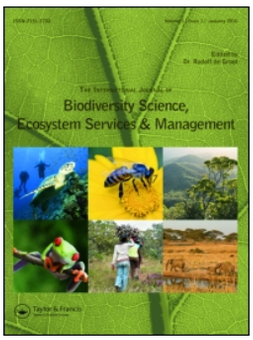

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Special Issue: Certifying Environmental Social Responsibility

Timber certification as a catalyst for change in forest governance in Cameroon, Indonesia, and Peru

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ABSTRACT

Policy instruments targeting environmental, social, and economic sustainability cover both local and global geographies and stem from both the public and private sectors. These policy instruments do not work in silos but interact throughout the regulatory process. In this paper we discuss interactions between public regulations and private certification that affect how forests are managed in three tropical countries: Indonesia, Cameroon, and Peru. We show how the governance regime in each of the countries has evolved in response to environmental and social issues. We focus on the Forest Stewardship Council's forest stewardship certification as it is the main global certification scheme in the tropical region and look at its role in attaining sustainability in timber production.

Case study results from Indonesia, Cameroon, and Peru indicate that certification influences all stages of the policy process: agenda setting and negotiation; implementation, and monitoring and enforcement. Results also suggest that certification introduces positive changes in management practices and improves social and environmental performance. However, its influence in attaining broader-scale sustainability is limited by a low level of uptake, notably in tropical countries where the costs of getting certified and maintaining certification are high and the certification criteria are rather complex, as well as by some of its inherent characteristics, as it can only solve problems at the forest management unit level.

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1. Introduction

Concerns about deforestation and sustainability of the use of forest resources can be traced back to 1980s (Fanzeres & Vogt 1999). Combined with the lack of success of the international community to adopt a legally binding global compact on the sustainable management of the world's forests led environmental NGOs in the 1990s to push for the creation of an umbrella forest certification standards organization, later to become the Forest Stewardship Council (FSC) (Fanzeres & Vogt 1999, Synnott 2005; Auld et al. 2008). While early on the focus of sustainability was largely on ecological impacts, e.g. deforestation and forest degradation, over time issues related to social welfare (e.g. livelihoods and poverty alleviation, access and benefit-sharing, indigenous rights and workers' rights) and economic development (e.g. international trade and investment and resource transfer from developed to developing countries) have also become defining issues of sustainable forest management and good governance (Arts & Buizer 2009; McDermott et al. 2010). In this millennium, the role of forests as providers of ecosystem services and biodiversity has been highlighted (Millennium Ecosystem Assessment 2003, 2005) and has shaped the discussion around forests and sustainable forest management (Cadman et al. 2016).

Policy instruments targeting environmental, social, and economic sustainability relate local to global scales and stem from both public and private sector. Public instruments include laws and regulations generally enforced through command-and-control, as well as policies that influence forests either directly (e.g. forest policy) or indirectly (e.g. trade policies) (as cited in Mather 2006; Lambin et al. 2014). Voluntary instruments by non-state actors include various certification schemes and commodity roundtables (Auld et al. 2008; Lambin et al. 2014). The evolution of international forest governance from its early focus on sustainability to legality and then to units of carbon stored has also given rise to new public–private governance instruments such as payments for environmental services (Wunder et al. 2008; McDermott 2014). In terms of governance, the FSC, as well as a growing number of other certification schemes covering the trade in commodities other than timber (e.g. fish or agricultural crops), can be defined as a private, non-state governance system, driven by international markets and consumers' choices, generally presented as an alternative to

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traditional public, state-driven laws and regulations (Cashore et al. 2004; Lambin et al. 2014).

As of February 2016, the FSC had certified 187 million ha of natural forests, of which around 20 million ha are natural tropical ones. Many acknowledge the positive impacts that the FSC has had on international standard setting since the 1990s, particularly the increased legitimacy of third-party-audited products on the world's markets, and on public policies in general (Overdevest & Zeitlin 2014). Scattered evidence also suggests that localized positive impacts exist in or around certified forests (Durst et al. 2006; Espach 2006; Schulte-Herbrüggen & Davies 2006; Auld et al. 2008; Van Kuijk et al. 2009; Damette & Delacote 2011; Cerutti et al. 2011b; Nasi et al. 2012). Yet, there also seems to be agreement among practitioners that there still is insufficient empirical evidence that changes in environmental and socio-economic impacts are indeed occurring at the expected scale and speed (e.g. Blackman & Rivera 2011; Romero et al. 2013; Visseren-Hamakers & Pattberg 2013).

However, FSC does not exist in a vacuum but on territories where public and private policies on forest management interact (the forest management unit), which makes it often difficult to establish a clear causal path as to what impacts are attributable to specific process. Moreover, the policy instruments have largely the same aims although with different sets of incentives, sanctions, and institutions. In a recent paper, Lambin et al. (2014) introduced a typology of interactions between different forest governance instruments. The three main interactions that can occur at different stages of the regulatory process (agenda setting and negotiation, implementation, and monitoring and enforcement) are complimentarity, substitution, and antagonism. Complimentarity means that two governance systems mutually reinforce each other. For example, certification can fill policy gaps or certification system can generate rewards for those actors who comply to extra-legal standards, while a public regulation can sanction those actors who violate the law. Substitution occurs when another governance entity replaces the private-led mechanism through policy learning or norm generation. The initial private mechanism may maintain an informal role after a formal regulation takes over its function. Hence, substitution and complementarity may overlap. Finally, when two governance systems are antagonistic they can undermine each other at all stages of the policy and implementation processes.

Interactions occur and vary along a gradient that is determined by different scales, both spatial (e.g. local, national, or international) and temporal (e.g. agenda setting and negotiation, implementation or enforcement). Interactions along such gradient are also influenced by the evolution of the public discourse about any particular environmental or socio-economic issue. In the framework of this Special Issue, this is referred to as the 'policy issue cycle' (Tomich et al. 2004). The cycle starts with the initial attention given to one issue (e.g. deforestation) followed by initial public debate on cause–effect mechanisms. The debate leads to the discussion and implementation of potential solutions (e.g. certification to achieve responsibly managed forests) and finally to the evaluation of the solutions' impacts and its possible improvement.

Based on these frameworks of analysis, in this paper we discuss interaction between public governance and certification in three tropical countries: Indonesia, Cameroon, and Peru and how the governance regime in each of the countries has evolved in response to environmental and social issues. We also assess what type of impacts certification and public policies have on the 'swing potential' of certified and noncertified forest operations, i.e. the difference between the best and worst examples of current timber harvesting and production practices (Davis et al. 2013). Bad management practices can be the result of a multitude of underlying factors, and we assess whether certification as currently implemented in the three sample countries is indeed improving past practices, for what reasons and through what interactions (if any) with public policies. Our assessment is built on the following three propositions introduced in the framework paper of this Special Issue (Mithöfer et al. 2017): only provide partial solutions for ecosystem service and social problems.

