

## Controlling illegal logging in domestic and international markets by harnessing multi-level governance opportunities

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**Abstract:** Illegal logging is perceived to pose significant obstacles to the achievement of sustainable management of forests in the tropics. Equally importantly, it gives rise to or supports other undesirable outcomes – networks of corruption, generating significant volumes of “black” money and fuelling speculation, crime, or trafficking. However, illegal logging of tropical timber is not homogeneous and its characteristics depend, among others, on the supplying markets, at the national or the international scales. Available approaches to reduce illegal logging, at different levels of governance, in the producing and consuming countries are reviewed and their potential contribution is assessed.

**Keywords:** Anti-money laundering (AML), chainsaw milling, consumer countries, corruption, EU Timber regulation, follow-the-money, forest certification, green consumerism, illegal logging, Lacey Act, logging permits, producer countries, VPAs

**Acknowledgements:** This article was partly financed by the Program on Forests (PROFOR), a multi-donor partnership program hosted by the World Bank. It was also partly funded through the PRO-Formal project, ‘Policy and regulatory options: recognising and better integrating the domestic timber sector in tropical countries in the formal economy’, funded by the European Union. The authors would like to thank two anonymous reviewers for their comments and suggestions on a preliminary version of the article.

## 1. Introduction

Illegal logging and associated domestic and international trade in illegally harvested logs is perceived to pose significant obstacles to the achievement of sustainable management of forests. It leads to the destruction of forest resources, biodiversity and other environmental services associated with forests (Kishor and Damania 2006; Tacconi 2007). In addition, and equally importantly, it gives rise to or supports other undesirable outcomes – networks of corruption, generating significant volumes of “black” money and fuelling speculation, crime, or trafficking (Smith et al. 2003; Tacconi 2007). Prevalence of illegal practices puts pressure on legal operators and reduces their incentives to follow the rule of law. Similar problems are also associated with many of the investments made in support of such trade including direct foreign overseas investments.

Illegal logging of tropical timber is not homogeneous and its characteristics depend, among others, on the supplying markets, at the national or the international scales. Expectations and constraints differ when illegal timber is supposed to feed national or foreign (especially Western) markets. The diversity characterizing the production and trade of illegal timber suggests combining various tools for its control. Some tools are specific for producing countries, others for consuming countries, while yet others are cross-boundary in nature. The plan of this paper is as follows: Section 2 characterizes the nature of illegal logging in the context of domestic consumption and trade; Section 3 presents facts on illegal logging principally fuelling international trade; Section 4 indicates the differences, similarities and potential areas of interaction in the context of the problems described in Sections 2 and 3. This forms an important intermediate step in our search for solutions; Section 5 discusses available solutions and their potential to address the problems; Section 6 summarizes and concludes.

## 2. Evidence on illegal logging destined for domestic markets

While illegal logging in the context of international trade has attracted tremendous attention in the last decade, problems of illegality in domestic timber production and trade are, to a large extent, overlooked. The fact of the matter is that in many countries, domestic trade and consumption is a high proportion of total timber production and they are comparable to exported volumes. This is evident from Figure 1, built on the data provided by Wit et al. (2010).

Many forest policies in the tropics urge large/medium scale timber producers to fulfill domestic demand. As shown in Figure 1, this is hardly the case in any sampled country: due to the high level of timber price in the international markets, logging companies mainly sell their products to Western or Asian clients. What remain for domestic markets are low-quality products and industrial scrap wood.

Domestic timber markets can also be supplied by small producers and this is supposed to be facilitated by the availability of small-scale logging titles that authorize citizens to harvest a limited number of trees. However, such titles are

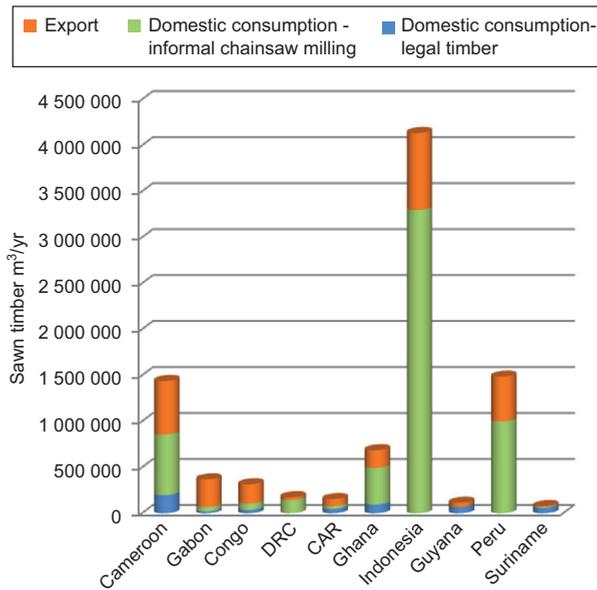


Figure 1: Timber volumes on domestic and foreign markets for a sample of tropical countries.

generally not adapted to the current needs of chainsaw millers and, as such, they are rarely requested for, or recorded by, the administration.

