

# ENVIRONMENTAL AND SOCIO-ECONOMIC IMPACTS OF COMMUNITY FORESTRY AND INDIVIDUAL SMALL-SCALE LOGGING IN CAMEROON

*Raphael Tsanga, Paolo Omar Cerutti,  
Paule Pamela Tabi Ekebil, and Edouard Essiane Mendoula*

## Introduction

In the tropics, sustainable forest management (SFM) has been widely promoted by institutions such as the International Tropical Timber Organisation (ITTO), which in 1992 developed a set of criteria and indicators for tropical forest management. Since the mid-1990s, SFM has been adopted by all forest countries in the Congo Basin, incorporated into their forest legislation (Cerutti & Lescuyer, 2011b), and broadly applied to ‘permanent forest domains’, i.e., forest areas which are mandated to remain forested in the long term. In general, this includes both protected areas and forest reserves, as well as large-scale logging concessions which must adopt and implement sustainable management plans. Management plans are currently the basis for the exploitation of 24 million hectares of forest concessions in the Congo Basin (Cerutti & Nasi, 2020), although the jury is still out as to whether they have so far been able to steer the eyes of both foresters and governments away from pure timber extraction and in the direction of more sound environmental and social performances (Cerutti et al., 2014; Cerutti & Lescuyer, 2011; Eba’a Atyi et al., 2013; Karsenty & Gourlet-Fleury, 2006; Nasi et al., 2012).

SFM refers to the sustained production of goods and services, including timber but also social and environmental, without undermining their intrinsic value or compromising their future productivity (Atyi, 2001; OIBT, 1998). In practice, sustainable timber production must go hand-in-hand with the effective protection of biodiversity and the safeguarding of the socio-economic rights of local and indigenous peoples (Leroy et al., 2013; Nasi & Frost, 2009). In this paper, SFM is intended as a way to achieve social and environmental sustainability as well as sustainable timber production. Although the implementation of SFM usually gives an important role to industrial logging companies, the contribution of local communities and small-scale producers is also widely recognised.

## **The practice of community forestry in Cameroon**

In Cameroon – the focus of this chapter – social forestry has taken the form of non-concessionary agreements called Community Forests (CF). Conceptually, community forestry refers to an approach to forest management whereby

local communities control a clearly and legally defined area and are supposed to be free from all sorts of immediate state influence on resource utilization. Provision of tenure rights over the forest enables the participants to be involved with the forest apart from ensuring sustainable resource management.

*(Lata & Rashid, 2020, p 2)*

In this perspective, CFs encompass a variety of activities including agroforestry practices, management of hunting areas by local communities, and sharing of benefits resulting from logging operations (Egbe, 2001). It is therefore a generic concept that refers to forestry-related activities carried out by local communities in order to generate the income needed to improve their living conditions (Lata & Rashid, 2020).

The Cameroonian regulatory framework defines CFs as

a forest in the non-permanent forest domain, subject to a management agreement between a village community and the Forest Administration. Management of this forest is the responsibility of the village community concerned, with the support or technical assistance of the Forest Administration in charge of forests.

*(Republic of Cameroon, Section 37)*

CF also refer to the participation of local communities in forest management through commercial logging operations, subject to the requirements of sustainable forest management. Natural resources within the borders of CFs can thus be harvested following a simple management plan. In the case of timber, which has been by far the most sought-after resource, CFs can be harvested directly (*en regie*) by the community, or via contracts established between the community and logging operators. Although in theory all logging operators could sign contracts with CFs, the legislator has over the years tried to encourage Cameroonian nationals to actively participate in the forest sector. This has resulted in individuals and small and medium-sized enterprises entering into contracts with CFs and – to a large extent – in CFs serving the regional and national timber markets, leaving the international market to long-established concessionaries.

CF and small-scale logging (SML) refer to different realities in the forestry sector, but because CFs remain very much focussed on timber harvesting, the two realities meet on the ground when it comes to access, harvest, process, and trade timber. CF is a forest title that allows logging operators – i.e. individual artisanal small-scale producers or small and medium enterprises – to harvest timber in the dedicated area. SML refers to an activity, i.e. the harvesting of timber using limited and non-industrial equipment for felling, processing, and transportation. SML can be carried out in CFs but also in other forests in the non-permanent domain, largely through informal processes.

Over the last two decades, the regional (e.g. Chad) and national demand for timber has grown much faster than what the largest number possible of CFs – even if unsustainably harvested – could supply. This has caused individual, small-scale loggers to look for resources well beyond CFs. Currently, artisanal production has largely replaced industrial production as the

main source of sawn timber in the markets of Central African cities (P. O. Cerutti & Lescuyer, 2011b; Lescuyer et al., 2014). What remains very much under-researched are the contributions made by CFs and SMLs to SFM and their impacts on forests and people (Burivalova et al., 2017). The contribution of CFs to sustainable forest management is controversial compared to artisanal logging harvesting. A review of experiences in Canada, Bolivia, the United States, and Mexico reveals that community forest management is a viable approach to forest conservation (Charnley & Poe, 2007). While stressing that the environmental impacts of community forest management require in-depth studies, other authors argue that deforestation and degradation rates in community forests are generally low (Burivalova et al., 2017).