(1) Public discourse on sustainability concerns and associated actions are part of an issue-attention cycle influencing progression between stages.
(2) Pressures from the public evoke private sector and governmental sustainability initiatives and shift standard systems.
(3) Sustainability initiatives, standard settings, and certifications

We focus on the FSC's certification scheme. It is a performance-based, outcome-oriented standard. It is focused on field performance of forest management to achieve environmentally appropriate, socially beneficial, and economically viable management of the world's forests (FSC 2007). The paper is structured as follows. In the next section, we examine environmental and social issues linked to timber production in the study countries and public policy responses to them. We then compare government regulation and FSC certification before discussing the contribution of certification in attaining sustainability through the propositions introduced. In the final section conclusions are given.

2. Methods

The case studies are based on 38 interviews with parties involved directly in forest certification in the study countries; literature reviews of the forestry issues, forest policies, and certification in the study countries; forest statistics reports provided by government officials; and field work conducted by the authors in the study countries over number of years.

Semi-structured interviews were conducted with people involved in the certification process using an interview guide provided in Annex 1. Interviews with forest companies, auditors, and certification consultants were focused on questions of what are the most difficult parts of FSC standard to be met and efforts required to fulfill them, which indicate the forest management improvements in certified concessions. Interviews with NGOs were aimed to obtain information on their program, involvement, and roles in forest certification.

Sample selection was based on snowballing process with the initial list of names based on the researchers' own knowledge of people with proven knowledge and involvement on the topic supplemented with names obtained from experts. The sampling was guided mainly by the goal of maximizing the amount of information collected and the diversity of viewpoints. The interviews were primarily conducted in person and also through email and phone calls when in person interview was not possible. The interviews were conducted during January–August 2015. Information obtained during earlier interviews on FSC certification in 2013 and 2014 with same respondents was also used.

The interview data were compiled per country and the main issues tabulated based on manual coding (see tables in the Annex 1). Further information on the issues was extracted from the interview data and the responses summarized at country level. Finally, information obtained from interviews was triangulated with the findings from literature review and experience of authors in forestry sector and forest certification.

3. Results

3.1. Environmental and social issues linked to timber production and public policy responses

3.1.1. Peru

Since the 1980s in Peru, one of the main problems has been that logging operations have been established in protected areas or zones identified as non-compatible (Table 1). Over the years this has led to numerous conflicts between indigenous people and loggers (Bedoya Garland & Bedoya Silva-Santisteban 2005). The government response was to establish designated harvesting areas under the forestry and wildlife law (LFFS 2000) that came into force in year 2000.

Another issue associated with the national forestry sector has been the overexploitation of valuable species such as mahogany (*Swietenia macrophylla*). The overexploitation led to drastic population decline to the point that mahogany was included in the Appendix II[1] of CITES by 2002 (Kometter et al. 2004). Since 2007, Peru has established and strengthened controls to keep within the extraction quotas, and the issue faded from the public discourse until 2012, when the results of an investigation on harvested species revealed flaws in the quota system (EIA 2012 and Table 2).

Transport and trade of products from illegal sources also has deep roots in the sector, enabled by institutional weakness. Corruption of government officials is one of the latent problems and has recently been made visible through the Free Trade Agreement (FTA) with the United States. In the framework of commitments made under the FTA, Peruvian Government reestablished the Oversight Organism of Forestry Resources and Wildlife (OSINFOR) and endowed it with autonomy to exercise its functions, including monitoring and sanction competencies. Since 2008 when OSINFOR began functioning, 43.5% of existing operations have been canceled or placed under investigation because of suspected violations of the LFFS (Finer et al. 2014). Another government action was to launch the national strategy against illegal logging, presided by a representative of the Presidency of the Council of Ministers.

On the social side, limited participation of indigenous communities in economic benefits from forest trade in Peruvian Amazon has been highlighted (Bedoya Garland & Bedoya Silva-Santisteban 2005); (EIA 2012). In Peru there is a system called *habilitación*, described as an informal patronage system (Sears & Pinedo-Vasquez 2011). The laborers sign contracts for an advancement of merchandise on credit in return for extracted timber but earn little more than subsistence returns. The system favors labor abuses and works as a mechanism for enslavement of indigenous communities. In response, there are government norms that emphasize the voluntary nature of work and recognize workers' right to a fair remuneration.[2] Furthermore, the Prior, Free, and Informed Consultation Law has been established to improve legal conditions for indigenous people.

3.1.2. Indonesia

Over the period 1967–1998, public concern focused primarily on unsustainable logging practices and forest fires (Table 3). They were addressed by the government through a number of forest regulations and other efforts such as collaboration with other countries to develop a model for sustainable logging

Table 1. Main environmental and social issues and policy response to them in Peru.

Year	Issue	Policy response	Comments
Since 80s	Logging operations in protected areas, communal territories, or other incompatible areas	Set of a nationwide long term concessions system operated by private agents. Mandatory management plans.	Long-term concessions and management plans among novelties of Law 27,308 (LFFS) that came into force 2000
Since 90s	Overexploitation of selected species	Extraction quotas for mahogany established by CITES authorities in Peru since 2007. Mandatory in situ verification when the POA includes endangered species.	Peru ratified the CITES Convention in 1974
2001	Participation of communities	Permits to communities is one of the access modalities for logging framed in the Law 27,308 (). Law No. 29785 (2011) Law on the Right to Prior Consultation of the Indigenous or Native Peoples.	Peru is signatory of the ILO Convention 169 about indigenous people
2004	Transport and trade of timber from illegal sources	Setting of control points alongside rivers and roads where timber pass through to markets administered by corresponding forest authorities (regional governments or MINAGRI[3]). Launch of a National Strategy Against Illegal Logging. Assignment of monitoring and sanctioning competencies to OSINFOR.	As part of decentralization and regionalization processes carried out by the national government since 2001, forestry competencies were transferred to Amazonian regional governments
2005	Enforced work	Labor aspects in the sector are regulated with national general norms that remark willingness to work and the right to perceive remuneration	Furthermore Peru is signatory of the ILO Conventions 29 and 165 about enforced work
2008	Corruption of government functionaries	In 2008 launch of OSINFOR as the national agency in charge of logging operations' supervision. Launch of National Anti-corruption Plan of the Forestry and Wildlife Sector.	Launching of OSINFOR and the National Anti-corruption Plan were part of the US FTA compromises

Table 2. Change in environmental and social issues over time in Peru.

Issues	1994	1999	2004	2009	2014
Logging in protected areas, communal territories, or other incompatible areas	X	X	X	X	X
Overexploitation of selected species	X	X	X	X	
Participation of communities			X	X	
Enforced work	X	X			
Transport and trade of timber from illegal sources	X	X	X	X	X
Corruption of government functionaries				X	X

practice or combating forest fire. Although forest fires are a classic periodical natural disaster associated with El-Nino (prolonged drought) events (Tacconi 2003) they are believed to result from anthropogenic activities related to forest clearance and degradation (Wooster et al. 2012). There have been concerns in Indonesia because of their intensity and their effects on human health, transportation, and loss of forest resources. Disastrous forest fires in 1982/1983, 1997/1998, and recently in 2015 were the largest forest fire events in the country.