As a consequence, the domestic timber sector remains largely informal. Another key characteristic of production for the domestic market is that the bulk of wood extraction is carried out in small-scale forestry operations and processed with chainsaws. This is true of countries in different regions – Africa, East Asia and Latin America – as can be seen in Figure 1. Chainsaw milling is a legal and regulated activity in most tropical countries but enforcement of chainsaw milling's regulations is often low. By implication then, a substantial proportion of wood consumed in domestic markets is being extracted informally using chainsaw milling.

The supply chain in chainsaw milling operations involves many actors, from the tree owner to the end consumer (Lescuyer et al. 2010). The organization of the chainsaw milling supply chain varies, depending on the status of chainsaw milling (legal or illegal), the organization of production (communities, enterprises or individuals), and the degree of integration between the participants in the trade chain. Chainsaw milling teams are typically small, with an operator and assistants who mill the lumber and transport it from the felling site to access roads or rivers. Operators may work independently or as contractors to someone else, and they may own their own equipment or operate equipment owned by others. Furthermore, chainsaw milling can be a full-time occupation or a component of a

diverse livelihood strategy. Timber is sold to the end customer or traded in local markets, where a number of people are employed in handling, loading, further processing, etc. Chainsaw operations are often financed by dealers from urban centers who trade lumber in timber markets. The personnel of regulating and law enforcement agencies are also important participants in the supply chain, although in a different way, often through corruption and bribery. By contrast, the State is the main loser in this activity, since this is not included in land management plans and does not pay forestry or other official taxes.

Although informal, chainsaw milling provides considerable benefits to local populations in terms of income and employment and impacts the overall development of local economies (Wit et al. 2010). To reiterate, there is a complex network of tree owners, millers, middlemen, traders and purchasers, geared towards meeting the demands of households and benefiting in significant ways, even when chainsaw milling is characterized by unequal power relationships, so that the bulk of the benefits are captured by a small group of the “elite”.

From the perspective of consumption an important characteristic of the domestic market in many countries is that wood extracted for use as timber is only a small part of the total demand; most locally traded wood is used for fuel or made into charcoal (Lescuyer et al. 2010). It may be traded across neighboring countries, with the proportion depending upon factors such as availability, demand, transport costs and porosity of borders. Chainsaw milling is typically a major source of logging the timber going into charcoal production. A detailed study for Tanzania reveals that the annual contribution of charcoal production and trade to be US\$650 million and the entire supply chain provides significant employment and household incomes in rural and urban areas. Yet, the sector is characterized by weak governance, poor law enforcement, corruption, widespread evasion of licensing fees and transport levies and unsustainable harvesting from miombo woodlands. A combination of measures – technical (expanding the areas under woodlots, improving the efficiency of conversion of wood to charcoal), law enforcement (confronting the vested and powerful interests controlling the sector, and tougher sanctions), policy coordination (sustainable household energy strategy) and economic actions (providing incentives to offset increased investment costs associated with sustainably produced charcoal) – is necessary to ensure that the charcoal sector is put back on the rails and reduce the pressures to deforest the miombo. Complementary steps would include exploring alternative sources of energy for rural needs such as solar power and jatropha oil (World Bank 2009).

Wood extraction to meet various demands in the domestic market is largely illegal and informal. However, banning such activities and/or strengthening enforcement to “stamp them out”, alone, would be a naïve approach as it would miss addressing the fundamental drivers of the problem, particularly those related to economic necessity and lack of alternatives to livelihoods and employment and policy failures. There is no “silver bullet” to address the problem in a sustainable manner; a multi-pronged strategy, based on a detailed diagnosis of

the problem, is necessary. In addition, the domestic illegal logging problem has connections and similarities with illegal logging in international markets and this raises the challenge of crafting a strategy which recognizes and addresses the interconnections and therefore offers a better chance for success; this will be further explored in the following sections of this paper.

### 3. Evidence on illegal logging destined for export markets

Recent years have seen a growing body of both, systematic, data-based evidence as well as investigative evidence of a more qualitative nature, on illegal logging in the context of international trade of tropical timber. In this section we summarize results of just a few studies to illustrate the magnitude and breadth of the problem.

