



ENDING TROPICAL DEFORESTATION: A STOCK-TAKE OF PROGRESS AND CHALLENGES

# ASSESSING THE TIMBER LEGALITY STRATEGY IN TACKLING DEFORESTATION

CHARLES VICTOR BARBER AND KERSTIN CANBY

## KEY POINTS

- Combating illegal logging is a key part of strengthening forest governance and eradicating forest-related corruption, and the foundation of achieving sustainability in the forest sector.
- Recent regulatory measures to promote forest legality taken by both consumer and producer countries and by international bodies have strengthened the political mandate and enforcement tools for enhanced state action, and incentivized private sector compliance and voluntary commitments.
- Technological advances that enable greater transparency and accountability in forest management, timber trade, and agricultural commodity supply chains have enhanced the capacity of governments, the private sector, civil society, and the media to monitor and enforce compliance with legal obligations and voluntary commitments.

## THE ISSUE

Illegal logging<sup>1</sup> causes forest degradation and serves as a catalyst for deforestation. Tackling illegal logging is therefore a foundation for conserving forests and biodiversity, reducing emissions from the forest sector, and sustainably managing production forestry. The extent of corrupt and illegal activities in the forest sector is difficult to document, making it difficult to monitor progress. Nevertheless, over the past decade, the adoption of timber legality measures that use third-party verification of legal compliance and involve independent

## CONTENTS

Key Points .....	1
The Issue .....	1
Why Combating Illegal Logging Is Important .....	2
Progress in Combating Illegal Logging .....	2
Remaining Challenges .....	8
Evidence Gaps and Areas of Controversy .....	10
Conclusions and Next Steps .....	11
Abbreviations .....	12
Endnotes.....	12
References .....	13

*Working Papers contain preliminary research, analysis, findings, and recommendations. They are circulated to stimulate timely discussion and critical feedback, and to influence ongoing debate on emerging issues. Working papers may eventually be published in another form and their content may be revised.*

**Suggested Citation:** Barber, C.V., and K. Canby. 2018. "Assessing the Timber Legality Strategy in Tackling Deforestation" Working Paper. Washington, DC: World Resources Institute. Available online at [wri.org/ending-tropical-deforestation](http://wri.org/ending-tropical-deforestation).

monitors has strengthened the political basis for action. Innovative “transparency technologies” have enabled more effective law enforcement by states, accountability by companies, and oversight by civil society. However, realizing global forest and climate objectives will require enhanced effort and collaboration among these groups.

## WHY COMBATING ILLEGAL LOGGING IS IMPORTANT

UN Environment (formerly UNEP) estimates that the value of illegally traded timber—US\$50 billion to \$152 billion per year (see Figure 1)—may exceed the total value of all official development assistance (UNEP 2017). This significant global industry undermines objectives related to forests, climate, and development in a number of ways.

**Illegal logging destroys the environment.** Illegal logging is a direct cause of forest degradation due to both the direct removal of timber and the collateral damage to forests done by the careless and destructive felling and transport practices (often including fire-setting) that are characteristic of illegal logging operations. In addition, illegal logging is often the precursor to subsequent clearing, burning, and converting of forests to agriculture or, all too often, degraded wastelands not even used for crops or pastures. Indeed, a growing proportion of the timber supply in many tropical countries does not come from logging concessions in areas of permanent forest estate. More than 30 percent of the world’s timber is “conversion timber” cut during the illegal clearing of forests to produce palm oil and other commodities (UNEP 2016). Lawson (2014) estimates that 30–50 percent of the world’s internationally traded tropical timber is sourced from illegally cleared forests.

**Illegal logging impedes efforts to reduce forest-based greenhouse gas emissions.** In the climate change context, jurisdictions characterized by entrenched illegal logging are unlikely to qualify for climate finance for reducing emissions from deforestation and forest degradation (REDD+), which might otherwise financially reward a jurisdiction for protecting its forest from degradation or clearing.

**Illegal logging impedes economic development.** Illegal logging impairs the collection of government royalties, taxes, and other revenue from the forestry sector, costing countries as much as \$5 billion a year (World Bank 2006). It also creates an unequal playing

field for companies that operate legally but must compete with those that reduce costs by breaking the law. As public institutions and trust in the state erodes, investment by “responsible players” is deterred, which continues a downward spiral of unsustainable exploitation and depleted assets.

**Illegal logging is intertwined with poor governance.** Illegal logging is often closely associated with corruption, civil conflict and violence, human rights violations, and organized crime. More broadly, poor governance and corruption undermine economic and social development by weakening the rule of law and the institutional foundation on which sustainable economic growth depends—with particular harm to the rights and livelihoods of indigenous and local forest-dependent communities. Quite apart from the environmental implications, these are core security challenges that many countries are confronting in their forested hinterlands.

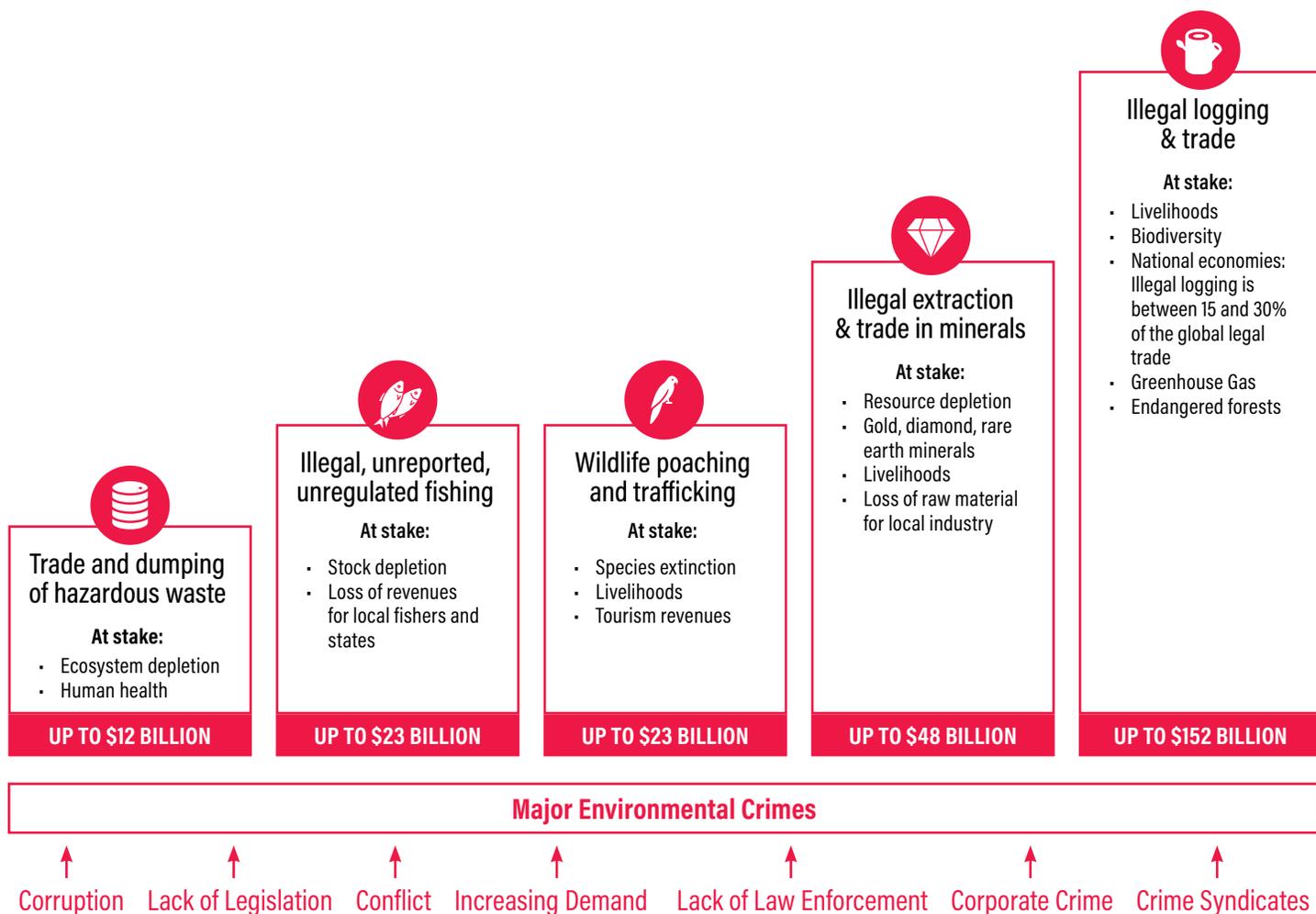
## PROGRESS IN COMBATING ILLEGAL LOGGING

### International policy initiatives

Thirty years ago, most governments were reluctant to acknowledge the politically sensitive issue of illegal logging, despite growing media and nongovernmental organization (NGO) attention. Throughout the 1990s, awareness of the scope of the problem grew, due in part to efforts of indigenous and environmental activists as well as dawning appreciation of the scale of revenue losses to poor nations. In a few countries such as Cambodia (Global Witness 2007) and Liberia (Global Witness 2002), it became clear that illegal logging was also linked to armed conflict and human rights abuses. Much international attention on illegal logging in tropical developing countries, but illegal logging in Russia’s Far East also began to attract scrutiny (Khatchadourian 2008).