In the early 1990s, deforestation became an issue but, partly because of the unreliability of the data and political and economic reasons encouraging large forest industry development (Maryudi, 2015), it was attributed to shifting cultivation of local communities (Sunderlin & Resosudarmo 1997) and thus it did not get public attention. Only after 1998, illegal logging, deforestation, and conflict over forest land tenure have been given more attention (Table 3). All of the issues are persistent (Table 4). Illegal logging is the only issue against which substantial regulatory steps have been taken although implementation and enforcement challenges still remain (Hoare & Wellesley 2014).

3.1.3. Cameroon

Deforestation and forest degradation have long been concerns related to Cameroon's forestry sector (Table 5). In response to the concerns raised, the government of Cameroon adopted in 1994 an innovative forestry law based on sustainable forest management approach that was enacted through a decree in 1995 (Republic of Cameroon 1994, 1995). In the new millennium, Cameroon has been in the headlines because of illegal and unsustainable logging, with special focus dedicated to the negative impacts that large-scale logging concessions cause on the well-being of local populations. Further analyses clarified the problem, indicating that there exist important differences between illegal forest activities in logging concessions vs. those carried out in artisanal, small-scale operations. In fact, illegal logging stemmed largely from the small-scale logging operations but this is partially due to government's illegal suspension of their logging titles (Cerutti & Tacconi 2008). Despite the sustainability paradigm being incorporated into the 1994 forest law, issues of illegality – which includes hunting, redistribution of forest taxes, and various types of conflicts with communities neighboring logging concession – leading to forest degradation have persisted over time (Table 6).

Table 3. Main environmental and social issues and policy response to them in Indonesia.

Year	Issue	Policy response	Comments
1980s and 1990s	Unsustainable logging practice	Polices related to silviculture systems (1972; 1989; 1993; 2009) SFM standard for concessions (1993; 2003)	Other responses: • Collaborations with donor countries to develop SFM model. • Support national certification system.
1982/1983 and 1997/1998	Forest fire	Policies related to forests and peatland protection (1990; 1992; 1999; 2004) Policy on no fire for land clearing (2001) Policy on big fines and criminal charge for actors of forest fire (2001)	As a response to the forest and peatland fire in 2015, the government of Indonesia established a new agency for peatland restoration (Presidential decree no .1/2016)
1998	Illegal logging	Policies related to forests and peatland protection (1990; 1992; 1999; 2004) Presidential decree to combat illegal logging (2005) SVLK and PHPL (2009) VPA with EU (2013)	
1999	Conflict over forest land tenure	Basic forestry law (1999) The highest constitution court decision (2011; 2012)	
2000s	Deforestation and forest degradation and carbon emission and biodiversity loss	RAN-GRK (2011) Moratorium on new licenses (2011; 2013)	

SFM: sustainable forest management.

Table 4. Change in environmental and social issues over time in Indonesia.

Issues	1994	1999	2004	2009	2013
Unsustainable logging	x	x	x	x	x
Forest fires	x	x	x	x	x
Deforestation and forest degradation		*x*	*x*	x	x
Land tenure		x	x	x	x
Illegal logging		x	x	x	

3.2. Comparison of government regulation and FSC certification

3.2.1. Peru

For the comparison between national regulation and sustainability standards, the national FSC standard for forest management that came into force in 2002 was used (FSC 2001). Regarding the normative regime the LFFS

Table 5. Main environmental and social issues and policy response to them in Cameroon.

Year	Issue	Policy response	Comments
Since 1980s	Deforestation and forest degradation	New forest law in 1994 incorporating sustainable forest management approach	To implement SFM, the forestry law mandates the preparation of forest management plans in all Forest Management Units (FMU), but delegates the specifics of the plans' preparation, approval, and control processes to implementing regulations (decrees and guidelines)
1993	Multiuse of the forest domain, especially mining activities in classified forests	Development of the zoning plan for Southern Cameroon	Forest administration does not use the land use plan that can help manage forest interfaces/agriculture or forest/farm
1990s	Unsustainable logging	Suspension of small-scale logging titles from 1999 to 2006 by ministerial regulation from the Ministry of Forestry. In 2006, another ministerial regulation banned all exports of timber harvested using small-scale logging titles	Illicit act due to the hierarchical order of norms in place in Cameroon
1998	Illegal logging	FLEGT-VPA signed in October 2010	
2001	Main silvicultural parameters (such as minimum cutting diameters, recovery rates) to be applied within logging concessions (and to a lesser extent in community forests)	A 2001 decree mandating management plans to be adopted in logging concessions and specifying how the plans have to be prepared	The 2001 decree has limitations and there have been several attempts to improve it, to no avail for the moment.
2002	Conflicts with communities on the establishment of community forests	A 2002 decree granted local communities the right of preemption to establish a community forest over other logging titles that might be established by the ministry on their customary land	Some community forests have been well managed, but there is an overwhelming literature on mismanagement and negative impacts

Table 6. Change in social and environmental issues over time in Cameroon.

Issues	1994	1999	2004	2009	2014
Deforestation and forest degradation	x	x	x	x	x
Multiuse of the forest domain	x	x	x	x	x
Unsustainable logging	x	x	x	x	x
Illegal logging		x	x	x	x

(2000) that was in force until recently and its respective regulations as well as other related legal instruments were used. In addition to the FSC principles, approaches to verification of legal wood's sources under national regulation and the FSC scheme were analyzed. Results of this analysis are summarized in Table 7.

Overall, FSC standards have higher demands than national regulation particularly regarding principles 4, 5, 6, and 8. Also, an important aspect that has emerged in recent years as a result of the Lacey Act's impact in the United States has been the implementation of measures to ensure that sources of wood are legal and sustainable. The United States is one of the leading importers of Peruvian wood.

Indeed, LFFS approved in 2011 and that is in process of implementation since November 2015 has its origins in the internal conflicts that characterized signing of the FTA with United States (Stetson 2012). The demands of the North American timber market led to include a specific annex about strategies to strengthen forest verification processes in Peru. As a result, upgrading and autonomy to OSINFOR were established, as well as the establishment of policy guidelines against national forestry functionaries' corruption, among other measures.

3.2.2. Indonesia

In the case of Indonesia, government regulation is based on two standards, i.e. legality (Sistem Verifikasi Legalitas Kayu-SVLK) and mandatory forest management certification (Pengelolaan Hutan Produksi Lestari-PHPL). SVLK standard is a subset of the PHPL standard. All concessions in Indonesia should meet the PHPL standard or optionally the SLVK standard for temporary time period. The SVLK certificate is valid on for 3 years and after that period the concessions should apply and pass for the PHPL standard. The SVLK standard requires that the forestry company should have (1) a right to the land and harvest, (2) a management plan approved by a government official, (3) a legal document for timber transportation, (4) payment for timber royalties, (5) documents assessing environmental and social impacts and the monitoring result, (6) a safety system in the workplace and fulfillment of worker rights such as employment contracts, the right to form worker unions, and the exclusion of child workers.

The PHPL standard covers precondition, production, ecology, and social criteria. The precondition criteria include the indicators of the concession boundary delineation; the management commitment for implementing SFM; the system and the skilled staff to implement SFM; and the system for free, prior, and informed consent (FPIC) by local communities for all forest-management activities. Production criteria include the management plan and its implementation, sustained yield, which interpreted that timber harvest should not exceed the government's approved harvesting target, silviculture to maintain forest regeneration, implementing reduced impact logging (RIL), and sufficient budget to implement SFM. Ecological criteria include set-asides for protected areas, forest protection and patrolling, monitoring the forest management impact on soil and water, and biodiversity (flora and fauna) assessment and management. Social criteria include a clear boundary and delineation between the concession and community areas, a mechanism to respect customary rights, the company obligation to local communities, participation of local people in forest management and benefit sharing to local people, a conflict resolution mechanism, worker rights, and capacity building.

