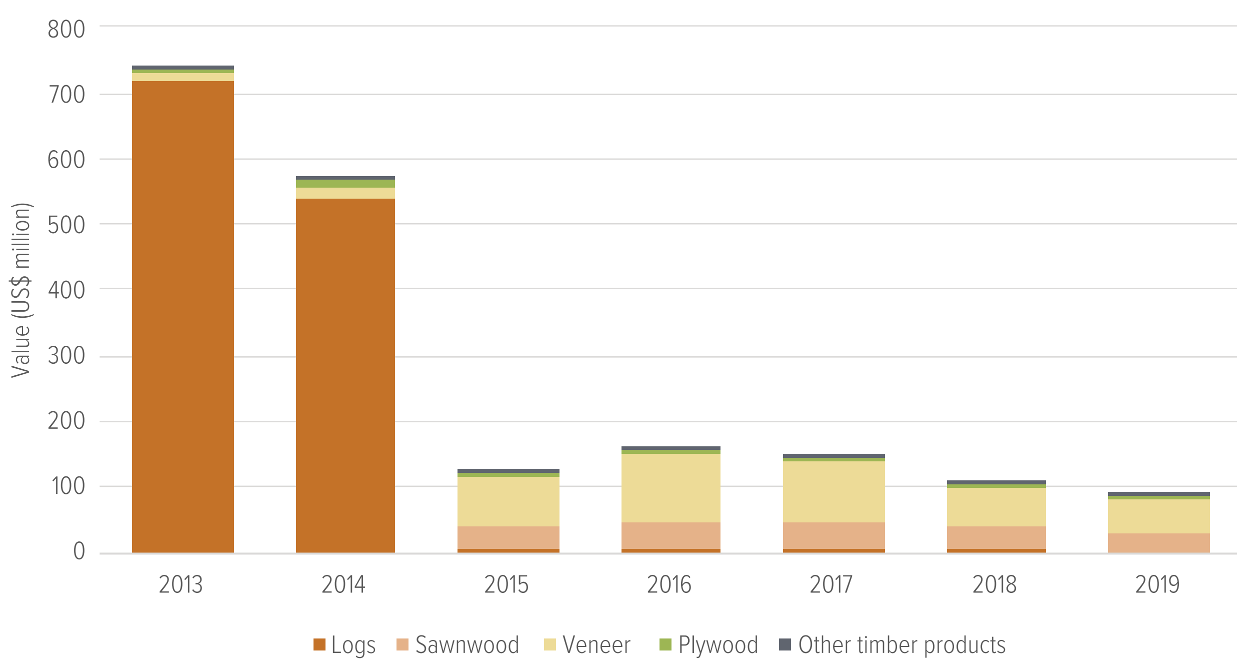
[33] The Government of India (GoI) no longer reports these data publicly.

Figure A8 | Exports of forest products from Myanmar to China and India *(US$ million, unadjusted for inflation. Gap in green line indicates period of missing data for India)*



Source: FAOSTAT (2020).

Figure A9 | Imports of timber products from Myanmar to India *(US$ million, unadjusted for inflation)*



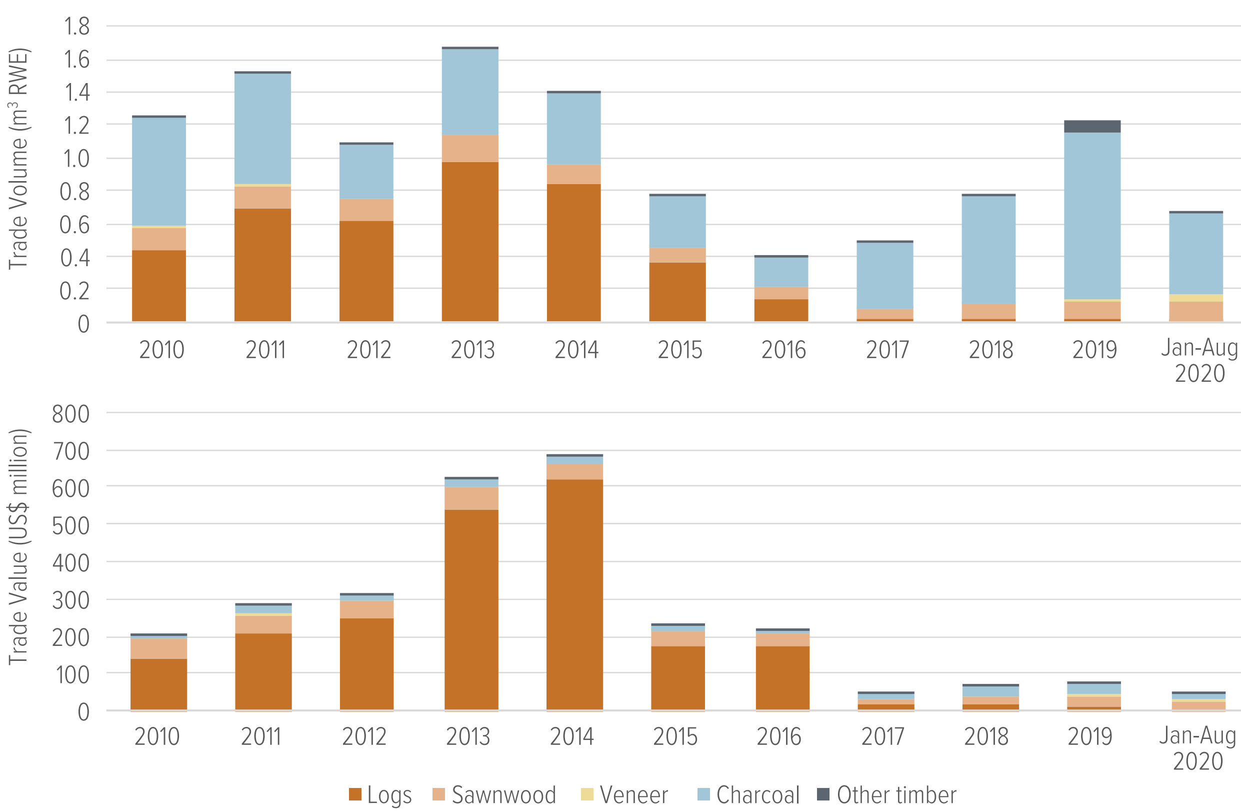
Source: UN Comtrade (2020).