According to an in-depth, multi-country study of illegal logging, Seneca Creek Associates (Seneca Creek Associates and Wood Resources International 2004) found that the value of suspicious wood products worldwide could be as high as US\$23 billion. Of the total of illegal timber, the study estimated that about US\$5 billion enters world trade, representing as much as 10% of the value of global trade of primary wood products. The study also estimated that 12% of global softwood roundwood exports and as much as 17% of global hardwood roundwood exports were of suspicious origin. As much as 23% of hardwood lumber exports and 30% of hardwood plywood exports might be considered suspicious.

Moving from the global to a more regional or country focus, the situation varies widely. Thus, in Cameroon, Cerutti and Tacconi (2006) compared the timber volumes of national production and of exports for the period 1991–2004. They demonstrated that 9% of timber exported in 2004 came from illegal sources, mainly related to small-scale logging permits. In contrast, calculations for Indonesia, show that, in the early 2000s, trade in illegally harvested logs bound for East Asian markets was USD 2.5 billion per annum while officially recorded logging activity was USD1.5 billion (Kishor 2004). In terms of trade across neighboring and relatively porous borders, a report finds illegally imported Lao timber could account for 16–25% of Vietnam's wood imports (Forest Trends 2010). When these statistics are broken down according to market segment, these percentages rise for those Vietnamese industries producing high quality, expensive indoor furniture – destined predominantly for Chinese markets and elsewhere in Asia. Vietnam's demand for Laos' natural forest wood products has a strong influence on how Laotian forests are managed, and how forest revenues are controlled and distributed. In turn, this has significant implications for over 80% of Laos' population who are poor and who rely on forest resources for their livelihoods.

It is useful to note that production and trade for international markets also involves a complex web of operators within and across countries, characterized by highly unequal political and market power and division of the "spoils". A report produced by Environmental Investigation Agency traced the life of a ramin

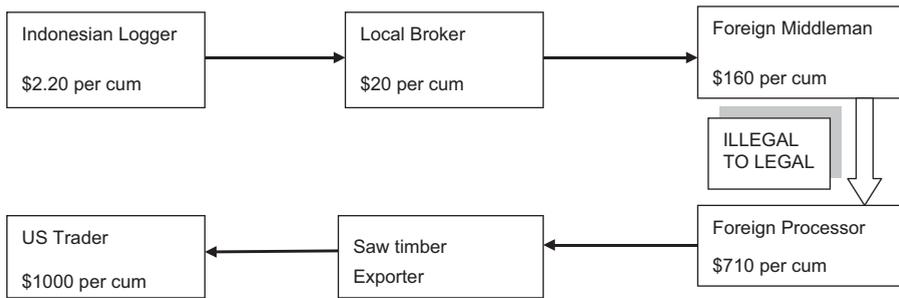


Figure 2: Value chain in the international trade in Ramin.

log illegally logged in Indonesia, through a series of “transformations”, to high-end markets in Europe and North America (EIA and Telepak 2001). It concluded that “a sophisticated network operates to move ramin stolen from Kalimantan and Sumatra onto the international markets, with Malaysia and Singapore effectively laundering the plundered timber.” (See Figure 2).

At least three key characteristics of this value chain are worth noting. First, while the logger (in Tanjung Putin national park, Indonesia) gets about \$2.2/cum, the final product sells for close to \$1000/cum in the European and US markets. Clearly there are huge middle-man profits, most of which accrue to operators outside Indonesia. Second, this is a huge drain of the natural resources of Indonesia with very little gain for the country including in any official revenue collections. And third, the “alchemy” (conversion) of the timber from illegal to legal takes place through a series of steps. The process involves a network of corrupt practices across several sectors and countries which is facilitated by significant volumes of hard currency. This, in turn, fuels more illegal activities, such as land speculation, drug smuggling and prostitution.

The bottom line is that effective control of illegal logging in the context of international trade needs action at various stages – in the country of origin, in the pass-through countries and in the final destination country. Thus, as in the domestic case, successful solutions will require action on a number of fronts.

#### 4. Illegal logging and trade networks: recognizing complexities

It is useful to draw out the complex chains of resource and money flows, as illustrated in Figure 3. Timber is logged illegally in the “supplier” country through a variety of means and at varying scales of operations. These range from the small with little use of equipment (e.g. the chainsaw operators), to large operators combined with use of sophisticated equipment. Domestic market products consist of relatively poor quality timber and timber products and fuelwood and charcoal. Part of this low-quality timber is however bought on domestic markets by small-