Governments began to listen. In 1998, the G8 Summit of industrialized nations adopted an Action Programme on Forests that included a call for action on illegal logging. That same year, the East Asia financial crisis hit forest-rich Indonesia, precipitating the resignation of long-time strongman President Suharto.<sup>2</sup> The ensuing period of reform and democratization exposed a web of corruption, cronyism, and nepotism that encompassed most of the country’s economy, including its oil, forestry, banking, and plantation sectors (World Bank 1998, 2001). As one condition of the bailout package devised by international lenders, Indonesia agreed in 1998 to implement a range

Figure 1 | **Up to \$152 Billion in Annual Revenue Loss Due to Illegal Logging and Trade**



Source: UNEP 2017.

of forest policy and governance reforms (Seymour and Dubash 2000). Indonesia also offered to host the first regional Forest Law Enforcement and Governance (FLEG) ministerial-level meeting in 2001, with World Bank and United States support.<sup>3</sup>

In 2003, the European Union (EU) launched its FLEGT Action Plan—adding the “T” for trade to recognize the importance of taking measures on the demand side as well as the supply side, in the context of trade relations. Also in 2003, the United States launched the President’s Initiative Against Illegal Logging (U.S. Department of State 2008). In 2005, the G8 Summit reiterated its commitment on the issue (G8 Hokkaido Toyako Summit 2008). Since then, international law enforcement bodies—including the United Nations Commission on Crime Prevention and Criminal Justice, the United Nations Office on Drugs and Crime (UNODC), and Interpol (the world’s largest inter-

national police organization), as well as the Asia-Pacific Economic Cooperation (APEC) forum—have all elevated attention to illegal logging.

In 2016, parties to the Convention on International Trade in Endangered Species (CITES) listed hundreds of rosewood species for protection. This was in response to the rapid and mostly illegal decimation of this high-value “ivory of the tropical forest” to feed the booming Chinese market for luxury *hongmu* rosewood furniture (Barber 2016; Forest Trends 2017).

Has all this international attention helped address the problem? Studies by Chatham House in 2010 and 2015 on the international response to illegal logging in key producer, consumer, and processor countries suggested that growing attention to the problem has had some positive impacts (Hoare 2015; Lawson and MacFaul 2010).

These studies conclude that illegal logging peaked between 2006 and 2008, subsequently declined in part due to the policy measures discussed earlier, but then rose again due to increasing illegal forest clearing for agricultural commodities and increased demand from China and other Asian markets lacking controls on the legality of imports.

The clearest successes identified by the studies have been in the European Union and United States (see Box 1). From 2006 to 2013, for example, volumes of illegal wood-based products imported by the United States fell by one-third, and by half in France, Netherlands, and the United Kingdom. These gains have been offset by increases of over 50 percent in the volume (though not necessarily the proportion) of high-legality risk timber imported by the emerging economies of China, India, and Vietnam. The Chatham House studies identified the three largest source countries for illegal timber as Indonesia, Brazil, and Malaysia.

## National Laws and Measures

The United States was the first country to enact a legally binding restriction on imports of illegal timber through the 2008 amendment of a century-old wildlife trafficking law, the Lacey Act. Under the new amendments, if a tree is illegally harvested, made into wood products, and then exported to the United States, anyone who imported, exported, transported, sold, received, acquired, or purchased the wood products made from that illegal timber, who knew or should have known that the wood was illegal, may be prosecuted (USDA APHIS 2009). An import declaration requirement was also introduced, and new database analyses are now being run to identify suspicious discrepancies between the true source of imported timber and how it has been declared.

The European Union followed suit with the EU Timber Regulation (EUTR), which entered into force in 2013. The EUTR prohibits the placement of illegally harvested timber and products derived from illegal timber on the EU market. As with the Lacey Act, “legal timber” is defined as that which complies with the laws of the countries where it is harvested. Operators in Europe that place timber on the EU market for the first time must exercise “due diligence” to minimize the risk of illegal timber in the supply chain (European Commission 2018b). Several European countries have also enacted measures that require only legal timber within their public procurement systems (Brack 2014).

Australia enacted its Illegal Logging Prohibition Act in 2012, although it only entered the phase of full implementation in early 2018. The act makes it a criminal offense to intentionally, knowingly, or recklessly import wood, pulp, and paper products into Australia or process Australian raw logs that have been illegally logged. It also outlines a process that businesses must undertake to ensure “due diligence” to minimize the risk that the wood or wood fiber has been illegally logged (Australia, Department of Agriculture and Water Resources 2017).

In the past two years, Japan, the Republic of Korea, Vietnam, Indonesia, and Malaysia have all taken steps to develop import regulations designed to keep illegally logged timber out of their markets. The new Asian laws generally follow the precedent set by the EU Timber Regulation and the Australian Illegal Logging Prohibition Act, with companies encouraged to initiate due diligence systems to reduce the risk of illegal timber imports. When operational, these new regulations, combined with those of the United States, European Union, and Australia, have the potential to create a significant global market incentive for companies to only trade in legal timber. While these countries are at different stages in the development and implementation of their timber import regulations, technical harmonization and robust, proactive enforcement will be critical for their long-term success in eliminating the trade in illegal timber and protecting forests (Norman and Saunders 2017).

China, the world’s largest importer and consumer of timber products, lacks any binding restrictions on the import of illegal timber. China’s forest products imports doubled between 2006 and 2016 to 290 million cubic meters (m<sup>3</sup>) roundwood equivalent (RWE) by volume. While the percentage of timber imports sourced from high-risk countries fell from nearly 90 percent in 2006 by volume to less than 66 percent in 2016, the absolute volume of high-risk timber imports is still increasing and surpassed 60 million m<sup>3</sup> RWE in 2016 for the first time (Forest Trends 2017).

Some tropical developing countries have launched sporadic crackdowns on illegal logging and associated trade, including Brazil (Phillips 2008), Indonesia (RNZ 2005), Laos (To et al. 2017), and Peru (Reuters 2016). Others, such as Guatemala, have developed timber traceability systems to better monitor and police supply chains (INAB et al. 2016). Finally, a number of countries, including Ghana, Indonesia, and Vietnam, have put timber legality assurance systems in place as part of the process of negotiating Voluntary Partnership Agreements (VPAs) with the European Union.

Progress is, however, variable across countries, and within countries over time. It is clear that even in countries taking good-faith measures to suppress illegal logging, implementation and enforcement will take considerable political will, as well as additional human and financial resources. At the same time, there certainly are well-managed logging businesses operating within the law in countries where illegal logging and corruption are still widespread.

## Trade policy

Both the European Union and United States have worked with developing country trading partners to incorporate measures that address illegal logging into trade dialogues and agreements. In 2005, the European Union initiated dialogues to develop legally-binding Voluntary Partnership Agreements (VPAs) to ensure legal timber trade with a number of timber-exporting developing nations. VPAs are also designed to support timber-exporting countries

### Box 1 | Enforcement Actions Under the U.S. Lacey Act and EU Timber Regulation

#### U.S. Lacey Act

- **Madagascar (Gibson Guitar Company):** In 2012, Gibson Guitar entered into a criminal enforcement agreement with the U.S. Department of Justice, resolving a criminal investigation into allegations that the company violated the Lacey Act by knowingly purchasing and importing illegal ebony wood from Madagascar. Gibson paid penalties of more than \$350,000, lost seized goods valued at more than \$25,000, and agreed to implement a compliance program.
- **China and Russia's Far East (Lumber Liquidators):** In 2016, Lumber Liquidators was sentenced in U.S. federal court for illegally importing hardwood flooring, much of which was manufactured in China from timber that had been illegally logged in eastern Russia. In addition to the charge of importing timber in violation of a foreign country's laws was a charge for false labeling regarding the true species and origin of the timber. The company was ordered to pay more than \$16.3 million, agreed to a five-year term of probation, and adopted mandatory implementation of a government-approved environmental compliance plan and independent audits.
- **Peru (Popp Forest Products):** In 2017, U.S. government agencies destroyed 24 pallets of seized timber that had been harvested in violation of Peruvian law. The seizure of the wood under the Lacey Act was based on inspections carried out by Peruvian government agencies in the areas where the timber was allegedly harvested, which showed that the timber could not be the species authorized for harvesting. The finding was corroborated by lab tests of samples taken from the shipment. As part of the agreement, Popp paid all costs associated with the transportation, destruction, and disposal of the seized timber, and lost the valuable product.