The UGoM's Customs Department also reported trends almost opposite of those reported by India. For FY14, Customs reported only US$40.7 million in exports to India, but the next year, exports rose to more than US$160.8 million (MEITI 2019a). In contrast, for 2014, India reported US$566 million in imports from Myanmar, which dropped to US$120 million in 2015 (Figure A9). Over the two years, presumably, more than US$480 million of timber exports to India were allowed to leave unaccounted for by Myanmar.

For China, FAO and Comtrade data for imports from Myanmar (Figure A7) are consistent with Government of China reports (GoC; Figure A10). For example, both report a similar drop in trade after 2014. The GoC reported that almost all the imports from Myanmar came overland through Kunming (rather than through the Port of Yangon; Figure 9). By 2017, the GoC data indicate that the trade in forest products with Myanmar had essentially been eliminated, except for charcoal imports (Figure A10). In particular, the GoC report a drop in log imports in 2015, and virtually all official log trade appears to have been eliminated by 2017. However, eyewitnesses claim that some level of log exports continues via routes that avoid official checkpoints (Lindsay 2020).

Between FY14 and 17, the GoC declared imports from Myanmar of primary forest products worth more than US$820 million (Figure A10), whereas the UGoM's Customs department reported a value of exports that was less than US$56 million, or less than 7 percent of China's reported amount (MEITI 2019a; MEITI 2019b; MEITI 2020).

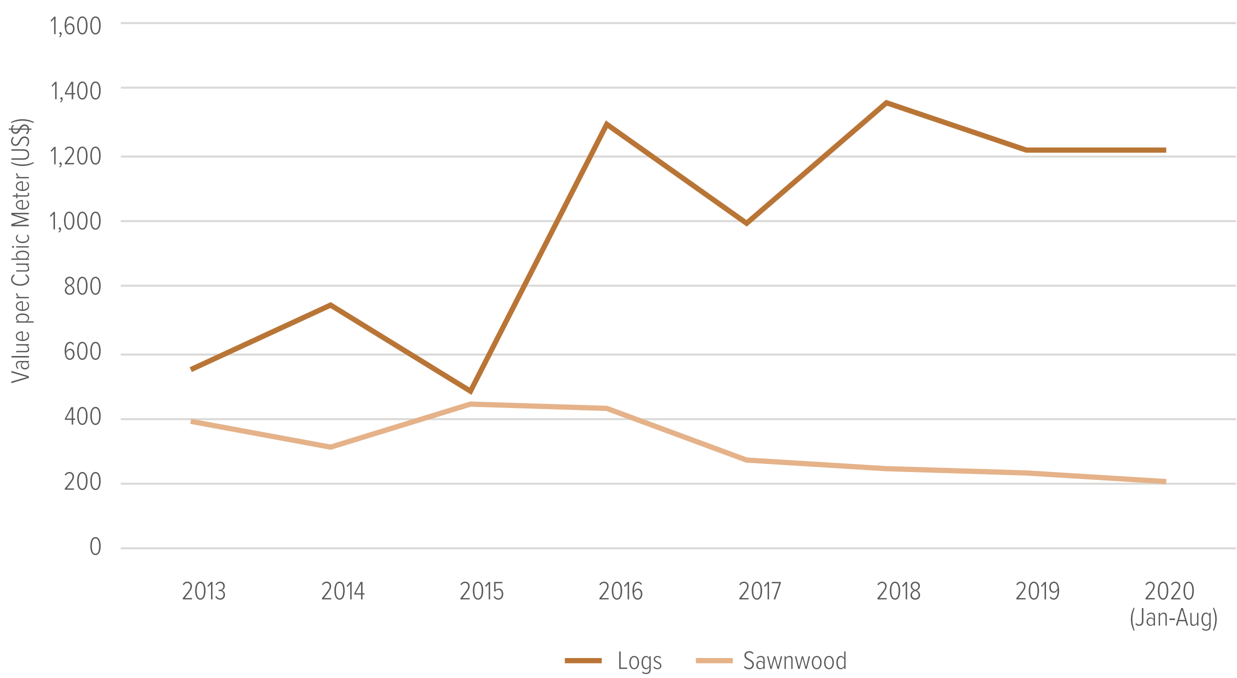
Figure A10 | Imports of forest products from Myanmar to China, by volume and value of roundwood equivalent (RWE) *(US$ million unadjusted for inflation)*



