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A RAPID RESPONSE ASSESSMENT

GREEN CARBON, BLACK TRADE

ILLEGAL LOGGING, TAX FRAUD AND LAUNDERING IN THE WORLD'S TROPICAL FORESTS

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ILLEGAL LOGGING, TAX FRAUD AND LAUNDERING IN THE WORLD'S TROPICAL FORESTS

A RAPID RESPONSE ASSESSMENT

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PREFACE

Environmental crime and the illegal grabbing of natural resources is becoming an ever more sophisticated activity requiring national authorities and law enforcement agencies to develop responses commensurate with the scale and the complexity of the challenge to keep one step ahead.

This report – *Green Carbon, Black Trade* – by UNEP and INTERPOL focuses on illegal logging and its impacts on the lives and livelihoods of often some of the poorest people in the world set aside the environmental damage. It underlines how criminals are combining old fashioned methods such as bribes with high tech methods such as computer hacking of government web sites to obtain transportation and other permits. The report spotlights the increasingly sophisticated tactics being deployed to launder illegal logs through a web of palm oil plantations, road networks and saw mills.

Indeed it clearly spells out that illegal logging is not on the decline, rather it is becoming more advanced as cartels become better organized including shifting their illegal activities in order to avoid national or local police efforts. By some estimates, 15 per cent to 30 per cent of the volume of wood traded globally has been obtained illegally. Unless addressed, the criminal actions of the few may endanger not only the development prospects for the many but also some of the creative and catalytic initiatives being introduced to recompense countries and communities for the ecosystem services generated by forests.

One of the principal vehicles for catalyzing positive environmental change and sustainable development is the Reduced Emissions from Deforestation and Forest Degradation initiative (REDD or REDD+). If REDD+ is to be sustainable over the long term, it requests and requires all partners to fine tune the operations, and to ensure that they meet the highest standards of rigour and that efforts to reduce deforestation in one location are not offset by an increase elsewhere.

If REDD+ is to succeed, payments to communities for their conservation efforts need to be higher than the returns from activities that lead to environmental degradation. Illegal logging threatens this payment system if the unlawful monies changing hands are bigger than from REDD+ payments.

The World's forests represent one of the most important pillars in countering climate change and delivering sustainable development. Deforestation, largely of tropical rainforests, is responsible for an estimated 17 per cent of all man-made emissions, and 50 per cent more than that from ships, aviation and land transport combined. Today only one-tenth of primary forest cover remains on the globe.

Forests also generate water supplies, biodiversity, pharmaceuticals, recycled nutrients for agriculture and flood prevention, and are central to the transition towards a Green Economy in the context of sustainable development and poverty eradication.

Strengthened international collaboration on environmental laws and their enforcement is therefore not an option. It is indeed the only response to combat an organized international threat to natural resources, environmental sustainability and efforts to lift millions of people out of penury.

Achim Steiner
UN Under-Secretary General
and UNEP Executive Director

Ronald K. Noble
INTERPOL Secretary General

SUMMARY

Forests worldwide bind CO_2 and store it – so called Green carbon – and help mitigate climate change. However, deforestation accounts for an estimated 17 per cent of global carbon emissions: about 1.5 times greater than emissions from all the world's air, road, rail and shipping traffic combined.

The vast majority of deforestation and illegal logging takes place in the tropical forests of the Amazon basin, Central Africa and Southeast Asia. Recent studies into the extent of illegal logging estimate that illegal logging accounts for 50–90 per cent of the volume of all forestry in key producer tropical countries and 15–30 per cent globally. Meanwhile, the economic value of global illegal logging, including processing, is estimated to be worth between US$ 30 and US$ 100 billion, or 10–30 per cent of global wood trade.

A number of certification schemes and programmes have evolved to reduce illegal logging. These schemes, such as voluntary trade agreements including the EU Forest Law Enforcement, Governance and Trade (FLEGT) Voluntary Partnership Agreements (VPAs), or Forest Stewardship Council (FSC) certification, have been successful in bringing stakeholders together and generating incentives for legal exports and more sustainable forestry.

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is increasingly being used by states to ensure that trade in listed timber species is legal, sustainable and traceable. Around 350 tree species are now included in the three CITES Appendices, and trade in their products is therefore subject to regulation to avoid utilization that is incompatible with their survival. CITES is also working with the International Tropical Timber Organization (ITTO) to promote sustainable forest management and to build the capacity of developing states to effectively implement the Convention as it relates to listed tree species.

The main aim of the above mechanisms are to promote sustainable trade. With the exception of CITES, they were not designed to combat organized crime and are not effective in combating illegal logging, corruption and laundering of illegal timber in tropical regions. Other incentives and subsidies to offer alternative incomes are unlikely to be effective when illegal logging and laundering offer much higher profits and very low risk. Widespread collusive corruption from local officials to the judiciary, combined with decentralized government structures in many tropical countries, provide little or no economic incentive for illegal loggers and corrupt officials to change their practices.

To become effective, voluntary trade programmes and the effective implementation of CITES, must be combined with an international law enforcement investigative and operational effort in collaboration with domestic police and investigative task forces in each country. This is to ensure that a local decline in illegal logging is not offset by increases elsewhere, as international cartels move to new sources of illegal timber.

In the last five years, illegal logging has moved from direct illegal logging to more advanced methods of concealment and timber laundering. In this report more than 30 ways of conducting illegal logging, laundering, selling and trading illegal logs are described. Primary methods include falsification of logging permits, bribes to obtain logging permits (in some instances noted as US$ 20–50,000 per permit), logging beyond concessions, hacking government websites to obtain transport permits for higher volumes or transport, laundering

illegal timber by establishing roads, ranches, palm oil or forest plantations and mixing with legal timber during transport or in mills.

The much heralded decline of illegal logging in the mid-2000s in some tropical regions was widely attributed to a short-term law enforcement effort. However, long-term trends in illegal logging and trade have shown that this was temporary, and illegal logging continues. More importantly, an apparent decline in illegal logging is due to more advanced laundering operations masking criminal activities, and not necessarily due to an overall decline in illegal logging. In many cases a tripling in the volumes of timber "originating" from plantations in the five years following the law enforcement crack-down on illegal logging has come partly from cover operations by criminals to legalize and launder illegal logging operations. Other cases of increased illegal logging involve road construction and the cutting of wide corridors, which facilitates land clearing by impoverished settlers, who are later driven away by ranchers and soy producers, such as has occurred in the Amazon. Companies make money from clearing the initial forest, have impoverished farmers convert forest land to farmland, and then push these farmers off to establish rangeland for cattle. Other scams include the falsification of eco-certification.

Funnelling large volumes of illegal timber through legal plantations, across borders or through mills, is another effective way to launder logs. In some instances illegal loggers mix illicit timber with 3–30 times the amount of officially processed timber, which also constitutes tax fraud. Many of these illegal operations involve bribes to forest officials, police and military, and even royalties to local village heads.

Illegal logging operations have also in some cases involved murder, violence, threats and atrocities against indigenous forest-living peoples. The challenges already facing indigenous peoples are further compounded as companies now launder illegal logging under fraudulent permits for ranches or plantation establishment schemes.

Much of the laundering of illegal timber is only possible due to large flows of funding from investors based in Asia, the EU and the US, including investments through pension funds. As funds are made available to establish plantations operations to launder illegal timber and obtain permits illegally or pass bribes, investments, collusive corruption and tax fraud combined with low risk and high demand, make it a highly profitable illegal business, with revenues up to 5–10 fold higher than legal practices for all parties involved. This also undermines subsidized alternative livelihood incentives available in several countries.

Efforts to stop this black trade must concentrate on increasing the probability of apprehending illegal logging syndicates and their networks, reducing the flow of timber from regions with high degree of illegality by adapting a multi-disciplinary law enforcement approach, developing economic incentives by discouraging the use of timber from these regions and introducing a rating og companies based on the likelihood of their in-

volvement in illegal practices to discourage investors and stock markets from funding them. When combined with economic incentives, through REDD+ and trade opportunities through CITES and FLEGT, these actions may become successful in reducing deforestation, and ultimately, carbon emissions.

Priority attention must also be given to investigation of tax fraud, corruption and anti-laundering, including substantially increasing the investigative and operational capacity of national task forces working with INTERPOL, against logging companies, plantations and mills.

The newly established International Consortium on Combating Wildlife Crime (ICCWC), chaired by the CITES Secretariat and comprised of INTERPOL, the United Nations Office on Drugs and Crime (UNODC), the World Bank and the World Customs organization (WCO), provides a substantial new commitment to the sharing and coordination of a comprehensive international effort to help combat wildlife crime, including illegal logging.

ICCWC represents the entire enforcement chain – customs, police and justice. It also addresses anti-money laundering and serves as a model at the international level for the sort of cooperation that is required amongst enforcement agencies at the national level to more effectively combat illegal international trade in timber products.

The cost of implementing an effective international law enforcement scheme and training capacity to substantially reduce the emissions from illegal logging is estimated to be approximately US$ 20–30 million dollars annually. While INTERPOL is currently leading the police related law enforcement response through Project LEAF, its success requires strong, constant, and sustainable commitment from governments, civil society, and the private sector.

RECOMMENDATIONS

1) Strengthen and consider funding opportunities for the development of a full-fledged Law Enforcement Assistance to Forests (LEAF) programme under INTERPOL and UNEP in close collaboration with all ICCWC partners, REDD+, FLEGT and other relevant programmes and agencies. The objective of the programme is undertaking coordinated international and improved national law enforcement and investigative efforts to reduce illegal logging, the international trade in illegally felled timber and forest-related corruption including tax fraud and laundering.

2) Increase national investigative and operational national capacities through an INTERPOL based training scheme to strengthen and build national task forces on combating illegal logging and laundering. This includes strengthening national law enforcement agency cooperation and coordination through supporting the formation of national taskforces to ensure enforcement of laws and regulations related to forests.

3) Centralize nationally the issuing of permits for land clearance whether for logging, plantations or ranching and permits for road transport of timber with strong anti-counterfeit measures.

4) Develop an INTERPOL classification system of geographic regions within countries according to the suspected degree of illegality in collaboration with National Central Bureaus (NCBs) and other relevant stakeholders. This includes defining upper limits of volumes of logs to be transported, restricting transport funnels of all timber from such illegal logging regions and monitoring forest change on a regional basis.

5) Encourage national tax fraud investigations with a particular focus on plantations and mills laundering, under- or over-reporting of volumes and over- or under-invoicing, tax fraud and mis-use of government subsidies.

6) Reduce investment attractiveness in forests enterprises active in regions identified as areas of illegal logging by implementing an international INTERPOL-based rating system of companies extracting, operating in or buying from regions with a high degree of illegal activity. This includes investigating possible complicity of investors in funding illegal activities related to logging, transporting, laundering or purchasing illegally logged timber.

7) Strengthen the resources available to ICCWC to have a dedicated role, unit(s) and responsibility at global and regional levels, as appropriate, specifically tasked to combat illegal logging and international trade in illegally logged or procured timber and wood products.

CONTENTS

INTRODUCTION

The importance of the world's forests to global efforts to reduce carbon emissions cannot be underestimated. While living forests are vital to reducing carbon in our atmosphere, deforestation accounts for an estimated 17 per cent of global carbon emissions – around 1.5 times greater than those from all the world's air, road, rail and shipping traffic combined.

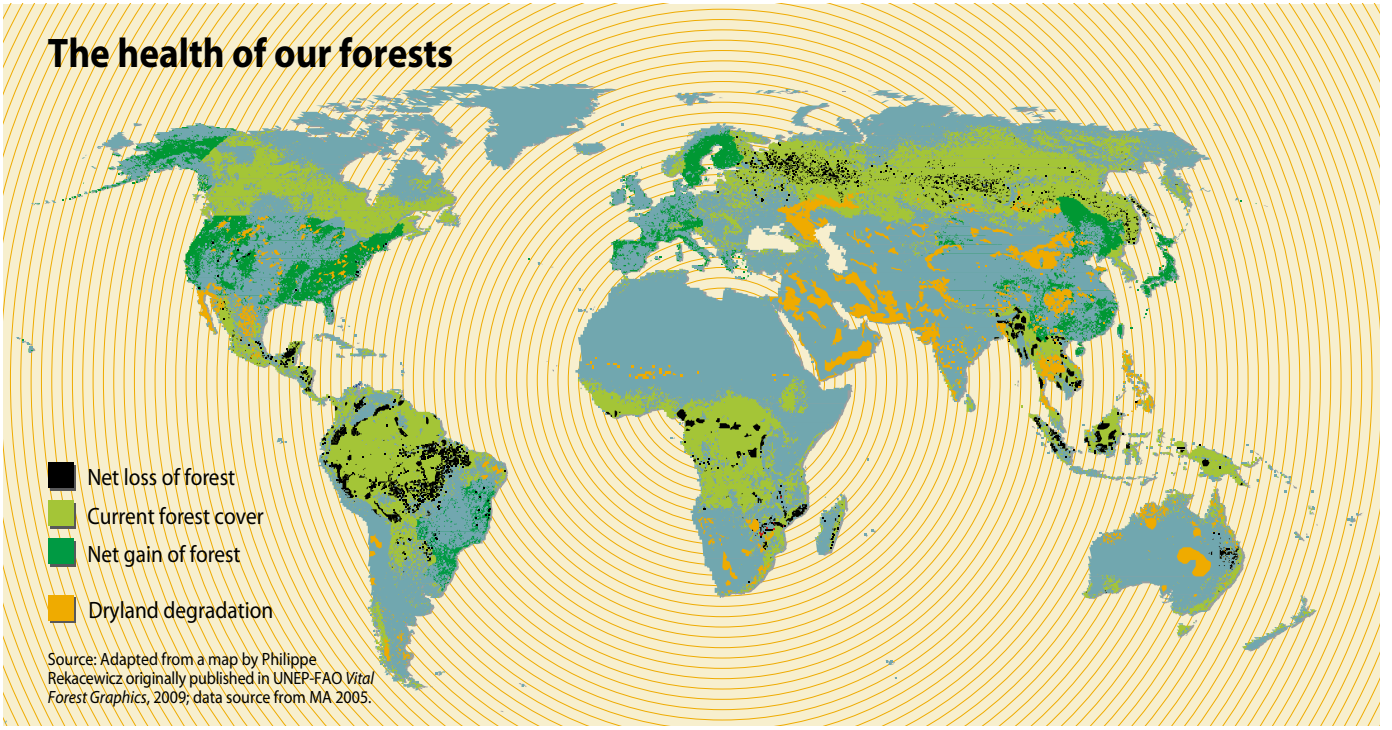
The vast majority of deforestation and illegal logging takes place in the tropical forests of the Amazon, Central Africa and Southeast Asia. Recent studies into the extent of illegal logging estimate that it accounts for 50–90 per cent of the volume of forestry in key producer tropical countries and 15–30 per cent of global forest production (INTERPOL-World Bank 2009). Reducing deforestation, and especially illegal logging, is therefore the fastest, most effective and least controversial means to reduce global emissions of climate gases.

The United Nations-backed REDD and REDD+ programmes are the principle instruments protecting forests to reduce these emissions. REDD and REDD+ provide national and international legal frameworks, including agreements, conventions and certification schemes, to reduce illegal logging and support sustainable practices. With billions of dollars being invested in avoiding tropical deforestation, the challenges of corruption and laundering illegally logged timber become a major hurdle to reduce illegal logging and its role in climate emissions, loss of biodiversity and human security (UNEP 2007, 2010; 2011; SIKOR and To 2011).

While recent years have seen increased concern for sustainable forestry only 8 per cent of the world's forests are certified as sustainably managed, with over 90 per cent of these certified forests in North America and Europe (UNEP 2009). In addition, it is estimated that illegal logging still occurs in many formally protected forests, especially in tropical countries (UNEP 2007). If illegal logging cannot be controlled, it is inevitable that the global community's efforts to reduce and offset carbon emissions will be undone.

In addition to the environmental damage, the loss of revenue and tax income from illegally harvested wood is estimated to be at least US$10 billion per year. (INTERPOL/World Bank 2009). The trade in illegally harvested timber is also highly lucrative for criminal elements and has been estimated at a minimum US$11 billion – comparable to the production value of drugs, which is estimated at around US$13 billion (INTERPOL/World Bank 2009; UNEP 2011). Most estimates however, have focused on estimates of import-export discrepancies and other official statistics, neglecting the vast underreporting constituting both laundering and deliberate underreporting. In some instances this is up to 30 times greater than the official volumes reported and a significant way to increase criminal profitability.