Conversely, other studies, notably on Cameroon, point out that community forests are not an effective tool for reducing deforestation (Bruggeman et al., 2015). On the contrary, the implementation of community forestry has often been shown to accelerate deforestation and degradation due to illegal logging (Minang et al., 2007). To some extent, CFs have indeed sometimes been perceived by communities as a quick way to access financial resources (Oyono, 2004), and so far the socio-economic impacts of CFs have not lived up to the expectations stemming from their inclusion in the legal framework almost three decades ago (Lescuyer et al., 2016).

In contrast, the existing evidence suggests that SML – for the vast majority occurring outside the legal framework – have positive economic impacts, with contributions to rural economies in terms of employment and income for rural communities. Yet similarly to CFs, impacts on forests and SFM remain very difficult to assess, not least because of their unclear legal standing vis-à-vis SFM. In this chapter, we will look at the practical implementation of both CFs and SML and how it is conducted in the daily realities of communities and small-scale loggers, and we will discuss the implications of such reality for SFM, with a focus on the socio-economic and environmental effects.

The chapter is organised as follows: the next two sections present the legal framework for community forests and small-scale logging. Then, we discuss their social and environmental performance. The last section concludes with a discussion about the relationship between SFM, community forests, and small-scale logging.

## **The legal framework of community forests and individual small-scale logging**

CF and SML have in common that they are located in the non-permanent forest estate. However, both CF and SML are legally distinct in several aspects, including the modalities of allocation and the respective management requirements.

### ***Legal framework and status of community forest***

The legal recognition of community forestry is the result of active support from partners such as the World Bank and numerous conservation NGOs. According to Decree No. 95/531 of 23 August 1995, *community forestry* refers to the transfer of a portion of the national domain from the state to the village community, which is responsible for its management. The forest intended for community management is the subject of a management agreement between the state and the community concerned, which can use and manage it on the basis of a simple management plan.

The agreement has a duration of 25 years and it determines the surface area of the forest, which is a maximum of 5,000 hectares; its boundaries; the beneficiary communities; and the prescriptions for the management of forest stands or wildlife. The management plan defines the modalities for the exploitation of the forest, and the communities must comply with it throughout the duration of the agreement. The forest products resulting from forest exploitation

belong to the community, which also has a right of pre-emption over any other permits, title, or products found in the forest. The State is the guarantor of compliance with the implementation of the management rules and can suspend the CF in case of failure or withdraw the right of exploitation in cases of serious violations of the prescriptions of the management plan.

The number of applications and the area of granted community forests has increased significantly over the last two decades, as the combination of support from donors and civil society has generated enthusiasm among the people living in forest areas. The first 82 applications were made in 2000 for a total area estimated at 272,935 hectares (Djeumo, 2001; Lescuyer, Tsanga, et al., 2016). As of 2018, about 683 communities – representing about 2.2 million hectares – had issued requests for attribution to the Ministry, of which only 275 (or about 940,000 ha) had been granted a permanent title (*convention définitive*) (MINFOF, 2018).

Yet data indicate that having a permanent title is still a long way from actually operating the CF, as bureaucracy tramples practicality. For example, in the same year (2018), only about 40 per cent of valid CF requests received annual harvesting titles (or about 28,000 ha of annual harvestable areas), from which communities eventually harvested only 25 per cent of authorised allowable cut (MINFOF, 2018).

### ***Legal framework and status of individual small-scale logging***

Along with the initial implementation of CF in the mid-1990s, individual artisanal logging emerged almost concurrently in response to the limits of the newly approved forest law (1994) and its implementing decree (1995), which had a strong focus on large-scale, export-oriented industrial logging. Since then, artisanal exploitation has been a practical response to the absence of industrial sawn timber on the national market – as well as the lack of sufficient stocks coming from CFs – in a context of strong and fast-growing demand.

Legally, artisanal exploitation can occur in three forms: i) personal cutting authorisations, which are valid for 3 months and authorise the extraction of a volume of 30 m<sup>3</sup>; ii) the right of use that authorises the populations living near the forest areas to harvest timber for their personal needs, without commercial activity; and iii) timber exploitation permit (*Permis d'exploitation de bois d'œuvre* or PEBO), which is exclusively reserved for nationals and should be awarded through periodic calls for tenders. The PEBO is located in the non-permanent forest estate and authorises one individual or company to harvest a maximum volume of 500 m<sup>3</sup> per year. The products resulting from the exploitation of the PEBOs are only intended to supply the national market. There is no legal limit to the maximum areas dedicated to artisanal exploitation in the non-permanent forest domain. Exploitation is possible after an inventory has been conducted to estimate the volume of available standing trees.

Though different from CFs, the bureaucratic history of PEBOs has followed a similar and very complex path, with the result that over more than two decades of existence, only a handful of PEBOs have been granted. First, the delivery of all authorisations and permits for artisanal exploitation was suspended in 1999 by the administration in charge of forests, allegedly because these logging permits had led to corruption and laundering of illegally harvested timber from forest concessions (Cerutti et al., 2013), with timber traded on the international market in violation of legal provisions. As often occurs with similar bans in cases of very weak local governance, artisanal exploitation did not stop during the years of suspension because demand kept growing and control was non-existent. In fact, what the suspension did was to send an entire sector into the informal market, as artisanal loggers were no longer able to access any legal title. During the ban period, the volume of artisanal sawing in Cameroon's major cities was estimated at 1 million cubic metres of roundwood equivalent (Koffi Yeboa, 2005; Plouvier et al., 2003).

