

Forest concessions in Central Africa: an introduction to the Special Issue

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SUMMARY

Forest concessions have been used by governments as a development instrument of remote and landlocked areas. Currently, in Africa, concessions are caught between the increase in population density in rural areas and agribusiness investors seeking land. They remain a controversial forest resource management instrument, although certification has been instrumental for improving management practices, in spite of contexts of poor governance. Relevance of traditional forest concessions is lowering in some places but innovations from both private and public actors create new opportunities of co-management of several “layers” of economic activity by different stakeholders sharing a common area.

Keywords: forest concessions, sustainable forest management, certification, logging, Central Africa, evaluation

Les concessions forestières en Afrique Centrale: une introduction au numéro thématique

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Les concessions forestières ont été utilisées par les gouvernements comme instrument de développement des zones reculées et enclavées. Actuellement, en Afrique, les concessions sont prises en tenaille entre l'augmentation de la densité de population dans les zones rurales et les investisseurs agro-industriels à la recherche de terres. Elles demeurent un instrument controversé de gestion des ressources forestières, bien que la certification ait joué un rôle déterminant dans l'amélioration des pratiques de gestion, en dépit de contextes de mauvaise gouvernance. La pertinence des concessions forestières traditionnelles diminue à certains endroits, mais les innovations des acteurs privés et publics créent la possibilité de cogestion de plusieurs «couches» d'activités économiques par différents acteurs utilisant le même espace.

Concesiones forestales en África Central: una introducción a la edición especial

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Las concesiones forestales han sido utilizadas por los gobiernos como un instrumento de desarrollo de áreas remotas y sin litoral. En la actualidad, las concesiones en África se encuentran bajo la presión del aumento de la densidad de población en las zonas rurales y los inversores en agronegocios que buscan tierras. Siguen siendo un instrumento controvertido de gestión de los recursos forestales, aunque se reconoce que la certificación ha sido fundamental para mejorar las prácticas de gestión, a pesar de suceder en contextos de gobernanza deficiente. La importancia de las concesiones forestales tradicionales está disminuyendo en algunos lugares, pero las innovaciones de los actores privados y públicos abren la posibilidad de transformar el papel de las concesiones forestales en muchos territorios.

Concessions are generally associated with a period of colonisation. Their roots in precolonial paramount chieftaincy and monarchical systems reveal their convenience, historically and across many continents, for transitions from sovereignty based territorial regimes of empire to more formal administrative charters and states of colonization (Hardin 2002). Today's neoliberal policies and practices instead mean shrinking of formal administrative state functions, and a return to what Hibou (1999) describes as avoided administrative costs and accountability for states who discharge or outsource functions like security, tax or fee collection, and waste management. Yet concessions remain relevant in many sectors of resource use and service provision around the world (see also Billard 2012, who considers the implications of these historical cycles for the entrance of new economic actors in forest sectors over time). This special issue takes concessions as a point of departure, and considers persistent features and change factors within and among forest concessions in Central Africa, with an eye toward their implications for contemporary forest management and their contrasts with those in South-East Asia. It is one of the outcomes of the Central Africa Forests and Institutions Research Project (CAFIInst), 2006–2011, an International Forestry Resources and Institutions (IFRI) Initiative, supported by the National Science Foundation (USA).

This issue features eight contributions, six original research articles and two synthesis papers on the current status of forest concessions in Central Africa (Karsenty and Ferron) and in South-East Asia (Chan) based on reports prepared by their authors in the framework of the FAO Forest Concession Initiative (www.fao.org/forestry/sfm/92208/en/). These include:

- Romero *et al.* (“Evaluation of the impacts of Forest Stewardship Council (FSC) certification of natural forest management in the tropics: a rigorous approach to assessment of a complex conservation intervention”) discuss methods and conditions that would allow for a rigorous approach to the effectiveness of FSC certification, including analysis of the underlying mechanisms through which changes can be attributable to the certification.
- Cerutti *et al.* (“Social impacts of the Forest Stewardship Council (FSC) certification in the Congo basin”) assess whether the implementation of the Forest Stewardship Council (FSC) certification scheme in the Congo basin has had positive additional impacts on the working and living conditions of logging companies' employees and their families, benefit-sharing mechanisms set up to regulate relationships between logging companies and neighbouring communities, and the local populations' rights to and customary uses of forests.
- Vermeulen and Karsenty (“Towards a community-based concession model in the DRC”) analyse the 2014 Decree laying down the rules for granting forest concessions to local communities in DRC. The explicit recognition of the duality of a customary de facto local community forest and a modern legal entity

(concession) is an innovation allowing for another conception of community forestry.

- Karsenty and Vermeulen (“Toward “Concessions 2.0”: articulating inclusive and exclusive management in production forests in Central Africa”) discuss the weaknesses of the current concession model and initiatives for helping it evolve; it then proposes a new type of concession, entitled ‘Concessions 2.0’, adapted to the future challenges presented by the overlapping among the rights and modes of the harvesting of multiple resources.
- Tieguhong *et al.* (“Beyond Timber: balancing demands for tree resources between concessionaires and villagers”) point out the importance of timber concessions as sources of food for local people to provide a foundation for governance arrangements that consider local needs for foods from timber trees. Their research provides information on the accessibility and availability of multiple use timber species as a foundation for negotiations and governance arrangements between concessionaires and local communities.
- Karsenty (“The World Bank's endeavours to reform the forest concessions' regime in Central Africa: lessons from 25 years of efforts”) analyse how the World Bank, supported by national reformers, used conditionalities to reform the forest concession regime in Central Africa and continuously intervened, *inter alia*, in Cameroon, Congo, Gabon and the DRC up to 2010. He shows how the evolution of paradigms in tropical forestry gave the critics of the WB policy of concession reforms opportunities to challenge the orientations followed hitherto in Central Africa, and how forestry has tumbled in the national policy agendas.

CONCESSIONS IN CENTRAL AFRICAN FORESTS

In Africa, concessions were not always specialized in one resource or another, as they are today with the distinction between land and forest concessions. Originally, colonial authorities and traders sought to ensure the collection of natural resources (wild rubber, wood, etc.) without having to make heavy investments in terms of transport infrastructure and territorial development (Guillaume 2001). Private companies were thus granted exorbitant prerogatives over local populations; many used forced labour for extracting the resources (Coquery-Vidrovitch 1972). This model collapsed between the two world wars, but created bad feelings towards colonial authorities. After independence, forest concessions were used by governments for forest development, hoping to generate employment spinoffs in areas away from the dynamics of urban and rural development. In the 1990s, under structural adjustment and neoliberal reforms toward decentralization of natural resource governance, governments sought to improve concessionaire management practices and improve the fiscal contribution of the forest sector. The sections below will shed more light on how, in the 2000s, managed forest concessions were promoted as instruments to combat deforestation. The

sustainable development of forest resources was to serve as a bulwark against the pressures for agricultural conversion exerted by farmers as well as domestic and foreign investors; all too often the effects were far more complex. The recent period has seen increasing pressure on forest concessions, caught between the increase in population density in rural areas, ever more intense mining and agribusiness investors seeking land for the production of perennial plants adapted to tropical and equatorial conditions, such as palm oil, rubber, cocoa and soy.

A CONTROVERSIAL FOREST RESOURCE MANAGEMENT INSTRUMENT

Criticism of forest concessions is thus not new; historically it has accompanied changing global geopolitics and changing regimes of environmental management and human rights. However, it has become particularly acute over the last twenty years. We identify three distinct streams of critical argumentation; more are no doubt still emerging.