The official value of the global wood trade has been estimated at around US$327 billion dollars (FAO 2007; UNEP 2009). Estimates for illegal logging in Indonesia alone, however, range from US$600 million to US$8.7 billion per year (Luttrell *et al.* 2011). If illegal logging consists of as much as 10–30 per cent of the total logging worldwide, with some estimates as high as 20–50 per cent when laundering of illegal wood is included, then the value of it is at least US$30–100 billion (NCB-Rome 2008; INTERPOL/World Bank 2009).



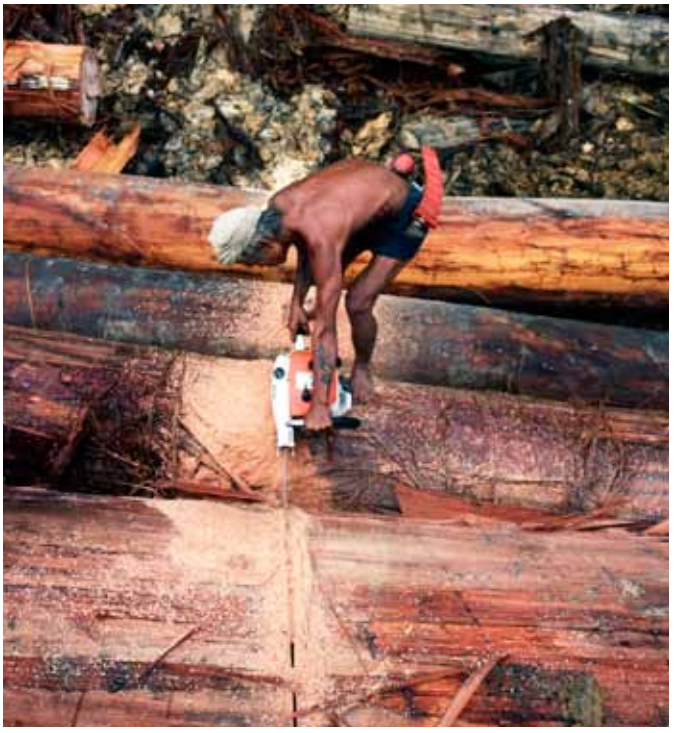
The criminal groups involved in illegal logging also damage local communities through loss of income and livelihood, life threatening environmental damage, corruption of officials, fraud, money laundering, extortion, threats of violence, and even murder (INTERPOL 2009; Hiemstra van der Horst 2011).

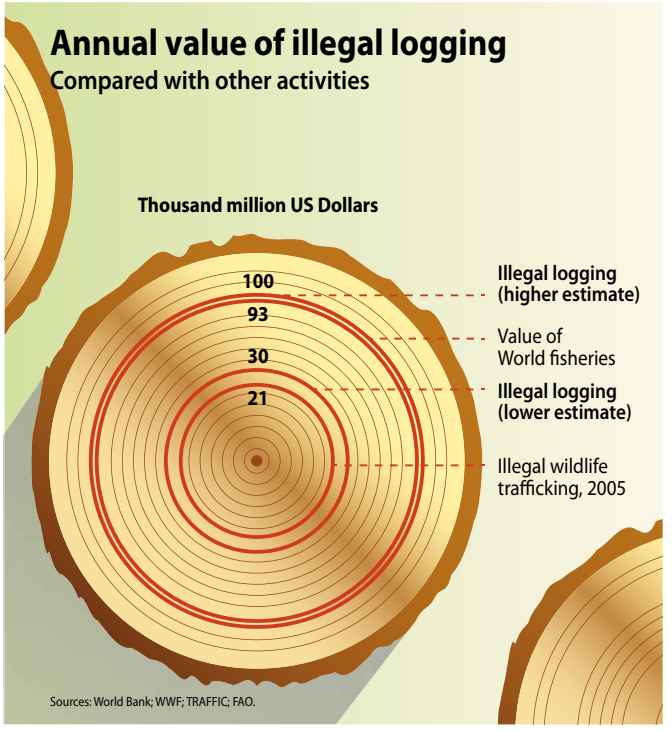
It is clear that, in spite of certification and management efforts, illegal logging has not stopped. Indeed it has remained high in many regions including the Amazon, Central Africa and Southeast Asia. In some areas, it has actually increased in recent years.

With the billion dollar investments in REDD+ and a developing carbon trade market designed to facilitate further investments in reducing emissions, illegal international cartels and networks pose a major risk to emission reductions and climate change mitigation through corruption and fraud, while also jeopardizing development goals and poverty alleviation in many countries.

In the mid-2000s, some countries, like Indonesia, experienced what appeared to be a decline in illegal logging following increased enforcement efforts, arrests and even logging moratoriums. However, what became apparent was that a decline in logging in parts of Indonesia triggered an increase in demand elsewhere, such as in the Papua New Guinea, Myanmar and the Greater Congo Basin (UNEP 2011). Indeed, as demand for timber or wood products is rising in many countries, including China (which is expected to almost double its wood consumption by 2020 with world demand for timber expected to increase by 70 per cent by 2020) (INTERPOL-World Bank 2009; UNEP 2009), a reduction in logging in one geographic location will be offset by increased logging in another.

Another critical issue is that most illegal logging takes place in regions characterized by conflict or widespread corruption. There are advanced corruption schemes in many tropical forest regions, including the Amazon Basin, the Congo Basin, Southeast Asia and Indonesia. Enforcement efforts during the





mid-2000s simply triggered a series of more advanced means to launder illegally logged timber or to conduct illegal logging under the cover of plantation development, palm oil establishment, road construction, redefinition of forest classifications, exceeding legal permit limits or obtaining illicit logging permits through bribes (Amacher, *et al.* 2012).

While some success was achieved in Brazil and, temporarily, in Indonesia with national initiatives including joint security sweeps (Operasi Hutan Lestari (OHL) sustainable forest operation), illegal logging activity has not declined. Indeed a large share, estimated from 40–80 per cent, of total volumes remains illegal (Luttrel, *et al.* 2011). Traditional law enforcement efforts limited to operations against illegal logging have been effective in protecting some national parks, but have also changed the nature of the illegal logging to more refined methods including widespread collusive corruption and laundering of illegal logging under fake permits, ostensible plantation establishment and palm oil development.

Illegal logging and black trade in illegally harvested wood products has continued due in large part to a lack of coordinated international law enforcement efforts to combat the organized transnational nature of the criminal groups involved. Indeed, law enforcement has often been associated with "guns on the ground", rather than full investigative operations examining tax fraud and laundering, which are essential for combating modern illegal logging syndicates.

The purpose of this report is to provide an overview of how illegal logging takes place and describe common methods of how it is laundered and financed and its primary destinations. The report also reviews some of the current practices and initiatives to combat illegal logging and provides information about how illegal logging syndicates and black wood traders are evading many current law enforcement initiatives and trade incentives.

Logging companies devastate the Penan's rainforest home, which they rely on for their survival.

"We're not like the people in the towns, who have money and can buy things. If we lose all the things the forest gives us, we will die."

Ba Lai, Penan man

Penan armed with blowpipes block the road as Shin Yang logging trucks approach.

ILLEGAL LOGGING: HOW IS IT DONE?

Illegal logging takes place in many forms, from illegal logging in protected areas or large-scale illegal logging without permits in remote areas, conflict zones and border areas, to advanced laundering operations mixing legal with illegal logs through bribery, re-definition of forest classification, forged permits, exceeding legal concessions and clearing or laundering through plantations, biofuel production and ranching establishments. In this chapter, an overview of the most common methods of illegal logging is provided. Methods used to launder the illegal cuts and funding the operations are explained in the following chapters.

HOW LOGGING OPERATIONS WORK

For any forestry operation to log an area, there are three basic considerations: 1) Deciding on the type of logging to be done i.e. selective cutting for valuable rare woods or clear-cutting of areas typically for timber and pulp; 2) Extraction of the wood to a road or river by skidders, tractors or other machinery, for temporary storage before longer transport by road or river; 3) Transport by truck, river barges or floats to the nearest mill, harbour or border crossing for domestic or international export.

The costs involved are a function of the terrain and accessibility to logs, cost of cutting and extraction, distance by roads, rivers or ships to buyers and mills domestically or internationally, and the price (demand) of wood extracted. As will be seen later, companies operating illegally may also have to bribe officials for logging permits, pay off local village heads or "security" staff to threaten or drive away villagers and local indigenous people, and bribe police, military or customs officials.

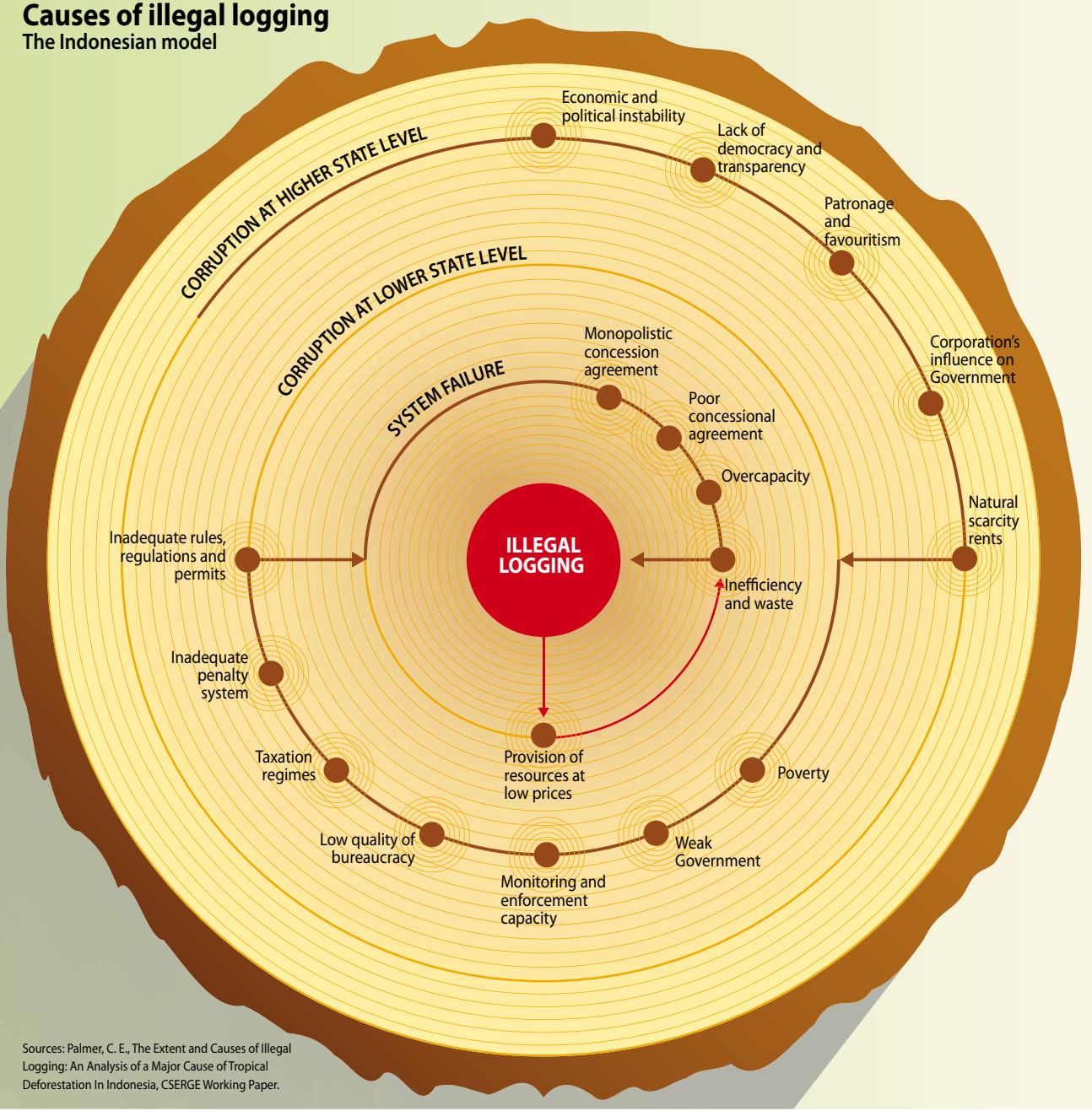
THE PROCESSING RECIPIENTS

The timber buyers for processing, whether in saw mills, pulp mills or board factories, will pay according to the species, quality, size and composition of the wood. The specifications depend on the purpose, use and processing of the wood. Any buyer for a wood corporation or mill will require detailed information on the wood purchased. Wood product prices are set according to manufacturing needs, market demands and costs of acquisition, which is typically a function of distance and transportation costs. There are sometimes premiums for certified timber, which offer additional opportunities for fraud or forgery. The more valuable and exclusive the end-product is on the market, the more expensive the transport can be.

A large mill will have large-scale fixed costs related to staff and production machinery. Hence, not only will processors need detailed knowledge on the type and quality of the wood they buy, they also need a consistent flow and supply of wood to their mills to avoid having a period of unused capacity in

Causes of illegal logging

The Indonesian model



Sources: Palmer, C. E., The Extent and Causes of Illegal Logging: An Analysis of a Major Cause of Tropical Deforestation In Indonesia, CSERGE Working Paper.

processing. While some of this is buffered through storage capacity, they cannot afford to rely on one geographic source of timber.

Most mills would prefer legal timber to illegal if the price was the same because of consumer demands. However, if illegal timber is mixed with legal either in the mills or during transport or can be obtained cross-border without fees or at lower costs, there is a high incentive for complicity in illegal logging due to potentially increased profit – and very low risk. In addition, under-reporting of turnover combined with over-invoicing provides ample opportunity for tax fraud.

THE END-USERS – CONSUMERS

Consumer awareness is highly variable. Unlike trade in some endangered wildlife or drugs, where consumers, in most cases, are aware of their complicity in crime, most consumers of wood products may not be informed or aware that the product they use – in furniture, panels, walls or computer paper – may have originating from illegal logging.

Indeed, as many processing mills are located in countries other than where the timber is extracted, or traded on the market many times during transport, a piece of paper from an EU-

LEAF – Law Enforcement Assistance for Forests

Project LEAF (Law Enforcement Assistance for Forests) is a climate initiative consortium on combating illegal logging and organized forest crime led by the INTERPOL Environmental Crime Programme and the United Nations Environment Programme's (UNEP) centre in Norway, UNEP GRID Arendal.

The project developed out of a unanimous resolution ratified at INTERPOL's 79th General Assembly calling for INTERPOL to play a leading role in supporting international environmental enforcement efforts and discussions during INTERPOL's 7th International Conference on Environmental Crime. Following presentations on the UN Collaborative climate change initiative on Reducing Emissions from Deforestation and Forest Degradation (REDD and REDD+) INTERPOL stated its commitment to explore emerging environmental threats and deciding the best way forward on REDD mechanisms and forest protection.

The feasibility project is financially supported by the Norwegian Agency for Development Cooperation (NORAD).

Objectives:
Project LEAF will assist INTERPOL Member Countries in 2012–13 in building a structure and platform suitable for enforcing national laws governing forestry, and in meeting international commitments such as REDD and REDD+, and providing a coordinated, holistic, response to the crimes perpetrated by organized criminal gangs engaged in illegal logging and international timber trafficking. This will be accomplished through targeted operations based on criminal intelligence analysis. The ultimate aim is to stop the activities of criminal gangs and groups driving illegal logging and the international trade in illegally harvested timber.

The project's specific objectives include:

- Provide an overview and review of the extent, primary geographic locations, routes, causes and structure of networks involved in illegal logging, corruption, fraud, laundering and smuggling of wood products.
- Support countries in improving enforcement and combating illegal logging and deforestation, laundering of forest products, fraud and illegal trade and smuggling in forest products.
- Provide training and operational support at different scales.
- Provide information and support on how organized criminals organize, launder, bribe and trade logged forest products illegally.
- Identify and evaluate the most effective guidelines, structure and best practices for combating illegal logging and deforestation for a full-fledged LEAF programme on law enforcement support beyond 2013.

Preliminary estimates suggest that a full global law enforcement investigative capacity under INTERPOL, supporting, training and liaising with National Central Bureaus and national anti-logging task forces including operational support in-country to reduce tax fraud, laundering and illegal logging, would cost US$20–30 million annually.

The International Consortium on Combating Wildlife Crime (ICCWC)

ICCWC is the collaborative effort by five inter-governmental organizations, ICCWC comprises the CITES Secretariat, INTERPOL, the United Nations Office on Drugs and Crime (UNODC), the World Bank and the World Customs Organization (WCO). The CITES Secretariat chairs the alliance, working to bring coordinated support to the national wildlife law enforcement agencies and to the sub-regional and regional networks that, on a daily basis, act in defence of natural resources.

