

Social impacts of the Forest Stewardship Council certification in the Congo basin

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SUMMARY

We assess whether the implementation of the Forest Stewardship Council (FSC) certification scheme in the Congo basin has had positive additional impacts—as compared to existing regulatory frameworks applied in noncertified Forest Management Units (FMU)—on (1) the working and living conditions of logging companies' employees and their families, (2) the effectiveness and legitimacy of the institutions and benefit-sharing mechanisms set up to regulate relationships between logging companies and neighbouring communities, and (3) the local populations' rights to and customary uses of forests. Results on (1) and (2) suggest that several significant differences exist between certified and noncertified FMUs. Results are instead mitigated on (3): Companies in certified FMUs tend to better enforce the law, but this may have unwanted negative impacts on customary uses. We discuss the reasons why several positive social outcomes materialised in certified vs. noncertified areas, and suggest possible improvements as well as required further research.

Keywords: forest certification, forest stewardship council, Congo Basin, sustainable forest management, legal timber

Les impacts sociaux de la certification du Forest Stewardship Council dans le bassin du Congo

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Nous évaluons si la mise en œuvre de la certification du Forest Stewardship Council (FSC) dans le bassin du Congo a eu des impacts positifs et additionnels—par rapport aux lois et règlements appliquées aux Unités Forestières d'Amenagement (UFA) non certifiées—sur (1) les conditions de vie et de travail des employés des sociétés forestières et des leurs familles, (2) l'efficacité et la légitimité des institutions et des mécanismes de partage des bénéfices mis en place pour réguler les relations entre les sociétés d'exploitation forestière et les communautés riveraines, et (3) les droits et usages coutumiers des populations locales. Les résultats sur (1) et (2) suggèrent que plusieurs différences significatives existent entre UFA certifiées et non certifiées. Les résultats sont par contre mitigés sur (3): les entreprises dans les UFA certifiées ont tendance à mieux faire appliquer la loi, mais cela peut avoir des effets négatifs indésirables sur les usages coutumiers. Nous discutons les raisons pour lesquelles certains résultats sociaux positifs se sont matérialisés dans les UFA certifiées vs. les UFA non certifiées, et suggérons des améliorations possibles ainsi que des pistes pour des plus amples recherches à conduire.

Impactos sociales de la certificación del Consejo de Manejo Forestal de la cuenca del Congo

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Evaluamos si la aplicación del esquema de certificación de Forest Stewardship Council (FSC) en la cuenca del Congo ha tenido impactos adicionales positivos en comparación con los marcos regulatorios existentes y aplicados en las Unidades de Gestión Forestal no certificadas (UGF) – en (1) los condiciones de bienestar de los empleados de las compañías y sus familias, (2) la eficacia y legitimidad de las instituciones y los mecanismos de participación en los beneficios establecidos para regular las relaciones entre las empresas madereras y las comunidades vecinas, y (3) los derechos de las poblaciones locales y los usos consuetudinarios de bosques. Resultados en (1) y (2) sugieren que existen varias diferencias significativas entre las UGF certificadas y no certificadas. Los resultados son mitigados en (3): las empresas certificadas tienden a cumplir mejor la ley, pero esto puede tener impactos negativos no deseados en los usos consuetudinarios. Se discuten las razones por las que varios resultados sociales positivos se materializaron en la certificación vs. áreas no certificadas, y se sugieren posibles mejoras, así como también áreas donde más investigación es necesaria.

INTRODUCTION

Forest certification emerged in the first half of the 1990s as a market-based response to the failure of intergovernmental processes to establish a global compact on forests. Since then, it has been promoted as a means to tackle global deforestation and forest degradation, as well as to address the growing concerns for sustainability shown by part of the industry and civil society around the globe (Lambin *et al.* 2014). The underlying logic is that the market should be able to reward companies producing timber according to rigorous, comprehensive and independently audited standards (Steering Committee 2012).

Among existing forest certification schemes, the one offered by the Forest Stewardship Council (FSC) is the most prominent for the certification of responsible forest management in the tropics. The analytical framework under which it is generally assessed defines it as: i) a non-state governance system, because it is an alternative to traditional public regulation; ii) voluntary, because forest enterprises may choose to adhere; iii) market-based, because it is driven by international markets and consumers' choices; and iv) third-party, because participating enterprises are regularly audited by an external entity, itself also periodically audited (Cashore *et al.* 2004, Cashore *et al.* 2005, Marx and Cuypers 2010). In essence, the FSC scheme checks companies and forest management units (FMUs) against a set of principles, criteria and indicators to assess whether management is environmentally appropriate, socially beneficial and economically viable.

Since 1993, the birthdate of the FSC, many have acknowledged its positive impacts on international standard setting, particularly the increased legitimacy of third-party-audited products on the world's markets (e.g. Cashore *et al.* 2004, Steering Committee 2012), and on public policies in general (Agrawal *et al.* 2008, Overdevest and Zeitlin 2014). As for impacts on the world's forests, much scattered evidence suggests that localized positive impacts exist in or around certified FMUs (e.g. Durst *et al.* 2006, Espach 2006, Auld *et al.* 2008, van Kuijk *et al.* 2009, Cerutti *et al.* 2011). Yet, it remains difficult to generate and thus replicate lessons learned at the global scale (Blackman and Rivera 2011, Romero *et al.* 2013, Visseren-Hamakers and Pattberg 2013). This is for two main reasons. First, there exist methodological difficulties in isolating the effects of forest certification from those of external processes like new policies, existing legislation, or the overall political-economic situation under which certification develops (Bass *et al.* 2001, Chan and Pound 2009). Second, there remain many knowledge gaps, particularly in some regions of the world, where certification developed later than in others.

This article seeks to contribute to filling that knowledge gap by assessing the social impacts of FSC-certified FMUs vs. noncertified FMUs in tropical natural forests in the Congo basin. We tested the three hypotheses that the presence of an FSC certificate—in line with the more general FSC philosophy as also reflected in the FSC standards—has had a positive impact on (1) the working and living conditions of employees

and their families, (2) the effectiveness and legitimacy of the institutions and benefit-sharing mechanisms set up to regulate relationships between companies and neighbouring communities, and (3) the latter's rights and customary uses.