Ecological Transformations

Conservation ecologists study ecological impacts of industrial exploitation on natural forests, and through research institutes and NGOs express concern about these questions. In South-East Asia, logging, although selective, is much more intense than in Central Africa, with volumes harvested from dipterocarpaceous forests that can exceed 100 m³ per hectare (10–12 trees harvested, i. e. with significant ecological damages). This is, on average, ten times more than has historically been the case in Central Africa, especially in the hinterlands of that world region where logistical difficulties, the lack of transport infrastructure and the great heterogeneity of forest stands have preserved the forests of the Central African hinterland from high exploitation intensity. The weak regulation of logging (Chan 2016, this issue) in most of the south eastern Asian countries concerned has led to a strong degradation of forest resources, often followed by deforestation linked to fires or agricultural conversion. In South America, harvesting intensities varies greatly according to transport costs and can be similar to one or other of the two above scenarios.

In the case of Central Africa, criticism focuses not only on the direct impact of exploitation within concessions – especially when they are industrially developed, and even when they are certified – but also on the indirect impact, through the creation of roads and trails – even those used for prospecting when cutting never occurs (Hardin and Remis 2006) which can facilitate accesses for poaching and agricultural settlers (cf. Laurance *et al.* 2015).

But Central Africa is not monolithic. In Gabon, for example, concessions cover around 60% of the forested land and timber production exceeded routinely 3 million m³ per year (in the 2000s); but until recently the country has had almost zero deforestation as the rural population density is very low, farming is not very active and mining has been largely limited to a few industrial scale operations. In DRC, in contrast, population density can be higher in some areas, and both industrial and artisanal mining operations exist, these latter without a formal concession agreement. Though timber production in concessions is about ten times lower in DRC than in Gabon, the former country lost nearly one million hectares of forest cover¹ in 2015 and 2016². As the most comprehensive study on the drivers of deforestation in the DRC indicates: “. . . it is above all the size of the present population that determines the amount of forest affected by deforestation and degradation. These very clear results contradict several more local studies that have often highlighted the distance to roads and the importance of road-related flows as a primary cause of deforestation” (our translation). And “the presence of a logging and mining concession does not appear to play a role in deforestation/degradation, at least at the national and sub-national levels studied” (Defourny *et al.* 2011).

Deforestation and degradation are thus not necessarily contingent rates of production, nor on roads and tracks within concessions, especially in equatorial areas where navigable rivers are numerous and provide access to forested areas. Indeed, Bell *et al.* even suggest that IUCN red list species protection measures at the concession scale can provoke logging companies to extend road networks to avoid protected trees, thereby increasing pressure on other elements of the forest system even while preserving some species in specific sites (Bell *et al.* 2012). In a context where such contradictory management effects are in the realm of possibility, the science of management becomes complex indeed. Geist and Lambin (2002) demonstrate that deforestation can be due to associated factors, often in tandem. Thus timber concessions are not intrinsically deforestation drivers, especially when logging is highly selective, or when compared with clearcutting for agriculture, mining or energy installations. However, their impact in already heavily populated areas can aggravate deforestation, and drive defaunation (for which methods of study are still emerging and shaping management experiments, see Nasi and Van Viet 2009).

Territorial Rights and Livelihoods

Another critical argument is the forestry industry’s competition for resources with and among local populations. This criticism comes from social activists, journalists and NGOs and also targets mining operations, protected areas, major

¹ “Tree cover losses”, as reported by Global Forest Watch who use a methodology differing from the one used by the FAO for its Forest Resources Assessment reports.

² Global Forest Watch 2017 data: www.globalforestwatch.org/

agricultural installations, and other large scale appropriations of land in this region. When we say competition among local populations, we point to the complexity of forest frontiers as sites for migration and labour. More employable segments of the population (many of whom may be non-locals with formal education or machine skills) benefit from salaried employment, and this can cause social conflicts that have been studied in Cameroon (Lassagne 2005), Centrafrique (Hardin 2011) and Gabon (Billard 2012). Concessionaires, though constrained by profit margins, by laws and/or by certification rules, can also contribute to improving well-being in villages. Contributions include provision of drinking water, goods and services, development of income-generating activities and, since reforms in the mid 1990s, redistributing some part of the income from timber sales (regionally or locally). Whether competition for such resources is a source of social improvement, or social tension, or both, varies from site to site.