#### EU Timber Regulation

In 2017 EU Member States implemented 17,735 checks on domestic timber and 2,798 checks on imported timber. More than 992 penalties were assessed and 21 cases went to court.<sup>a</sup>

- **Democratic Republic of Congo:** The German government seized two shipments of wengé logs from the Democratic Republic of Congo after being alerted to informalities in the timber's certificates of origin. The courts confirmed the forged documents in June 2017. The logs, worth an estimated €1,000/m<sup>3</sup>, will be put up for auction, with the proceeds going to the Federal Republic of Germany.<sup>b</sup>
- **Belgium:** The European Commission has for the first time launched legal proceedings against a Member State for not properly enforcing the EUTR. The legal action against Belgium sends a clear signal to all Member States to step up EUTR enforcement efforts. Between 2013 and March 2017, Belgium carried out only 26 EUTR checks. If Belgium does not take action, the case could go to the European Court of Justice, where Belgium could face financial penalties.
- **Myanmar:** Competent authorities in Denmark, Germany, Sweden, and the United Kingdom (UK) have taken action to stop imports of illegally harvested timber from Myanmar. In response, the Ministry of Natural Resources and Environmental Conservation (MONREC) released a statement regarding improvements in traceability and transparency.<sup>c</sup> However, EU Member States agree that this still falls short of what is needed to demonstrate the origin of the timber and ensure full due diligence from an EU perspective.
- **India:** In October 2017, furniture seller Lombok became the first UK company to be fined for placing on the market a sideboard imported from India without carrying out the required due diligence assessment, breaking UK and EU law.
- **Cameroon:** In 2017, Dutch authorities issued an injunction and noncompliance penalty of €1,800/m<sup>3</sup> of Cameroonian timber placed on the market by Dutch firm Fibois BV Purmerend because the company had not complied with the EUTR due diligence obligation. In March 2018, UK company Hardwood Dimensions Ltd. was also fined for failing to ensure that Cameroonian timber it placed on the market was legal.

Sources: a. European Commission 2018a; b. BLE 2018; c. MONREC 2017.

to improve domestic governance of the forest sector. Of particular importance is the legality assurance system that licenses legally produced timber to ensure that only legal timber is exported; these “FLEGT licenses” are given expedited access to European markets under the EUTR.<sup>4</sup>

VPA negotiations are active in more than a dozen countries. To date, however, only the VPA with Indonesia has yielded FLEGT-licensed exports, which began in late 2016 (EU FLEGT Facility 2017). It is too early to assess the impact of the Indonesia VPA on illegal logging levels and trends, but a 2018 study by Indonesia’s Independent Forest Monitoring Network cites some progress—as well as major areas for improvement (JPIK 2018). Other countries (e.g., Ghana, Vietnam) are nearing FLEGT-licensed exports, and many credit VPA processes with important side benefits, including more robust dialogue among forestry sector stakeholders, more transparency of forestry sector information, and increased legitimacy for independent civil society forest monitoring organizations (Jonsson et al. 2015; EU FLEGT Facility 2018).

The United States has followed a somewhat different path. In 2009, in its precedent-setting Free Trade Agreement with Peru, the two countries agreed on a unique Forest Governance Annex that for the first time incorporated binding illegal logging measures into a trade pact (USTR 2009). During the negotiations between the 12 nations that comprised the Trans-Pacific Partnership (TPP), the United States pushed for language mirroring the 2008 Lacey Act to require countries to prohibit imports of illegal timber. Although the United States was unable to convince negotiators to include that exact provision, some language obliged signatories to “combat” trade of timber harvested in violation of the laws of jurisdictions other than their own. This provision survived into the final text agreed in 2016, but when the Trump administration pulled out of the TPP in January 2017, the remaining 11 nations deleted the Lacey language from the final version of the agreement, signed in March 2018 (Barber and Li 2018).

## Private sector responses

Private sector responses to new timber legality requirements have gained momentum, although results have been uneven. In the United States, a 2004 study commissioned by the American Forest and Paper Association argued that cheap, illegal timber from overseas was undercutting U.S. producers, providing an incentive for U.S. timber producers to join with environmentalists in pushing for the 2008 amendment to the Lacey Act (SCA

and WRI 2004). In 2017, the Trump administration echoed the assertion that imports of illegal timber undermine U.S. businesses (see Box 2).

In 2004 the UK Timber Trade Federation published its first Responsible Purchasing Policy, which included the commitment to “sourc[e] their timber and timber products from legal and well-managed forests” (TTF 2004). Reasons for adopting the policy included the awareness that the entire sector’s “brand” was being damaged and the need to respond to the UK’s new public procurement policy, which required that wood-based products be both legal and sustainable. Similar steps were taken in other countries that import the bulk of their timber, such as the Netherlands and Denmark.

Many companies have turned to independent third-party certification of their supply chains as a strategy for strengthening timber legality due diligence, in the context of the broader sustainability criteria of certifiers. Between 2005 and 2015, for example, the proportion of sawnwood and panels on the Dutch market certified by either the Forestry Stewardship Council (FSC) or the Program for the Endorsement of Forest Certification (which both

### Box 2 | **Trump, Trade, and Timber**

Many feared that the Trump administration, having abandoned the Trans-Pacific Partnership (TPP) and vowing to renegotiate the North American Free Trade Agreement (NAFTA), would also attempt to gut the U.S.-Peru Free Trade Agreement, including its precedent-setting and legally binding Forest Governance Annex. Building on action taken by the U.S. Trade Representative in 2016 to request that Peru verify the legality of a 2015 shipment of timber to the United States, in October 2017, U.S. Trade Representative Robert Lighthizer directed the U.S. Customs and Border Protection agency to block future timber imports from a Peruvian exporter based on illegally harvested timber found in its supply chain, stating the following:

“This unprecedented enforcement action demonstrates President Trump’s strong commitment to enforcing our trade agreements and ensuring that trade is fair to the American people. Illegal logging destroys the environment and undermines U.S. timber companies and American workers who are following the rules. We will continue to closely monitor Peru’s compliance with its obligations under our trade agreement.”

It appears that this view, linking efforts to stem illegal logging overseas to Trump’s “America First” trade objectives, has also insulated the Lacey Act from attempts by some in Congress to weaken the law. Given that both the administration and its allies in Congress have moved to dismantle numerous domestic environmental regulations, it is notable that the Lacey Act has thus far evaded anti-regulatory pressures.

include legality standards, but offer no guarantee of legality) rose from 13 percent to 83 percent. The proportion of sustainably certified paper rose from less than 1 percent to 64 percent (Oldenburger and Van Benthem 2017).

Producers in countries where illegal logging is perceived as problematic have also begun to address the legality of timber sources, often at the request of their customers in markets with timber legality legislation in place (i.e., the European Union and United States). Corporate actions have included the development of legality compliance training efforts, such as the program created by the U.S.-based International Wood Products Association (see IWPA 2016). In some cases, companies have shifted sourcing away from countries perceived as posing a higher timber legality risk (Sit 2017).

Progress has not been limited to companies in the most developed countries. In May 2017, Vietnamese associations and enterprises active in the wood processing and trading sector signed a commitment to ban the use of illegal timber to protect the reputation of Vietnamese wooden products and guarantee sustainable development for the industry (Norman and Saunders 2017). By 2016, there were over 4,000 FSC chain-of-custody certificates in China. While these are mostly in the export sector, the continuous economic growth and ever-growing middle class mean that the domestic market for FSC-certified products is likely to expand in the future (FSC 2016).

Momentum in much of the private sector is moving in the right direction on timber legality. But action by companies is still very much conditioned on the extent to which they perceive there to be significant reputational, legal, or material risk arising from the presence of illegal timber in their supply chains. Future progress on private sector compliance therefore depends on both energetically enforcing timber legality measures in countries where they are already in place, and establishing binding measures in the many major markets that do not have effective legislation in place—notably China, India, Japan, Korea, and the growing markets of the Middle East.

### Civil society analysis and advocacy

Civil society organizations—international NGOs, their local partners in producer countries, independent forest monitors in the EU VPA countries, and investigative journalists and media outlets—have been integral in raising the profile of illegal logging and holding governments and companies to account for their action or inaction. The

investigative efforts of groups such as the Environmental Investigation Agency (EIA) and Global Witness, and the advocacy and consumer-targeted campaigns of the Rainforest Action Network (RAN), the Rainforest Foundation, Greenpeace, and others have played a significant role in exposing the problem, pressuring governments and companies and sensitizing consumers to the impacts their purchasing choices have on forests. Other organizations, such as the World Wildlife Fund (WWF) and The Nature Conservancy (TNC), have played important roles in developing timber legality standards and training programs. NGOs were also active in lobbying for adoption of the 2008 Lacey Act amendments, the EU Timber Regulation, and Australia's Illegal Logging Prohibition Act. Other NGOs and think tanks, including Chatham House, Client Earth, Forest Trends, and the World Resources Institute have played important roles in compiling data, conducting research, tracking progress, and convening stakeholder dialogue processes.

In countries with VPAs in place or under negotiation, the process has been a catalyst for strengthening the role and capacities of NGOs as independent forest monitors (IFMs) within emerging FLEGT-licensing systems, although effectiveness has varied across countries (Brack and Léger 2013). This is because IFMs depend on governments to provide a secure legal mandate, ensure broad access to information, protect IFMs' autonomy and security in the field, and facilitate access to secure funding (Young 2007).