We focus on social impacts because both the FSC and all current regulatory frameworks in the countries of the Congo basin have a strong social component that seeks to improve relationships between logging companies and local populations while contributing to local development. This provides a suitable comparative environment against which certified FMUs can be assessed. Also, we focus on the Congo basin because it has one of the largest certified areas of natural tropical forests in the world, with about 5.5 million ha as of May 2015 (info.fsc.org).

In this article, the term institutions is used to refer to associations, committees and platforms set up to facilitate discussions between the local populations and logging companies and foster local development. Benefit-sharing mechanisms refer to various schemes, mandated by law or adopted in certified FMUs, set up with the purpose of redistributing to the local populations part of the (mostly financial) benefits accrued to logging companies through their use of the FMUs (e.g. see Cerutti *et al.* 2010 for an example on Cameroon).

We focus on institutions and benefit-sharing schemes because i) shortcomings in their implementation represent one of the major corrective actions required of logging companies by FSC auditors (Newsom and Hewitt 2005), and ii) discussion platforms and committees between logging companies and the FMUs' neighbouring populations are mandated by all forest laws in the region. Indeed, they stem from the decentralization of natural resource management that has been underway since the late colonial period (1950s) in many countries, including those in the Congo basin, with the objective of empowering local people and marginalized groups (Karsenty 1997, Larson and Ribot 2005, Colfer 2011). However, the proliferation of local institutions in the Congo basin has so far largely failed to deliver positive economic and social impacts (Assembe Mvondo 2005, Oyono and Efova 2006). We believe it is therefore relevant to investigate to what degree the more recent institutions created through the forest laws or supported by FSC certification have achieved those positive impacts.

We proceed by providing a short background on the legal frameworks in sampled countries (i.e. Cameroon, Gabon and the Republic of Congo, the only three countries in the Congo basin with FSC-certified FMUs), with particular reference to how social issues are tackled there. This is relevant because the potential improvements brought in by forest certification can be better understood when compared to the baseline legal scenario under which all FMUs should be normally managed. Next, we describe the methods used, followed by a presentation of the main results. We will then discuss the major findings and explore potential ways forward, both in terms of future research and policy implications. The last section draws the conclusions.

THE FORESTRY SECTOR IN THE CASE-STUDY COUNTRIES

The selected countries' forestry sectors present many analogies in terms of their history, policies and social and governance challenges. Forests are largely registered as public lands, and are divided over vast swathes of territory into large-scale logging concessions. Notably, over the last couple of decades all countries underwent structural adjustment plans that modified the fiscal regimes applied to logging concessions, as well as their social and environmental requirements.

The formal, large-scale, industrial forestry sector in the three countries contributes similar percentages of their GDPs and it generally represents the second largest employer after agriculture (Table 1).

Also similar among countries and to the aims of the FSC, are the legally mandated social obligations and benefit-sharing mechanisms (Table 1). In all countries, there exist also private schemes that logging companies used to stipulate even before the advent of the FSC with the neighbouring populations, notably in the form of contractual agreements

or *cahiers des charges*: They list in-kind or monetary contributions promised by the company to the populations. All these similarities among countries come to no surprise, as all current forest laws in the countries of the Congo basin were influenced by the 1992 Rio Declaration on the principles of sustainable forest management, as is the FSC. Also, the case-study countries have ratified the major relevant international conventions (such as those on labour and human rights), which are also reflected in the FSC standards.

Customary rights, including agricultural activities, hunting and non-timber forest products (NTFP) gathering, receive similar treatment in the regulations of the three countries. In general, they are guaranteed provided there is no commercial purpose (i.e. only self-consumption). Hunting and NTFP collection must also be conducted with 'traditional' means (e.g. hunting without the use of guns), while agricultural fields cannot be extended further than the surfaces already cultivated at the moment of the allocation of the FMU, unless located in specially designated agroforestry or agricultural zones within the FMU.

TABLE 1 Key aspects of the formal forestry sector in case-study countries

	Cameroon	Gabon	Republic of the Congo
Sector as percent of GDP	4	4.3	5.6
Employment (% of agricultural sector)	22 000 (0.3%)	13 000 (2.4%)	7 400 (0.4%)
Allocated concessions (No. / million ha)	111 / 7.1	57 / 11.6	52 / 11.9
Concessions with approved management plans (No. / million ha / % of total concessions)	72 / 5 / 65%	26 / 6.1 / 31%	7 / 3.6 / 13%
Concessions FSC (No. / million ha / % of concessions with approved management plans)	14 / 0.9 / 19%	6 / 1.9 / 31%	4 / 2.5 / 70%
Compulsory social security	Yes, social security fund (<i>Caisse Nationale de Prévoyance Sociale</i>)	Yes, social security fund (<i>caisse nationale de sécurité sociale</i>) and health and social security fund (<i>caisse nationale d'assurance maladie et de garantie sociale</i> , since 2013)	Yes, social security fund (<i>Caisse nationale de sécurité sociale</i>)
Guaranteed customary rights (agriculture, hunting, NTFP collection) inside concessions	Yes, with traditional means and for personal consumption. Farmers can maintain fields that existed before the creation of the FMU, but are not authorized to open new ones	Yes, with traditional means and only for personal consumption or local trade. Must be conducted only by the local population, i.e. living in the village	Yes, with traditional means and for personal consumption
Legally-mandated benefit-sharing mechanisms	Yes, area-based fee (<i>redevance forestière annuelle</i>)	Yes, but regulation to be completed	Yes, area-based fee (<i>redevance de superficie</i>) and local development fund (<i>Fonds de Développement Local</i>) only in FMUs with an approved management plan

The latter provision is particularly problematic. The logic on which it is based is that if an FMU is supposed to be managed sustainably, allowing shifting cultivation inside it could mean no control over land that is mandated by law to remain forested and to guarantee the biodiversity of the country. However, such logic does not lead to conflict only if other legal provisions were respected, notably the one mandating consultation and negotiations over the final boundaries of each FMU, to be held between the State and the local populations, *before* the granting of FMUs. As this has rarely been the case, logging companies have often been granted FMUs with the implicit responsibility to conduct such negotiations *a posteriori*, i.e. during the drafting of the management plan and while logging activities were already on-going.

