**Timber Trafficking**

Introduction

Timber trafficking is the transport of illegal or illicit timber. it occurs through mislabelling, the forging of certificates and authorisation permits, laundering with legal timber, obscuring of source through port-hopping, processing in third-countries, and corruption.

A truck carrying logs on the back of a trailer

Description automatically generated*A timber truck in Pahang, Malaysia. Author’s Photo*

Characteristics

*Practices* *& Routes*

Timber varieties are banned or subject to quotas under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) are often trafficked illegally. Interpol and the World Bank report that mahogany, ramin, teak and rosewood are most commonly trafficked cargos.[1](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-1-315), with rosewood is the most trafficked form of flora or fauna by both volume and value [2](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-2-315)

Illicit timber is often transported by sea. It can be mislabelled in shipping and customs manifests as non-CITES species, with sea-transportation routes are often chosen in order to disguise it source.[3](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-3-315)

Timber traffickers do not always send timber directly from the source (mostly countries in the Global South) to consumer markets (most often in the Global North). Examples include controlled Madagascan timber being shipped to Singapore (itself a hub for onward transportation) via ports in East Africa and the Indian Ocean;[4](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-4-315) banned timber from Indonesia being sent to Malaysia via barges before being shipped onwards to China with its origin declared as Malaysian or Papua New Guinean;[5](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-5-315) DRC timber travelling across land borders to Tanzania and Mozambique before onward shipping;[6](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-6-315) and various controlled African timbers being sent to Brazil prior to being sent to the EU.[7](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-7-315) There is evidence that a significant quantities of controlled timber are sent to China, where it is processed before being sent on to Western markets.[8](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-8-315) The more countries involved in the trafficking chain makes it harder to trace the origin of the timber.[9](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-9-315)

Maritime routes are an important link in the supply chain of illegal timber.[10](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-10-315) Due to the timber’s weight and bulk, as well as the geographical distance between suppliers in the Global South and consumers in the Global North, other forms of transportation are less viable. However, there has been less focus on the transport of restricted timber by sea compared to its harvesting,[11](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-11-315) which Cao argues has restricted the efficiency of law enforcement and our understanding of the crime.[12](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-12-315)

There are various degrees of technical illegality in the trafficking of timber, as well as differing opinions on what should be considered as illegal due to uneven regulation. This has led Green et al. to argue that legality boundaries are ‘conceptually unsatisfactory’.[13](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-13-315)

Some activities are more severe than others, such as mass-unlicensed harvesting from protected areas and subsequent document forgery and corruption. Others, such as licensed actors harvesting outside of their legal timber concessions, may seem less severe as a result of this document fraud and due to the involvement of otherwise legal actors.[14](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-14-315)

While some states define illegal practices in line with the national context where the harvesting takes place, INTERPOL and the World Bank define illegality as taking place against both the national laws of origin and ratified international treaties and conventions.[15](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-15-315) Regulation across countries is uneven, and this lack of uniformity can even occur within countries with high degrees of decentralization or lacking centralized state control.

‘Dirty’ or ‘conflict’ timber is not technically illegal, but is unregulated and often harvested in areas of armed conflict, high social conflict, lack of centralised regulatory power, lack of governmental legitimacy, or prevalent exploitation of the poor.[16](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-16-315) Internationally, some species of conflict timber are defined as protected in CITES, though CITES does not include all at-risk species and problematic practices.

The emergence of ‘green criminological’ perspectives habe added a new dimensions to these approaches and challenges more traditional ‘legalist’ perspectives.[17](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-17-315) Green criminologists argue that ideas of ‘victimisation’ should be understood to include marginalized referents such as indigenous communities, non-human species and environmental spaces themselves (see impacts).[18](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-18-315) Laws are often insufficient in their protection of these things on their own.

*Perpetrators*

Legalist understandings can be problematic in the case of environmental crimes because of the often patchy effectiveness of legal regulation. In some countries, politicians have close connections to the ‘timber barons’ who control much of the timber trade.[19](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-19-315)

Shipping lines, shipping agents, and terminal operators are often legal actors, but have illegal importers and exporters as clients. The extent of intentionality on behalf of those actually shipping the timber can be unclear. Large shipping companies often claim that they are not responsible for the trade as they do not check or label the containers themselves. Other practices, such as port-hopping, knowingly picking up timber from problematic sources, transhipping timber, and small scale smuggling are less ambiguous.[20](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-20-315)

UNEP and Interpol argue that ‘illegal logging is … becoming more advanced as cartels become better organised including shifting their illegal activities in order to avoid national or local police efforts’.[21](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-21-315) Others suggest that the trade is increasingly ‘organised, sophisticated, and transnational’, involving multiple organised criminal networks.[22](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-22-315) In an in-depth study of Kenya and Tanzania, Kioko demonstrates supply chains of supply include loggers from local communities, smugglers/traders, transporters, and buyers from India and China.[23](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-23-315)

Due to this level of sophistication and organisation UNEP and Interpol have labelled the crime of harvesting and trafficking as an ‘environmental crime crisis’.[24](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-24-315)

*Motivation*

Timber trafficking is profit-driven. There is high consumer demand for both cheaper timber as well as protected species which are perceived to be high quality and bring status.[25](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-25-315) Redwood, for example, is popular in Chinese furniture amongst the growing upper classes.[26](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-26-315) Teak is a timber of choice for decking on luxury yachts in the West.[27](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-27-315) Like any trafficked substance, timber increases significantly in value at the destination country. Telapak and the EIA, for example, show that Merbau timber is worth only £120 in an Indonesian port, but £2200 when sold in an American store. [28](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-28-315)

Scope

There are varying estimates on the scope of the problem. The World Bank, for example, presents monetary figures both concerning the value of the trade (30-157 billion USD) and the lost tax revenue to the countries impacted (6-9 billion USD).[29](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-29-315) They arrive at this figure by integrating three different estimates – two from UNEP & Interpol (30-100 billion USD & 51-152 billion USD)[30](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-30-315) and one from the Global Financial Integrity Index (52-157 billion USD).[31](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-31-315)

