

Legally and illegally logged out

The status of Myanmar's timber sector and options for reform

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Plate 1: Over-logging: Continuing logging in an evidently over-logged forest, Katha Forest Management Unit, Sagaing, Spring 2015.

This area has been the primary ‘timber basket’ for the country for a century, and is now almost completely exhausted. National Code of Forest Harvesting Practice prescribes that ‘over-logged areas will be excluded from harvesting’, and so the logging activity pictured appears to be in contravention of the Harvesting Code.

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Summary

Myanmar has been endowed with extensive areas of some of the most valuable timber bearing forests in the world. But in Myanmar's recent history they have been more of a curse than a blessing, attracting colonial annexation and plunder in which local rights were extinguished and local needs neglected. After Independence forest extraction funded the entrenchment of increasingly oppressive military dictatorships and 'crony' allies, enabled through a corrupt *ad hoc* and unsustainable dictatorial mechanisms purely concerned with revenue at the cost of the forest itself.

It is urgent that the situation is reviewed in order to identify the ways that it can be returned to formality and rule of law – so that the forest resources can again become a blessing rather than a curse.

This report presents findings of a research project conducted for ALARM in 2015. It is one of two complementary papers by the authors, the other, entitled '*Legally and illegally logged out: Extent and Drivers of Deforestation & Forest Degradation in Myanmar*' presents findings relating to forests and land use change.

Our findings are summarised as follows.

The timber trade has been one of the most important economic sectors in Myanmar's economy for over a century. A sophisticated administration has developed to facilitate it. However the capacity to extract and export has overridden considerations for sustainability, for in-country value addition and even for domestic use.

Forests have been systematically over-logged for decades: Colonial and military governments have focussed on export-oriented timber exploitation and significantly exceeded estimated sustainable levels (the Annual Allowable Cut) for decades. This plunder reached a final crescendo in the felling season of 2013-2014 as it became clear the opportunities provided by the military era were ending.

Myanmar's forests are now largely exhausted. There are very few commercially valuable trees remaining in accessible forest areas.

Illicit logging practices have been widespread: Specific 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.

There is a new mood of improved stringency to enforce harvesting regulations indicated by policy pronouncements, interviews and observation. But there is also lack of transparency and entrenched interests. Unaccounted illegal flows and malpractice evidently persist, although the extent is reduced.

Felling still continues but is 'scraping the barrel': Today, the harvested volume as well as the sawing grade quality is far lower than in the 1980s, and preferred species have become very scarce. Many sawmills are idle or running below capacity.

The timber industry is in a difficult transition from exporting logs to further processing: The business model of 'mining' old growth forest resources has precipitated the current crisis and is no longer viable or legal.

Reforms are urgent An inter-related set of actions are urgently required to transform the forest sector from the current 'vicious cycle' of decline to a 'virtuous cycle' of regeneration through participatory management focused on the growing and marketing of timber trees. Such reforms are:

1. **Secure and assess the remaining forest areas**, gazette Unclassified Forests, review existing concessions, stop any further land use change away from forest, and update inventory data for forests with apparent timber production potential.
2. **Reform land and tree tenure to secure private and community rights**. Promote a sustainable timber supply through liberalising timber and wood production and marketing conditions.
3. **Introduce sustainable forest management** in conjunction with local communities. Much forest should be treated as 'logged-out' and allowed to recover for years ahead. Community Forestry and other joint governance models should be widely promoted.
4. **Capacitate FD to be 'fit for purpose' and close MTE**. This may be achieved through privatisation as it is unlikely MTE could survive in a competitive marketplace with little timber left to harvest. However it is important that if MTE is to be privatised (or 'corporatized' as the current term, no preferential access to forests is involved.
5. **Promote good governance and rule of law**: Update and enforce rules and guidelines. Publish forest and logging data, introduce third party monitoring of logging, transport and export of timber and wood products. Train the judiciary in forestry matters.
6. **Facilitate citizen-led multi-stakeholder landscape planning**: Re-negotiate management objectives. Build multi-stakeholder alliances between citizens, public servants and enterprises, particularly Small and Medium Enterprises in wood processing.
7. **From conflict economy to peace dividend**: resolve political conflicts in ethnic areas and decentralise forest governance. Challenge the illegal timber conflict economy. Improve border control in partnership with neighbouring countries.
8. **Promote further processing of legal timber**. Establish credible Chain of Custody, liberalise and streamline export procedures.
9. **Conduct an overall sectoral policy review**: revise the Forest Law, promote community forestry and other forms of citizen rights to forests, forest products, and forest revenues.

1. Myanmar's timber sector

The context:

Myanmar's forests and timber sector have been central to the country's economy and society, particularly over the last century. More than half of Myanmar's land has been forests, and these forests have provided a wide range of benefits for Myanmar society: timber, wood, fuelwood; grazing and fodder; non timber forest products (including wild foods, medicinal and other plants); ecosystem services such as hydrological functions, local microclimate moderation, soil stability and so on. (Emerton 2014).

Myanmar's forests have contained some of the most valued timbers in the world – particularly rosewoods and teak yet in these have, in many ways, been a '*resource curse*' for the country as their value contributed to colonial annexation, and in the post-colonial period their over-extraction has funded entrenchment of the oppressive military dictatorship.

Now, amidst unprecedented political reforms in Myanmar, the forest and timber sector is currently undergoing a long overdue process of reform. This is indicated by a number of policy changes, most significantly the 2014 Log Export Ban, which has made it illegal to export unprocessed logs, and the Government's engagement in a Voluntary Partnership Agreement (VPA) process with the European Union's Forest Law Enforcement Governance and Trade (FLEGT) initiative, requiring transparency and compliance improvements.

This policy redirection is essential. Practical implementation will inevitably take time and face obstacles as powerful political-economic interests allied to the military regime seek to maintain their dictatorship era business model and monopolistic power.

Meanwhile the MOECF is under strong pressure from international timber traders to increase supply, more evidently recent pressure from China, and also missions from the European and US sector representatives. This growing pressure is due to a combination of factors: growing demand around the world; declining supply of tropical hardwood from shrinking forests; and growing stringency around compliance concerning illegal sourcing.

In order to respond to these pressures the authors have tried to clarify the status of the timber industry, and the challenges for reform.

This study:

Under an EU-funded project managed by ALARM, the authors have conducted a detailed field study in Spring 2015 on the current status of the timber trade and forest change. We sought to answer two simple questions:

1. What is the current status of the timber and forest sectors, and the actual processes ongoing in relation to:
 - a) forest condition, management & planning; land use, land use change, forest degradation & deforestation
 - b) the timber industry, legality, enforcement, governance
2. What should the reform agenda be?
 - a) What policy measures can promote democratic governance processes, sustainability of the resource, and equity in distribution of the costs and benefits?

This report focusses on the issues of forest management for timber, and the timber industry. A companion report considers forests and land use change.

Our **method** involved interviews with a wide range of stakeholders nationally and regionally, field study of forests at timber extraction sites in three state/regions, visits to log depots and processing factories in Kachin, Tanintharyi, Sagaing, Mandalay and Yangon, analysis of previously unreleased Ministry of

Environmental Conservation & Forestry (MOECAF) data. We have also benefited from an ongoing ALARM project on the remote sensing-based mapping of forest condition and change¹.

Our approach has involved four different collection methods:

1. interviews with key informants at national, region/state, field levels, and workshops.
2. field observation in a range of timber extraction sites; also at timber transit locations;
3. assessment of official data provided by MOECAF;
4. review of secondary literature.

We sampled 3 ‘hotspot’ state/regions & townships, as listed in Table 1 below and illustrated in Map 1. These “hotspots” were selected in collaboration with ALARM’s EU funded FLEGT project. At each we visited a range of field sites. Field research was conducted over a five week period in February March 2015.

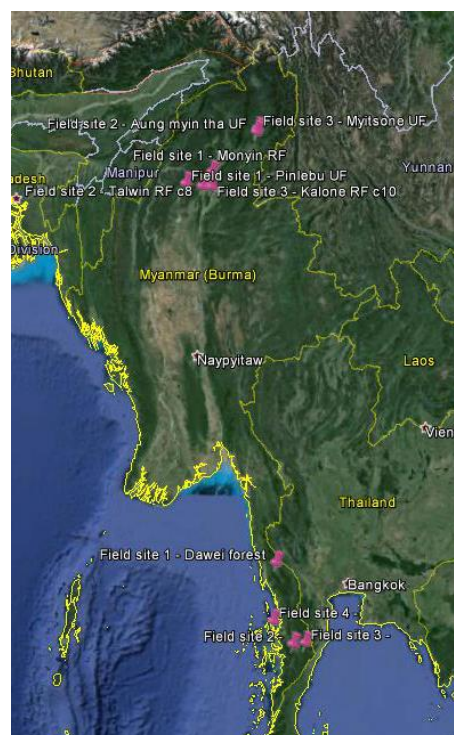


Table 1: Data collection: types of data and the three state/regions

Map 1: Study sites (google earth)

Types of data:	Sagaing	Kachin	Tanintharyi
State-Region level	Monywa	Myitkyina	Dawei
➤ FD Assistant Director			
➤ MTE manager			
Forest Management Unit / Township level	Katha dist. FMU	Myitkyina dist. FMU	Dawei dist. - FMU
➤ FD and MTE officials	1. Pinlebu township	1. Monyin township	1. Dawei township
➤ Field extraction sites	2. Katha township	2. Myitkyina township	2,3. Tanintharyi township
➤ Transport			Myeik dist –FMU
➤ Depots			4. Myeik Kyunsu township
➤ Domestic extraction & use			

Access and transparency issues

During this study we have enjoyed the support of the Director General of MOECAF and are very grateful for his efforts, and we also enjoyed regional and local cooperation from many public servants. However for ordinary citizens the timber extraction process remains currently highly inaccessible and non-transparent. Even with senior support we have experienced a range of difficulties in many locations due to non-cooperation, obstruction from public servants (particularly from MTE) and reluctance to speak openly. Excuses expressed included

- * ‘We have no permission from above to release data.’
- * ‘Furnishing data will require too much work and we are too busy’

¹ "Myanmar Forest Cover Change 2002-2014" available from ALARM/FLEGT

- * *'Field access is not possible – due to security issues, anyway there is nothing of interest ...'*
- * *'We cannot meet you as there is a visit by the chief minister'*
- * *'Sorry I am hard of hearing'*

In an investigation of a sector notorious for illegality and corruption these responses themselves indicate a serious institutional problem. There are several reasons why public servants (with some notable exceptions) may be so reluctant to be transparent to citizens and researchers. There seems to be a widespread level of embarrassment regarding the state of the system and the fundamental problems, so many staff would rather avoid exposing this. There is also an institutional culture from colonial and junta days of anti-democratic and non-transparent conduct. The hierarchy has been built on the control and disciplining of citizens rather than serving them; and lastly it seems many staff may have something to hide in terms of underlying corruption problems (which we discuss in section three below).

Most modern democracies have basic Right To Information (RTI) legislation so that public servants are legally obliged to share data with citizens, and additionally most developed countries make government data available online as routine. Data transparency and the right to information will be essential in Myanmar to address corruption.

The Evolution of Myanmar's timber administration and industry

To understand the current administration around timber in Myanmar it is essential to understand its historical evolution. Here we briefly rehearse the main periods.

Pre-colonisation (up to 1824)

Timber extraction before the colonial period was to an extent centralised under the monarchy, and particularly focussed on supplying the booming ship-building industry. However the capacity to extract timber was quite modest relative to later periods, and colonial buyers complained of erratic supplies.

British Colonial Era (1824- 1948)

The administration of timber we see today was established under the British colonial area. The British annexation began with the First Anglo-Burmese War of 1824-1826, after which there was a gradual expansion of colonial timber extraction especially along the Tinnisrye coast. Initially harvesting was unregulated open access, and resource depletion inevitably ensued. In response increasing regulation was gradually introduced.

After the Second Anglo-Burmese War of 1852 the British initiated forestry administration to take legal control of forests and to regulate extraction on a more systematic basis. In 1856 the Burmese Forest Department was established under Dietrich Brandis, who developed the Myanmar Selection System (MSS) based on the German technical 'scientific forestry' repertoire intended to assure a sustained yield. The MSS involved specific territories being reserved for timber production ('Reserved Forests'), and harvesting these according to 10 year management plans, based on tree inventory and annual allowable cut calculations so that only the 'increment' volume is extracted. Larger trees are individually extracted without clearing the entire stand. The trees and logs are government property, and may be extracted and transported to a depot for auction either by the government administration, or by subcontractors.

The 1881 Forest Act provided the legal basis for forest control and management. The Third and final Anglo-Burmese War in 1885-86 allowed the Forestry regime to be extended to upper Burma.

A major concern as the forest estate was appropriated was the handing of local people's rights in forests they had hitherto accessed for domestic and local commercial use. The reservation process of identifying forest areas, defining boundaries and considering rights claims was lengthy, and for a range of reasons local people were often not aware or able to petition for recognition of their use rights. In India, where

the same system was followed, there has recently been legal reform to seek to redress these 'historical injustices' (Government of India Forest Rights Recognition Act 2006)

Thus the 19th century saw an expansion of colonial control of forests and timber through a major institutional strengthening of the colonial Forest Department into a highly systematic administration.

Independence and Democratic Period (1948-1962)

Independent Burma inherited a particular colonial system of forest administration, and this system was maintained with little reform, redress of historical grievances and recognition of democratic rights. The country needed to be rebuilt and the modernisation policies also needed international revenues, which could be most easily generated through timber sales. However in the initial period political unrest meant that the Forest Department was hardly able to manage any forests, and Bryant has labelled the immediate post-independence period as 'forestry on the run'. (Bryant 1997 p.159)

Military Coup and the Socialist era (1962-1988)

After the 1962 coup timber export revenues became increasingly essential to fund nation-building. The administration of marketing timbers was under the State Timber Board, which gradually evolved into the Myanmar Timber Enterprise (MTE) of today.

Having two separate administrations, the Forest Department for timber production and the Myanmar Timber Enterprise for extraction and marketing inevitably institutionalized a power struggle. The FDs performance would depend on its ability to regulate extraction within the AAC, that is to sustainable levels. The MTE performance depends on generating as much revenue as possible. As time went on national revenue targets took precedence over the AAC, and MTE achieved greater political status than the FD. But the crisis of forest productivity that this short term expedient makes inevitable could not be delayed for ever.

The MTE became a far bigger organisation than the Forest Department and many of the seniors are members of the military. Since MTE senior staff exercise significant discretionary power in awarding subcontracts and managing timber flows and timber sales, it can be a highly lucrative opportunity for corrupt practice.