'Wildlife', as defined by the consortium is not restricted to animals alone, but also incorporates endangered plants, illegal logging and non-timber forest products, some of which are illegally traded at very significant levels.

The mission of ICCWC is to usher in a new era where perpetrators of serious wildlife crimes will face a formidable and coordinated response, rather than the present situation where the risk of detection and punishment is all too low. In this context, ICCWC will mainly work for, and with, the wildlife law enforcement community, since it is frontline officers who eventually bring criminals engaged in wildlife crime to justice. ICCWC seeks to support development of law enforcement that builds on socially and environmentally sustainable natural resource policies, taking into consideration the need to provide livelihood support to poor and marginalized rural communities.

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is an international agreement between governments. Its aim is to ensure that international trade in specimens of wild animals and plants does not threaten their survival. The CITES Secretariat has been working since 1975 to help countries combat illegal cross-border trade in animals and plants.

INTERPOL is the world's largest international police organization, with 190 member countries. Created in 1923, it facilitates cross-border police cooperation, and supports and assists all organizations, authorities and services whose mission is to prevent or combat international crime. INTERPOL's General Secretariat has a programme devoted to combating environmental crime.

The United Nations Office on Drugs and Crime (UNODC) is a global leader in the fight against illicit drugs and international crime. Established in 1997 through a merger between the United Nations Drug Control Programme and the Centre for International Crime Prevention, UNODC operates in all regions of the world through an extensive network of field offices.

The World Bank is a vital source of financial and technical assistance to developing countries around the world. Its mission is to fight poverty and to help people help themselves and their environment by providing resources, sharing knowledge, building capacity and forging partnerships in the public and private sectors. The Bank supports a global program of technical assistance on anti-money laundering and has played a leading role in international efforts to strengthen forest law enforcement and governance.

The World Customs Organization (WCO) is the only intergovernmental organization exclusively focused on Customs matters. With its worldwide membership, the WCO is now recognized as the voice of the global Customs community. It is particularly noted for its work in areas covering the development of global standards, the simplification and harmonization of customs procedure, the facilitation of international trade, trade supply chain security, the enhancement of Customs enforcement and compliance activities, anti-counterfeiting and piracy initiatives, public-private partnerships, integrity promotion, and sustainable global Customs capacity building programmes.

ICCWC has recently developed a Wildlife and Forest Crime Analytic Toolkit, which is primarily designed to assist government officials in wildlife and forestry administration, Customs and other relevant enforcement agencies to conduct a comprehensive analysis of possible means and measures related to the protection and monitoring of wildlife and forest products, and to identify technical assistance needs.

based, US-based, Chinese or Japanese producer may actually have come from a conflict zone in Africa, an indigenous reserve in Brazil or a UNESCO World Heritage orangutan habitat in Indonesia (UNEP 2007; 2011; UNEP-INTERPOL 2009). While there are some certification schemes available, like FSC, the majority of these certifications are located in Canada, the US and Europe (UNEP 2009; Schepers 2010).

Furthermore, as will be demonstrated in this report, there are many ways wood can be laundered on its journey from the forest to the consumer, making certification schemes nearly impossible to implement effectively in many critical tropical deforestation locations. Hence, while consumer awareness and demand is critical for putting pressure on manufacturers and the processing industry, illegal logging, financing of illegal logging or processing and laundering is a profitable transnational organized crime which requires an international law enforcement and investigative effort.

Like any other crime, organized illegal logging cannot be combated merely through voluntary trade schemes or alternative income generation nor be prevented by short-lived police crack-downs. It requires the full breadth of incentives, reduced profitability and high risk. Only when the profit-risk ratio changes dramatically, and both alternative incomes and market incentives are in place can we expect illegal logging and deforestation to decline.

While both trade incentives and economic support through FLEGT and REDD+ will become increasingly available, there must also be effective international law enforcement, training and investigative capacities to cut criminal profits and increase the risk involved in illegal logging, wood-related tax fraud and laundering to bring about an overall decline in illegal logging.

There are now just five surviving Akuntsu. When they die, the tribe will become extinct. Their population was wiped out in the 1980s by illegal loggers and gunmen employed by ranchers. They now live in a tiny patch of forest surrounded by ranches.

The Mashco-Piro in southeast Peru are being driven out of their forest home by illegal loggers and into the glare of tourists' cameras.

How the UN-REDD Programme Supports Country efforts on Anti-Corruption in REDD+

Corruption is an important reason why illegal logging continues to thrive in many parts of the world, and why environmental and socially damaging activities by mining, agriculture and timber companies operating in tropical forest regions are allowed to exist with impunity. In a number of countries engaged in the REDD+ (reducing emissions from deforestation and forest degradation in developing countries) mechanism, corruption has been, or continues to be, a pivotal factor in the political economy of forest use and deforestation1.

In 2009 the UN-REDD Programme2 launched activities to help prevent corruption risks in REDD+. The work is focused on making the case for why preventing corruption risks is essential for REDD+ to work, providing advice on how this can be done, and working with partner countries engaged in anti-corruption work. UNDP's Global Programme on Anti-Corruption for Development Effectiveness is a partner in these activities.

Why is tackling corruption risks in REDD+ necessary?
Corruption in REDD+ may happen during the design of a national REDD+ strategy: powerful actors may seek to influence policies, through bribery, trafficking in influence and other corrupt means, in order to either skew the distribution of benefits in their favor, including through manipulating the design of land policies, or avoid having to alter their current practices, including illegal logging. Corruption risks in REDD+ could also take the form, during the implementation phase, of embezzlement of REDD+ benefits, and allowing laundering of REDD+ proceeds3.

1. U4, Corruption and REDD+: Identifying risks amid complexity, May 2012.
2. The UN-REDD Programme, a partnership of FAO, UNDP and UNEP, was launched in 2008. The Programme supports nationally-led REDD+ processes and promotes the informed and meaningful involvement of all stakeholders, including Indigenous Peoples and other forest-dependent communities, in national and international REDD+ implementation. More at www.un-redd.org.
3. These risks are further detailed in Staying on Track: Tackling Corruption risk in Climate Change, UNDP, 2010, http://tinyurl.com/Stayingon-Track-UNDP.

Corruption could undermine the effectiveness of REDD+ as a climate change mitigation instrument, because, with corruption, strategies to address the drivers of deforestation are likely to fail. It will reduce the efficiency with which emission reductions are achieved, as limited financial resources are lost to illegal activities. It will also result in inequitable sharing of benefits, and could pose risks to the human rights of local communities and indigenous stakeholders. Without effectiveness, efficiency and equity, the very sustainability of the REDD+ mechanism is at risk.

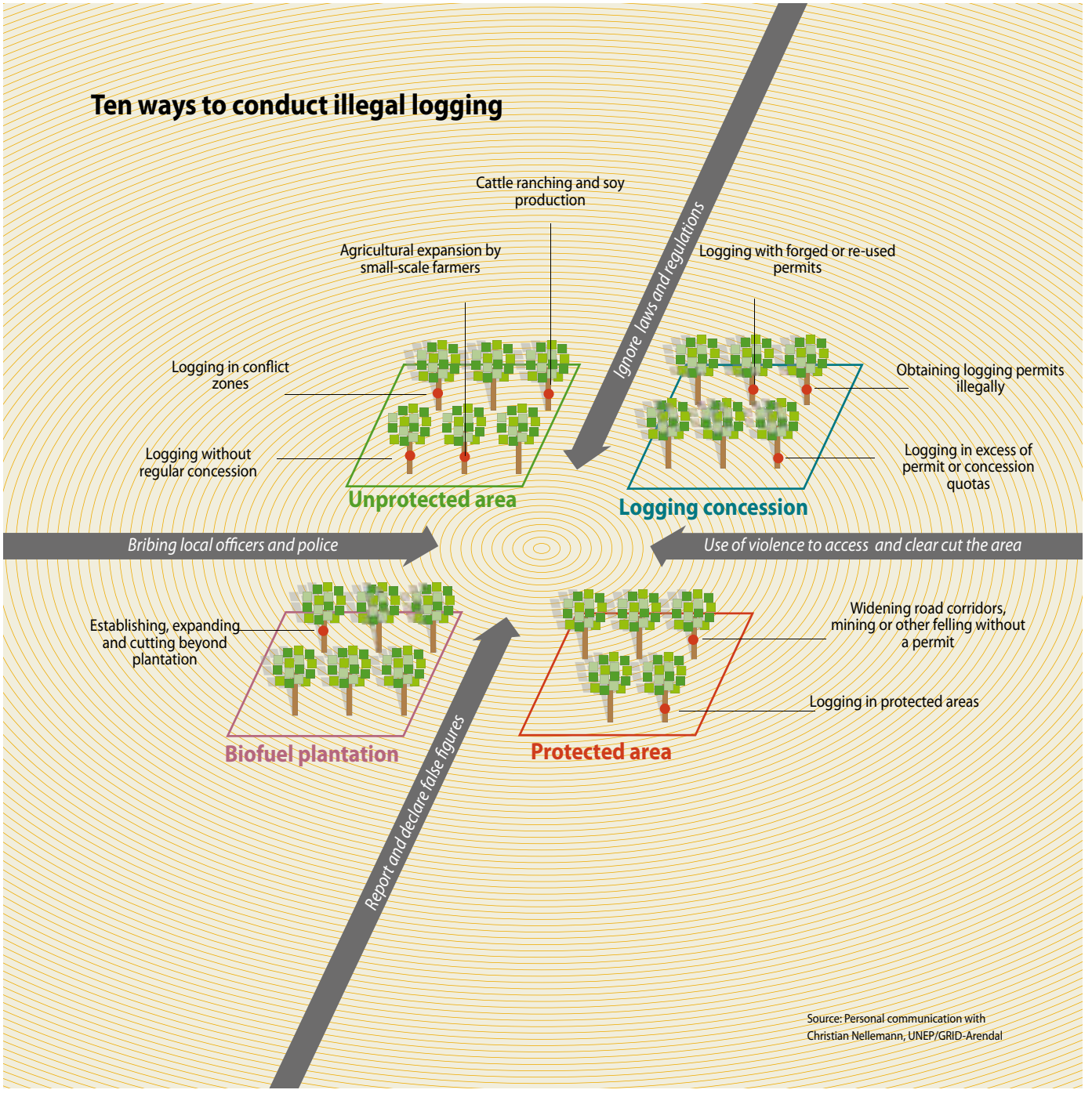
REDD+ countries also need to respond to the United Nations Framework Convention on Climate Change's "Cancun Agreements", where they have committed to REDD+ countries to promoting and supporting "transparent and effective national forest governance structures". Many countries also have commitments under relevant conventions such as United Nations Convention Against Corruption (UNCAC) and other regional anti-corruption agreements.

Pioneer work on anti-corruption in REDD+ could also potentially pave the way to promote transparency and accountability in other climate finance mechanisms.

How does the UN-REDD Programme support countries efforts on anti-corruption in REDD+?
A range of different approaches can be supported to help prevent corruption, and these have been applied successfully in the forest and other sectors. Examples include approaches to enhance access to information, citizen demand for accountability, accountability and integrity of public officers, sound financial management systems, protection of whistleblowers and the delivery of justice.

Measures conducive to reducing corruption risks in REDD+ countries already exist in many instances linked to their broader governance efforts, such as stakeholder engagement. These efforts need to be strengthened based on thorough and participatory assessments, and by specific technical inputs to promote transparency and accountability in different elements of a national REDD+ strategy, such as in the design and operation of national registries, national REDD+ funds and benefit distribution systems. To this end the UN-REDD Programme provides:

- Funding, policy and technical support;
- Knowledge dissemination through publications and workshops;
- Facilitation of in-country conversations between, for example, anti corruption agencies and national REDD+ teams;
- Coordination and linkages with UNDP's support to the implementation of UNCAC and of national anti-corruption strategies;
- Coordination and linkages to other relevant areas of UN-REDD Programme support, such as participatory governance assessments, engagement of stakeholders and in particular civil society and Indigenous Peoples, the right to Free, Prior and Informed Consent, national-level recourse mechanisms, legal preparedness, safeguards and safeguards information systems.


Ten ways to conduct illegal logging
Cattle ranching and soy production
Agricultural expansion by small-scale farmers
Logging with forged or re-used permits
Ignore laws and regulations
Logging in conflict zones
Obtaining logging permits illegally
Logging without regular concession
Logging in excess of permit or concession quotas
Unprotected area
Logging concession
Bribing local officers and police
Use of violence to access and clear cut the area
Establishing, expanding and cutting beyond plantation
Widening road corridors, mining or other felling without a permit
Logging in protected areas
Biofuel plantation
Protected area
Report and declare false figures
Source: Personal communication with Christian Nellemann, UNEP/GRID-Arendal