The most common measure is a percentage figure of the total wood trade. These estimate vary considerably, however. Figures range from 5-10 per cent,[32](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-32-315) 6 per cent,[33](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-33-315), 15 per cent, [34](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-34-315)10-30 per cent,[35](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-35-315) 20-40 per cent,[36](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-36-315)and 20-50 per cent.[37](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-37-315)

The illegal timber trade is estimated to account for 50 to 90 per cent of wood harvested from Amazonia, Central Africa and Southeast Asia.[38](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-38-315) Interpol have national estimates for high risk countries, including Indonesia (40 to 60 per cent) and Gabon (70 percent).[39](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-39-315) The U.S. Trade Representative’s Office estimated that 90 per cent of U.S. timber imports from Peru were sourced from illegal logging.[40](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-40-315) Figures such as these have led to the characterization of timber trafficking as a ‘major problem in all producer countries’,[41](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-41-315) and ‘common everywhere’.[42](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-42-315)

Aggregated figures such as those cited above depend on nation-specific data which can be difficult to extrapolate accurately. Similarly, CITES reports only covers some varieties of timber, such as protected species[43](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-43-315) While reporting is mandatory, there are few procedures in place to ensure compliance.[44](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-44-315) Belgium for example made no reports on CITES from 2007-2011.[45](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-45-315)

In consequence, it seems likely that much trafficked timber remains undetected.[46](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-46-315) As such, the estimates provided above should only be considered as very general assessments and ‘best guesses’.[47](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-47-315)

Impact

Because the harvesting of illegal timber it is unregulated and occurs without oversight, it is generally more damaging for the environment than legally produced wood. The Environmental Investigation Agency (EIA) have argued that the trade in illegal timber is among the most destructive environmental crimes occurring today.[48](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-48-315) It impacts upon biodiversity, reduces habitats, and weakens the quality of water, air, and soil quality.[49](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-49-315) A 65 per cent of forestry loss in Riau, Indonesia, has led to an 84 per cent decline in elephant populations, and 70 per cent decline in the number of tigers, for example.[50](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-50-315) Timber trafficking also has a knock-on effect, facilitating natural disasters such flash flooding, landslides, forest fires and soil erosion.[51](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-51-315)

Significant loss of forests as a direct result of illegal timber harvesting is documented across regions of the world including in South America,[52](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-52-315) Central America, [53](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-53-315) Southeast Asia and Asian Pacific,[54](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-54-315) Africa (particularly West Africa),[55](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-55-315) and Central and Eastern Europe.[56](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-56-315)

Deforestation has increased on a massive scale. During the 1990s as a whole an estimated 160 million hectares of forest were lost.[57](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-57-315) Between 2015 and 2020, 10 million hectares were lost annually.[58](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-58-315) Such large scale global deforestation has global implications for the environment. As a ‘significant contributor’ to,[59](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-59-315) and ‘among the most important drivers’ of,[60](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-60-315) deforestation, the illegal timber trade has an important impact on climate change.[61](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-61-315)

This stems not only from lost carbon-sequestration potential,[62](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-62-315), but also from transportation of timber because forest is cut down to make access roads.[63](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-63-315) Greenpeace estimate that carbon emissions ‘resulting from constructing roads and infrastructure for logging would be 2.5 times greater than emissions from the selective logging itself’.[64](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-64-315) There are fewer studies on the impact that illegal shipping has in this picture however.

The illegal timber trade can also impacts local communities who depend on local forestry for their livelihoods and food security.[65](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-65-315) Due to their often relative lack of political power, they are often threatened with physical violence by powerful actors who seize land and coerce local communities into either leaving or working for timber traffickers.[66](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-66-315) In Indonesia, for example, there has been ‘significant deforestation-related violence’,[67](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-67-315) and more broadly there are instances of murder and violence against similar communities.[68](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-68-315)

This is particularly problematic in countries where the government is implicated in timber trafficking, as local people lose all recourse to criticise illegal forestry activities due to threats or acts of violence. [69](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-69-315) When participating in illicit timber harvesting, local loggers work in dangerous conditions, and are vulnerable to exploitation.[70](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-70-315) A study by the ILO estimates that in Peru, 33,000 people were working under forced labour conditions in the timber trade.[71](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-71-315)

The involvement of informal actors and transnational criminal syndicates, as well as the linkages to corruption, can undermine broader social cohesion,’ leading to a population’s disaffection and loss of confidence in law enforcement authorities and their capabilities and, by extension, a loss of confidence in national institutions’.[72](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-72-315)

The potential for profit and disagreements over rights to land can result in conflicts between local communities and outsiders. Profits can be used to maintain conflict, with revenue being used to finance armed conflict in countries such as Liberia, Myanmar, and the DRC,[73](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-73-315) and political conflict in Indonesia where revenues from the trade has funds election campaigns that entrench timber barons.[74](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-74-315)

Illegal logging is thought to cost developing countries between 6-15 billion US dollars in revenues and taxes per annum.[75](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-75-315) However, calculating the actual economic consequences caused by timber trafficking is difficult. The World Bank argue that these figures do not capture the full impact on ecosystems, which they value at 1 trillion USD.[76](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-76-315) Either way, it is clear that the cost of timber trafficking is considerable for governments and societies worldwide.

The illegal trade in timber can make it difficult for legal businesses compete. Sustainable practices are more expensive, and the price of timber is lowered by the additional supply the illegal trade brings to the global timber market.[77](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-77-315)

Linkages & Synergies

There are a multiple linkages between timber trafficking and other forms of crime.

Corruption for example is widespread and spans the entire supply chain.[78](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-78-315) Other facilitating crimes include money laundering and document forgery.[79](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-79-315)

The illegal trade in timber has also been linked to other forms of trafficking on the basis that trades of illicit goods will interact with one another, especially if there is an overlap in the criminal organisations and trade routes involved.[80](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-80-315)

Criminal networks may also coerce indigenous populations into forced labour and other non-indigenous victims may be trafficked to illegally harvest timber.