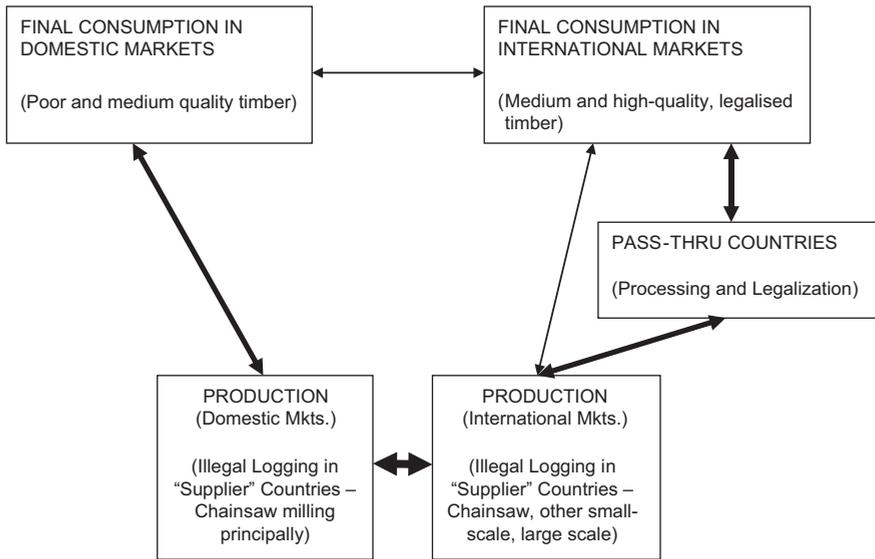


Figure 3: Illegal timber and money flows in national and international markets.

scale companies and can find a way to reach international markets. This has been the case of wengue (*Millettia Laurentii*) and bubinga (*Guibourtia tessmannii*) species in Cameroon which were actively bought by Asian entrepreneurs in Cameroon until the Forestry services stopped this export. For international markets, there is another layer of complexity in the form of “pass-through” countries where timber may be processed and also gets legalized through counterfeit paperwork.

Money flows are obviously in the opposite direction to the flow of timber and timber products and contribute to the poor governance of the sector in many tropical countries. Available evidence suggests that individual international transactions are typically large and could run to several tens of millions of dollars (Kishor 2004). The money from such transactions is often “parked” in banks in pass-through and final consumption countries, before being distributed to operators or moved elsewhere. It is more difficult to track money accruing from the domestic informal sector partly because there is a very large number of relatively small-volume transactions. Financial assessments of this trade have been done in some countries, like Ghana (Marfo 2009), Cameroon (Cerutti and Lescuyer 2011), or Congo (Lescuyer et al. 2011), but the analysis of distribution of the money and other benefits among stakeholders remains rough or unaddressed.

In Figure 3, the thickness of the arrows represents the strength of the interlinkages. Thus, while production activities whether for domestic or international markets are well interconnected, there are fewer connections between the two points of final consumption. However, the latter type of connection does exist and can develop. Legal and illegal “systems” do not exist independently of

one another, but are sometimes interlinked. Legal operators have the temptation to earn some “easy money” through laundering, i.e. by mixing in small volumes of illegal products with their legal ones. This adds yet another level of complexity when designing instruments to combat illegal logging.

The above complexities need to be kept at the forefront and addressed through the available control and incentive instruments. How some of the available approaches help in this regard will be the subject of discussion of the next section.

## **5. Dealing with the complexities: harnessing the potential of multi-level governance reform instruments**

Sustainable forest management was promoted at the beginning of the 1990s and resulted in a general revision of the forestry codes in many tropical countries, usually with the support of international funds. Paradoxically, strengthening forestry laws has tended to increase forest illegality in most tropical countries (Karsenty 2003). European and North American countries were the first to criticize the limited implementation of these new forestry codes and to fear the likelihood of increased import of illegal timber into their economies. One of the earliest responses was the creation of private labels for sustainable wood products, like the Forest Stewardship Council, by international non-governmental organizations, to meet the expectations of Western consumers regarding the quality of imported tropical timber. This market-driven and voluntary approach was promoted almost unilaterally by a couple of organizations in Europe and USA (Lescuyer 2006).

A few years later, the consumer countries decided to reinforce their national regulations regarding the legality of the imported tropical timber. This opened a discussion with the supplier countries, which is ongoing. This required a debate on timber legality and especially on the ways and means by which to apply the forestry regulations in the producing countries. This is a hard and long task that illustrates the diversity of perceptions on sustainable forest management and the complexity of tracking timber products. However, the high economic importance of timber export for many tropical countries has created a willingness to explore some of the tough measures to improve legality, proposed by the consumer countries; although the national capacity constraints and institutional weaknesses are likely to make implementation difficult.

At the same time however, tropical countries are elaborating national approaches to reduce the scope of illegal timber on their domestic or sub-regional markets. The revision of forestry laws, for instance in Brazil, Congo or Cameroon offers an opportunity to better address this issue.