Source: General Administration of Customs, PR China. Compiled by Forest Trends.

While the volume of logs has reportedly dropped dramatically, the declared value per cubic meter of these logs has increased. At the same time, the value of sawnwood has been declining (Figure A11). This could be a result of a changing species-mix more valuable rosewood species have allegedly become increasingly important in the cross-border trade with China.

Figure A11 | Value of log and sawnwood imports from Myanmar to China *(US$/cubic meter, unadjusted for inflation)*



Source: General Administration of Customs, PR China. Compiled by Forest Trends.

A4 Appendix 4: Summary of Union Government of Myanmar Enforcement Activities, 2013 to Present

Since 2004, Myanmar has reported that its enforcement authorities seized more than 550,000 hoppus tons of teak and hardwoods, or almost 1 million m^3. From 2000 to 2014, 119,298 hoppus tons of illegal timber was seized in Kachin alone (ITTO 23:1 2019).

Enforcement activities reported in the ITTO's bi-monthly *Tropical Timber Market Reports*

The UGoM provides bi-monthly updates to the International Timber Trade Organization (ITTO). Here, for the first time, Forest Trends has compiled a comprehensive accounting of all enforcement activities detailed in the ITTO reports between 2013 and 2020:

Table 1. Reported timber seizures by MONREC of teak + hardwood species in Myanmar

Year	**Reported Timber Seizures** *(hoppus tons)*
2004-2011	269,021 [annual average = 33,627]
FY11	19,140
FY12	20,416
FY13	45,466
FY14	51,725
FY15	46,153
FY16	50,027
FY17	48,681
TOTAL	550,629

Source: ITTO (18:15 2014; 19:22 2015) & MEITI 2020, compiled by Forest Trends.

2013

In May, according to the *Kumudra Journal,* the Myanmar Timber Merchants Association (MTMA) concluded that the annual illegal trade in timber is about 100,000 hoppus tons. Barber Cho, Secretary of the MTMA, estimated that "illegally harvested timber leaving the country via overland routes could be worth over US$200 million annually and that the extent of the problem has been made worse by an escalation of the conflict between government forces and ethnic groups in the Shan and Kachin states…[Exported logs] are being 'legalised' through the payment of local taxes where the logs will be processed. Analysts who have visited the area say that, in some cases, mountain sides have been almost totally denuded by illegal operators" (ITTO 17:9 2014). One analyst said that "the cheap illegal timber has a negative impact on legally imported timber in China and prices for timber imported legally have been seriously undermined" (ITTO 17:7 2013).

Over the course of 2013:

- 57 truckloads of illegal timber were seized along the Bamaw-Momauk-Loigye road in eastern Kachin State (ITTO 17:15 2013).[34]
- Between April and December 2013, over 35,000 cubic tons of various species were seized, including 5,000 tons of teak, much in Kachin and Northern Shan (ITTO 18:2 2014). Authorities arrested 2,027 Myanmar and eight Chinese nationals and impounded logging equipment (ITTO 18:15 2014).

2014

- Between April and October 2014, 40,000 tons of illegally harvested timber was seized, including more than 7,200 tons of teak. Authorities arrested almost 4,000 Myanmar nationals and 109 foreigners and impounded 1,091 logging trucks and 106 items of logging equipment, such as cranes and tractors (ITTO 18:9 2014).
- One enforcement operation near Tachileik on the Myanmar-Thai border seized timber worth an estimated MMK76.5 million (equal to approximately $77,000), but analysts believe these operations "represent just a fraction of the volumes being smuggled." While seized timber is resold locally, "some analysts fear there is a timber laundering scheme" (ITTO 18:24 2014).

Tamalan logs are in great demand in China and can fetch prices up to US$7,000 per ton (ITTO 18:8 2014). While the cost of trucking 15-20 tons from Mandalay to Muse on the Myanmar-China border (through Namhsan and Kholan in the Southern Shan States, skirting Kengtung) was estimated to be as high as US$10,000 per trip, the load may collect up to US$140,000 (ITTO 18:9 2014).