In terms of more direct competition for forest resources, restrictions on customary rights, especially on hunting and agriculture, can be economically damaging, especially for less formally educated and economically mobile inhabitants. This may be especially true in FSC-certified concessions where concessionaires must apply national regulations more strictly (Cerutti et al. 2107, this issue). Competition for the exploitations of certain non-timber products (fruit, mushrooms or caterpillars that co-occur with certain commercial tree species) is also a potential source of tension and even conflict, as was the case around Moabi (*Baillonella toxisperma*) in the 1990s in Central Africa. However, Tieguhong and his colleagues (2017, this issue) who have studied this question, write “*our observation reveal that our initial hypothesis that timber harvesting by concessionaires reduced the access by communities to food resources from [some NTFP species] may be a simplification of a more complex and nuanced set of interactions*”. The remoteness of harvested areas and villages, the minimum tree cutting diameters in concessions implementing forest management plans, and mapping or even geolocation of key food producing trees with hand held GPS units can make concession level prospecting and logging accessible to even those with limited literacy and numeracy, opening up spaces for negotiation between responsible concessionaires and communities (Hopkin 2007).

It thus seems to us important to chronicle such concession level efforts, for too often wider reforms and policy shifts, designed to “integrate” logging and sustainable development have simply led to proliferations of forest uses in a given concession, for example trophy hunting, ecotourism, research AND logging, further depletes forest resources even while temporarily increasing livelihood options (Hardin 2011). Alternatively, as in the case of the Brazilian government’s efforts to curb deforestation in the Amazon, we see reduced *de facto* free access through allocation of timber concessions which, given concomitant expansion of forest conversion for cattle production or plantations for commodity agriculture, have led to closing frontiers for diverse forest livelihoods (Newton et al. 2017).

Forest Concessions National Economic Contributions

A third, more recent critical argument has been raised by politicians in producer countries, although it is sometimes backed by international agribusiness lobbies. Leaving aside the artisanal sector, the forestry sector generally represents only 1 to 5% of GDP, and less than 1% in the DRC. For Cameroon, a study by CIFOR (Eba’a Atyi et al. 2013) suggested that the forest sector’s value added has consistently accounted for 2.7% of total value added (GDP) between 2008 and 2010. Admittedly, this figure does not take into account informal activities (artisanal exploitation of timber, firewood, non-timber forest products, etc.) and the authors of this same study estimate that by integrating these activities the contribution to GDP could reach 4.3%. However, informal activities in other sectors (agriculture, fisheries, mining, services, etc.), which are very important in Africa, are also very poorly reflected in GDP, and a full accounting of all the informal productions in the GDP might not significantly change the initial estimate of the limited contribution of forestry in a narrow GDP definition (that is, not accounting for the ecosystem services associated with the forests).

As a result, more and more government officials consider that for emergence of national economies, they must convert part of “their” forests to cash crops, such as palm oil or rubber. While the risks associated with large-scale agricultural investments (land insecurity, logistical difficulties, etc.) have, so far, discouraged more than one investor (Tollens 2010), it is conceivable that this situation could evolve over time. Agribusiness, which is only a minor driver of deforestation to date in Central Africa, could take on a more significant role in the future, as shown by developments in rubber and oil palm in Gabon, Cameroon and the Republic of Congo (Feintrenie 2014). The promises of the REDD+ mechanism for financing “sustainable forest management” activities have not materialized (Karsenty 2017, this issue) and the controversies surrounding concessions do not augur well for either policy instruments or micropractices, or both, to combine in a more sustainable set of forest concession schemes that can overcome the controversy.