Responses

*International*

Timber trafficking received greater international policy attention since the 1992 Rio Earth Summit.[81](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-81-315) There are now a number of international and regional regulations in place to control the trade in timber, though there is still ‘no single universal international instrument designed specifically to prevent and suppress timber trafficking’.[82](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-82-315)

The international trade in timber is regulated by CITES. CITES works to conserve endangered species through trade controls ranging from controlling quotas to outright bans. Species covered are listed in 3 appendices.[83](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-83-315)The first lists species threatened with extinction, meaning their trade is permitted only in exceptional circumstances. The second lists species not yet threatened but that must be controlled for sustainability. The third lists species that are protected in at least one country that has asked other CITES parties for assistance in controlling trade in those species.

However, many illicitly traded species are excluded from CITES.[84](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-84-315) Trade suspensions are the highest recourse, but there is no real focus on enforcement. This is problematic when Appendix I or II species can be traded with export permits, but there is little oversight or guidance on how these permits are issued. There is a general consensus that the role of CITES in monitoring and controlling the potentially illegal timber trade has been limited.[85](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-85-315)

*Regional*

There are also a variety of regional instruments aimed at controlling timber trafficking, though these have their own limitations.[86](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-86-315) The EU Timber Regulation (EUTR), for example, widens the scope of illegality beyond CITES to define a legal product as having been produced in accordance with ‘all applicable legislation’.[87](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-87-315) However, it contains no tracking or reporting systems. Instead, operators are expected to mitigate risks themselves and failure to do so leads to only minor sanctions.[88](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-88-315) The Forest Law Enforcement, Governance, and Trade (FLEGT) initiative which assists with producer countries’ due diligence.[89](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-89-315)

Compliance with the EUTR is often not policed at the EU border, but instead by enforcement agencies who analyse businesses’ practices. Only 0.33% to 3.1% of operators were checked by EUTR member countries and these focused on due diligence checks rather than port inspections.[90](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-90-315) Many containers coming into EU ports go through automated green lanes with minimal checks or random tests.

The EU proposed a regulation to curb deforestation and forest degradation in 2021 that would repeal EUTR and strengthen regulations.[91](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-91-315) It would require mandatory due diligence for all operators placing relevant commodities and products on the EU market and minimum member state inspections. It is therefore stronger than the EUTR, but it has not yet been fully adopted and it is unclear as to the extent to which it would strengthen customs checks.

*National*

There are significant national asymmetries in the enforcement of timber trafficking and particular weaknesses in addressing the actual shipments of illicit timber (as opposed to its harvesting).

Enforcement is a particularly problematic issue.[92](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-92-315) Customs enforcement is often weak as it focuses mostly on CITES breaches or paperwork checks, while customs authorities often lack the capacity or expertise to identify the origin of timber cargoes .[93](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-93-315) This is particularly the case if illicit timber has been mixed with legal streams or has been processed prior to import.

One recommendation is for ‘there to be direct lines of communication set up between relevant customs officials in producer and consumer countries in the region to enable swift verification of suspect documentation’, and training in timber identification and the markings and tags which should be found on legal logs.[94](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-94-315) Another recommendation is that authorities focused on the timber trade should work closely with customs to identify high-risk shipments and intercept them for inspection at the port.[95](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-95-315)

For these measures to be effective, investigations are required in order to track illegal timber from source.[96](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-96-315) However, there is a lack of regular exchange between different agencies such as customs and police officers, especially between countries.[97](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-97-315) Timber is generally not a priority for law enforcement in destination countries and, due to a lack of international cooperation when investigations do occur, they do not always result in significant actions against perpetrators and sanctions remain limited.[98](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-98-315)

A further issue relates to asymmetries in law enforcement capacity. Many source countries have limited capacity to monitor forests or enforce penalties for illegal logging, suffer from endemic corruption, or do not prioritise timber trafficking as a significant issue.[99](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-99-315) Improving transparency has been suggested as a significant step towards tackling these issues, but has been difficult to implement. Another significant step would be the securing of documentation through watermarking and stamps.[100](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-100-315)

This is not to say all enforcement efforts have failed. One example is the East Africa Initiative on Illegal Timber Trade and Reducing Emissions from Deforestation and forest Degradation (REDD+), which provides an opportunity to build on each country’s experiences in combatting the illegal timber trade and brings in the specialized expertise of INTERPOL and collaborating UN agencies.[101](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-101-315) These agencies assist the governments of Kenya, Uganda and Tanzania to address different facets of the illegal trade in timber: from economic drivers, and corruption, to law enforcement, customs control, and monitoring.

INTERPOL established Project LEAF (Law enforcement Assistance for Forests), now called Global Forestry Enforcement, in 2012. It is a global initiative to support law enforcement, and is composed of criminal intelligence officers and analysts with backgrounds in international environmental law, financial investigations, forestry, and law enforcement.[102](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-102-315) Between 2012 and 2017 they made 547 arrests, and they have been instrumental in developing national capacities.[103](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-103-315)

The UNODC also conducts ‘widespread research into how best to guide countries on illegal logging, advocating for governments to increase efforts to protect natural resources and convict perpetrators of crimes against the environment’.[104](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-104-315) Critically, the UNODC’s work in this area also involves working with authorities to improve laws and increase international cooperation to respond to these crimes.

Despite this, some argue that regulation and enforcement are not sufficient measure on their own, and additional steps need to be taken to disincentivise the crime by making it less economically viable, by providing routes to sustainability, or by tackling the norms of behaviour that make timber trafficking permissible.[105](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-105-315)

*NGOs*

NGOs such as the World Wildlife Fund for Nature (WWF) have also been important in lobbying governments for greater action and raising awareness of the issue. The WWF has also negotiated its own labelling policy, and the Forest Stewardship Council has a certification scheme that identifies sustainable timber.

