Experimentalism in transnational forest governance: Implementing European Union Forest Law Enforcement, Governance and Trade (FLEGT) Voluntary Partnership Agreements in Indonesia and Ghana

Christine Overdevest

Department of Sociology and Criminology, University of Florida, Gainesville, FL, USA

Jonathan Zeitlin 回

Department of Political Science, University of Amsterdam, Amsterdam, The Netherlands

Abstract

Over the past decade, the European Union (EU) has created a novel experimentalist architecture for transnational forest governance: the Forest Law Enforcement, Governance and Trade (FLEGT) initiative. This innovative architecture comprises extensive participation by civil society stakeholders in establishing and revising open-ended framework goals (Voluntary Partnership Agreements [VPAs] with developing countries aimed at promoting sustainable forest governance and preventing illegal logging) and metrics for assessing progress toward them (legality standards and indicators) through monitoring and review of local implementation, underpinned by a penalty default mechanism to sanction non-cooperation (the EU Timber Regulation that prohibits operators from placing illegally harvested wood on the European market). This paper analyzes the implementation of VPAs in Indonesia and Ghana, the two countries furthest advanced toward issuing FLEGT export licences. A central finding is the reciprocal relationship between the experimentalist architecture of the FLEGT initiative and transnational civil society activism, whereby the VPAs' insistence on stakeholder participation, independent monitoring, and joint implementation review, underwritten by the EU, empowers domestic non-governmental organizations with local knowledge to expose problems on the ground, hold public authorities accountable for addressing them, and contribute to developing provisional solutions.

Keywords: civil society, European Union, experimentalist governance, forest governance, illegal logging.

1. Introduction

Over the past decade, the European Union (EU) has created a novel architecture for transnational forest governance by advancing a combination of policy measures aimed at promoting sustainable forestry in developing countries and combating trade in illegal timber. The ambitious vision behind this architecture, laid out originally in the 2003 Forest Law Enforcement, Governance and Trade (FLEGT) Action Plan (European Commission 2003), includes two main components: (i) negotiating Voluntary Partnership Agreements (VPAs) with producer countries to build domestic institutions that promote "sustainable" forest governance and assure the "legality" of exported timber; and (ii) enacting legislation in the form of the EU Timber Regulation (EUTR) that makes it an offence to place illegally harvested timber from whatever source on the European market and obliges firms to demonstrate "due diligence."

In previous work (Overdevest & Zeitlin 2014, 2015), we have argued that the FLEGT initiative constitutes the core of an emergent experimentalist governance architecture. This innovative architecture comprises extensive participation by domestic civil society stakeholders in establishing and revising open-ended framework goals (VPAs aimed at promoting sustainable forest governance and preventing illegal logging) and metrics for assessing

Correspondence: Jonathan Zeitlin, Department of Political Science, University of Amsterdam, Postbus 15578, 1001 NB Amsterdam, The Netherlands. Email: j.h.zeitlin@uva.nl

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progress toward them (legality standards and indicators) through continuous monitoring and review of local implementation (at both national and EU levels), underpinned by a penalty default to sanction non-cooperation (the EUTR). Through its interactions with private certification schemes and public legal timber requirements in third countries such as the United States (US) and Australia, this EU-based experimentalist architecture is likewise contributing to the stepwise construction of a broader transnational forest governance regime.

An experimentalist regime of this type may provide a promising approach to addressing contentious, uncertain transnational issues like forest governance where conflicts of interest and values block multilateral agreement and there is no hegemon to impose global rules (Humphreys 2006; Hale *et al.* 2013, pp. 237–250; Overdevest & Zeitlin 2014). Yet FLEGT VPAs have proved extremely challenging to implement, leading to widespread questions about their practicability and effectiveness within and beyond the EU (TEREA/S-FOR-S/ TOPPERSPECTIVE 2016).

This paper analyzes the implementation of VPAs in Indonesia and Ghana, the countries furthest advanced toward issuing FLEGT export licenses, based on timber legality assurance systems (TLASs) developed through participatory multi-stakeholder processes, subject to third-party monitoring and joint review by EU and national representatives. Indonesia began to ship FLEGT-licensed timber to the EU in November 2016, while Ghana is expected to follow in 2018 (Ghana-EU 2017). These two countries may thus be considered "paradigmatic cases," where the phenomenon of interest – the implementation of a FLEGT VPA – is strongly present (della Porta 2008). The paper's goal is to analyze the obstacles to VPA implementation and how these have been overcome in these two cases, using a process-tracing approach to identify the mechanisms involved, focused on the contribution of FLEGT's experimentalist governance architecture (Beach & Pedersen 2013). Assessing how the findings of this analysis could apply to other countries where VPA implementation has (so far) been less successful is a task for another paper.

The analysis proceeds in five steps. Section 2 reviews FLEGT's experimentalist governance architecture, concentrating on the VPAs and the EUTR. Section 3 compares VPA negotiations in Indonesia and Ghana, underlining both the similarities between their participatory, multi-stakeholder character and the design differences in the resulting TLASs. Section 4 examines the main roadblocks that emerged during the implementation process in the two countries, emphasizing the complex, deep-rooted nature of the problems that the VPAs seek to address. Section 5 considers how far and in what ways these obstacles have been overcome, highlighting the role of iterative review by joint committees of EU and domestic representatives in creating opportunities for public accountability, recursive learning, and collaborative problem-solving. Section 6 summarizes the main findings and draws out their broader implications for the implementation and effectiveness of transnational experimentalist regimes. A central finding is the reciprocal relationship between the experimentalist architecture of the FLEGT initiative and transnational civil society activism, whereby the VPAs' insistence on stakeholder participation, independent monitoring, and joint implementation review, underwritten by the EU, empowers domestic civil society groups with local knowledge to expose problems on the ground, hold public authorities accountable for addressing them, and contribute to developing joint solutions.

In addition to a wide range of documentary sources and participation in expert and stakeholder meetings, this paper is based on 60 interviews with public officials, civil society activists, business leaders, consultants, and independent experts from the EU, Indonesia, and Ghana conducted between 2011 and 2016 (see Appendix S1 for a full list). All interviewees agreed to be quoted, provided that the source could not be identified directly. Interviews cited in the text are referred to by a unique code, the key to which is presented in Appendix S1. Appendix S1 also provides more detailed information on the documentary sources reviewed and the procedures followed to select the interviewees, analyze the transcripts, and cross-check our findings.

2. The Forest Law Enforcement, Governance and Trade (FLEGT) initiative as an experimentalist governance architecture

2.1. Experimentalism in transnational governance¹

Experimentalist governance can be defined as a recursive process of provisional goal-setting and revision, based on learning from review of implementation experience in different settings. In its most developed form, experimentalism involves a multi-level governance architecture, whose elements are linked in an iterative cycle. First, open-ended framework goals (like "sustainable forests" or "legal timber") and metrics for gauging their advancement are established in consultation with relevant stakeholders by some combination of "central" and "local" units (each of which can be public, private, or hybrid). Local units are then given substantial discretion to pursue these common goals in ways adapted to their own specific contexts. But in exchange for such autonomy, these units must report regularly on their performance, and participate in mutual monitoring, joint evaluation, and peer review. When they do not make good progress according to agreed indicators, the local units are expected to show they that are taking appropriate corrective measures, informed by the experience of their peers. Finally, the goals, metrics, and procedures themselves are periodically revised in response to the problems and possibilities revealed by the review process, and the cycle repeats. Often, such experimentalist architectures are underpinned by "penalty defaults:" measures that induce reluctant parties to cooperate in joint exploration and problemsolving by threatening to impose sufficiently unattractive alternatives (Sabel & Zeitlin 2012; de Búrca *et al.* 2014).

Experimentalist governance architectures have a number of fundamental advantages. First, they accommodate diversity by tailoring shared goals to varied contexts, rather than trying to impose "one-size-fits-all" solutions. Second, they foster coordinated learning from local experimentation through disciplined comparison of different approaches to advancing common general ends. Third, the same processes of mutual monitoring, joint evaluation, and peer review that support learning from diverse experience also provide dynamic, non-hierarchical mechanisms for holding both local and central actors accountable for their actions in pursuit of agreed goals. Fourth, because both the goals themselves and the means for achieving them are explicitly conceived as provisional and subject to revision in the light of experience, problems identified in one phase of implementation can be corrected in the next. For each of these reasons, experimentalist governance architectures have emerged as a widespread response to turbulent, polyarchic environments. In such environments, strategic uncertainty means that actors do not know their precise goals or how best to achieve them ex ante, but must discover both in the course of problem-solving, while a multi-polar distribution of power means that no single actor can impose her own preferred solution without taking into account the views of others.

Experimentalist governance appears particularly well-suited to transnational domains, where there is no overarching sovereign to set common goals, while the diversity of local conditions makes enforcement of uniform fixed rules even less feasible than in domestic settings. Because experimentalist regimes depend on neither a central hierarchical authority nor a prior convergence of interests and values, they likewise represent a promising framework for tackling contentious cross-border issues where there is no hegemonic power able to impose global rules. Although experimentalism does not correspond to traditional canons of legitimacy, the greater openness and policy space it offers to nations, regions, and civil society actors in pursuing shared goals makes it potentially not only more effective but also more normatively attractive than conventional forms of global governance based on integrated, hierarchical international organizations and treaty regimes (de Búrca *et al.* 2014; Overdevest & Zeitlin 2014).

Yet the very polyarchy and diversity that make experimentalist governance attractive under such conditions can also make it hard to get a transnational regime off the ground, or stall its operation once established. Thus, too many participants with divergent perspectives can block an initial agreement on common framework goals. Conversely, one or more powerful players may be able to veto other proposed solutions even if they cannot impose their own. Hence, as in domestic settings, some kind of penalty default – such as trade sanctions or consumer boycotts – may also be required to destabilize the status quo and induce reluctant parties to cooperate in order to advance the development of a transnational experimentalist regime.²

Despite these familiar collective action problems, a growing body of recent research suggests that transnational experimentalist regimes appear nonetheless to be developing across a number of major policy domains, such as environmental sustainability, disability rights, food safety, data privacy, and anti-money laundering (de Búrca *et al.* 2014; Overdevest & Zeitlin 2014; Zeitlin 2015). Some of these regimes are fully multilateral, like the Montreal Protocol for the Protection of the Ozone Layer or the United Nations (UN) Convention for the Protection of the Rights of Persons with Disabilities. Others are regional, such as the regime for the protection of dolphins and conservation of tuna stocks in the Eastern Tropical Pacific. Still others, like the emergent transnational regime for promoting sustainable forestry and combating illegal logging whose implementation we analyze in this paper, are complex assemblages of unilateral public and private initiatives, which have emerged through the convergence of multiple distinct pathways (Overdevest & Zeitlin 2014).

2.2. The experimentalist character of FLEGT voluntary partnership agreements

The VPAs are the keystone of the EU FLEGT architecture. As codified in the 2005 FLEGT Regulation, the EU invites developing countries to negotiate bilateral agreements in order to secure access to a "green lane" for licensed timber imports into the European market. The FLEGT Action Plan and briefing notes set out a number of conditions for the conclusion of such agreements. First, partner countries undertake to develop an agreed set of definitions for legal timber, based on a multi-stakeholder review of existing national law, including international agreements to which they are a party, in order to identify inconsistencies and gaps. The outcome of these reviews, which typically cover not only fiscal, forestry, and environmental regulation (including sustainable forest management), but also labor law, workplace health and safety, and community rights, becomes the basis for defining legal timber. EU requirements for this review process include broad participation by domestic civil society organizations (CSOs) as well as private businesses (EU FLEGT Facility 2010). Once agreed, these legality definitions are converted into a grid, which includes detailed indicators for verifying compliance. These grids are designed to serve as auditable performance standards, specifying the evidence needed to demonstrate conformity to the FLEGT license, and are field-tested to ensure their implementability. The legality definitions themselves are subject to periodic review and revision in light of implementation experience.

A second requirement of the FLEGT initiative is that partner countries develop a national TLAS, overseen by an independent auditor, to ensure that domestic wood is legally harvested, transported, and exported. All VPAs must also ensure the integration of imported wood into their national TLAS. In a number of countries, these systems include separate independent monitors in addition to the third-party auditor. In some cases, civil society groups are also formally empowered to report irregularities through the official dispute resolution mechanisms. In others, they are expected to serve as informal watchdogs, mobilizing public pressure against companies and government officials who violate the agreed legality standards. The VPAs likewise include provisions for independent monitoring of their broader social, economic, and environmental impact on the partner country, as well as of the performance of FLEGT licensed timber in the EU and international markets.