TEN WAYS TO CONDUCT ILLEGAL LOGGING

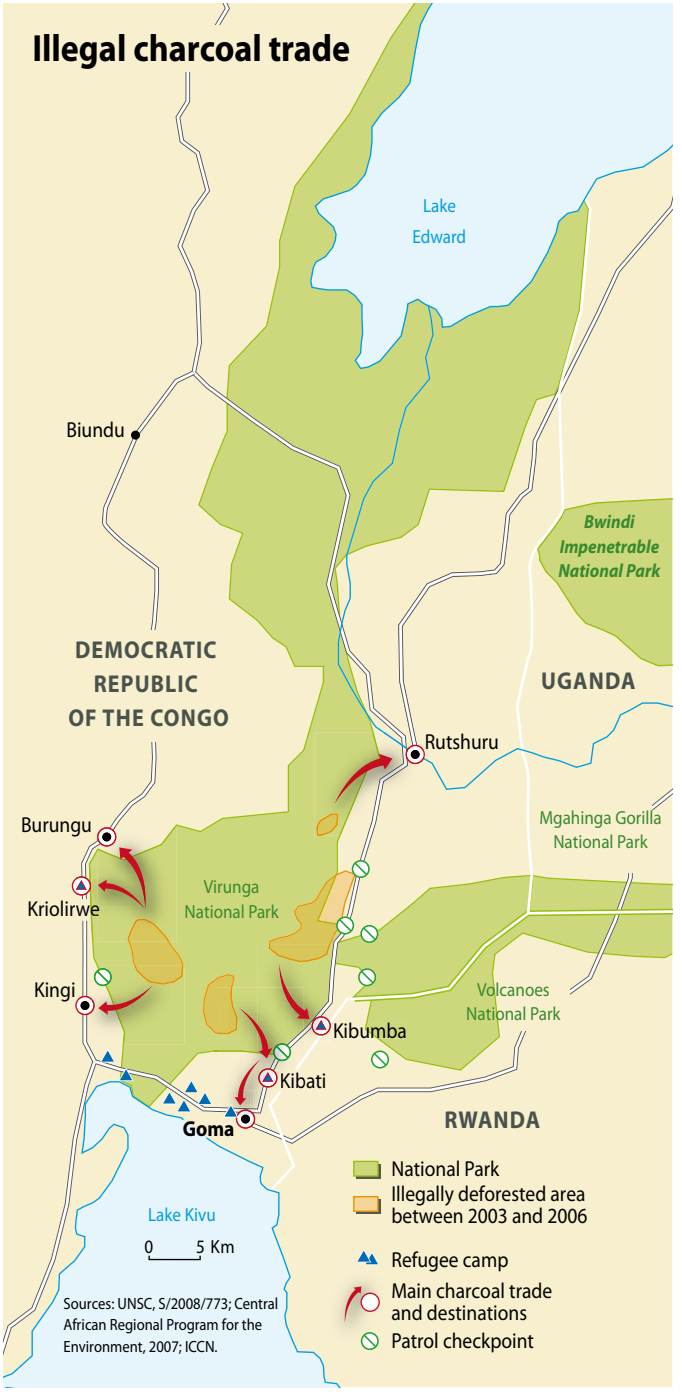
#1 LOGGING IN PROTECTED AREAS

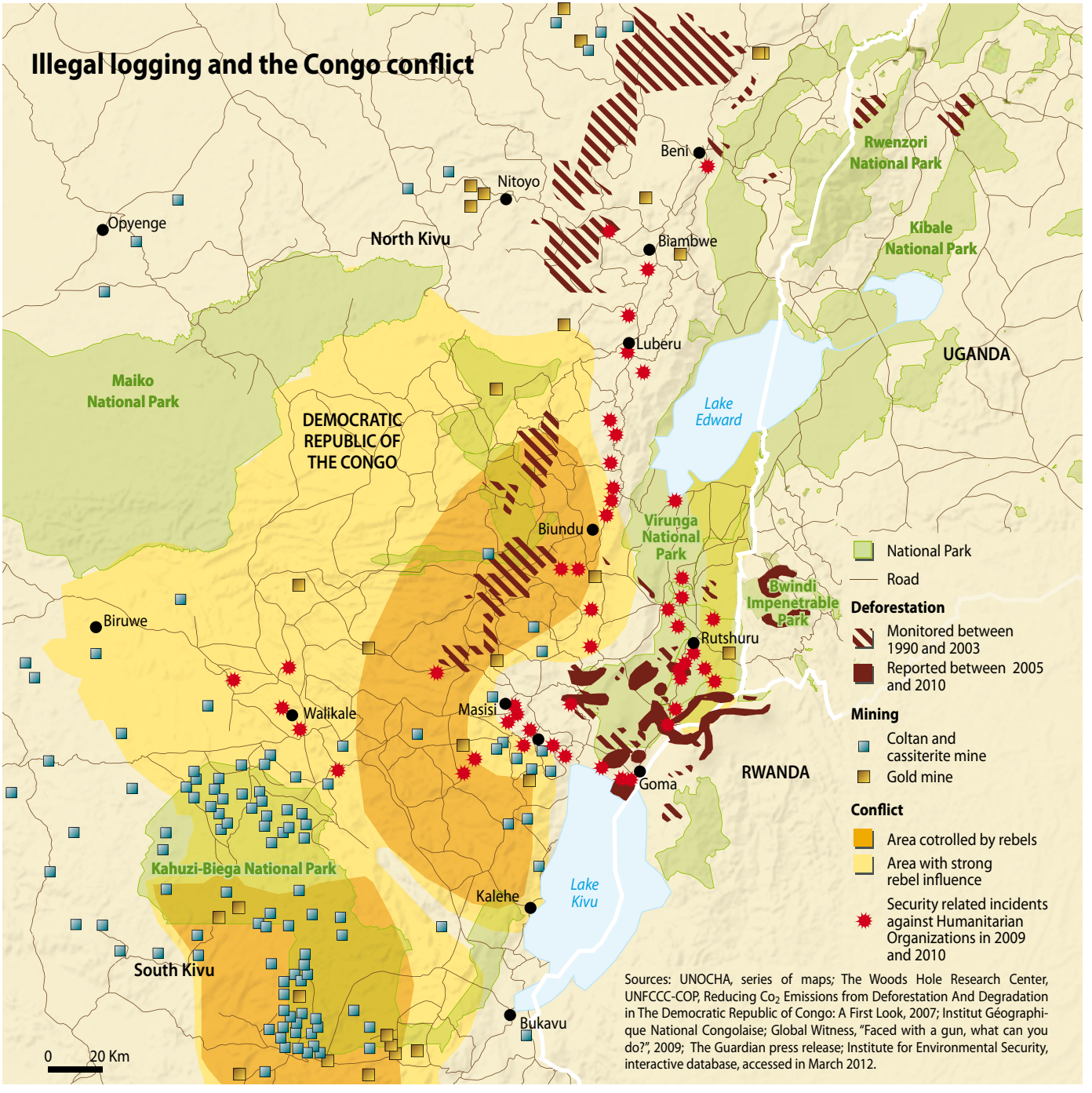
Many protected areas include an abundance of rare wood species in high demand for panels, floors and furniture. They may also hold some of the last remaining concentrations of high-density wood for charcoal.

A 2007 UNEP-UNESCO report documented illegal logging in 37 of 41 protected areas in Indonesia, including large-scale deforestation of a UNESCO World Heritage site and an endangered orangutan habitat (UNEP-UNESCO 2007). Loggers, with armed guards, moved into parks and cut down the forests with unarmed rangers facing lethal risk, bribes or simply lack of resources to enforce the park boundaries (UNEP-UNESCO 2007).

Other examples include cutting wood for charcoal in endangered mountain gorilla habitat in Eastern Democratic Republic of the Congo (DRC), where militias drive villagers into refugee camps, then profit from cutting and producing charcoal in the Virungas national parks and selling the high-demand charcoal to the camps (UNEP-INTERPOL 2010). Rangers in Virungas have been effective in protecting the gorilla population and saving it from extinction, and in implementing vehicle checkpoints and destroying kilns for charcoal production, but at a great costs and high risks. More than 200 rangers have been killed in the last decade defending the park boundaries against a charcoal trade estimated at over US$28 million annually, and another US$4 million on road taxes on charcoal alone (UNEP-INTERPOL 2010).

Other examples include driving out and killing indigenous peoples in reserves in the Amazon, Greater Congo Basin and Southeast Asia, where outspoken leaders have been assassinated.





Sources: UNOCHA, series of maps; The Woods Hole Research Center, UNFCCC-COP, Reducing Co_2 Emissions from Deforestation And Degradation in The Democratic Republic of Congo: A First Look, 2007; Institut Géographique National Congolaise; Global Witness, "Faced with a gun, what can you do?", 2009; The Guardian press release; Institute for Environmental Security, interactive database, accessed in March 2012.

#2 LOGGING WITHOUT PERMITS IN UNPROTECTED AREAS

In many remote regions, or where corruption is widespread, illegal logging is done by armed guards or "security personnel", who drive local villagers away from the area. From the 1960s to early 2000s, this was one of the most common methods of logging illegally, as there was little, public regulation or enforcement in rural areas. Local mayors, officials and police officers were threatened or more often bribed to turn a blind eye (Amacher *et al.* 2012).

In many cases, this continues to happen in very remote areas or in conflict zones, where companies or militants hold local power (UNEP-UNESCO 2007; UNEP-INTERPOL 2009).

#3 ILLEGAL LOGGING IN CONFLICT ZONES

Illegal logging directly fuels many conflicts as timber is a resource available for conflict profiteers or to finance arms sales. This practice is carried out on the Laos-Cambodian border. Awareness campaigns by Global Witness helped close down border points in the DRC, Southern Sudan, Colombia, and Aceh, Indonesia, where the military was also involved in many illegal logging operations. Without public order, militant, guerillas or military units impose taxes on logging companies or charcoal producers, issue false export permits and control border points. They frequently demand removal of all vehicle check points and public patrolling of resource-rich areas as part of peace conditions following new land claims and offensives. On occasion, conflicting groups agree on non-combat zones to ensure mutual profit from extraction of natural resources, such as happened on the Laos-Vietnam-Cambodian border in recent decades, and in North and South Kivu, DRC.

Laundering of illegal timber undermines forestry reform in Cambodia

The timber trade is increasingly targeting rare luxury tree species which are protected under Cambodian law. In January and February 2004, armed groups operating in Kratie province of Cambodia have been illegally logging luxury tree species and exporting the timber to Vietnam through border passes in the Valoeu region. These activities have been facilitated by documents provided by the Ministry of Commerce and the Forest Administration, which purport to authorise a series of luxury timber exports, including a recent export of more than 1,000 m^3 of Kranhung wood, worth approximately $700,000. The operations allegedly involved former police chiefs in the region. To circumvent the logging ban, harvesting operations were disguised under a variety of illegal permits, to meet the demands of the illicit cross-border wood trade with Thailand, Vietnam and Laos.

Global Witness, Press release 20th February 2004

#4 LOGGING IN EXCESS OF PERMIT OR CONCESSION QUOTAS

One of the most common ways to conduct illegal logging is for a company to obtain a legal permit to harvest timber and simply exceed the legal volume or, as permits are normally issued for a geographic area, to cut beyond this area. This is quite easy, as permits may not include an accurate description and coordinates of the area to be cut, and there are few resources available to cross-check or monitor either the amount extracted or the area actually logged. Without a joint master map and with many concessionaires often operating in one region, it is difficult to monitor, trace or cross-check the areas logged. Accurate information on borders, concessions and operating companies is not available for cross-check on the ground, by air or remotely. Furthermore, as companies have a legal permit for part of what they cut, they can simply mix legal with illegal timber and thus launder the illegal logs on the spot.

One of the most common ways to conduct illegal logging is to obtain a legal permit and simply exceed the legal volume.

#5 LOGGING WITH FORGED OR RE-USED PERMITS

Another common scam is to forge a permit. In some places, permits may be hand-written, easily reproduced or have the dates changed. With very few resources for enforcement and many operators, an inspecting forestry officer or ranger would have to consult multiple offices and files in order to cross-check the authenticity of a permit. The officer may even be denied access to official records or have no means to access them by phone or in person over long distances and with limited funds. Bribery of officials is a further challenge. Furthermore, a company may simply copy many permits and, without accurate borders, it becomes very difficult to check. Finally, as operators may change, passing on or resale of permits is not uncommon. Thus, one company may log an area for a certain volume, then move on to the next, and sell the permit to a second party who will then extract a similar volume of timber from the original area on the same permit. These permit sales may also involve forgery of eco-certification.

Another common scam is to forge a permit.

#6 OBTAINING PERMITS THROUGH BRIBES

One of the most common ways to conduct illegal logging is to obtain a permit by bribing an official responsible for issuing permits. This can take place in three ways: a) by paying a standard commission – a fixed price for a permit paid directly to an official, for example US$ 25,000 for a permit to cut 17 km2 of forest; b) by paying a percentage of the value of goods extracted or the value of the permit. A common price in Indonesia, for example, is 10–40 per cent of the value of the deal, much lower than for obtaining a permit; or c) by paying high prices for other services or goods, such as housing, vehicles, gas or other.

For obtaining a logging permit, the most common form of bribery is a direct price. For local officers, a commission based on a percentage or price per truck or tonne transported is also common. Hence, the bribery may indeed be part of a well-organized scheme of incomes for everyone from local officers to officials high up in the bureaucracy.

Controlling bribery is difficult and is compounded by the fact that permit or concession areas are not always accurately delineated and detailed maps are not available. With several hundred logging companies active in one area, independent control is very difficult without standardized central filing systems. Indeed, a possible controlling body would not only have to control a high number of different permits from various offices, it would have to be cross-checked with re-issued permits, and verified in the field for exact areas of each operation and extracted volumes. This is further complicated by the fact that there may be several authorities and landowners or users involved and a decentralized government structure with unclear jurisdictions. Hence even if a case is followed through in an attempt to prosecute, there may be major challenges in proving intent and guilt. Surprisingly, some licensing schemes and trade agreements request drawing and marking of individual stumps, reflecting little understanding of the situation on the ground in these tropical regions and conflict zones (UNEP 2010).

#7 ESTABLISHING OR EXPANDING PLANTATIONS

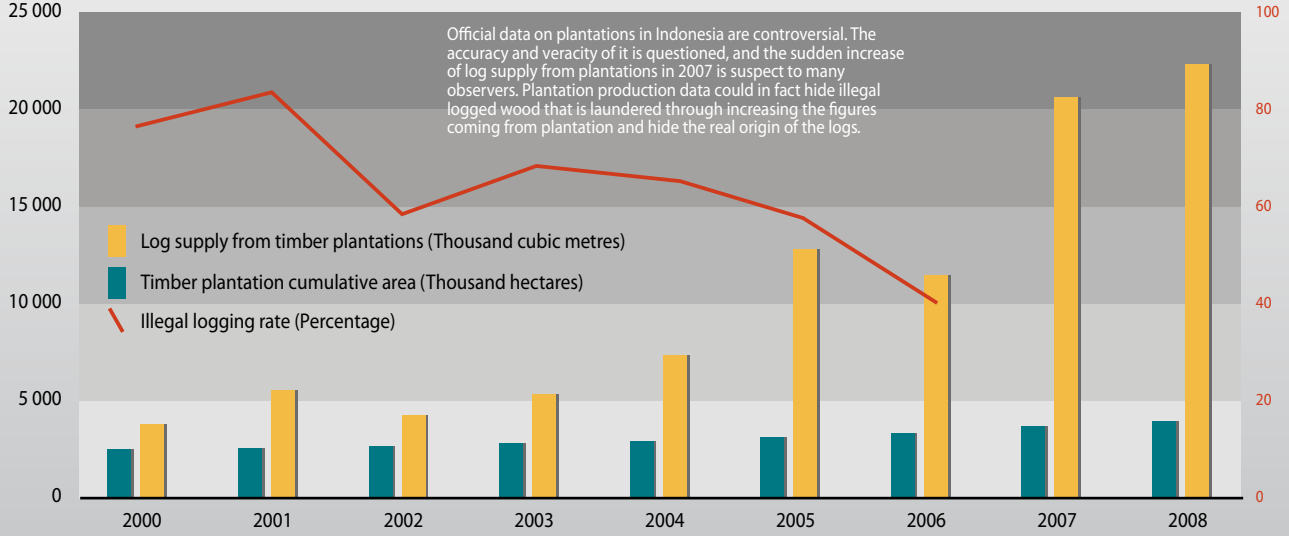
Much of the logging in Indonesia, takes place in association with establishment of palm oil or other plantations. As forest is cleared for plantations, it is a common practice to cut beyond these areas or get a permit for a larger area than initially planted. The profits from cutting the surrounding forests are used as income in the first years of the plantation before the first crop can be harvested. In many places, plantation permits are issued for operations but production is never started. The plantation is a cover for the actual purpose which is logging.

In many places, the plantation is a cover for the actual purpose which is logging.

#8 AGRICULTURAL EXPANSION BY SMALL-SCALE FARMERS

Some deforestation appears to be driven by impoverished small-scale farmers struggling for a living. This poses a major challenge as they consist of a diverse group with many individuals and presents a difficulty for both ethical and practical enforcement and especially prosecution. However, the reality is often different. In the Amazon, small-scale farmers may burn to clear forest but rarely have the capacity to clear large areas of pristine forest. Rather, larger companies, often in collaboration with or owned by large-scale ranchers, build logging roads into the forest financing the expanding roads systems with income from logging the roadways. As areas are partially cleared, the clear-cuts and secondary forest provide the opportunity for small-scale impoverished settlers to move in along road corridors, burn the residue and create small homesteads. As soils are quickly depleted or expanding ranches need grassland, small-scale farmers are pushed further into the forest and the ranchers take away the cleared land for cattle.

Plantation in Indonesia: a new frontier in black wood laundering?



Sources: UNODC-CIFOR, Lessons for REDD+ from measures to control illegal logging in Indonesia, 2011; Chatman House, Illegal Logging and Related Trade Indicators of the Global Response, 2010.

Soy expansion in the Brazilian Amazon frontier

A case study from Mato Grosso

Matupá
Villa Rica
Sao José do Xingu
Confresa
Canabrava do Norte
Sao Felix do Araguaia
Serra Nova Dourada
Bom Jesus do Araguaia
Querencia
Sinop
Sorriso
Gaucha do Norte
Canarana
Água Boa
Paranatinga
Tangará da Serra
Diamantino
Nobres
Nova Olímpia
Santo Antonio do Leste
Nova Xavantina
Chapada do Guimaraes
Barra do Bugres
Primavera do Leste
Cuiaba
Poxoréo
Barra do Garcas
Santo Antonio do Leveger
Rondonópolis

Biomes

- Forest
- Transition area
- *Cerrado* (savannah)
- *Pantanal* (swamp)

Infrastructure

- Interstate road
- National road

Agriculture

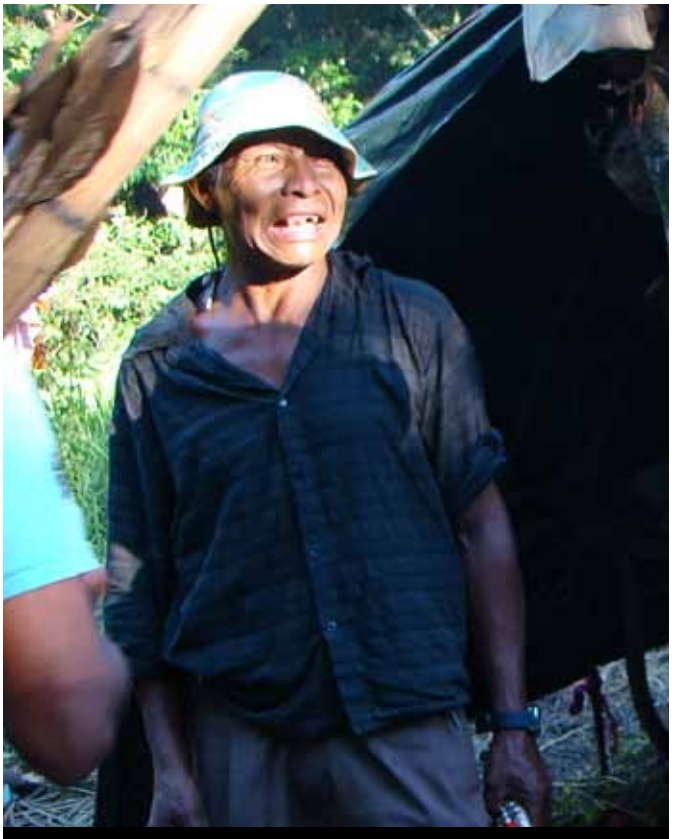
- Soy planted area
- Indigenous area (protected by the Federal Constitution of Brazil)

Sources: IBGE and Mongabay, online databases accessed in 2010.