### Technology, transparency, and accountability

Technological innovations over the past decade have greatly improved transparency of the forestry sector and the forest products trade, thereby improving prospects for strengthening the accountability of both governments and industry for policies, actions, and investments contributing to deforestation. Conversely, governments and companies that are reforming policies to slow deforestation can increasingly demonstrate accomplishments and results to all stakeholders in an accessible and transparent way.<sup>5</sup>

Advances in Earth observation are perhaps the most dramatic: Thirty years ago, remote sensing capacities to monitor forest change were limited, and what data existed were inaccessible and treated in many countries as a military secret. Forest cover data were incomplete, inaccurate, and usually out of date. Forest resource maps in many countries were drawn to serve the interests of political and economic elites (Peluso 1995). Today, anyone

---

with an Internet connection can access near real-time data on what is happening to forests from platforms such as Global Forest Watch, GeoBosques in Peru, and the Monitoring of the Andean Amazon Project (MAAP).<sup>6</sup>

Technologies for tracing timber and identifying wood are also developing rapidly, enabling wood to be tracked from the forest to the consumer, and allowing species verification and origin of wood samples to be taken along supply chains. Enhanced computer power and sophisticated algorithms allow for big data analysis that can detect patterns and anomalies across enormous and disparate datasets on trade, financial flows, and criminal networks.

Mobile technologies and social networks have created a bottom-up and peer-to-peer world of communication and transparency that can inspire and enable coordination and action among stakeholders and across great distances. Innovative media outlets and platforms, both international and national, have greatly expanded access to the public and policymakers for sharing information and advocacy.

Data by itself does not make policy or stop deforestation. Used strategically, however, this technology-led transparency revolution can help us better understand where deforestation is increasing or decreasing and ascertain drivers of forest loss. Technology can also be used to determine whether products are what—and from where—they claim to be, validate implementation of corporate and government obligations and commitments, and ferret out evidence of illegality.

## REMAINING CHALLENGES

There has been progress in combating illegal logging and associated trade, but the problem remains. Consider, for instance, a 2016 UN report that stated that the value of seizures of illegal rosewood—a minor element of the overall illegal timber trade—from 2005 through 2014 was greater than the value of all ivory, rhino horn, coral, bird, and reptile seizures combined (UNODC 2016). What more must be done? Four areas for action stand out:

**1. The growing role of conversion timber.** Until a few years ago, efforts to control deforestation focused on eliminating illegal logging practices in the production of timber from designated forest areas. Wholesale forest clearing was neither necessary nor cost effective for those exploiting the rich timber stocks of places such as Borneo, New Guinea, or the Amazon basin.

Today, however, the conversion of forests to other land uses, particularly commodity agriculture, appears to be a more significant driver of deforestation. Currently, as much as 50 percent of tropical timber in international trade is “conversion timber” cut on lands being cleared for the expansion of “forest risk” agricultural commodities (Lawson 2014).<sup>8</sup> Agricultural projects are sometimes a front for wholesale forest clearance: Increasing regulatory control of managed forest sources (and attendant higher costs) have made agricultural clearance permits a more attractive option for accessing timber in many places (Hewitt 2013).

People have converted forests to agriculture for millennia, but the pace of conversion in the tropics has intensified over the past four decades, beginning with the mass conversion of parts of the Amazon and Central America to cattle pasture in the 1970s. Conversion continued in the 1990s with the spread of palm oil, rubber, cacao, soy, and fast-growing wood-pulp plantations decimating forests in Indonesia and mainland Southeast Asia. Most recently, West and Central Africa, Peru, and other countries in the Andean Amazon have seen dramatic conversion (Boucher et al. 2011).

Conversion timber is not necessarily illegal—a good deal of forest clearing may in fact be carried out in compliance with countries’ laws and regulations. There is increasing evidence, however, that a significant proportion of conversion timber is in fact illegal (Hewitt 2013). The underlying illegalities are often related to the processes by which land, and the permission to clear it, are acquired from the state. Often, the key legal issue is corruption and bribery in the clearance permitting process. In other cases, violations of the rights of indigenous and local communities constitute the underlying illegality.

The scale of illegal conversion timber is vast. Recent analysis by Blundell et al. (2018) estimates that illegal deforestation for industrial agriculture globally generated losses of more than \$17 billion each year during the early 2000s—based on estimates of tax evasion on logs harvested, loss of ecosystem functioning, and the cost of decreased agricultural productivity due to conflict with local communities.

**2. The pervasiveness of corruption.** Efforts to reduce illegal logging are often stymied by entrenched corruption. Otherwise admirable policy measures and initiatives can be sabotaged by various forms of corruption ranging from

petty bribery at the local level to grand corruption involving powerful figures in government and billions of dollars (Interpol 2016; Sundstrom 2016; Transparency International 2010).

In Indonesia, advances in implementing the national timber legality assurance system, discussed earlier, are at risk due to longstanding corrupt practices in the timber sector (Chitra and Cetera 2018; KPK 2015). Corruption also permeates the land acquisition process for palm oil development in that country (see for example Gecko Project 2018). Countries face similar challenges in the Congo Basin, as logging concessions are corruptly transformed into vehicles for the illegal conversion of rainforest to palm oil and other commodities (Earthsight 2018). Similar situations can be found in Cambodia (Crothers 2017), Vietnam (Tatarski 2017), Peru (Goi 2017), and Brazil (Watts and Vidal 2014).

Conversely, exposing forest-related corruption can sometimes energize support for broader forest policy reforms. In Brazil, for example, the 2002 revelations of widespread corruption in the trade of CITES-protected mahogany proved to be an important catalyst for subsequent reforms that contributed to the rapid decline in Brazil's deforestation rate during the mid-2000s (Seymour and Busch 2016).

Successful approaches to combating corruption in the forest sector (and other sectors) involve a variety of tactics and vary from country to country. Transparency of information concerning government and private sector decision-making and investment processes is generally a key factor, and the technology advances previously discussed can help in this regard. In some cases, reducing the volume and complexity of government regulations—which can provide opportunities for corruption—is important. Transnational application of laws such as the U.S. Foreign Corrupt Practices Act, can have an influence. A strong civil society and independent media with effective legal protections against retaliation for whistleblowing is another factor.

The establishment of a strong and politically independent investigative and prosecutorial mechanism can be the cornerstone of an effective anti-corruption strategy. Indonesia's national Corruption Eradication Commission, which has specifically targeted the forestry sector, is one such example (see Box 3).

### Box 3 | **Getting Serious on Forest-Related Corruption: Indonesia's Corruption Eradication Commission**

Indonesia has suffered pervasive economic and political corruption for decades, an affliction seemingly impervious to shifts in economic fortunes, political democratization, elections, governmental decentralization, and radical improvements in transparent information and freedom of the press.<sup>a</sup> While Indonesia's ranking on the international Corruption Perceptions Index has improved in recent years, corruption remains a challenge and is a significant feature of the forestry sector.<sup>b</sup>

This characterization is confirmed by the work of Indonesia's Corruption Eradication Commission (known by its Indonesian acronym KPK). First established in the early 2000s, KPK has not only been granted prosecutorial authority, but is also afforded an entirely new and separate court, protected by new anti-corruption legislation. This status allows the KPK to pursue high-profile cases of well-connected politicians and businesspeople. Corruption in the forestry sector has become an area of focus for KPK. In 2014, it signed a Memorandum of Understanding (MoU) with several ministries to address corruption associated with the illegal issuance of forest use permits.<sup>c</sup> The MoU also grants KPK the authority to use multiple laws to tackle forest crimes, reflecting the frequent overlap between such crimes and corporate criminal liability, money laundering, tax avoidance, and corruption.

In 2015, KPK published a comprehensive report titled *Preventing State Losses in Indonesia's Forestry Sector*. The report concluded that for the 2003–14 period, less than a quarter of Indonesia's actual timber production was reported, with unreported cutting totaling between 630 and 772 million m<sup>3</sup> during the 12-year period studied.<sup>d</sup> In dollar terms, this represented state losses of approximately \$6.5 billion to \$9 billion, or between \$500 million and \$750 million per year. KPK has also secured convictions of senior officials engaged in forestry-related corruption, including a sentence of 14 years for a former governor from Riau Province in Sumatra.<sup>e</sup>

The KPK's proactive approach has earned it some enemies within Indonesia, and efforts to limit its power are perennial and ongoing. As Indonesia gears up for local elections in 2018 and the next general election in early 2019, political pressures on the KPK are intensifying. It seems clear, however, that the KPK has the potential, after decades of failed efforts, to make a dent in corruption in the forestry sector. It is an example that other countries may wish to study carefully.

Sources: a. Keefer 2002; b. GAN Integrity 2017; c. Setuningsih 2014; d. KPK 2015; e. Parker 2014.

**3. The need for legal reform.** Employing timber legality as a strategy for reducing deforestation and forest degradation presupposes that a country possesses a reasonably well-functioning legal and judicial system, and that reducing deforestation is actually a policy and legal objective. Unfortunately, that is often not the case in many tropical forest countries. This challenge can exist apart from the problem of corruption.

Substantive laws are often ambiguous, or may affirmatively support logging and forest clearing in service of other state objectives. Procedures for accessing information and challenging state action that affects forests (e.g., freedom of information laws and environmental impact assessments) may be weak, or inaccessible to those who are adversely affected. Judicial systems can be so slow and complex that courts effectively cease to be venues for resolving disputes.