Third, the VPAs establish a joint committee of EU and partner country representatives, which is charged with monitoring and reviewing implementation of the agreement; resolving disputes; and recommending any necessary changes, including further capacity-building measures. These joint committees, which operate by consensus but may refer unresolved disputes to arbitration, are designed to serve as deliberative problem-solving bodies responsible for sustaining the agreement through regular review of implementation experience, drawing on information provided by the various independent monitors, including domestic CSOs, to detect and correct flaws in the system's operation. In Indonesia and Ghana, as in other VPA countries, joint implementation committees include representatives of domestic civil society and private business, as well as public officials from both sides. As we shall see, these bodies have played a crucial role in moving the implementation process forward in both countries.

As its contribution to the VPA process, the EU commits to facilitating access for FLEGT licensed timber to the European market, while providing capacity-building support to domestic public and private actors. FLEGT has funneled significant aid from the EU, member states, and other international donors to assist government agencies, CSOs, and business associations in partner countries with TLAS development and the implementation of governance reforms mandated by the VPAs.³

FLEGT's focus on legality assurance is innovative in that rather than imposing "northern" environmental and social standards on the global south, the EU's regulatory approach respects territorial rights and World Trade Organization (WTO) non-discrimination rules, while sidestepping politically sensitive sovereignty issues, thereby fostering developing country participation in the emerging transnational forestry regime. By involving a broad range of stakeholders in the negotiation and implementation of voluntary agreements, FLEGT VPAs induce developing countries to engage in an ongoing dialogue about good forest governance – again avoiding unilateral imposition. In this way, FLEGT creates a path to building a transnational consensus around what constitutes illegality and how to control it, encompassing both timber-producing countries and other large importers such as the US, Australia, and even China (Overdevest & Zeitlin 2014, pp. 40–42, 2015, pp. 152–155).

As of July 2017, seven countries have agreed VPAs with the EU (Cameroon, Republic of Congo, Central African Republic, Ghana, Indonesia, Liberia, Vietnam), while negotiations are underway with eight more in Africa, Asia, and Latin America (Côte d'Ivoire, Democratic Republic of Congo, Gabon, Guyana, Honduras,

Laos, Malaysia, Thailand). Although the VPAs have become increasingly standardized, they differ from one another in a number of areas, reflecting both specific features of the local setting and the sequence in which they were negotiated. While the TLAS in each agreement applies to all wood exports, not just to the EU, countries vary in how they are integrating production for the domestic market into the system.⁴ Institutional arrangements for civil society participation in implementing and monitoring the VPAs likewise vary cross-nationally, becoming more extensive and specific in later agreements (FERN 2013; Overdevest & Zeitlin 2015, pp. 144–146).

Although there are no formal EU mechanisms for cross-national peer review, regular meetings of a range of transnational stakeholder forums serve as institutionalized platforms alongside the European Commission and the European Forest Institute (EFI) EU FLEGT Facility for information pooling, critical debate, and recursive learning from comparative experience with VPA negotiation and implementation in different national and regional contexts.⁵ The FLEGT Action Plan itself has recently been assessed both by the European Court of Auditors (2015) and by an independent evaluation team (TEREA/S-FOR-S/TOPPERSPECTIVE 2016).

FLEGT VPAs are extremely challenging for partner country governments, both politically and administratively, in terms of their demands for multi-stakeholder participation and far-reaching reforms of forest governance. They have also proved technically complex and arduous to implement. Some of the key implementation challenges concern the practical difficulties of designing effective timber-tracking and legality assurance systems under developing country conditions (such as intermittent power supplies and internet connectivity). But others stem from the prevalence in many countries of entrenched patron-client relations, which give rise to widespread but sometimes hard to detect forms of corruption (INTERPOL 2016), as well as from pervasive weaknesses in domestic administrative coordination and governance capacity. In every partner country, ensuring timber legality has turned out to be connected to thorny, deep-rooted political issues concerning the exploitation of natural resources, property rights, land use, and state-society relations, which the VPA implementation process has progressively exposed to public scrutiny and pressure for remediation.

As a result of these challenges, the fulfillment of VPA commitments and the issuance of FLEGT export licenses have taken much longer than expected in all partner countries. In Indonesia, the first to complete the VPA process, export of FLEGT-licensed timber began in November 2016. In Ghana, the issuance of FLEGT licenses is expected to start in 2018. Liberia, which had developed a timber-tracking and chain-of-custody system as part of the process of lifting UN sanctions on wood exports in 2006, is likewise reported to be making good progress toward meeting FLEGT requirements. In the Republic of Congo, where the implementation process had ground to a halt for several years, there is evidence of renewed momentum on both legality reform and TLAS development, including the appointment of an independent auditor and funding for civil society monitoring. In the Central African Republic, where the government was overthrown by a rebel coup in 2012, the VPA process has slowly begun to revive following successful democratic elections in 2016, with a new multi-stakeholder roadmap for TLAS development and increased CSO monitoring activity. In Cameroon, however, VPA implementation has largely stalled amid reports of extensive illegal logging, despite significant progress in terms of transparency and civil society participation in forest governance.⁶

Given the deeply contested character of forest governance reform, as our cases will show, VPA provisions for independent monitoring, civil society engagement, and joint implementation review by the EU and its partners are crucial to overcoming such political and administrative blockages, as well as for detecting and correcting defects in the design of wood-tracking and legality verification systems. Capacity-building assistance from the EU and other international donors to both public and private actors involved in their development and monitoring is another crucial element. But also important in inducing local actors to continue working to meet VPA requirements, even in countries where the domestic barriers to implementation are highest, is the exclusion of illegally logged wood from the European market through the EUTR.

2.3. EU timber regulation as a penalty default

Alongside the VPAs, the other core element of the FLEGT architecture is the EUTR, which obliges all operators placing timber products on the European market for the first time to demonstrate "due diligence" that they were

not illegally harvested in their place of origin (domestic or foreign), subject to criminal penalties for handling illegally logged wood. Such due diligence includes securing detailed information on timber sources and species, undertaking a risk assessment, and creating and implementing a risk-mitigation plan.

The EUTR requires national competent authorities responsible for implementing the regulation to investigate "substantiated concerns" from third parties, including CSOs (European Commission 2016a). Transnational CSOs like Greenpeace and the Environmental Investigation Agency (EIA) have already used this provision to publicize complaints about exports of illegally logged wood from a variety of countries to Europe (EUTR/FLEGT Expert Group 2015a,b, 2016b; UNEP-WCMC 2017).

Like the FLEGT VPAs, the EUTR was explicitly designed to be WTO-compliant, as it does not discriminate between domestic and imported wood, and imposes identical requirements on all operators (Overdevest & Zeitlin 2015, pp. 159–160). The Regulation is intended to serve as a backstop to encourage countries to sign VPAs as a preferred option. A major impetus for its passage came from countries negotiating VPAs, such as Indonesia, which told the EU that additional measures were needed to prevent signatories from being undercut by trade diversion to competitors (Speechly & van Helden 2012). The EUTR enhances the attractiveness of signing a partnership agreement with the EU by threatening to impose substantial liability risks and costs on firms exporting from non-VPA countries. In this way, it can be understood as a penalty default. The Regulation's initial effectiveness in this regard can be seen in the successive spikes in VPA signings and requests to open negotiations by timber-exporting countries after the announcement of the proposed legislation in 2008, its enactment in 2010, and its entry into effect in 2013. The EUTR's penalty default effect is likewise visible, as we shall see, in ongoing efforts of business and government actors in VPA signatory countries such as Indonesia and Ghana to meet the demanding requirements for issuing FLEGT export licenses.

At the same time, however, many member states were initially slow to establish competent authorities for EUTR implementation, to develop procedures for checking and evaluating operators' due diligence systems, and to introduce legal penalties for violations (Saunders 2013; Hoare 2015, pp. 42–43; European Commission 2016b,c). This uneven implementation left significant gaps through which illegal timber could enter the EU market, thereby weakening the regulation's dissuasive effectiveness, a point highlighted by the European Court of Auditors (2015) and the independent evaluation of the FLEGT Action Plan (TEREA/S-FOR-S/TOPPER-SPECTIVE 2016, vol. I, pp. 50, 52–58). As we shall see, critics of FLEGT VPAs in countries such as Indonesia have cited these gaps in EUTR enforcement as an argument against complying with their legality certification and export licensing provisions. International CSOs likewise highlight the continued entry of illegal timber from Cameroon into the EU market as a key factor undermining domestic political will to implement the VPA (FERN 2015b).

But as a result of infringement proceedings and pre-infringement pilots initiated by the European Commission, all member states (with the partial exception of Slovakia) have now met the basic requirements for implementing the EUTR. To support uniform implementation, pool information, compare experiences, and develop common risk assessment tools and procedures, member state competent authorities have created an informal enforcement network, which meets regularly alongside the Commission's official EUTR/FLEGT Expert Group (http://ec.europa.eu/transparency/regexpert/index.cfm?do=groupDetail.groupDetail&groupID= 3282), with a confidential website for sharing documents and event notifications, including substantiated concerns from third parties. Some competent authorities have likewise begun to work together to map supply chains in high-risk countries, assess the adequacy of companies' due diligence procedures, and carry out joint inspections on cases of common concern. Reaching beyond Europe, the Timber Regulation Enforcement Exchange (TREE, http://www.forest-trends.org/program.php?id=401) brings together public officials, CSOs, and business representatives from the EU to share information on enforcement approaches and developments in high-risk regions with their US, Australian, and INTERPOL counterparts. As a result, the level of enforcement activity has intensified significantly in recent years, including due diligence assessments, site visits, corrective action requests, injunctions, and sanctions or financial penalties (European Commission 2016c, pp. 13-14, 16, 24; Client Earth 2017; UNEP-WCMC 2017).⁷ Taken together, this combination of information sharing and enforcement coordination within and beyond the EU seems likely to enhance the effectiveness of the EUTR and reinforce its role as a penalty default for the FLEGT VPAs and the emergent transnational forest governance regime more generally.

3. Negotiating Voluntary Partnership Agreements (VPAs) in Indonesia and Ghana

Ghana and Indonesia are furthest advanced in developing TLASs and delivering FLEGT export licenses. In this section, we analyze VPA negotiations in these two countries, focusing on the common features of stakeholder involvement in the process on the one hand and the different choices about the design of the national TLASs that emerged from it on the other.

In both countries, the VPA negotiations built on the impetus generated by a CSO-led transnational campaign against illegal logging, which pushed the issue onto the agenda of multilateral bodies such as the G8, the World Bank, and the World Summit on Sustainable Development during the late 1990s and early 2000s. These initiatives, particularly the regional dialogues on Forest Law Enforcement and Governance (FLEG) organized by the World Bank, produced a growing political and epistemic consensus on the problem of illegal logging and appropriate measures to combat it, including improvements in domestic law enforcement and forest management capacity, involvement of stakeholders and local communities, and coordinated efforts to control international trade in illegal timber. But none of them generated legally binding commitments among the participating countries at regional or national level, nor established systematic mechanisms for monitoring and reviewing progress toward their agreed aims. Hence, when the European Commission unilaterally decided in 2003 to advance the shared goals of the international community by linking the improvement of forest law and governance to trade regulation through bilateral partnership agreements with developing countries, the ground was prepared for a breakthrough to an innovative new governance architecture in both Indonesia and Ghana (Overdevest & Zeitlin 2015).

3.1. Indonesia

Buoyed by the first FLEG conference held in Bali in September 2001, Indonesia and the United Kingdom (UK) signed a bilateral Memorandum of Understanding (MoU) to combat illegal logging. This MoU provided a model for the FLEGT VPAs by committing both governments to involve stakeholders in reviewing existing forest legislation for gaps and inconsistencies; create a new mutually agreed legality definition; and develop, test, and implement a system for legality verification (Brack 2005). The MoU built on a series of high-profile campaigns against illegal logging conducted jointly by Indonesian and northern CSOs, which used ground level investigative reporting to press both importing countries and the Indonesian government for reforms (e.g. Environmental Investigation Agency & Telapak Indonesia 2001). The success of these campaigns in turn motivated large exporting firms to support first the MoU and then the VPA in hopes of repairing the damaged reputation of Indonesian wood products in European markets.