Thus, measures to prevent or reduce timber illegal activities at the level of programs, policies and instruments, with significant differences in scale and scope, are originating from various directions. For purposes of a systematic discussion, they can be grouped in four broad categories of interventions, and are described below.

### **5.1. Measures applied unilaterally in the country of origin (or supplier-country measures)**

- a) Strengthening national capacities to enforce forest law. Most large and medium logging activities follow similar operational steps, from logging in clearly delineated large production forest, to timber processing in industrial plants and to export through a restricted number of customs checkpoints. This commodity chain can be better controlled to guarantee the legality of the final product on both the international and domestic markets. Two approaches can be considered and combined: (1) a more rigorous control of the administrative practices – including effective sanctions when a fraud is recorded – combined with a bonus system to encourage field agents to implement legality; (2) the presence of independent observers that accompany and support forest national monitoring systems, as was done for instance in Cameroon, Congo and Indonesia.
- b) Reform of the small-scale logging permits. The permits for chainsaw milling created under most forestry laws in tropical countries are not satisfactory: some do not allow sales and only cover small volumes, others require formal recognition as a logger and all of them entail cumbersome procedures. For a chainsaw miller, the way towards legality is not impenetrable, but close to it. Ill-adapted measures create illegal situations, either because legality is beyond the reach of most small-scale chainsaw millers, or because certain actors decide to reach an agreement with State agents in order to circumvent these regulations, thereby generating collusion and corruption. In many tropical countries, procedures for obtaining legal permits can be simplified and volumes can be adapted to the real capacities of chainsaw millers. Reforming small-scale logging permit gives an opportunity to better integrate customary tenure on trees and to recognize and formalize local people's rights over these resources (Lescuyer et al. 2012). Such kind of permits should be readily available by being issued at the administrative level closest to the applicant. But even if these permits are adapted to chainsaw millers' capacities, they will be requested only if their costs are lower than the benefits legality may bring to the operators. If a legal logging permit does not ensure lower "parafiscal" charges, most chainsaw millers will probably choose to stay in the informal sector.
- c) Promoting legality of demands in tropical countries. This will require intervention for private and public demands for timber and timber products.
  - i) Make private demands legal through the creation of urban markets that specialize in the sale of legal timber (at a higher sales price). However, it is not known whether this type of niche market potentially exists, nor is it known what price premiums it could support. The challenge lies in convincing the upper and middle social classes and corporate entities to pay a "little more" for legally and sustainably harvested, good-quality timber.

- ii) The State can give the sector new impetus by requiring all public markets to buy timber only from legal sources. Even where public consumption does not constitute a significant part of total consumption, this requirement can send a strong signal about the State's intention regarding control of illegal logging and timber trade. Denmark, Japan and the UK are examples of an increasing number of countries which require their public procurements to use only legally sourced timber (FAO 2011).

## **5.2. Measures conceived in destination countries but implemented in both the importing and exporting countries: anti-money laundering laws**

In recent years, worldwide efforts to combat money laundering and the financing of terrorism have assumed heightened importance. Anti-money laundering procedures are favored by international initiatives like the OECD Convention on Combating Bribery of Foreign Public Officials in International Business Transactions, simply known as the "OECD Anti-Bribery Convention". This came into force in 1999 and Parties to the Convention have made bribing of foreign public officials in international business a criminal offence. The OECD Anti-Bribery Convention is complemented by a set of OECD recommendations which set forth general provisions aimed at deterring, preventing and combating international bribery. Countries are for instance recommended establishing transparency in book-keeping and auditing practices, encouraging the adoption of internal company controls, including standards of conduct as well as adoption of sound procurement rules and practices.

The opportunity to launder proceeds from illegal timber operations is an important enabler underlying forest crime. Large-scale illegal logging generates significant proceeds. Anti-money laundering and asset forfeiture laws can help in the investigation and prosecution of illegal logging and other forest crimes, especially when money flows through financial institutions at some stage in its laundering (Goncalves et al. 2012). In Indonesia the fact that illegal logging was made a predicate crime to money-laundering provides an opportunity for harnessing the potential of the anti-money laundering laws, to tackle forest crimes. When the proceeds from sale of illegal timber flow through other countries, global anti-money laundering laws enable prosecution of offenders in say Hong Kong, Singapore and Malaysia, with criminal money laundering offences, for their involvement in corruption offences in Indonesia. A key advantage of charging offenders in Hong Kong (say), who are dealing with the proceeds of an illegal logging crime committed in Indonesia is that it does not rely on an Indonesian conviction first. Thus, with international cooperation, AML laws, provide additional opportunities to combat illegal logging (Walters 2010). Invoking AML laws to fight forest crimes offers several additional advantages such as additional jail time for offenders, seizure and confiscation of assets from the proceeds of the crime, legal requirement by financial institutions to report suspicious transactions etc. (Goncalves et al. 2012).