**4. Strengthening China’s commitment to timber legality.** There can be no effective global approach to illegal logging without the support and participation of China, the world’s largest importer of timber and exporter of forest products (Laurance 2011). China began to restrict domestic logging in natural forests in 1998, a policy it strengthened to a national ban in 2016 (Sun et al. 2016). During the same period, China’s role as importer, processor, and exporter of forest products saw a meteoric rise (Donofrio et al. 2018). Between 1998 and 2016, the value of Chinese timber imports rose from around \$946 million to more than \$16 billion, while the value of Chinese exports of wood furniture and plywood rose from around \$924 million to more than \$19 billion.<sup>9</sup>

Reflecting this new reality, in 2009 both the European Union and United States established illegal logging-focused trade dialogues with China; the EU-China Bilateral Cooperation Mechanism and the U.S.-China Bilateral Forum, respectively. For its part, China has developed a draft timber legality assurance system, signed MoUs on combating illegal logging and associated trade with a few states, and increasingly voices its support for firmer action on timber legality. China has not, however, enacted meaningful restrictions on imports of illegal timber, even for CITES-listed rosewood species, for which it is the major market. Major suppliers of high-risk timber to China include Indonesia, Papua New Guinea, Russia, Thailand, and Vietnam (Forest Trends 2017).

China’s role in the world is actively changing, and its inward-focused foreign policy has pivoted to an emphasis on building long-term stable relationships with resource-

rich countries around the world, including major rainforest nations in Africa, South America, and Southeast Asia (Albert 2017). In 2013, China launched the “Belt and Road Initiative” to facilitate trade and investment in 65 countries across Asia, Europe, and Africa, some of which are forest-rich. In 2015, China was an essential player in assuring a positive outcome for the Paris Climate Agreement. It is hoped that China will use its central role in international timber trade to reduce its imports of illegally logged timber and to promote trade in legally sourced forest products.

## EVIDENCE GAPS AND AREAS OF CONTROVERSY

The “legality strategy” has achieved some successes as part of the overall strategy to reduce deforestation and forest degradation. A continued policy focus on illegal logging and associated trade, adjusted to take into account changing contextual factors noted earlier, remains a valid and important strategy. However, several caveats apply:

**“Legal” does not mean sustainable.** While perhaps an obvious point, it is important to bear in mind that legality and ecological integrity and sustainability are not the same thing. The world’s forest and land use laws would surely look quite different if they were written by forest ecologists rather than politicians, bureaucrats, and representatives of special interests focused on politics and profit. Legality can be a powerful tool in support of the conservation and sustainable management of forests—but only if the laws themselves embody that goal.

**Illegal logging—and the effectiveness of measures to reduce it—are hard to measure.** It is difficult to gather data on illegal trade in any sector, because by definition such trade takes place in the shadows. For that reason, it is difficult to develop indicators for assessing whether interventions to combat illegal logging have been effective. That is not a reason for inaction, but rather indicates the need to rely more on expert analysis and information rather than on quantitative indicators such as volume of seizures by law enforcement authorities. It also emphasizes the importance of increasing transparency of both government and private sector information about the timber, forest, and land sectors.

**Document-based legality verification procedures may facilitate rather than prevent illegal logging.** As countries put in place timber legality assurance measures that license certain timber flows as legal, the risk of

“timber laundering” increases. Particularly in countries where corruption is a problem, there is a risk of illegally cut timber corruptly entering the legal supply chain, at which point authorities and companies in both exporting and importing countries may claim such timber is legal by virtue of its licensing. The convergence of forest-related corruption and the proliferation of weak legality verification standards that do not actually guarantee substantive legality—such as independent timber certification bodies—is thus a significant challenge.

**“The law” has rarely been the friend of indigenous peoples.** There is robust evidence that recognizing and protecting the land and resource rights of indigenous forest-dependent communities can be an effective strategy for slowing deforestation and forest degradation, legal or otherwise (Stevens et al. 2014). Yet the law in many countries has frequently dispossessed indigenous peoples dependent on forests, in particular through illegal or forced land acquisition. The situation is changing in some countries but progress is slow, constituting a human rights issue as well as a significant concern for forest legality strategies.

Without recognition of their rights, however, indigenous people may see the law turned against them, criminalizing what they claim as their longstanding rights, livelihoods, and cultures (Colchester 2006). At the same time, indigenous peoples are often directly at risk from illegal logging, land grabbing, and forest conversion, as recent events in Brazil (Wallace 2016), Cambodia (Sochua 2018), Ecuador (Aguilar 2017), Peru (Zarate and Neuman 2014) and Papua New Guinea (Global Witness 2017) attest.

## CONCLUSIONS AND NEXT STEPS

Legality is an important component of overall efforts to reduce deforestation and forest degradation in the tropics, and progress has been made. However, urgent action is required to consolidate gains to date and to address outstanding challenges and uncertainties:

- Countries that have put timber legality import controls in place need to expand and intensify investigations, increase the number of prosecutions, and ensure that sanctions are sufficient to send strong deterrent signals to producer countries and markets.
- Governments in countries that have not enacted effective timber legality import controls—particularly China, India, Japan, and Korea—need to institute effective legal controls to exclude illegal timber from

their imports and industries.

- Tropical timber-producing countries need to build on the promising work started by timber legality assurance systems pioneered under VPAs with the European Union, with a focus on verifying legality for timber in both export and domestic markets.
- Combating corruption must become a higher priority for the forest and land sectors. Illustrative measures may include use of anti-money laundering, foreign corrupt practices, and whistle-blowing statutes; broadening freedom of information laws in support of greater transparency; and establishing dedicated independent anti-corruption bodies.
- Countries and companies need to adjust their anti-illegal logging strategies to better address the issue of conversion timber coming from forest clearing for agricultural commodities.
- Governments, responsible private sector actors, donors, and international civil society need to increase support for citizen monitoring and investigating illegality in rainforest countries, including putting political and economic pressure on nondemocratic governments to reduce political oppression and censorship of civil society forest and land monitors and defenders.
- Private sector companies in both the forest products and forest-risk commodities sectors should make or reaffirm commitments to legal and sustainable logging and zero deforestation in supply chains, and take active measures to implement these commitments through their internal policies, due care, and compliance procedures.
- Donors and scientific centers of excellence should increase financial and technical support for reducing the cost, improving the accessibility, and scaling the adoption of innovative technologies for timber and commodity traceability, wood species and origin identification, monitoring timber sector transparency and legal compliance, timber trade data transparency and analytics, and geospatial forest and land monitoring tools and platforms.

Tackling the underlying drivers of illegal logging will help ensure the strong governance that is a fundamental basis for reducing emissions from deforestation and forest degradation, but this will require redoubled political will, effort, and cooperation among stakeholders.

---

## ABBREVIATIONS

APEC	Asia-Pacific Economic Cooperation
CITES	Convention on International Trade in Endangered Species
EU	European Union
EUTR	EU Timber Regulation
FLEG	Forest Law Enforcement and Governance
FSC	Forestry Stewardship Council
IFM	independent forest monitor
MAAP	Monitoring of the Andean Amazon Project
MONREC	Ministry of Natural Resources and Environmental Conservation
NAFTA	North American Free Trade Agreement
NGO	nongovernmental organization
RWE	roundwood equivalent
TPP	Trans-Pacific Partnership
UNEP	United Nations Environment Programme
UNODC	United Nations Office on Drugs and Crime
VPA	Voluntary Partnership Agreement

## ENDNOTES

1. For the purposes of this brief, illegal logging is defined as the cutting, sale, and/or trade of timber felled in violation of applicable local, national, or international laws and regulations, including laws that govern the acquisition of land in relation to the conversion of forests for nonforest use.
2. The economic crisis of 1997–98 also coincided with the worst forest and land fires in Indonesia’s history, which precipitated a regional “haze crisis” as smoke from Indonesia choked Singapore and Malaysia. The fires had their roots in the corrupt crony capitalism through which Suharto’s regime exploited Indonesia’s forests for 30 years. They also contributed to his downfall in mid-1998 (Barber and Schweithelm 2000).
3. Similar meetings were subsequently convened with US and World Bank support for Africa (in 2003) and Russia and Europe (in 2005). In 2002 the Asia Forest Partnership was launched in Asia, Japan, and Indonesia, in part as a response to the view of some countries in the region that the US/World Bank-led effort was too heavy-handed. (Oberndorf 2013).
4. For more information, see “FLEGT Licensed Timber: Essential Information,” available at <http://www.flegtlicence.org/>.
5. For more on transparency, see the companion paper in this series, “Mining Global Financial Data to Increase Transparency and Reduce Drivers of Deforestation” (Graham et al. 2018).
6. For more on forest monitoring, see the companion paper in this series, “Tropical Forest Monitoring” (Petersen et al. 2018).
7. For reviews of the “classical” patterns of tropical logging and deforestation in the 1980s, see Richards and Tucker (1988) and Repetto and Gillis (1988).
8. These include palm oil, soy, beef, cocoa, rubber, and wood fiber pulp. See Taylor and Streck 2018.
9. Please see the United Nations Statistics Division’s UN Comtrade Database, <https://comtrade.un.org/data/>.