The WWF has issued a compendium for the maritime shipping sector that includes red flags to look out for.[106](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-106-315) Red flags include: shipment incongruous with origin or destination country; questionable paperwork; weight and appearance discrepancy; split consignments; vague descriptions; abnormal shipping routes; switched bill of lading; incomplete consignee addresses; and cash payments.[107](https://www.safeseas.net/evidence/2022/08/21/timber-trafficking/#easy-footnote-bottom-107-315) They also provide specific guidelines for timber shipments, including the different permits and certificates required.

Similarly, the EIA conducts in-depth investigations, releasing reports and recommendations that have had an important influence on the fight against the illegal timber trade.

List of References

1. Inte[rpol & World Bank 2009](https://www.interpol.int/content/download/5160/file/Chainsaw%20Project%20-%20An%20INTERPOL%20perspective%20on%20law%20enforcement%20in%20illegal%20logging.pdf)
2. [UNODC 2020](https://www.unodc.org/documents/data-and-analysis/wildlife/2020/World_Wildlife_Report_2020_9July.pdf); see also: [UNODC 2018](https://www.unodc.org/documents/data-and-analysis/wildlife/2020/WWLC20_Chapter_2_Rosewood.pdf); [UNODC 2015](https://www.unodc.org/documents/wwcr/Rosewood.pdf)
3. Zavagli 2021
4. [UNODC 2020](https://www.unodc.org/documents/data-and-analysis/wildlife/2020/World_Wildlife_Report_2020_9July.pdf)
5. [EIA& Telapak 2001](https://eia-international.org/report/timber-trafficking/); [Telapak & EIA 2004](https://eia-international.org/report/profiting-from-plunder/); [EIA & Telapak 2005](https://eia-international.org/wp-content/uploads/Stemming-the-Tide-low-res-Jan-06.pdf); [Telapak & EIA 2005](https://eia-international.org/wp-content/uploads/The-Last-Frontier.pdf); [Transparency International 2010](https://images.transparencycdn.org/images/2010_7_TI_TimbertraffickingandLaundering_EN.pdf); [EIA 2014](https://eia-international.org/report/permitting-crime-how-palm-oil-expansion-drives-illegal-logging-in-indonesia/); [Obidzinski et al. 2006](https://www.cifor.org/publications/pdf_files/Books/BObidzinski0601.pdf); [2007](https://www.jstor.org/stable/43740297#metadata_info_tab_contents)
6. [WWF 2012](https://d2ouvy59p0dg6k.cloudfront.net/downloads/regional_timber_movement_and_trade__summary___english.pdf)
7. [Bisschop 2012](https://www.tandfonline.com/doi/abs/10.1080/17440572.2012.701836)
8. [EIA 2012](https://us.eia.org/report/appetite-for-destruction-chinas-trade-in-illegal-timber/); [Bisschop 2015](https://www.routledge.com/Governance-of-the-Illegal-Trade-in-E-Waste-and-Tropical-Timber-Case-Studies/Bisschop/p/book/9781138637115)
9. [Interpol & World Bank 2009](https://www.interpol.int/content/download/5160/file/Chainsaw%20Project%20-%20An%20INTERPOL%20perspective%20on%20law%20enforcement%20in%20illegal%20logging.pdf)
10. [Cao 2017](https://link.springer.com/book/10.1007/978-3-319-64280-2); [Zavagli 2021](https://apps5.wwf.org.hk/red-flag-compendium/)
11. [Tacconi 2007](https://www.routledge.com/Illegal-Logging-Law-Enforcement-Livelihoods-and-the-Timber-Trade/Tacconi/p/book/9781844076079)
12. [Cao 2017](https://link.springer.com/book/10.1007/978-3-319-64280-2)
13. [Green et al. 2007](https://www.jstor.org/stable/29768437#metadata_info_tab_contents)
14. [Bisschop 2015](https://www.routledge.com/Governance-of-the-Illegal-Trade-in-E-Waste-and-Tropical-Timber-Case-Studies/Bisschop/p/book/9781138637115)
15. [Interpol & World Bank 2009](https://www.interpol.int/content/download/5160/file/Chainsaw%20Project%20-%20An%20INTERPOL%20perspective%20on%20law%20enforcement%20in%20illegal%20logging.pdf); [Brack & Haymen 2001](https://www.chathamhouse.org/sites/default/files/public/Research/Energy,%20Environment%20and%20Development/intergovernmental_actions_on_illegal_logging_march_01.pdf)
16. [Price et al. 2007](https://link.springer.com/chapter/10.1007/978-1-4020-5462-4_7#copyright-information); [Bannon & Collier 2003](https://openknowledge.worldbank.org/handle/10986/15047); [Bisschop 2015](https://www.routledge.com/Governance-of-the-Illegal-Trade-in-E-Waste-and-Tropical-Timber-Case-Studies/Bisschop/p/book/9781138637115); [Thomson & Kanaan 2013](https://agris.fao.org/agris-search/search.do?recordID=GB2013202658); [van Solinge 2008](https://link.springer.com/chapter/10.1007/978-0-387-74733-0_8)
17. [Gibbs et al. 2009](https://academic.oup.com/bjc/article-abstract/50/1/124/349223); [White 2013](https://link.springer.com/chapter/10.1057/9781137273994_2); [Lynch & Stretsky 2003](https://journals.sagepub.com/doi/10.1177/1362480603007002414)
18. [Walters et al. 2013](https://link.springer.com/book/10.1057/9781137273994); [Cao 2017](https://link.springer.com/book/10.1007/978-3-319-64280-2)