For the comparison between national regulation and sustainability standards, the international FSC standard for forest stewardship version 5 (FSC 2014b) was used. There are big gaps between the government regulation and FSC standard (Table 8). FSC requires the change from timber exploitation to forest management, which means that long-term forest values should be considered. In addition, FSC also requires more accommodation of the needs and desires of local communities. Governmental regulations and FSC requirements are sometimes in conflict in regards to silviculture. RIL implementation, high conservation value forests (HCVFs)-related activities and community development as well as social impact assessment are among the most difficult criteria to meet. Even the best concessions in Indonesia need substantial efforts, time, and costs to meet the FSC standard (Ruslandi et al. 2014).

3.2.3. Cameroon

For the comparison between national regulation and sustainability standards, the national FSC standard for forest management was used (FSC 2012). The standard shares some of the indicators with legal requirements that forest managers have to respect while operating in the country but contains several additional indicators (Table 9). Also, certification goes well beyond the legal technical prescriptions required for management plans. For instance, several management plans had to be modified as a result of the FSC monitoring process, and minimum harvesting diameters increased (Cerutti et al. 2008).

Table 7. Comparison between legal system and FSC certification in Peru.

	Legal system	FSC
Principle 1: Compliance with laws and FSC principles	Mandatory management plans. Taxes, fees, and other financial obligations should be paid before logging. Concessionaries and other forest's users have to maintain forest's integrity in their managed area. Compliance with the CITES.	Additionally, operators have to demonstrate long-term written commitment with the SFM principles and to define internal preventive actions aimed to protect operation areas from violations and/or other nonauthorized activities
Principle 2: Rights and responsibilities of tenancy and usage	The LFFS (2000) set three modalities for access areas aim to forests logging: (1) Long-term concessions awarded to private enterprises through open public contest. (2) Permits to indigenous and peasant communities that want to carry out forestry operations inside their titled territories. (3) Authorizations to allow timber extraction in local forests by other rural populations. All these modalities require approbation of management plan (and corresponding fees) by the competent forestry authority (regional government or MINAGRI) before logging operations are started.	Additionally, the national FSC standard requires that the internal policies and actions to solve any claim or conflict that could emerge from use of forest resources are defined in a written document
Principle 3: Indigenous peoples' rights	Peru signed the ILO Convention 169 about indigenous people's rights in 1993. However, only after the Law 29,785 was enacted in 2011 it set the conditions for free, prior, and informed consultation process to indigenous communities in projects that could affect them. Yet, there are no outlines or guidelines about how this process should be carried out in the frame of logging operations	Logging operations by indigenous communities should elaborate participative management plans. In case these operations are carried out by a third party, a contract must be made to formalize this agreement. Furthermore, FSC standards set conditions for relationships between communities and private operators including: respect to places with high ecological, economical, and/or religious values; rewarding mechanisms to compensate usage of traditional knowledge and internal platform in case conflicts could emerge.
Principle 4: Community relations and worker's rights	LFFS (2000) established that management plan should contain a labor and community relationship program. Labor is regulated through several mechanisms and norms based on the ILO Conventions 29 and 165 against enforced work and several specific laws that remark the willing nature of work and the worker's right to be compensated. Furthermore, recently implemented Law 28,806 created a government platform (SUNAFIL) that gives oversight of compliance of worker's rights in all sectors including social and health benefits.	Communities around or inside the operation areas have priority in case of employment or capacity building by the enterprise. Internal mechanisms for participation and communication with communities surrounding the operation areas. Existence of an internal regulation about industrial health. There is a preventive health plan that includes the organization of a medical kit and an internal protocol for emergencies. Workers have adequate protection equipment for both field and industrial activities.
Principle 5: Optimize the forest's benefits	No mandatory regulations about economic performance of concessionaries additional to compliance with fiscal obligations are included in the LFFS (2000)	The national FSC standards promote economic efficiency in logging operations through: – Elaboration and implementation of business plans that set adequate production and marketing strategies in order to reach economic profits. – Availability of updated accounting information that could lead to take adequate business decisions. – Minimization of waste wood during extraction and processing processes. – Products diversification and integration with complementary activities that could generate local benefits to communities surrounding.
Principle 6: Environmental impacts	An environmental assessment study is part of the management plan according to LFFS (2000). In order to do this, operations should define environmental management's norms and activities and also a contingency plan	The national FSC standard sets measures in order to maintain forest's ecological and biological function such as: – To protect endangered species inside the logging area. This includes zoning of protected areas, limiting hunting, and avoiding 'barbasco' for fishing. – To implement a silvicultural plan that favor forest's conservation of its vital ecological functions. – To control erosion, reduce forest damage, and other mechanical disturbs through implementation of reduced impact logging as well as construction and maintenance of forestry paths, among other techniques. – Avoid chemical products for pest control and adequate management of toxic residuals. – To control usage of exotic introduced species and to limit land cover changes to a small area of the total concession and to those areas not included in HCVF.

(*Continued*)

Table7. (Continued).

	Legal system	FSC
Principle 7: Management planning and its implementation	Management planning comprised by two levels: (1) General Forestry Management Plan (PGMF) with a 40 years horizon. Gives the general framework for the business strategic planning. (2) Operative Annual Plans (POA) that sets business activities during each year. PGMF can be modified based on the results of the OSINFOR's periodical assessment or because of concessionary's own initiative. Guidelines for management plans were set through RJ 109–2003-INRENA. Also, this norm allows that estimation of concession's productive potential could be based on secondary sources.	For elaboration of POAs detailed forestry inventories are mandatory. In addition to this, management plan should contain a description of the silvicultural management plan that will be implemented in the logging area and a justification about harvesting rate both based on scientific evidence. This evidence should come from data gathered in permanent parcels inside the same operation area. Management plan should detail this aspect too and changes on plans should be based on the findings. Workers should have a summarized version of the management plan and are trained in order to assure its implementation.
Principle 8: Monitoring and assessment	Monitoring and assessment program considering sustainable management indicators proposed in the management plan. OSINFOR is the government agency in charge of oversight management plans' compliance. For this they perform periodical assessments to concessionaries each 5 years.	An internal monitoring and assessment system that allows identifying productive, biological, environmental, and socioeconomic changes attributable to forest management against a set of minimal indicator proposed in the standard. In addition, results of these assessments should be public and taken into account in periodic reviews of management plans.
Principle 9: Maintenance of high conservation values' forests (HCVF)	There is no consideration of HCVs in the LFFS (2000)	Peruvian FSC Standard did not develop any criteria for this principle. However set that HCVF should be identified and measures to maintain or increment its values must to be taken. In practice, each auditor developed indicators in order to assess compliance with this principle
Legal sources verification	According to its jurisdiction, regional governments or MINAGRI perform verification competencies on timber's sources. For this they usually administer control points that verify timber's legality located in the main timber routes nationwide. However, limited public budget for equipment and personal in charge of this function constraints effectiveness of public control. On the other hand, as we mentioned before OSINFOR is the main government agency in charge of management plans' compliance through direct verification to concessionaries each 5 years.	FSC set two standards for Controlled Wood (FSC-STD-40–005 y el FSC-STD-30–010) in order to demonstrate that timber comes from legal sources. In this sense, indicators in these standards aim to verify that timber is not: – Illegally logged – Logged violating traditional and/or civil rights – From HCVF threated by logging activities – From areas where forest are turning to plantation or other non-forest uses. – From genetically modified trees. Audits regarding compliance are performed periodically by a third independent party. In Peru, there is only one initiative (Chullachaqui SRL) with this modality of the FSC certification.