Many non-MTE staff encountered in our study commented bitterly that the MTE is institutionally corrupt and should be closed down before any more of the country's wealth is embezzled by staff.

SLORC Dictatorship era (1988-2016)

After the SLORC coup the new military dictatorship promoted several 'national entrepreneurs' to take a dominant role in the nation's economy. What have become widely known as 'cronies' were given favorable commercial opportunities, and the timber sector was no exception. Cronies were able to secure very lucrative subcontracts with MTE for major logging concessions. This era saw the rapid spread of corrupt practice as Than Shwe directed the timber sector through increasing revenue targets with little recognition of Forest Department norms for sustainable extraction.

Reform period (2008 on)

After 2008 the political arrangements started to change, with the unveiling of a new constitution, the installation of a new President Thein Sein, with a gradualist reform agenda. Signs that the era of unfettered extraction were coming to an end were signaled most clearly by the 2014 Log Export Ban (LEB). After the introduction of the Log Export Ban felling has reduced, and there seems to be a new political agenda for reform.

The Administration of the timber value chain

Forests in Myanmar cover around 30 million hectares (according to MOECAP 2011). Of this only around two thirds is under the jurisdiction of the forest department, of which just over half is Reserved Forest for timber production. Figures 1 below illustrates the extent of and its administration.

Forests are managed under the 1992 Forest Law, which is a slightly updated version of the colonial 1906 Forest Act. Hence the current legal basis for forest governance remains essentially colonial. Additionally there are associated Rules and a Code of Harvesting Practice. Figure 2 below illustrates the main aspects of the timber extraction and marketing channels.

The forest and timber governance system has 9 main aspects, as illustrated:

1. Classification of forest

Reservation and gazettelement of the Permanent Forest Estate gradually happened over the late 19th and 20th Century.

Reserved Forests are specifically allocated for timber production, to be managed under detailed Management Plan. Reserved Forests are typically divided in 30 approximately similar sized compartments, so that each can be extracted from successively in a 30 year rotation.

Protected Public Forests, are ostensibly for domestic supply. However there is no regulatory mechanism to manage extraction within sustainable levels.

Unclassified Forests under the Ministry of Agriculture and Irrigation, which despite having forest cover are available for concession and conversion to plantation or other use.

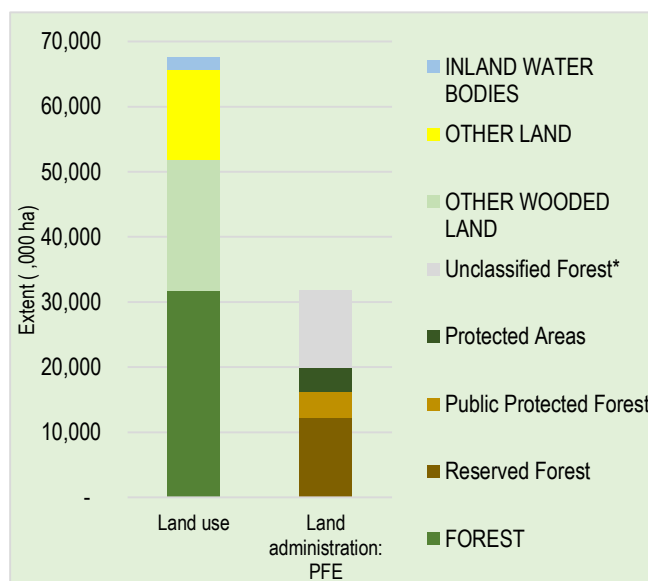


Figure 1: Myanmar Land use and Permanent Forest Estate (Data: MOECAP 2011)

Note 1: 'Forest here is taken to mean land with over 10% canopy cover.

Note 2: Unclassified Forest extent is an estimate derived from the total forest land

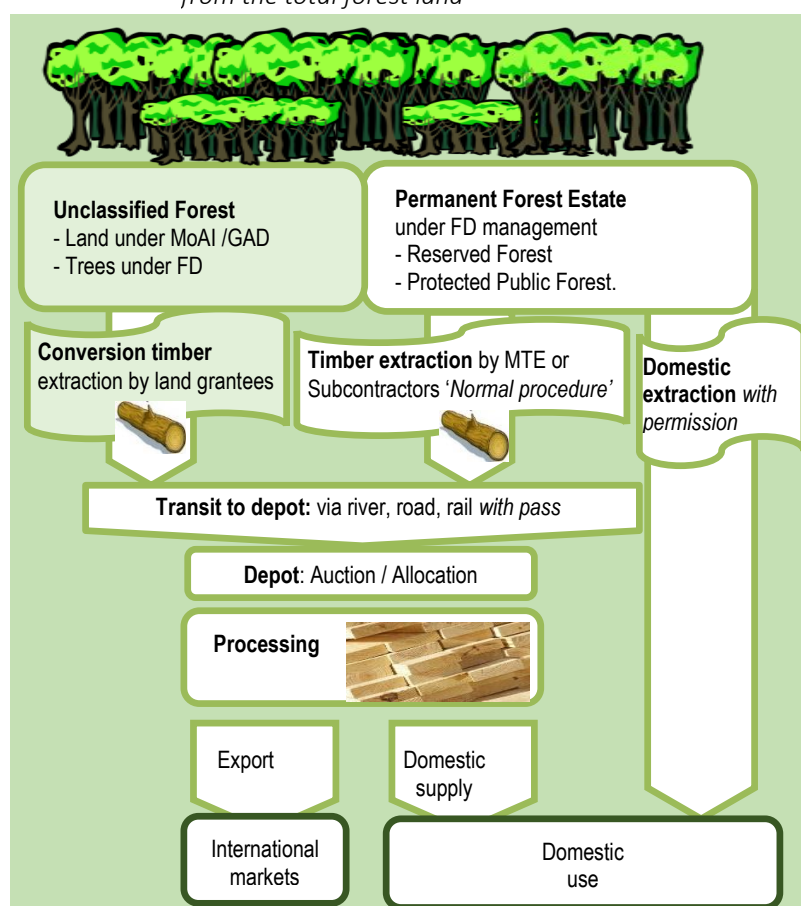


Figure 2 Elements of the forest and timber governance system

2. Extraction of timber

Timber extraction is supposed to occur from forest areas under the specified legal basis. The MTE has the monopoly right to extract timber, and may subcontract extraction tasks to private sector subcontractors, although how the allocation of tasks is divided between MTE and subcontractors is not transparent.

Sustained yield forest management principles require that harvest does not exceed growth. The Annual Allowable Cut (AAC) is the forester's upper limit for sustainable extraction, which is equal to or less than the annual increment of valued timber in a given forest area. Under the Myanmar Selection [felling] System (MSS), the AAC is derived by an inventory of the growing stock every ten years, a 30 year felling cycle and minimum girth limits. Accordingly, 1/30 of a forest area will, on average, be harvested annually. Every 10 years the forests are re-measured (inventoried) to assess the growing stock and adjust the AAC.

Inspections by forestry department staff during and after logging are prescribed to ensure compliance. Before logging takes place, foresters must mark each tree that may be felled within the girth limit (so-called Selection Felling (SF) marking). When the AAC is reached, tree marking stops for that year, even if there are more mature trees in the compartment.

All extraction must be according to the Harvesting Guidelines. Key aspects include:

1. specifying minimum Diameter at Breast Height (DBH) for extraction (6'6" teak, 6' non teak).
2. each compartment should be closed for 30 years to regenerate and should not be revisited within that time.
3. if a block is exhausted it must also be closed for regeneration.
4. controls on the density of roads and 'skidding points' within the compartments to minimise impact on the forest.

In the colonial era not only marking, but also extraction was conducted by the Forest Department. However in 1948 the State Timber Board was created, which took over timber marketing functions. This subsequently became MTE, which is now the responsible authority for extraction, although where they lack the necessary extraction capacity they may need to subcontract to private companies to assist.

Timber extraction levels were traditionally based on following a long term Forest Management Plan and extracting within the AAC. However the pursuit of state revenue meant that under political pressure revenue targets took precedence. The national military head announced an arbitrary revenue target to the heads of FD and MTE to generate that season. The implication was that if the target was not fulfilled their employment may be terminated. So the Director General of the Forest Department was obliged to then allocate target extraction from different areas of the country, overriding the 'bottom-up' AAC based on forest production level. Although initially the RF was the planned area for extraction, as revenue targets exceeded the AAC from the RF, harvesting from non-RF became necessary, and monitoring and observation of harvesting rules also seems to have eroded, as we shall see in the next section.

3. Direct Domestic extraction

Local people are permitted to extract timber from PPF and UC for personal supply, with permission / permit). However this necessitates travel to often distant govt offices, and bribes may be expected for such permits. The system is ineffective and leads to a *de facto* open access regime for domestic use in which there can be no effective regulation on extraction. Consequently unregulated domestic extraction has contributed to forest degradation.

4. Domestic supply

For domestic commercial supply it is expected that traders must compete at the MTE auctions. However since the systems are established with a focus on export revenues and are centralised and bureaucratised they are hardly suited to smaller scale and lower capitalised domestic suppliers. Hence much domestic supply is necessarily through informal sources.

5. Conversion timber

When Unclassified Forests (VFV land) are granted for 100 year lease concessions, the trees remain the property of the FD so they must be inspected and marked for felling. They would then be transported to the MTE depot and traded as other logs, and subcontractors would be paid for extraction and transport accordingly.

6. Transport from skidding point to depot (with transit permit)

In the past much transport of timber was by river, and this required drying the timber so its moisture content was reduced and it would easily float. These days transport has become increasingly by road, which can be faster and there is thus no need to dry. Transport of timber beyond the Township requires a FD Removal Pass, to be show at checkpoints (which may be FD, police or military). However MTE have been except from this requirement.

Subcontractors are paid for extraction and transport costs for delivery to the depot.

7. Auction at depot to private buyers, or allocation for export

In the past Yangon log depot was the central depot for export, and the MTE or subcontractors would deliver there. The best timbers were allocated for export and the MTE export division would manage the sale, or permission was given for subcontractors and merchants to export. Timber from southern Tanintharyi could be exported from Myeik. Recently an exception was made for some reason for Asia World's private docks in Yangon. The system has now changed and since 2014 timber is auctioned at regional depots and the MTE export division has been closed. Thus the costs of transport and export are upon the private trader rather than MTE.

8. Processing (now a requirement for export).

In the past logs could be exported unsawn. Processing would happen outside of the country, and profits made there too. In 2014 the LEB made it illegal to export without processing. The legal definition of what the minimum threshold for 'processing' would be is unclear, but the provision has been sufficient to stop the direct export of logs.

9. Export to international markets

In the new system, to export timber exporters must fulfil a range of complex bureaucratic requirements covering exportation permissions and taxation.

Review

The administrative and legal system around forest governance and the timber management appears reasonably logical and systematic. In the next sections we review the extent to which it has been robust under political pressure, and whether the system has ensured that, on the whole, extraction has been sustainable and legal.

2. Official logging levels - have systematically exceeded sustainable levels

The Issue: the silvicultural system in theory

It is well known that Myanmar's formal process for timber extracting and the marketing system as described above has not been strictly followed during the non-democratic military era. The AAC has not been respected and neither has the guide for harvesting, but rather it has been over-ridden by revenue generation targets (e.g. Bryant 1996). However the details and consequences are not so clear. In this section we examine the details of official logging processes and levels

Data and method

The best available evidence we have for extraction levels and its effects is the official FD tree marking and MTE extraction data. We have supplemented and triangulated this data with field observation.

Some of the official data we have used has already been published (MOECF 2011) and other data have been kindly provided by FMU offices and by MOECF centrally. The information indicates the official levels of extraction. However this is not complete as formally recorded extraction is only part of actual felling and extraction. In all forest activities there is an inevitable level of wastage when trees are felled (e.g. poor felling destroying some marked trees, damage to other trees around the felling site, skidding trails and road areas).

Additionally any unaccounted extraction due to illicit logging is not counted, including both organised and informal domestic supply. The issue is covered in detail in chapter 3 below.

Further, the source from which logs are taken is difficult to track in the aggregated figures. Log consignments may or may not come from a specific reserved forest, and it seems to have become over time increasingly common for log consignments to be sources from Unclassed Forests, as RF have become exhausted. Alternatively if the target forest is under conflict, logging may shift elsewhere.

Findings: long term over-extraction

Official logging data in Myanmar is separated into teak and 'other hardwood' which contains a range of timbers. Historically Teak has been the priority timber species of foresters, due to its extremely valued properties of resilience to water including salt water, and its suitability for shaping, particularly curving for boat hulls. Both during and since the colonial era official annual harvest levels have been staggering: throughout the 1980s, and then from the early 1990s to the end of the 2000s the recorded harvest for teak has been peaking at around 740,000 m³ annually (MOECF 2011, 2015), as illustrated in Figure 2 below for the period from 1918 to the present. The AAC for actual extraction of teak over the period 1918-2009 was consistently exceeded by official extraction in the 1980s and mid 1990s on.

However, as mentioned above, the official extraction level is incomplete as we must also take into account wastage during harvesting and transport and unrecorded (illegal) harvesting if we are to compare actual extraction to the prescribed AAC. Following Castrén (1999) we have included estimates of wastage (at 10% for felling damage) and illegal (including criminalised domestic use) harvest (at 20%). When this is added we can see that the AAC is likely to have been exceeded from the start of the 1970s onwards without exception, throughout the 1980s, as well as in the late 1990s and throughout the 2000s.

Furthermore, we cannot be confident that the estimates for wastage and illegal extraction are really high enough. Particularly since the SLORC era began, it is widely recognised that illegal extraction by 'crony' companies accelerated. Therefore a higher estimated level is probably likely to be accurate.

The shrinking Annual Allowable Cut over the 20th Century reflects that the over-extraction had a cumulative impact on the forests' productivity, reducing by over half between the 1960s and the 2000s. Along with over-extraction, other causes include conversion of forest to agriculture (Bryant 1996, pp. 158-

168). Observe that the AAC for teak was increased in 2001 (perhaps politically) even though the resource was clearly overharvested.