For the moment, the brief history and schema we have offered here of concessions and their critics do not point to a single alternative policy for sustainable local, regional, and national African forest economic development. Conservationists argue for the extension of protected areas, whether community-based or not, and want to stop the logging of natural forests. On the other hand social-oriented NGOs consider that protected areas can be coercive and suggest that local communities should be granted timber exploitation rights that favour artisanal exploitation, either in farmers’ fallow land or within community forests (themselves the target of pointed criticism about the inequity their claims process creates, between rural village groups and more metropolitan entrepreneurs). As for the proponents of agro-industry, many seem to have turned the page on “selective forestry” and believe that modernity resides in large plantations, for timber or cash crops. With emerging technologies such as increasing drone

capacity, and software platforms for the aggregation of information about and inputs to rural landholders, such a future appears to augur far more radical and irreversible transformation than we have seen since the rubber boom of the early 20th century in this region (Hochschild 1999). We are in a crucial moment to look back at the struggles and success of the timber industry, to extract knowledge in the face of such change.

THE CHALLENGES OF CERTIFICATION

Independent “good forest management” certification is now more than 20 years old, considering that it all started with the creation of the Forest Stewardship Council (FSC) in 1993, which came to dominate the Central African region, displacing other certification schemes over the course of the 1990s. Its spread has often been greeted with some scepticism, either because of the gradual South-South shift in the trade in tropical timber, the fragility of an instrument based exclusively on trust (due to a lack of scientific consensus on sustainability “criteria and indicators” (Karsenty *et al.* 2004), or because it does not address extra-sectoral factors and bypasses governments (Smouts 2001). It is also criticized by conservationists for endorsing the industrial exploitation of old growth forests (Freris and Laschefski 2001).

The problems raised at the beginning of the 2000s such as revenue distribution, community negotiations and carbon sequestration remain fairly relevant, but certification, a market instrument intended to express the “power of the consumer”, has become, in various forms, an unavoidable subject of forest debates. In addition to the aspiring “good forest management” certifications like FSC or PEFC (born *Pan-European Forest Certification Scheme*, now known as the *Programme for Endorsement of Forest Certification*) there are also, now, certifications of timber legality.

Certification has become an institution, in the sociological sense of an “established social form”. If, in its early days, independent certification was perceived by the governments themselves as a competition or even an infringement of their sovereignty, the discourse has shifted. Certified areas are often promoted by governments to demonstrate good forest management. In Malaysia and Brazil, governments themselves are the promoters of national certifications, more controllable by their administrations. The Republic of Congo is also moving in this direction with the PAFC (*Pan African Forest Certification*), a subsidiary of the PEFC, which claims to be a realistic alternative to the FSC in Central Africa.

POOR GOVERNANCE AND CERTIFICATION

One of the recurring debates is whether certification can develop and be effective in tropical countries with weak rule

of law and poor governance. If we take FSC certified areas of tropical natural forest (where legitimacy and management issues are more widespread to date than in most temperate areas) we obtain the modest figure of 12.3 million ha – or 15 million ha if we include semi-natural forests (calculation based on FSC data, China excluded)³. Central Africa is the tropical region with the largest areas of FSC-certified natural forests (5.6 million ha in 2017)⁴. This is a thorny issue for NGOs opposed to any form of industrial exploitation, some of which are focused particularly on discrediting the certification of concessions operating in Gabon, Congo and Cameroon (see, for instance, Greenpeace International 2011). The presence in these countries of European groups with large concessions exporting the majority of their production to the European Union explains the importance of Central Africa in FSC certification.