## REFERENCES

- Albert, E. 2017. "China in Africa." July 12. <https://www.cfr.org/background/china-africa>.
- Aguilar, D. 2017. "Illegal Logging and Hunting Threaten Yasuni Isolated Indigenous Groups." Eye on the Amazon (blog), June 22. <http://amazonwatch.org/news/2017/0622-illegal-logging-and-hunting-threaten-yasuni-isolated-indigenous-groups>.
- Australia, Department of Agriculture and Water Resources. 2017. "Illegal Logging Laws—Guidance for Importers." December 20. <http://www.agriculture.gov.au/forestry/policies/illegal-logging/information-importers/guidance-for-importers>.
- Barber, C. 2016. "UN Issues New Protections for Rosewood Trees, the 'Ivory of the Forest.'" *Insights* (blog), October 17. <http://www.wri.org/blog/2016/10/un-issues-new-protections-rosewood-trees-ivory-forest>.
- Barber, C., and B. Li., 2018. "With U.S. Out of TPP, So Are Measures to Curb Illegal Logging." *Insights* (blog), March 14. <http://www.wri.org/blog/2018/03/us-out-tpp-so-are-measures-curb-illegal-logging>.
- Barber, C., and J. Schweithelm. 2000. *Trial by Fire—Forest Fires and Forestry Policy in Indonesia's Era of Crisis and Reform*. Washington, DC: World Resources Institute.
- BLE (Bundesanstalt für Landwirtschaft und Ernährung). 2018. "Judgment on Illegal Wengé Wood from the Congo." [https://www.ble.de/SharedDocs/Meldungen/DE/2017/171116\\_Wenge-Holz.html;jsessionid=2B165073A0EB0AE8EF0F59CBD4412748.2\\_cid325?nn=8904380](https://www.ble.de/SharedDocs/Meldungen/DE/2017/171116_Wenge-Holz.html;jsessionid=2B165073A0EB0AE8EF0F59CBD4412748.2_cid325?nn=8904380). Accessed May 3.
- Blundell, A.G., E.E. Harwell, E.T. Niesten, and M.S. Wolosin. 2018. "The Economic Impact at the National Level of the Illegal Conversion of Forests for Export-Driven Industrial Agriculture." Discussion Draft. Washington, DC: Climate Advisers. <https://www.climateadvisers.com/wp-content/uploads/2018/04/Climate-Advisers-Costs-of-Deforestation-for-Industrial-Agriculture-11-2017-clean.pdf>.
- Boucher, D., P. Elias, K. Lininger, C. May-Tobin, S. Roquemore, and E. Saxon. June 2011. *The Root of the Problem—What's Driving Tropical Deforestation Today?* Cambridge, MA: Union of Concerned Scientists.
- Brack, D. 2014. *Promoting Legal and Sustainable Timber: Using Public Procurement Policy*. London, UK: Chatham House. [https://www.chathamhouse.org/sites/files/chathamhouse/publications/research/20140908PromotingLegalSustainableTimberBrackFinal2\\_0.pdf](https://www.chathamhouse.org/sites/files/chathamhouse/publications/research/20140908PromotingLegalSustainableTimberBrackFinal2_0.pdf).
- Brack, D., and C. Léger. 2013. *Exploring Credibility Gaps in Voluntary Partnership Agreements: A Review of Independent Monitoring Initiatives and Lessons to Learn*. London, UK: Global Witness.
- Chitra, J., and K. Cetera. 2018. "Indonesia Has a Carrot to End Illegal Logging; Now It Needs a Stick." *Insights* (blog), January 3. <http://www.wri.org/blog/2018/01/indonesia-has-carrot-end-illegal-logging-now-it-needs-stick>.
- Colchester, M. 2006. *Justice in the Forest: Rural Livelihoods and Forest Law Enforcement*. Bogor, Indonesia: Center for International Forestry Research.
- Crothers, L. 2017. "Long Plagued by Illegal Logging, Cambodia Faces Accusations of Corruption." Mongabay (blog), June 12. <https://news.mongabay.com/2017/06/long-plagued-by-illegal-logging-cambodia-faces-accusations-of-corruption/>.
- Donofrio, S., P. Rothrock, and J. Leonard. 2018. "Zooming In: Companies, Commodities & Traceability Commitments That Count, 2018." Washington, DC: Forest Trends. [https://www.forest-trends.org/wp-content/uploads/2018/04/doc\\_5748.pdf](https://www.forest-trends.org/wp-content/uploads/2018/04/doc_5748.pdf).
- EarthSight. 2018. *The Coming Storm: How Secrecy and Collusion in Industrial Agriculture Spell Disaster for the Congo Basin's Forests*. Fairfax, CA: EarthSight. [http://www.bad-ag.info/app/uploads/2018/03/EarthSight\\_The\\_Coming\\_Storm\\_20pp\\_Report\\_0218\\_FINAL\\_v2.pdf](http://www.bad-ag.info/app/uploads/2018/03/EarthSight_The_Coming_Storm_20pp_Report_0218_FINAL_v2.pdf).
- EIA (Environmental Investigation Agency). 2011. *The Bali Declaration Ten Years On*. London, UK: EIA. [https://eia-international.org/wp-content/uploads/EIA\\_APFW\\_briefing\\_1111\\_WEB.pdf](https://eia-international.org/wp-content/uploads/EIA_APFW_briefing_1111_WEB.pdf).
- EU FLEGT (European Union Forest Law Enforcement and Governance-Timber) Facility. 2017. "Indonesia and EU celebrate One Year of Certified Legal Timber Trade." November 30. <http://www.flegt.org/news/content/viewItem/indonesia-and-eu-celebrate-one-year-of-certified-legal-timber-trade/30-11-2017/158>.
- EU FLEGT Facility. 2018. "EU FLEGT Facility: Highlights and Insights from 2017." March 13. <http://www.euflegt.efi.int/publications/eu-flegt-facility-highlights-and-insights-from-2017>.
- European Commission. 2018a. "Latest State-of-Play EU Timber Regulation." EU Forest Directors meeting, Sofia, Bulgaria, April 11. <http://ec.europa.eu/transparency/regexpert/index.cfm?do=groupDetail.groupMeetingDoc&docid=13307>.
- European Commission. 2018b. "Timber Regulation." May 28. [http://ec.europa.eu/environment/forests/timber\\_regulation.htm](http://ec.europa.eu/environment/forests/timber_regulation.htm).
- Forest Trends. 2017. *China's Forest Product Imports and Exports, 2006–2016: Trade Charts and Brief Analysis*. Washington, DC: Forest Trends. [https://www.forest-trends.org/wp-content/uploads/2017/08/doc\\_5627.pdf](https://www.forest-trends.org/wp-content/uploads/2017/08/doc_5627.pdf).
- FSC (Forest Stewardship Council). 2016. "FSC and WWF Promote FSC-Certified Products in China." May 17. <https://ic.fsc.org/en/news-updates/id/1548>.
- G8 Hokkaido Toyako Summit. 2008. *The G8 Forest Experts' Report on Illegal Logging*. <https://www.mofa.go.jp/policy/environment/forest/report0805.pdf>.
- GAN Integrity. 2017. "Indonesia Corruption Report." June. <https://www.business-anti-corruption.com/country-profiles/indonesia>.
- Gecko Project. 2018. "Ghosts in the Machine—the Land Deals behind the Downfall of Indonesia's Top Judge." April 18. <https://thegeckoproject.org/ghosts-in-the-machine-4acb5c5236cc>.
- Global Witness. 2002. "Briefing Document: Liberia's Logs of War—Underpinning Conflict." Press Release. May 3. <https://www.globalwitness.org/en/archive/briefing-document-liberias-logs-war-underpinning-conflict/>.
- Global Witness. 2007. *Cambodia's Family Trees: Illegal Logging and the Stripping of Public Assets by Cambodia's Elite*. London, UK: Global Witness.
- Global Witness. 2017. *Stained Trade: How U.S. Imports of Exotic Flooring from China Risk Driving the Theft of Indigenous Land and Deforestation in Papua New Guinea*. London, UK: Global Witness.