19. [Simon 2000](https://journals.sagepub.com/doi/10.1177/00027640021955469); [White 2011](https://www.taylorfrancis.com/books/mono/10.4324/9780203804001/transnational-environmental-crime-rob-white)
20. [EIA& Telapak 2001](https://eia-international.org/report/timber-trafficking/); [Bisschop 2015](https://www.routledge.com/Governance-of-the-Illegal-Trade-in-E-Waste-and-Tropical-Timber-Case-Studies/Bisschop/p/book/9781138637115)
21. [UNEP & Interpol 2014](https://www.interpol.int/content/download/5153/file/The%20Environmental%20Crime%20Crisis%20-%20Threats%20to%20sustainable%20development%20from%20illegal%20exploitation%20and%20trade%20in%20wildlife%20and%20forest%20resources%20EN.pdf)
22. [Tacconi 2007](https://www.routledge.com/Illegal-Logging-Law-Enforcement-Livelihoods-and-the-Timber-Trade/Tacconi/p/book/9781844076079); [Stewart 2016](https://www.taylorfrancis.com/chapters/edit/10.4324/9781315580005-23/project-leaf-interpol-work-illegal-logging-forest-crime-davyth-stewart); [van Solinge & Kuijpers 2012](https://www.taylorfrancis.com/chapters/edit/10.4324/9780203093658-22/amazon-rainforest-green-criminological-perspective-tim-boekhout-van-solinge-karlijn-kuijpers); [Wyatt 2013](https://link.springer.com/book/10.1057/9781137269249)
23. [Kioko 2022](https://brill.com/view/book/9789004471641/BP000021.xml?language=en)
24. [UNEP & Interpol 2014](https://www.interpol.int/content/download/5153/file/The%20Environmental%20Crime%20Crisis%20-%20Threats%20to%20sustainable%20development%20from%20illegal%20exploitation%20and%20trade%20in%20wildlife%20and%20forest%20resources%20EN.pdf)
25. [Bisschop 2015](https://www.routledge.com/Governance-of-the-Illegal-Trade-in-E-Waste-and-Tropical-Timber-Case-Studies/Bisschop/p/book/9781138637115); [EIA 2015](https://eia-international.org/report/addressing-aseans-regional-rosewood-crisis-an-urgent-call-to-action/)
26. [EIA 2015](https://eia-international.org/report/addressing-aseans-regional-rosewood-crisis-an-urgent-call-to-action/); [Zhu 2018](https://www.tandfonline.com/doi/full/10.1080/24694452.2019.1613955)
27. [EIA 2019](https://reports.eia-international.org/stateofcorruption); [EIA 2021](https://eia-international.org/report/taxing-questions-evidence-of-tax-evasion-in-teak-exports-from-myanmar/); [WWF 2021](https://forestsforward.panda.org/newsroom/?uNewsID=3403841)
28. [Telapak & EIA 2007](https://eia-international.org/report/thousand-headed-snake/)
29. [World Bank 2019](https://openknowledge.worldbank.org/handle/10986/32806)
30. [UNEP & Interpol 2014](https://www.interpol.int/content/download/5153/file/The%20Environmental%20Crime%20Crisis%20-%20Threats%20to%20sustainable%20development%20from%20illegal%20exploitation%20and%20trade%20in%20wildlife%20and%20forest%20resources%20EN.pdf)
31. [GFI 2017](https://www.gfintegrity.org/wp-content/uploads/2017/03/Transnational_Crime-final.pdf)
32. [Seneca Creek & Wood Resources 2004](http://forestindustries.eu/sites/default/files/userfiles/1file/afandpa.pdf)
33. [OECD 2012](https://www.oecd-ilibrary.org/trade/illegal-trade-in-environmentally-sensitive-goods_9789264174238-en)
34. [Contreras-Hermosilla et al. 2017](https://www.oecd.org/sd-roundtable/papersandpublications/39348796.pdf)
35. [UNEP & Interpol 2014](https://www.interpol.int/content/download/5153/file/The%20Environmental%20Crime%20Crisis%20-%20Threats%20to%20sustainable%20development%20from%20illegal%20exploitation%20and%20trade%20in%20wildlife%20and%20forest%20resources%20EN.pdf)
36. [WWF 2009](https://wwf.panda.org/wwf_news/?172901/Colombia-commits-to-stop-illegal-timber-trade)
37. [Interpol & World Bank 2009](https://www.interpol.int/content/download/5160/file/Chainsaw%20Project%20-%20An%20INTERPOL%20perspective%20on%20law%20enforcement%20in%20illegal%20logging.pdf)
38. [WWF n.d.](https://wwf.panda.org/discover/our_focus/forests_practice/deforestation_causes2/illegal_logging/); [Wallen 2018](https://theconversation.com/global-timber-trafficking-harms-forests-and-costs-billions-of-dollars-heres-how-to-curb-it-93115)
39. [Interpol & World Bank 2009](https://www.interpol.int/content/download/5160/file/Chainsaw%20Project%20-%20An%20INTERPOL%20perspective%20on%20law%20enforcement%20in%20illegal%20logging.pdf)
40. [USTR 2016](https://ustr.gov/sites/default/files/Timber-Committee-Report-8172016.pdf)
41. [Lawson & MacFaul 2010](https://chathamhouse.soutron.net/Portal/Default/en-GB/RecordView/Index/187054)
42. [Contreras-Hermosilla 2001](https://documents1.worldbank.org/curated/pt/232581468763471728/pdf/286170Law0Forestry0WBI0WP.pdf)
43. [Robinson & Sinovas 2018](https://kar.kent.ac.uk/70206/1/Robinson_et_al-2018-Conservation_Biology_acceptedarticle.pdf); [Foster et al. 2014](https://onlinelibrary.wiley.com/doi/full/10.1002/aqc.2493?casa_token=GBEhmSUhHEUAAAAA%3A3ZhqsQA-KVhe9gsicdzrxKZSjV7exPIIRUkgRO71_DPs7mEAQa3tk0n9mPLfTskbWWbtn4r2016vu7Mb)