The direct objective of certification is to improve practices at the forest management unit level. And for FSC-certified concessions in Central Africa, research suggests that certification has led in at least some cases to improved forest production practices (Medjibe *et al.* 2015). This progress is also reflected in the social dimensions of forest management such as relationships with non-local labour, and with local populations (Cerutti *et al.* 2017, this issue, Tsanga *et al.* 2014). This progress, despite the frequent poor governance of the forest sector, confirms the hypothesis of Cashore *et al.* (2004) that certification can be, to some extent, a complementary tool in the case of ineffective public policies. To the extent that companies invest in certification to gain or maintain environmentally sensitive market share (a market segment that is also often the most profitable) they are self-regulating to avoid losing their certification, and thus, as far as possible, complying with poorly enforced laws.

CHALLENGES OF ANALYSIS AND EVALUATION

The effectiveness of certification in relation to complex dynamics of land cover change and social change has led to lively discussions between academics – including between various teams who collaborated on the CAFInst Research Project initiative undergirding this work (Brandt *et al.* 2016, Karsenty *et al.* 2017). Observations, recognized by assessment specialists as “naïve,” converge to find improved forest management and law enforcement in certified concessions. Thus the question arises as to what changes are attributable to certification (and only to certification) and what is attributable to the context (e. g., market demand). As Romero *et al.* (2017, this issue) state, a BACI-type assessment (Before - After / Control - Intervention) is difficult to conduct rigorously because of the difficulty of identifying relevant counterfactuals (i. e. changes that occurred in uncertified concessions that are fully comparable to those that are certified) while avoiding the many possible selection biases. For instance,

³ <https://ic.fsc.org/en/facts-and-figures>

⁴ Idem

certified concessions holders may be self-selecting as better adherents to the law because of their markets or history (self-selection bias). Romero *et al.* (2017, this issue) argue for contextual analyses to address these questions, toward ascertaining the underlying mechanisms by which changes occur that could be attributed to certification.

It is also important to consider whether the questions asked by evaluators are always the most relevant. With advances in satellite imagery and algorithms, changes in forest cover in any part of the world can be known with great accuracy, and this is very useful in evaluating the effectiveness of policy instruments specifically designed to combat land cover change due to deforestation. However, neither certification nor forest management plans are *directly* aimed at combating such deforestation: in addition to their social dimension (through specifications) forest management plans mainly aim at allowing the recovery of the main species harvested through several successive cutting cycles. Will the harvesting practices prescribed in current management plans actually renew Sapelli (*Entandrophragma cylindricum*) or Okoumé (*Aucoumea klaineana*) over the very long term? Given the uncertainty in the predictive models of growth and mortality of harvested stands (and this despite nearly a century of inconclusive colonial and postcolonial science on these questions), without speaking of the impact of the climate change, it is unlikely that we could have a definitive answer until a century or more from now.

While human understandings are advancing slowly with respect to the complex ecologies that link trees in long term but also seasonal nutritional cycles with mycorrhizal fungi, phenological cycles for flowering plants, and the declining populations of insects worldwide, much remains to be understood. All of this feeds into reasons why we can say certification is the *sign* of changing consumers' demand and changing public perceptions about the need for sustainability. Perhaps certification should simply be seen as a *co-attribute* of social dynamics expressed in terms of changing market demand, rather than as the "cause" of change in loggers' practices. Nonetheless, efforts at establishment of baseline data and longitudinal analysis of forest change over time such as those carried out by the CAFInst process, may help us move beyond what are surely early stage efforts such as evaluating the effectiveness of certification through the (low) differences in deforestation rates on FSC and non-FSC concessions, with or without management plans (surely at various levels of implementation and enforcement).

Seen at a larger scale, it is a fact that certification has not reduced deforestation in tropical countries. Nonetheless, saying that improving forest management in production forests indirectly contributes to preventing deforestation is a plausible hypothesis. Indeed, and even if relative prices are not currently very favourable, not only can sustainable forestry development through concessions can generate some jobs and tax revenues that could have an influence on the decision making regarding the allocation of public lands, but it also offers the possibility of a complex matrix of negotiated use that is integrated with locally consumed forest products

and agriculture, against the "farms and parks" model currently gathering steam, especially in African states aspiring to "emergence" through agribusiness.