2015

The Yunnan provincial government began targeting the illegal border trade, with a focus on the area around Honghe, Dehong, Wenshan, and Xishuangbanna (ITTO 19:12 2015). The FD claimed "that the areas on the border subject to illegal operations and smuggling are conflict zones and it is impossible for FD to operate without military support" (ITTO 19:10 2015). In October, press noted "preparations being made in the Shan and Kachin States by villagers to recover and smuggle logs abandoned during recent fighting," including along the Shweli River. It was expected that when China's ban on the import of logs from Myanmar ended at the end of the year, smuggling would resume "because it is impossible to control the entire border...[u]nless the two governments can thrash out misunderstandings concerning the recognition of Myanmar's log export ban and stop felling and smuggling of timber from the forests in northern Myanmar" (ITTO 19:20 2015).

- The Forest Department estimated 100,000 hoppus tons of timber is smuggled annually, taking "a heavy toll on the ecosystem especially in the in Kachin and Shan States Kachin State, Shan States and the Sagaing Division" (ITTO 19:11 2015).
- In January, the Myanmar Army arrested 20 Myanmar citizens and 119 foreigners and seized 472 vehicles, logging equipment, 14 loaded logging trucks, and stimulants and raw opium (ITTO 19:7 2015).

[34] ITTO also noted that this was the first case of by local newspapers in Myanmar of "government action to tackle transport of illegal logs."

- The FD seized c.300 cubic tons of timber in Shwegu township, Kachin State, as well as c.175 cubic tons of illegal timber from registered sawmills and c.117 cubic tons from motor launches. Timber is discharged in places near the border and trucked into China. The largest single haul of seized timber was of 4,557 tons. The smugglers were apprehended and charged under immigration laws and the Protection of Public Property Law No. 3 (ITTO 19:22 2015).
- A court in Myitkyina, the capital of Kachin State, sentenced 153 Chinese loggers to life sentences. Two weeks later, the UGoM pardoned all the prisoners and arranged for their repatriation (ITTO 19:14 2015).
- Following search and seizure operations in May in Indaw, Ban Mauk, Pin Le Bu, Wuntho, and Kawlin, the FD Deputy Director, General Zaw Win, reportedly dismissed more than 2,000 employees for corruption and complicity in timber smuggling (ITTO 19:10 2015).

2016

"According to the Sagaing Region Forestry Department, corruption, poverty, limited employment opportunities and high market demand are the causes of illegal felling and deforestation...Sagaing Region and Shan State have experienced the worst illegal felling...According to the Minister, Forestry staff were recently attacked while apprehending suspects," (ITTO 21:9 2017). For FY16, 8,321 suspected smugglers were arrested. However, "analysts report that the Forestry Department is disappointed with the lenient sentences handed down on those guilty of illegal felling and smuggling," (ibid.).

- In January, "a Forest Officer was shot in Northern Shan State while he was trying to stop illegal log harvesting," (ITTO 20:1 2016).
- In September, c.800 tons of illegal timber were confiscated along the Myanmar/China border (ITTO 20:16 2016).

2017

ITTO noted that "trafficking [of] protected animals and plants is [thought to be] rampant... especially in border areas and this illegal trade is said to be worth $20 billion annually," (ITTO 21:21 2017). Seized wildlife skins were incinerated, including elephant skins and leopard and tiger bones with a street value estimated at $1.3 million. "[I]llegal timber traders and brokers continue to conduct log trading in Myanmar's border towns. Demand for teak in border towns is driving up prices and this illegal trade is distorting prices for verified legal teak used by domestic industry making it difficult for them to operate profitably," (ITTO 22:2 2018).

- In January, 500 tons of illegal teak and padauk/tamalan were seized in Yangon Port. "Many believe that for the shipment to have got as far as the port suggests the smugglers had help from officials along the supply chain," (ITTO 21:2 2017). A further 1,000 tons of illegal padauk and tamalan were seized in containers in the outskirts of Yangon. The FD Deputy Director General commented that smugglers were "attempting to use a new route for illegal exports. Previously, smuggled timber crossed the border with China, but since the crackdown on the border and strict controls in China, smugglers have switched to ocean transport out of Yangon Port," (ITTO 21:3 2017).
- The FD "confiscated over 50,000 tons of illegal timber, including 14,000 tons of teak. Analysts point out that this represents just a fraction of the volume thought to have been smuggled out of the country...[T]he volume of confiscated teak is almost same as the annual allowable cut for 2017-18," (ITTO 21:8 2017).

- UGoM arrested over 8,000 people and confiscated 2,599 vehicles and machines.
- Forest Rangers were rearmed in the Sagaing Regions, in part because “there have been several fatal shootings of Rangers when they confronted timber smugglers,” (ITTO 21:7 2017).