44. [CITES n.d.](https://cites.org/eng/resources/reports/Annual_Illegal_trade_report)
45. [Bisschop 2015](https://www.routledge.com/Governance-of-the-Illegal-Trade-in-E-Waste-and-Tropical-Timber-Case-Studies/Bisschop/p/book/9781138637115)
46. [Seneca Creek & Wood Resources 2004](http://forestindustries.eu/sites/default/files/userfiles/1file/afandpa.pdf); [Contreras-Hermosilla 2001](https://documents1.worldbank.org/curated/pt/232581468763471728/pdf/286170Law0Forestry0WBI0WP.pdf)
47. [Bisschop 2015](https://www.routledge.com/Governance-of-the-Illegal-Trade-in-E-Waste-and-Tropical-Timber-Case-Studies/Bisschop/p/book/9781138637115)
48. [EIA 2012](https://us.eia.org/report/appetite-for-destruction-chinas-trade-in-illegal-timber/)
49. [Rosander 2008;](https://www.recoftc.org/publications/0000160) [van Solinge 2008](https://link.springer.com/chapter/10.1007/978-0-387-74733-0_8); [2010](https://www.taylorfrancis.com/chapters/edit/10.4324/9781843927983-10/equatorial-deforestation-harmful-practice-criminological-issue-tim-boekhout-van-solinge); [Symes et al. 2018](https://www.nature.com/articles/s41467-018-06579-2)
50. [WWF et al. 2008](https://wwf.panda.org/wwf_news/?125780/Pulp-and-palm-oil-the-villains-in-Sumatras-global-climate-impact-and-local-elephant-losses)
51. [Bradshaw et al. 2007](https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1365-2486.2007.01446.x); [Interpol & World Bank 2009](https://www.interpol.int/content/download/5160/file/Chainsaw%20Project%20-%20An%20INTERPOL%20perspective%20on%20law%20enforcement%20in%20illegal%20logging.pdf); [Lawson & MacFaul 2010](https://chathamhouse.soutron.net/Portal/Default/en-GB/RecordView/Index/187054); [Tan-Soo et al. 2014](https://link.springer.com/article/10.1007/s10640-014-9834-4); [Aragao et al. 2018](https://www.nature.com/articles/s41467-017-02771-y)
52. [van Solinge 2010](https://www.taylorfrancis.com/chapters/edit/10.4324/9781843927983-10/equatorial-deforestation-harmful-practice-criminological-issue-tim-boekhout-van-solinge)
53. [Aide et al. 2012](https://onlinelibrary.wiley.com/doi/full/10.1111/j.1744-7429.2012.00908.x?casa_token=iehm6ZGVKP0AAAAA%3Autyy9VeEjbwIg1Ungl3ZJqhcJ8F_v6bDR-8rGxD8g73WZ6d4Li6DDZRSU37V4PP6HrKmY0w8u02YcwQP)
54. [Miettinen et al. 2011](https://onlinelibrary.wiley.com/doi/full/10.1111/j.1365-2486.2011.02398.x?casa_token=-v_SdGzUdygAAAAA%3Ap5ZGOls5qPCLfINyEC-UeYQBB_h1v1I8F9OIbL2cTo67VdMOEn-wK73iueOZLNA0k_S74Dnd-Naga1oe); [Symes et al. 2018](https://www.nature.com/articles/s41467-018-06579-2)
55. [Perez et al. 2005](https://www.sciencedirect.com/science/article/abs/pii/S0378112705002677?via%3Dihub); [Ernst 2012](https://onlinelibrary.wiley.com/doi/full/10.1111/gcb.12092); [Megevand 2013](https://openknowledge.worldbank.org/handle/10986/12477); [Kioko 2022](https://brill.com/view/book/9789004471641/BP000021.xml?language=en)
56. [Hirschberger 2008](https://wwfeu.awsassets.panda.org/downloads/illegal_wood_for_the_european_market_july_2008.pdf)
57. [FAO 2020](https://www.fao.org/state-of-forests/en/)
58. [FAO 2020](https://www.fao.org/state-of-forests/en/)
59. [Interpol & World Bank 2009](https://www.interpol.int/content/download/5160/file/Chainsaw%20Project%20-%20An%20INTERPOL%20perspective%20on%20law%20enforcement%20in%20illegal%20logging.pdf)
60. [Lawson & MacFaul 2010](https://chathamhouse.soutron.net/Portal/Default/en-GB/RecordView/Index/187054)
61. [Malhi et al. 2008](https://www.science.org/doi/full/10.1126/science.1146961?casa_token=xLxyzRdJ9MYAAAAA%3ANeRiuvoOJcFx-bdJlCrHa9qdzdIBGJXVJPfhoMmuQQTmB5T3AvxzcRGovO5Ktc6LMzzfpLklE7AX9hk); [Marengo 2011](http://www.ccst.inpe.br/wp-content/uploads/relatorio/Climate_Change_in_Brazil_relatorio_ingl.pdf); [Lawrence & Vandecar 2015](https://www.nature.com/articles/nclimate2430)
62. [Gatti et al. 2021](https://www.nature.com/articles/s41586-021-03629-6?ftag=YHF4eb9d17)
63. [Greenpeace 2007](https://www.greenpeace.org/static/planet4-netherlands-stateless/2018/06/carving-up-the-congo-part-1.pdf)
64. [Greenpeace 2007](https://www.greenpeace.org/static/planet4-netherlands-stateless/2018/06/carving-up-the-congo-part-1.pdf)
65. [Shahril et al. 2012](https://www.routledge.com/Current-Issues-in-Hospitality-and-Tourism-Research-and-Innovations/Zainal-Radzi-Hashim-Chik-Abu/p/book/9780415621335); [Bennett et al. 2018](https://www.sciencedirect.com/science/article/pii/S0305750X18301207?casa_token=oJMc_S7z3ZsAAAAA:tYqYPMsrxW19mk-Ifny8Oe1y1a8FiRpm7q-ttKzBSLEeMv2W_Ay784UQbYExtcg9tSxjm8fRRns); [BenYishay et al. 2017](https://www.sciencedirect.com/science/article/pii/S0095069617304813?casa_token=XVeUacaWAZsAAAAA:Qg9SLMNk9lSfhSHfjIeFWP5EWoMLMH_6xyI8rvGMFj3orxz1M8JY7s5ATKhmWij1fufmw6wtSXI); [FAO 2020](https://www.fao.org/state-of-forests/en/)