4. Discussion

4.1. Interactions between certification and public policies

In all the study countries, certification has influenced all stages of the policy process from the moment it entered the national arena: agenda setting and negotiation, implementation, and monitoring and enforcement. Over the years, FSC certification has introduced new concepts (such as HCVF) and influenced the development of national policies. For example, in Indonesia FSC certification and other voluntary certifications have influenced the development of legality verification (SVLK) standard, third-party audit requirement and auditor perception on good forest management practice or raising the bar of the SVLK/PHPL standard due to the better auditing skills of auditors obtained from the FSC certification auditing training and experience. Similarly, FSC certification has contributed to progress in forest governance by improving transparency and community participation, public consultation, building trust among stakeholders, and providing more space for NGOs and civil societies (Muhtaman & Prasetyo 2006; Cerutti et al. 2014; Ruslandi et al. 2014).

FSC certification has also introduced changes in management or monitoring practices that cover the social and environmental issues faced by the countries over the years. Such issues were largely mentioned in the existing public regulations (mainly stemming from the 1992 Rio Conference), but they were rarely enacted. This is because forest operations, although managed through an approved management document, remained largely focused on timber extraction and on the control of extraction rules for larger financial benefits. Broader environmental and social issues were (and still are) not considered in the curricula of forest officials, and thus they were not verified or monitored in daily operations. FSC certification has pushed those topics on the national agendas with the help of certification advocates such as NGOs and donor countries (see below). This is not to say that the topics were immediately or entirely

Table 8. Comparison between the government regulation (SVLK and PHPL) and FSC certification requirements in Indonesia.

	Legal system	Implementation	FSC
Principle 1: Compliance with laws	Demonstrate legal entity and business operation of the organization. Delineation of the forest management unit. Comply with silviculture rules. Comply with labor and environmental laws. Pay reforestation fees (DR) and forest royalties (PSDH). Compensate local communities. Issuance of annual cutting permits and license renewals are conditional on legal compliance, as determined by external auditors (SVLK).	Lack of enforcement of governmental regulations, especially labor and environmental laws. The required financial compensation paid to local communities is less than what they requested.	In addition to complying with national and local laws, concessions should: recognize and respect local community rules; negotiate and make an agreement on the compensation fee for the communities; deal with FSC rules that sometimes contradict national regulations (e.g. SILIN rules require unsustainable logging intensities); provide evidence of balanced attention to social, ecological, and production issues; and, provide documentation for forest delineation and resolve any related conflicts.
Principle 2: Workers' rights and employment conditions	Concessions should follow the labor law (UU 13/2003) and regulations related to worker health and safety	Government oversight of implementation of these regulations was generally weak or nonexistent. No detailed guidelines to comply with safety procedures.	Comply with all national regulations and international conventions related to workers. Proper safety equipment provided and utilized. Adequate training and supervision provided and documented.
Principle 3: Indigenous peoples' rights	No recognition of indigenous peoples' rights		
Principle 4: Community relations	Concessions are required to develop social programs for local people (MoF Decree 691/Kpts-II/1991)	This regulation was not enforced and largely failed to improve company–community relations. The legal rights of local communities, including indigenous people, are not recognized. In many cases, unclear land tenure is a source of conflicts between concessions and communities.	Social baseline surveys and social impact assessments. Help with community development programs using participatory processes. Monitor social impacts and evaluate program effectiveness. Resolve land tenure and other rights issues on a case-by-case basis using procedures developed by the concession. All activities that affect communities need to be preceded by community consultations with broad stakeholder participation.
Principle 5: Benefits from the forest	Reduced impact logging (RIL) is the MoF's principal proxy for SFM in their mandatory forest certification program (Pengelolaan Hutan Produksi Lestari -PHPL). Prepare tree position maps and plan logging roads, but these are only administrative requirements.	Insufficient governmental regulation to implement RIL. Government regulations can be satisfied with RIL training and installation of demonstration plots.	Preharvest timber inventories and contour mapping. Harvest plans reflect established standards for operations, environmental protection, and utilization. Felling and bucking methods prioritize worker safety, ensure efficiency, and minimize logging waste. Efficient and low environmental impact skidding with planning and operational controls down to the individual tree level. Deactivation activities (e.g. post-logging road and skid trail closure) to reduce soil erosion and restrict illegal access. Construct and maintain logging roads so as to minimize soil erosion and facilitate log transport. Monitor compliance with RIL guidelines and ensure company-wide utilization. RIL training and supervision.
Principle 6: Environmental values and impacts	Reduced impact logging(RIL)		Social impact assessment Risk assessment before site disturbing activities
Principle 7: Management planning	10 years management plan Annual working plan Environmental impact management plan		Public summary
Principle 8: Monitoring and assessment	Prepare environmental management and monitoring plans (Analisis Dampak Lingkungan – AMDAL) for reduction and monitoring of soil erosion, protection of flora and fauna, and community development programs. Prepare annual reports on plan implementation.	Little control on implementation of environmental plans. Documents are prepared, but the implementation reports are seldom if ever prepared; if prepared, there were no responses from the relevant governmental agencies.	Integration of monitoring protocols and results into forest management plans as well as making public the results of these monitoring activities. Infrastructure changes generally required for fuel handling, recycling, and general waste management. CoC. RIL evaluation. Publicly available. Mechanism to revise management plan.

(*Continued*)

Table8. (Continued).

	Legal system	Implementation	FSC
Principle 9: High conservation values	No explicit regulations require biodiversity conservation at the concession level. Small portions of concessions should be set aside to protect genetic resources.	Set asides are not always located in places that maximize their conservation value. Instead un-loggable areas are overrepresented.	Extensive training and substantial investments in external consultants are required for HCVF surveys and development of biodiversity management plans. Other required HCVF-related activities include stakeholder consultations and incorporation of habitat protection and monitoring into planning and operational procedures.
Principle 10: Implementation of management activities	Comply with TPTI (MoF Decree 485/Kpts/II/1989 and MoF Decree P.11/Menhut-II/2009)	Research indicates that sustainability is unlikely under TPTI, especially with SILIN.	Intensive growth and yield monitoring is required. Harvest levels should be revised based on monitoring results. Logging intensities should be reduced and logging cycles lengthened. Implement appropriate silviculture. Promote natural regeneration and native species. Minimize logging waste. Prohibit GMO. Minimize the application of pesticides and fertilizer. Conserve environmental values

Source: Adapted from Ruslandi et al. (2014)

Table 9. Comparison between national regulations and the national FSC standard in Cameroon.