The multi-stakeholder review process initiated by the MoU involved a wide range of domestic and international CSOs, along with certification bodies, auditors, forest businesses, and Ministry of Forestry officials (FERN 2013).⁸ The legality definition produced by this group eventually took the form of an auditable forest certification standard called the *Sistem Verifikasi Legalitas Kayu* (SVLK), which served as the basis for VPA negotiations with the EU. Negotiations began in 2007, but did not gain real momentum until the publication of the draft EUTR, which reassured Indonesia that FLEGT licenses would automatically be accepted as proof of legality without the need for additional due diligence, unlike wood exports from non-signatory countries. The SVLK was adopted in 2009, with phased-in deadlines for attaining certification. The VPA itself was agreed in May 2011 and formally ratified in April 2014 (European Forest Institute 2012; EU-Indonesia 2014).

The SVLK is an operator-based licensing system in which forest concessions and mills are required to hire private third-party auditors, called Conformity Assessment Bodies (CABs), accredited by the Indonesian national accreditation board (KAN), to assess their legal compliance. The auditors check that the operator has proper harvest permits and transport licenses, has paid fees and implemented safety and labor policies, and verify mills' ability to control and document the flow of SVLK timber from their suppliers. In addition to mandatory legality certification, the SVLK also includes sustainable forest management (*Pengelolaan Hutan Produksi Lestari* [PHPL]) certification. Producers on state-owned land are required to achieve PHPL certification after three years, allaying concerns raised by some commentators that legality certification would lead to a "ratcheting down" of environmental standards among leading firms (cf. Bartley 2014). The SVLK covers all Indonesian timber exports, including pulp, paper, and wooden furniture, going beyond the EU's own requirements.

The VPA provides for five complementary monitoring mechanisms. First, Indonesian CSOs operate as Independent Monitors (IMs) of the SVLK and can file complaints with CABs and the KAN about irregularities in legality verification. *Jaringan Pemantu Independen Kehutanan* (JPIK) is the main national IM network. The second type of monitoring is Comprehensive Evaluation. The Ministry of Forestry appoints a multi-stakeholder Joint Working Group to monitor and review the SVLK. This group is required to review IM reports and make recommendations for improvements to the Joint Implementation Committee (JIC) of EU and Indonesian representatives established to oversee the VPA. The third type of monitoring, Periodic Evaluation (PE), is a formal system audit of the entire SVLK by an independent third party contracted by the JIC. The PE includes review of both the IM reports and the Comprehensive Evaluation. Fourth, the VPA provides for Impact Monitoring to assess the SVLK's effects on the domestic timber industry and ensure that indigenous and local communities are not adversely affected by its operation. Finally, an Independent Market Monitor evaluates the acceptance of FLEGTlicensed timber in the EU market. To facilitate independent monitoring, the VPA commits Indonesia to making SVLK license and audit information publicly available through the Ministry of Environment and Forestry's online SILK system.

3.2. Ghana

Unlike in Indonesia, the initial impetus for the Ghanaian VPA did not come from the regional FLEG conferences. More important was the interest of the government, supported by large-scale private business, to secure continuing access to the EU market, which then accounted for 60 percent of national timber exports, as well as in improving regulation and reforming the forest sector (Ansah 2010; Beeko & Arts 2010).⁹

VPA negotiations with the EU began in March 2007 and successfully concluded in September 2008; the VPA was signed in November 2009 and ratified in March 2010 (European Community-Ghana 2010). It was the first VPA to be agreed, and the only one prior to the passage of the EUTR. Hence, there was no road map or ground rules for the process, which had to be made up by the participants as they went along.¹⁰

The FLEGT Action Plan and Commission negotiating mandate for the VPAs included a commitment to ensuring broad stakeholder participation in forest governance. In Ghana, however, the legality review process initially sidelined civil society groups. In response, local and European CSOs coordinated an effective public campaign, which successfully pressured the government into opening up the process to greater civil society input (FERN 2013, p. 15).¹¹

A VPA Contact Group was established by Forest Watch Ghana, a local civil society platform. This group also included timber traders, business associations, traditional authorities, and forest forums. Representatives from the Contact Group served formally on the VPA Steering Committee and unofficially on the Ghanaian negotiating team, as well as on working groups dealing with key practical issues (Osuwu 2009; Ansah 2010).¹² CSO participation in the negotiations broadened the governance discussion from timber legality to socio-economic issues, leading to the adoption of new rules focused on multiple uses, benefits, and impacts of forests (Beeko & Arts 2010; Lartey *et al.* 2012; FERN 2013; Ghana Forest Governance CSOs 2015).

As in Indonesia, the VPA includes a set of agreed legality definitions, enumerating approved types of permits, while excluding wood harvested under administrative permits and contracts not awarded through competitive bidding. The legality definitions also require compliance with forest regulations, including a sustainable forest management plan and a Social Responsibility Agreement (SRA) with local communities, as well as with labor law and fiscal obligations.

The VPA commits Ghana to develop a TLAS to cover all wood harvested or processed in the country, whether for export or the domestic market. The impetus to include the domestic market in the negotiations came from the Ghanaian side, reflecting a broad consensus among government, business, and civil society stakeholders.¹³ Unlike Indonesia, the Ghana Legality Assurance System (GhLAS) is based on an integrated national Wood Tracking System (WTS) to ensure traceability of timber flows through a series of "critical control points" from forest to mill to port. This design choice for an integrated rather than decentralized TLAS reflects the central role of the public Forestry Commission (FC), as well as the country's much smaller size compared to Indonesia, whose forested area is 20 times larger.¹⁴

The VPA mandates the creation of a Timber Validation Department (TVD) within the FC to supervise the GhLAS, by auditing procedures and reconciling data at each critical control point, ensuring that they match information in the central database. The TVD is also responsible for reporting on infractions and making recommendations for improvement. To oversee the TVD and deal with complaints regarding its operation, the VPA establishes a multi-stakeholder Timber Validation Committee. In addition, the VPA provides for the appointment of an IM, responsible for auditing the GhLAS, conducting field investigations, identifying system failures, assessing corrective actions, and reporting findings to a joint implementation committee of Ghanaian and EU representatives, known as the Joint Monitoring and Review Mechanism (JMRM).

A key feature of the Ghanaian VPA is a commitment to legal and governance reforms aimed at addressing the "root causes and drivers of illegal logging" (European Community-Ghana 2010: art. 15). These include the revision of regulations for the award of permits and concessions, as well as reinforcement of local forest tenure and stakeholder rights. The VPA identifies areas where additional resources are needed for effective implementation from the EU and other sources, and commits the government to encourage stakeholder consultation in its implementation. It also provides for specific monitoring of the agreement's social and economic effects, in order to mitigate any adverse affects on indigenous and local communities. Although the VPA does not contain a specific transparency annex, it commits Ghana to make a wide range of forest information publicly available and charges the JMRM to operate "as transparent[ly] as possible" (European Community-Ghana 2010: art. 20).

4. Implementation challenges and roadblocks

FLEGT VPAs are extremely challenging for developing countries to implement because of the breadth of the policy issues they address and the depth of the governance changes they mandate. This section comparatively analyzes the main challenges and roadblocks – technical, administrative, and political – that have delayed the issuance of FLEGT licenses in the two countries most advanced in VPA implementation.

4.1. Indonesia

Among the most significant obstacles to the implementation of the Indonesian VPA has been the slow and uneven pace of SVLK certification. Indonesia has over 700,000 firms involved in the production of timber, paper, and furniture, employing nearly 1.5 million people, including many small and medium-sized enterprises (SMEs), which represent a significant challenge for an operator system based on individual field audits. A major concern for many stakeholders, both domestic and international, was that the high cost of SVLK certification would exclude SMEs from export markets (Setyowati & McDermott 2016). Other factors contributing to the slow initial pace of certification include the limited number of accredited auditing bodies and lags in adoption by conversion permit holders and private landowners (Obidzinski *et al.* 2014).

Widespread concerns have likewise been raised about the quality of auditors and the audits themselves. Key issues include variability in the stringency of accredited auditors, opportunities to shop around for more lenient auditors, follow-up of complaints raised by the independent monitors, and loopholes for the entry of illegally harvested wood into the supply chain. JPIK, the federation of independent monitors, has complained that representatives of local communities are not consulted in the audit process, while public summaries of audits and minutes of consultations are not being produced as required by the SVLK regulations. JPIK and other CSOs have also pointed to evidence of illegally harvested wood entering into the supply chain of certified companies despite SVLK traceability requirements (Anti-Forest Mafia Coalition 2014; Meridian *et al.* 2014).¹⁵

Despite widespread praise for CSOs' formal role as independent monitors in the SVLK, there were numerous initial complaints about their ability to perform this function effectively. Thus JPIK monitors reported difficulties in accessing necessary information at each stage of the certification process, from the timing of planned audits and required consultations through audit reports to follow-up actions taken in response to complaints. JPIK has also drawn attention to the lack of human and financial resources that limit CSOs' capacity to carry out independent monitoring. Between 2010 and 2013, JPIK reported that it was only able to monitor three percent of SVLK permit holders and officially filed only 10 complaints with certification bodies. Alongside insufficient resources and information disclosure, JPIK cited "varying acceptance" by both government and companies as a key factor

in explaining the limited monitoring activities carried out by its representatives. JPIK has also demanded greater official protection for IMs, as some have faced intimidation and death threats (Anti-Forest Mafia Coalition 2014; Meridian *et al.* 2014).¹⁶

Beyond these serious problems with the SVLK's rollout and integrity, VPA implementation has exposed a series of deep-rooted and unresolved issues. One concerns the status of indigenous peoples' rights to their traditional lands, which the Indonesian government appropriated and reclassified as state property in 1999. At one point during the multi-stakeholder negotiations over the SVLK, it appeared as if the legality standard would include instructions to auditors "to look at community documentation of traditional/customary rights, agreements between companies and communities, and documentation of how land conflicts have been resolved." But these criteria were deleted from the final version, although CSOs were hopeful that the underlying issues would be addressed in the mandatory environmental and social impact assessment included in the SVLK (Bartley 2014, pp. 99–100).

In May 2013, the Indonesian Constitutional Court issued a landmark decision modifying the 1999 law and returning millions of hectares previously controlled by the government to the hands of indigenous peoples. The ruling separated state and public forests, thereby removing customary forests from state control (First Peoples Worldwide 2013). The case was brought by AMAN, the Indigenous Peoples' Alliance, which had also been consulted on the SVLK negotiations, but withdrew from the process when it became apparent that the legality definitions would not include a reference to customary rights. The decision has widely been seen as a major victory for indigenous peoples' rights, vindicating the efforts of domestic and international CSOs to push this issue within the broader agenda of forest governance reform. But there are legal questions about the effects of the Constitutional Court's ruling (Butt 2014), which the Ministry of Forestry has sought to exploit by creating new administrative barriers to returning control over customary forest land to indigenous communities (Down to Earth 2014).

Other land and resource governance challenges include inadequate spatial planning capacity, bureaucratic silos, and corruption. Until recently, Indonesia lacked geographical information systems for modern natural resource planning. It also suffers from administrative fragmentation, where ministries tend not to share information across agencies, often driven by official corruption. As one international advisor observed:

The data silos that you find in the ministry are there because of physical rent-seeking practices....[E]very license, every piece of paper bears a price. And that price goes to an official, who then pays up and down the network, set[s] fees...that are all worked out so everybody has a bonus at the end of the year.¹⁷

As a consequence of this corruption-ridden governance structure, different ministries often issue licenses for concessions on the same land and also disagree about how much land is forested. CSOs have produced reports showing overlapping concession licenses for palm oil, mining, rubber plantations, and forest concession areas, as well as permits for logging activity inside environmental conservation zones (Anti-Forest Mafia Coalition 2014, p. 30).¹⁸

Civil society organizations and others have questioned whether the SVLK can address and correct these deeprooted problems, especially because the VPA does not directly tackle corruption in the permit allocation process (Seyowati & McDermott 2016).¹⁹ Certifying bodies are required to consider only "the existence of a permit document, without examining the process of the issuance of the permit."²⁰ CSOs have urged that the SVLK be revised to oblige auditors to check whether permits are issued in violation of officially designated area functions, or in response to side payments and other forms of corruption (Meridian *et al.* 2014).