“Follow-the-money” approach, as the application of AML laws to forest crimes is more popularly called, has fired the imagination of policy-makers as a powerful tool in the fight against illegal logging and is seen as a complement to the traditional “follow-the-log” approaches. The follow-the-money can be an effective approach to going after the “big fish”. However, a follow-the-money approach will be feasible only in situations where the banking sector is well developed and offers an attractive option to “park” money earned from illegal logging and trade. This is more likely to happen in the case of illegal logging for international markets with sophisticated banking sectors in “pass-through” countries. However, in domestic markets, anti money-laundering initiatives have been little tested and are unlikely to offer a potential instrument, especially for African countries where the banking sector is poorly developed. Despite its potential, as yet we do not have a clear-cut example of a follow-the-money based action which has brought forest criminals to justice.

### **5.3. Measures conceived in the countries of destination but implemented in the countries of origin**

- (a) FLEGT Voluntary Partnership Agreements (VPAs). VPAs are bilateral agreements between the European Union and timber exporting countries, which aim to guarantee that the wood exported to the EU is from legal sources and to support partner countries in improving their own regulation and governance of the sector. Once agreed, the VPAs will include commitments and action from both parties to halt trade in illegal timber, notably with a license scheme to verify the legality of timber exported to the EU. The agreements also promote better enforcement of forest law and promote an inclusive approach involving civil society and the private sector. The first VPA to be formally concluded was with Ghana. Republic of Congo and Cameroon are in the ratification process while negotiations are ongoing with: Liberia, Gabon, Democratic Republic of Congo, Central African Republic, Malaysia, Indonesia and Vietnam.
- (b) Forest certification is one approach for controlling illegal logging and other forest crimes by increasing the supply of timber from well-managed forests. Under the scheme, an independent organization develops standards of good forest management, and independent auditors issue certificates to forest operations that comply with those standards. This certification verifies that forests are well-managed – as defined by a particular standard – and ensures that certain wood and paper products come from forests that are managed to meet a pre-determined set of environmental, social and economic standards. In 2010, about 350 million hectares of forests were under the two major certification schemes – Forest Stewardship Council and Programme for the Endorsement of Forest Certification schemes – and their affiliates (FAO 2011). Of this, tropical forest countries account for only about 17million hectares, a small fraction of the total production area (ITTO 2011). There

is thus an urgent need to extend the certified area, especially in tropical countries.

#### **5.4. Measures conceived and applied unilaterally in the country of destination**

- (a) European Union Timber Regulation (formerly “due-diligence”). In 2010, the EU created new legislation to ban illegal wood from being placed on the EU market, requiring operators to practice due diligence to minimise risk. It also has provisions to facilitate traceability of wood products within the EU back to their first placing on the EU market. The Regulation will come into force on 3 March 2013 and affects timber trade of all 27 EU Member States. It covers most wood products, including pulp and paper, and requires operators to have systems in place that assure that the timber is from legal origin – or face sanctions.
- (b) The Lacey Act. This is named after Republican Jim Lacey of the USA, who introduced it in 1900 to control hunting, catching and trade in animals in the US. It was a fairly obscure statute until May 2008 when an amendment was added to specifically focus on the illegal trade in plants and plant products, including timber, by controlling illicit logging of temperate and tropical forests. The amendment made it a crime to knowingly import into the country any wood species illegally sourced from a US state or foreign country. When illegality is suspected, a US importer can be challenged to provide proof of legality or face prosecution. The first case for prosecution under this Act is that of Gibson Guitar, which was accused of importing rosewood illegally harvested from a national park in Madagascar. The company, in turn, has accused its European supplier. Further action is currently pending.
- (c) Greening the private companies’ demand for timber. This focuses on reducing the demand for illegal produce and implementing environmentally and socially responsible procurement policies for wood and wood products. Corporate codes of conduct are one promising initiative whereby corporations, either independently or as members of associations, commit themselves to follow self-defined principles of social and environmental responsibility. These pledges also often include committing to comply with the laws of countries in which they operate. IKEA, the giant Swedish furniture maker, has developed a “staircase model approach” to promote legal and sustainable forestry among its suppliers. Requirements include the legal sourcing of wood products. IKEA, in partnership with the World Wildlife Fund, has developed a wood tracking system to ensure that there are no leakages along the chain of custody. The partnership has also established producer groups committed to extracting only legally sanctioned harvests. Many examples of industry codes also exist. The Confederation of European Paper Industries has declared a set of principles committing its members to the purchase and use only of wood coming from legal logging. Similar declarations have been made by other associations that

are prominent users of timber, such as the International Council of Forest and Paper Associations, the Intrafrican Forest Industries Association, the Japanese Federation of Wood Industry Association, and the American Forest and Paper Association.