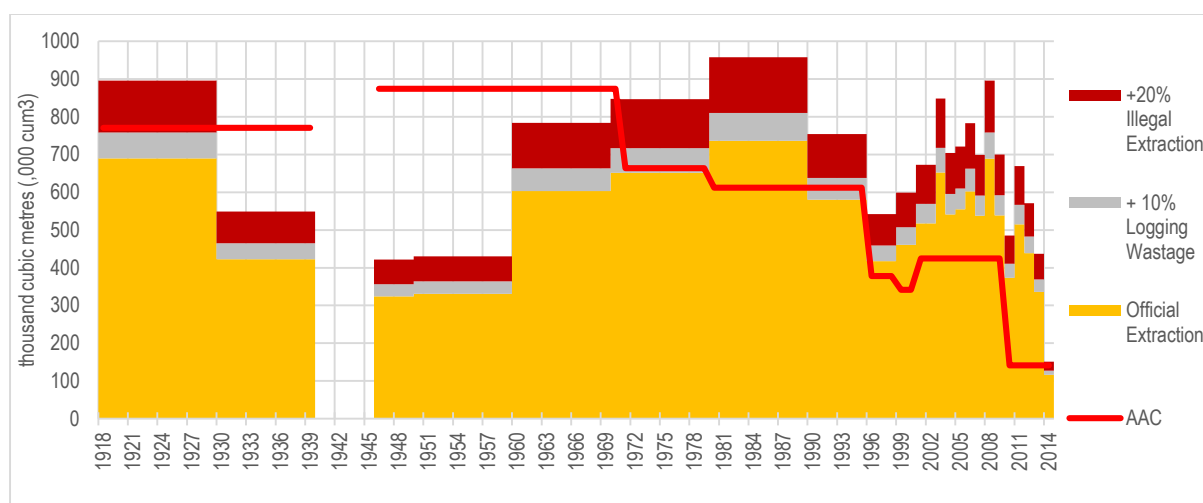


Figure 3: Teak AAC and production plus estimated wastage and estimated illegal extraction.

Data: MOECAAF 2011, Castrén 1999. Notes: Data is for harvesting season – so 1918 signifies 1918-1919 season. Data unavailable for the period 1940-45; data for 14-15 indicative only

Based on inventories at forest management unit-level in 2010, the AAC for teak was drastically reduced from the previous 147,300 to 48,897 trees (or 424,790 to 141,000 m³), reflecting that previous overlogging was affecting the growing stock. The AAC for other hardwoods was moderately reduced from 1,131,416 to 817,043 trees (1,602,034 to 1,156,896 m³ - Data: MOECAAF 2015). Yet detailed official data for the period since 2009/10-2014/15 illustrates that harvesting has not been commensurately reduced. The aggregate AAC has been significantly exceeded every year until 2014-15, and the 14-15 data may not be complete. In 2015-16 the AAC for teak has now been halved again and stands at 20,000 cubic tonnes.

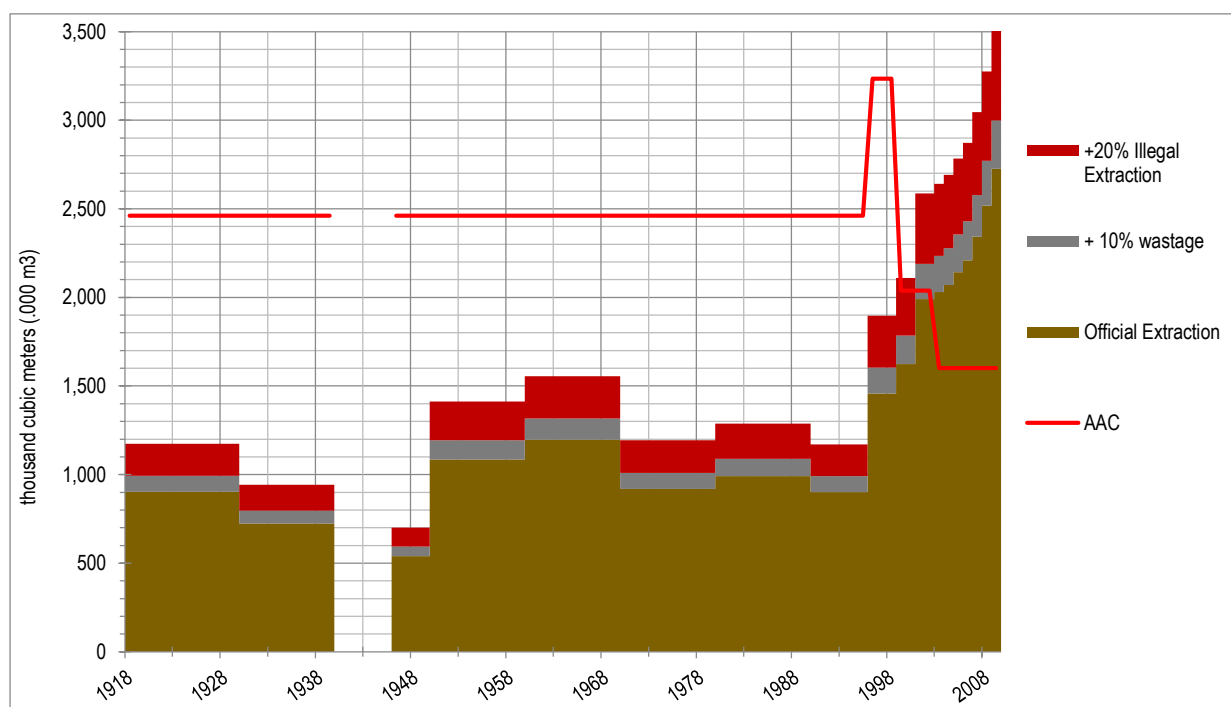


Figure 4: 'Other hardwoods': AAC, production plus wastage and estimated illegal extraction 1918-2008. *Data MOECAAF 2011. Note: Data unavailable for the period 1940-45.*

For the non-teak commercial species – the category of 'other hardwoods' (that is mostly Kanyin, i.e. *Dipterocarp* species) –stocks and extraction levels have been higher than teak for much of the period. They

are, however, far below the AAC, reflecting the fact that these mainly lower value species are in more plentiful supply. However in the mid 1990s extraction began to rapidly increase and the AAC, based on an updated inventory was rapidly downgraded, presumably because available forest resources had been degraded or cleared (figure 4). The odd-looking increase in 1996 and the following decrease in 1998 of the AAC suggests that the setting of the AAC has for this period not *only been* technical but also subject to political influence, which temporarily ‘compensated’ logging companies for the 1996 reduction of the teak AAC. Persistent over-harvesting of ‘other-hardwoods’ was the response.

Recent patterns of over-extraction 2010-15

Figure 5 below illustrates the breakdown for official Teak harvesting by State/region for the five years 2009-10 to 2014-15. The period shows the extreme divergence between the FD recommendations and the MTE actual felling, reflecting the continuing balance of power between the two groups, and the fact that leading political figures, right up to 2014 felt the expedience of continuing short term resource plunder over long term recovery and sustainability.

The AAC from both teak and other hardwoods was reduced based on an updated inventory. However FD senior staff have acknowledged to us that the quality of this inventory was necessarily limited due to lack of sufficient resources, and therefore the prescriptions are necessarily approximate. To derive a more accurate inventory and AAC, a more detailed and properly funded assessment is needed. Furthermore, if the AAC is exceeded in any year, the AAC for subsequent years should be downgraded, as the growing stock has been reduced.

The extraction continues to be far above the Forest Department Annual Allowable cut. The figure also illustrate that the majors flow are coming from Sagaing and areas of Shan. In 2013-14 the national AAC for teak was exceeded in Sagaing region alone (Figure 4).

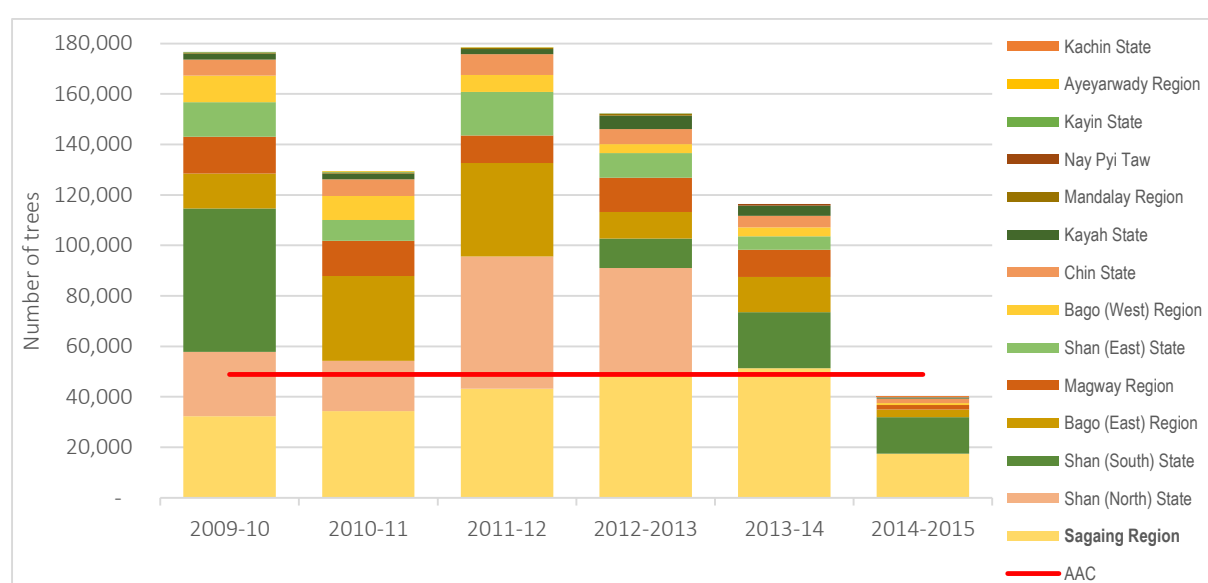


Figure 5: Teak – National aggregate AAC and Trees Marked for felling by FD for 2009-2015 (Data: MOECAP 2015). Note so wastage or illegal extraction shown.

Figure 5 above shows the continuing high levels of teak extraction. If we compare extraction with AAC by specific region/state we can see that for teak almost all the regional are exceeding their AAC, most by several times over. Severe damage to the growing stock is inevitable.

Breaking down the data by state/ region AAC and trees marked for felling we can see that virtually all areas are exceeding their teak AAC by a very large factor, implying a severe negative impact on the growing stock.

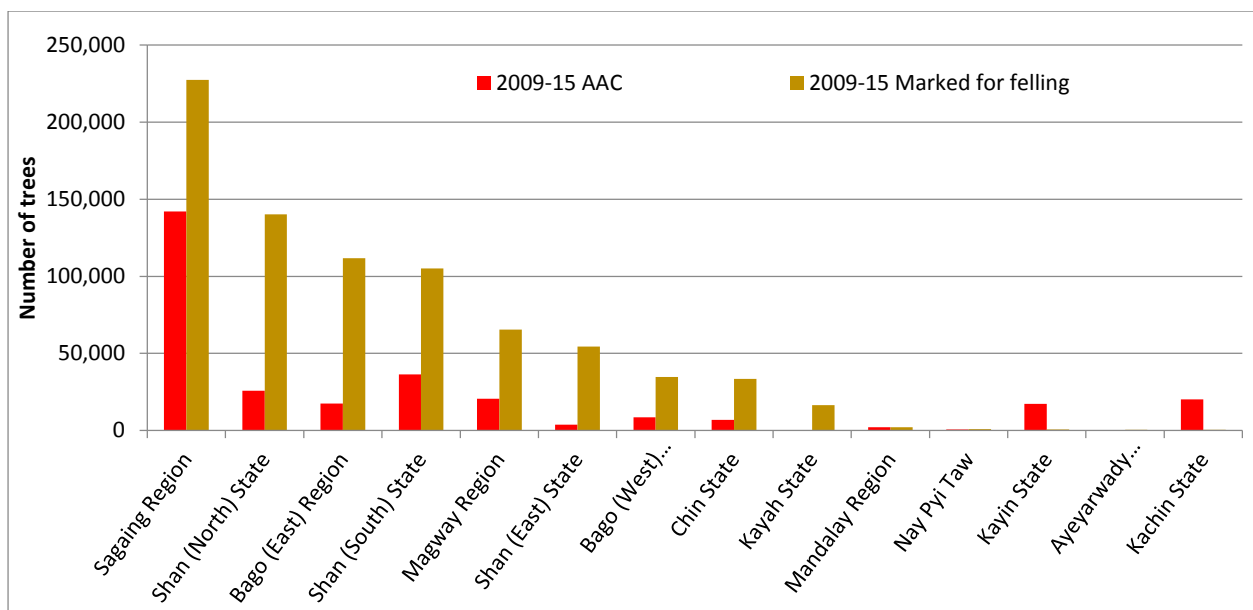


Figure 6: Teak: contrast between cumulative AACs and actual number of trees marked for felling 2009-15, by state. (Data: MOECF 2015)

Although Figure 6 above shows that extraction has been exceeding the AAC until this year for teak, the *actual* extraction levels are likely to have been even higher for three main reasons:

1. Harvesting under Modified Procedure (MP) in conflict areas is poorly monitored.
2. Conversion timber (discussed below) is not marked and recorded in the normal way
3. Conflict timber and other unaccounted/illicit extraction is not included

The exceeding of the AAC for teak is a common pattern across the forested states and regions, with few exceptions (see Figure 7 below). It is evident that Sagaing Region has been treated as the country's 'teak basket'. In general, teak has been grossly overharvested in Sagaing, Shan Bago, Magway, and Chin. In 2012/13 and 2013/14, up to the 2014 log export ban, teak was harvested at levels that tremendously exceeded the AACs in almost all regions and districts.