4.2. Ghana

In Ghana, unlike Indonesia, the biggest challenges encountered in the initial phase of VPA implementation concerned the failure of the initial attempt to develop a nationwide WTS for the TLAS. But as in Indonesia, implementation of the VPA's broad commitments to forest governance reform also raised a series of thorny, longstanding issues concerning land use and allocation of rights to natural resources, including the award of all timber harvesting permits through competitive bidding and reorientation of the domestic market away from illegal "chainsaw milling." Although the Ghanaian VPA was agreed in 2008, there was little movement toward implementing its provisions over the next several years. Unlike in subsequent VPAs, the EU had not arranged with the Ghanaian government and domestic stakeholders to monitor progress while waiting for the agreement to be ratified, resulting in a loss of momentum (Groen 2013).²¹ This institutional vacuum was compounded by a change of government following the 2008 elections, which made it necessary to rebuild political support for the VPA almost from scratch, while the key negotiators from both the FC and Forest Watch Ghana also moved on to other positions, resulting in a loss of expertise among key domestic stakeholders. Finally, prior to the passage of the EUTR in 2010, there was also a lack of urgency about VPA implementation among Ghanaian forest businesses. As an EU representative later remarked:

[t]here was no pressure from the private sector either, because the EUTR, the fundamentals of it, were still being argued over in Europe in 2008/2009. So it was not something that anybody in the Ghanaian private sector took seriously at that point in time. Now they do. (quoted in Groen 2013, p. 98)

Once the VPA implementation process began seriously in 2010–2011, it quickly ran into problems with the development of an electronic WTS. The contract to develop a pilot was awarded to an international software company specialized in supply-chain management, which also received similar contracts from the other African countries involved in VPA negotiations. This software platform was intended to provide an electronic system for tracking timber from the forest to the point of export. Field personnel entered the information into hand-held computers and wirelessly transmitted it to a central database. The central databases were configured to generate reports and perform data reconciliation along the supply chain, which if nonconformities were found could lead to "management decisions" about whether to approve the timber as legal (Gyimah 2012).

The pilot WTS suffered from a series of fundamental flaws, including over-centralization, design inflexibility, and excessive costs, as well as intermittent internet access in remote locations. FC officials, private businesses, and CSOs were all insufficiently involved in the system's design and testing. The contractor lacked direct forestry experience, focused primarily on information technology, and struggled to set up traceability systems in contexts where the public actors were not as cooperative as their typical industrial clients. As a result, the pilot WTS did not produce information that could be used directly for management purposes, either by the FC itself or by private companies. The failure of this approach to WTS design led to non-renewal of the contract, following a 2012 review, not only in Ghana, but also in the other African VPA countries (Gyimah 2012; Groen 2013, pp. 88, 99–102).²²

While efforts by the FC and its EU advisors to advance the VPA were focused on fixing the WTS, a major political outcry blew up over the award of administrative permits contrary to the agreed legality definitions. Ghanaian forestry regulations stipulate that all timber utilization contracts should be awarded through competitive bidding (Carlsen & Hansen 2014, p. 540). But prior to the VPA, this rule was frequently violated, while large numbers of special permits were awarded to firms non-competitively, taking advantage of a legal loophole allowing the Minister to authorize them administratively. According to Carlsen and Hansen (2014, p. 543), the award of such permits was often based on unofficial payments, campaign contributions, and other forms of personal support to politicians and high-level officials.

In 2011, domestic and international CSOs denounced Ghana's issuance of Salvage Permits, especially for rosewood, which was enjoying an export boom.²³ Following complaints to the JMRM, the FC announced that the large-scale use of such permits had been halted (FERN 2013, p. 34). But CSOs reported that their issuance nonetheless continued, an allegation denied by the FC (The Forestry Commission of Ghana 2013; Global Witness 2013, pp. 14–15). In 2013, the new Minister of Land and Natural Resources promised to stop issuing administrative permits not recognized by VPA, although civil society activists dispute whether this commitment was fully honored.²⁴

Even more problematic was Ghana's commitment under the VPA to ensure that all wood sold on the domestic market for export is also legally harvested. Recent estimates suggest that between half and two-thirds of all Ghanaian wood goes to the domestic market, 50 percent of which is illegally logged (down from 70 percent in 2010 and 84 percent in 2005), mostly by so-called chainsaw millers (Marfo 2010; TEREA/S-FOR-S/TOPPER-SPECTIVE 2016, Annexes 5, 8–9).²⁵ Small-scale milling is a major source of income and employment for local forest communities, underwritten by illegal traders selling wood in urban markets, including for public contracts. As in other VPA countries, including Indonesia, CSOs working with forest communities are concerned that strict legality enforcement could have a devastating impact on local livelihoods (Lesniewska & McDermott 2014). The Ghana VPA contains explicit commitments to ensure that this does not occur, including provisions for enforcing payment of stumpage fees (amounting to five percent of the value of harvested timber) to local communities through SRAs, as well as monitoring its socio-economic impacts. But reform of the domestic market and reconversion of chainsaw milling remain extremely difficult long-term challenges.

5. Recursive problem-solving: The VPAs as accountability and learning platforms

As the previous sections illustrate, implementation of the FLEGT VPAs in both Indonesia and Ghana has proved much more arduous and time-consuming than the EU and its partners expected when they were signed, in part because they ran up against deep-seated governance problems. The EU-Ghana VPA, for example, envisaged the issuance of FLEGT export licenses within two years following its ratification, assuming that this would be a simple technical exercise once the negotiations had been completed. Despite the slow progress in implementing the agreements in both countries and the many roadblocks encountered on the way, the experimentalist architecture of the VPAs has provided a powerful set of institutional resources for exposing and addressing the key obstacles to timber legality assurance and forest governance reform. In both countries, the joint implementation committees, which include representatives of civil society and private business, as well as government officials, have served as effective platforms for CSOs and other domestic stakeholders to raise problems about the working of the VPA with support from the EU, and to set in motion collaborative processes for developing provisional solutions. The penalty default effect of the EUTR - to the extent that it is perceived as credible by the actors concerned - reinforces the pressures on both public officials and private businesses to tackle the obstacles to VPA implementation and FLEGT licensing flagged by the JICs, which regularly monitor and review progress of the implementation of commitments agreed at previous meetings. This process of recursive problem-solving, which combines accountability for meeting agreed commitments with joint learning about how to do so, has led to significant progress in tackling the barriers to VPA implementation, both proximate and more deeply rooted.

5.1. Indonesia

In Indonesia, this process of recursive problem-solving through exposure of implementation deficits has worked through a sequence of interconnected channels and mechanisms. These include: (i) investigative reports by domestic and international CSOs that highlight gaps between SVLK standards and performance; (ii) the use of these investigations as "shadow reports" by EU bodies to demand corrective action from the Indonesian authorities; (iii) joint evaluation reports about the operation of the SVLK mandated by the VPA process, which identify problems that must be addressed prior to the issuance of FLEGT licenses; and (iv) review of these evaluations by the JIC, leading to the development of solutions through multi-stakeholder working groups, and the formulation of Action Plans for their implementation, which are themselves regularly reviewed and revised. The remainder of this section traces this sequence of accountability channels and mechanisms, together with their effects on the SVLK and Indonesian forest governance.

Since the SVLK was launched, CSOs have closely tracked its implementation in order to expose performance gaps and hold the Indonesian government and the EU accountable. In March 2014, a group of domestic and international CSOs calling themselves the "Anti Forest-Mafia Coalition" published a detailed study of SVLK-certified forest concessions designed to evaluate the credibility of the system's early implementation. The report documented pervasive performance shortfalls (discussed in the previous section) and marshaled information about them into an accessible form, which could be cited by EU officials and other concerned parties. A second influential report, based on independent monitoring of companies that had applied for SVLK certification, likewise highlighted numerous shortcomings in the auditing process (Meridian *et al.* 2014). International attention had already been drawn to criticisms of the SVLK's workings by Human Rights Watch (2013) in a high-profile report focused on violent conflicts arising from the government's failure to safeguard local community rights in awarding forest concessions.

These exposés of the SVLK's operation were taken up as "shadow reports" by the European Parliament (EP), which passed a detailed resolution on the Indonesian VPA in the spring of 2014 prior to its formal ratification by the EU. Responding to criticisms of the SVLK raised by Human Rights Watch (whose report is explicitly cited) and the Anti-Forest Mafia Coalition (whose report was carefully timed to feed into the debate),²⁶ the EP resolution called upon the Commission to ensure that these concerns were satisfactorily addressed before approving the Indonesian FLEGT licensing system (European Parliament 2014). The EP resolution in turn fed directly into processes of joint monitoring, review, and evaluation mandated by the VPA itself. Stage I of the monitoring process, concluded in September 2013, resulted in a joint Action Plan that identified 17 timetabled actions required for Indonesia to move from SVLK certification to the issuance of FLEGT licenses, largely reflecting the concerns raised about implementation roadblocks and challenges reviewed earlier. A second and third Action Plan followed over the next two years, documenting Indonesia's responses and providing a platform for ongoing stakeholder input in the lead-up to FLEGT licensing.

Between September 2014 and January 2016, EU and Indonesian officials, accompanied by domestic business and civil society representatives, convened regularly in the JIC to monitor progress and follow up on action items, supported by multi-stakeholder Joint Working Groups to resolve outstanding problems. The participation of EU officials and civil society representatives ensured that sensitive issues raised by the EP Resolution and CSO reports would be addressed, including not only the rollout and integrity of the SVLK itself, but also information sharing, independent monitoring, and customary rights.

Responding to concerns about the exclusion of SMEs, the SVLK was revised to allow small producers to establish group certification cooperatives with government financial support. To accelerate the certification process among small producers, the Ministry of Environment and Forestry (MoEF) established a network of independent facilitators to map their location, assess gaps in meeting SVLK requirements, and assist in achieving group certification. There has likewise been substantial growth in the number of accredited CABs and trained auditors. As a result of these measures, rollout of the SVLK has greatly advanced. As of August 2015, SVLK certification had attained 100 percent coverage among state forest concessions and large primary timber processors and 52 percent among medium-sized primary timber processors. By the end of 2015, 98 percent of all timber exports covered by the VPA had received an SVLK legality certificate (European Commission 2015; Indonesia-EU 2015c, pp. 19, 21–22, 2016).

To enhance the SVLK's effectiveness in detecting and preventing the entry of illegal wood into the supply chain, the revised VPA annexes include forest conversion permits, while Indonesia has agreed that all new forest conversion concessions must be SVLK-certified (European Commission 2016e). Indonesia has also committed to develop an integrated online information management system for controlling the movement of timber from state forests to the point of sale, whether for export or the domestic market, which is intended to enable reconciliation of data across the different stages of the supply chain, as in Ghana (Indonesia-EU 2015c, pp. 14, 29, 2016).

The Action Plans obliged certification bodies to outline how they act on reports of infringements, as well as to impose sanctions on certifiers and companies who fail to deliver audit reports on time. To reinforce these requirements, the revised SVLK regulations stipulate that if local communities and CSOs do not receive a satisfactory response to complaints raised with a CAB about illegal activities detected in connection with an SVLK license, they can file complaints directly with the MoEF (Indonesia-EU 2014; European Commission 2016e). The Action Plans further commit the Indonesian government to "document that the average response time to filed complaints by CABs and the MoEF has decreased" (Indonesia-EU 2015b). In the meantime, there are signs that Indonesian police and courts have begun to move aggressively to crack down on illegal logging (Jakarta Globe 2015; Jakarta Post 2015).

Inadequate information about the SVLK verification process has been a recurrent complaint from CSOs. The revised SVLK regulations include guidelines obliging CABs "to publicly announce and inform stakeholders about audits and share information about the verification results." The CABs are now required to send copies of all audit reports to the MoEF, including information on non-compliances, which the Ministry may follow up with law enforcement actions based on their findings. The next revision of the SVLK regulation will establish a formal procedure for dealing with companies that have failed an audit, including "information sharing with all relevant

authorities at central and local levels" and follow-up of the verifiers not passed (Indonesia-EU 2014, 2015a, 2016).

Regarding independent monitoring, the joint closure report on VPA implementation observes that CSOs have carried out gap analyses of their own needs, provided training to their members, and integrated local communities into their capacity-building activities. It also notes that there are now 629 people from 95 organizations involved in independent monitoring, covering over 60 companies, twice as many as in 2013. IM rights have been explicitly addressed through agreements with the MoEF and revision of the SVLK regulations, including formal security protocols, a mechanism for data access/information sharing, and steps toward establishing a sustainable funding mechanism (Indonesia-EU 2016; Parthama 2016).²⁷

While corruption in the permit allocation process was an important issue for both domestic civil society and the EP, the joint assessment of the SVLK and associated Action Plans did not include specific measures to address it. Instead, the joint assessment merely acknowledged this concern, and requested Indonesia to "elaborate...its reasons why the description of processes to allocate forest resources and to issue rights to harvest are not included in the standards in the SVLK regulation" (Indonesia-EU 2014). According to one international advisor, this request was

[b]atted back on the grounds that the historical corruption that went on in the distribution of licenses, there's very little you can do about that without raising so many skeletons in cupboards that you'd need to have a major and wholesale review of licenses...²⁸

Unfortunately, he observed, the SVLK certification and auditing system was neither designed nor equipped to carry out such a wholesale review of historic licenses.