Differences among countries also remain in both implementation and control. First and foremost, existing management plans are said to be still too much oriented towards timber production without enough attention paid to social issues (Vandenhoute and Doucet 2006, Lescuyer *et al.* 2012). Second, public benefit-sharing mechanisms and the institutions created for the management of the redistributed amounts have experienced different fortunes. Cameroon's redistribution scheme has been running for more than a decade with weak positive impacts on rural livelihoods (Cerutti *et al.* 2010), the Republic of Congo experiences a partial implementation, and in Gabon, more than a decade after the adoption of the law, the implementing regulation is still partially developed.

It is against such background that FSC certificates started to be granted at the end of 2005 (after a failed attempt in Gabon in 1996), first to a Cameroonian FMU and then to other FMUs in the Republic of the Congo and in Gabon. As of 2013, when this research started, certificates in the three countries covered an area of about 5.3 million ha and 24 FMUs representing between 19 and 70 percent of FMUs with an approved management plan (Table 1). These numbers are still arguably low when compared to the total area that could potentially be covered with management plans and certification. However, before certification extends further in the region, we believe it is appropriate to try and assess what impacts, if any, it has had on several social indicators. The next section explains how we measured such impacts.

METHODS

Selection of FMUs and villages

In each country, three FMUs certified by FSC as of April 2013 (when this research started) were selected. Selection was not random because, given the small number of companies engaged in certification, we tried to minimize the use of multiple certified FMUs owned by the same company or group (although this could not be avoided in one country due

to the small number of certified FMUs). This was done to decrease the probability that similar results, especially in working conditions, would be due to shared management regimes. In other words, we aimed to include in the sample of certified FMUs the largest number of companies or groups, i.e. management regimes.

Next, to pair certified and noncertified FMUs a two-stage matching procedure was adopted. First, coarse matching (Gertler *et al.* 2011), i.e. a screening process based upon available secondary data and expert judgment (Glew *et al.* 2012), was used to select the 'universe' of noncertified FMUs in which institutions and villages with similar observable characteristics to those in certified FMUs were likely to be located. Second, within the radius of potential FMUs, we aimed at maximising similarity between the treatment (FSC) and control group (non-FSC) by selecting proxy variables that should contribute to reducing observable biases and systematic differences between institutions and villages in certified vs. noncertified FMUs (Table 2).

To account for potentially different perceptions of the impacts of forestry operations, and the effectiveness of social structures or processes in the same FMU during different stages of the logging process, four villages neighbouring or inside each FMU were selected in areas where forestry operations were currently on-going, were planned for the coming year, or had been completed in the previous year or two. In total, surveys were conducted in 69 villages.¹ Villages were selected after information about logging history had been received from the concerned companies. Where there was a choice of more than one village for each stage (4 cases), the more easily accessible villages were selected. Given that forestry operations are conducted on the entire annual allowable surface, we believe this latter choice does not introduce biases in the results.

After the selection of the nine certified and nine noncertified FMUs (three in each category from Cameroon, Gabon and the Republic of the Congo), in order to test the three hypotheses listed above, we undertook a review of the mechanisms adopted by concerned logging companies to regulate working conditions in sawmills and forestry operations, and to sustain relationships with villages neighbouring the FMUs. This task involved preliminary analysis of the documentation available from companies in certified and noncertified FMUs, in particular their management plans and socioeconomic studies, as well as the planned social procedures and relevant written policies. The bulk of this material shows the mechanisms adopted by forest managers to address social issues but it does not provide definitive evidence of the quality of their implementation.

After selection, companies and villages were contacted and asked whether they were willing to participate in the study, under conditions of anonymity and confidentiality. Two companies, one certified and one noncertified, declined to participate in the study. Thus, access to company data and

¹ The total number of planned villages was 72. Three villages were not reachable due to heavy storms and a lack of canoes and alternative tracks. They could not be replaced because no other village neighboring the concerned FMUs existed.

TABLE 2 Variables used in pairing FMUs

Variable	Explanation
Alternative employment opportunities in the area	Similar employment opportunities focused on forestry operations help ensure that local economic impacts are largely based on those operations. FMUs close to adjacent forestry operations by other companies, large mining or agro-industrial sites could introduce biases (e.g. leakage) in local working conditions.
Dependence on cash crops for livelihoods and access to markets	Revenues generated through different cash crops and by easier access to local or regional markets could introduce biases in the historical capacities of people to organize themselves into cooperatives or conflict-prevention/resolution institutions.
Ethnicity	This is a proxy for social structure. Selecting different social structures could introduce biases on the customary norms in place (including gender roles), with impacts on i) the way negotiations with outsiders, including logging companies, are conducted, ii) the setting up and management of local institutions, and iii) the implementation of special rules of exclusion or regulation of the use of resources by the local population within and around FMUs.
Political/administrative jurisdictions	Different District or other relevant administrative unit officers could introduce biases in the way institutions, benefit-sharing mechanisms and customary uses are managed, supervised or sanctioned. This is because decentralised officers play important roles in i) conflict prevention and resolution, ii) controlling (and sanctioning if need be) the behaviour of companies and citizens where operations occur, iii) supervising the management of benefit-sharing mechanisms, and iv) mediating discussions on damage compensation by logging companies to the local populations for damages caused by forestry activities.
Presence of a management plan	This control was introduced to avoid overestimating the impacts of FSC certification, and was based on the assumption that, if a plan existed, even in draft form in noncertified FMUs, social interactions with neighbouring villages would likely have already taken place, as mandated by the law, and their impacts could be assessed.
Species harvested by logging companies and markets served	By selecting FMUs that produce similar tree species or products and largely serve similar markets, we tried to reduce biases introduced in the decisions taken by companies about whether to adhere to certification. This remains a debatable variable because it is also highly dependent on the market strategies of different companies, which are considered confidential and may change over time.

staff was not granted, and results on working and living conditions thus compare 16 FMUs (eight certified and eight noncertified). Companies' participation required willingness of managers to be interviewed and to share both public and (if needed) internal documents. Because of the risk of companies influencing workers and village residents (e.g. their statements during interviews), companies were asked to facilitate access to facilities only where absolutely needed in order for the study to proceed (e.g. where access to FMUs must be granted by the company management team), but in all cases interviews were conducted in the absence of companies' representatives.