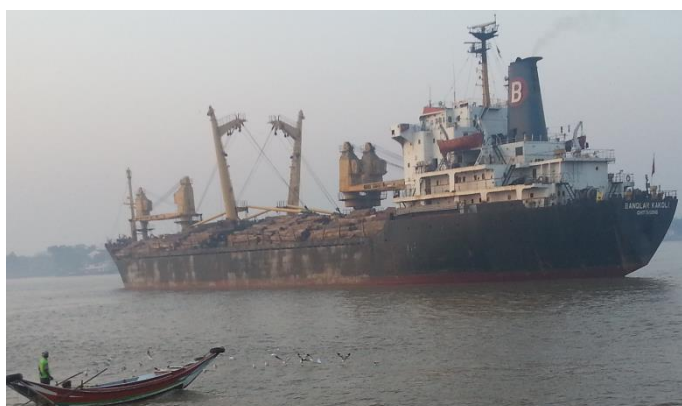


Plate 2: Chittagong registered cargo vessel in Yangon port spring 2014: heavily laden with logs for export, in the last moments before the Log Export Ban

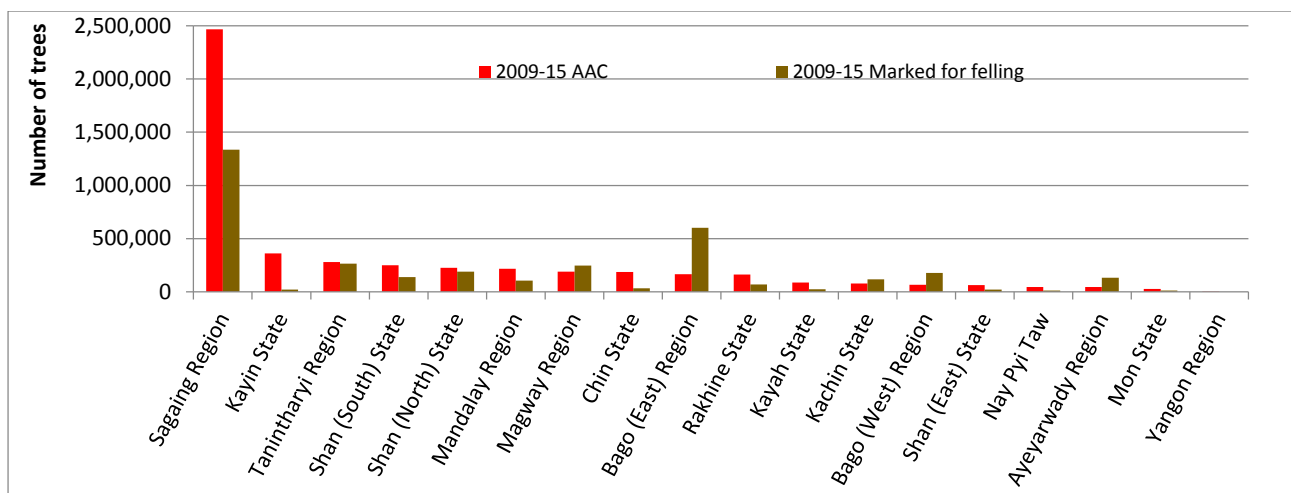


Figure 7: 'Other hardwoods' – Cumulative AACs and number of trees marked for felling 2009-15. (Data: MOECAAF 2015)

The situation for 'other hardwoods' seems to be less alarming as, with the exception of Bago (East and West), Magway, and Ayeyarwady Regions and Kachin State, these have been harvested at or below the AAC (Figure 6). This suggests a shift from the period of over-harvesting in 2000-9 (Figure 5 above). Yet, a more likely explanation might be that logging companies have focussed primarily on over-harvesting teak, while they could get away with it, such that less capacity has been available to harvest the economically less attractive other hardwoods. Supporting this view is the fact that Tanintharyi Region, where teak was logged out long ago, also experienced a 'logging rush' up to the 2014 log export ban. Here, the AAC was exceeded by more than 250% in both 2012/13 and 2013/14.

Official logging in Sagaing:

Katha is one of Sagaing's main FMUs. The sequential pattern for Katha FMU teak extraction shows that every year felling has exceeded the AAC level, and most extremely in 2013-14, where it was exceeded by almost 500% - as the log export ban loomed. Field visit to forests indicated the aftermath of teak over-extraction, virtually no teak trees left (as illustrated on the front cover photograph), and although the vast Pinlebu log depot contained substantial hardwood volumes in spring 2015, there was no teak in evidence.

In field visits we observed natural teak-dominated forests where all recently felled trees were only just above the minimum girth limit of 6'6" and the entire harvest was official assessed to be of the lowest log grade (signified here by one out of five stars).

These forests may regenerate if closed for the prescribed 30 years. However formal rules were widely ignored by local people who having no

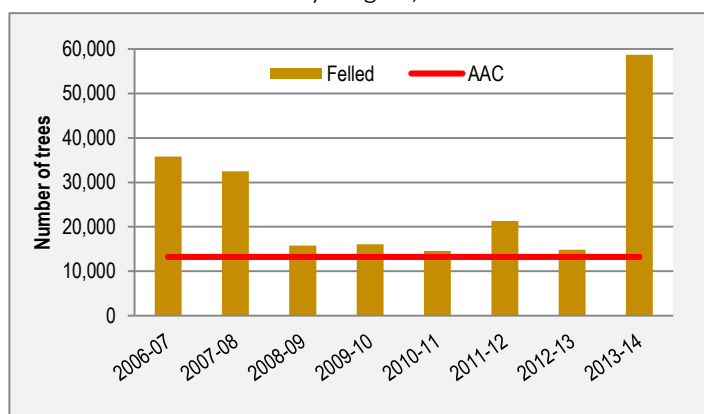


Figure 8: Annual Teak extraction 2006-2013 Katha FMU



Plate 3: Pinlebu log depot, Sagaing, Spring 2015. High volumes of dipterocarp in evidence, but no teak visible

other sources, we observed accessing the forest to extract timber, firewood, and various non-timber forest products (orchids, fish, bushmeat, medicinal plants and so on). In another forest we visited, the composition had been a mixed teak dipterocarp forest - but all above girth limit teak trees had been cleared only seven years ago. Here, marked above girth-limit dipterocarps were being extracted - but in addition we found several fresh stumps of undersized and unmarked, teak. Again, it was obvious that local people accessed the forest. Yet Forestry Department field staff also mentioned that, after they had marked trees for felling, Myanmar Timber Enterprise staff commonly paid them to refrain from carrying out logging and post-logging stump inspection (an example of petty corruption). One observed forest reserve was under massive degradation as past clearance of all teak and dipterocarp timber was now followed by rampant firewood cutting that Forestry Department staff were unable to control.

Official logging in Kachin

Kachin has been contributing far less timber for official export than Sagaing, however there has been a major illegal trade with the Chinese, including apparently many Chinese state owned companies (EIA 2014).

Teak stocks are generally exhausted and there has been very little teak for some years now although a range of other hardwood species are present. The data by Forest Management Units also indicates a familiar pattern of logging out of areas due to logging targets not respecting FD AAC levels. It is a matter of concern that the collapse of timber supply from logging seems to be augmented by conversion timber. The MTE data for southern Kachin townships indicates a surge of timber supplies from conversion of Unclassified Forests in these areas. (Figure 10). It is notable that as the number of tree increases by a factor over 3 times, the volume of timber seems to increase by a factor or around 8 times. This implies either much bigger and more valuable trees indicating that 'good forests' are being destroyed, if the figures are to be believed.

Official logging in Tanintharyi

In Tanintharyi we see another clear picture of over-extraction from the different Forest Management Units, peaking just before the Log Export Ban (see figures 11-14 below). Volumes are relatively small in Dawei FMU as much of the forest has already been logged out and is now coming under plantation crops. IN Myeik there has been very high levels of logging across the island archipelago, peaking in recent years.

Kawthawng FMU have suffered from much land conversion and logging has also soared in the four years prior to the log export ban.

Overall the Tanintharyi official extraction levels (Figure 14 below) tell the now familiar story of actual extraction soaring beyond AAC, particularly in the period before the LEB.

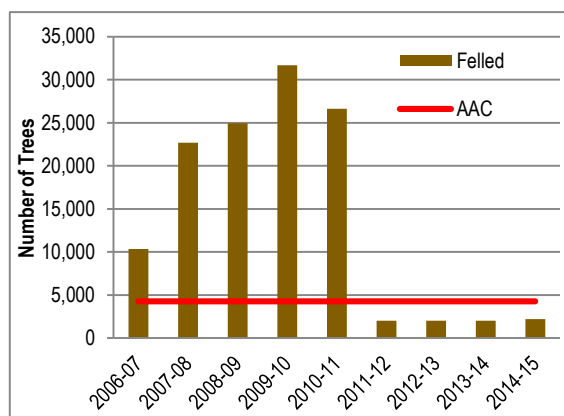


Figure 9: Myitkyina Forest Management Unit - Other Hardwoods (FD data)

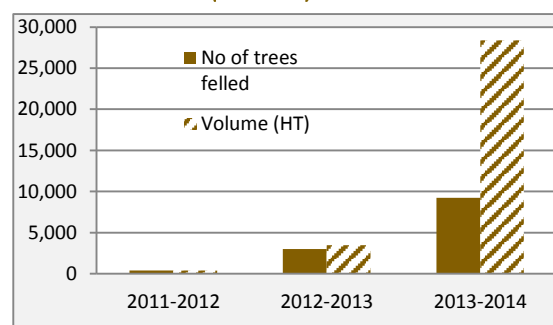


Figure 10: Conversion timber volumes for Bamaw & Shweku townships, Kachin state (MTE data)

Summary: reasons for and management of the over-extraction

The official over-harvesting is in stark contrast to the Myanmar *Selective Harvesting System*. Politically arbitrary annual revenue targets have over-ridden sound silvicultural principles and instituted a 'Myanmar Revenue Target System' which passed down 'revenue orders' to MOECF. This 'burden' was then shared among forest management units at annual meetings between the Director Generals of the Forestry Department and the Myanmar Timber Enterprise, and their regional directors.

The 'teak rush' up to the log export ban of 2014 suggests that a 'final round' of harvesting opportunities were handed to private subcontractors through political patronage (an apparent case of grand corruption). The LEB was originally to be enforced from the start of April 2014. However we understand from MTMA that this was even delayed by 6 months to enable the MTE and subcontractors to export the huge volumes they had extracted.

It is evident that overharvesting has been long term and systematic, persisting until forests are exhausted. There has also been significant regional variation in terms of timber presence, accessibility, and conflict. The experience over the 2010-15 period puts into glaring contrast the extreme divergence between the FD recommendations and the MTE actual felling. This reflects the continuing balance of power between the two groups, and the fact that leading political figures, right up to 2014, felt it was acceptable to continue short term resource plunder over long term recovery and sustainability.

The AAC from both teak and other hardwoods have recently been reduced based on an updated inventory. However FD senior staff have acknowledged to us that the quality of this inventory was necessarily limited due to resources, and therefore conclusions are approximate. To derive a more accurate inventory and AAC a more detailed and well-resourced assessment is needed.

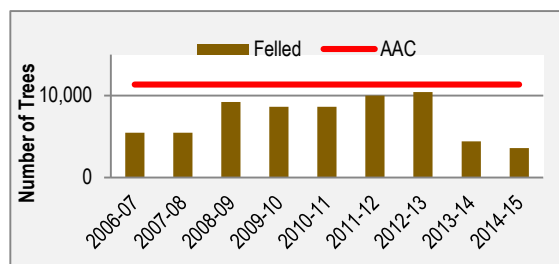


Figure 11: Dawei FMU - Other Hardwoods

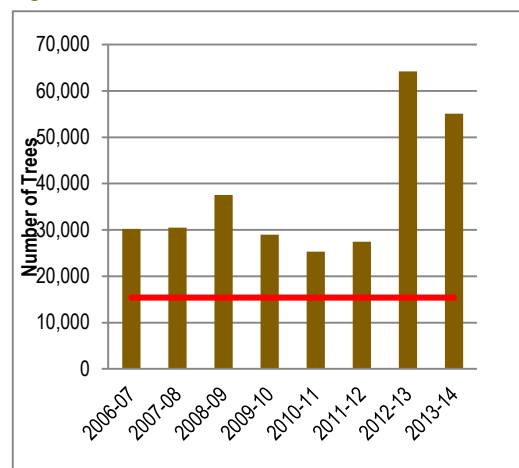


Figure 12: Myeik FMU - Other Hardwoods

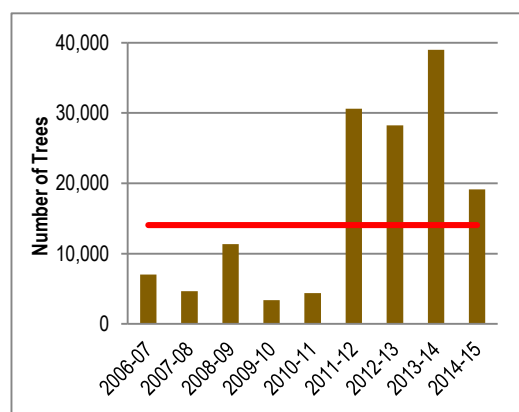


Figure 13: Kawthawng FMU - Other Hardwoods

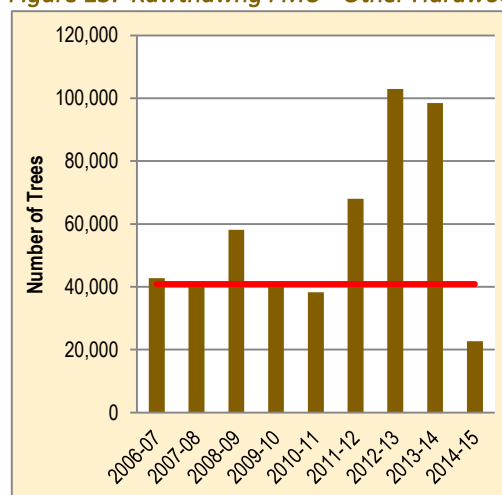


Figure 14: TOTAL Tanintharyi Region - Other Hardwoods

3. Illicit practices and non-compliance in the timber sector – nature and extent

The issues

It is widely recognised and explained by most Forest Department staff we interviewed in private that during the dictatorship era corrupt practice and illegality became prevalent across many aspects of the timber sector. There seem to be three main aspects: the first is grand corruption – in the sense of large scale illegal activity in which powerful figures have been able to enrich themselves through abuse of their responsibilities. The second is petty corruption, relating to minor day to day bribe seeking at the field level. The third is criminalisation of normal livelihood activities of citizens. The nature and extent of corruption and non-compliance are however inevitably difficult to study directly, as those involved seek to keep their illicit activities undetected.

The reasons why this corruption became so pervasive seems to be due to a combination of factors:

- military dictatorship-era abuse of power for personal enrichment and patronage to friends and business partners.
- corruption within MTE around exercise of discretionary power, especially in allocating extraction contracts
- the pressure to generate revenues above other concerns, forcing dependency of the MTE on subcontractors providing logging capacity and working capital
- the marginalisation of Forest Department enforcement authority and inability to challenge subcontractors with senior military patronage.
- the lack of realistic salaries
- A wider lack of rule of law in the country and undermining of judicial and police independence by the military

Now the dictatorship era is transforming into a more democratic phase, most signified by the November 2015 elections, it is urgent to restore the rule of law and transparent governance in the sector. This is particularly important if sustainable management of harvesting is to be re-introduced effectively, and also if 'higher prices but higher compliance' international markets are to be accessed in the future.

There is clearly a serious official effort now underway within government towards this: policy pronouncements, the Log Export Ban, the process to privatise ('corporatise') the MTE, agreement to initiate a FLEGT bilateral process with Europe, and also our interviews and observations indicate there is a new mood of improved stringency in enforcing harvesting regulations.

However, these efforts are encountering resistance from those powerful figures in the MTE/Military nexus who seek to continue the dictatorship era business model. There remains a lack of transparency and accessibility and the problems appear to remain widespread. The primary actors engaged in the industry, the MTE and their subcontractor partners are well accustomed to lack of scrutiny and senior level support for irregular activity to go unpunished. For these reasons it is clear that unaccounted illegal flows and malpractice evidently persist, although the extent is unclear - due to the aforementioned lack of transparency and lack of right to information.