Nevertheless, CSOs continued to pursue this issue through the 2008 Public Information Disclosure Act. After the MoEF rejected requests for information on permits, claiming that this fell outside the law, Forest Watch Indonesia submitted a complaint to an administrative court, which ruled that such information must be made public and reaffirmed its decision on appeal (FERN 2015a; Forest Watch Indonesia 2015). Independent monitors also work closely with the Indonesian Anti-Corruption Commission to feed information into the latter's investigation and enforcement actions, a number of which have targeted corruption in the award of forest concessions to SVLK-certified companies (Anti-Forest Mafia Coalition 2014, pp. 27–28).²⁹

Finally, regarding indigenous rights, revisions to the VPA annexes require changes in the procedures for utilization of timber from customary forests to be integrated into the SVLK regulations following the adoption of legislation to implement the Constitutional Court's landmark decision (European Commission 2016e).³⁰ The draft legislation has not yet been passed by Parliament, but in February 2017 President Joko Widodo (Jokowi) granted rights to nine indigenous communities over their customary forests. Although this move covers only a small proportion of the lands claimed by Indonesia's indigenous peoples, it marks a milestone toward recognition of their customary rights, with profound implications for community forest governance (Rogers 2016; Mongabay 2017; Mulyana 2017).

By mid-2015, the success of these recursive problem-solving activities meant that Indonesia appeared to be well on its way to the completion of VPA implementation. But a major political obstacle had meanwhile emerged: a regulation issued by the Ministry of Trade (MoT) exempting furniture exports from mandatory SVLK certification. In the spring of 2015, a breakaway trade organization, the Indonesia Furniture and Craft Association (known as AMKRI) began to lobby President Jokowi, himself a former furniture manufacturer, to exempt its members' exports from SVLK certification requirements, allegedly because of the high cost for small producers.³¹ To address these concerns, the government had already introduced a provision whereby small businesses could file a "self-export declaration" that their timber was derived from a legal source, as well as the subsidized system of group certification discussed earlier. In October 2015, however, the MoT announced that the self-export declaration, which was rejected by the EU, would be replaced by a full exemption for furniture manufacturers' organization (ASMINDO), most of whose members had already obtained certification and feared damage to Indonesian exports, as well as by the Indonesian Pulp and Paper Association and the MoEF. European and Australian timber importers likewise urged Indonesia to complete the process of FLEGT licensing, which would meet the requirements not only of the EUTR, but also of the Australian Illegal Logging Prohibition Act (Jong 2015; Multistakeholder Forestry Partnership 2015; Jong & Amin 2015; Wirayani 2015). The EU Ambassador wrote publicly to the Trade Minister pressing him to reconsider in order to make possible the planned issuance of FLEGT licenses (Guérand 2015). In January 2016, the closure report to the JIC concluded unequivocally that "the export regulation undermine[s] provisions of the VPA" and represents "a serious hindrance for the start of FLEGT licensing" (Indonesia-EU 2016).

Faced with this impasse, a public war of words broke out within the Indonesian government. The MoEF's chief VPA negotiator declared that if the regulation were not revoked, there would be no purpose continuing the negotiations, subjecting Indonesia to international ridicule. In response, an MoT spokesman questioned the EU's seriousness about implementing FLEGT, citing limited enforcement of the EUTR (Jong 2016).

In the end, however, the Indonesian government proved unwilling to risk an open breach with the EU, which accounts for 11 percent by value of national wood and paper exports (including 40 percent of furniture exports). To smooth the path for negotiations on a Comprehensive Economic Partnership Agreement with the EU, the MoT agreed to issue a new export regulation abolishing the exemptions and applying SVLK requirements to all products covered by the VPA. With the removal of this final roadblock, the President of Indonesia, the European Commission, and the European Council jointly announced on 21 April 2016 that Indonesia had met the VPA's requirements and could proceed toward issuing FLEGT licenses (Guérand 2015; European Commission 2016d).

Indonesian CSOs publicly welcomed this decision, but warned that the anticipated benefits of FLEGT licensing would not be achieved unless stakeholders "work together to build and maintain credibility" of the SVLK through "continuous governance improvement," including effective enforcement responses to non-compliances and enhanced recognition of indigenous people's rights to forest land (JPIK *et al.* 2016). To address such postimplementation issues, Indonesia and the EU agreed to develop a new Joint Action Plan for longer-term activities "to continuously monitor critical aspects of the system during future operation of FLEGT licensing...and provide the basis for future strengthening of the system" (European Commission 2016e).

5.2. Ghana

After the failure of the pilot WTS, a broad coalition came together to push for implementation of the Ghanaian VPA. At its head was the FC, especially officials who had participated in the negotiations and were now setting up its TVD. A second key group comprised large forestry firms, which accounted for more than 50 percent of Ghanaian wood exports, and had invested in preparation for FLEGT licensing. Both the FC and private industry were concerned about potential damage to Ghanaian forestry exports to the EU, which are still very economically attractive despite growing demand from other less demanding markets (Global Wood 2013). The third critical force was domestic civil society, organized into a vibrant national platform with support from international CSOs, donors, and the EU.³²

As in Indonesia, the VPA joint implementation committee, known in Ghana as the JMRM, has served as a vital platform for accountability, learning, and recursive problem-solving. Since VPA ratification, Ghanaian and EU representatives have met regularly to review progress and identify outstanding issues that must be resolved before the issuance of FLEGT licenses. Public "aide memoires" set out next steps and work plans for their implementation. Civil society representation on the JMRM and Multi-Stakeholder Implementation Committee (MSIC) has created an effective framework to raise forest governance concerns in the presence of the EU delegation, thereby putting pressure on the Ghanaian authorities to address them. These bodies have provided an institutional focus for ongoing cooperation among a broad range of CSOs, community groups, and forest activists, who come together regularly to prepare joint positions for and review the results of JMRM/MSIC meetings (Ghana Forest Governance CSOs 2015).³³

The first major issue to be tackled was redesign of the WTS. Following careful review of the failed pilot, the FC launched a new tender, specifying that the WTS should be usable for forest management as well as legality assurance. The tender was awarded in 2012 to the Ata Marie Group (AMG), an international forestry consultancy experienced in working with both public and private clients. This group developed the WTS in close consultation with the FC and large private timber exporters, building as far as possible on their existing operations and practices.³⁴

Unlike its predecessor, the new WTS can be used to manage inventories and produce a digital species map in two days (as opposed to three weeks for a hand-drawn map), which facilitates the update of sustainable forest

management plans. The system includes a full set of VPA legality definitions for compliance verification and auditing. Real-time data reconciliation automatically identifies discrepancies between information entered at critical control points from logging to mill to export. This generates a set of red flags for auditing and review, while making falsification much more difficult, because it requires coordination across different stages of the process. The WTS also exports information on royalties, fees, and taxes to the FC's financial control system, and can be used to generate real-time industry and trade statistics. Solar power installations and internet upgrades supported by international donors are being developed to tackle problems with electricity outages and loss of connectivity in remote areas. Each WTS module has been tested individually, and the FC is now in the final stages of "end-to-end" testing of the system, which has been rolled out in 34 of 46 districts covering the bulk of national timber production (Ghana-EU 2016b, 2017).³⁵

In April 2014, the legality verification protocols for the GhLAS were field-tested and jointly evaluated by a team including civil society and EU observers. The results of this testing, which exposed problems with the updating of forest management plans, criteria for assessing compliance with SRAs, and over-reliance on official documentation rather than direct investigation, were reported to the JMRM, and the protocols were revised to incorporate this feedback (Ghana-EU 2014).³⁶

Although the final joint evaluation has not yet been completed, the VPA and the GhLAS have already begun to transform the FC's operational practice. Officials at all levels "from senior management to field staff" are reported to be "quite excited" about the system's "potential as a forest management tool and not just as a tool for regulation," down to small matters such as the advantages of electronic over paper data entry during forest rain, which avoids the need for return visits to rerecord illegible information. More fundamentally, other FC divisions are using red flags thrown up by TVD audit reports to detect and correct operational problems, such as non-compliance with SRA requirements in specific districts.³⁷ The FC is likewise collaborating with civil society and private business on an EU-funded project to develop a public portal for the WTS, which could also be used by foreign customers to carry out due diligence on their Ghanaian supply chains (Ghana-EU 2017).

The preparations for issuing FLEGT licenses, including joint testing and evaluation of the GhLAS, have served as a remarkably incisive platform for exposing and addressing thorny, deep-rooted issues of forest governance, corruption, and social justice. Among the most significant of these are SRAs with local communities. The VPA legality definitions stipulate that compliance with SRAs is required for FLEGT licenses. Such compliance is critical not only for ensuring that local communities get a fair share of the benefits from timber revenues, but also for mobilizing their support against illegal chainsaw milling. Inclusion of SRA obligations in the VPA legality definitions has already made a tangible impact on the ground in many forest communities. According to the civil society submission to the 2015 FLEGT evaluation:

The VPA legality matrix has indices which require continuous community involvement to ensure that communities duly receive their benefits from forest [sic]. Local communities are aware of these provisions and use them as a basis for making demands on logging companies and forest sector agencies. (Ghana Forest Governance CSOs 2015)

Despite this progress, widespread irregularities persist in SRA implementation, especially the requirement that the use of stumpage fees should be formally agreed with local community assemblies rather than village chiefs. Following field-testing of the GhLAS, the FC and CSOs involved in the VPA process jointly developed a "compliance checklist" for SRAs, which has been incorporated into the revised legality verification protocols. The compliance checklist:

[p]rovides a list of very clear things that it would be useful to check for...like whether the proper info had been given, whether communities were clear on how much was owed to them, and whether there was evidence that what had been owed to them was delivered.

In addition, the FC's top management has "put pressure on districts and regions to report monthly on SRAs and what they are doing to ensure implementation".³⁸

A closely related issue is regulation of the domestic market, where illegal chainsaw timber remains the dominant source of supply, despite Ghana's commitment to apply the VPA legality definitions to all wood produced and processed within the country. A major step to address the problem, developed through the JMRM, is a new public procurement policy, which CSOs helped to design, obliging contractors of public construction projects to demonstrate that the wood they use was legally harvested. This policy should help to reduce corruption and improve the quality of public construction, as well as closing off one of the main sources of demand for illegal wood. The FC is also introducing a new mandatory system of timber tracking for the domestic market, based on inspection and log measurement and conveyance certificates that create a clear chain of custody from the forest to the point of sale (Ghana-EU 2016a,b, 2017).³⁹

To address the root causes of the problem and ensure that increased enforcement of legality requirements does not come at the expense of forest communities, the FC, in collaboration with international and domestic CSOs, has sought to encourage illegal chainsaw operators to reconvert themselves into artisanal millers selling legal lumber to the domestic market. Although such reconversions have been successfully piloted on a small scale, obtaining a sufficient supply of legal timber for the artisanal sector remains a major challenge, as Ghana's forest reserves have been largely depleted, while exports remain more lucrative (Hoare 2014, pp. 8–9; Obeng *et al.* 2014). Alternative strategies for supplying the domestic market include organizing bulk purchases of wood by associations of artisanal millers and imports from other countries with more abundant reserves. The FC has facilitated the formation of a Domestic Timber Trade Network to regulate the supply and pricing of legal lumber for the domestic market through a voluntary registration scheme. In the longer term, however, supplying the domestic market with legal timber will have to involve reforestation and the development of new plantations (Marfo & McKeown 2013; Ghana-EU 2016b).⁴⁰

Another longstanding problem that has been effectively tackled through the VPA process is revision of forest management plans. The VPA requires all forest reserves supplying FLEGT-licensed wood to have an up-to-date sustainable management plan. Most such plans were prepared in the 1960s and had not been updated since then (Hansen & Lund 2017). Pressure to meet this requirement has led to the drafting of plans covering all forested reserves to be harvested through 2018, with support from international donors for stakeholder consultations, and other priority areas to follow in subsequent years. The digitalization capacities of the WTS have helped to accelerate this process (Ghana-EU 2016b, 2017).⁴¹