2018

- MONREC “reported over 5,000 tons of illegally harvested timber had been seized and suspects held in Bago Region in the southern central part of the country…Minister Ohn Win mentioned that the Community Monitoring and Reporting System (CMRS) will be used to assist combating forest crime,” (ITTO 22:8 2018).
- Between April and July, “2,149 people were arrested for illegal activities in the natural forest,” (ITTO 22:16 2018).
- Local media “quoted people living and working in the Kachin and Shan States as saying the illegal timber border trade became more apparent since the Myanmar Armed Forces announced a 4-month truce in the two states,” (ITTO 23:1 2019).

The FD “will officially transport 3,000 tons of teak and 2,000 tons of other hardwood logs which are stockpiled in East Than Lwin. Permission was granted by the National Reconciliation and Peace Center (NRPC). These logs had been extracted from the production areas under the control of the Karenni National People’s Liberation Front (KNPLF) (ITTO 22:17 2018).

2019

In January, ITTO reported that “despite the efforts of the government FD to protect forest resources and ensure sustainable harvesting it has been reported that illegal logging is still rampant in the country even in the Bago Mountain Range…[The FD] admitted it does not have the capacity to tackle the widespread illegal activities,” (ITTO 23:2 2019).

“In November, Myanmar exported some 100 tons of teak sawnwood to Thailand via a cross border trade arrangement being the first of around 1,100 tons set to be shipped. The export process was witnessed by Minister Ohn Win and supervised by the Forest Department, the General Administration Department, the Custom Department, the Immigration Department and the Myanmar Police…There are no official records for the cross border trade with China most of which was deemed illegal by the Myanmar government. In a revision of its forestry laws China has included a prohibition on enterprises in China buying illegally sourced timber. The local media in Myanmar have welcomed the change but say the provincial authorities in China may not strictly enforce the new law,” (ITTO 24:2 2020).

- The FD reported that “some 44,000 tons of illegally harvested teak and other hardwoods were seized over the past 11 months. Of the total, over 11,250 tons, mostly teak, were seized in Kayah State in eastern Myanmar,” (ITTO 23:20 2019).
- Since NLD took power, more than 20,000 alleged timber traffickers were arrested. During the three years, 9,460 pieces of machinery and 1,163 chainsaws were seized. The FD noted that “most of the seizures were made possible by its community-based system to monitor illegal logging and alert authorities,” (ITTO 23:9 2019).

2020

The FD reported that "illegal timbers are being seized almost every day largely as a result of the Community Monitoring and Reporting System (CMRS)...[B]etween 2016 and 2019, 160,000 tons of illegal teak was seized and 23,000 offenders including 59 foreigners were apprehended...U Tin Aye, former director of the Forestry Department and now acting Secretary of Myanmar Forest Association said timber is smuggled to China and other neighbouring countries but the scale of the illegal activities is such that the Forestry Department alone is not capable of preventing these cross border activities. Conflict between the government and ethnic groups and the lack of cooperation among relevant ministries is exacerbating the problem," (ITTO 24:6 2020).

- In the first five months of 2020, the FD has made "421 smuggling cases in which 120 smugglers were arrested and 66 various types of machinery seized," (ITTO 24:10 2020).
- A ten-year jail sentence was given to nine people convicted of attempted timber smuggling from the Myanmar International Port in Ahlone township in 2017 (ITTO 24:4 2020).
- Police in the Netherlands seized a shipment of Myanmar teak that was being transported from the Czech Republic. The police followed up with raids of several locations in Holland (ITTO 24:3 2020).
- Director of the Forest Department in the Mandalay Region reported the "seizure of over 1,400 tons of illegal timber in the region in the first five months of this year," comprised of over 200 tons of teak, over 200 tons of other hardwoods and close to 1,000 tons of other timber products (ITTO 24:10 2020).
- The Regional Minister of Forestry for Bago "stated there has been an increase in illegal logging in the Bago Yoma Range where the 10-year logging ban has been in place since 2016-17...the Minister proposed activating an existing regulation which restricts entry into the forest," (ITTO 24:13 2020).
- The FD "seized a container packed with undocumented padauk...declared as non-wood products in an attempt to avoid submitting the required documents verifying the shipment was legal," (ibid.).
- As a precautionary measure against COVID-19, MTE suspended all auctions from March to August (ITTO 24:16 2020).
- The MTE issued a letter in which "it assures the transparency of the timber supply chain in the country and its support for production and sale of legal and sustainable timber...The letter was released at a time when EU importers are struggling to meet the requirements of the EUTR, particularly when it comes to Myanmar teak as the country is considered a high risk source of timber," (ITTO 24:15 2020; MTE 2020).
- As a precautionary measure against an apparent second wave of COVID-19, the FD will cease issuing a Certificate for Legality of Forest Products (CLFP) (ITTO 24:17 2020).