Surveys

In selected FMUs, surveys were conducted in two different settings. First, we asked company managers and staff questions related to working conditions and living standards of staff and their families—both at the work site, i.e. sawmill or harvesting site, and in the *bases vie* or compounds where the company provides housing, services and facilities for workers and their families. Second, questions related to institutions and customary rights were asked in the villages neighbouring the FMUs: Focus-groups, one-to-one interviews and social transects (de Zeeuw and Wilbers 2004, NGO

Programme Karnataka-Tamil Nadu 2005) were all used to collect and triangulate information.

Where the sociocultural environment did not favour good representation of women in focus-group discussions, the interviewers tried to hold separate discussions with women. Interviews were conducted by seven people—two women and five men—rotating through the three countries in teams of three in different periods from May to September 2013. Interviews were conducted in the local language where necessary, but more often in French.

A total of 69 village focus-group discussions were held, along with 364 one-to-one semi-structured interviews and 52 social transects (Table 3).

Assessed variables were organized under three themes as summarized in Table 4.

External, non-resident people (including elites living in urban centres, government officials and representatives or workers of neighbouring logging companies) were also interviewed to complement and verify the accuracy of factual information collected in the villages (e.g. amounts of taxes paid and existence of new management rules and investments). In these interviews, we asked about their perceptions of institutions and their representatives, the most common types of conflict and their underlying interests.

TABLE 3 *Types of surveys*

Survey	Format	Certified/noncertified (gender)
Conditions of workers in forestry and sawmill operations	One to one	27/26 (all men)
Managers of logging companies	One to one	7/7 (3 women and 11 men)
Active members of committees, associations or local platforms	One to one	12/8 (3 women and 17 men)
External members of active committees (local officials, mayors, NGO representatives)	One to one	11/3 (4 women and 10 men)
Population of villages neighbouring the FMUs	Focus group	34/35
Farmers, hunters and gatherers from villages neighbouring the FMUs	One to one	134/125 (107 women and 152 men)
Social transects (generally with village chief or delegate)	One to one	26/24 (all men)
Informal and unstructured interviews	One to one and one to many	58/53 (gender not recorded)

TABLE 4 *Themes and variables*

Theme	Working conditions at logging sites and in and around sawmills, and living conditions in and around the <i>bases vie</i>	Institutions, consultation, and benefit-sharing mechanisms, and living conditions in and around neighbouring villages	Customary rights to forest resources
Variables	<ul style="list-style-type: none"> Existence and condition of mini-markets (<i>économats</i>) 	<ul style="list-style-type: none"> Institutions and their governance 	<ul style="list-style-type: none"> Existence and quality of mechanisms for compensation of damages to property, resources and livelihoods
	<ul style="list-style-type: none"> Availability and quality of water 	<ul style="list-style-type: none"> Evidence for existence and quality of public consultation 	<ul style="list-style-type: none"> Quality, availability of, and impacts on rights to game, land, and NTFPs
	<ul style="list-style-type: none"> Safety conditions and quality of mechanisms to address injuries 	<ul style="list-style-type: none"> Existence and types of mechanisms for consultation, sharing of outcomes and follow-up consultation with neighbouring villages 	<ul style="list-style-type: none"> Existence and enforcement of negotiated rules and their perceptions by the local population
	<ul style="list-style-type: none"> Existence and implementation of rules for employment of local population 	<ul style="list-style-type: none"> Quality and quantity of benefits 	
	<ul style="list-style-type: none"> Salary ranges 	<ul style="list-style-type: none"> Quality of impacts 	
	<ul style="list-style-type: none"> Type of social insurance provided by the company and whether it is in line with national requirements 	<ul style="list-style-type: none"> Availability and quality of health services 	
	<ul style="list-style-type: none"> Type of associative bodies 	<ul style="list-style-type: none"> Availability and quality of education opportunities 	
	<ul style="list-style-type: none"> Quality of housing 	<ul style="list-style-type: none"> Types of infrastructure provided 	
		<ul style="list-style-type: none"> Existence of cultural assets (e.g. community halls and churches) 	

Note: "Workers" are understood as all people paid for work, directly by the company and indirectly through subcontractors.

In order to better triangulate the information, the survey teams spent several days researching each FMU, always residing in the villages where the procedures were supposed to take place and affect living conditions. In addition to the formal questions asked during formal interviews, we crosschecked answers through more than 100 informal interviews, asking questions on whether and how procedures (e.g.

obligation to wear safety gears) as described in available documents (e.g. management plans or internal policies) were being implemented during the everyday lives of workers and their families.

Lastly, data from certified and noncertified FMUs across the three countries were pooled and compared. Although a brief country background has been presented in the previous

section, grouping FMUs and companies working in different socio-political contexts in different countries might obscure important country-related trends and preclude lessons to be learnt on a country basis. Nonetheless, the anonymity requested by companies and state officials alike in the three countries and the small available sample dictated our decision. Yet, all analyses were initially conducted on a per-country basis. Although the aggregate values of a few variables are influenced by one country more than another, overall results do not show significant differences among countries for most variables. This is also likely a consequence of all countries having very similar legal frameworks and coming under the same FSC regional standard. Although more in-country research is indeed needed, this makes us confident that no major trend has been overlooked by aggregating country-level data.

Limitations of the study

Many evidences from the Congo basin indicate that at least up to the end of the 1990s, prior to the advent of certification and before logging concessions as we know them today became the most common way of conducting forestry operations, the *modus operandi* was very much similar among logging companies, with illegal logging and social conflicts with neighbouring populations being recurrent features (e.g. Durrieu de Madron and Ngaha 2000, Auzel and Halford 2002, Auzel et al. 2004).

Within such background, and with the experiences collected by the authors over more than a decade spent in the Congo basin conducting research on similar topics, we are confident that the results of this study can very plausibly be attributed to the advent of certification.

Yet, we also remain cognizant that the design applied in this study is not rigorous enough to establish causality, as would be the case in an experimental or quasi-experimental design with a more statistically rigorous construction of the counterfactual (Caliendo and Kopeinig 2008, Sekhon 2009, Rosenbaum 2010, Gertler et al. 2011). Indeed, there might be variables—observable and unobservable—other than those considered here that could have affected the probability of becoming certified in the first place, such as managers' specific preferences or market-dependent decisions. For that reason, a few plausible complementary explanations for the results obtained will thus be provided when necessary.