66. [van Solinge & Kuijpers 2012](https://www.taylorfrancis.com/chapters/edit/10.4324/9780203093658-22/amazon-rainforest-green-criminological-perspective-tim-boekhout-van-solinge-karlijn-kuijpers); [Casson & Obidzinski 2007](https://www.taylorfrancis.com/chapters/edit/10.4324/9781849771672-10/new-order-regional-autonomy-shifting-dynamics-illegal-logging-kalimantan-indonesia-anne-casson-krystof-obidzinski); [Chan 2010](https://www.bluegreenalliance.org/resources/illegal-logging-in-indonesia-the-environmental-economic-and-social-costs/)
67. [van Solinge & Kuijpers 2012](https://www.taylorfrancis.com/chapters/edit/10.4324/9780203093658-22/amazon-rainforest-green-criminological-perspective-tim-boekhout-van-solinge-karlijn-kuijpers)
68. [van Solinge 2008](https://link.springer.com/chapter/10.1007/978-0-387-74733-0_8)
69. [Kaimowitz 2003](https://www.cifor.org/knowledge/publication/1351/); [Edwards 2019](https://www.cambridge.org/core/books/abs/minorities-matter/orang-asli-in-ge14-towards-meaningful-political-engagement/637AC98D323FBC38E7E585A668B35CD5)
70. [Casson & Obidzinski 2007](https://www.taylorfrancis.com/chapters/edit/10.4324/9781849771672-10/new-order-regional-autonomy-shifting-dynamics-illegal-logging-kalimantan-indonesia-anne-casson-krystof-obidzinski); [Chan 2010](https://www.bluegreenalliance.org/resources/illegal-logging-in-indonesia-the-environmental-economic-and-social-costs/)
71. [Garland & Silva-Sebastian 2005](https://ideas.repec.org/p/ilo/ilowps/993751743402676.html)
72. [Interpol & World Bank 2009](https://www.interpol.int/content/download/5160/file/Chainsaw%20Project%20-%20An%20INTERPOL%20perspective%20on%20law%20enforcement%20in%20illegal%20logging.pdf), see also: [Human Rights Watch 2009](https://www.hrw.org/report/2009/12/01/wild-money/human-rights-consequences-illegal-logging-and-corruption-indonesias); [Cao 2017](https://link.springer.com/book/10.1007/978-3-319-64280-2); [FAO 2020](https://www.fao.org/state-of-forests/en/); [Global Witness 2002](https://www.globalwitness.org/en/archive/briefing-document-liberias-logs-war-underpinning-conflict/); [2017](https://www.globalwitness.org/en/reports/eus-responsibility-act-conflict-timber-new-framework-action/); [Brack 2005](https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1467-9388.2005.00421.x)
73. [Cao 2017](https://link.springer.com/book/10.1007/978-3-319-64280-2); [FAO 2020](https://www.fao.org/state-of-forests/en/); [Global Witness 2002](https://www.globalwitness.org/en/archive/briefing-document-liberias-logs-war-underpinning-conflict/); [2017](https://www.globalwitness.org/en/reports/eus-responsibility-act-conflict-timber-new-framework-action/)
74. [Human Rights Watch 2009](https://www.hrw.org/report/2009/12/01/wild-money/human-rights-consequences-illegal-logging-and-corruption-indonesias); [Edwards & Heiduk 2015](https://journals.sagepub.com/doi/full/10.1177/186810341503400303)
75. [European Commission 2010](https://ec.europa.eu/commission/presscorner/detail/de/MEMO_10_511); [World Bank 2019](https://openknowledge.worldbank.org/handle/10986/32806)
76. [World Bank 2019](https://openknowledge.worldbank.org/handle/10986/32806)
77. [Rosander 2008](https://www.recoftc.org/publications/0000160); [Lawson & MacFaul 2010](https://chathamhouse.soutron.net/Portal/Default/en-GB/RecordView/Index/187054)
78. [Seneca Creek & Wood Resources 2004](http://forestindustries.eu/sites/default/files/userfiles/1file/afandpa.pdf); [Wyatt & Cao 2015](https://open.cmi.no/cmi-xmlui/handle/11250/2475047); [Evans 2022](https://www.tandfonline.com/doi/full/10.1080/08865655.2022.2031253); [Gordon 2016](https://heinonline.org/HOL/LandingPage?handle=hein.journals/bcenv43&div=8&id=&page=); [Kishor & Damania 2007](https://documents1.worldbank.org/curated/en/571831468315566390/pdf/399850REPLACEM101OFFICIAL0USE0ONLY1.pdf); [Transparency International 2014](https://knowledgehub.transparency.org/helpdesk/literature-review-on-corruption-risks-in-the-forestry-sector-in-comifac-cou); [Zain 2020](https://www.worldwildlife.org/pages/tnrc-introductory-overview-corrupting-trade-an-overview-of-corruption-issues-in-illicit-wildlife-trade); [Zavagli 2021](https://apps5.wwf.org.hk/red-flag-compendium/)
79. [Interpol & World Bank 2009](https://www.interpol.int/content/download/5160/file/Chainsaw%20Project%20-%20An%20INTERPOL%20perspective%20on%20law%20enforcement%20in%20illegal%20logging.pdf); [Zavagli 2021](https://apps5.wwf.org.hk/red-flag-compendium/)
80. [South & Wyatt 2011](https://www.tandfonline.com/doi/abs/10.1080/01639625.2010.483162); [Van Uhm et al. 2021](https://link.springer.com/article/10.1007/s12117-021-09416-z); [Wyatt et al. 2020](https://link.springer.com/article/10.1007/s12117-020-09385-9)