Bibliography

Chatterjee, Bipul and Prashant Sharma. 2020. View: Accelerate India-Myanmar economic ties with people at the centre stage." *The Economic Times*, October 17. Accessed December 14, 2020. https://economictimes.indiatimes.com/news/economy/foreign-trade/view-accelerate-india-myanmar-economic-ties-with-people-at-the-centre-stage/articleshow/78720025.cms?from=mdr. [Chatterjee and Sharma 2020]

Cho, Barber, Aung Kyaw Naing, Lok Mani Sapkota, Maung Maung Than, David Gritten, Peter Stephen, Allison Lewin, and Tint Lwin Taung. 2017. *Stabilizing and Rebuilding Myanmar's Working Forests: Multiple Stakeholders and Multiple Choices*. Washington DC: The Nature Conservancy and RECOFTC-The Center for People and Forests. Accessed December 9, 2020. https://www.recoftc.org/publications/0000315.

Conservation International. 2020. "Biodiversity Hotspots." Conservation International. Accessed December 8, 2020. https://www.conservation.org/priorities/biodiversity-hotspots.

The Economist Intelligence Unit. 2014. "Myanmar and India to open overland trade route." *The Economist,* June 26. Accessed December 14, 2020.
http://country.eiu.com/article aspx?articleid=31952187&Country=India&topic=Politics&subtopic=Fore_2.
[The Economist Intelligence Unit 2014]

EU FLEGT Facility. 2020. *The Myanmar FLEGT Process*. Barcelona: European Forest Institute EU FLEGT Facility. Accessed December 14, 20202. https://ec.europa.eu/environment/forests/pdf/efi/Myanmar.pdf. [EU FLEGT Facility 2020]

FAO. 2019. "FAOSTAT." Food and Agriculture Organization of the United Nations. Accessed December 8, 2020. http://www.fao.org/faostat/en/#data. [FAOSTAT 2020]

FAO. 2020. *Global Forest Resources Assessment 2020: Main Report*. Rome: Food and Agriculture Organization of the United Nations. Accessed. Accessed December 7, 2020. http://www.fao.org/documents/card/en/c/ca9825en.

Forest Department. 2002. "Reporting Questionnaire for Indicators at the National Level." Submitted to ITTO April 2002. [Forest Department 2002]

Forest Trends. 2020. *India's Wooden Furniture and Wooden Handicrafts: Risk of Trade in Illegally Harvested Wood.* Washington DC: Forest Trends. Accessed December 9, 2020. https://www.forest-trends.org/publications/indias-wooden-furniture-and-wooden-handicrafts-risk-of-trade-in-illegally-harvested-wood/. [Forest Trends 2020a]

Forest Trends. 2020. *What is in Myanmar's EITI Forestry Reports for 2016-2018?* Washington DC: Forest Trends. Accessed December 8, 2020. https://www.forest-trends.org/publications/what-is-in-myanmars-eiti-forestry-reports-for-2016-2018/. [Forest Trends 2020b]

Forest Trends. 2019. *What is in Myanmar's First EITI Forestry Reports?* Washington DC: Forest Trends. Accessed December 8, 2020. https://www.forest-trends.org/publications/what-is-in-myanmars-first-eiti-forestry-reports/. [Forest Trends 2019]

Global Forest Watch. 2020. “Myanmar.” Global Forest Watch. Accessed December 8, 2020. https://www.globalforestwatch.org/dashboards/country/MMR/.

The International Tropical Timber Organization (ITTO). *ITTO Tropical Timber Market Report 24*, no. 17 (September 2020).

ITTO. *Tropical Timber Market Report* 24, no. 6 (March 2020).

ITTO. *Tropical Timber Market Report* 24, no. 4 (February 2020).

ITTO. *Tropical Timber Market Report* 24, no. 3 (February 2020).

ITTO. *Tropical Timber Market Report* 24, no. 2 (January 2020).

ITTO. *Tropical Timber Market Report* 24, no. 16 (August 2020).

ITTO. *Tropical Timber Market Report* 24, no. 15 (August 2020).

ITTO. *Tropical Timber Market Repor* 24, no. 13 (July 2020).

ITTO. *Tropical Timber Market Report* 24, no. 10 (May 2020).

ITTO. *Tropical Timber Market Report* 23, no. 9 (May 2019).

ITTO. *Tropical Timber Market Report* 23, no. 30 (October 2019).

ITTO. *Tropical Timber Market Report* 23, no. 2 (January 2019).

ITTO. *Tropical Timber Market Report* 23, no. 11 (June 2019).

ITTO. *Tropical Timber Market Report* 23, no. 1 (January 2019).

ITTO. *Tropical Timber Market Report* 22, no. 8 (April 2018).

ITTO. *Tropical Timber Market Report* 22, no. 7 (April 2018).

ITTO. *Tropical Timber Market Report* 22, no. 6 (March 2018).

ITTO. *Tropical Timber Market Repor* 22, no. 19 (October 2018).

ITTO. *Tropical Timber Market Report* 22, no. 17 (September 2018).

ITTO. *Tropical Timber Market Report* 22, no. 16 (August 2018).

ITTO. *Tropical Timber Market Report* 22 no. 5 (March 2018).

ITTO. *Tropical Timber Market Report* 22 no. 3 (February 2018).

ITTO. *Tropical Timber Market Report* 22 no. 2 (January 2018).