RESULTS

Working and living conditions

Working and living conditions can broadly be divided into two categories: those that exist in the workplace (forest or the sawmill), such as the existence of clear written rules for the

use of safety equipment, and those that exist at the *base vie* (company housing provided for staff and their families), such as written procedures for house occupancy.

Several indicators do not present significant differences between certified and noncertified FMUs. Such indicators are linked to the existence of 'services' that forestry workers and governments alike have historically considered essential for operations to start and continue without overt conflict occurring, even before the advent of certification (indicators 1–2, 4–5 and 10, Table 5). Companies with certified FMUs invest more time and money in improving the quality of such service tough, as well as tending to their maintenance. For instance, in the certified group, higher satisfaction with prices in the *économats* (a kind of minimarket provided by the company where workers, their families, and often the general population can buy daily necessities), as compared to prices in nearby villages or towns, is generally due to the fact that certified companies subsidize prices by refraining from charging for transportation from the closest markets. The same holds for providing and maintaining a permanent system for delivering both potable and non-potable water, as well as electricity, able to reach all homes in the *base vie* and to support all basic water and energy needs (drinking, washing and cooking).

Certified FMUs also perform significantly better in relation to having written and enforced procedures in place to regulate working and living activities. For instance, most companies provide safety equipment (indicator 5, Table 5), but in noncertified FMUs the correct use of equipment is rarely verified by a dedicated staff (indicator 6, Table 5).

Health-related indicators (indicators 7, 8, and 9, Table 5) arguably provide the clearest sign of distinction between certified and noncertified FMUs, with the quality of the services and facilities provided setting them apart. The average number of staff served by medical personnel (doctors, nurses and other caregivers) was similar between certified and noncertified FMUs (80 and 88, respectively). However, companies in certified FMUs employed more professional and permanent staff, e.g. doctors and nurses with national certifications or diplomas who are regularly available onsite, compared to a larger number of less formally trained caregivers in noncertified FMUs.

Neither companies in certified nor those in noncertified FMUs had special contracting conditions for hiring or retaining young employees (no longer legally minors but still lacking work experience).² Also, gender-disaggregated data showed a highly imbalanced workforce, with both certified and noncertified companies employing about 97% men.

Overall, a significant association existed between certification and whether companies had one or more active and officially recognized associative bodies with a mandate for collective bargaining with companies on issues including salaries and safety and health conditions (indicator 16, Table 5). In all cases where such associations exist, they were

² The three study countries have ratified ILO Convention 138 (Minimum Age Convention, 1973), but have not integrated it into their national laws. Currently, the legal minimum age for employment is 14 years in Cameroon and Congo and 15 years in Gabon.

TABLE 5 *Synthesis of results (working and living conditions, percent of sampled FMUs)*

	FSC	non-FSC
Working conditions in sampled FMUs (N=16)		
1 <i>Economat</i>	100%	100%
2 Potable water	86%	67%
3 Individual home showers and WC systems	100%	46%***
4 Electricity to <i>bases vie</i> (24/7)	100%	50%
5 Provision of safety gear	100%	75%
6 Procedures to control and verify use of safety equipment	90%	25%**
7 Health- and life-insurance provided to all staff	100%	25%***
8 Local medical facilities	100%	38%**
9 Injuries-related procedures	88%	12%***
10 Staff with permanent contract	87%	72%
11 Women over total staff	3%	3%
12 Salary range higher than national collective agreements	57%	25%
13 House with durable materials in <i>bases vie</i>	87%	40%
14 Written procedures for house occupancy	88%	29%**
15 Written procedures for waste collection and treatment	100%	20%***
16 Active associative bodies (e.g. unions)	100%	25%***
17 Written procedures for conflict resolution	25%	0%

Notes: .01 - ***; .05 - **; .1 - *.

acknowledged and integrated into the companies' internal working procedures. Regular meetings occur between staff and company representatives, where complaints registered on logbooks are discussed and settled. Despite the consideration given to staff associations, only 25% of certified FMUs and none of the noncertified ones had clear written procedures for resolution of conflicts between the staff association and the company (indicator 17, Table 5).

Institutions and benefit-sharing mechanisms

Active institutions, such as officially registered platforms of discussion and various forms of associative bodies, established by, or having received funds or other means from, the current logging company, are significantly more present in certified than in noncertified FMUs (indicators 1–3, Table 6).

Qualitative findings indicate that, among institutions that pre-existed the current logging companies, those in certified FMUs (37%) were more active, more effective and better managed than those in noncertified FMUs (80%). This may be because certified companies supported the institution whether or not they helped establish it (the reported target was smooth, long-term social appeasement over the entire FMU), while in noncertified FMUs, most logging companies were more interested in institutions established by them, normally in areas where forestry operations were on-going (the reported target was smooth, short-term social appeasement in annual cutting areas).

Several variables were assessed to check how effectively institutions were governed (indicators 4–7, Table 6). Significant differences exist in the presence of negotiated, written and approved procedures (e.g. a statute) that regulate the management and functioning of the institution. Also, institutions around certified FMUs are more likely to elect and periodically renew their members, and to allow external members to participate in official meetings. The rationale for the assessment of these variables was that (1) elected members and their periodical renewal were more likely to represent different lineages and (2) the participation of external members (such as decentralised state officials and NGOs) could encourage more transparent and technically sound decisions in the adoption and implementation of projects.

As a proxy for effectiveness, we also asked to check the minutes of the meetings that occurred in 2012 and 2013. They were provided in all cases in certified FMUs and in 67% of noncertified FMUs. The presence of minutes is relevant because, when they are lacking, people cannot refer to officially recorded points of discussion to check the status of their complaint, that is, if follow-up actions have been taken by the company.