	Legal system	FSC
Principle 1: Compliance with laws		
Principle 2: Workers' rights and employment conditions	The rights and living conditions of laborers are generally secured by the Ministry of labor which is often far from the employees and often has no control over the treatment of workers in terms of salaries and living conditions	
Principle 3: Indigenous peoples' rights	Indigenous people's rights are guarantee by the law. NTFPs collection (including hunting bushmeat) is authorized inside logging concessions but only for personal consumption and if collection (or hunting) occurs with traditional means	The implementation of the FSC standard led to facilitating. NTFP processing and trade by local people *outside* the logging concessions, but it remains difficult for logging companies to regulate access to their concessions; access to NTFPs are governed by customary rules both in and outside the FMUs and are almost never controlled by the logging companies, overwhelmed by the task.
Principle 4: Community relations	Limited support of multi-stakeholder platform	Certification pushes company to maintain a permanent channel of communication with local communities, notably through the establishment of ad hoc committees that aims at preventing conflicts
Principle 5: Benefits from the forest	The law provides benefits from the forest royalties to local residents	Given the failure of the legal system in redistributing royalties, certified companies often prefer to set up ad hoc redistributive schemes
Principle 6: Environmental values and impacts		
Principle 7: Management planning	Most concessions are managed through an approved management plan. Yet, the quality and the implementation of those plans remain wanting, especially because the ministry does not allocate the necessary means to the on-the-ground controls	Certification goes well beyond the legal technical prescriptions required for management plans. For instance, several management plans had to be modified as a result of the FSC monitoring process, and minimum harvesting diameters increased
Principle 8: Monitoring and assessment	The 2001 decree on management plans does not require post-harvest inventories which are very important in the monitoring of the long-term impacts of the management plans	
Principle 9: High conservation values	Although the concept of 'protection areas' (*series de protection*) is embedded in the preparation of management plans, this is more restricted than HCVF, and normally refers to standard protection measures (e.g. distance from rivers) and does not require the identification of specific high conservation values	In the certified FMUs, some activities are undertaken by the companies to ensure the protection of areas of high conservation values, thanks to the regular controls by externals audits
Principle 10: Implementation of management activities	The 2001 decree on management plans de facto transferred to private operators all activities in forest management, without providing the necessary means or capacities to the ministry to control, verify and monitor their effective implementation	Implementation of management activities is controlled by external audits

implemented across the board, and indeed many differences still exist between certified and noncertified concessions in regard to implementation of regulatory requirements, but there is no doubt that forest officials in selected countries are more at ease today with concepts such as redistribution of benefits, social inclusions, conflict resolution, or HCVF than they were a decade ago, when certification was not as diffused as today.

When the interactions between certification and government regulations are analyzed, several scenarios appear. First, certification has often a complementary role in that it covers several environmental and social issues that remain outside the scope of public forest management and governance, such as biodiversity conservation, social inclusion and community relations, and benefit-sharing mechanisms as part of the companies' financial obligations vis-à-vis the state and communities. For instance, results indicate that gaps still exist in how national regulations tackle issues related to HCVs. In those cases, certification pushes logging companies to extend the scope of their legal obligations.

In other cases, government regulation and certification assign responsibilities that should be related to one single issue to different people or institutions, creating potential conflicting situations. For example, in Indonesia forest boundary delineation is the government's responsibility but concessionaires are required to document efforts to resolve boundary disputes. There is also some overlap of complementarity and substitution regarding some of the norms. For example, in Peru indigenous peoples' rights and FPIC are part of the state regulation.

On several occasions certification is substituted by government regulation on paper but remains complementary in practice as a result of poorly or weakly implemented laws because of vested interests by public officials and lack of means or capacities by often understaffed public institutions. For instance, benefit-sharing mechanisms between logging companies and the local populations are often included in national regulations, but rarely implemented as in the case of Cameroon and Indonesia. Or as in Peru, in an attempt to overcome logging in protected areas (PAs) or other 'no-go' places, a zoning requirement was included in the forestry law but government has difficulties to verify that information provided in management plans is accurate and that the harvesting operations are performed in the corresponding plot. In certification, this problem is presumably prevented or at least alleviated through the third-party verification. In such cases, certification becomes a substitute for ineffective public policies, as hoped for by the proponents of private governance and forest certification in particular (e.g. Cashore et al. 2004), and as also already noted in other parts of the world (e.g. Espach 2006).

4.2. Pressures from the public evoke private sector and governmental sustainability initiatives and shift standard systems

In the study countries, NGOs have reflected attention to sustainability concerns confirming the first and second propositions but there are differences between issues. Regarding some of them, such as the threat to orangutans due to deforestation in Indonesia, the pressure has come especially from NGOs in the North through targeted media campaigns (Greenpeace 2010) whereas other issues have been more localized and remained the concern of national NGOs and media, e.g. overexploitation of mahogany in Peru (EIA 2012). NGOs have also been active stakeholders in promoting certification along with donor countries. This has been especially the case regarding sites of high public interest as hypothesized in the first proposition. For example, in Peru more than half of the certified forests are located in the Madre de Dios department, one of the areas with several conservation initiatives due to its high biodiversity levels (Catenazzi et al. 2013).

Although some of the social and environmental issues persist from year to year, the majority of them have been addressed subsequently in government regulations. Yet, the initial response may take a long time and require a push from 'outside' as the example of Peru shows (Figure 1). In Peru, the push has come not only from NGOs promoting certification but also from the United States, which signed a FTA with Peru in 2006 (PTPA 2006). The PTPA contains an Annex on Forest Sector Governance that includes concrete steps to strengthen forest sector governance and combat illegal logging and illegal trade in timber and wildlife products. In a similar fashion it is hoped for that the Voluntary Partnership Agreement (VPA) signed between Cameroon and EU will strengthen the forest sector governance and decrease illegal logging.

Importing countries may further create a push for certification through public procurement policies as there is evidence on their positive effect on increasing market share for verified legal and sustainable timber (Brack 2014). This is particularly the case in Europe where countries have become more and more sensitive to environmental considerations (Delvingt 2010). Directive 2004/18/EC of the European Parliament and of the Council issued in March 2004 provides an opportunity for public authorities to take into account environmental and social considerations in public procurement criteria. For example, the Dutch Government aims to procure 100% of its needs from sustainably harvested timber (TPAC 2015). The creation of green public procurement gives thus a competitive advantage to operators involved in the certification.