AT THE CROSSROADS

Worldwide, forest concessions seem to be on the decline, except in Brazil where the government is turning them into a public policy tool to combat deforestation and "occupy the ground" in the Amazon. This decline is first and foremost linked to the degradation of forested natural resources under multiple pressures. The combined political pressure from conservationists and social NGOs opposed to industrial concessions led an organization such as the World Bank, highly engaged in the 1990s and 2000s in reforming the forestry concession regime in Central Africa, to abandon this political terrain in order to reduce its exposure to external and internal criticism (Karsenty 2017, this issue). Deprived of this political support, the reformers in Central Africa were unable to pursue their agenda. This step backward translated into increased dualism in the forestry sector. The most presentable face is that of concessions that are certified or evolving in this direction, self-regulating to a large extent in relation to market strategies and consumer concerns. The other face is that of companies who are reluctant to implement management plans because of the low environmental requirements of the emerging or domestic markets on which they sell their timber. To this must be added the impressive growth of artisanal timber activities (often encroaching on concessions areas), reflecting the informalisation of entire sectors of African economies. This development, combined with log export ban decision in the case of Gabon, has led to a drop in tax revenues from the forestry sector. It is very difficult to know the amount of fees and taxes collected today by Central African governments, which shows not only the lack of progress in transparency of the sector, but even its pullback compared to the early 2000s.

It is clear that the relevance of traditional forest concessions is lowering in forest regions that are experiencing a rapid increase in population density (generally associated with a decline in forest cover). But, in remote, landlocked and sparsely populated regions (where most of the large forest areas remain), it can be assumed that concessions retain assets. The low presence of state administrations and the weakness of local governments lead to a certain continuity of the neoliberal return to discharged government functions, being carried out by private actors. But these mandates play out a contemporary form distinct from the colonial "cahiers des charges" or notebook of charges that detailed private companies' responsibilities for policing, road building, and public infrastructure. Today some concessions even have responsibilities for wildlife management alongside their traditional social, development and forest management obligations. As a result, forest concessions are structuring institutions in areas where state presence is discontinuous and economic opportunities are few. Recent experiences in Central Africa have shown the limited economic viability of autonomous

community forests in areas remote from markets where logistical problems quickly become insurmountable for village structures without external support (Ezzine de Blas *et al.* 2009, Diaw 2016).

Such a situation, however, is not satisfying from a political economy standpoint. Cerutti *et al.* (2017, this issue) note that the presence of FSC-certified concessions is a disempowerment of governments and can increase community dependence vis-à-vis the company. Historic concession holders who themselves span postcolonial and present eras struggle with the complex demands of certification, and want to see a better definition of the limits of their responsibility and for local public authorities to be able to also play their roles with the citizens and migrants to Central African forest areas. Many of them have forged complex truces with labour unions, local authorities, national officials, and neighbouring industries over several decades. These forms of institutional memory, while steeped in power asymmetries and widely recognized as a kind of colonial hangover, also have value when we confront them with change forces unleashed by rapid expansion of investment incentives in “special economic zones” promising free forests, water, and energy for the growth of commodity agriculture and related industries in the region at present.

FROM LAND SPARING TO LAND SHARING?

Faced with increasing competition with agricultural uses of forest land, the evolution of the forest concessions regime is likely to require the commercial development of multiple renewable natural resources offered by forest ecosystems, beyond timber. The concept of Multiple-use Forest Management has been put forward by FAO (Sabogal *et al.* 2013) but is encountering difficulties related to the restrictive vision of “usage rights” conveyed by regulatory frameworks in Central Africa (Lescuyer *et al.*, 2015). Moreover, if the development of new resources within the concession perimeter were to be reserved for the concession holder, it would mean removing local populations from the daily livelihoods they use (Tieguhong *et al.* 2017, this issue) and the memory of the omnipotent concessionaires at the beginning of the 20th century would surely resurface. As we alluded above, Multiple-Use Forest Management can only be legitimate if it is based on the recognition of the land rights of the different communities using the concession’s resources, on equitable sharing of income from the development of these different resources and on inclusive management of the concession’s norms, rules, and affairs.