## **Comparative benefits of community forests and individual small-scale logging**

The establishment of CF in the Cameroonian context aims to provide local communities with an instrument for local development. In this respect, article 35 (3) of the Cameroonian forest law states that ‘forest products of any kind resulting from the exploitation of community forests belong entirely to the village communities concerned’. Notwithstanding the existence of other forest products and services, timber exploitation remains the preferred option for local communities to earn income from the forest. Case studies conducted in recent years suggest that where community forests exist, the local population derives substantial financial and economic benefits from them.

### ***Financial profits of community forest***

Community forestry is a financially profitable activity, at least as long as resources last. The bulk of CF activity involves the harvesting of timber, the majority of which is exported. Each year, the CF generates a turnover of approximately US\$1.9 million (CFA1.3 billion) for a net profit estimated at US\$762,327 (CFA413 million) (Lescuyer, Cerutti, et al., 2016). Although practical examples remain rare, CFs can provide other benefits, such as the exploitation of non-timber forest products, the reduction of carbon emissions and the conservation of biodiversity. Socially, the exploitation of CF provides benefits that are both individual and collective. At the individual level, the benefits of CF are identical to those of SML. These are essentially the wages of the workers and the remuneration of the trees’ customary owners. At the community level, the income generated by CF enables communities to build community infrastructure and finance income-generating activities (Nzoyem et al., 2010). However, the positive impact of CF on improving the living conditions of local communities is rather questionable. In most cases, the lack of financial means forces communities to establish partnerships with private actors. It has been established that these private operators monopolise the majority of the revenues from logging, to the detriment of the communities. A significant part of these revenues is also captured by political and administrative elites.

The community forestry model is not homogeneous. Its implementation and results depend on many variables that need to be simplified for the purposes of economic analysis (Ezzine de Blas et al., 2009). For example, we will retain an average CF size of 3,440 ha, which is the average size of CFs allocated until 2011. In addition, the number of active CFs is set at 150, which is a close estimate of the number of annual harvesting certificate (AHC) issued per year over the last 3 years by the Ministry of Forestry and Wildlife (MINFOF). Also, a large majority of active CFs are operated under subcontract by private operators (Cuny, 2011). This trend has changed little over the years; in the following estimate, 25 per cent of active CFs are operated by the state and 75 per cent are subcontracted to private operators. All these unit estimates are shown in Table 16.1 and applied to the case where (i) the timber is exploited by the community and (ii) the situation where the timber exploitation is subcontracted, both with an average area of 3,440 ha and an annual production of 60 m<sup>3</sup> of sawn wood.

The average turnover of a CF – under the hypothesis of exporting all its production – is estimated at around US\$12,920 (CFA8,500) per year, i.e., an overall turnover of this sector of around US\$1.8 million (CFA1.2 billion) for 150 active CFs. Exporting all its production is the only real possibility for the CF to make profits. Current exploitation costs make CF production uncompetitive on the local market compared to that of individual artisanal logging. Thus, CF timber is deprived of its main market.

The financial benefits from the exploitation of community forests are distributed between local communities, state officials, and private operators when the CF is managed by a private

Table 16.1 Financial benefits and operating costs of CF for communities

<i>Costs</i>	<i>Timber exploitation by the community US\$/m<sup>3</sup></i>	<i>Timber exploitation sub-contracted US\$/m<sup>3</sup></i>
<b>Turnover</b>	<b>219</b>	<b>28</b>
<b>Start-up costs</b>		
Preliminary studies and allocation	6	0
Preparation of the MTP	5	0
Environmental Impact Assessment	8	0
<b>Operating costs</b>		
Preparation of the operation	<b>18</b>	0
Harvesting and processing whitewood	58	0
Harvesting and processing redwood	83	0
Operation of the management entity	14	0
Miscellaneous administrative costs	4	0
<b>Profit</b>		
Formal profit for the community	23	28
Real profit (with informal income) for the community	28	28
Profit for the private operator	0	55

Table 16.2 Beneficiaries of community forests

<i>Beneficiaries</i>	<i>Sources of revenue</i>	<i>Amount (US\$/yr)</i>
Local communities	Wages, profit from timber sale	1,043,450
Administration	Formal and informal costs	172,657
Private operators (logging companies, consultants, NGOs)	Profit from timber sale, design of CF management documents	547,514

partner (Table 16.2). The shared revenues come from the sale of trees and wages, but a significant part also comes from informal payments and trafficking in official logging and transport documents. Thus, community forestry is also a source of corruption.

### ***Financial profits of individual small-scale logging***

As it is often the case in informal markets, it is difficult to gauge a comprehensive and detailed picture of the socio-economic impacts of individual, small-scale logging. Yet a cursory consideration of our research over more than a decade in most countries of the Congo basin indicates that such impacts have been overall real and positive since about the turn of the century.

In a more practical way, individual SML benefits four groups of actors: rural populations, urban populations, representatives of government or council authorities, and council authorities.