Data and method

We have relied on interviews and field observation. We found the evidence and personal observation of current and retired staff and traders, both senior and junior, to be compelling. This may not be exhaustive but seems to capture the main problems although of course they remain difficult to quantify.

Findings

We can confirm a very weak rule of law around the timber trade and pervasiveness of corruption in the sector, both grand and petty.

We have categorised the range of modes of non-compliance with the legal provisions, according into 11 main aspects:

1. Contracting 'kickbacks' (bribes) to secure logging subcontracts.
2. Unscrutinised logging allowing illicit and over-extraction as well as breaking of other harvesting rules.
3. Bribe seeking from domestic extractors
4. Contracting kickbacks for land conversion leases and conversion timber irregularities.
5. Illegal extraction in conflict areas.
6. Mixing of unaccounted and accounted timbers.
7. Transit bribes.
8. Laundering impounded timber.
9. Manipulation of Timber Allocation, Auctioning, and Grading.
10. Under-invoicing of export consignments.
11. Un-accounted border flows

We have gathered credible allegations that the range of modes of corruption have existed under the dictatorship era, and although we have proof that some continue to occur, we do not have proof that all these crimes are currently occurring or their extent. Rather it is alleged that many continue in some areas, and we lack proof to dispel these allegations. Castrén suggested an approximate figure of 20% on top of official logging. However in reality we cannot know the magnitude, and it is plausible that the actual quality of unaccounted timber could be significantly higher.

In this section we review the evidence by the three regions we studied, and then sum up across the country.

Sagaing: evidence of illegal logging and unaccounted timber practices

Sagaing, as discussed above, is the major timber producing area in the country, and systematic overharvesting has been continuing for years. It is also has some of the more blatant examples of irregularities, illicit harvesting and unaccounted flows.

1. Contracting kickbacks to secure logging subcontracts.

Such patronage relations are widely reported to have existed in the past. When an MTE field office was given an annual log allocation to fulfil, it was understood that



Plate 4: Undersized teak stump - recently illegally felled in logging area, Sagaing. Fresh elephant prints in the vicinity implicate the subcontractor



Plate 5: Excessive density of logging roads in Reserved Forest, Sagaing. Subcontractor is ignoring Harvesting Guidelines



Plate 6: Logging area in Katha FMU, Sagaing. A coppicing teak stump indicates the area is being re-entered after it was logged recently, contrary to harvesting guidelines

subcontractors would seek to influence their share of the allocation with informal payments. We were told that bribes are still routinely paid for the awarding of subcontracts that provide opportunities for lucrative irregular extraction.

2. Unscrutinised logging allowing illicit and over-extraction as well as breaking of other harvesting rules.

We found numerous reports that Forest Department guards are routinely paid an informal salary on a regular basis by subcontractors in order not to scrutinize the harvesting activities. This enabled subcontractors to do as they wished in the forest, presumably collusion with MTE staff allowing over extraction, ignoring of harvesting guidelines, and harvesting outside specified compartments. Observation indicated: the following irregularities:

Firstly, there are numerous transgressions of felling guidelines. These include high density of felling roads which cuts the costs by reducing skidding by elephants. It is also apparent that, contrary to the Harvesting Guidelines forest compartments are being re-entered before the specified 30 year recovery period. This indicates that the forests will inevitably decline.

Second, visits

to logging sites indicate a range of illegal malpractice by subcontractors. Extraction of unmarked and undersized trees, mostly teak, is occurring. We observed undersized teak stumps, indicating that trees below the legal girth limit have been harvested. We also observed fresh stumps, not hammer marked for felling by the FD field staff, but which had been felled and dragged away by elephant. The only elephants in the vicinity were the subcontractor's, and by their camp was a pile of un-hammer-marked and therefore unaccounted logs.

3. Bribe seeking from domestic extractors

The situation is unclear on this aspect as data is almost impossible to come by. It is clear there is extensive unregulated domestic extraction continuing. Domestic supply is almost entirely informal. However the extent of bribes being paid is uncertain it is reasonable to assume it is routine and substantial.

4. Contracting kickbacks for land conversion leases and conversion timber irregularities. There are several famous cases of irregular land concessions in recent years in Sagaing, and most citizens we spoke to blamed this on the Chief Minister and his family. The most blatant example is the vast sugar cane plantation in an ex-



Plate 7: Unmarked teak stump indicates unauthorised felling. Again presence of elephant prints implicate subcontractor.



Plate 8: Unaccounted logs in sub-contractor logging camp, illegally felled



Plate 9: River conduit for timber, Katha, to be transported towards Mandalay. Several informants reported that legal and illegal logs are mixed in transit



Plate 10: Tamerlan fitches impounded by FD, Katha FMU, Sagaing

reserved forest over the river from Katha town. This was awarded as a concession to 'Great Wall' company a few years ago, presumably in return for some financial consideration. The very valuable trees there have long since been logged out and the important forest ecology destroyed.

5. Illegal extraction in conflict areas. *Not applicable - no armed conflict in this area*

6. Mixing of unaccounted and accounted timbers.

We observed the existence of separate piles of accounted (e.g. hammer-marked) and unaccounted (non-hammer-marked and therefore illegally felled) timber in a logging camp. In order to move the unaccounted logs we heard that the timbers may be mixed with legal timbers on the top, to facilitate the appearance of legality. But it is not possible to verify this. We also heard reports that accounted and unaccounted logs are mixed for the downstream route towards Mandalay, and then unaccounted timbers are separated before checking around Mandalay

7. Transit bribes.

We encountered widespread evidence of high value timbers such as Tamerlan being transported across the state towards the Chinese border. Since the FD, police and military have regular checkpoints along the route, and any large logs or flitches that could reach China must have been knowingly allowed through these many checkpoints. Some minor cases are being apprehended. However we were told that these lacked the correct 'godfather' endorsement of their paperwork, and that with the right 'crony' stamp a bribe would be accepted and the logs would get through.

It is not clear what happens to logs impounded in the forest office. We were told they are retained as evidence for cases and then sold on. However the sale would effectively render the timber legal (i.e. 'launder' it) and it was not possible to get sale volumes or prices for this timber flow. One may reasonably guess that, considering the very high value of the timber in question, the lack of transparency gives rise to concerns that the system is vulnerable to abuse.

MTE are exempted from the need for a removal pass –which would see to enable MTE staff to transport unaccounted timber without scrutiny if they so wished.

8. Laundering impounded timber.

There is widespread and rapid illegal cutting and transportation of rosewood for the Chinese market. Some is being successfully apprehended (see places 10-12). It is unclear what happens to the impounded flitches if and when a court case is held. The situation seems poorly scrutinised and more transparency over this would allay fears that the flitches may be sold on, potentially to the same criminals who extracted them, therefore 'legalising' the timber.



Plate 11: examples of illegal Tamerlan transport apprehended by FD, Katha FMU, Sagaing (photo: FD Katha)



Plate 12: Tamerlan flitches impounded in FD compound, Sagaing.

9. Manipulation of Timber Allocation, Auctioning, and Grading.

Manipulation of the auction stage is recognised by many in the timber sector to be one of the key areas where corruption could lead to major pay-offs. The normal method we were told would be to offer dummy lower value timbers for sale, allowing a co-conspirator trader to win the auction with a low bid, and then the consignment would be switched to higher value timbers. Several different witnesses told us that the practice was widespread in the past.

The auction system is under reform, and in 2015 a next decentralised depot system was begun and most timber auctions now take place at the major log depots. We were not able to monitor auctions, but would expect the traditional manipulation to be difficult to eradicate without transparent accounts, which do not yet exist. It is therefore not yet clear whether it will be an improvement on the old centralized system.).

10. Under-invoicing of export consignments. Not Applicable

11. Un-accounted border flows . Definite – there is much unaccounted timber being transported towards the Chinese border, and normally successfully passing through Forest Department and military checkpoints on the way.

The aspects of illegal timber flows and corruption in Sagaing, what we may collectively call ‘non-compliance’ with laws, are summarised in the table below:

Table 2: Modes of non-compliance – Sagaing summary

Modes of non-compliance	Sagaing currently?	In Detail
1. Contracting kickbacks to secure logging subcontracts.	Probable	Definite in the past (widespread reports) – probable in the present but cannot be certain
2. Unscrutinised logging allowing illicit and over-extraction as well as breaking of other harvesting rules.	Definite	Range of crimes by subcontractors in collusion with MTE evident
3. Bribe seeking from domestic extractors	Probable	Unclear but highly likely
4. Contracting kickbacks for land conversion leases and conversion timber irregularities.	Probable	Several major cases – e.g. Great Wall clearance of Reserved Forest area.
5. Illegal extraction in conflict areas.	<i>Not Applicable</i>	No conflict
6. Mixing of unaccounted and accounted timbers.	Probable	The situation is unclear but this may be expected
7. Transit bribes.	Definite	In the present – much high value unaccounted timbers are transported across the country without impediment from checkpoints
8. Laundering impounded timber.	<i>Unclear</i>	But poorly scrutinised
9. Manipulation of Timber Auctioning	<i>Unclear</i>	Definite in the past, unclear in the present
10. Under-invoicing of export consignments.	<i>NA</i>	No (legal) export conduit
11. Un-accounted border flows	Definite	Much unaccounted timber being transported towards the Chinese border

Kachin: evidence of illegal logging and unaccounted timber practices

Kachin presents a unique context: there is an ongoing conflict; senior Union military figures are involved in commercial activities in the multi-billion dollar jade extraction business in conjunction with Chinese investors; there is therefore a serious problem with enforcement of legality in all sectors, including timber.

1. Contracting 'kickbacks' (bribes) to secure logging subcontracts.

As with Sagaing we were told that 'kickbacks were routine in the past, but as there is very little subcontracting now the situation is currently unclear.

2. Unscrutinised logging allowing illicit and over-extraction as well as breaking of other harvesting rules.

There is very limited official logging now in Kachin as most is logged out.

3. Bribe seeking from domestic extractors

Supplying the domestic market within the legal framework is difficult, so many are obliged to extract and supply informally. There is much evidence around forest areas of informal cutting, chainsaw lumber production, unofficial small scale sawmills and transportation to market. We heard numerous reports that the product users and traders must pay bribes to staff of several different agencies (FD, police, military, GAD) in order to extract, process and transport.

With high domestic demand for fuelwood, wood and timber and very weak enforcement powers there appears to be an open access 'race to the bottom' harvesting bonanza proceeding in the more populated areas of the southern forests in the state, particularly for fuelwood. Field visits to forests around Monyin encountered an orchestra of unauthorised chainsaw loggers audible across the forest areas. Visual assessment level of felling in many areas would suggest the forests are becoming rapidly exhausted and may not survive more than a few seasons if regulatory enforcement does not become effective immediately

4. Contracting kickbacks for land conversion leases and conversion timber irregularities.

There is extensive land grabbing in accessible areas of the state— especially around the Myitkyina/ Waingmaw valley. People from many villages have been evicted, partly in the Union military strategy that resettlement removes support and cover for KIA forces. Land grabbed areas may then be cleared for plantation. It is unclear the extent to which landgrabbing has involved kickbacks, and the extent to which conversion timber involves corruption, but under the prevailing circumstances it is highly probable.

5. Illegal extraction in conflict areas.

This is a profound problem for the state. There has been large scale highly systematic extraction of timber to export illegally to China.

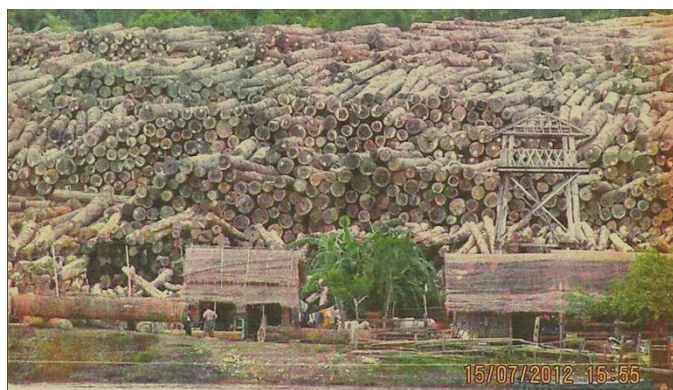


Plate 13: Illegally harvested Burmese logs from Kachin over the border in Ruili, China (Source – Eleven Media)



Plate 14: Low grade logs impounded from illegal Chinese convoy, by Union military commander who it seems was not paid sufficiently on this occasion

The Chinese government is ignoring the sovereignty of Myanmar by allowing convoys of empty trucks to enter Myanmar, and to return across the border loaded with illegal harvested and illegally transported timber. This practice flouts Myanmar's sovereignty and jurisdiction, and Chinese official pleas of ignorance seem somewhat insulting to the intelligence when all commercial border traffic is monitored and recorded.

Under the prevailing militarised conflict conditions in Kachin the Forest Department cannot enforce control. The Tatmadaw Union military commanders are said to receive large personal bribes in order to allow convoys to enter and leave the country, and their collaborating Border Guard Forces (BGF) similarly. The Kachin Independence Army, fighting to defend their right to self-determination and to protect citizens and resources from abuse, have also felt it necessary, though for different reasons, to allow and tax the extraction of timber by Chinese traders.

6. Mixing of unaccounted and accounted timbers.

The situation is unclear

7. Transit bribes.

Undoubtedly. There are widespread reports that illegal loggers must pay at least three authorities: The Tatmadaw, The KIA, and forest department. On some routes to China there are also Tatmadaw –proxy 'Border Guard Forces' who also expect to be paid.

8. Laundering impounded timber.

The situation is unclear

9. Manipulation of Timber Allocation, Auctioning, and Grading.

Unclear – there is very little timber auctioned for sale in Kachin

10. Under-invoicing of export consignments.

Not applicable – there are no legal export routes

11. Un-accounted border flows

Historically huge volumes. More recently more limited. Refer to the point 5 above.