In the event of loss or damage affecting the property, resources, health or livelihoods of local populations neighbouring FMUs, companies are held responsible and complaints are addressed to them. Overall, a significant association existed between certification and whether companies adopted and implemented mechanisms for the compensation of

TABLE 6 *Synthesis of results (institutions, percent of sampled villages)*

	FSC	non-FSC
Institutions and benefit-sharing mechanisms in sampled villages (N=69)		
1 Existing institutions	69%	31%***
2 Active institutions vs. existing ones	96%	73%
3 Active institutions established by current company	63%	20%**
4 Written procedures to manage institutions	85%	53%**
5 Election of members (vs. appointment)	86%	53%**
6 External membership authorised	63%	7%***
7 Periodic renewal of members	89%	60%***
8 Mechanisms for damage compensation to rural population	100%	25%***
9 Private benefit-sharing mechanisms	100%	44%**
10 Annual redistribution to all villages	89%	33%**

Notes: .01 - ***; .05 - **; .1 - *.

damages (indicator 8, Table 6). In all cases reviewed during fieldwork, compensation was monetary, generally with the company disbursing the agreed amounts to an *ad hoc* commission established between the claimants and the company, in the presence of state officials.

A significant association also exists between certification and whether companies would adopt private, voluntary benefit-sharing schemes in addition to those legally mandated law. These are funds that logging companies provided to neighbouring villages, generally through the local institutions, to improve local livelihoods and foster local development. In general, the objectives of institutions and people representing them in certified vs. noncertified FMUs reflected a long- vs. short-term vision. This difference also led to different institutional settings for benefit-sharing mechanisms. Companies with certified FMUs tended to group villages to create joint or 'embedded' institutions (Ostrom 1990), irrespective of the harvesting stage. This was for financial reasons, mainly to minimize transaction costs and increase the amounts disbursed to each group, because companies generally sustained the costs of keeping a regular communication channel open with all villages, not only those neighbouring annual allowable cuts.

Although it was relatively easy to discuss with companies the types of redistributive schemes adopted, the collection of reliable data on redistributed amounts was far more difficult. Data received from four companies with certified FMUs in two countries indicated an average amount distributed of about €55,000 per company per annum. On a per capita basis, this would be an average of €56 per person per year, or about 16 percent of the €350 annual average rural income in Cameroon (INS 2002).

Customary uses

Local uses of forest resources in FMUs are officially recognized, but this recognition has limitations. Lacking an officially approved, previously negotiated national land use map,

when an FMU is granted by the state to a private company for logging, the company must accommodate local uses as long as they do not oppose existing laws. Hence, since changing an FMU boundary is a legally complex process, managing conflicting forest uses is mainly incumbent on logging companies.

Overall, results indicate no significant difference in the practice of shifting cultivation, hunting and NTFPs collection between certified and noncertified FMUs (indicators 1, 3 and 5, Table 7). However, the local populations around certified FMUs perceive the presence of the FMU as a constraint to their uses more than the populations around noncertified FMUs (indicators 2, 4 and 6, Table 7).

Differences existed in hunting related to the period of harvesting. While all study villages, near both certified and noncertified FMUs, practiced hunting while harvesting was on-going, only 60% of villages had active hunting operations during pre- and post-harvest periods. Also, while people in all villages with on-going harvesting perceived logging as an opportunity for hunting, it was considered an opportunity by only 40% of villages in the pre-harvest period and 25% of villages in the post-harvest period. These numbers might reflect the fact that logging creates new access to the forest and thus gives more people the means to buy bushmeat, making hunting more profitable, albeit illegal. When logging ends and roads are closed, as required by the law and certification, local people no longer perceive logging as an opportunity.

DISCUSSION

Results indicate that, between certified and noncertified FMUs, differences were relevant on many indicators measured as proxies for the quality of working and living conditions (hypothesis 1), and for the quality, legitimacy and effectiveness of institutions and benefit-sharing mechanisms (hypothesis 2). Differences were more nuanced in the impacts on customary practices, such as shifting cultivation, hunting

TABLE 7 Synthesis of results (customary uses, percent of sampled villages)

	FSC	non-FSC	
Customary uses (N=69)			
1	Shifting cultivation inside FMU	44%	33%
2	FMU perceived as a constraint to shifting cultivation	43%	14%
3	Hunting inside FMU	89%	100%
4	FMU perceived as a constraint to hunting	83%	50%
5	NTPF gathering inside FMU	67%	100%
6	FMU perceived as a constraint to NTFP gathering	17%	0%

and NTFP gathering (hypothesis 3). People were more aware that new rules applied in certified FMUs, and they thus felt more constrained, but results do not show significant differences between the daily activities of people living near certified FMUs and those of people living near noncertified ones.

Overall, the impression conveyed by interviewees (both managers and workers) was that differences between certified and noncertified FMUs were due to the nature of forest certification. Not only is the FSC Standard more detailed than national laws, it is also regularly updated, controlled and verified. National laws do not uphold as high a standard and are weakly implemented and verified.

Working and living conditions

Major differences were found in the existence and effective implementation of clear written procedures that regulate working and living conditions in the sawmills, during forestry operations, and in the *bases vie*. The quality of life had improved since certification was granted: Essential services such as water supply and medical facilities were guaranteed; housing, electricity and waste management contributed to improved living conditions; and workers were more satisfied with prices and products available at the local minimarkets near certified FMUs.

Some variables, like health and life insurance and contractual agreements, are largely regulated by national laws. Although the timber company's respect for the law is surely one of the final buyers' basic expectations from certified timber, it is not to be taken for granted in countries where governance, notably in the forestry sector, is weak, and where existing laws are often inequitable.

These results corroborate findings in other regions of the world that certification could serve as an incentive to comply with the law or even to help enforce the law where compliance and enforcements are weak (e.g. Durst *et al.* 2006, Espach 2006). Yet they also raise questions about companies with noncertified FMUs that are allowed to conduct operations without respecting national regulations. For instance, many interviewed workers were well aware of their irregular situation, but the lack of legal recourse and alternative employment options, and the asymmetrical power relations with both company and state officials, left them few means to improve their condition.

Institutions

Active institutions through which the local populations and the company can regularly discuss issues are arguably the most distinctive feature of certified FMUs. Companies must strive to increase the institutions' legitimacy, effectiveness and, most importantly, their long-term sustainability (e.g. see Tsanga *et al.* 2014 for Cameroon), but they are testimony to one clear positive change that certification can bring about, again corroborating results in other parts of the world (e.g. Ulybina and Fennell 2013).