There are various dimensions to those impacts, which we describe here. First and foremost, the annual consumption of artisanal sawn wood is estimated at 662,000 m<sup>3</sup> in Cameroon. Estimates by Cerutti and Lescuyer (2011) show that multiplying this volume by the average

Table 16.3 Components of sales price of sawn wood in domestic markets (US\$/m<sup>3</sup>)

<i>Components of final sales price</i>	<i>Estimation (US\$/m<sup>3</sup>)</i>	<i>%</i>
Wages (rural and urban areas)	56	34%
Transportation and equipment	28	18%
Consumables and miscellaneous in rural areas	20	13%
Informal payments (rural and urban areas)	20	13%
Payment to customary owners	8	5%
Official taxes	0.12	0%
Rent for outlet	0.6	0%
<b>Profit (rural and urban areas)</b>	<b>26</b>	<b>17%</b>

Table 16.4 Beneficiaries of individual SML

<i>Beneficiaries</i>	<i>Sources of revenue</i>	<i>Amount (million US\$/yr)</i>
Rural populations	Wages	37
	Tree sales	
	Profit on sale of sawn wood to urban traders	
Urban populations	Wages	21.5
	Outlet rental	
	Profit from sale of lumber to end user	
Representatives of government or council authorities	Informal payments at council level, during transport and in urban markets	13
Council authorities	Final taxes	0.08

price of a cubic metre of sawn wood on the national market (US\$153/CFA82000) shows that the total value of this market is approximately US\$101 million (CFA55 billion) (see Table 16.3).

Second, small-scale timber operations generate both (very much needed) employment and profits for a large section of both rural and urban societies where the resource is harvested and eventually sold. This means not only for the operators directly engaged in harvesting or selling, but also rural and urban institutions such as Councils, Regions, decentralised agencies and State officials in terms of informal payments at the commune level, on the road, and in urban markets; they all have been able to adapt and capture (both legally and outside the legal framework) at least part of the benefits derived from a booming value chain. For example, we documented how most Councils have adopted ad-hoc ‘taxes’ applied to the tools used by operators (e.g. a ‘tax’ on chainsaws), their produce (e.g. a ‘tax’ per product, such as planks, beams, etc.), and the operators themselves (e.g. a ‘tax’ to enter the forest).

Third, and very much linked to the previous point, small-scale timber operations provide jobs, most of them based in rural areas where they are very much needed. In 2010, at least 40,000 people made a living directly from small-scale chainsaw timber production (Cerutti & Lescuyer, 2011b). One can only understand the relative importance of such information by comparing it to the industrial sector. For example, although solid data are hard to find, the available literature suggests that over the past decades, the number of direct jobs has not increased much from the 10,000–20,000 claimed by large-scale industries (see Table 16.4).



Of course, one cannot compare the two sectors on several other indicators, such as the contribution to the state's coffers, which is pretty much nothing in the case of small-scale timber operators. And yet it is exactly this type of information that needs discussing in order to understand the real socio-economic impacts of small-scale harvesting. For example, it is difficult to cost the social and administrative support provided – and the ‘taxes’ applied – by decentralised entities to what are ultimately activities conducted outside the legal framework, unless one considers in parallel the centralised management of forest-related taxes paid by industrial companies and CFs, which does not result in a regular redistribution back to the local populations.

Also, to the extent that Councils and other entities do collect ‘taxes’, it is rare that there are any records kept. SML operations are a major source of personal income for many government officials, who have created a huge, obligatory payment system to ‘launder’ the timber sold on local markets; this system brings in about US\$12,1 million (CFA6,5 billion) per year. Nearly 9 per cent of the sawyers’ costs comprise payments to various types of public authorities on the logging site or somewhere along the timber transport route. In addition to payments to council representatives, chainsaw millers set aside money for ‘wayside payments’ that ‘facilitate’ the transport of chainsaw timber to the urban markets. Such payments are for the personal benefit of the government agents located at checkpoints along the road rather than for any public fund, and must be made to all the government services that have such checkpoints.

More socio-economic impacts are indirect in nature. About half of the operating costs incurred by individual and small-scale entrepreneurs are spent in the villages or small towns where the resources are cut and processed (e.g. see also Djiongo, 2005). These include food, local salaries for helpers, payments to customary owners, replacement equipment, etc. In other words, for every US\$1 that the law promises to be redistributed back to rural areas for their development, rural communities get at least US\$3.6 (CFA2,000) not in promises, but in cash. By way of illustration, the total amount of the annual forestry fee collected in 2016 was theoretically US\$34.2 million (CFA18.5 billion) (Cerutti et al., 2016). According to the 2016 finance law, the share for local actors is 45 per cent, i.e., around US\$7.7 million (CFA4.1 billion). At the same time, artisanal logging directly benefits local communities to the tune of US\$39.1 million (CFA21.1 billion).

### **Environmental impacts of community forestry and small-scale logging**

Environmental sustainability refers to a wide range of aspects including biodiversity conservation, carbon stock management, provision of ecosystem services, and the health of ecosystems (Brummett et al., 2009; Karsenty & Gourlet-Fleury, 2006; Nasi et al., 2009). The consideration of these aspects is essential for SFM, but their implementation is complex, especially at the local community level. The direct relation between legality and sustainability is more often theoretically assumed than practically verified. The same applies to the relation between illegal and unsustainable logging. In practice, this means that the exploitation of industrial concessions is necessarily sustainable since it takes place within the framework of management. That is to say, artisanal exploitation, which takes place mainly in the informal sector, must be unsustainable. Just as the positive impact of regulatory instruments such as the development plan on sustainable management needs to be put into perspective – if we consider the environmental damage resulting from logging and the opening of roads – the supposedly negative impacts of artisanal exploitation need better qualification.