Overall we may summarise the situation for Kachin as Table 3 below:

Table 3: Modes of non-compliance in Kachin

Modes of non-compliance	Kachin	
1. Contracting kickbacks to secure logging subcontracts.	Probable	Logging concessions are being granted in last well stocked inaccessible areas in north (Putao)
2. Unscrutinised logging allowing illicit over-extraction as well as breaking of other harvesting rules.	Probable	If legal logging is still continuing
3. Bribe seeking from domestic extractors	Definite	Widespread and systematic
4. Contracting kickbacks for land conversion leases and conversion timber irregularities.	Probable	Much 'conversion timber' is being generated through agribusiness plantations, many of which seem part of a military strategy of territorial control through denying KIA forces cover
5. Illegal extraction in conflict areas.	Definite	Widespread and blatant overharvesting by Chinese mafia gangs, and also Myanmar small scale mafias in conjunction with military and armed groups. Bribes to military commanders paid by illegal cross-border Chinese logging gangs

6. Mixing of unaccounted and accounted timbers.	Probable	Unclear
7. Transit bribes.	Definite	Illegal logs move around the state with checkpoints providing no real obstruction, as long as payments are received
8. Laundering impounded timber.	<i>Unclear</i>	
9. Manipulation of Timber Auctioning	<i>Unclear</i>	
10. Under-invoicing of export consignments.	<i>Unclear</i>	
11. Un-accounted border flows	Definite	Although there have been famous recent cases of enforcement these are exceptional

Tanintharyi: evidence of illegal logging and unaccounted timber practices

The region is highly diverse, with forested uplands on the Thai border, river valleys subject to forest clearance for plantations, coastal mangroves and the Myeik island archipelago. There is also a complex political situation with Karen National Union and Union Government exerting co-existing jurisdictions. In the areas we visited in Dawei, Myeik and Kawthawng we observed a range of irregularities, as follows:

1. Contracting ‘kickbacks’ (bribes) to secure logging subcontracts.

As elsewhere this is probable but currently impossible to verify with no transparent tendering process.

2. Unscrutinised logging allowing illicit and over-extraction as well as breaking of other harvesting rules.

Large volumes of timber from the much reduced remaining forest areas have been extracted under the Modified Procedure system. This system leaves much opportunity for unscrutinised over-extraction, although it is very difficult to monitor the system. There is however stringent monitoring on behalf of the KNU. Contractors told us the negotiations with KNU are much more fraught, to the extent that KNU may direct them how much less timber may come out of a compartment that the FD has allowed. On the other hand it is not possible to scrutinise the KNU accounts to allay fears part or all of the payments are simply embezzled.

3. Bribe seeking from domestic extractors

In many areas we encountered local people furtively producing chainsaw lumber for domestic use, and some presumably for commercial supply. It seemed ironic that citizens use of a few planks is criminalised whilst destruction of entire forests by favoured commercial elites is permitted,



Plate 15: Kawthawng: Timber extracted under modified procedure being measured for girth.



Plate 16: Girth of logs recorded – for both FD and Karen National Union unofficial taxation



Plate 17: Kawthawng: Unaccounted chainsaw lumber at Modified Procedure logging camp

4. Contracting kickbacks for land conversion leases and conversion timber irregularities.

High volumes of conversion timber are generated from land conversion. The scrutiny of this conversion process is unclear, and data for volumes has been hard to come by. With ready international markets close by to the south and apparently weak scrutiny, it is highly probable that a significant proportion is transported cross-border.

5. Illegal extraction in conflict areas.

In the past this was widespread. The situation currently is not clear, and it seems the KNU maintains relatively disciplined control on forests under its de facto control.

6. Mixing of unaccounted and accounted timbers.

As in other areas the practice seemed likely, but hard to verify

7. Transit bribes.

Again, considering the volumes of timber moving across the landscape bribe payment at checkpoints seemed probable.

8. Laundering impounded timber.

The situation was unclear

9. Manipulation of Timber Allocation, Auctioning, and Grading.

The situation is unclear as we were not able to scrutinise auctions.

10. Under-invoicing of export consignments.

Myeik is unique in Myanmar in that it is permissible for timber to be exported directly from Myeik, an exception to the norm that it should only be from Yangon. Timber is exported directly to Malaysia and other international markets, and in the absence of the ability to verify, there seems to be a strong possibility of non-compliance

11. Un-accounted border flows

Again this seems to be probable as there are very poorly scrutinised export facilities in Myeik.

Overall we may summarize the modes of non-compliance in Tanintharyi in Table 4 below



Plate 18: Myeik: Much of accessible forest areas have been converted for plantation – conversion logging has been extensive, with unclear legality



Plate 19: Local citizens extract chainsaw lumber for domestic use furtively on Myeik archipelago

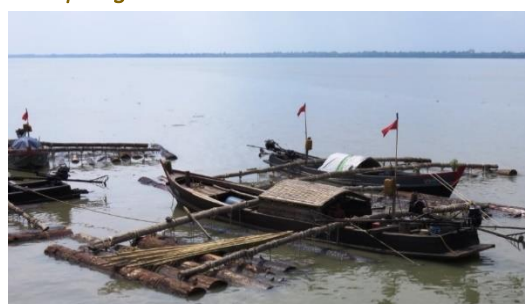


Plate 20: Timber from interior areas is floated down to Myeik private island depot for processing and export



Plate 21: Private log depot in Myeik on private island. The location makes it almost impossible to scrutinise operations effectively.



Plate 23: International exports from Myeik private docks. Scrutiny almost impossible



Plate 22: Private sawmill on Myeik private island, both export and domestic.

Table 4: Current modes of non-compliance Tanintharyi

Modes of non-compliance	Tanintharyi	
1. Contracting kickbacks to secure logging subcontracts.	Probable	Definite in the past (widespread reports) – probable in the present but unclear
2. Unscrutinised logging allowing illicit and over-extraction as well as breaking of other harvesting rules.	Unclear	Unclear – although scrutiny seems stronger from KNU than FD, and irregularities in locations we observed were low
3. Bribe seeking from domestic extractors	Probable	There is much domestic extraction proceeding, although the extent to which this is unofficially taxed is unclear
4. Contracting kickbacks for land conversion leases and conversion timber irregularities.	Probable	It is hard to confirm but there is widespread land conversion proceeding in a poorly scrutinised (post) conflict environment
5. Illegal extraction in conflict areas.	Probable	Definite in the past – Probable in the present although unclear – KNU seem more conservative managers than FD/MTE
6. Mixing of unaccounted and accounted timbers.	Unclear	
7. Transit bribes.	Unclear	
8. Laundering impounded timber.	Unclear	Unclear but poorly scrutinised
9. Manipulation of Timber Auction.	Unclear	Unclear in the present
10. Under-invoicing of export consignments.	Probable	Highly probable due to poor scrutiny, but unclear.
11. Un-accounted border flows	Probable	Probable – very poorly scrutinised export facilities in Myeik.

Figure 7 below illustrates, overlaid on the 'normal' timber extraction procedure (Figure 1 above) the major probable modes of non-compliance, and Table 1 below explains the issues.

It is important to note here that in an institution culture that has become corrupted, not all acts of corruption are entirely voluntary. We heard that many junior staff have become involved in illicit practice reluctantly, partly looking the other way when grand corruption has been occurring in order to retain their jobs, and partly participating in petty bribe seeking as a humiliating method of 'topping up' their salaries. For this reason some respondents said they hoped to leave the service at the earliest opportunity to avoid the humiliation and disrepute.

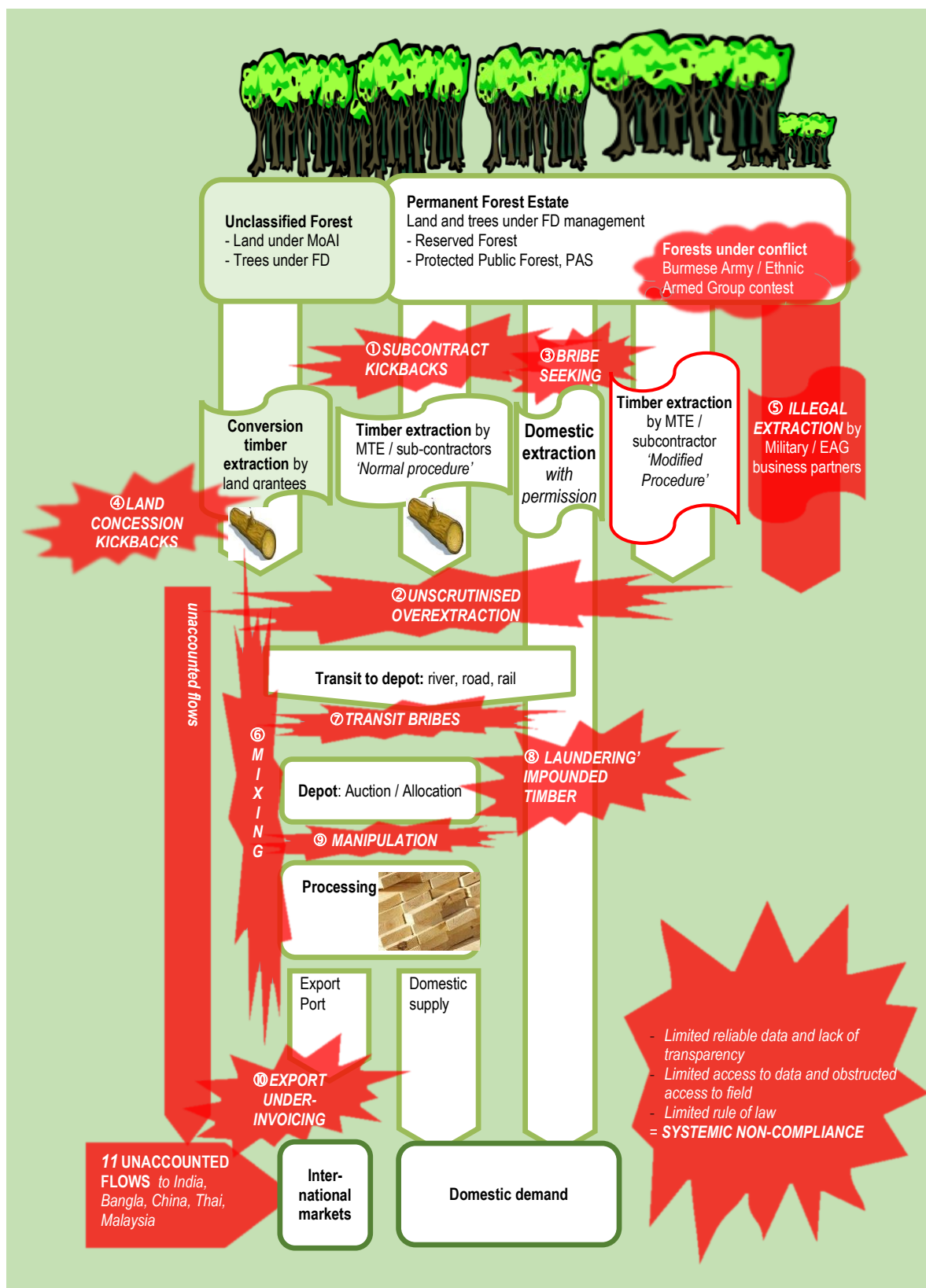


Figure 15: Range of illegal and corrupt practice in Myanmar's timber sector (highlighted in red)

Overall picture of current illegal logging, corruption and non compliance

Having reviewed the range of ways in which illegal logging and corruption may be occurring in different parts of the country, here in table five below we summarise and compare the evidence. From the range of

experiences it is reasonable to conclude that there are a wide range of ways in which the timber sector is systematically non-compliant with national laws. In several aspects the evidence is certain: subcontractor over extraction, bribe seeking from both criminalised domestic extractors and transporters of illegal logs, illegal extraction in conflict areas and unaccounted borders. In other aspects the practices seem virtually certain but it is very difficult to verify without criminal investigation.

The range of modes of non-compliance are summarised in table 5 below and illustrated in figure 15.

Table 5: Overall evidence of non-compliance

Modes of non-compliance	Sagaing	Kachin	Tanintharyi
1. Contracting kickbacks to secure logging subcontracts.	Probable	Probable	Probable
2. Unscrutinised logging allowing illicit and over-extraction as well as breaking of other harvesting rules.	Definite	Probable	<i>Unclear</i>
3. Bribe seeking from domestic extractors	Probable	Definite	Probable
4. Contracting kickbacks for land conversion leases and conversion timber irregularities.	Probable	Probable	Probable
5. Illegal extraction in conflict areas.	<i>Not applic.</i>	Definite	Probable
6. Mixing of unaccounted and accounted timbers.	Probable	Probable	<i>Unclear</i>
7. Transit bribes.	Definite	Definite	<i>Unclear</i>
8. Laundering impounded timber.	<i>Unclear</i>	<i>Unclear</i>	<i>Unclear</i>
9. Manipulation of Timber Allocation, Auctioning, and Grading.	<i>Unclear</i>	<i>Unclear</i>	<i>Unclear</i>
10. Under-invoicing of export consignments.	NA	<i>Unclear</i>	Probable
11. Un-accounted border flows	Definite	Probable	Probable

Implications

A lack of transparency and prevalent lack of compliance undermines the credibility of the Forest Department, MTE and Myanmar timber exports, which are considered ‘very high risk for non-compliance’ for those international markets that care about compliance in the chain of custody, for instance the European Union, Australia and the US. Ensuring transparency of processes and timber flows, and involving third party participatory monitoring would reduce risks and improve rule of law.