Among the thorniest issues to be tackled before FLEGT licenses could be issued was the regulation of administrative permitting. The VPA legality definitions exclude wood harvested through permits awarded without competitive bidding, and the Minister of Land and Natural Resources had promised to stop their issuance. In 2014, however, his successor insisted that as such permits were legal under Ghanaian law, they should be allowed to continue. The Ministry claimed that administrative permits are appropriate for off-reserve areas too small to justify competitive tendering, while the FC argued that an accelerated permitting process is needed to prevent trees being cut down illegally. CSOs involved in the VPA process opposed any non-competitive permitting, fearing that this would be used as a patronage device for reallocating harvesting rights to firms whose permits had expired.⁴²

Here, too, a solution to this impasse has been reached through a multi-stakeholder working group convened by the JMRM. This group produced a set of guidelines for issuing special permits that would sharply reduce the Minister's discretionary power by subjecting it to public scrutiny and oversight. Following a protracted controversy that threatened to divide both government and civil society, the Minister agreed to embody these guidelines in an enforceable Legislative Instrument to be ratified by Parliament. The resulting regulation, in whose drafting CSOs likewise participated, settled all of the outstanding legal issues arising from the VPA implementation process. It creates a new type of "small-scale" Timber Utilization Contract (TUC) for allocating harvesting rights in off-reserve areas; requires all special permits to be converted to TUCs and subjected to SRA obligations; establishes alternative procedures for competitive awards; and clarifies that timber rights do not renew automatically. The new regulation also declares that conversion of existing leases to TUCs should be based on a one-off rather than annual payment of a Timber Rights Fee, thereby resolving another long-standing dispute with large forest concession holders that had threatened to block the issuance of FLEGT licenses. Finally, the Legislative Instrument provides for online public access to information on forest resource management and requires civil society representation on the Timber Validation Committee (Ghana-EU 2016b, 2017).⁴³

The JMRM is currently preparing for the final joint assessment of the GhLAS, which is expected to occur in October 2017. The new Minister of Land and Natural Resources appointed following the 2016 elections has reaffirmed the government's commitment to completing VPA implementation and ensuring the availability of funds for this purpose. Assuming that the results of the joint assessment are positive, issuance of FLEGT licenses is expected to begin in 2018 (Ghana-EU 2016b, 2017; Tandoh 2017).

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6. Conclusion

After years of difficult negotiations, both Indonesia and Ghana have largely met the requirements of their VPAs with the EU. Indonesia has already begun to issue FLEGT export licenses, and Ghana is expected to follow shortly. By inaugurating fully functioning TLASs whose operations can be publicly monitored, reviewed, and revised, the issuance of these licenses will open a new era not only for these two countries, but also for the FLEGT initiative as an experimentalist transnational regime.

Already, however, the implementation of FLEGT VPAs in both countries has resulted in significant improvements in forest governance, including measurable declines in illegal logging. Chatham House studies estimate that the share of illegally logged wood in domestic production fell from 60 percent to 40 percent in Indonesia and from 59 percent to 49 percent in Ghana between 2010 and 2013 alone (Hoare & Wellesley 2014, pp. 23-24; Hoare 2014, p. 20). At a deeper level, the VPA process has led to substantially increased participation by civil society and other stakeholders in forest governance, greater transparency and accountability, and heightened recognition of community rights in both countries. The VPA process has focused attention on protecting the livelihoods of small producers in the transition to the new timber legality regime - in Ghana through the domestic market policy and enforcement of Social Responsibility Agreements; in Indonesia through subsidized group certification. In Ghana, the TLAS has begun to transform the Forestry Commission's practice, enhancing its capacity for sustainable forest management through the accelerated updating of plans and species maps, as well as for regulatory enforcement through the use of audit reports to detect and correct operational problems, including noncompliance with SRAs. In Indonesia, the SVLK requires concessions on state forest land to achieve sustainability after an initial three-year period. In both countries, the VPA process has reduced arbitrary administrative discretion in forest governance, including the award of concessions and permits, while creating new mechanisms for exposing corruption across the supply chain. The effectiveness of such mechanisms can be expected to grow as the monitoring, reporting, and review provisions of TLASs kick into gear with the onset of FLEGT licensing.⁴⁴

In both Indonesia and Ghana, the FLEGT VPAs have taken many years to implement, not because of the complexity of the agreements or the inefficiency of the process, but rather because of the complex and difficult character of the problems they confront. In both countries, the apparently simple objective of ensuring timber legality turned out to be inextricably entwined with thorny, deep-rooted political issues concerning exploitation of natural resources, property rights, land use, and state-society relations. The VPA process has proved a remarkably incisive framework for exposing such issues layer by layer, identifying their root causes, and thrashing out provisional solutions through iterated deliberation among local stakeholders, supported by the EU. In Ghana, the issues tackled through this process include regulation of administrative permitting, payment of Timber Rights Fees by large concession holders, observance of Social Rights Agreements with local communities, and the creation of a legal small-scale milling sector to supply the domestic market. In Indonesia, major issues addressed through the VPA – even if by no means definitively resolved – include securing market access for small producers, reducing corruption in forest administration, and recognition of indigenous peoples' customary rights.

Crucial to this process of recursive problem-solving in both countries have been the joint implementation committees of national and EU representatives responsible for monitoring and reviewing progress, together with the multi-stakeholder bodies reporting to them, which have served as robust platforms for accountability, collective learning, and consensus formation. The effectiveness of these experimentalist institutions in exposing and addressing such refractory issues through iterated deliberation and joint review of implementation experience offers potential lessons for other transnational policy fields, where solutions to global challenges necessarily require deep, ongoing engagement with complex local problems, such as conflict minerals or climate change.

Another key lesson of VPA implementation in Ghana and Indonesia concerns the reciprocal relationship between the FLEGT initiative's experimentalist architecture and transnational civil society activism. In both countries, the VPAs' insistence on stakeholder participation, independent monitoring, and joint implementation review, underwritten by the EU and supported by transnational CSOs, have empowered domestic civil society groups to expose gaps in the fulfillment of agreed commitments, hold public authorities accountable for redressing them, and collaborate in reaching mutually acceptable solutions. These civil society groups in turn have made an indispensable contribution to the effectiveness and legitimacy of the VPAs in both countries by feeding independent local knowledge about their on-the-ground operation into the joint review process with the EU on the one hand, while building domestic support for their objectives on the other. Here, too, there are striking parallels with other policy fields, such as human rights, where, as de Búrca (2015) has argued, domestic CSOs and transnational advocacy networks play similar roles in making UN treaty regimes function effectively as experimentalist governance architectures, whatever their original design.

A third major lesson of FLEGT implementation in Indonesia and Ghana concerns the role of penalty defaults in supporting voluntary cooperation within transnational experimentalist regimes. Enactment of the EUTR was critical in inducing Indonesia to sign a FLEGT VPA, by allaying fears that verifiable legality standards for national timber exports could divert trade to less scrupulous competitors. The unpredictable risks and costs associated with demonstrating due diligence in avoiding illegal wood sourcing under the EUTR have likewise motivated business and government actors in both countries to persist in working through the barriers to VPA implementation necessary to obtain FLEGT licensing. Conversely, uneven implementation of the EUTR and continuing entry of illegal timber into the EU have encouraged domestic forces opposing compliance with VPA commitments, not only in Indonesia and Ghana but also in other countries like Cameroon. By reinforcing the EUTR's effectiveness as a penalty default, recent improvements in its enforcement can thus be expected to boost the VPAs' attractiveness to other negotiating partners, alongside the arrival of the first FLEGT licensed timber on the European market.

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Notes

- 1 This subsection draws on Overdevest & Zeitlin (2014, pp. 25-27) and Zeitlin (2015, ch. 1).
- 2 Cf. de Búrca *et al.* (2014, n. 31), who consider that "something akin to a penalty default can operate not only by imposition of hierarchical authority, but also by reason of asymmetries of power among the actors involved...the invocation of pervasive norms or an effective consumer boycott."
- 3 The independent evaluation of the FLEGT Action Plan estimates that the EU and its member states together invested €882.4 million through individual and multi-country projects, of which €231 million was directed to the six VPA signatory countries (TEREA/S-FOR-S/TOPPERSPECTIVE 2016, vol. I, pp. 127–128).
- 4 All VPAs, except that with the Central African Republic, also cover wood sold on the domestic market.
- 5 Examples include EU FLEGT Week, http://illegallogging-deforestation-conference.eu/; the African Forest Governance Forum, http://forestgovernanceforum.com/; the Chatham House Illegal Logging Update and Stakeholder Consultation, https://www.chathamhouse.org/event/illegal-logging-update-and-stakeholder-consultation-meeting-number-27; and the Community Rights Network of CSOs from VPA countries (FERN 2014). See also Jeffree (2017) on the emergence of an informal but increasingly structured transnational experience-sharing and support network among CSOs involved in negotiating and implementing VPAs.
- 6 For country-by-country reviews of the current state of play on VPA negotiations and implementation, see EUTR/FLEGT Expert Group (2016a), EU FLEGT Facility (2016), and FERN (2016).
- 7 According to a survey of 13 EU member states (plus Australia), respondents conducted 1,513 due diligence assessments and 822 site visits between October 2015 and September 2016, issuing 565 corrective action requests, 75 injunctions, and 59 sanctions or financial penalties (Forest Trends 2016).

- 8 IND/CSO2; IND/CSO5.
- 9 GH/INTCON5.
- 10 EU/COM3; EU/CSO2.
- 11 GH/CSO4.
- 12 GH/CSO4; GH/CSO5.
- 13 GH/INTCON5.
- 14 The total forested area in Ghana in 2010 was 49.4 m km² compared to 944 m km² in Indonesia (www.tradingeconomics. com). Ghana comprises an area of 92 million square miles, with a population of 25.9 million, compared to 741 million square miles and 249.9 million people in Indonesia.
- 15 IND/CSOs 1, 5-6, 8-10; IND/BUS1.
- 16 IND/CSO8.
- 17 IND/INTCON3; cf. IND/CSO6.
- 18 IND/CSO5; IND/CSO1.
- 19 IND/CSO6.
- 20 IND/CSO5.
- 21 EU/CSO1; EU/COM3.
- 22 EU/EFI1; EU/EFI5; GH/GOV1; GH/INTCON1.
- 23 GH/INTCON2.
- 24 GH/INTCON2; GH/CSO5.
- 25 GH/GOV2; GH/BUS1; GH/CSO2.
- 26 IND/CSO10.
- 27 IND/CSO5; IND/INTCON3.
- 28 IND/INTCON3.
- 29 IND/CSO10; IND/GOV5.
- 30 IND/INTCON4.
- 31 According to well-informed local sources, the driving force behind the AMKRI demand for exemption was not small producers, but a handful of larger furniture companies operating in the grey economy, who wanted to avoid payment of back taxes and other compliance costs of SVLK certification (IND/INTCON4).
- 32 GH/GOV1; GH/INTCON2; GH/CSO4; GH/CSO5.
- 33 GH/CSO4. A meeting of the Civil Society Contact Group in May 2014 included 59 participants (Ghana Civil Society Contact Group 2014), while a similar meeting we attended on February 12, 2015 included 22 participants from 18 organizations, as well as an international facilitator.
- 34 GH/GOV1; GH/INTCON1.
- 35 GH/GOV2; GH/GOV3; GH/INTCON1; GH/INTCON2; GH/INTCON4.
- 36 GH/CSO4; INTCON2.
- 37 GH/INTCON4; GH/EFI15; GH/GOV2; GH/GOV3.
- 38 EU/EFI14; cf. also GH/INTCON2; GH/CSO2; GH/GOV3; Ghana-EU 2016a.
- 39 GH/GOV1; GH/GOV2; GH/GOV3; GH/BUS1.
- 40 GH/GOV1; GH/GOV2; GH/BUS1; GH/BUS2; GH/CSO2; GH/CSO3.
- 41 GH/GOV2.
- 42 Client Earth Legality Working Group meeting February 12, 2015; GH/CSO1; GH/CSO4; GH/CSO5; GH/INTCON2.
- 43 GH/GOV2; GH/INTCOM2; GH/INTCOM4; GH/INTCOM5.
- 44 On the corruption-reducing impact of the GhLAS, see also Carlsen & Hansen (2014, pp. 545–546).