#9 CATTLE RANCHING AND SOY PRODUCTION

Cattle ranching is a primary cause of deforestation in the Amazon, accounting for up to 70 per cent of the forest loss (UNEP/FAO/UNFF 2009). As outlined above, in most cases small-scale farmers, moving in along logging roads to burn secondary or cleared forest for crop production, are gradually pushed or bought-out from their land to provide new grazing land for cattle ranching (UNEP/FAO/UNFF 2009; Barsimantov and Navia 2012). There are many different methods to achieve this. However, cattle ranching remains a primary cause of permanent loss of forest as cleared forest does not return to its original state. With many small-scale farmers at the frontline, it is a major political challenge to try to stop impoverished farmers from seeking new land to feed their families. There are also political difficulties trying to counter the financial power and influence of the cattle ranchers.

On November 18th, 2011, Guarani leader Nísio Gomes was assassinated in front of fellow villagers. He was the leader of a group of Guarani Indians, 60 of whom returned to their ancestral land in the southern state of Mato Grosso do Sul, Brazil in early November, after being evicted by cattle ranchers. On February 10th, 2012, Brazilian judges ruled that 170 Guarani Indians could stay on the land currently occupied by a ranch.



Nísio Gomes, a Guarani shaman shot dead by gunmen.

Cattle ranching is a primary cause of deforestation in the Amazon, accounting for up to 70 per cent of the forest loss.

Illegal logging and political economic networks

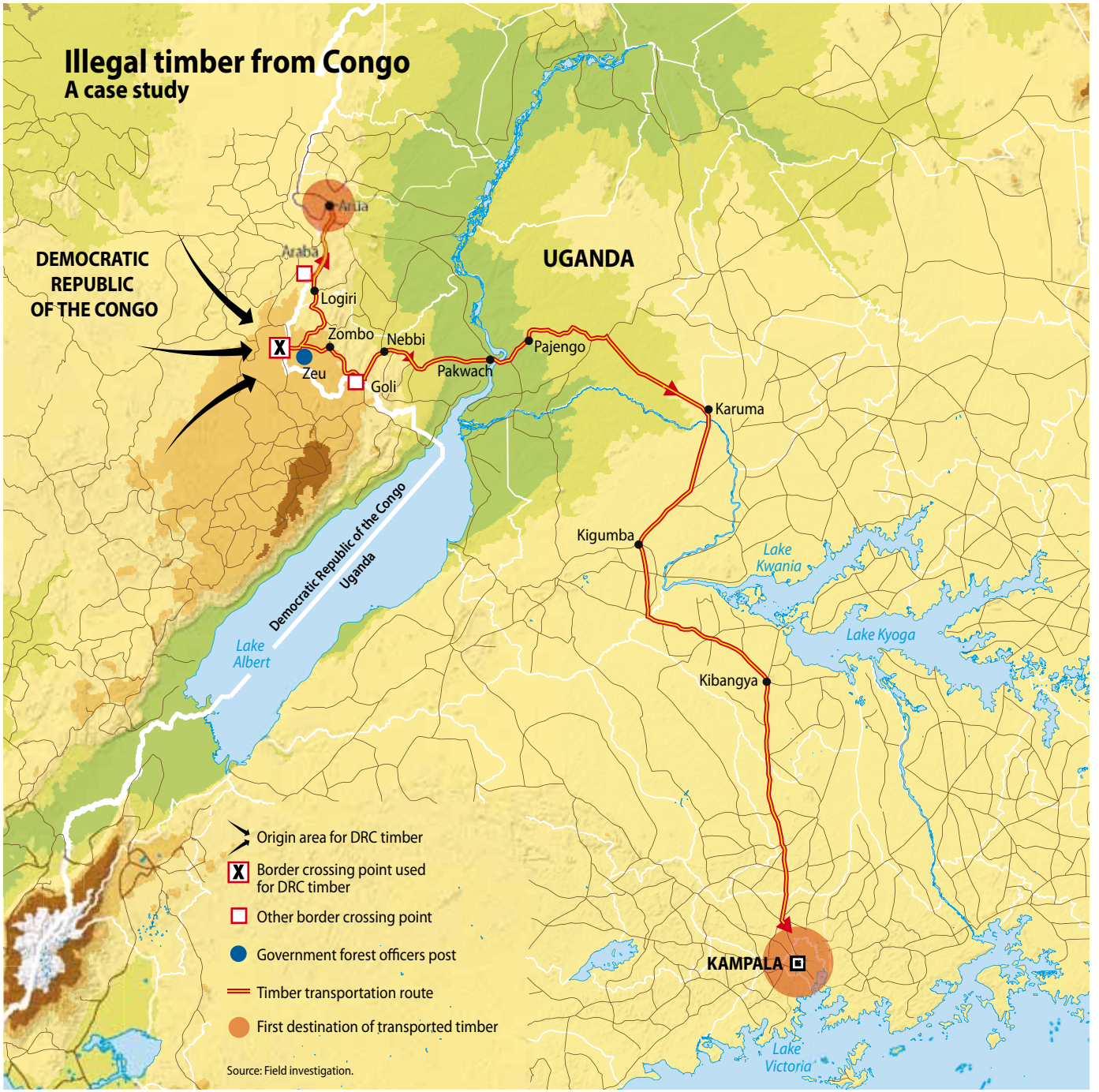
Political economic networks often provide forceful drivers for small-scale illegal logging and timber trade. Many of these networks bring together not only powerful actors from the private sector but also government officials, including the very officials holding the responsibility to enforce logging bans, harvest regulations, and restrictions on timber trade. The operations of these networks are described in recent research on small-scale illegal logging in Albania, Romania and Vietnam. The research demonstrates how artisanal loggers, small traders, wood processors and government officials find ways to circumvent national laws and forest regulations. It also reveals that the villagers living near affected forests, the media and wider society often react by calling for the application of national law and demand strict law enforcement.

Nevertheless, research shows that a narrow law enforcement approach may easily generate counter-productive results in the case of small-scale logging. Logging bans and tighter law enforcement may actually play into the hands of the actors driving illegal logging. The reason is that a narrow enforcement approach may strengthen the position of corrupt local officials by expanding their powers instead of reining in their practices. A mayor in Romania, for example, wielded his legal and extra-legal powers to circumvent a ban on logging in an adjacent national park in favour of his wife's company (Dorondel 2009). A district forest service in Albania looked away from illegal logging in return for bribes, even though it had stopped issuing logging quotas entirely (Stahl 2010). And forest rangers in Vietnam abused their enforcement powers to facilitate illegal timber trade, deriving personal profits from it (Sikor and To 2011). None of these local actors would terminate their illegal practices unless national law-makers find ways to strengthen their accountability to their constituents, as well as to national authorities.

#10 WIDENING ROAD CORRIDORS, MINING OR OTHER FELLING

Another very common method of illegal logging is to construct roads in protected areas or other areas for mining operations or other purposes. Forests are cut in wide corridors along the road, with the road often targeting high-valuable timber along its way. Such an incident was observed in 2008 in Sumatra, Indonesia, where objections from a critical local mayor concerned about tourism impacts and flood risks from the illegal logging resulted in a price being put on his head by the local timber mafia (UNEP 2011).

Another common method of illegal logging is to construct roads that often target high-valuable timber along its way.


Illegal timber from Congo
A case study
DEMOCRATIC REPUBLIC OF THE CONGO
UGANDA
Aru
Arua
Logiri
Zombo
Nebbi
Zeu
Goli
Pakwach
Pajengo
Karuma
Kigumba
Kibangya
KAMPALA
Lake Albert
Democratic Republic of the Congo
Uganda
Lake Kwania
Lake Kyoga
Lake Victoria
Origin area for DRC timber
Border crossing point used for DRC timber
Other border crossing point
Government forest officers post
Timber transportation route
First destination of transported timber
Source: Field investigation.

Across Borders – Transporting Congolese Timber to Uganda

A verified source "Tony" describes how he worked for two years, in logging and smuggling of Congolese timber from the Democratic Republic of Congo (DRC) and across the border into northern Uganda.

Organized out of Arua in the northwestern part of Uganda in Nebbi district, they would liaise with an officer in the FARDC, The Congolese Army, who would personally escort them across the border into DRC with an empty truck. The border crossing was never a problem he explains, as "the officer would always get us ahead in the line so we never had to wait and never had to show any papers". Tony explains that the Congolese officer was also involved in the trade, had his own workers transporting timber to Uganda and selling it to a network of customers through the distributor, who hired Tony. This distributor would himself never cross the Congolese border, but also ran a store in Arua district, where the Congolese timber was sold. This business was clearly very lucrative as "most times the timber was not in the store because it was so popular".

The Congolese officer had his own workers transporting timber to Uganda and selling it to a network of customers.

During the logging operations, the loggers would live in camps in the bush. Getting the good will of the locals was important and before they began logging they would always consult the local chiefs. As there were never any Congolese officials involved in choosing timber, all they had to do was to give the chiefs some small compensation and they could pick the trees they wanted. In return for the compensation, the spiritual leaders of the village would perform rituals to ensure the good temper of the trees. If this was not done, one could easily run the risk of having to work in a forest where the trees were unwilling to be chopped down, and Tony gave a vivid example of one time where the village chiefs had not been paid and "one tree was bleeding blood, and would not stop" – a not uncommon example of abundance and fear of voo-doo and witch doctors in this region.

For a compensation, the spiritual leaders of the village would perform rituals to ensure the good temper of the trees.

After chopping down the trees, the logs would be processed on-site and made into thick planks by the use of a chainsaw before loaded onto the truck. On the question of what kind of trees they cut Tony was only able to identify African Mahogany – a vulnerable species according to the IUCN red list, but "there were other valuable trees as well, especially one with dark wood inside and very red cover outside". The timber would then be transported back to the border where – assisted by the Congolese army officer and a few men from the military – they would again cross the border paper-free into Uganda. Tony explained that if the truck was going straight to the shop in Arua district not far away from the border, then the lack of papers was not a problem. But "if the timber was going to Kampala, my relative would go to the government officers and they would give him a paper that said the timber was from Uganda". With these newly bought certificates guaranteeing domestic origin the timber could either be processed in Kampala or transported to Kenya and possibly even the coast where it could easily be shipped to any other country.

Tony's story is not unique, but provides an insight into the Congo basin timber business and how collusive corruption and instability is used to extract resources.

BOTTLENECKS IN THE BLACK WOOD TRADE

Illegal timber, originating from a broad range of companies and local sources, has to be aggregated and funnelled by road or river transport to a limited number of destinations domestically or for export, which creates a bottleneck in the illegal trade. Buyers require detailed information on the species, quality and origin of the timber in order to process it the best and most effective way.

However, illegal timber transport is radically different from the illegal drug trade, where all materials have to be smuggled, even domestically, for distribution or processing. Normally, trucks do not need a permit to transport logs domestically. Once the timber is loaded onto trucks, the traders are at no risk to transport the illegal timber, often mixed with legal, away from the crime scene to buyers and processors.

Transport of illegal logs provides one of the first bottlenecks in the black wood trade. The logs have to be transported along road corridors, across border check points, through harbours or small landings, on barges along rivers or by floating the timber down rivers (Ryzhova and Ioffe 2009; UNEP-INTERPOL 2011). Many of the rare species are high-density wood which means they cannot be transported on water. With a higher density than water, they would simply sink.

The wood has to be transported from the logging sites to nearby mills or distant points for processing, with transportation costs reducing the profits to both logging companies and the processing industry. Hence, the mills closest to the source often receive the largest proportion of illegal timber.

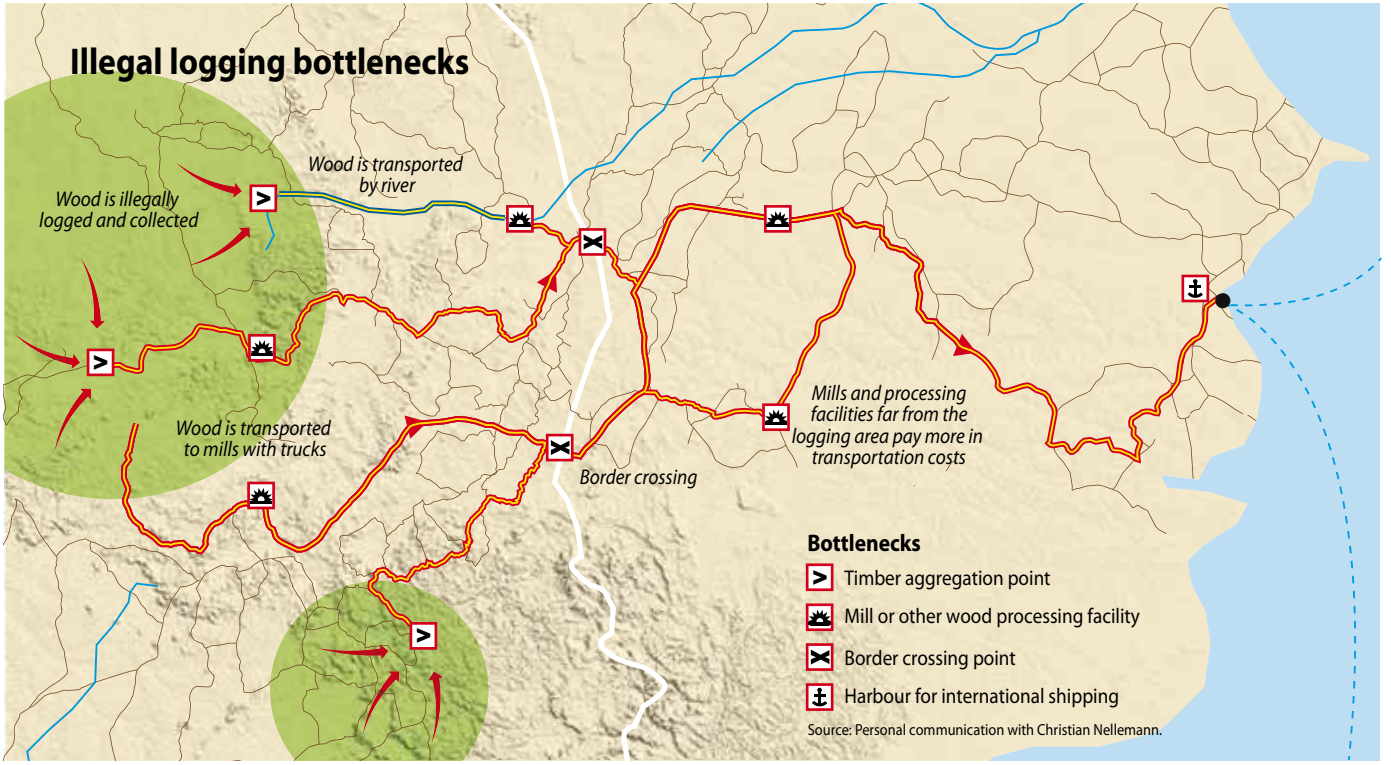
In the State of Pará, Brazil, efforts to issue road permits for timber exiting a region have been successful. Once a certain volume was reached, no more permits were issued.

On Dec 15th, 2008, BBC reported that hackers working for illegal logging cartels hacked the government website in the Brazilian state of Pará to get access to logging or transport permits, to evade restrictions on permitted volumes. Hackers have helped logging firms in Brazil evade limits on tree felling, says a Greenpeace report. Greenpeace estimated that 1.7 million cubic metres of illegal timber may have been removed with the aid of the hackers.

Information released by Brazilian federal prosecutor Daniel Avelino, suggested hackers were working for 107 logging and charcoal companies. Mr Avelino sued the companies behind the mass hacking attack for two billion reals (near US$1.1 billion) corresponding to the estimated value of the timber processed through the illegal scheme. The Brazilian investigation commenced in April 2007 and some 30 ring leaders were arrested. Since then more than 200 people have faced charges for their involvement in the subversion of the logging system.