As public policies have evolved over the years so has certification (FSC 2014a, Synnott 2005). New

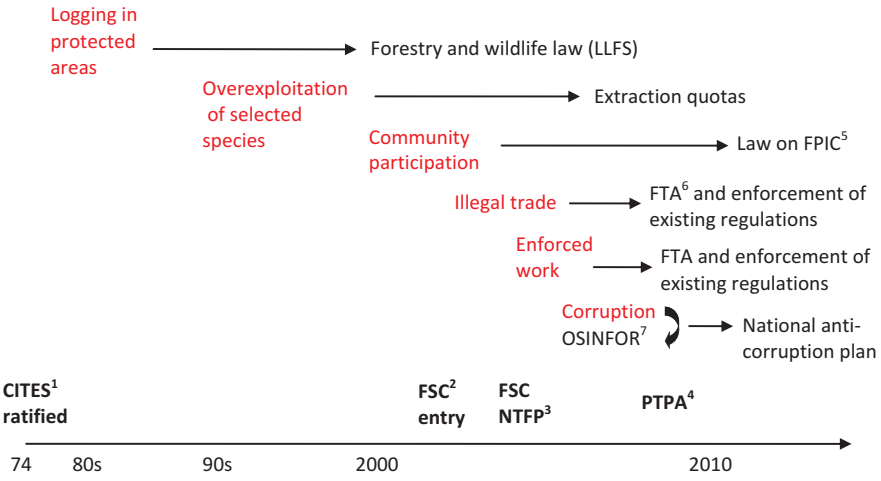

Figure 1. Environmental and social issues linked to timber production in Peru and public policy responses to them over time. [1] Convention on International Trade in Endangered Species of Wild Fauna and Flora.[2] First Forest Stewardship Council certification.[3] FSC's Non-timber Forest Product standard adopted in Peru.[4] PTPA.[5] Free, prior, and informed consent.[6] Free trade agreement with the United States.[7] In the framework of commitments made under the FTA, Peruvian Government reestablished the Oversight Organism of Forestry Resources and Wildlife (OSINFOR).

concepts have been introduced in the aim to attain sustainability, e.g. the HCVs, and new standards created, e.g. standard for small or low intensity managed forests (SLIMF). As the certification standard evolves from its already high starting point, the changes are more marginal rather than leaps whereas, especially in countries with rudimentary forestry law, the minimum requirements may change drastically through interaction with certification. The difference may remain on the timing of such changes, as certification by its nature is an ever-improving process, while public policies and regulations may have very slow improving paces. Yet, on the long run, this evolution of government regulations and its linkage with certification has the potential to raise the bar and also reduce the 'swing potential' between noncertified and certified forest operations (Figure 2) as also noted in other countries (e.g. Eba'a Atyi 2006). Furthermore, it can foster achievement for FSC certification by non-certified companies (Ruslandi et al. 2014).

4.3. Sustainability initiatives, standard settings, and certification only provide partial solutions for ecosystem service and social problems

Overall, there is evidence that certification is indeed improving practices in some certified concessions in the three study countries. For example, based on the comparisons of before and after certification or between certified and uncertified concessions, FSC certified concessions in Indonesia were reported to change from conventional rather destructive logging practices to RIL, improved their conservation and environmental (e.g. soil erosion) management as

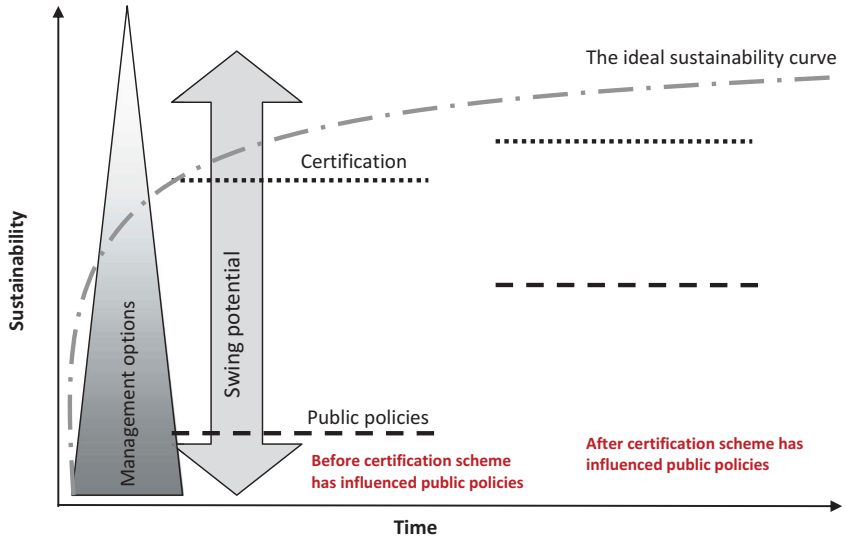

Figure 2. The evolution of certification and public policies over time in relation to ideal sustainability and their influence on swing potential at two different time points: before certification scheme has influence on public policy and after it.

well as worker safety welfare (Griscom et al. 2014; Ruslandi et al. 2014). In addition, the certified concessions were also reported to have better community relations and increased transparency in decision-making and stakeholder participation. It is doubtful that these improvements would have occurred without certification as the forest management practices of the companies engaged in certification were among the best in Indonesia at the beginning of the certification process (Ruslandi et al. 2014). Similarly in the Peruvian case, FSC certification has improved environmental management and social performance of the certified companies (Trujillo 2014). Also in the Congo Basin several positive outcomes have been noted in certified concessions when compared with noncertified concessions: better working and living conditions, improved participation, and decision-making through active local institutions, existence of benefit-sharing mechanism, and more equitable distribution of benefits (Cerutti et al. 2014). These improvements can be traced back to the period when the company decided to engage in certification and thus are unlikely to have occurred without certification. Similarly in Indonesia, training in RIL and other aspects related to certification started at the very early stages (Ruslandi et al. 2014). Hence, our case studies are in contradiction with the proposition that engagement with certification procedures primarily increases and improves the level of documentation and management articulation, before it changes management practices on the ground. Paperwork is surely increased with certification, but most of it is the direct sign that processes and practices changed from the past.

However, the role of certification in resolving some environmental and social issues and attaining sustainability is limited by several factors. First, there is a contradiction between the scale of the issues and certification: the concessions resolve problems at forest management unit level which provides very limited response to issues such as deforestation. This is reinforced by the extent of certified areas, especially in tropics where FSC has very limited uptake (Marx & Cuypers 2010). Although certified areas have increased in the study countries recently, they still represent only about 5% of the total area under production in Indonesia and Peru and about 14% in Cameroon.

Also, the cost of certification can be a significant barrier of entry into certification system (Bass et al. 2001; Gale 2006; Dauvergne & Lister 2012; Steering Committee of the State-of-Knowledge Assessment of Standards and Certification 2012). In our study countries financial assistance for certification has helped to advance the amount of area certified but the costs of maintaining certification have remained. In Peru, the maintenance of certification has been unstable during the period 2003–2013 because certified operations have relied mainly on the financial support of development projects that have partially or fully subsidized the costs of certification and because the ability of these operations to establish long-term commercial relationships with certified timber buyers is limited (Isminio 2014; Trujillo 2014). In a recent study, Trujillo (2014) identified four reasons why operations could not maintain the certification during 2005–2014 period: (1) low economic-financial capacity; (2) limited access to certified timber markets; (3) low productive diversification and technological development; and (4) legal and institutional instability and informality of the sector.