81. [Tacconi 2007](https://www.routledge.com/Illegal-Logging-Law-Enforcement-Livelihoods-and-the-Timber-Trade/Tacconi/p/book/9781844076079)
82. [Cao 2017](https://link.springer.com/book/10.1007/978-3-319-64280-2)
83. [CITES n.d.](https://cites.org/eng/app/index.php)
84. [Schloenhardt 2008](https://www.aic.gov.au/publications/rpp/rpp89)
85. [Reeve 2015](http://www.cifor.org/publications/pdf_files/OccPapers/OP-130.pdf); [Hutton & Dickson 2009](https://www.cambridge.org/core/journals/oryx/article/citesdoes-it-offer-wild-species-a-future/159073BD57DA7A0E52FC1559817534E8); [Wyatt 2021](https://www.taylorfrancis.com/books/mono/10.4324/9781003007838/cites-protecting-wildlife-tanya-wyatt); [Andersson 2021](https://www.sciencedirect.com/science/article/pii/S2351989421000056)
86. [Goncalves et al. 2012](https://www.worldbank.org/en/topic/financialsector/publication/justice-for-forests-improving-criminal-justice-efforts-to-combat-illegal-logging-report)
87. [European Commission n.d.](https://ec.europa.eu/environment/forests/timber_regulation.htm)
88. [Saunders 2014](https://www.chathamhouse.org/sites/default/files/publications/research/20140424EUTimberRegulationCITESSaundersReeve.pdf)
89. [Zeitlin & Overdevest 2020](https://onlinelibrary.wiley.com/doi/full/10.1111/rego.12350)
90. [WWF 2018](https://d3bzkjkd62gi12.cloudfront.net/downloads/wwf_eutr_implementation_eu_synthesis_report_2019.pdf)
91. E[uropean Commission 2021](https://ec.europa.eu/environment/forests/deforestation-proposal.htm)
92. [EIA & Telapak 2004](https://eia-international.org/wp-content/uploads/The-Ramin-Racket-Low-Res.pdf); [Oldfield 2002](https://www.taylorfrancis.com/chapters/edit/10.4324/9781849773935-24/regulation-timber-trade-sara-oldfield); [Keong 2007](https://www.ingentaconnect.com/content/cfa/ifr/2007/00000009/00000003/art00009); [Lenzen 2012](https://www.nature.com/articles/nature11145); [Le 2019](https://www.tandfonline.com/doi/full/10.1080/13880292.2019.1629176?casa_token=-sK4iCSd7HsAAAAA%3ANNZbiJ9w2vnLv5ndrYWiBp2TjRYfoNhPdN6UZrKAEOwMBg-Ut0OBWqlxNmEr7fd96-8cFMae7lBtzg)
93. [Cao 2017](https://link.springer.com/book/10.1007/978-3-319-64280-2); [Olschofsky & Kohl 2016](https://www.sciencedirect.com/science/article/pii/S2666719320300169); [Koch et al. 2011](https://brill.com/view/journals/iawa/32/2/article-p213_6.xml); [Lancaster & Espinoza 2012](https://analyticalsciencejournals.onlinelibrary.wiley.com/doi/full/10.1002/rcm.6215?casa_token=0ZfldqxnMxcAAAAA%3Au8qogr7PhOmFPFjqXM3DblvHFMhvMtNIryfsyDNrW7KmSMTJIijSzjjISmbRuqkw8Wk93VASKr8aoiZa)
94. [EIA & Telapak 2005](https://eia-international.org/wp-content/uploads/Stemming-the-Tide-low-res-Jan-06.pdf)
95. [Bisschop 2015](https://www.routledge.com/Governance-of-the-Illegal-Trade-in-E-Waste-and-Tropical-Timber-Case-Studies/Bisschop/p/book/9781138637115)
96. [Bisschop 2015](https://www.routledge.com/Governance-of-the-Illegal-Trade-in-E-Waste-and-Tropical-Timber-Case-Studies/Bisschop/p/book/9781138637115)
97. [WWF 2018](https://d3bzkjkd62gi12.cloudfront.net/downloads/wwf_eutr_implementation_eu_synthesis_report_2019.pdf)
98. [Kioko 2022](https://brill.com/view/book/9789004471641/BP000021.xml?language=en)
99. [Stewart 2016](https://www.taylorfrancis.com/chapters/edit/10.4324/9781315580005-23/project-leaf-interpol-work-illegal-logging-forest-crime-davyth-stewart); [UNEP & Interpol 2014](https://www.interpol.int/content/download/5153/file/The%20Environmental%20Crime%20Crisis%20-%20Threats%20to%20sustainable%20development%20from%20illegal%20exploitation%20and%20trade%20in%20wildlife%20and%20forest%20resources%20EN.pdf); [Kioko 2022](https://brill.com/view/book/9789004471641/BP000021.xml?language=en); [Goncalves et al. 2012](https://www.worldbank.org/en/topic/financialsector/publication/justice-for-forests-improving-criminal-justice-efforts-to-combat-illegal-logging-report)
100. [EIA & Telapak 2005](https://eia-international.org/wp-content/uploads/Stemming-the-Tide-low-res-Jan-06.pdf)
101. [UNEP 2014](https://www.unep.org/news-and-stories/press-release/tanzania-kenya-and-uganda-unite-efforts-combat-illegal-timber-trade)
102. [INTERPOL 2019](https://www.interpol.int/content/download/5149/file/Global%20Forestry%20Enforcement%20Prospectus%202019-web.pdf)
103. [INTERPOL 2019](https://www.interpol.int/content/download/5149/file/Global%20Forestry%20Enforcement%20Prospectus%202019-web.pdf)
104. [UNODC 2012](https://www.unodc.org/documents/sustainable-livelihoods/TOC_Environment_FactSheet_UNODC2012.pdf)
105. [UNODC 2012](https://www.unodc.org/documents/sustainable-livelihoods/TOC_Environment_FactSheet_UNODC2012.pdf); [Kioko 2022](https://brill.com/view/book/9789004471641/BP000021.xml?language=en)
106. [Zavagli 2021](https://apps5.wwf.org.hk/red-flag-compendium/)
107. [Zavagli 2021](https://apps5.wwf.org.hk/red-flag-compendium/)