ITTO. *Tropical Timber Market Report* 22 no. 1 (January 2018).

ITTO. *Tropical Timber Market Report* 21, no. 9 (May 2017).

ITTO. *Tropical Timber Market Report* 21, no. 8 (April 2017).

ITTO. *Tropical Timber Market Report* 21, no. 7 (April 2017).

ITTO. *Tropical Timber Market Report* 21, no. 6 (March 2017).

ITTO. *Tropical Timber Market Report* 21, no. 4 (February 2017).

ITTO. *Tropical Timber Market Report* 21, no. 3 (February 2017).

ITTO. *Tropical Timber Market Report* 21, no. 21 (November 2017).

ITTO. *Tropical Timber Market Report* 21, no. 2 (January 2017).

ITTO. *Tropical Timber Market Report* 21, no. 18 (September 2017).

ITTO. *Tropical Timber Market Report* 21 no. 15 (August 2017).

ITTO. *Tropical Timber Market Report* 21 no. 14 (July 2017).

ITTO. *Tropical Timber Market Report* 21 no. 13 (July 2017).

ITTO. *Tropical Timber Market Report* 20, no. 7 (April 2016).

ITTO. *Tropical Timber Market Report* 20, no. 5 (March 2016)

ITTO. *Tropical Timber Market Report* 20, no. 3 (February 2016).

ITTO. *Tropical Timber Market Report* 20, no. 21 (December 2016).

ITTO. *Tropical Timber Market Report* 20, no. 20. (November 2016).

ITTO. *Tropical Timber Market Report* 20, no. 19 (November 2016).

ITTO. *Tropical Timber Market Report* 20, no. 17 (October 2016).

ITTO. *Tropical Timber Market Report* 20, no. 16 (September 2016).

ITTO. *Tropical Timber Market Report* 20, no. 15 (September 2016).

ITTO. *Tropical Timber Market Report* 20, no. 12 (June 2016).

ITTO. *Tropical Timber Market Report* 20, no. 11 (June 2016).

ITTO. *Tropical Timber Market Report* 20, no. 10 (May 2016).

ITTO. *Tropical Timber Market Report* 20, no. 1 (January 2016).

ITTO. *Tropical Timber Market Report* 19, no. 7 (April 2015).

ITTO. *Tropical Timber Market Report* 19, no. 22 (November 2015).

ITTO. *Tropical Timber Market Report* 19, no. 20 (October 2015).

ITTO. *Tropical Timber Market Report* 19, no. 18 (September 2015).

ITTO. *Tropical Timber Market Report* 19, no. 17 (September 2015).

ITTO. *Tropical Timber Market Report* 19, no. 14 (July 2015).

ITTO. *Tropical Timber Market Report* 19, no. 12 (June 2015).

ITTO. *Tropical Timber Market Report* 19, no. 10 (May 2015).

ITTO. *Tropical Timber Market Report* 19, no. 1 (January 2015).

ITTO. *Tropical Timber Market Report* 18, no. 9 (May 2014).

ITTO. *Tropical Timber Market Report* 18, no. 8 (April 2014).

ITTO. *Tropical Timber Market Report* 18, no. 6 (March 2014).

ITTO. *Tropical Timber Market Report* 18, no. 24 (December 2014).

ITTO. *Tropical Timber Market Report* 18, no. 23 (December 2014).

ITTO. *Tropical Timber Market Report* 18, no. 21 (November 2014).

ITTO. *Tropical Timber Market Report* 18, no. 2 (January 2014).

ITTO. *Tropical Timber Market Report* 18, no. 15 (August 2014).

ITTO. *Tropical Timber Market Report* 17, no. 23 (December 2013).

ITTO. *Tropical Timber Market Report* 17, no. 19 (October 2013).

ITTO. *Tropical Timber Market Report* 17, no. 11 (June 2013).

ITTO. *Tropical Timber Market Report* 19, no. 11 (June 2015).

ITTO. *Tropical Timber Market Report* 17, no. 9 (May 2013).

ITTO. *Tropical Timber Market Report* 17, no. 7 (April 2013).

Jenkins, Michael and Art Blundell. 2017. "To avoid the 'conflict trap,' Myanmar should protect its forests." Thomson Reuters Foundation. Accessed December 9, 2020. https://news.trust.org/item/20170103170943-rosle/.

Lebedys, Arvydas and Yanshu Li. 2014. *Contribution of the Forestry Sector to National Economies, 1990-2011*. Rome: Food and Agriculture Organization of the United Nations. Accessed December 8, 2020. http://www.fao.org/3/a-i4248e.pdf.

Lindsay, Skylar. 2020. "Myanmar's illegal timber trade continues despite COVID-19." *ASEAN Today*, May 8. Accessed December 14, 2020. https://www.aseantoday.com/2020/05/myanmars-illegal-timber-trade-continues-despite-covid-19/.