- Goi, L. 2017. "Corruption, Lack of Capacity Drive Illegal Logging in Peru: Report." InSight Crime. April 20. <https://www.insightcrime.org/news/brief/corruption-lack-capacity-drive-illegal-logging-peru-report/>.
- Graham, P., G. Thoumi, E. Drazen, and F. Seymour. 2018. "Mining Global Financial Data to Increase Transparency and Reduce Drivers of Deforestation." Working Paper. Washington, DC: World Resources Institute. One of a series of papers prepared for the Oslo Tropical Forest Forum, Oslo, June 27–28.
- Hewitt, D. 2013. *Potential Legality Issues from Forest Conversion Timber*. Washington, DC: Forest Trends.
- Hoare, A. 2015. *Tackling Illegal Logging and the Related Trade: What Progress and Where Next?* London, UK: Chatham House. [https://indicators.chathamhouse.org/sites/files/reports/Tackling%20Illegal%20Logging%20and%20Related%20Trade\\_0.pdf](https://indicators.chathamhouse.org/sites/files/reports/Tackling%20Illegal%20Logging%20and%20Related%20Trade_0.pdf).
- INAB (El Instituto Nacional de Bosques), ITTO (International Tropical Timber Organization), and IARNA (Instituto de Agricultura, Recursos Naturales y Ambiente). 2016. *Estudio de mercado y trazabilidad de los productos forestales en Guatemala*. [http://www.itto.int/files/itto\\_project\\_db\\_input/3076/Technical/TFL-PPD-040-13R2-M-Estudio%20de%20mercado%20y%20trazabilidad.pdf](http://www.itto.int/files/itto_project_db_input/3076/Technical/TFL-PPD-040-13R2-M-Estudio%20de%20mercado%20y%20trazabilidad.pdf).
- INTERPOL (International Criminal Police Organization). 2016. *Uncovering the Risks of Corruption in the Forestry Sector*. Lyon, France: Interpol.
- IWPA (International Wood Products Association). 2016. "IWPA Launches National Due Care Training Program for Wood Trade Professionals." April 19. <http://www.iwpawood.org/news/285523/IWPA-Launches-National-Due-Care-Training-Program-for-Wood-Trade-Professionals.htm>.
- Jonsson, R., A. Giurca, M. Masiero, E. Pepke, D. Pettenella, J. Prestemon, and G. Winkel. 2015. *Assessment of the EU Timber Regulation and FLEGT Action Plan*. Joensuu, Finland: European Forest Institute. [https://www.efi.int/sites/default/files/files/publication-bank/2018/efi\\_fstp\\_1\\_2015.pdf](https://www.efi.int/sites/default/files/files/publication-bank/2018/efi_fstp_1_2015.pdf).
- JPIK (Independent Forest Monitoring Network). 2018. *SVLK: A Process Toward Accountable Governance—Monitoring by the Independent Forest Monitoring Network (JPIK), 2014–2017*. Bogor, Indonesia: JPIK. [http://jpik.or.id/info/wp-content/uploads/2018/Newsletter/Newsletter%209%20edition%20\[EN\].pdf](http://jpik.or.id/info/wp-content/uploads/2018/Newsletter/Newsletter%209%20edition%20[EN].pdf).
- Keefer, P. 2002. *The Political Economy of Corruption in Indonesia*. Washington, DC: World Bank. <http://www1.worldbank.org/publicsector/anticorrupt/FlagshipCourse2003/KeeferIndonesia.pdf>.
- Khatchadourian, R. 2008. "The Stolen Forests: Inside the Covert War on Illegal Logging." *New Yorker*, October 8. <https://www.newyorker.com/magazine/2008/10/06/the-stolen-forests>.
- KPK (Komisi Pemberantasan Korupsi). 2015. *Preventing State Losses in Indonesia's Forestry Sector: An Analysis of Non-tax Forest Revenue Collection and Timber Production Administration*. South Jakarta, Indonesia: KPK. <https://acch.kpk.go.id/images/tema/litbang/pengkajian/pdf/Preventing-State-Losses-in-Indonesia-Forestry-Sector-KPK.pdf>.
- Laurance, W. 2011. "China's Appetite for Wood Takes a Heavy Toll on Forests." *Yale Environment 360*, November 17. [https://e360.yale.edu/features/chinas\\_appetite\\_for\\_wood\\_takes\\_a\\_heavy\\_toll\\_on\\_forests](https://e360.yale.edu/features/chinas_appetite_for_wood_takes_a_heavy_toll_on_forests).
- Lawson, S. 2014. *Consumer Goods and Deforestation: An Analysis of the Extent and Nature of Illegality in Forest Conversion for Agriculture and Timber Plantations*. Washington, DC: Forest Trends.
- Lawson, S., and L. MacFaul. 2010. *Illegal Logging and Related Trade: Indicators of the Global Response*. London, UK: Chatham House. [http://awsassets.panda.org/downloads/chatham\\_house\\_illegallogging\\_2010.pdf](http://awsassets.panda.org/downloads/chatham_house_illegallogging_2010.pdf).
- MONREC (Ministry of Natural Resources and Environmental Conservation). 2017. "Statement of Timber Legality Assurance in Myanmar." March 16. <https://eia-international.org/wp-content/uploads/Statement-of-Progress-in-Timber-Legality-Assurance-in-Myanmar.pdf>.
- Norman, M., and J. Saunders. 2017. *Regulating the Trade in Illegal Timber: Asian Approaches Compared—State of Play June 2017*. Washington, DC: Forest Trends.
- Oberndorf, R.B. 2013. *Combating Illegal Logging in Asia: A Review of Progress and the Role of the Asia Forest Partnership, 2002–2012*. Washington, DC: Forest Trends. [https://www.forest-trends.org/wp-content/uploads/imported/afp-final-report\\_april-2013\\_web.pdf](https://www.forest-trends.org/wp-content/uploads/imported/afp-final-report_april-2013_web.pdf).
- Oldenburger, J., and M. van Benthem. 2017. "Dutch Sustainably Sourced Timber Consumption Grows 83% in a Decade," Wageningen, Netherlands: Probos Foundation. [http://www.probos.nl/images/pdf/bosberichten/BB\\_2017\\_03\\_Dutch\\_sustainably\\_sourced\\_timber\\_consumption\\_grows\\_to\\_83\\_in\\_a\\_decade.pdf](http://www.probos.nl/images/pdf/bosberichten/BB_2017_03_Dutch_sustainably_sourced_timber_consumption_grows_to_83_in_a_decade.pdf).
- Parker, D. 2014. "Indonesian Politician Gets 14 Years in Jail for Illegal Permits, Forest Corruption." Mongabay, March 13. <https://news.mongabay.com/2014/03/indonesia-politician-gets-14-years-in-jail-for-illegal-permits-forest-corruption/>.
- Peluso, N. 1995. "Whose Woods Are These? Counter-mapping Forest Territories in Kalimantan, Indonesia." *Antipode* 27 (4): 383–406.
- Petersen, R., C. Davis, M. Herold, and V. De Sy. 2018. "Tropical Forest Monitoring." Working Paper. Washington, DC: World Resources Institute. One of a series of papers prepared for the Oslo Tropical Forest Forum, Oslo, June 27–28.
- Reuters. 2016. "Peru Cracks Down on Illegal Loggers in Amazonian Tribe's Reserve." April 28. <https://www.reuters.com/article/peru-logging/peru-cracks-down-on-illegal-loggers-in-amazonian-tribes-reserve-idUSL2N17V232>.
- Phillips, T. 2008. "Troops Sent to Amazon After Violent Protests at Brazil Logging Crackdown." *Guardian* (Manchester, UK), November 25. <https://www.theguardian.com/environment/2008/nov/25/brazil-forests>.
- Repetto, R., and M. Gillis, eds. 1988. *Public Policies and the Misuse of Forest Resources*. Cambridge, UK: Cambridge University Press.
- Richards, J., and R. Tucker, eds. 1988. *World Deforestation in the 20<sup>th</sup> Century*. Durham, NC: Duke University Press.
- RNZ (Radio New Zealand). 2005. "Crackdown on Illegal Logging in Indonesia's Papua Hits Local Furniture Firms." May 27. <https://www.radionz.co.nz/international/pacific-news/155294/crackdown-on-illegal-logging-in-indonesia-s-papua-hits-local-furniture-firms>.