Innovations from both private and public actors also matter. In recent years, initiatives aimed at large-scale online mapping of customary areas (*finages*) in and around the concessions have been launched under the impetus of NGOs (Vermeulen and Karsenty 2017, this issue). Some certified companies have undertaken to systematically map customary areas superimposed on the concession area. These companies use this information to share some of the revenues from timber exploitation, on the basis of the importance of overlapping

rights or of the mere presence of the following factors. The amounts earmarked are managed by the company; the villagers must form associations to benefit from the funds, intended for productive and social investments. Of course such efforts cannot fully recognize the fluidity and complexity of territorial arrangements within and between groups of users in most rural African settings. However, as the growth of agriculture in these regions prompts multiplication of boundaries and of contestation about them, such efforts seem to us salutary.

Such mapping of land rights, more and less formal, and the sharing of revenues associated with it are first steps in the evolution of concessions from those driven by narrow business logic and outside investors towards institutions of territorial development based on the consideration of forest communities’ rights. Subsequent steps could even lead, as we have seen in the mining sector, toward veritable joint ventures with communities. A more distant horizon could involve new legal categories such as low profit companies where the goal is organizational stability and social innovation, and revenues are to a larger extent reinvested in the diversification and adaptation of the company itself and its social or environmental aims over time. The extension of such experiments into Central Africa’s forests would entail co-management of several “layers” of economic activity by different stakeholders sharing a common area—the concession. This could enable capitalizing on existing equipment such as that afforded by existing sawmills, garages and machine shops (as for example mining installations in U.S. regions like Appalachia are being converted to solar fields, with retraining of personnel).

Under such scenarios, high value-added non-timber products (such as Okoumé resin in Gabon) or products with a considerable domestic market, such as some resilient bushmeat species, tree nuts of use in sauces, or even dried insects for us flavouring and augmenting protein in prepared foods, could form the basis for new commodity chains combining processing and promotion in urban or export markets. Degraded areas could be restored and developed through limited plantations of wood or perennial crops, creating new value chains to be operated jointly by communities’ members and concession holder. The presence of an industrial logging company can be an asset in establishing partnerships with potential business-oriented associations set up by villagers, provided that the legal and institutional framework for promoting such “Concessions 2.0” (Karsenty and Vermeulen 2017, this issue) is evolving fast enough, and with the right research on best practices elsewhere and in countries concerned. It is of course speculation that such uses could bolster rural communities’ ability to assert their property rights in the face of brewing and actual large-scale land transactions for agriculture, energy, and hydropower uses. But the history of traditionally governed communities’ land acquisition in Africa holds many examples of such partnerships being decisive in contemporary access and use (Cook 2011). Such partnerships (with missionaries, for example) were driven in part by competition with other economic or political actors in changing economic landscapes of African resource use.

This potential evolution from industrial forest concessions to new more inclusive or even transitional institutional forms

would require fiscal ingenuity and innovation. Karsenty and Ferron (2017, this issue) propose that the average specific cost of FSC certification (€2.20 per m³, meaning around €0.63 per ha per year) could be offset by a reduction in the area fees of certified permits. The government's tax revenue shortfall would be offset by financial transfers from donors to promote sustainable and inclusive management of productive forests, which is one of the objectives of REDD+ for which billions of dollars have been invested with marginal results so far. This anchoring of social experiments in existing imperfect institutions rather than in difficult to implement ideals could be one key to institutional and economic diversity in future African landscapes, and merits sustained consideration.

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