References

Ansah BK (2010) A Civil Society Counter-brief on the Republic of Ghana-EU VPA. [Last accessed 12 September 2017.] Available from URL: http://www.fern.org/publications/briefing-note/civil-society-counter-brief-ghana-eu-vpa

- Anti-Forest Mafia Coalition (2014) SVLK Flawed: An Independent Evaluation of Indonesia's Timber Legality Certification System. 18 March. [Last accessed 19 September 2017.] Available from URL: http://eyesontheforest.or.id/attach/Anti% 20Forest%20Mafia%20Coalition%20%2818Mar14%29%20SVLK%20Flawed%20FINAL.pdf
- Bartley T (2014) Transnational Governance and the Re-centered State: Sustainability or Legality? *Regulation & Governance* 8, 93–109.
- Beach D, Pedersen RB (2013) Process-Tracing Methods: Foundations and Guidelines. University of Michigan Press, Ann Arbor, MI.
- Beeko C, Arts B (2010) The EU-Ghana VPA: A Comprehensive Policy Analysis of its Design. International Forestry Review 12, 221–230.
- Brack D (2005) Controlling Illegal Logging and the Trade in Illegally Harvested Timber: The EU's Forest Law Enforcement, Governance and Trade Initiative. *Review of European Community & International Environmental Law* 14, 28–38.
- Butt S (2014) Traditional Land Rights Before the Indonesian Constitutional Court. Law, Environment and Development Journal 10, 59-73.
- Carlsen K, Hansen CP (2014) Rent-seeking and Timber Rights Allocation in Ghana. International Forestry Review 16, 537–548.
- Client Earth (2017) EUTR News-March 2016 to March 2017. [Last accessed 19 September 2017.] Available from URL: https://www.clientearth.org/eutr-news-march-2016-to-march-2017/
- de Búrca G (2015) Human Rights Experimentalism. Max Weber Lecture Series 2015/02. European University Institute, Florence. [Last accessed 19 September 2017.] Available from URL: http://cadmus.eui.eu/bitstream/handle/1814/38110/ MWP_LS_DeBurca_2015_02.pdf?sequence=1&isAllowed=y
- de Búrca G, Keohane RO, Sabel CF (2014) Global Experimentalist Governance. British Journal of Political Science 44, 477-486.
- della Porta D (2008) Comparative Analysis: Case-oriented Versus Variable-oriented Research. In: della Porta D, Keating M (eds) Approaches and Methodologies in the Social Sciences, pp. 198–222. CUP, Cambridge, UK.
- Down to Earth (2014) Forestry Ministry Reluctant to Relinquish Control over Forests. March. [Last accessed 19 September 2017.] Available from URL: http://www.downtoearth-indonesia.org/story/forestry-ministry-reluctant-relinquish-control-over-forests
- Environmental Investigation Agency & Telapak Indonesia (2001) *Timber Trafficking: Illegal Logging in Indonesia, South East Asia and International Consumption of Illegally Sourced Timber*. [Last accessed 19 September 2017.] Available from URL: https://eia-international.org/wp-content/uploads/Timber-Trafficking-low-res.pdf
- EU FLEGT Facility (2010) Current Guidance in the Development of Legality Definitions in FLEGT Voluntary Partnership Agreements. [Last accessed 19 September 2017.] Available from URL: http://forestindustries.eu/content/current-guidance-development-legality-definitions-flegt-voluntary-partnership-agreements
- EU FLEGT Facility (2016) Annual Report: EU FLEGT Facility: Highlights and Insights from 2016. [Last accessed 19 September 2017.] Available from URL: http://www.euflegt.efi.int/publications/eu-flegt-facility-highlights-and-insights-from-2016
- EU-Indonesia (2014) Voluntary Partnership Agreement between the European Union and the Republic of Indonesia on Forest Law Enforcement, Governance and Trade in Timber Products into the Community. Official Journal of the EU L 150/252, 20 May.
- European Commission (2003) Forest Law Enforcement, Governance and Trade (FLEGT): Proposal for an EU Action Plan. Communication from the Commission to the Council and the European Parliament. COM (2003) 251 final, Brussels, 21 May.
- European Commission (2015). Commission Decision (EU) of 8 July 2015 on the position to be taken by the Commission, on behalf of the European Union, in the Joint Implementation Committee set up by the Voluntary Partnership Agreement between the European Union and the Republic of Indonesia on Forest Law Enforcement, Governance and Trade in timber products into the European Union as regards the amendments to the Annexes I, II, and V of the Voluntary Partnership Agreement between the European Union and the Republic of Indonesia, Official Journal of the European Union, L 187/30, 15.7.2015.
- European Commission (2016a) *Guidance Document for the EU Timber Regulation*. Commission Notice. COM (2016) 755 final, Brussels, 12 February.
- European Commission (2016b) Report from the Commission to the European Parliament and the Council, Regulation (EU) No 995/2010 of European Parliament and of the Council of 20 October 2010 laying down the obligations of operators who place timber and timber products on the market (the EU Timber Regulation). COM(2016) 74 final, Brussels, 18 February.
- European Commission (2016c) Evaluation of Regulation (EU) No 995/2010 of the European Parliament and of the Council of 20 October 2010 Laying Down the Obligations of Operators Who Place Timber and Timber Products on the Market (the EU Timber Regulation). SWD (2016) 34 final, Brussels, 18 February.
- European Commission (2016d) Joint Statement by the President of the European Commission, the President of the European Council and the President of the Republic of Indonesia. Brussels, 21 April. [Last accessed 19 September 2017.] Available from URL: http://europa.eu/rapid/press-release_STATEMENT-16-1516_en.htm
- European Commission (2016e) Commission Delegated Regulation of 9.2.2016 Amending Annexes I and III to Council Regulation (EC) No 2173//2005 Following a Voluntary Partnership Agreement with Indonesia for a FLEGT Licensing Scheme for Imports of Timber in the European Union. C(2016) 3438 final.
- European Community-Ghana (2010) Voluntary Partnership Agreement between the European Community and the Republic of Ghana on Forest Law Enforcement, Governance and Trade in Timber Products into the Community. Official Journal of the EU, L 70/31, 9 March.
- European Court of Auditors (2015) Special Report No 13/2015: EU Support to Timber-producing Countries under the FLEGT Action Plan. Available from URL: http://www.eca.europa.eu/en/Pages/DocItem.aspx?did=33292

- European Forest Institute (2012) *The VPA Process and Implementation*. [Last accessed 19 September 2017.] Available from URL: http://www.efi.int/files/attachments/euflegt/efi_newsroom_indonesia_the_vpa_process_and_implementation_ed.pdf
- European Parliament (2014) European Parliament Resolution of 27 February 2014 on the Conclusion of the Voluntary Partnership Agreement between the European Union and the Republic of Indonesia on Forest Law Enforcement, Governance and Trade in Timber Products into the European Union. P7_TA(2014)0175. Available from URL: http://www.europarl.europa. eu/sides/getDoc.do?type=TA&language=EN&reference=P7-TA-2014-0175
- EUTR/FLEGT Expert Group (2015a) Minutes of FLEGT/EUTR Expert Group Meeting, 18 February.
- EUTR/FLEGT Expert Group (2015b) Minutes of FLEGT/EUTR Expert Group Meeting, 15 June.
- EUTR/FLEGT Expert Group (2016a) Minutes of FLEGT/EUTR Expert Group Meeting, 11 February.
- EUTR/FLEGT Expert Group (2016b) Minutes of FLEGT/EUTR Expert Group Meeting, 2 December.
- FERN (2013) Improving Forest Governance: A Comparison of FLEGT VPAs and their Impact. 7 February. [Last accessed 19 September 2017.] Available from URL: http://www.fern.org/improvingforestgovernance
- FERN (2014) Community Representation and Participation in the VPA Process: How Communities from Nine VPA Countries are Represented in the FLEGT VPA Process. March. [Last accessed 19 September 2017.] Available from URL: http://www.fern.org/sites/fern.org/files/participationENG_internet.pdf
- FERN (2015a) Court Rules in Favor of Transparency in Indonesia. *EU Forest Watch* No. 206. [Last accessed 19 September 2017.] Available from URL: http://www.fern.org/node/5927
- FERN (2015b) Forest Watch Special: FLEGT VPA Update December 2015. [Last accessed 19 September 2017.] Available from URL: http://www.fern.org/publications/eu-forest-watch/forest-watch-special-vpa-update-december-2015
- FERN (2016) Forest Watch Special: FLEGT VPA Update November 2016. [Last accessed 19 September 2017.] Available from URL: http://www.fern.org/publications/eu-forest-watch/forest-watch-special-vpa-update-november-2016
- First Peoples Worldwide (2013) Indonesian Court Ruling Gives Land Rights Back to Millions of Indigenous People. 19 June. [Last accessed 19 September 2017.] Available from URL: https://www.culturalsurvival.org/news/indonesian-court-rulinggives-land-rights-back-millions-indigenous-people
- Forest Trends (2016) *Timber Regulation Enforcement Exchange*. Newsletter Fall 2016. [Last accessed 19 September 2017.] Available from URL: http://www.forest-trends.org/documents/files/doc_5494.pdf
- Forest Watch Indonesia (2015) Appeal Rejected, The Ministry of Environment and Forestry to Be Sued Openly. 26 August. [Last accessed 19 September 2017.] Available from URL: http://fwi.or.id/english/publikasi/appeal-rejected-the-ministryof-environment-and-forestry-to-be-sued-openly/
- Ghana Civil Society Contact Group (2014) *Meeting Communiqué*. Fumesua, 22 May. [Last accessed 19 September 2017.] Available from URL: http://loggingoff.info/wp-content/uploads/2015/09/814.pdf
- Ghana-EU (2014). Aide Memoire: Seventh Mission of the Joint Monitoring and Review Mechanism. Accra, 4-6 June.
- Ghana-EU (2016a) Aide Memoire: Eighth Session of the Joint Monitoring and Review Mechanism. Accra, 10, 11, and 15 March.
- Ghana-EU (2016b) Aide Memoire: Technical Session of the Joint Monitoring and Review Mechanism, Accra, 17 November.
- Ghana-EU (2017) Aide Memoire: Technical Session of the Joint Monitoring and Review Mechanism, Accra, 14 June.
- Ghana Forest Governance CSOs (2015) *Reflections on the VPA Process in* Ghana: Success and Challenges from a Civil Society Perspective. May. [Last accessed 19 September 2017.] Available from URL: http://loggingoff.info/wp-content/uploads/ 2015/09/REFLECTIONS-ON-THE-FLEGT-PROCESS-IN-GHANA-.pdf
- Global Timber Forum (2015). Concern Mounts over Indonesian Legality Rules Relaxation. 3 November. [Last accessed 19 September 2017.] Available from URL: http://www.gtf-info.com/news/concern-mounts-over-indonesian-legality-rules-relaxation/
- Global Witness (2013) Logging in the Shadows: How Vested Interests Abuse Shadow Permits to Evade Forest Sector Reforms. 29 April. [Last accessed 19 September 2017.] Available from URL: https://www.globalwitness.org/en/archive/loggingshadows-how-vested-interests-abuse-shadow-permits-evade-forest-sector-reforms/
- Global Wood (2013) *Wood Products Prices in the UK and Holland: Report from Europe*, 16–31 May. [Last accessed 19 September 2017.] Available from URL: http://www.globalwood.org/market/timber_prices_2013/aaw20130502e.htm
- Groen S (2013) A Study on the Delayed Implementation of the FLEGT Program in Ghana. Master thesis, University of Leiden, Leiden.
- Guérand V (2015). Trade Ministry Regulation 89/M-DAG/PER/10/2015 and implications for SVLK and FLEGT/VPA advancement. Letter to HE Mr Thomas Trikasih Lembong, Indonesian Minister of Trade, 23 October. [Last accessed 19 September 2017.] Available from URL: http://gtf-info.com/uploads/documents/151026-ares4573331-svlk-flegt-vpa-1-.pdf
- Gyimah R (2012) In Search of a Workable Wood Tracking System for Ghana's FLEGT/VPA: Informed Lessons from a Pilot Project. FAO, Compendium on Experiences From the Voluntary Partnership Agreement (VPA) Process in West and Central African Countries, 23–25 October 2012, Accra, pp. 21–37. [Last accessed 19 September 2017.] Available from URL: http://www.fao.org/forestry/37830-09c6e70d4769baf6bbe6721cbd5422b58.pdf
- Hale T, Held D, Young K (2013) Gridlock: Why Global Cooperation is Failing When We Need It Most. Polity Press, Cambridge, UK.
- Hansen CP, Lund JF (2017) Imagined Forestry: The History of the Scientific Management of Ghana's High Forest Zone. *Environment and History* 23, 3–38.
- Hoare A (2014) Illegal Logging and Related Trade: The Response in Ghana. Research Paper, October. A Chatham House Assessment. [Last accessed 19 September 2017.] Available from URL: https://www.chathamhouse.org/sites/files/ chathamhouse/field/field_document/20141029IllegalLoggingGhanaHoareFinal.pdf
- Hoare A (2015) *Tackling Illegal Logging and Related Trade: What Progress and Where Next?* 15 July. [Last accessed 19 September 2017.] Available from URL: https://www.chathamhouse.org/sites/files/chathamhouse/field/field_document/20150715IllegalLoggingHoare.pdf

- Hoare A, Wellesley L (2014) Illegal Logging and Related Trade: The Response in Indonesia. October 29. [Last accessed 12 September 2017.] Available from URL: https://www.chathamhouse.org/publication/illegal-logging-and-related-trade-response-indonesia
- Human Rights Watch (2013) The Dark Side of Green Growth: Human Rights Impacts of Weak Governance in Indonesia's Forestry Sector. July 15. [Last accessed 19 September 2017.] Available from URL: https://www.hrw.org/report/2013/07/15/ dark-side-green-growth/human-rights-impacts-weak-governance-indonesias-forestry

Humphreys D (2006) Logjam: Deforestation and the Crisis of Global Governance. Earthscan, London.