Furthermore, it seems that even the companies engaged in certification lack in capacity to implement the certification requirements. For example, in Peru there is limited knowledge inside enterprises about technical and operational aspects associated with FSC certification, lack of scientific evidence on ecology and silviculture that contributes to make adequate decisions during logging operations, and difficulties to interpret the standard (Trujillo 2014). Furthermore, for those companies that do engage in certification, the lack of capacity further increases the costs. For example, in Indonesia most concessions lack the capacity to carry out required HCV assessments. Hiring specialists to overcome the lack of internal capacity increases the costs of certification as, e.g. in Indonesia daily rates to conduct biodiversity surveys and HCVF assessments vary between USD 250 and 650 (Ruslandi et al. 2014).

Considering the limiting factors it is not a surprise that companies engaged in certification in our study countries are mainly larger companies interested in access to or already operating in the markets of Europe, North America, Japan, and South Korea. Regardless of the country, the companies are first and foremost motivated by economic considerations related to access to funds and assurance to markets (e.g. legality requirements and responsible sourcing) (Cerutti et al. 2011a; Ruslandi et al. 2014; Trujillo 2014). Indeed, there is a risk-management element as in Peru certification is linked to corporate social responsibility and environmental sustainability and in Indonesia and Cameroon it is seen as a way to increase professionalism in management and to improve corporate reputations. The findings show that larger companies are more likely to capture public attention and are therefore more likely to act on sustainability concerns but with the caveat that the companies operate in international markets. At local or national markets certification may not add value and even certified timber may not be sold as such (Isminio 2014; Trujillo 2014). This can be because prices in local and national markets that don't require certification are

better for given species and thus, offer an incentive to channel some of the certified timber through these conventional chains (Pérez 2009; Trujillo 2014).

Despite limited direct influence currently, there are processes that may increase certification's appeal in the future and hence its contribution in attaining sustainability in the use of forest resources. One is the rise of PES schemes (including REDD+) (Costanza et al. 2006; Boyd & Banzhaf 2007; van der Meer et al. 2007; Stanton et al. 2010; De Groot 2011). For example, in Peru compliance of Maderacre with FSC standards prepared it to fulfill VCS and CCB Gold requirements while aiming to participate in a local REDD+ initiative (Entenmann 2012). Second is the lack of safeguards associated with REDD+ schemes (Jagger et al. 2012). FSC certification already includes globally used minimum environmental and social standards with guidance on processes such as FPIC that are in the center of REDD+. However, it should be noted that REDD+ is a highly contested arena as there are many other actors involved in developing the safeguards (McDermott et al. 2012; McDermott 2014). Third is the rise of corporate responsibility (Waage & Kester 2013). With demonstrated positive impacts certification could work as a tool to guarantee responsible forest management and to mitigate investment risk. Fourth, FSC is currently developing new tools explicitly targeting ecosystem services and related promotional claims. Finally, certification may be used to attract financing. In Peru, compliance with FSC standards gives forestry operations advantage to form productive alliances and to access funds and other commercial opportunities (Trujillo 2014).

5. Conclusions

Through comparisons between national regulations and FSC standards of Indonesia, Cameroon, and Peru, this paper explored different types of interactions that occur along different stages of policy process. The impact of the governance instruments in addressing social and environmental issues was also assessed.

Based on the study countries, certification influences all stages of the policy process. Although most concerns over particular social and environmental issues have been addressed in public regulations over time, albeit sometimes with considerable time lag, certification has remained complementary in practice. Hence, certification has become a substitute for ineffective public policies due to ineffective implementation of government regulations. At the same time certification has kept introducing new concepts thus improving the ideal of sustainable forest management over time. Therefore, it is not surprising that the requirements of FSC certification exceed the legal requirements in all the study countries.

There is some evidence that FSC certification has improved environmental management and social performance of the certified companies. In sites of high public interested as well as for companies likely to capture public attention, certification has been a strategic step toward risk management. Despite some evidence of positive impacts at Forest Management Unit (FMU) level, certification has had limited effectiveness in reducing deforestation and forest degradation, the original concerns to which certification was a response, due to the limited scale certification has been adopted in the study countries. Thus, the focus of several countries has shifted to other instruments and legality verification has emerged as the new leading policy instrument to combat illegal logging and forest degradation.

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Disclosure statement

No potential conflict of interest was reported by the authors.

Notes

1. Appendix II lists species that are not necessarily now threatened with extinction but that may become so unless trade is closely controlled.
2. DS 003–97-TR, Ordered Unique Text of the DL 728, Law of Productivity and Labor Competitiveness.
3. In the cases of most Peruvian Amazonian departments (San Martin, Loreto, Ucayali, Madre de Dios, Amazonas), forestry competencies were given to regional government as part of Decentralization's Law implementation. However, other Peruvian departments such in Coast or Sierra, MINAGRI or SERFOR the name according the next LFSS, keep these competencies that are exerted by its local representatives.

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Annex 1. Interview guide for the country case studies: Indonesia, Peru, and Cameroon

Background

The focus of the country case studies is on how public regulation and certification play out at national level. The interest is in FSC certification as a governance instrument and how the governance system (including public regulation) has evolved in each country over time. The research questions below are organized under four different sections that describe (1) country's forestry sector and (2) environmental and social problems, (3) governance response to them, and finally (4) the logging company perspective.

Research questions:

1. Description of the country's forestry sector

Certification scheme name	Year of certification scheme's move into the country	Public actors involved	Private actors Involved	Investors	Amount invested
FSC					
Any other					
…					

	The year when certification entered country	Midpoint	2014 (or the most recent year data available)
Area under the commodity (ha)			
Area certified (ha)			
Annual production (volume)			
Annual production (value)			
Export (volume)			
Export (value)			
Annual production of certified produce (volume)			
Annual production of certified produce (value)			
Export volume of certified produce (volume)			
Export volume of certified produce (value)			
Major destination markets of three biggest companies producing certified timber (destination plus volume)			
Major destination markets of three biggest companies producing certified timber (destination and value)			
Commodity contribution to GDP (% of GDP)			
Exports of commodity as % of total exports			

2. Swing potential

– What are environmental and social problems within the commodities' current production system at country level?

- Specific problems (tangible things instead of climate change, i.e. what is the actual problem climate change brings)
- Time frame since around the beginning of 90s as certification was established then.

Year	Issue	Policy response
…		
…		
…		

– Have the problems changed over time? That is, do some problems persist over time or are they dealt with and are not problems anymore?

Issues	1994	1999	2004	2009	2014

3. Global value chains

– To what extent do sustainability standards go beyond regulation?

– And how do they do so dynamically over time (what new concepts emerge) and why?

– Does public regulation follow or lead? When and how?

– What is known about the current mandatory and voluntary standards in offering management considerations that aid or inhibit the potential of the commodities' production system to overcome environmental and social concerns?

(In other words: Can the current regulations and voluntary standards help to overcome environmental and social concerns? Which concerns? How?)

Issues (following FSC principles and adding others if not addressed by certification)	Characterize legal (BAU) framework system	Characterize certified system
For example, Principle 1: Compliance with laws	*The laws of the country must be respected*	*Same*
….	….	….
For example, Principle 7: Management planning	*Management plan approved by government*	*Plan approved + control of harvesting diameters, regeneration …*
….	….	….

4. Issue cycle

– Are sustainability standards an insurance mechanism of firms against reputational risk of malpractices? (Logging companies)

– If so, what room is there for standards as part of the value addition?

– For which indicators (FSC criteria) would this hold?