Nominally at least, such institutions included women and marginalised groups as members. There is still a long way to go to reach fairness and equity in decision-making, and some interviewees stated that the inclusion of such groups "is not in our customs," but overall results showed that current institutions do include them. Further research is however needed to assess to what degree the voices of such groups are accounted for in the institutions' final deliberations and to suggest possible ways of improvement.

Meanwhile, however, the same type of institutional space must be provided for *all* villages in and around certified FMUs. The current average rate of villages with institutions (69% of total villages), although significantly higher than in noncertified FMUs (31%), indicates that efforts are still needed even on the part of companies with certified FMUs, in order to reach all villages. To that aim, we believe the FSC, and certifying bodies in particular, should push companies to draw a clear roadmap for the creation of institutions, with milestones to be checked in subsequent audits.

Given the weak role played so far by state officials in setting up and sustain local institutions, albeit such role is oftentimes mandated by the law, one could argue that, through the current model, non-state actors such as FSC might compound the problems of creating institutions that only serve the purpose of obtaining and maintaining certification, irrespective of the existing local context or previously established institutions. Hence, it is important for the FSC and certifying bodies to also check that institutions supported by companies are sufficiently related to the local context (e.g. existing institutions), in order to avoid a proliferation that only serves one limited purpose and might engender competition and negative impacts on overall local legitimacy and effectiveness of existing institutions.

Benefit-sharing mechanisms

Arguably, the reduction of logging companies' responsibilities vis-à-vis the local populations was one of the implicit targets of the current laws in all sample countries. Companies used to be expected to support the development of local communities by providing both cash and in kind benefits. The new laws converted those benefits into a fee managed by the state, which in turn took responsibility for poverty reduction and development of local communities, through the equitable redistribution of those fees.

The expected impacts, however, have not yet materialized (e.g. see Ndjanyou and Majerowicz 2004, Cerutti *et al.* 2010 for Cameroon). Hence, people continue to turn to the companies for financial and in-kind support rather than working through the new legal frameworks. Companies tend to fund social peace with private contributions in order to avoid disruptions that could negatively affect both their business and the positive national and international image gained through certification. Yet, more research is needed to assess the local impacts of such schemes, as companies may also trade short-term social peace—very much monitored by certifying bodies and NGOs—with the long-term effectiveness in the use of the funds—very much less monitored.

We argue private schemes may also have unintended consequences, such as supporting the deresponsibilisation of the state. In these circumstances, certification is in effect put in the awkward position of sending a potentially wrong signal to both citizens and the state. Citizens perceive that, despite dysfunctional or failed public schemes, certification forces companies to maintain the flow of funds toward them, maintaining or even increasing their dependence on companies. At the same time state officials take for granted that companies with certified FMUs will keep disbursing funds to the local populations to maintain social peace, which benefits the state as well as the companies in spite of the government's poor performance in managing public schemes. This trend could provide a disincentive for the state to fulfil its responsibilities to citizens by allowing it to take advantage of the way private schemes make up for the state's shortcomings.

It is difficult to provide simple solutions to this conundrum. It involves long-term political issues of state and civil-society formation as well as practical, short-term issues related to economic sustainability and how to spread certification further in the Congo basin. One possibility is for national legislators to consider using incentives—of which financial ones could be the easier to use in the short-term (e.g. Karsenty 2010)—to encourage socially responsible behaviour in general and certification in particular. Public regulations and certification schemes could and should work together to encourage better management of the forest and improved livelihoods for its inhabitants. If the current situation remains unchanged, the risk is for certification to push companies back to function as a state within the state (Singer 2008).

Customary rights

Study results indicate that the presence of an FMU, certified or not, is not associated with significant differences in local agriculture, hunting or NTFP collection practices. Some of

these practices are, however, illegal. In particular, shifting cultivation in fields that did not already exist when an FMU was established, or that occur in specifically delimited areas, and hunting and NTFP collection with non-traditional means and for commercial purposes are banned in all three study countries.

While the level of reported activities inside the FMU is similar for certified and noncertified FMUs, people living around certified FMUs perceive the pressure of new regulations more than people living around noncertified FMUs. This is because companies with certified FMUs establish procedures and rules to enforce the law and hire personnel to enforce them. Communities perceive those efforts as a new constraint that goes against their customary rights.

Given weak law enforcement, companies with noncertified FMUs are under much less pressure to implement the law, especially on matters not directly related to timber harvesting. They can thus adopt a position of greater tolerance of local customs, even when they break the law. As a result, social peace is paradoxically more likely to be maintained in noncertified FMUs than certified ones, as on-the-ground interactions with the local populations exerting their customary uses are limited in the former. Yet, the natural answer of companies with certified FMUs to palliate such risk has been to regularly and intensively use dialogue platforms to find negotiated solutions. They are not always effective, but we believe they are a step in the right direction.

More broadly, these results point to a tension that may arise in certified FMUs between the obligation to respect FSC Principles 1 (Compliance with the law) and 3 (Indigenous peoples' rights). All companies face an ethical dilemma when responding to customary rights and practices, as they are almost always the primary source of income for rural people: agriculture, hunting and NTFP gathering have been practiced for centuries under rules that have great social legitimacy, even when made illegal by modern laws. Thus, for both economic and cultural reasons, any company's action that puts them at risk would incite intense local opposition.

Furthermore, even when the will and the financial resources exist, it can be difficult for companies to oppose customary practices. Hunting and gathering are practiced by thousands of people who cannot easily be controlled. Companies may have an obligation to control customary practices, but only the state has the power to sanction. Yet, state officials have neither the means nor the time to enforce the law in the vast territories in question. Hence, companies have to support state efforts (e.g. through the provisions of vehicles and fuel), even if they are reluctant to provide this funding. When they do, as in the case of hunting, logging companies are often unable to distinguish between customary and non-customary hunting practices (i.e. bushmeat trading), especially before they are carried out. Hence, companies, especially those with certified FMUs, tend to apply the same rules to all hunting. This often infringes legal rights to customary and subsistence hunting (e.g. Tiani *et al.* 2005).

Compensation is an alternative to enforcement, and more effective mechanisms of compensation have been developed in certified FMUs than in noncertified ones. For instance, cultivated areas are usually much better identified and their destruction or abandonment is officially compensated by the

operator. This does not answer, however, the question of where else the local populations can go to practice their activities, especially in the more populated areas. If anything, they can be pushed towards less monitored areas, such as noncertified FMUs or protected areas. More research is needed to assess such externalities of certification.