- Indonesia-EU (2014) Results of Joint Assessment of the Indonesian Timber Legality Assurance System, Stage Two, 23 September to 31 October.
- Indonesia-EU (2015a) Summary of Indonesia-European Union Action Plan on the Advancement of VPA Implementation, 15 March.
- Indonesia-EU (2015b) Summary of Indonesia-EU Action Plan on the Advancement of VPA Implementation, July.
- Indonesia-EU (2015c) Implementing the Indonesia-EU FLEGT Voluntary Partnership Agreement Annual Report May 2014– April 2015, July.

Indonesia-EU (2016) Public Summary Joint Working Group Closure Report on Advancement of VPA Implementation, January. INTERPOL (2016) Uncovering the Risks of Corruption in the Forestry Sector, 9 December.

- Jakarta Globe (2015) Riau Police Arrest Alleged Illegal-Logging Ringleader. 4 June. [Last accessed 19 September 2017.] Available from URL: http://jakartaglobe.id/news/riau-police-arrest-alleged-illegal-logging-ringleader/
- Jakarta Post (2015) Stabat Court Praised for Imposing Heavy Sentence on Illegal Logger. 7 June. [Last accessed 19 September 2017]. Available from URL: http://www.thejakartapost.com/news/2015/06/07/stabat-court-praised-imposing-heavy-sentence-illegal-logger.html
- Jeffree M (2017) FLEGT Boosts Civil Society Self-help. European Timber Trade Federation Newsletter, Winter-Spring, 28 March.
- Jong HN (2015) Jokowi's Defense of Former Industry Criticized. *Jakarta Post*, 18 April. [Last accessed 19 September 2017.] Available from URL: http://www.thejakartapost.com/news/2015/04/18/jokowi-s-defense-former-industry-criticized.html
- Jong HN (2016) RI, EU Stalemate on Timber Licensing. *Jakarta Post*, 26 January. [Last accessed 19 September 2017.] Available from URL: http://www.thejakartapost.com/news/2016/01/26/ri-eu-stalemate-timber-licensing.html
- Jong HN, Amin K (2015) Gov'ts New Certification Policy May Lead to Illegal Logging. Jakarta Post, 6 October. [Last accessed 19 September 2017.] Available from URL: http://www.thejakartapost.com/news/2015/10/06/govt-s-new-timbercertification-policy-may-lead-illegal-logging.html
- JPIK, Forest Watch Indonesia, Indonesian Ecolabel Institute, Indonesia Center for Environment Law, WWF Indonesia, Eyes on the Forest, AURIGA, Coalition of Aceh Rainforest Movement (2016) Implementation of FLEGT Licenses Must Be Accompanied by Continuous Governance Improvement in the Forestry Sector and Trade. Position Paper, Bogor, 11 May. [Last accessed 19 September 2017.] Available from URL: https://eia-international.org/wp-content/uploads/ Implementation-of-FLEGT-Licenses-Position-Paper-FINAL.pdf
- Lartey É, Kwesi T, Kwesi E, Lartey H (2012) Forest Law Enforcement, Governance and Trade Processes in Ghana: Strengthening the Weak Elements of Community Participation. FAO, Compendium on Experiences From the Voluntary Partnership Agreements (VPAs) Process in West and Central African Countries, 23–25 October 2012, Accra, Ghana, pp. 38–49. [Last accessed 19 September 2017.] Available from URL: http://www.fao.org/forestry/37830-09c6e70d4769baf6bbe6721cbd5422b58.pdf
- Lesniewska F, McDermott CL (2014) FLEGT VPAs: Laying a Pathway to Sustainability via Legality Lessons from Ghana and Indonesia. *Forest Policy and Economics* 48, 16–23.
- Marfo E (2010) *Chainsaw Milling in Ghana, Context, Drivers, and Impacts.* Tropenbos International. [Last accessed 12 September 2017.] Available from URL: http://www.tropenbos.org/publications/chainsaw+milling+in+ghana:+context,+drivers+and +impacts.
- Marfo E, McKeown JP (2013) Negotiating the Supply of Legal Timber to the Domestic Market in Ghana: Explaining Policy Change Intent Using the Advocacy Coalition Framework. *Forest Policy and Economics* 32, 23–31.
- Meridian A, Minangsari M, Haysim C, et al. (2014) SVLK in the Eyes of the Monitor: Independent Monitoring and a Review of the Implementation of the Timber Legality Verification System, 2011–2013. JPIK (Jaringa Pemantu Independen Kehutana).
 [Last accessed 19 September 2017.] Available from URL: http://fwi.or.id/english/wp-content/uploads/2014/11/JPIK_ SVLK-in-teh-Eye-of-the-Monitor.pdf
- Mongabay (2017) Jokowi Grants First-Ever Indigenous Rights to 9 Communities. 4 January. [Last accessed 19 September 2017.] Available from URL: https://news.mongabay.com/2017/01/jokowi-grants-first-ever-indigenous-land-rights-to-9-communities/
- Multistakeholder Forestry Programme (2015) Jokowi SVLK Statement Triggers Controversy. 18 April. [Last accessed 19 September 2017.] Available from URL: https://www.mfp.or.id/index.php/en/more-news/82-news/304-jokowi-svlk-statement-triggers-controversy
- Mulyana A (2017) What's Next for Customary Forests in Indonesia Forests News, Center for International Forestry Research, 13 March. [Last accessed 19 September 2017.] Available from URL: https://forestsnews.cifor.org/48834/what-next-for-customary-forests-in-indonesia?fnl=en
- Obeng EA, Marfo E, Osuwu-Ansah N, Boateng Nantwi G (2014) Assessment of the Effectiveness of Multi-stakeholder Dialogue. [Last accessed 19 September 2017.] Available from URL: http://www.tropenbos.org/publications/assessment+of+the +effectiveness+of+multi-stakeholder+dialogue
- Obidzinski K, Dermawan A, Andrianto A, Komarudin H, Hermawan D (2014) The Timber Legality Verification System and the Voluntary Partnership Agreement (VPA) in Indonesia: Challenges for the Small-scale Forestry Sector. *Forest Policy and Economics* 48, 24–32.

- Osuwu B (2009) The Dynamics of Multi-stakeholder Processes in the Negotiation of Voluntary Partnership Agreement in Ghana. Master thesis, Wageningen University, Wageningen.
- Overdevest C, Zeitlin J (2014) Assembling an Experimentalist Regime: Transnational Governance Interactions in the Forest Sector. *Regulation & Governance* 8, 22–48.
- Overdevest C, Zeitlin J (2015) Forest Law Enforcement Governance and Trade (FLEGT): Transnational Dynamics of an EU Experimentalist Regime. In: Zeitlin J (ed) *Extending Experimentalist Governance? The European Union and Transnational Regulation*, pp. 137–165. OUP, Oxford.
- Parthama P (2016) FLEGT VPA Update from Indonesia. Presentation to Chatham House Illegal Logging Stakeholder Update, 16 June. [Last accessed 19 September 2017.] Available from URL: https://www.illegal-logging.info/sites/files/chlogging/ Day%202_Session%206_Putera%20Parthama.pdf
- Rogers C (2016) New Life for Indonesia's Long-Delayed Indigenous Rights Bill? *Mongabay*, 17 March. [Last accessed 19 September 2017.] Available from URL: https://news.mongabay.com/2016/03/new-life-for-indonesias-long-delayed-indigenous-rights-bill/
- Sabel CF, Zeitlin J (2012) Experimentalist Governance. In: Levi-Faur D (ed) The Oxford Handbook of Governance, pp. 169–183. OUP, Oxford.
- Saunders J (2013) EUTR Survey Paper, January. [Last accessed 19 September 2017.] Available from URL: http://illegallogging.info/uploads/EUTRSurveyPaperJadeSaunders.pdf
- Setyowati A, McDermott CL (2016) Commodifying Legality? Who and What Counts as Legal in the Indonesian Wood Trade. Society & Natural Resources 30, 750–764.
- Speechly H, van Helden F (2012) Forest Governance in Southeast Asia. In: Broekhoven G, Savenije H, von Scheliha S (eds) Moving Forward with Forest Governance, pp. 101–108. [Last accessed 19 September 2017.] Available from URL: http:// www.tropenbos.org/publications/etfrn+news+53:+moving+forward+with+forest+governance
- Tandoh K (2017) Minister Issues Directive to Sanitise Forestry Sector. Ghana News Agency, 22 February. [Last accessed 19 September 2017.] Available from URL: http://www.ghananewsagency.org/science/minister-issuesdirective-to-sanitiseforestry-sector-113547
- TEREA/S-FOR-S/TOPPERSPECTIVE (2016) Evaluation of the EU FLEGT Action Plan 2004–2014, Final Report, April 27, 2016. [Last accessed 19 September 2017.] Available from URL: https://ec.europa.eu/europeaid/evaluation-eu-flegt-action-plan-forest-law-enforcement-governance-and-trade-2004-2014_en
- The Forestry Commission of Ghana (2013) Forestry Commission Ravishes Global Witness Report. 6 March. [Last accessed 19 September 2017.] Available from URL: http://www.fcghana.org/news.php?news=67
- UNEP-WCMC (United Nations Environment Program World Conservation Monitoring Program) (2017) Enforcement of EUTR: Briefing Note for the Competent Authorities Implementing the EU Timber Regulation, April 2017-May 2017. [Last accessed 19 September 2017.] Available from URL: https://www.unep-wcmc.org/system/comfy/cms/files/000/001/ 054/original/Briefing_note_April_2017-May_2017.pdf
- Wirayani P (2015) Furniture Exporters Deem SVLK Relaxation a Setback. Jakarta Post, 18 November. [Last accessed 19 September 2017.] Available from URL: http://www.thejakartapost.com/news/2015/11/18/furniture-exporters-deemsvlk-relaxation-a-setback.html
- Zeitlin J (ed) (2015) Extending Experimentalist Governance? The European Union and Transnational Regulation. OUP, Oxford.

Laws cited

- Australian Illegal Logging Prohibition Act 2012, An Act to combat illegal logging, and for related purposes, Government of Australia, Federal Register of Legislation, No. 166, 2012.
- EU Timber Regulation (EUTR) Regulation (EU) No 995/2010 of the European Parliament and of the Council of 20 October 2010 laying down the obligations of operators who place timber and timber products on the market, Official Journal of the European Union, L 205/23, 12.11.2010.
- FLEGT Regulation Council Regulation (EC) No 2173/2005 of 20 December 2005 on the establishment of a FLEGT licensing scheme for imports of timber into the European Community, Official Journal of the European Union, L 347/1, 30.12.2005.
- Public Information Disclosure Act, Republic of Indonesia, Act Number 14 Year 2008, ratified in Jakarta on 30th of April 2008.

Supporting information

Additional Supporting Information may be found in the online version of this article at the publisher's web-site:

Appendix S1. Sources and Methods.