- SCA (Seneca Creek Associates) and WRI (Wood Resources International). 2004. "Illegal" Logging and Global Wood Markets: The Competitive Impacts on the U.S. Wood Products Industry. Poolesville, MD: SCA; University Place, WA: WRI. [https://www.illegal-logging.info/sites/default/files/uploads/1\\_AF\\_and\\_PA\\_summary.pdf](https://www.illegal-logging.info/sites/default/files/uploads/1_AF_and_PA_summary.pdf).
- Setuningsih, N. 2014. "KPK, Government Join Forces with MoU on Forestry." *Jakarta Globe*, October 17. <http://jakartaglobe.id/news/kpk-government-join-forces-mou-forestry/>.
- Seymour, F., and J. Busch. 2016. *Why Forests? Why Now? The Science, Economics, and Politics of Tropical Forests and Climate Change*. Washington, DC: Brookings Institution Press.
- Seymour, F., and N. Dubash. 2000. *The Right Conditions: The World Bank, Structural Adjustment, and Forest Policy Reform*. Washington, DC: World Resources Institute.
- Sit, S. 2017. "U.S. Retailers Halt PNG Wood Imports over Logging Claims." *Supply Management*, August 2. <https://www.cips.org/supply-management/news/2017/august/us-firms-halt-png-imports-over-logging-claims/>.
- Sochua, M. 2018. "Illegal Logging: Cambodia's Murderous Problem." *Phnom Penh Post*, February 9. <https://www.phnompenhpost.com/opinion/illegal-logging-cambodias-murderous-problem>.
- Stevens, C., R. Winterbottom, J. Springer, and K. Reytar. 2014. *Securing Rights, Combating Climate Change: How Strengthening Community Forest Rights Mitigates Climate Change*. Washington, DC: World Resources Institute. <http://www.wri.org/publication/securing-rights-combating-climate-change>.
- Sun, X., K. Canby, and L. Liu. 2016. *China's Logging Ban in Natural Forests: Impacts of Extended Policy at Home and Abroad*. Washington, DC: Forest Trends. <https://www.forest-trends.org/publications/china%20%92s-logging-ban-in-natural-forests/>.
- Sundstrom, A. 2016. "Understanding Illegality and Corruption in Forest Management: A Literature Review." Working Paper Series 2016:1. Gothenburg, Sweden: University of Gothenburg.
- Tatarski, M. 2017. "New Report Details Enormous Corruption, Illegal Logging along Vietnamese Border with Cambodia." *Mongabay*, May 8. <https://news.mongabay.com/2017/05/new-report-details-enormous-corruption-illegal-logging-along-vietnamese-border-with-cambodia/>.
- Taylor, R., and C. Streck. 2018. "The Elusive Impact of the Deforestation-Free Supply-Chain Movement." Working Paper. Washington, DC: World Resources Institute. One of a series of papers prepared for the Oslo Tropical Forest Forum, Oslo, June 27–28.
- TTF (Timber Trade Federation). 2004. "Responsible Purchasing Policy." London, UK: Timber Trade Federation. [https://www.illegal-logging.info/sites/default/files/uploads/RPP\\_Background.pdf](https://www.illegal-logging.info/sites/default/files/uploads/RPP_Background.pdf).
- To, P. X., N. Basik Treanor, and K. Canby. 2017. *Impacts of the Laos Log and Sawnwood Export Bans: Significant Reductions in the Exports to Major Markets of Vietnam and China in 2016*. Washington DC: Forest Trends. <https://www.forest-trends.org/wp-content/uploads/imported/laos-export-ban-v12-typo-fix-14-sept-2017-pdf.pdf>.
- Transparency International. 2010. "Analysing Corruption in the Forestry Sector." Berlin, Germany: Transparency International. [https://knowledgehub.transparency.org/assets/uploads/kproducts/2010\\_ForestGovernanceRiskManual\\_EN.pdf](https://knowledgehub.transparency.org/assets/uploads/kproducts/2010_ForestGovernanceRiskManual_EN.pdf).
- UNEP (United Nations Environment Programme). 2016. *The Rise of Environmental Crime: A Growing Threat to Natural Resources, Peace, Development and Security*. Nairobi, Kenya: UNEP. [https://wedocs.unep.org/bitstream/handle/20.500.11822/7662/-The\\_rise\\_of\\_environmental\\_crime\\_A\\_growing\\_threat\\_to\\_natural\\_resources\\_peace%2C\\_development\\_and\\_security-2016environmental\\_crimes.pdf?sequence=3&isAllowed=y](https://wedocs.unep.org/bitstream/handle/20.500.11822/7662/-The_rise_of_environmental_crime_A_growing_threat_to_natural_resources_peace%2C_development_and_security-2016environmental_crimes.pdf?sequence=3&isAllowed=y).
- UNEP. 2017. "Major Environmental Crimes." (Infographic.) *Our Planet*, March 24–25. <https://wedocs.unep.org/bitstream/handle/20.500.11822/20259/Our%20Planet%20March%202017.pdf?sequence=1&isAllowed=y>.
- UNODC (United Nations Office on Drugs and Crime). 2016. *World Wildlife Crime Report: Trafficking in Protected Species*. Vienna, Austria: UNODC. [https://www.unodc.org/documents/data-and-analysis/wildlife/World\\_Wildlife\\_Crime\\_Report\\_2016\\_final.pdf](https://www.unodc.org/documents/data-and-analysis/wildlife/World_Wildlife_Crime_Report_2016_final.pdf).
- USDA (U.S. Department of Agriculture) APHIS (Animal and Plant Health Inspection Service). 2009. "APHIS Factsheet March 2009." [https://www.aphis.usda.gov/publications/plant\\_health/content/printable\\_version/fs\\_laceyact.pdf](https://www.aphis.usda.gov/publications/plant_health/content/printable_version/fs_laceyact.pdf).
- U.S. Department of State. 2008. "The President's Initiative Against Illegal Logging: Protecting Forests and the Livelihoods That Depend on Them." Washington, DC: U.S. Department of State. <https://2001-2009.state.gov/documents/organization/103493.pdf>.
- USTR (U.S. Trade Representative). 2009. "Chapter 18: Environment." Forest Governance Annex, U.S.-Peru Free Trade Agreement. [https://ustr.gov/sites/default/files/uploads/agreements/fta/peru/asset\\_upload\\_file953\\_9541.pdf](https://ustr.gov/sites/default/files/uploads/agreements/fta/peru/asset_upload_file953_9541.pdf).
- Wallace, S. 2016. "Illegal Loggers Wage War on Indigenous People in Brazil." National Geographic Wildlife Watch, January 21. <https://news.nationalgeographic.com/2016/01/160120-brazil-illegal-logging-indigenous-people-Amazon-Basin-Awa-ibama/>.
- Watts, J., and J. Vidal. 2014. "Brazil Laundering Illegal Timber on a 'Massive and Growing Scale.'" *Guardian* (Manchester, UK), May 14. <https://www.theguardian.com/environment/2014/may/15/brazil-laundering-illegal-timber-on-a-massive-and-growing-scale>.
- World Bank. 1998. "Indonesia in Crisis: A Macroeconomic Update." Working Paper 18672. Washington, DC: World Bank.
- World Bank. 2001. "Indonesia—Environment and Natural Resource Management in a Time of Transition." Washington DC: World Bank.
- World Bank. 2006. *Strengthening Forest Law Enforcement and Governance: Addressing a Systemic Constraint to Sustainable Development*. Washington, DC: World Bank. <http://documents.worldbank.org/curated/en/330441468161667685/pdf/366380REVISED010Forest0Law01PUBLIC1.pdf>.
- Young, D.W. 2007. "Independent Forest Monitoring: Seven Years On." *Independent Forestry Review* 9 (1): 563–74.
- Zarate, A. and W. Neuman. 2014. "Peru Investigates the Killing of an Environmental Advocate." *New York Times*, September 10.

## ACKNOWLEDGMENTS

We are pleased to acknowledge our institutional strategic partners, who provide core funding to WRI: Netherlands Ministry of Foreign Affairs, Royal Danish Ministry of Foreign Affairs, and Swedish International Development-Cooperation Agency.

The authors would like to thank our peer reviewers who provided valuable input and feedback: Melissa Blue Sky, Rick Jacobsen, Cathy Karr-Colque, Jonathan Mason, Ruth Nogueron, Rachael Peterson, Tina Schneider, Rod Taylor, Arief Wijaya, and Michael Wolosin. We also wish to thank Frances Seymour for her contributions as the series editor and reviewer, Paige Langer for excellent project management, and Emily Matthews, Lauri Scherer, Romain Warnault, and Julie Moretti for editing and design.

This publication was made possible due to financial support from Norway's International Climate and Forest Initiative.

## ABOUT THE AUTHORS

**Charles Barber** is the Director of the Forest Legality Initiative at World Resources Institute.

Contact: [CBarber@wri.org](mailto:CBarber@wri.org).

**Kerstin Canby** is the Director of the Forest Policy, Trade, and Finance Initiative at Forest Trends.

Contact: [KCanby@forest-trends.org](mailto:KCanby@forest-trends.org).

### Other Working Papers from our series **Ending Tropical Deforestation: A Stock-Take of Progress and Challenges**

- The Elusive Impact of the Deforestation-Free Supply Chain Movement
- The Global Debate About Biofuels and Land-Use Change
- Intact Tropical Forests: Log Them or Lose Them?
- Jurisdictional Approaches to REDD+ and Low Emissions Development: Progress and Prospects
- Mining Global Financial Data to Increase Transparency and Reduce Drivers of Deforestation
- REDD+: Lessons from National and Subnational Implementation
- Tropical Forests and Climate Change: The Latest Science
- Tropical Forest Monitoring: Exploring the Gaps Between What Is Required and What Is Possible for REDD+ and Other Initiatives

## ABOUT WRI

World Resources Institute is a global research organization that turns big ideas into action at the nexus of environment, economic opportunity, and human well-being.

### Our Challenge

Natural resources are at the foundation of economic opportunity and human well-being. But today, we are depleting Earth's resources at rates that are not sustainable, endangering economies and people's lives. People depend on clean water, fertile land, healthy forests, and a stable climate. Livable cities and clean energy are essential for a sustainable planet. We must address these urgent, global challenges this decade.

### Our Vision

We envision an equitable and prosperous planet driven by the wise management of natural resources. We aspire to create a world where the actions of government, business, and communities combine to eliminate poverty and sustain the natural environment for all people.

### Our Approach

#### COUNT IT

We start with data. We conduct independent research and draw on the latest technology to develop new insights and recommendations. Our rigorous analysis identifies risks, unveils opportunities, and informs smart strategies. We focus our efforts on influential and emerging economies where the future of sustainability will be determined.

#### CHANGE IT

We use our research to influence government policies, business strategies, and civil society action. We test projects with communities, companies, and government agencies to build a strong evidence base. Then, we work with partners to deliver change on the ground that alleviates poverty and strengthens society. We hold ourselves accountable to ensure our outcomes will be bold and enduring.

#### SCALE IT

We don't think small. Once tested, we work with partners to adopt and expand our efforts regionally and globally. We engage with decision-makers to carry out our ideas and elevate our impact. We measure success through government and business actions that improve people's lives and sustain a healthy environment.



Copyright 2018 World Resources Institute. This work is licensed under the Creative Commons Attribution 4.0 International License. To view a copy of the license, visit <http://creativecommons.org/licenses/by/4.0/>