Maria-Sube, Elodie and Graham Woodgate. 2019. "Analysis of the India-Myanmar timber trade." *Asian Journal of Forestry* 3(1). https://smujo.id/ajf/article/view/3014.

Ministry of Commerce. 2020. "Trade situation of Myanmar in 2011-2012 fiscal year to 2020-2021 fiscal year (October monthly)." The Republic of the Union of Myanmar Ministry of Commerce. Accessed December 14, 2020.

Moe, Thit Nay. 2014. "FDI in Timber Processing Tops $51Mln, India Biggest Investor." *The Irrawaddy*, March 5. Accessed December 14, 2020. https://www.irrawaddy.com/business/fdi-timber-processing-tops-51mln-india-biggest-investor.html#:~:text=India%20was%20the%20biggest%20foreign,million%20invested%20in%20wood%20processing.

Myanmar Extractive Industries Transparency Initiative (MEITI). 2019. *EITI Report for the Period April 2014-March 2015; Forestry Sector*. London: Moore Stephens LLP. Accessed December 9, 2020. https://myanmareiti.org/sites/myanmareiti.org/files/publication_docs/myanmar_forestry_eiti_report_2014-15_final_signed.pdf. [MEITI 2019a]

MEITI. 2019. *EITI Report for the Period April 2015-March 2016; Forestry Sector.* London: Moore Stephens LLP. Accessed December 9, 2020. https://myanmareiti.org/sites/myanmareiti.org/files/publication_docs/myanmar_forestry_eiti_report_2015-16_final_signed.pdf. [MEITI 2019b]

MEITI. 2020. 4th *EITI Report for Fiscal Year 2017/18; Forestry Sector*. London: BDO. Accessed December 8, 2020. https://eiti.org/files/documents/myanmar_forestry_eiti_final_report_2017-18_final_-_signed.pdf. [MEITI 2020]

Myanmar Ministry of Natural Resources and Environmental Conservation (MONREC). 2020. Ministry of Natural Resources and Environmental Conservation. Accessed December 8, 2020. http://www.monrec.gov.mm/news/1219. [MONREC 2020]

Myanma Timber Enterprise. 2020. "Letter on the Certificate for the Legality of Forest Products." August 7. Accessed December 15, 2020. http://www.mte.com.mm/index.php/en/annoucements/1340-the-certificate-for-legality-of-forest-products.

Myanmar Timber Merchants Association. "About Myanmar." Myanmar Timber Merchants Association. Accessed December 14, 2020. http://myanmartimberassociation.org/about_myanmar.html. [Myanmar Timber Merchants Association n.d.]

Myar, Maw Oo. 2019. "Karenni State Govt Legalizes Sale of Logs From 10,000-Ton Timber Harvest." Kantarawaddy Times. Accessed December 8, 2020. https://www.bnionline.net/en/news/karenni-state-govt-legalizes-sale-logs-10000-ton-timber-harvest.

Shein, Kyi, La Ring, May Thu Htet, Pyai Nyein Kyaw, Than Tun So, and Thu Zar Zar Soe. 2020. 2020 *Election: Electoral promises of political parties and retrospective democratic accountability*. Yangon: Inya Economics. Accessed December 8, 2020. https://www.inyaeconomics.com/wp-content/uploads/2020/10/Electoral-Promise-Report-and-Restrospective-Democratic-Accountability-Iny-Economics-Sept-2020.pdf.

Smith, Martin. 2007. "State of Strife: The Dynamics of Ethnic Conflict in Burma." *East-West Center Policy Studies* No. 36: xii, 96. https://www.eastwestcenter.org/publications/state-strife-dynamics-ethnic-conflict-burma.

Treue, Thorsten, Oliver Springate-Baginski, and Kyaw Htun. 2016. *Legally and Illegally Logged out; Extent and Drivers of Deforestation & Forest Degradation in Myanmar*. Yangon: EcoDev/ALARM. Accessed December 8, 2020. https://www.burmalibrary.org/sites/burmalibrary.org/files/obl/docs22/Final_Extent_and_Drivers_of_deforestation_and_Forest_Degradation_in_Myanmar.pdf.

United Nations Environment World Conservation Monitoring Centre. 2018. Myanmar – *Country Overview to Aid Implementation of the EUTR*. Cambridge: United Nations Environment World Conservation Monitoring Centre. Accessed December 14, 2020. https://ec.europa.eu/environment/forests/pdf/Country_overview_Myanmar_25_10_2018.pdf.[UNEP-WCMC 2018]

World Bank. 2020. *Incentivising Sustainable Private Sector Investment in Timber Plantations in Myanmar.* Washington DC: World Bank. Accessed December 8, 2020. http://hdl.handle.net/10986/34149. [World Bank 2020a]

World Bank. 2020. *Myanmar Country Forest Note*. Washington DC: World Bank. Accessed December 8, 2020. http://documents1.worldbank.org/curated/en/737331593329879596/pdf/Myanmar-Country-Forest-Note.pdf [World Bank 2020b]

FOREST TRENDS

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