Table 6: The range of reported modes of non-compliance, and issues for enforcement

Modes	Details	Is it changing post – LEB?
1. Contracting kickbacks to secure logging subcontracts.	Subcontracts are allocated at FMU-level for one year at the time and can be very lucrative. Accordingly, prospective subcontractors may wish or need to ‘influence’ the allocation process on an annual basis through bribery. Allegedly, senior figures in the Military and MTE have, through this process, enriched themselves by taking bribes in the past.	Unclear. Some subcontractors are blacklisted for irregularities of unknown nature. Action needed: Transparent tender system with no discretionary element to maximize public revenues. Independent monitoring

2. Unscrutinised logging allowing illicit and over-extraction as well as breaking of other harvesting rules.	Widespread allegations (particularly in Sagaing) suggest that MTE and subcontractors systematically pay FD staff to stay away from logging operations. Low salaries make FD staffs vulnerable to such 'offers'. Lack of field-level scrutiny enables irregularities including extraction (i) of unmarked trees, (ii) from non-specified areas, and (iii) undersized trees, producing 'unaccounted' timber. Further, logging roads are opened at excessive density and not closed after extraction. Compartments are re-entered before 30 years. Unscrutinised Modified Procedure (MP) – there is timber felling in conflict areas where trees are not marked by FD staff. Subcontractors extract trees above girth limit at will. Log sizes are only scrutinised at the depot providing opportunities for irregularities.	This seemed to be 'standard procedures' in some areas of Sagaing and apparently is not changing. Apparently, the MP system has been discontinued from 2014-15, because of these problems. Action needed: Effective monitoring of harvesting and enforcement of rules and guidelines. Sound incentive structure for FD staffs. Independent monitoring
3. Bribe seeking from domestic extractors	There is a grey area between domestic extraction for own use, and for commercial sale. Apparently, low FD field staff salaries promote routine rent seeking from less powerful 'rule breakers' (petty corruption).	A 'criminalized' domestic wood market and low paid FD staff is an unhealthy combination. Action needed: Market liberalization.
4. Contracting kickbacks for land conversion leases and conversion timber irregularities.	In principle, forests are converted for other uses according to a formal system. Yet, practice establishes ample opportunities for irregularities. It is widely rumoured that some state chief ministers' and state/regional governments' judgement on land concessions are influenced by payments. Flows of poorly scrutinized conversion timber invites mixing with other unaccounted timber. Further, land conversion grants form part of a military strategy against armed ethnic groups. Crops/plantations are not always established after clearings and selling of conversion timber (Woods 2015).	Very unclear. There have been policy pronouncements on a moratorium on land allocation, but there seems to be no register of concessions. Pronouncements from the President's office have said land allocation will be suspended. Action needed: Political engagement from the highest level to avoid the sanitization of conversion practices
5. Illegal extraction in conflict areas.	Upland conflict areas contain some of the ecologically most valuable remaining forests, partly because the conflict has deflected logging activities elsewhere. Yet, when forests are controlled by one or other of the combatant organisation logging takes place. In Kachin, Chinese logging convoys are reportedly a frequent problem, stripping several valleys of trees.	Enforcement may be increasing, but this risks challenging the de facto jurisdiction of ethnic armed groups at a time when the peace process in a national priority. Action needed: Peace talks and political dialogue must include forest conservation resolutions
6. Mixing of unaccounted and accounted timbers.	Unaccounted timber may be 'laundered' through mixing with accounted timber during transit. This allows for persistent mixing, and creates aversion from foreign markets, which require due diligence regarding chain of custody (CoC).	Widespread rumours suggest this continues. The absence of a comprehensive CoC system prevents provenance validation of timber flows. Action needed: Comprehensive Chain of Custody system.

7. Transit bribes.	Timber is transported from forest to market by river, rail or road. Numerous checkpoints should ensure that transported logs and wood products are legal. Yet, checkpoints appear porous with payment of bribes or menaces from powerful interests, and some unaccounted timber definitely moves through. In conflict areas the Burmese army and/or ethnic armed groups may control the checkpoints and 'tax' unaccounted timber flows, which gives an incentive to maintain the conflict.	So far unclear Action needed: Comprehensive Chain of Custody system. Sound incentive structure for rule enforcing staffs at checkpoints. Independent monitoring. Ending of armed conflicts around the country.
8. 'Laundering' impounded timber.	Internationally, unaccounted timber often becomes accounted when it is impounded and then sold on. No direct evidence of this was discovered. Yet, low salaries may tempt FD staffs to collude with illegal loggers.	Guarding high value products by low paid staffs presents an inherent risk. Action needed: Sound incentives for FD staffs
9. Manipulation of Timber Allocation, Auctioning, and Grading.	In the past, MTE controlled timber flows and selected which logs went to auction domestically and which to export. This allowed for large discretionary timber allocations to favoured clients. In part such irregularities were necessitated as MTE had little or no working capital and thus became obliged to use timber as payment to sub-contractors providing extraction, transport, and export services. Further, the pre-LEB auction and allocation system involved fraudulent assessment of timber quality (Sawing Grades) thus allowing for, de facto, under-invoicing and creation of unofficial cash-flows.	In 2014, the system was changed to direct auction at field depots, and MTE's marketing division closed. This appears to improve transparency, enhance state revenues, and may reduce wastage. Yet, the new auction system appears open to some level of manipulation. Action needed: Independent monitoring.
10. Under-invoicing of export consignments.	Internationally, the volume of timber consignments is often understated to evade taxation and to facilitate export of unaccounted/illegal timber. The extent to which this has happened is unclear. However, the sizeable discrepancy between stated exports and imports of destination markets (EIA 2013) indicates that significant volumes of 'unaccounted timber' have evaded formal export invoicing systems. To some degree timber traders 'admitted' to this but also emphasized that under-invoicing was a necessity evil, when international currency accounts were difficult to open in Myanmar and thus had to be opened elsewhere.	Conditions seem to be improving, but it is very difficult to verify. Action needed: Transparency of export volumes. Independent monitoring inclusive of timber and wood product export-import data.
11. Un-accounted border flows	Since many borders are areas of conflict border transit of unaccounted timber is easier than through the regulated docks in Yangon.	Action needed: Peace talks to include modes of effective enforcement and cooperation with neighbouring countries' border guards.

The obvious conclusion to draw is that Myanmar needs to introduce a realistic and robust Chain of Custody system and Timber Legality Assurance System, with independent design and independent third party monitoring. Any such CoC or TLAS system created within the government is likely to lack credibility.

4. Felling continues but is ‘scraping the barrel’

The issue

As we have seen in chapter 2 there has been an intense burst of over-felling up to the end of the 2013-14 season, when the log export ban was introduced. Although logging has continued in the 2014-15 and 15- seasons, the quantities available are much lower, and girths and sawing grades and species are lesser than in recent years.

It seems reasonable to conclude therefore that after the frenzy of harvesting, legal and illegal, most of Myanmar’s forest are now exhausted or ‘logged out’ and exhausted. Until they recover, if they ever do, production will remain at this new low level. There are now fundamental sustainability problems with timber supplies in the short and medium term. In the long term availability will depend on whether effective forest governance is adopted and whether a restoration programme is initiated. The lower the extraction for the next few decades the more likely that the forests will ever recover.

Data

A range of sources are required to establish a clear picture of the current quantity and quality of timber supplies, only some of which have been available. Site visits to forests, industry sources and sawmill observation were used.

Findings

Field observation in forests, as discussed above, indicates that the growing stock of above girth limit commercial species is limited except in the most remote areas. Over-extraction of teak in particular, and lack of remaining seed trees has already changed the ecological composition of most forests.

Observation at log yards indicated much old and low quality wood, but limited quantities of higher quality and more commercially valuable timber.

Visual evidence from site visits to sawmills and wood processing factories confirms this. In Mandalay MTE compound the Win & Win / MTE joint venture sawmill stood idle due to lack of supply. Many other businesses report a similar scenario.

There are a few remaining relatively well-stocked forests, particularly in inaccessible areas such as interior areas of Tanintharyi, interior northern Sagaing and remote inaccessible and conflict ridden areas of northern Kachin, although these too are being logged.



Plate 24: Idle sawmill capacity in MTE compound (Win & Win/MTE joint venture), Mandalay



Plate 25: So-called ‘rubbish’ timber at National Wood Enterprise factory, Yangon being processed into furniture

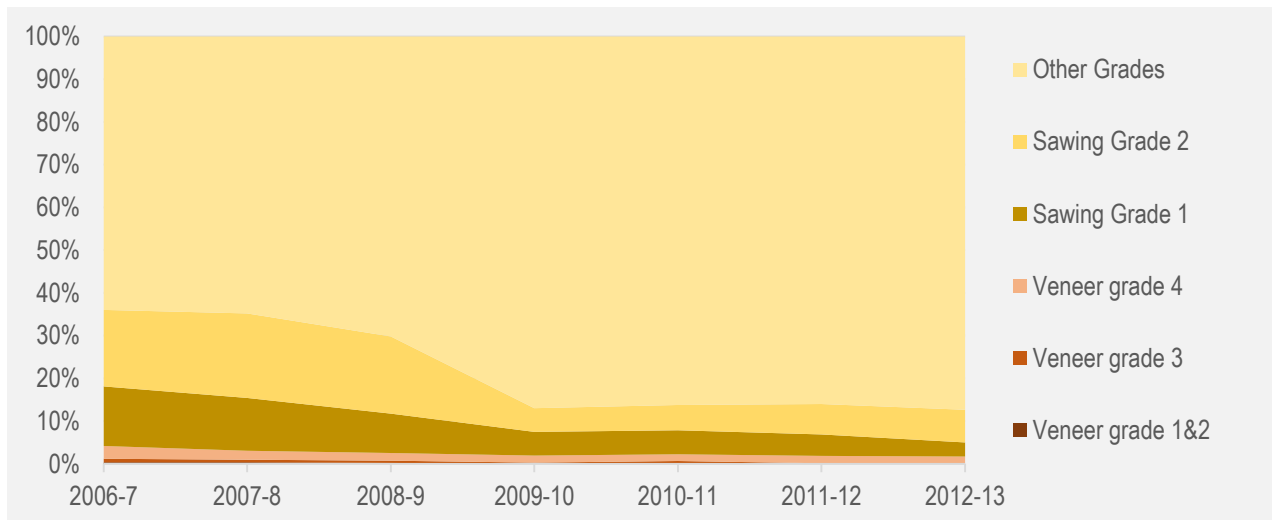


Figure 16: Export Log quality (MTE 2013)

The figure above shows that higher value grades of timber have declined from being over 1/3 of the exports to around 10% in 2012-13.

In summary we can see that harvested volumes (in section 2) as well as the sawing grade quality is far lower than in the 1980s. Preferred species have become scarce. Thus many sawmills are idle or running below capacity, or forced to use lower grade woods.

5. From logging to processing: Myanmar's timber industry in transition

Issue

For over a century Myanmar's forest sector business model has been to harvest, transport, and export logs for value addition elsewhere. The main cost and technical challenge have been little more than transportation of the huge volumes. This has been very lucrative whilst accessible good forests were 'mined'. But it has been unsustainable. In the new reality of depleted forests and timber shortage, how is the timber industry adapting?

Data

To understand this issue we have mainly relied on interviews, a workshop we held in spring 2015 for the timber industry and field visits

Findings

Timber in the past has been a very lucrative business. Hence allocation of contracts could earn much patronage. All said they are already experiencing severe problems with supply and access. Timber businesses are taking one of three strategies:

1. **Diversifying out of the sector / 'moving out'.**
Much of the capital of the timber industry are transport vehicles. This is suited for roadbuilding, or other haulage etc. Several business representatives said that as logging business is drying up they are moving their capital into other sectors, particularly roadbuilding.
2. **Recalcitrant persistence / 'hanging in':** A few respondents told us their traditional business model can continue fine. This approach may work in the few conflict / ceasefire areas where there are still valuable trees, but even there, there seems to be an element of denial of the looming issue of dwindling stocks.
3. **Investing in processing 'rubbish' / 'stepping up'.**
The most dynamic businesses are learning the technical challenges and investing in advanced processing equipment to add value to the low quality but relatively cheap wood available. There is a very large international demand and growing domestic demand for wood products. A skilful processor can convert low quality inputs into a final product of apparently similar



Plate 26: EcoDev timber industry workshop, Feb 2015



Plate 27: National Wood Enterprise has switched to processing 'rubbish' timber



Plate 28: Using sophisticated processing machinery to cut 'rubbish' into regular pieces and glue 'finger joints'



Plate 29: Another consignment of parquet for export. In the background is a large relic teak log - a memory of the good old days.

standard to those from high quality inputs using precision finger jointing techniques and veneers. Good profits can clearly be made. The main challenge for investment, especially for larger scale is certainty of continued wood supply. Processors need to keep many months if not years stock in hand, and if this becomes difficult to assure the financial return on their capital investment is threatened. Thus a sustainable and predictable timber supply is crucial and this doesn't currently exist, and is not likely to for some years to come.

Implications

Few countries in the world still allow unprocessed log export, and many have even introduced logging bans. India has had a *de facto* ban since 1980s, Thailand since 1988 and China has recently introduced a felling ban. A logging ban may well help Myanmar's forests to recover, although domestic demand must still be supplied at some basic level so it may be that a 'felling for export' ban is a more realistic proposition.

In the meantime, however, there is a need to incentivise the production of timber if future demand is to be met, and if a wood processing industry is to develop. There is also a need for policies to ensure a predictable supply. This requires a strong rule of law together with liberalised markets, so that timber production becomes a commercially competitive crop. In many areas teak would be amongst the most lucrative crop if it was legal to privately harvest and sell, but being property of the state under the 1992 Forest Law makes it unattractive. Policy adaptation is needed to assure production of wood, even at lower quality to keep the emerging wood processing industry supplied with adequate volumes. Technical support and international partnerships are also needed.

In the meantime for forests to recover it is essential that extraction and processing capacity is aligned with sustainable offtake levels.

6. Conclusions and recommendations

Diagnosis: The political economy of forest & timber decline:

A technical review of Myanmar's forest and timber as recently as 1999 was upbeat about the prospects for its future (Castrén 1999). Over the subsequent 17 years of mismanagement and criminal plunder its fortunes have virtually collapsed. Myanmar has gone from having extensive, highly valuable, and productive forests providing multiple social and environmental functions to having shrunk, degraded and unproductive forests. In the process massive profits from this national asset have benefited small elites while corrupting the forestry and timber sectors. The causes of this collapse are no great mystery! We might summarise them as follows

1. Systematic 'revenue-target' driven over-extraction. Formally this was mainly legal extraction, but substantial illicit practices as well as high wastage occurred under political favouritism in relation to Myanma Timber Enterprise and 'crony' subcontractor companies.
2. Expansion of agriculture and 'land grab' agri-business concessions into forests.
3. A disempowered and somewhat demoralised Forest Department 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 Forest Department to do so.
6. A conflict economy in many upland areas bordering neighbouring countries provoked and maintained by Union Military, allowing them to indulge in illegal timber trading and taxation (amongst other sectors) for personal gain

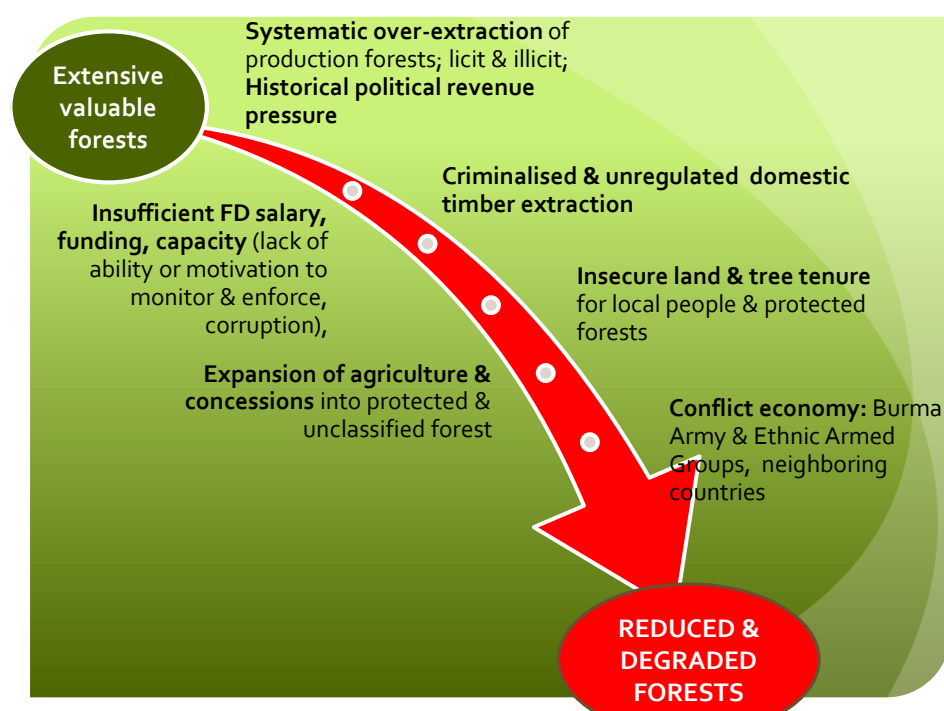


Figure 17: Political economy of forest and timber decline

Current prognosis: Myanmar timber has already become a rarity, excepting low grade plantation produce. Without concerted action to reverse the trend, forests will continue to decline until they are gone, and with them timber, fuelwood, forest biodiversity and crucial hydrological and atmospheric ecosystem

services. Myanmar must now decide whether to resign itself to this, or take action to conserve and recovering forests.