The potential ecological impact of artisanal logging includes several elements. Unless it is occurring inside CFs and the prescriptions of their management plans, artisanal exploitation takes place mainly in the non-permanent forest domain, which can be converted to other uses,



notably agriculture. Previous findings indicate that about two-thirds of the harvesting operations take place in the agroforestry zone.

Yet about 33 per cent of operations still happen in old-growth forests, which albeit legally convertible, maintain a multitude of environmental services. As is the case for CFs – and indeed logging concessions – SML have low extraction rates. This is more a consequence of the general historic focus of the timber market on a handful of species, than of a voluntary choice by artisans and communities alike. Yet, as the experience of countries such as Côte d'Ivoire shows (Tsanga et al., 2020), things may change fast, and degradation and deforestation readily increase if no clear rules exist, as is the case at present (Cerutti et al., 2015).

Similarly, there still exists an economic preference for large-diameter trees, as more products and dimensions can be extracted, and fewer kilometres walked, as compared to a larger number of smaller trees. For the time being, this spares smaller trees which can potentially regenerate the stands of trees, unless (as examples from many countries show, and in the absence of clear regulations) the cycles become quicker and shorter, in which case loggers will use ever smaller diameters.

In terms of impact on permanent forest estate, results also show that there seems to exist no immediate risk of artisanal logging entering the permanent forest estate, where SFM is mandatory. Yet two major risks exist in the longer term (Cerutti & Lescuyer, 2011). The first risk relates to the lack of management measures for commercial species. According to Cameroonian law, the tree officially belongs to the state. It is up to the administration to organise the modalities of access and felling of trees in the national forest estate. In practice, the state is rather like an absentee owner in the non-permanent forest estate. Ownership of trees is therefore the responsibility of customary rights holders who sell them to artisanal loggers. In the majority of cases, customary owners are not concerned with sustainable management practices. Such practices undermine the long-term commercial value of forests through the intensive exploitation of high-value species and accelerate the displacement of sawyers to increasingly remote areas, including penetration into the permanent forest estate.

The second risk is directly related to demography and the increasing demand for sawn wood in urban areas. Cameroon, like many sub-Saharan African countries, will see its population increase significantly over the next 30 years. Cameroon's population, which was estimated at 24 million in 2017, is expected to double by 2050 to around 50 million (UN-DESA, 2017). The trend in the future will therefore be to gradually increase the production of artisanal sawn wood to supply the increasingly demanding domestic markets (Marien & Bassaler, 2013). Also, with economic growth, the national demand for timber is expected to increase significantly in the coming years. With the increase in demand and a decreased availability in the non-permanent domain – and a competition for the same species – there is a risk of gradually shifting logging to the permanent domain

## **Discussion**

Community forestry should fulfil at least three objectives, notably i) the provision of goods to meet basic needs at rural household level, ii) employment and income generation in the community, and iii) the provision of environmental stability (Lata & Rashid, 2020). In practice, the model has many weaknesses (Duguma et al., 2018). With regard to the socio-economic objectives, it can be said that they have been achieved by community forestry in Cameroon. The question that arises is the extent to which the benefits obtained are in line with initial expectations. When comparing the socio-economic benefits of community forestry with other forms of decentralised income, the results suggest that these are limited. According to Oyono (2004)

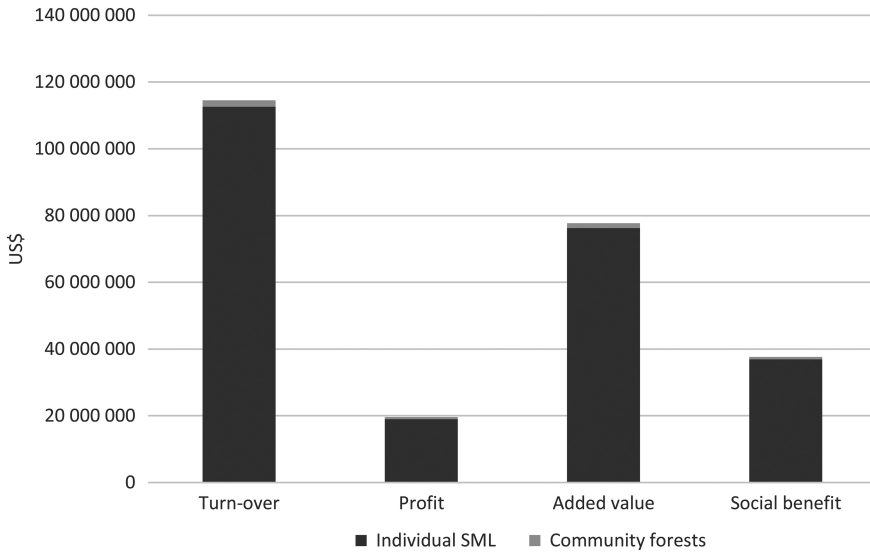


Figure 16.1 Respective financial benefits of community forests and SML. Source: Lescuyer, Cerutti, et al., 2016.

‘its potential for individual or collective accumulation is limited and, thus, underestimated by local communities – particularly in comparison with forestry fees and royalties’. The moderate contribution of community forests can also be seen when the financial benefits of community forests are compared with those of individual small-scale logging.