Controlling and limiting the road transport and intake to mills provides one of the primary opportunities for limiting the total amount of logging from regions with high rates of illegal logging. Introducing road or timber taxes also makes illegal timber less attractive from such areas. However, imposing such a tax would have to provide rewards, bounties or returns for local officers that are greater than the typical bribe paid per truck in order to be an effective incentive to enforce. Hence, identifying the level of tax or tariff to be imposed will depend upon the region, the rate of illegal logging, its value, and the bribes commonly paid in the region.

Controlling the bottlenecks, combined with road or transportation tariffs dependent upon rate of deforestation and criminal activity in the region would raise the cost of illegal timber to the same cost as legal timber. This would also increase the costs for mills processing illegal wood and impact their attractiveness on the stock markets for investors.



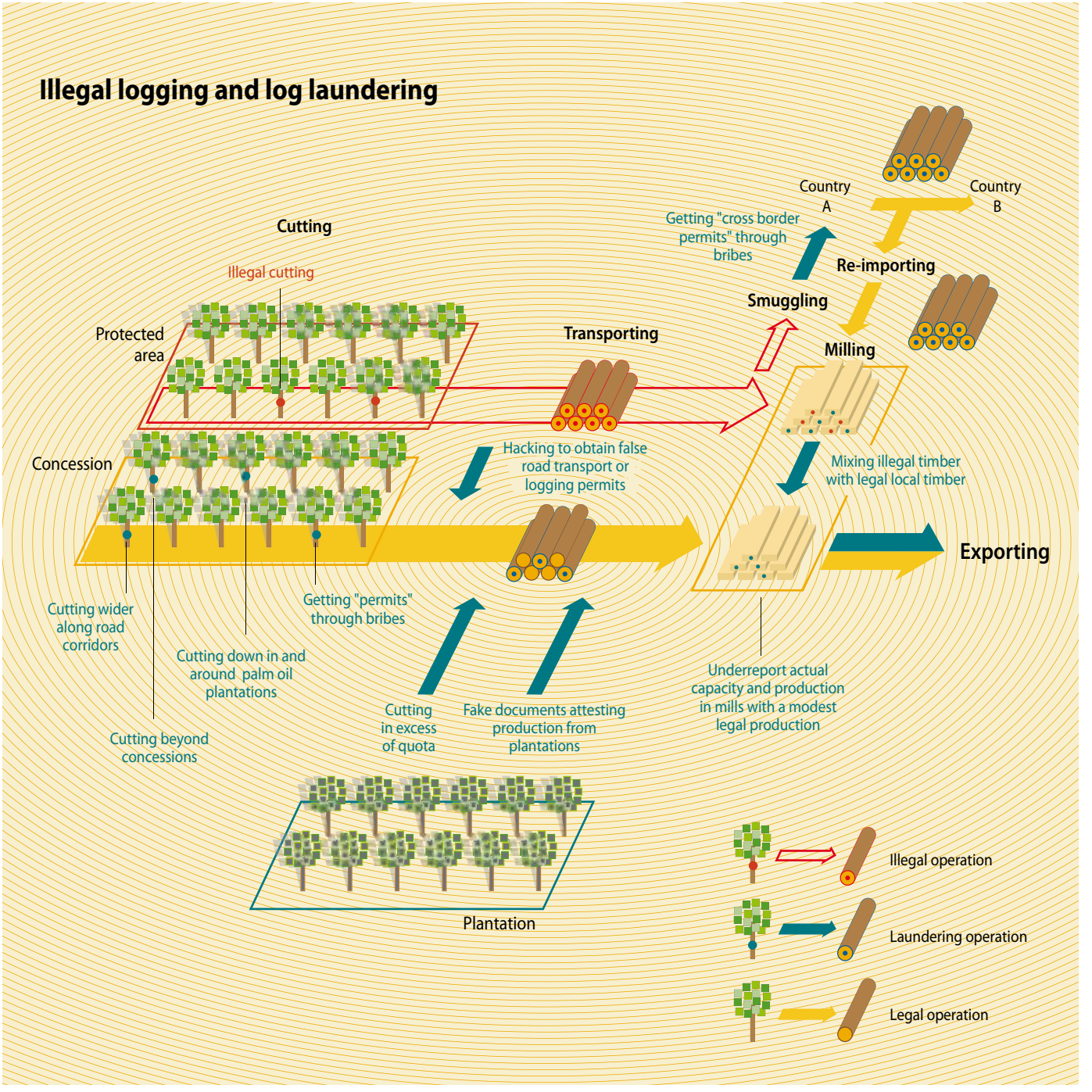
LAUNDERING ILLEGAL LOGS AND WOOD PRODUCTS

A key element in illegal logging schemes is the laundering of the illegal timber and other wood products. This is the primary way that illegal logs are transported, processed and exported or manufactured, thereby bypassing the majority of certification schemes and efforts to avoid illegal imports.

The laundering of timber or wood products is also where government certification schemes or international agreements are often inadequate. Schemes such as the EU FLEGT Voluntary Partnership Agreements (VPAs) are important mechanisms for establishing joint intentions and collaboration to prevent imports of illegal timber. However, they are not primarily law enforcement initiatives to combat illegal logging or transnational crime and corruption, and face many challenges regarding the actual crime.

One of the greatest challenges in combating illegal logging is understanding how illegally logged, procured, processed or manufactured wood products are laundered and spread to markets in the US, the EU, China and Japan, which together receive over 80 per cent of the world's illegally logged wood. One common laundering scheme is to mix illegally logged logs with legal logs during the forestry operation, at a storage facility for transport, in processing mills, or through resale along with legal cuts. Another increasingly common method is to filter illegal logs through real or "artificial" plantations (existing only on paper) – thus selling illegal logs as products of the plantations.

Illegal logging and log laundering



TWENTY WAYS TO LAUNDER ILLEGALLY LOGGED WOOD

#1 Mixing illegally logged logs with legal logs by exceeding cutting quotas on-site. Here, a legal logging permit is obtained, and the logging operator simply exceeds the permitted quota or area assigned, and piles illegally cut logs with legal logs for road or water transport. Companies may further increase profits by over-invoicing transport, while under-reporting (under-invoicing) the volumes sold officially.

#2 Mixing illegal logs with legal logs by transporting illegal timber from an illegal cutting site to a legal forest operation.

#3 Using permits or logging concessions in one area to cut in a different area, using road transport to hide the origin. This can take place over long or short distances.

#4 Mixing illegally logged timber with legal logs at a sawmill or pulp mill, sometimes exceeding the official capacity of the mill. All wood products from the processor or manufacturer get the same "clean" origin statement.

#5 Under-reporting processed volumes in mills by overstating the percentage of wood extracted on average per cubic metres of logs processed or by understating the total capacity or volumes produced, or by laundering timber through a plantation with a smaller actual volume.

#6 Exporting illegal logs cross-border by bribes at border points from origin country A or by illegal roads, and exporting as "legally originating" from country B, bypassing licensing.

#7 Exporting logs illegally from origin country A to country B, then re-importing to a mill in country A as "legal" import from B.

#8 Controlling legal or illegal border points. This is common in conflict zones and remote areas.

#9 Exporting logs by road or ship, and then re-selling the entire shipment to a third country through open trade, thus changing the ownership and assumed origin of timber, often using original customs papers from the third country. This can be done many times so that a ship leaving Indonesia, for example, may trade logs multiple times on the market to arrive at a destination port in China as products owned by a Thai company. Many of these intermediate companies may be subsidiaries or temporary companies established for a single operation and later dissolved. Temporary companies are also used to conduct tax and VAT fraud, either by closing down firms before VAT is to be paid, or by utilizing the differences in VAT among countries to reduce payment. This scam has also been used to conduct fraud on carbon credits. As both ownership of logs or carbon credits are internet-based, billions of dollars have been stolen through fraud in this manner.

#10 Falsifying origin of logs or wood products in customs papers, or bribery of customs officers and forest officials. This also includes falsifying eco-certification.

In 2009 a Brazilian federal prosecutor, Bruno Valente Soares, conducted an investigation into charges that illegal timber from the state of Pará was being laundered as "eco-certified" wood, and subsequently exported to markets in the United States, Europe, and Asia. International buyers often pay an extra tariff or premium for eco-certified timber, while the alleged operations also involved forgery and fraud. The scheme allegedly involved up to 3,000 companies across Pará's timber sector.

#11 False declaration of tree species on customs papers, especially for endangered or rare species.

#12 Using existing export permits and certificates to export illegally logged timber originating from another part of the country.

#13 Multiple re-use of existing export permits and certificates for export in harbours. Only a fraction of traded volumes are actually checked by customs. A common smuggling scheme is simply to re-use the same permit once un-inspected cargo has left the harbour. This is one of the reasons that export-import amount on goods such logs may show great discrepancies.

#14 Using forged permits or permits obtained illegally through hacking of government sites or bribery.

#15 A limited group of "comptoirs" or sellers get official permits to export timber legally and get certified – often through bribes. They procure a certain amount of legal timber, and mix this with illegally cut timber. Any company buying timber abroad from these officially approved comptoirs is buying timber classified as legal export.

#16 Obtaining a legal permit for a plantation and cutting down existing forest. Many plantations – whether for bio-fuel or wood production – are established simply to cut down the existing trees. They sell logs in the first years, and then close the company or get new plantation permits for additional areas, often bordering on primary forest. These "plantations" become cover operations to disguise primary logging, logging nearby or, in some instances, far away.

#17 Obtaining a permit for plantation production of wood for mills and funnelling illegally logged timber through the non-productive plantation permit. As plantations have no restrictions on the volumes they can legally produce, large amounts of illegally logged can be laundered this way.

#18 Laundering illegally cut wood by mixing it with legally produced plantation products. In this instance, the plantations are active producers, but procure a

Laundering illegally logged wood through real or non-productive plantations

The number of companies registered as plantations has sky-rocketed in tropical deforestation regions in the recent years. And many of these operations are established with substantial government subsidies. In Indonesia, the amount of logs allegedly produced through plantations increased from an official 3.7 million cubic metres in 2000 to 22.3 million cubic metres in 2008 (Luttrel *et al.* 2011), although it is widely known that only a fraction of these plantations were actually established (Obidzinski and Dermawan 2011).

At the same time the number of illegal logging cases in Indonesian courts dropped from a high of 1714 in 2006 to only 107 in 2009 (Luttrell *et al.* 2011).

In 2011, UNODC quoted officials in Indonesia: "Some observers of Indonesia's timber plantation sector state that the number of plantation estates actually producing timber may be less than half of the officially quoted figures (Sugiharto 2007f). World Bank analysts in Jakarta are even more skeptical and suggest the area of productive HTI plantations may be no more than one-third of the officially quoted numbers (World Bank 2006).

The scheme also offers additional benefits for criminals: receipt of government subsidies, a legal permit to sell timber, an opportunity to launder, under-invoice and under-report volumes and over-invoice costs, hence an opportunity for extensive tax fraud.

One common laundering scheme is to mix illegally logged logs with legal logs during the forestry operation.

much larger share of illegal wood elsewhere, and sell it as part of their legal plantation production. This also allows for full inspection of the on-site plantation operation.

#19 Selling illegal timber as part of legal land clearing operations for palm oil or soy plantations or ranching establishments is a common laundering scheme.

Cutting beyond legal areas or volumes, or using this as a cover for logging operations provides profit from both clearing the land and later range production of beef.

#20 Cutting wide corridors along new roadways, thus mixing the illegally logged corridors with legally permitted cuts for road establishment.

Bribes to obtain logging permits, evade tax or launder illegal logging

The use of bribes and corruption is a primary challenge in combating illegal logging (Amacher *et al*. 2012). In the Bulungan, Malinau and Nunukan districts of Northeast Kalimantan, Indonesia, an investigation revealed that illegal loggers paid up to three bribes of US$ 25,000 each in 2000–01 to obtain a logging permit for areas of approximately 1766 hectares (Smith *et al*., 2007). In some years loggers paid only one bribe, but had to pay similar amounts for new permits, and sometimes additional payments for former permits. Furthermore, companies paid an average of only 28 per cent (a range of 0–88 per cent) of the real tax owed. An additional "royalty" of three dollars per cubic metre was paid to villagers. However, as timber contractors can specify the volumes themselves, they could easily evade some of this tax.

By paying fixed bribes for set areas and permits, royalties to village heads, and bribes to police and military in a set scheme, illegal loggers exported to mills in Sabah, Malaysia. Official imports in Sabah were 3.5 greater than the official exports to Sabah. However, the official Indonesian exports to Sabah from Kalimantan and the subsequent official Malaysian imports were only 3–10 per cent of the total estimated real volumes, suggesting 90–97 per cent was imported illegally or 3–33 times greater volumes than official records.

Indeed, the bribes paid were more costly than the possible official revenues from the logging. Hence, illegal loggers involved in a broad scheme of corruption could obtain illegal permits, bribe police, forestry officials and the military for transport, and bribe customs officials and finally under-report total volumes logged by up to 90 per cent to conduct tax fraud, illegal logging, smuggling and bribery – with little risk of getting caught.

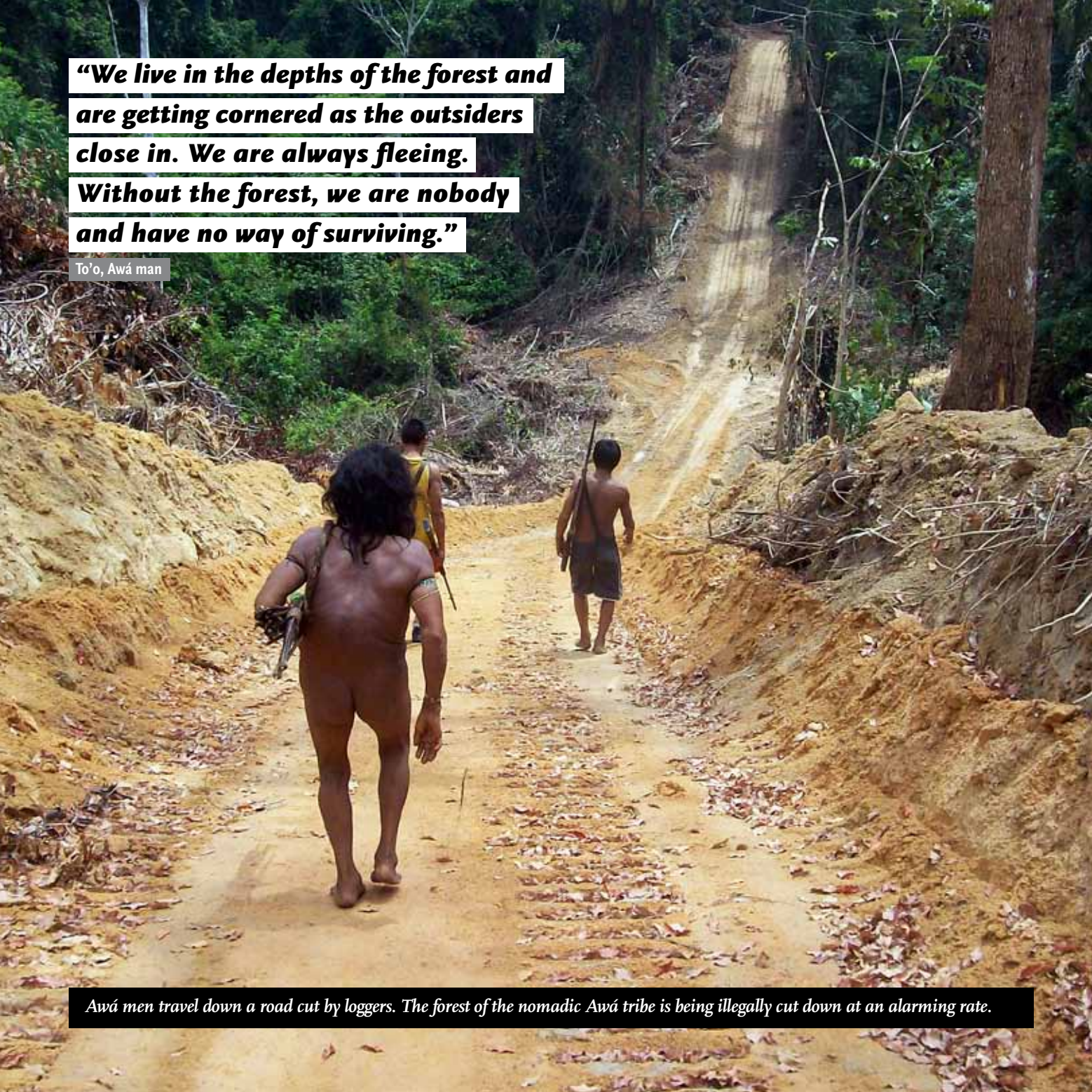
In many instances, illegal logging syndicates can also use a comptoir or middleman, who has an official export permit. They will then pay export fees on the timber – combining both legal and illegal – but pay very little tax from the actual logging through initial under-reporting. The comptoir may then pay full export tax and tax on revenues, but have secured large amounts of illegally logged cheap timber, thus making a profit while laundering the timber for "clean" export to the EU, China, Japan and the US.