Alternatively, companies could initiate a legal procedure to return part of the land to state control so that people can practice shifting cultivation on it. This could at least partly redress the past mistakes made in attributing FMUs before their borders were effectively negotiated with the local populations. Yet, the renegotiation of borders is resisted by most state officials and civil servants because a reduction in the area an FMU would result in a reduction of the annual area fee that a company has to pay, in turn resulting in a reduction in payments through legally-mandated benefit-sharing schemes. Indeed, results indicate that state officials prefer to tolerate the practice of shifting cultivation inside FMUs, even though it is against the law.

On the positive side, all these interactions and negotiations in certified FMUs contribute to the improvement and activities of the existing institutions, as they occur during official gatherings and are often integrated in the annual plan of logging operations discussed and approved there. Challenges and limitations remain, however, inasmuch several customary activities are conducted on an individual or family basis, and are thus not easy to regulate through collective institutions. On the negative side, most local populations will only rarely see any improvement until interactions remain confined to certified FMUs, which still cover a tiny minority of concession area in the Congo basin.

CONCLUSION

This article assessed the social performance of a set of FSC-certified forest management units (FMUs) and compared it with the performance of similar noncertified FMUs in Cameroon, the Republic of Congo and Gabon. We found that certified FMUs: i) provide better working and living conditions for workers and their families; ii) have more inclusive and better governed institutions for negotiations between the local population and logging companies, except with regard to conflict-resolution mechanisms; iii) have better managed and more effective benefit-sharing mechanisms; and iv) adopt innovative ways of dealing with problems related to infringement of customary uses, which remains one of the most thorny issues that companies face in certified FMUs.

Our results indicate that certification can be significantly associated with better social outcomes. Because of the large number of variables that could influence the decisions of logging companies and their social impacts, it remains difficult to assert that certified FMUs would not have performed equally well in the absence of certification. However, such results and the fact that most certified companies were not reputed for their social and legal performances in the 1990s (e.g. Durrieu de Madron and Ngaha 2000, Forests Monitor 2001) suggest that causality may be plausible.

Apart from managers' specific preferences or market-dependent decisions that were not assessed by this study, the

most evident triggers that cause companies to improve their social performance seem to be: i) the need to maintain a permanent channel of communication with the local population, in order to avoid unexpected disruptions or social conflicts that might interfere with operations; ii) the periodic, regular and effective controls embedded in certification; and iii) improved reputational risk management.

Measured positive changes do not yet mean positive long-term impacts on the livelihoods of all people living in and around certified FMUs. Also, further research is needed on the crucial areas of elite capture, embezzlement and corrupt practices, notably by state officials, which also have negative impacts on the populations' livelihoods (e.g. Cerutti *et al.* 2013). Although such issues are neither limited to the forestry sector nor easily tackled at the FMU level, one would expect a stronger push towards improved practices and behaviours from companies with certified FMUs than from those willing to maintain the status quo. Indeed, there should not be complacency from the FSC or logging companies with certified FMUs in comparing themselves with the worst performers, as the logic of the FSC is to reward more responsible forest managers who are assessed against ever-evolving standards, irrespective of the quality of national laws.

Yet, results indicate that if any step in the direction of implementing the social targets of sustainable forest management has been made in the Congo basin, that step has been encouraged by certification. Sometimes change simply meant correcting poor governance, such as lack of law enforcement. Sometimes, as in the case of some working and living conditions, it meant making the additional efforts expected by the FSC. In still other cases, as with private benefit-sharing mechanisms, it meant redressing a negative situation created by the lack of a state presence to fulfil the FSC mandate.

Challenges remain, however, especially in relation to customary uses. Paradoxically, findings indicate that social peace may more easily be maintained—and negative impacts on customary uses may be limited—in noncertified FMU, managed or not, than in certified ones, because of the 'non-intervention' of logging companies in those areas.

Although differences still remain among certified FMUs, they clearly stand apart from most noncertified FMUs, except those that have shown an intention to seek certification, both in deeds, for example by adopting a third-party-audited chain-of-custody, and in words, for instance through their communication efforts and during interviews held for this study. The current social situation in the average noncertified FMU is somewhat worrying in terms of the interpretation that sustainable forest management is given by most state organisations mandated to regulate the forestry sector in the Congo basin. That is, an almost unique focus on timber harvesting with insufficient attention paid to social issues. Even more worrying is, of course, that a large number of FMUs in the three countries studied do not have an approved management plan (35% of the total FMUs in Cameroon, 69% in Gabon, 87% in the Republic of the Congo). In those cases, it is arguably safe to assume that timber harvesting assumes an even stronger focus, with no basis left on which social criteria and indicators (or lack thereof) can be monitored, and indeed sanctioned if need be.

More broadly, the focus on timber also has implications for the “pragmatic focus on legality” (European Commission 2004: 1) that all countries in the Congo basin have embraced in the past decade. Such focus will only bear generalized positive social outcomes insofar as the state is willing to enforce social regulations. Our sense from the fieldwork conducted for this study is that implementation of social initiatives outside certified FMUs risks remaining negligible in the short to medium term, for two main reasons. First, state officials in charge of controlling daily forestry operations lack the capacity to monitor social implementation and impacts, because this is not part of their training, experience or terms of reference. Second, while social issues do feature in the laws’ general objectives, they carry low political and financial significance in forest policies and in implementing regulations.

From the final buyers’ perspective, this is a point worth stressing. The impression we received from this study is that by “weeding out the bottom” (Steering Committee 2012, Appendix F, A-103), the current efforts to verify the legality of tropical timber production might be able to clean timber supply chains from the worst *ecological* performers, e.g. those companies that do not respect even the most basic of silvicultural rules, such as minimum harvesting diameters or annual allowable cuts. This is because such rules, largely related to timber harvesting, can be checked by local state officials through the monitoring of official documentation, including but not limited to approved management plans.

Yet verification strategies will need to go beyond the currently mandated official documentation, and adopt improved and innovative ways of legality verification, if the worst *social* performers are also to be sanctioned, by the state or the market.

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