Recent developments in CF and SML show that, as far as SFM in its broadest sense is concerned, there is plenty of room for improvement (Fomou et al., 2017, 2020). By their nature and background legal framework, neither the current management of CFs nor artisanal logging in the non-permanent forest domain seem conducive to SFM.

Community forests remain trapped between a legal requirement for sustainability and their creation in the non-permanent forest estate, which is not legally mandated to remain forested and can be converted into agricultural land. Hence, in the absence of a strong supervision and facilitation from the government (Cerutti & Nasi, 2020), this framing brings a natural weakness to the overall process, and keeps the requirements for operating a CF sustainably beyond the reach of local communities. Also, as the legal framework for conducting forest operations inside community forests has been largely influenced by the management practices of large-scale forest concessions, it remains very expensive, administratively over-complex, and ultimately unsuitable, also for small-scale loggers who could have access to CFs.

This is a constant and very important trend, because if the legislator introduced for the first time an innovative concept in the law, in practice the bureaucratic machine that should have led to communities actually benefiting (financially at least), has not been able to deliver a smooth, functional, and efficient procedure that enables those benefits. Frustrated, many communities resort to alternative ways of benefiting from a resource they consider theirs, with less than optimal environmental, social, and long-term economic results.

The general conditions under which the wood market is organised introduce further complexity to the system. Community forests are very often located in degraded areas. These areas are often poor in commercially useful species, partly because the annual area authorised for logging is small and partly because the volume of commercial species requested by market demand

is rarely available when needed. The result is a configuration whereby a small number of species are over-exploited without respecting minimum forest management standards, e.g., by logging outside annual allowable cuts or simply outside the CF perimeter.

For all the positive impacts that have been described here, there remains a very big open question as to the sustainability of these operations. Of course, if one extrapolates from the local reality, recommendations to tackle the development of this sector urgently and head-on are as easy to make as it is easy to see that – given recent and current consumption trends – demand cannot be sustained as such for another 20–30 years. Resources are being extracted at a pace well beyond any regeneration potential, mostly in already-degraded areas with no solid restoration/reforestation plan in sight.

The socio-economic impacts briefly described here must be read with the eyes of the thousands of people currently deriving their livelihoods from those resources. This must not exclude, of course, the eyes of the hundreds of state officials who are currently deriving a private rent from bribing their way into the sector. And although one should always look into the details of the trade-offs generated by one proposed solution or another, there are necessary conditions that need to be fulfilled first and foremost for those trade-offs to be put on the table of democratic discussions between the Government and private operators.

One of the conditions is that individual and small-scale operators must be provided a safe space where their voices can be heard and listened to. It is indeed encouraging to see that, in the last decade, several attempts at creating organised and coherent groups of operators have emerged across the national territory.

Another broad condition is that if small-scale operations (as well as Community Forests) must also become part of the various national pledges towards sustainability in general and SFM in particular, they must be provided a coherent and supportive legal framework within which they can operate, if they so choose. On this topic, it is much less encouraging to see that the process launched by the Government more than a decade ago and aimed at revisiting the forest law also to make it more conducive to small-scale operators to function legally has resulted in no change so far.

## **Conclusion**

This chapter has discussed community forestry and artisanal small-scale logging as conducted in Cameroon and has assessed the existing evidence on both models' socio-economic and environmental impacts (through both secondary and primary data collected by the authors over more than a decade). Though different in theory and in the law, CF and SML have become over the years synonymous with illegal and/or unsustainable logging, both conducted in the Cameroonian non-permanent forest domain.

We believe that, as the government of Cameroon clarifies its aspirations and objectives via selected development paths, and as it increases its pledges and international engagements towards combating deforestation, forest degradation, and illegal logging, a clarification and improvement of the regulatory framework surrounding CFs and SML are a must.

The existing evidence shows that the impacts of community forestry on local development are mixed. These data run counter to the view that the transfer of forest resource management to local communities is synonymous with community development, biodiversity conservation, and the rational exploitation of timber. In practice, the legal framework for community forestry is ambivalent and it must be redressed. On the one hand, it advocates the sustainable management of community forests through the establishment of management standards. On the other

hand, the complexity and costs of acquisition and procedures have put sustainability objectives beyond the reach of most local communities. Furthermore, the location of community forests in the non-permanent forest estate does not encourage long-term, sustainable management practices, while persistent corrupt, albeit largely unsanctioned, behaviours have continued for decades. As a result, many illegal and unsustainable practices have developed over the years.

Individual artisanal logging, on the other hand, largely exploits the same geographical space and it does not carry all the hassles needed to proceed with CFs, yet it remains almost entirely in the informal realm. While it is thus financially more profitable for both the sawyers and the individuals among local communities than CFs, information on its environmental sustainability are scant. Yet most of the sawn timber consumed on the national market comes from this activity, and if urgent improvements of the regulatory framework are not adopted, the damage to both forests and communities' livelihoods in the medium to long term can follow pathways already observed in countries such as Cote d'Ivoire.