Profits are made along the entire chain. With little risk, in a decentralized system, police and military have little opportunity or incentive (because of bribes) to intervene.

Awá men hunting in the forest. The tribe relies on the forest for their survival, but it is being rapidly deforested.

Hemokoma'á, a member of the Awá tribe, in front of illegally deforested land.

Karapiru, an Awá man who survived the massacre of his family by ranchers' gunmen. He lived alone in the forest for 10 years.



"We live in the depths of the forest and are getting cornered as the outsiders close in. We are always fleeing. Without the forest, we are nobody and have no way of surviving."

To'o, Awá man

Awá men travel down a road cut by loggers. The forest of the nomadic Awá tribe is being illegally cut down at an alarming rate.

EXPORT AND TRADE IN ILLEGAL LOGS

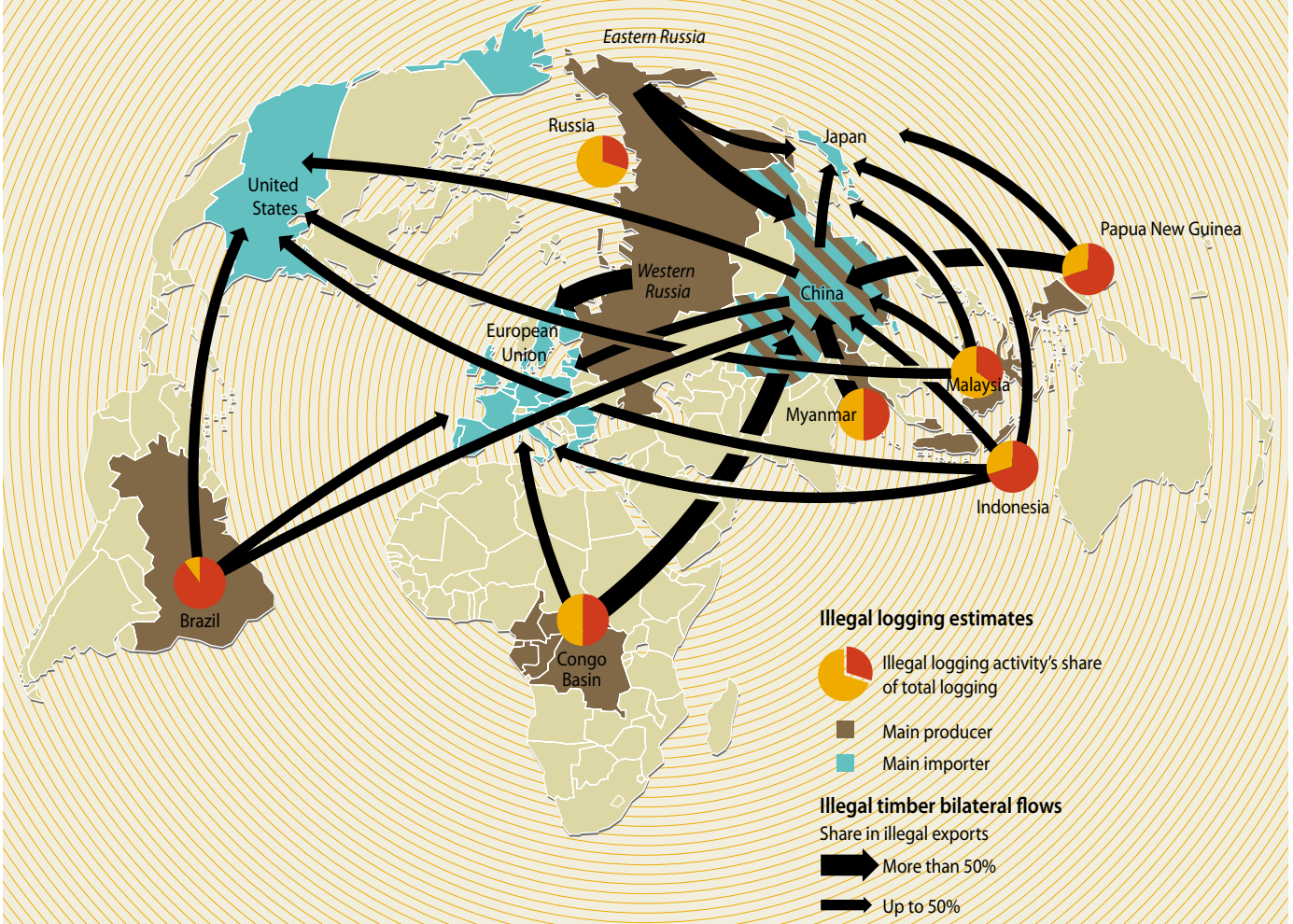
A key challenge in combating the global illegal wood trade is the fact that illegal wood crosses borders as a laundered "legal" product. Transnational crime, or the transnational trade in laundered products, provides a particular law enforcement challenge as national law enforcement has no international jurisdiction unless through specific operations or special agreements.

Furthermore, domestic law enforcement efforts in a region or locality may simply result in companies closing down local operations and increasing illegal logging elsewhere in the country or abroad. Crack-downs on illegal logging in Indonesia in the mid-2000s resulted in increased logging in other parts of the country, a shift towards more advanced laundering and cover operations, and an increase in demand of timber products from other countries, such as the Central Africa region. Indeed, Chinese companies increased imports of timber from the greater Congo Basin and Central African region substantially during the 2000s (UNEP-INTERPOL 2011; Hiemstra van der Horst 2011).

China is probably the largest importer of wood products with illegal origin. Other primary importers of illegal logs or wood products are Japan, the EU and the US.

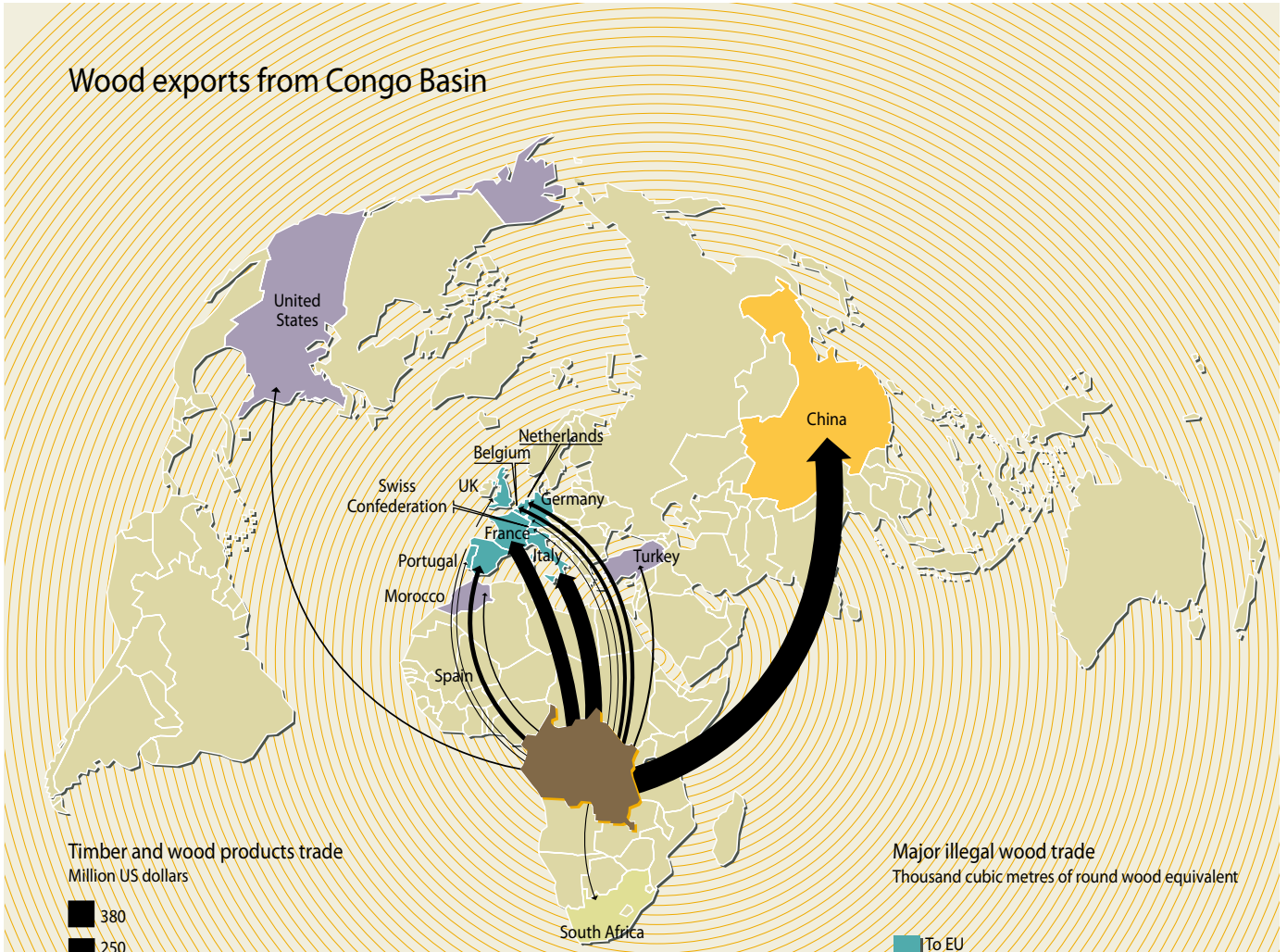
Black wood dependency

Main bilateral flows of illegal timber



Sources: WWF-Australia; Globaltimber.co.uk, Estimates of the percentage of "Illegal Timber" in the imports of wood-based products from selected countries, 2007.

Wood exports from Congo Basin



Timber and wood products trade

Million US dollars

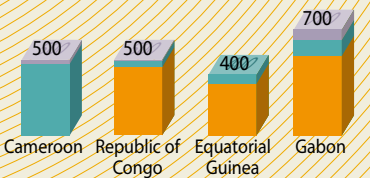
- 380
- 250
- 65
- 10

Congo Basin countries

Major illegal wood trade

Thousand cubic metres of round wood equivalent

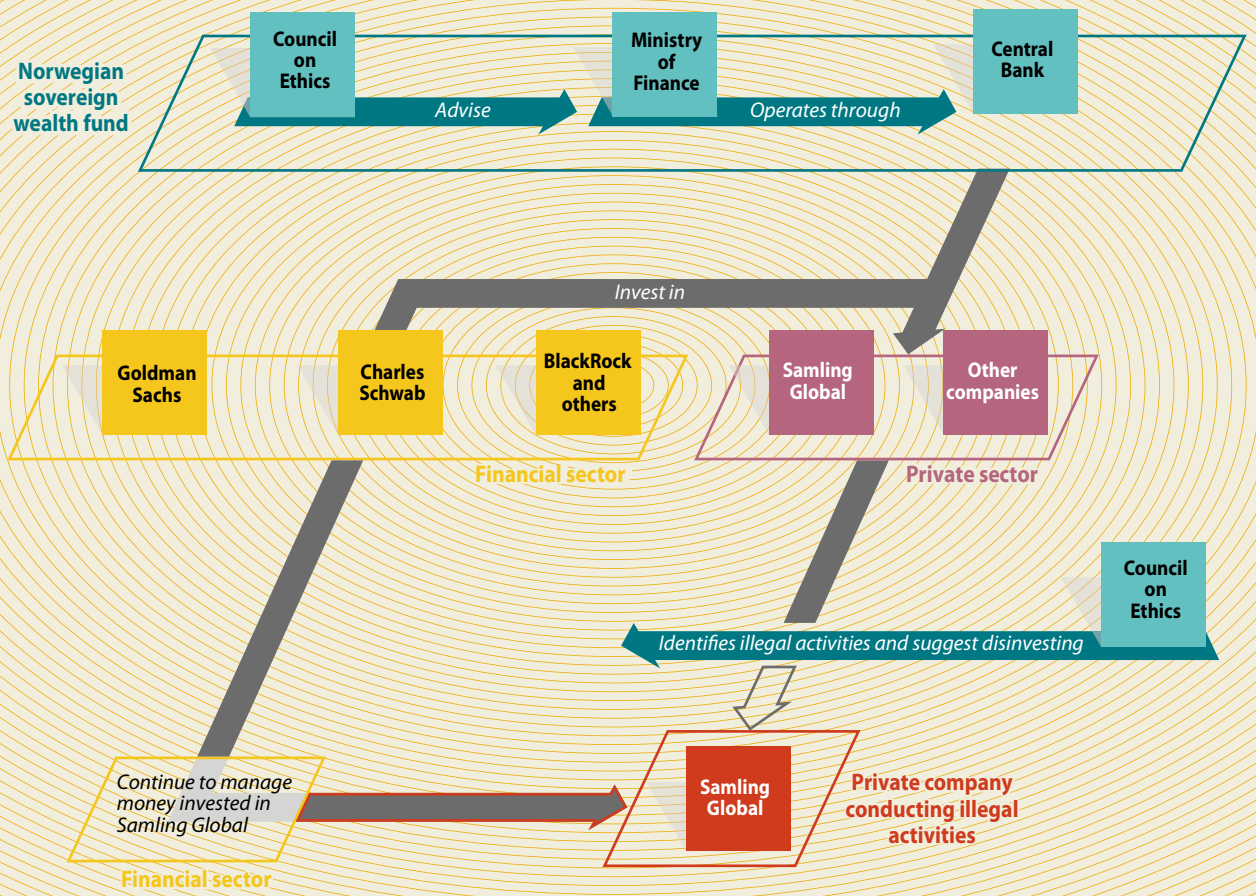
- To EU
- To China
- To other markets



Sources: International Trade Centre database, accessed 02.03.2010; Estimates of the percentage of "Illegal Timber" in the imports of wood-based products from selected countries, Global Timber, 2007; Ruiz Perez, M., A multi-country characterization of timber companies, Forest Ecology and Management, 2005.

By-passing flow of investment to illegal logging

A case study from the Norwegian sovereign wealth fund



Source: Personal communication with Keith Finlayson.

FINANCING ILLEGAL LOGGING AND PROFIT LAUNDERING

This chapter uses an example of a mainstream investment fund – a Norwegian sovereign wealth fund – to illustrate a type of governance mechanism employed in an attempt to limit investment in companies involved in illegal logging (or other breaches of environmental and social norms). The system is critiqued and an outline provided on how it could be improved.

THE NORWEGIAN SOVEREIGN WEALTH FUND

The Norwegian example is instructive because it illustrates an approach used by a many funds that are mandated to consider environmental, social and governance factors in allocating investment. It is also important since the Norwegian fund is one of the largest in the world, with more than US$550bn of assets under management, and it recently excluded a company, Samling Global, from its portfolio due to suspected complicity in illegal logging activities.

There are three relevant institutional elements in the Norwegian system. First, there is the country's Ministry of Finance (MoF) which has overall responsibility for the fund. It takes advice from a second, quasi-independent body called the "Council on Ethics" (CoE). The third is an arm of the Norwegian Central Bank that is tasked with the actual financial management of the Fund.

After a monitoring and investigative process, the CoE can recommend to the MoF that a company be excluded from the fund. The MoF will then usually consult with the Central Bank – and possibly other parties – before making a determination. If the final decision is for a company to be excluded, the Central Bank has a few weeks in which to sell out of its position before a public announcement is made.

When exclusions are announced, they sometime facilitate a wider awareness of an ethical issue. For example in 2008 Rio Tinto – a "blue chip" mining company – was excluded on the basis of the company's association with the controversial Grasberg gold mining venture in the Indonesian province of Papua (Norwegian government, 2008). The Fund sold off around US$1 billion in Rio Tinto shares and bonds and extensive medic coverage was generated.

However, beyond the public relations dimension, there are a number of problems with the exclusion system.