- (d) Fostering responsible private consumption. This approach is also of paramount importance in closing the demand-supply gap and reducing the incentives for illegal supplies. The experience in this regard is mixed. While green consumerism has been in vogue for quite some time, it is not widespread. Nor are there significant price premiums attached to legally produced timber and timber products. At the same time, however, countries such as Denmark, Japan, and the UK have pledged that their public procurements would use only legally sourced timber. At the same time it must be recognized that most of tropical timber, especially, is not consumed in environmentally sensitive markets.

## 6. Concluding remarks

What have been the impacts of the multiplicity of global efforts undertaken to control illegal logging? The findings from a report provide some insights (Lawson and MacFaul 2010). This, an in-depth study of five producer countries (Brazil, Cameroon, Ghana, Indonesia and Malaysia), two processing countries (China and Vietnam) and five consumer countries (Japan, the USA, the UK, France and the Netherlands), demonstrates that actions taken by governments, civil society and the private sector over the last ten years in response to illegal logging and related trade have led to a reduction in illegal logging by between 50 and 75% in Cameroon, the Brazilian Amazon and Indonesia; imports of illegally sourced wood to the seven consumer and processing countries studied are down 30% from their peak in 2004.

The report emphasizes that much more needs to be done to consolidate the early successes. Japan and China should also follow in the footsteps of the US and EU and prohibit the import and sale of illegally sourced wood. To ensure such prohibitions are effective and encourage broader improvements, importing countries also need to expand cooperation with source countries along the lines of the EU's voluntary partnership agreements.

By contrast, little has been done so far to specifically fight illegal logging in the domestic markets of the tropical countries. This mainly relies on an improvement of the small-scale logging sector, which has not received much attention by the international community. However, whether export-oriented or geared to supplying national demands, illegal logging relies on the same natural resources and the stakeholders may interact, especially in their relationships with forestry administration. Some measures to fight illegal logging can impact both sectors (international and domestic), like the Forest Law Enforcement Governance and Trade action plan, but they have to be adapted to the national context to be efficient.

Many approaches have been tried to tackle the problem, including those based on the (conventional) “follow-the-logs” and (innovative) “follow-the-money” ideas. Following the logs is more of an upstream approach than following the money which is more of an “end-of-the-pipe” approach. Following-the-logs is necessary to address all dimensions of the problem, whereas following-the-money can be an effective approach to going after the “big fish”. However, a follow-the-money approach will be feasible only in situations where the banking sector is well developed and offers an attractive option to “park” money earned from illegal logging and trade. This is more likely to happen in the case of illegal logging for international markets with sophisticated banking sectors in “pass-through” countries. Thus, in the case of illegal logging involving international trade and markets, reformists can and should use follow the log and follow the money approaches to be able to design really effective measures to stamp out illegal logging.

Illegal logging associated with the domestic timber sector in tropical countries is perceived to be of a problematic size, however not much is known about it. Yet, available experience indicates that anti money-laundering initiatives are unlikely to offer a potential instrument, especially for African countries where the banking sector is poorly developed and money stays outside the formal banking system. In these cases, follow-the-logs would stay as the primary focus of all interventions and reforms – at the same time as exploring emerging opportunities to control illegal logging from following the money.

Cooperative approaches of various types – between stakeholders, between sectors and at different scales – are also critical for success at controlling illegal logging. In the domestic context, cooperation is needed for inter-agency collaboration among forestry, agriculture, rural development and energy – to reduce unintended pressures on the forest. When timber is destined for international markets, bilateral cooperation will be necessary across forestry, law-enforcement and customs of source and destination countries. At a higher scale, international multilateral collaboration codifying treaties, agreements and international standards relevant to legally sourced timber will provide powerful ways to address illegality.

We conclude by reemphasizing that illegal logging is supported by a complex web of physical, political and financial relationships involving a multiplicity of stakeholders. Added complexity arises from the fact that these are not confined to a specific country but transcend national borders. However, we also emphasize that these complexities need to be squarely kept in focus while designing strategies to control illegal logging. In other words, solutions will necessarily be complex, multi-pronged and target a range of stakeholders; they will have to include participatory processes and build a consensus on implementation; and they will have to span different levels of governance. Only then would we be assured of effective and long-lasting solutions, including a consolidation of the gains made to date.