## Bibliography

- Atyi, R. E. (2001). Principes et concepts essentiels en aménagement forestier. In *Sustainable management of African rainforest Part I: Workshops* (pp. 3–11). Tropenbos International.
- Bruggeman, D., Meyfroidt, P., & Lambin, E. F. (2015). Production forests as a conservation tool: Effectiveness of Cameroon's land use zoning policy. *Land Use Policy*, *42*, 151–164. <https://doi.org/10.1016/j.landusepol.2014.07.012>
- Brummett, R., Tanania, C., Pandi, A., Ladel, J., Munzimi, Y., Russell, A., Stiassny, M., White, S., & Davies, D. (2009). Ressources en eau et biens et services liés à l'écosystème forestier. In *Les forêts du bassin du Congo – Etat des forêts 2008* (pp. 145–161). Weyrich.
- Burivalova, Z., Hua, F., Koh, L. P., Garcia, C., & Putz, F. (2017). A critical comparison of conventional, certified, and community management of tropical forests for timber in terms of environmental, economic, and social variables: Certified and community forest management. *Conservation Letters*, *10*(1), 4–14. <https://doi.org/10.1111/conl.12244>
- Cerutti, P. O., & Lescuyer, G. (2011a). *Le marché domestique du sciage artisanal au Cameroun état des lieux, opportunités et défis*. CIFOR. [http://webdoc.sub.gwdg.de/ebook/serien/yo/CIFOR\\_OP/59.pdf](http://webdoc.sub.gwdg.de/ebook/serien/yo/CIFOR_OP/59.pdf)
- Cerutti, P. O., & Lescuyer, G. (2011b). *The domestic market for small-scale chainsaw milling in Cameroon: Present situation, opportunities and challenges*. CIFOR.
- Cerutti, P. O., Lescuyer, G., Tsanga, R., Kassa, S. N., Mapangou, P. R., Mendoula, E. E., Missamba-Lola, A. P., Nasi, R., Eckebil, P. P. T., & Yembe, R. Y. (2014). *Social impacts of the Forest Stewardship Council certification*. CIFOR.
- Cerutti, P. O., Mbongo, M., & Vandenhaute, M. (2016). *État du secteur forêts-bois du Cameroun (2015)* (p. 42). Center for International Forestry Research (CIFOR).
- Cerutti, P. O., & Nasi, R. (2020). Sustainable forest management (SFM) of tropical moist forests: The Congo Basin. In *Achieving sustainable management of tropical forests* (pp. 595–618). Burleigh Dodds Science Publishing.
- Cerutti, P. O., Tacconi, L., Lescuyer, G., & Nasi, R. (2013). Cameroon's hidden harvest: Commercial chainsaw logging, corruption, and livelihoods. *Society & Natural Resources*, *26*(5), 539–553. <https://doi.org/10.1080/08941920.2012.714846>
- Cerutti, P., Tsanga, R., & Essiane Mendoula, E. (2015). *Le marché domestique du sciage artisanal en Côte d'Ivoire: Analyse qualitative pour établir l'état des lieux, les opportunités et les défis* (p. 29). <http://www1.cifor.org/fileadmin/subsites/proformal/PDF/le-marche-domestique-du-sciage-artisanal-en-cote-divoire.pdf>
- Charnley, S., & Poe, M. R. (2007). Community forestry in theory and practice: Where are we now? *Annual Review of Anthropology*, *36*(1), 301–336. <https://doi.org/10.1146/annurev.anthro.35.081705.123143>
- Cuny, P. (2011). *Etat des lieux de la foresterie communautaire et communale au Cameroun*. Tropenbos International.
- Djeumo, A. (2001). Développement des forêts communautaires au Cameroun : Genèse, situation actuelle et contraintes. *Réseau de foresterie pour le développement rural*, *25b*, 1–17.
- Djiongo, E. R. (2005). *Contribution à la formalisation de la filière bois artisanal dans la province de l'Est-Cameroun*. Université de Dshang.