First, the burden of proof required for a determination of "severe environmental damage" (Norwegian government, 2010a) is quite high and it is a challenging task for a small and modestly funded secretariat like the CoE – especially when viewed in the context of monitoring and investigating the many thousands of companies that make up the diversified portfolio of the fund. Arguably the fund manager, the Central Bank, has a greater capacity to identify and investigate potential breaches of the fund's guidelines. For example, they can utilize their own investment managers who are in regular contact with company boards and management. However in reality the incentives are not in place to motivate their managers to investigate company malpractice if this is likely to reduce the profitability of the fund (and by implication, their own personal compensation).

Secondly, when companies are excluded, there is little evidence that the market takes any notice. For example, there seems to be no attributable change in the financial returns on company shares after an exclusion has been announced, compared to before the announcement (Beck and Fedora, 2008).

Furthermore, exclusion from the fund does not completely, or, arguably, even significantly, block the flow of the fund's money into those companies. For example, in 2010 Samling Global was excluded for suspected involvement in illegal logging in Sarawak (a part of Malaysia) and other areas (Norwegian Government, 2010b; 2012; Environmental Investigation Agency & Rainforest Foundation Norway. 2011). However the Norwegian fund invests heavily in the finance sector, and holds significant stakes in Goldman Sachs, Charles Schwab, BlackRock and other companies that continue to manage money invested in Samling Global. In fact the financial mechanics are such that Norwegian money is automatically redirected into those parts of the portfolio that are still exposed to Samling Global, and other profitable, but excluded, companies.

ATTEMPTS AT FIXING THE SYSTEM

The suspicion is that, beyond attracting a certain amount of media attention, the exclusion system is largely ineffective. Many companies that probably should be excluded are simply overlooked. And those that are excluded seem to be able to access investment capital from other sources at no penalty, or even from the very funds from which they are excluded, albeit one or two steps removed from direct financial management.

Various tweaks to the system have been proposed, but they are mostly organisational in nature and attempt to close the gaps by promoting closer liaison between different institutional elements (for example greater integration between the CoE and the Central Bank). These ultimately come to very little, primarily because the different parts of the system speak fundamentally different languages. While the Norwegian CoE may have deep deliberations on the ethics of a case, these are never translated into core financial incentives that drive the everyday management of an investment fund.

SENDING AN ETHICAL SIGNAL THROUGH PRICE

Illegal logging belongs in a category of undesirable activities and factors that economists call "externalities". The term refers to the true costs of the activities being external to the market, and not reflected in the prices of goods and services. Investors are likely to be attracted by the higher returns (due to lower costs) from companies involved in these activities.

The way to deal with externalities is to bring them into the market by explicitly setting a price on them (one example is placing a price on greenhouse gas emissions either by a tax or an emissions trading scheme). Once priced into the market system, information is conveyed through to investors in terms they can understand. There are multiple points in the illegal logging supply chain where it may be possible to impose the real costs of the activity – some easier to implement than others.

For example the cost could be imposed in the country of origin, directly on the companies involved in the logging. In practical terms this could be accomplished by enacting and enforcing domestic law, prosecuting offending companies and imposing economically meaningful fines. However the burden of proof in the core legal sense is often very high and the level of any fines often do not reflect the profits that can be earned by continuing to break the law.

An alternative might be to impose a cost when the timber is imported into its destination markets. For example when timber or timber products are loaded or unloaded from a ship they could be surveyed using genetic or isotopic fingerprinting techniques to estimate the proportion that comes from illegal (or even just unsustainable) logging (Johnson and Laestadius, 2011; Hermanson and Wiedenhoft, 2011; Cabral *et al.*, 2012; Hoeltken *et al.*, 2012). A scaled "tax" or "tariff" could then be applied to the importer. The imposition of the cost could be designed to follow from the results of an accepted and impartially applied measurement protocol. However passing legislation to apply import tariffs is tricky at the best of times, and may very well come into conflict with the principles of global free trade agreements. Such an approach is not a trivial endeavor.

However there is another option and that is to apply the cost back onto the investor, with their managers sitting in Oslo, Singapore, Hong Kong or New York. Using the Norwegian example again, and changing the institutional arrangements: Instead of simply recommending companies for exclusion, the CoE (or other independent agency) could assign a risk rating to companies that are suspected to be involved in illegal logging. This would be based on a standard protocol, using a range of methods, including periodic audits of certification scheme integrity, genetic or isotope fingerprinting surveys (Eurlings *et al.*,

2010; Kagawa and Leavitt, 2010; Lowe *et al.*, 2010; Tnah *et al.*, 2010a,b), classification of operational region based on degree of illegal activity, and perhaps augmented by satellite imagery monitoring (Broich *et al.*, 2011a,b). (A financial analogy would the work of the rating agencies such as Moody's and Standard & Poor's that provide credit ratings for companies and countries.)

The financial manager, the Central Bank, would then be directed to calculate the return on the fund's portfolio by discounting company returns using the risk factor. A similar discounting factor could be applied to returns earned from investments in companies like BlackRock, who in turn manage investments in companies the CoE define as risky. (The information on how much exposure BlackRock *et al.* have to companies like Samling Global is readily available. Even if it weren't, a major investor like the Norwegians could seek, via a shareholder resolution or otherwise, to have their companies make the information available.)

This approach requires no major legislation or international negotiation. In Norway it could be mandated by the MoF, possibly even referencing an international illegal logging (ILL) risk rating that could be developed under the INTERPOL-UNEP LEAF programme. That is not to say that it would be a popular move, for a key element would be to link the compensation of the fund managers in the Central Bank to the risk adjusted returns.

However if this was implemented then ethics would really be communicated in a language the financial system understands.

COMBATING ILLEGAL LOGGING

Most international initiatives to counter illegal logging are designed to reduce illegal activities through promotion of voluntary trade agreements or to promote sustainable practices through premiums for certified timber. These do not combat illegal logging as a crime involving laundering, extortion, bribery, and fraud.

Certification schemes, such as the FSC are primarily effective in North America and the EU. Many other initiatives are designed to promote legal trade with market incentives. Some schemes, such as the EU FLEGT VPAs are important mechanisms for establishing collaboration and joint intentions to avoid imports of illegal timber. However, they are not primarily law enforcement initiatives to combat illegal logging, transnational crime and corruption. (Seymour and Forwand 2011).

Existing schemes have had some effect in certain regions, but are primarily structures to ensure partnership and stakeholder participation in sustainable trade. This requires the involvement of the entire enforcement chain – customs, police and the justice system – as is being modeled at the international level through ICCWC – the International Consortium on Combatting Wildlife Crime. They are no substitute for law enforcement operations that investigate, secure evidence, apprehend, prosecute, and ultimately convict suspects involved in illegal logging, forgery, tax fraud and organized transnational crime.

Best use must also be made of existing global conventions, and in particular CITES, which is being increasingly used by States to ensure that international trade in timer listed species is legal, sustainable and traceable.

However the success of both voluntary trade agreements to reduce illegal logging and international and domestic law enforcement efforts depend on mutual success. As long as the profits in illegal logging remain high and the risks of getting caught are very low, there is little incentive to abandon illegal practices.

As long as illegal wood products are easily laundered, promotion of sustainable trade will have limited effects, especially when the probability of getting caught is minimal, and investors provide substantial capital to companies that continue illegal practices. Effective law enforcement must reduce the profits from illegal logging, substantially increase the risk for criminals involved and restrict the source of investment in any network processing or trading significant amounts of illegal timber.

However, the profit maximization behaviour of many criminals involved in illegal logging and illegal trade of wood products suggest that criminals will make simple evaluations based upon the possible profit obtainable and the risk involved. If profits are high and risks are low, the incentive for behavioural change remains low (Dieudonne and Kozak 2010; Amacher *et al.* 2012).

The three most important law enforcement efforts would be to:

1. Reduce profits in illegal logging
2. Increase the probability of apprehending and convicting criminals at all levels involved including international networks
3. Reduce the attractiveness of investing in any part of production involving high proportions of wood with illegal origin.

As described in the chapter under logging operations, it is clear that hundreds of companies can be involved in covering up illegal logging operations. As master plans and central overviews of the boundaries of concessions and actual compliance are virtually non-existent in tropical countries, it becomes extremely difficult to restrain these operations locally. The exception is combating illegal logging in protected areas where clear boundaries can be effectively enforced. Experiences from national parks in Africa, including the Virungas in DRC, and the Indonesian Special Responsive Police Forest Task Force (SPORC) units, provide examples of how enforce-

The EU FLEGT Voluntary Partnership Agreements (VPAs)

To reduce importation of illegally logged timber to the EU, the FLEGT (Forest Law Enforcement, Governance and Trade) Action Plan was developed.

A central element of the EU's strategy to combat illegal logging are trade accords with timber exporting countries, known as Voluntary Partnership Agreements, to ensure legal timber trade and support good forest governance in the partner countries. As a second element, the EU created legislation to ban illegally-produced wood products from the EU market, known as the EU Timber Regulation.

The first VPA to be formally concluded was with Ghana. Republic of Congo and Cameroon are in the ratification process. Negotiations are ongoing with Liberia, Gabon, Democratic Republic of Congo, Central African Republic, Malaysia, Indonesia, and Vietnam.

The EU FLEGT Action Plan and VPAs provide a number of measures to exclude illegal timber from markets, to improve the supply of legal timber and to increase the demand for responsible wood products. Indeed, the VPA with the Republic of Congo includes 255 criteria on logging and timber tracking for ensuring the legal status of a log imported to the EU, including suggestions of identification of logging sites and stumps and recording on 1:25,000 and 1:50,000 scale maps – that are generally not available.

The FLEGT action plan has been widely deemed as successful in bringing stakeholders together and setting common goals (Beeko and Arts 2010), however, it is voluntary trade program, not a law enforcement program to combat illegal logging, and falls short in its ability to address illegal activity in its current form. Most of the criteria are easily bypassed through the corruption and laundering schemes described in this report. As of March 2012, no FLEGT licensed timber had yet been imported to the EU.

However, the programme could provide, through the stakeholder involvement and network established, an excellent platform for reducing illegal logging and imports to the EU if combined with an international law enforcement initiative, working with both EUROPOL and INTERPOL. Indeed, given the role of international cartels, who can circumvent the VPA system through transit countries or laundering (Lovric *et al.* 2011) broad collaboration is warranted.

ment in protected areas could be strengthened (UNEP 2007; 2011; Navarrate *et al.* 2011).

To reduce the profits from illegal logging, the cost of illegal logs for the mills, comptoirs or international buyers must be higher than legal logs. This price must include the wood price and transportation costs if a mill must purchase legal logs from another part of the country, with a risk of seasonal delays and transportation costs.

In Indonesia, the cost of having one large logging concessionaire deliver timber to a mill has been estimated at US$ 85 per cubic metre (including bribes of ca. 20 per cent), a small concessionaire US$ 46 per cubic metre, but the cost of illegally procured logs US$ 5 per cubic metre at the road and US$ 32 directly at the mill (URS , 2002; Tacconi, 2008)

Perhaps the most effective system is one practiced in parts of Brazil, where the quantity of logs transported by road out of a logging region – whether legal or not – is restricted by permits and vehicle check points. Forgery of permits through hacking of government websites has been a challenge, along with bribing of officials at control points. However, it is more effective to restrict the total volume flow through bottlenecks to reduce overall logging in the region. By restraining the total permitted volume transported by road, the standing stock and forest area in a region can more easily be determined through satellite imagery.

Similar restraints could be used on all processing mills and manufacturers, export border points and harbours. This could be used to restrain the total volumes cut to an amount that can be replaced by natural forest increment to avoid deforestation, with annual

adjustments. In the long-term this would be more effective and have less dramatic effects than a short-term moratorium.

A national classification, following an international law enforcement procedure, could be developed for all regions in a country according to the degree of illegal logging mills and manufacturers within the region. It would be easier to monitor forest loss on a regional basis, because of the lack of clarity about where logging is not permitted or done through false permits.

Satellite images can be used to monitor regions or protected areas. For example, through the use of satellite imagery (ETM+), the total forest cover loss for Sumatra and Kalimantan from 2000–08 was projected at 5.39 million hectares, which represented 5.3 per cent of the land area and 9.2 per cent of the year 2000 forest cover of these two islands. At least 6.5 per cent of all mapped forest cover loss occurred in land zones prohibiting clearing. An additional 13.6 per cent of forest cover loss occurred where clearing is legally restricted, suggesting that about 20 per cent was obviously illegal (Broich *et al.*,2011a).

Road or truck tariffs could be imposed at all exits from a logging region and at entries to mills. Here, possible bribery at control points is a particular challenge. If the average bribe paid for a permit is an incentive for underpaid local officers – then the likelihood of bribery is high. However, if road tariffs involve an official share which goes to checkpoints, higher than the typical bribe paid, it would involve a direct incentive of legal commission of the local officers along with a government tax, and would also raise the price of illegally procured timber. A similar tariff could be imposed on any confiscation or identification of illegal log volumes filtered through plantations. Thus, any timber originating from regions with high proportions of illegal logging will receive higher tariffs or taxes and become more costly to purchase. This could also discourage investors from buying shares in companies or investing in funds involved in regions with high levels of illegal logging, and could encourage investments in other regions with less illegal logging.

The development of such a system would require substantial intelligence efforts and collaboration from national and local enforcement institutions. Even road tariffs would still make some illegal operations profitable as the timber is not taxed at the origin, and hence, is still competitive on the open market. Thus, combating laundering and tax fraud where logs are produced is essential to an effective reduction in the profitability of illegal logging.

The strength of the system would be the combined actions of restraining total flows, reducing profits from illegal trade, increasing support to local law enforcement, improving monitoring and reducing the attractiveness of investing in companies involved in illegal logging and trade of illegal origin wood. It would also make sustainably procured logs more attractive, while not raising the price on sustainable logs to create a competitive disadvantage on the domestic and international market.

The entire chain of crime must be addressed to increase the probability of apprehending and prosecuting criminals involved in logging, trading, processing, manufacturing, exporting or importing wood products with illegal origin. Transportation bottlenecks and laundering provide primary areas to intervene, while international trade also provides opportunities.

Currently, the FLEGT action plan and VPAs aim to ensure that timber is produced legally, using voluntary trade agreements and licensing schemes with access to markets as a primary incentive to promote more sustainable practices (Moiseyev *et al.* 2010). REDD+ aims to create performance-based monetary incentives in each country to halt deforestation and forest degradation by offering alternative incomes. Both REDD+ and FLEGT are crucial mechanisms to support sustainable forestry and emission reductions, but may underestimate the work and methods that are required to investigate and combat organized crime.

The nature and profitability of organized national and transnational criminal cartels, the collusive corruption involved and tax fraud through laundering operations require a specially designed approach from the law enforcement sector and an internationally coordinated investigative capacity. Ministries of forestry and environment, trade programmes, alternative income schemes and NGOs are experts in their fields, but are not qualified to conduct criminal investigations or combat organized crime.

The emerging LEAF programme will focus on building or supporting existing national task forces and provide training in intelligence gathering, securing evidence and operational national and transboundary coordination for full investigation, arrests, international wanted notices (INTERPOL Red notice) and prosecution. It is clear that law enforcement, with-

out the trade opportunities and subsidies provided through FLEGT and REDD+, would be insufficient to stem the rise in criminal cartels involved.

Improved collaboration between FLEGT, REDD+, CITES, ICCWC and the evolving LEAF-programme, should be considered. If coordination and subsequent funding of an internationally coordinated law enforcement and investigative capacity is developed, including coordinated task forces in the countries involved in producing, processing, exporting and receiving illegal timber, the effectiveness of both FLEGT and REDD+ could increase substantially. This could also ensure that progress in some regions is not offset by set-backs in others, as cartels simply move their extraction activities.

Unless the profitability of illegal logging and laundering is substantially reduced and the risk involved substantially increased, illegal logging and laundering will continue. As this report has shown, there are many laundering opportunities for criminals, who may even get additional benefits through tax fraud and misuse of government subsidies. With the scale of the existing illegal logging business, it is clear that there may be an increase in international criminal cartels if these activities are not counteracted in the near future.

This is of further importance as many of the resource regions also have substantial illegal trade and extraction of other resources such as minerals and earth metals. With advanced laundering schemes, illegal logging is being linked more closely to meat, soy, and palm oil plantation production, as well as trade in minerals and money laundering. Already, illegal logging is being used in some instances to cover for other types of crime including money laundering from drugs (Austrac 2010). Improved coordination between FLEGT, REDD+ and the development of a LEAF programme could help stem the further evolution of international criminal cartels in illegal logging.

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A logging truck transporting trees from the Penan's rainforest home in Sarawak.

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