## Literature cited

- Cerutti, P. O. and L. Tacconi. 2006. *Forest, Illegality, and Livelihoods in Cameroon*. Bogor: CIFOR Working Paper No. 35.
- Cerutti, P. O. and G. Lescuyer. 2011. *The domestic market for small-scale chainsaw milling in Cameroon: present situations, opportunities and challenges*. Bogor: CIFOR Occasional Paper 61.
- EIA and Telepak Indonesia. 2001. *Timber Trafficking*. September, 2001. Available at: <http://www.eia-international.org/>.
- FAO. 2011. *State of the World Forest 2011*. Rome: Food and Agriculture Organization of the United Nations.
- Forest Trends. 2010. *Timber Markets and Trade between Laos and Vietnam: A Commodity Chain Analysis of Vietnamese-Driven Timber Flows*. Washington: Forest Trends.
- Goncalves, P. M., M. Panjer, T. S. Greenberg, and W. B. Magrath. 2012. *Justice for Forests: Improving Criminal Justice Efforts to Combat Illegal Logging*. Washington DC: The World Bank.
- ITTO. 2011. *Status of Tropical Forest Management 2011*. Yokohama: ITTO.
- Karsenty, A. 2003. Underlying causes of the rapid expansion of illegal exploitation of tropical timber. *International Forestry Review* 5(3):236–239.
- Kishor, N. and R. Damania. 2006. Crime and Justice in the Garden of Eden: Improving Governance and Reducing Corruption in the Forestry Sector. In *The Many Faces of Corruption*, eds. J. Edgardo Campos and S. Pradhan, 89–114.
- Kishor, N. 2004. *Review of formal and informal costs and revenues related to timber harvesting transporting and trading in Indonesia*. Washington DC: The World Bank, unpublished note.
- Lawson, S. and L. MacFaul. 2010. *Illegal Logging and Related Trade: Indicators of the Global Response*. London: Chatham House. Available at: <http://www.chathamhouse.org.uk/publications/papers/view/-/id/911/>
- Lescuyer, G. 2006. Des critères de bonne gestion forestière à la certification des concessions : le Bassin du Congo au centre des débats. In *Exploitation et gestion durable des forêts en Afrique centrale*, eds. D. Ezzine de Blas, R. Nasi, J. C. Nguinguiri, 369–388, Paris: L'Harmattan.
- Lescuyer, G., P. O. Cerutti, E. Essiane Mendoula, R. Eba'a Atyi, and R. Nasi. 2010. Chainsaw milling in the Congo Basin. *European Tropical Forest Research Network (ETFRN) News*, 52, 121–128.
- Lescuyer G., R. I. Yembe-Yembe, and P. O. Cerutti. 2011. *Le marché domestique du sciage artisanal en République du Congo: état des lieux, opportunités et défis*. Bogor: CIFOR Document Occasionnel, 71.
- Lescuyer, G., P. O. Cerutti, E. Essiane Mendoula, R. Eba'a Atyi, and R. Nasi. 2012. Evaluation du secteur du sciage artisanal dans le bassin du Congo. In *Les forêts du bassin du Congo – Etat des Forêts 2010*, eds. C. de Wasseige, P. de Marcken, N. Bayol, F. Hiol Hiol, Ph. Mayaux, B. Desclée, R. Nasi, A. Billand,

- P. Defourny, and R. Eba'a, 97–107, Luxembourg: Office des publications de l'Union Européenne.
- Marfo, E. 2009. *Chainsaw milling in Ghana. An overview of the issues*. Kumasi: Tropenbos International and CSIR Forestry Research Institute of Ghana.
- Seneca Creek Associates and Wood Resources International. 2004. *"Illegal" Logging and Global Wood Markets: The Competitive Impacts on the U.S. Wood Products Industry*. Washington DC: American Forest and Paper Association.
- Smith, J., K. K. Obidzinski, and I. Suramenggala Subarudi. 2003. Illegal logging, collusive corruption and fragmented governments in Kalimantan, Indonesia. *International Forestry Review* 5(3):293–302.
- Tacconi, L. 2007. *Illegal logging: Law enforcement, livelihoods and the timber trade*. London: Earthscan.
- Walters, J. 2010. Following the proceeds of illegal logging in Indonesia. *Trends and Issues in Crime and Criminal Justice* no. 391.
- Wit, M., J. Van Dam, P. O. Cerutti, G. Lescuyer, R. Kerret, and J. Parker McKeown. 2010. Chainsaw milling: supplier to local markets – A synthesis. *European Tropical Forest Research Network (ETFRN) News* 52:vii–xxii.
- World Bank. 2009. *Environmental crisis or sustainable development opportunity? Transforming the charcoal sector in Tanzania*. Washington DC: The World Bank.