- Duguma, L. A., Atela, J., Ayana, A. N., Alemagi, D., Mpanda, M., Nyago, M., Minang, P. A., Nzyoka, J. M., Foundjem-Tita, D., & Ngo Ntamag-Ndjebet, C. (2018). Community forestry frameworks in sub-Saharan Africa and the impact on sustainable development. *Ecology and Society*, 23(4), 21. <https://doi.org/10.5751/ES-10514-230421>
- Eba'a Atyi, R., Lescuyer, G., Poufoun, J. N., & Fouda, T. M. (2013). *Étude de l'importance économique et sociale du secteur forestier et faunique au Cameroun* (p. 315). MINFOF-CIFOR.
- Egbe, E. S. (2001). The concept of community forestry under Cameroonian law. *Journal of African Law*, 45(1), 25–50. <https://doi.org/10.1017/S0221855301001596>
- Ezzine de Blas, D., Ruiz Pérez, M., Sayer, J. A., Lescuyer, G., Nasi, R., & Karsenty, A. (2009). External influences on and conditions for community logging management in Cameroon. *World Development*, 37(2), 445–456. <https://doi.org/10.1016/j.worlddev.2008.03.011>
- Fomou, G., Feujoy, D. S., Djanteng, P., Fombana, C., & Ndjeudja. (2020). *L'exploitation légale des forêts communautaires au Cameroun: Une perspective réaliste et viable?* (p. 28). SAILD.
- Fomou, G., Vandenhaute, M., & Feujoy, D. S. (2017). *Légalité et traçabilité des bois des forêts communautaires du Haut-Nyong* (p. 56). FAO - SAILD.
- Karsenty, A., & Gourlet-Fleury, S. (2006). Assessing sustainability of logging practices in the Congo Basin's managed forests: The issue of commercial species recovery. *Ecology and Society*, 11(1), 26.
- Koffi Yeboa, A. (2005). *Sciège artisanal, transformation et commerce du bois d'œuvre du Cameroun à destination de l'arc soudano-sahélien*. ENGREF.
- Lata, L. N., & Rashid, A. Z. M. M. (2020). Social forestry: Principles, evolution, and implications for sustainable development. In W. Leal Filho, A. M. Azul, L. Brandli, A. Lange Salvia, & T. Wall (Eds.), *Life on land* (pp. 1–12). Springer International Publishing. [https://doi.org/10.1007/978-3-319-71065-5\\_148-1](https://doi.org/10.1007/978-3-319-71065-5_148-1)
- Leroy, M., Derroire, G., Vendé, J., & Leménager, T. (2013). *La gestion durable des forêts tropicales De l'analyse critique du concept à l'évaluation environnementale des dispositifs de gestion La gestion durable des forêts tropicales* (Vol. 18). Agence Française de Développement (AFD). <https://hal.archives-ouvertes.fr/hal-01450729>
- Lescuyer, G., Cerutti, P., & Tsanga, R. (2016). Contributions of community and individual small-scale logging to sustainable timber management in Cameroon. *International Forestry Review*, 18(1), 40–51. <https://doi.org/10.1505/146554816819683744>
- Lescuyer, G., Ndotit, S., Bilogo bi Ndong, L., Tsanga, R., & Cerutti, P. O. (2014). *Policy options for improved integration of domestic timber markets under the voluntary partnership agreement (VPA) regime in Gabon* (Info Brief No 82; CIFOR Info Brief, p. 4). Center for International Forestry Research (CIFOR). <https://doi.org/10.17528/cifor/005081>
- Lescuyer, G., Tsanga, R., Essiane Mendoula, E., Embolo Ahanda, B. X., Hadji Adama, O., Fung, O., Dubiez, E., & Bigombe Logo, P. (2016). *Demandes nationales de scièges: Obstacle ou opportunité pour promouvoir l'utilisation des ressources forestières d'origine légale au Cameroun?* (p. 73). FAO - CIFOR.
- Marien, J.-N., & Bassaler, N. (2013). *Éléments de prospective à l'horizon 2040 pour les écosystèmes forestiers d'Afrique centrale* (p. 170). COMIFAC.
- Minang, P. A., McCall, M. K., & Bressers, H. Th. A. (2007). Community capacity for implementing clean development mechanism projects within community forests in Cameroon. *Environmental Management*, 39(5), 615–630. <https://doi.org/10.1007/s00267-005-0275-2>
- MINFOF. (2018). *Secteur forestier et faunique du Cameroun – Faits et chiffres – Edition 2017*. Ministère des forêts et de la faune.
- Nasi, R., Billand, A., & van Vliet, N. (2012). Managing for timber and biodiversity in the Congo Basin. *Forest Ecology and Management*, 268, 103–111. <https://doi.org/10.1016/j.foreco.2011.04.005>
- Nasi, R., & Frost, P. G. H. (2009). Sustainable forest management in the tropics: Is everything in order but the patient still dying? *Ecology and Society*, 14(2), 40. <https://doi.org/10.5751/ES-03283-140240>
- Nasi, R., Mayaux, P., Devers, D., Bayol, N., Atyi, R. E., Mugnier, A., Billand, A., & Sonwa, D. (2009). Un aperçu des stocks de carbone et leurs variations dans les forêts du bassin du Congo. In *Les forêts du bassin du Congo – Etat des forêts 2008* (pp. 199–216). Weyrich.
- Nzoyem, N., Vabi, M., Kouokam, R., & Azanga, C. (2010). *Forêts communautaires contre la pauvreté, la déforestation et la dégradation des forêts: En faire une réalité au Cameroun*. 14.
- OIBT. (1998). *Critères et indicateurs de l'aménagement durable des forêts tropicales naturelles* (N° 7; Politique forestière, p. 28). Organisation internationale des bois tropicaux.
- Oyono, P. R. (2004). The social and organisational roots of ecological uncertainties in Cameroon's forest management decentralisation model. *European Journal of Development Research*, 16(1), 174–191.
- Plouvier, D., Atyi, R. E., Fouda, T. M., Oyono, P. R., & Djeukam, R. (2003). *Étude du sous-secteur sciège artisanal au Cameroun*. AGRECO.

- Republic of Cameroon. (1995). *Décret n° 95-531-PM du 23 août 1995 fixant les modalités d'application du régime des forêts au Cameroun.*
- Tsanga, R., Cerutti, P. O., & Essiane, E. (2020). *Demandes en bois et produits dérivés dans les marchés publics en Côte d'Ivoire.* FAO et CIFOR. <https://doi.org/10.4060/cb1102fr>
- UN-DESA. (2017). *World population prospects: The 2017 revision.* United Nations, Department of Economic and Social Affairs (UNDESA), Population Division. [https://population.un.org/wpp/Publications/Files/WPP2017\\_KeyFindings.pdf](https://population.un.org/wpp/Publications/Files/WPP2017_KeyFindings.pdf)



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