Prescription: Integrated reform agenda

Several interrelated steps must be taken before it is too late, based on the post-colonial and post dictatorship principle of citizen participation for democratic resource control, access, use; decision-making; legitimate & sustainable benefit sharing; Transparency & accountability

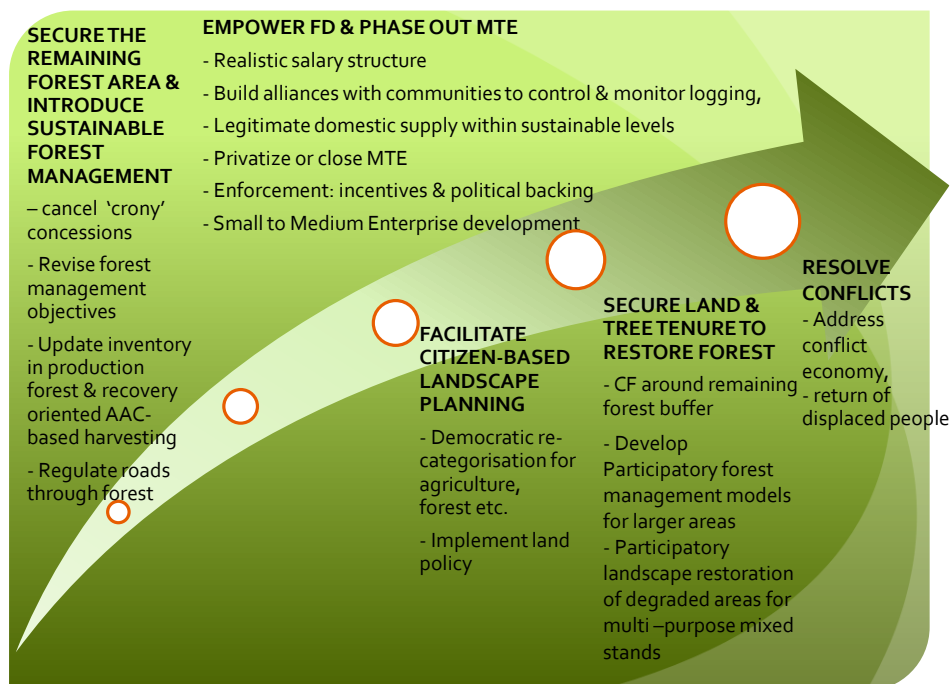


Figure 18: Reform agenda for restoring forest and timber supply

1. **Secure and assess the remaining forest areas**, gazette remaining unclassified forests, review existing concessions, stop any further land use change away from forest, and update inventory data for forests with apparent timber production potential.

Forests are vulnerable to appropriation by powerful commercial interests

- ✗ Incomplete reservation forest estate has left large areas of Unclassified Forest areas to be destroyed/ cleared
- ✗ Insecure private land tenure and absence of secure tree tenure discourages private and community timber production
- ✗ Expansion of agribusiness concessions into forests result in unaccounted conversion timber and grievances for those evicted while benefits to society at large appear limited or negative.

Secure forests for the national interest and provide legal basis for private / community timber provision:

- Secure forests for the national interest and provide legal basis for private / community timber provision
- Secure the remaining forest area through gazetting of Unclassified Forest
- Review land concessions – any that have transgressed regulations should be cancelled
- Land tenure of communities and citizens must be secure
- Legal provision for ownership of products from private and community teak production
- Review and clarify the objectives of purposes of different forest categories and improve achievement: production / livelihood / biodiversity and ecosystem services.

2. **Introduce sustainable forest management** in collaboration with local communities. Much of the forest should be treated as 'logged-out' and allowed to recover for many years ahead.

There has been systematic & sustained over-extraction far beyond sustainable levels for short term (and short-sighted) revenue generation

- ✗ AAC itself has often been very approximate, as inventory is not technically adequate. AAC should be significantly less than 100% of annual increment to be realistically sustainable
- ✗ Extraction has not been technically planned but *ad hoc* – with repeat visits to compartments within 30 years, and *ad hoc* harvesting from other forests to achieve revenue targets.

A shift to long term forest recovery and restoration for multiple environmental and social benefits needs to be the overriding forest sector policy.

- Immediate moratorium on commercial logging (eg MTE and subcontractors) until sustainable principles can be restored.
- Conduct rigorous resource inventory.
- Close most of the country's forests for commercial logging as they are over-logged, allow other areas to improve through harvesting significantly below regeneration level
- Harvest according to 'bottom-up' technically sound site level plans, and ensure the FD is independent of political/ revenue pressures.
- Don't commercially harvest outside of Management Plan context, e.g. in Public Protected Forest and Unclassified Forests
- Where conflict obstructs harvesting the harvesting target must not be transferred elsewhere on an ad hoc basis.
- Minimise wastage: practice Reduced Impact Logging, increase harvesting and conversion efficiency and minimise forest roads.

3. **Capacitate and empower the FD** to be fit for their regulatory purpose and phase out the Dictatorship-era MTE.

The FD authority to regulate and protect has been disempowered, Dictators with MTE have overridden principles of responsible forestry

- ✗ Lack of transparency
- ✗ Lack of effective capacity or motivation: Inadequate salary and powers.
- ✗ Lack of institutional ability or motivation to monitor and enforce.
- ✗ Strong incentives to 'look the other way', and supplement inadequate salary with bribes.

- Capacitate FD with proper funding, salary structure, resources.
- Close down / privatise or 'corporatize' MTE
- If there must be any commercial logging there must be a transparent non-preferential tendering system, well scrutinised, and independently monitored
- Empower FD enforcement in respect to MTE and subcontractors abuses
- Build alliances between FD and civil society to strengthen monitoring, regulation and enforcement

4. **Corruption, Compliance and Rule of Law: Enforce rule of law;** rules and guidelines, assure transparency and introduce third party monitoring of logging, transport and export of timber and wood products

The fundamental problems are: extensive unaccounted flows and lack of compliance – particularly through MTE/'crony' subcontractor client relationship.

Commit to legality: strengthen rule of law, improve monitoring and enforcement

- Culpability of illegal logging enforced, starting with the largest culprits.
- Bribe taking should be considered a criminal act.

- ✘ Complicity of military and authorities with illegal cross-border trade.
- ✘ There are multiple 'modes of non-compliance'
- Reverse culture of tolerance of corruption in FD & rebuild trust of local people
- Subcontracts scrutinised and irregularities punished. FD staff must have dignified salary and adequately punished for irregularities.
- Introduce transparency of land and timber allocation systems for civil society to understand.
- Promote credible independent third party civil society monitoring and participation with democratic governance systems within and around forests

5. **Facilitate citizen-led multi-stakeholder landscape planning** and build multi-stakeholder alliances between citizens, public servants and private sector enterprises, particularly employment-generating Small and Medium Enterprises in wood processing.

- Conservation of remaining 'good' forest for nature conservation, ecosystem service - PA system, Community conserved areas ...
- Timber production – new restoration of natural forest areas to mixed species timber plantation (through PFM/CF etc. for shared livelihood benefit)
- Containment of agri-business plantations

6. **Domestic timber supply: Promote a sustainable timber supply** for the long term - through secure private / community land and tree tenure and fair marketing conditions.

Lack of regulated system for domestic timber and fuelwood extraction and supply

- ✘ Largely criminalised leading to salary supplements for staff
- ✘ Cut-and-run logging and felling practices

Establish regulated basis for domestic supply

- Facilitate citizen based landscape management planning, through which local communities get meaningful and enforceable rights to local forest resources and revenues from these through fair marketing and taxation rules
- Promote Community Forestry and other Participatory Co-Management models for larger forest areas
- Manage demand through substitute fuels for charcoal/fuelwood, e.g. through the abundant natural gas

7. **From conflict economy to peace dividend: Resolve political conflicts** in ethnic areas equitably through democratic decentralisation.

Illicit timber flows have created incentive to perpetuate conflict for the Myanmar army and some armed ethnic groups

Resolve conflicts equitably through ceasefire process in which military business interests are cancelled

- Facilitate return of displaced people
- Introduce devolved forest governance in ethnic areas
- Work with neighbouring countries, to introduce border checkpoints which respect Myanmar laws for wood exports. .

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Glossary of Terms used

Annual Allowable Cut (AAC) The amount of timber extraction which the Forest Department estimates is within sustainable levels. The AAC is hard to precisely gauge as it requires detailed inventory of the growing stock in the forest, and also accurate prediction for growth rates over time, both of which are hard to know reliably. It is also founded on the aim of maintaining the forest in its initial condition (which may already be degraded) rather than improving the condition. Nevertheless the AAC is the forester's basic planning tool for identifying the maximum level of sustainable extraction. If the level is exceeded the growing stock declines and the AAC in subsequent years must also decline. A successively declining AAC is an unambiguous indicator of unsustainable harvesting in the past, assuming the calculation method is stable.

Forest Management Unit (FMU) The administrative unit for forest department. FMUs are approximate to districts but can vary and are not aligned, even crossing state boundaries

International Timber Trade Association (ITTO): Based in Japan the ITTO monitors the international timber trade, shares information and promotes the timber industry's commercial interests.

Ministry of Environment Conservation and Forestry (MOECAF): The responsible bureaucratic organisation for the management of Myanmar's 'Permanent Forest Estate'. Within MOECAF resides the Forest Department; Nature Wildlife Conservation Division; Myanma Timber Enterprise

Modified Procedure (MP): In conflict areas where the Union Forest Department staff would be at risk subcontractors are permitted to enter the forest at their own risk (or more realistically with their own negotiation with ethnic armed groups), and extract within estimated harvesting levels. The harvest is then accounted at a depot outside of the conflict area. The system has been vulnerable to abuse, and has finally been discontinued in 2015.

Myanma Timber Enterprise (MTE): The state marketing agency for timber.

Myanmar Timber Merchants Association (MTMA): The state convened association which timber merchants are obliged to register with.

Myanmar Selection System (MSS): The silvicultural system, originally developed by Brandis for application in Myanmar. It involves selection of specific larger timber bearing trees for harvesting without clearing the whole stand.

Permanent Forest Estate (PFE): These are areas of forested landscapes reserved by the Forest department. PFE may be under one of three main categories: Reserved Forest, Public Protected Forest, or Protected Area (for biodiversity conservation)

Public Protected Forest (PPF): areas of forested landscapes containing lower value timber stands or that have not yet gone through the reservation process for other reasons. These are allocated for domestic supply, although timber is also extracted by the state and its agents.

Reserved Forest (RF): Areas of forest landscape reserved by the government as they contained higher value timber stands at that time, and were allocated for state timber production under a Forest Management plan.

Unclassified Forest (UF): Areas of forests not yet reserved by the Forest Department, and therefore by default under the Ministry of Agriculture and Irrigation, which classify them as 'Virgin Fallow and Vacant Land (VFLV) areas, suitable for conversion to other land use such as plantation.

Forest Law Enforcement, Governance and Trade (FLEGT): a policy initiative of the European Union which seeks to ensure timber traded in the EU has not been supplied illegally.

Voluntary Partnership Agreement (VPA): a bi-lateral agreement between the EU and timber exporting countries. The main policy instrument for FLEGT. The VPA process involves verifying the timber value chain is free from illegality and corruption.

Timber Legality Assurance System (TLAS): A system to verify that the timber value chain does not contravene laws, and therefore that timber offered on the market is fully legal.

Log Export Ban (LEB): Introduced in spring 2014 by MOECF it prohibited export of unprocessed logs

Harvesting Guidelines: MOECF guidelines to appropriate methods for extraction of timber

Hammer marking: The traditional method for marking trees to be felled or logs once felled. A 'hammer' with code letters and numbers is imprinted on a debarked section of the bole.

Border Guard Forces (BGF): dissident Ethnic Armed Groups in border areas which have made bilateral peace agreements with the Tatmadaw Union Military in return for control of their territories. There seems to be a 'divide and conquer' strategy to co-opt factions of Ethnic Armed Groups.

Chain of Custody (CoC): The control of logs and timber between felling and market. A safe CoC allows exporters and buyers to be confident there has not been illegality or corruption, and the timber has not been mixed with unaccounted timber.

General Administration Department (GAD): Established in 1957 under Ministry of Home Affairs which came under formal military control due to the 2008 Constitution, the GAD oversees main bureaucratic activities: tax collection, land registration and management. In practice it is one of the main mechanisms through which the Military permeate and control government at all levels, and its overhaul is a high priority for democrats.

Community Forest (CF): The control management and use of forests by local people. Community Forestry has been a worldwide policy process for post-colonial reform of colonial appropriation of village common property. In Myanmar CF was introduced with the 1995 CF Instruction. CF has spread slowly so far, due to

a range of factors: for the villagers the deal can be somewhat unattractive as relations with under-paid government staff normally involve the expectation of bribes. Additionally the effort to establish the management has attracted limited interest from forest department staff.

Virgin Fallow and Virgin land (VfV): The Ministry of Agriculture and Irrigation's classification for what the Forest Department consider 'Unclassified Forest'. Although millions of rural people use VfV land for agriculture and agroforestry, without tenure security, the land can be allocated for other purposes. Therefore they are vulnerable to destitution and food insecurity.

Note on timber statistics: several different units are used for timber and extraction levels: tree, log, hoppus tonne, cubic tonne, cubic meter and so on. Conversion factors are approximate as each tree, log and cubic meter has different size and density, and size of trees is generally declining over time. Logs are also differentiated by sawing grade, so that sawing grade 1 is the best quality, and SG 8 the worst.

