# CHAPTER 4

## An appraisal of chainsaw milling in the Congo Basin

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## Introduction

Over the last two decades, forest policies in the States of the Congo Basin have been devised and adopted with the aim to tackle and reduce poverty, notably among the rural population, as well as to contribute to the improvement of the States' economies and to foster the responsible management of biodiversity. Indeed, forest management in the region takes place in a context of widespread rural poverty, and it is estimated that over 58 % of the population lives below the poverty line – $ 2 a day – with the majority of them living in rural areas where the forest is predominant (World Bank, 2010). Over the years, the new laws brought real improvements in the way the forest was managed, with a strong increase in the number of logging concessions managed with newly approved forest management plans and, overall, larger amount of taxes entering the Treasury's coffers (Eba'a Atyi *et al.,* 2009).

The vast majority of policy reforms, however, targeted the large-scale, industrial, export-oriented forestry operations, while neglecting the smaller-scale, chainsaw timber production, largely sold on the domestic and regional timber markets. Small-scale logging titles that authorize citizens to harvest a limited number of trees, albeit for their personal and non-commercial needs, are indeed included in all the legal frameworks of the region, but such titles are generally not adapted to the current needs of chainsaw millers and, as such, they are rarely requested to, and recorded by, the administration. As a consequence, the domestic timber sector remains largely informal despite its importance. Its economic, ecological and social impacts are unbeknownst to the national ministries and unaccounted for in national and international statistics.

For instance, for the year 2007, official statistics reported timber production in Central Africa at about 8.4 million cubic meters (Eba'a Atyi *et al.,* 2009), with Gabon and Cameroon being the largest producers and the Democratic Republic of Congo (DRC) the smallest. However, all national data, as well as their international counterparts, such as the FAOSTAT, the UN COMTRADE[22] or the ITTO data, only included production from the formal, large-scale, and export-oriented industrial forestry sector.


***Photo 4.1: Mill in Cameroon, transforming logs into wood planks***


***Photo 4.2: Informal market for Bétou on the Oubangui River in northern Republic of Congo***

[22] UN COMTRADE : UN Commodity Trade Statistics Database.

What is meant in this chapter by domestic chainsaw milling sector? This sector is often considered in opposition to the industrial sector that processes the timber largely for export. Although there are instances where the dichotomy between domestic and industrial timber fades (some industrial scrap is sold on national market and some timber produced by chainsaw millers is sold on international markets) the two sectors present clear boundaries, as shown in table 4.1.

***Table 4.1: Distinguishing characteristics between domestic and industrial sectors***

| | Domestic sector | Industrial sector |
|---|---|---|
| Felling permits | No (or very rarely) | Yes (concessions, community forests…) |
| Felling and processing techniques | Chainsaw (sometimes mobile saw) for felling and processing in the forest, small number of trees per operation | Heavy machinery, large number of trees per operation, processing plant after log skidding and transportation by trucks |
| Sales | Lower quality sawnwood for national market and neighboring countries | Logs, sawnwood, veneer, plywood, wooden floors, almost exclusively for export |
| Taxes and regulations | Largely informal | Largely formal |

*Source: Cerutti & Lescuyer, 2011*

This chapter reports and discusses the preliminary results[23] of a systematic appraisal of the economic and social impacts of chainsaw milling in the Congo Basin, as gauged from a research conducted by the Center for International Forestry Research (CIFOR) over the period 2008-2009 in Cameroon, Gabon, DRC and Congo, and over the period 2010-2011 in the Central African Republic (CAR). In these countries, the research focussed on sawn products sold on domestic markets and sourced from all over the region using both legally produced timber, such as scraps from industrial sawmills or regularly attributed small scale logging titles, and illegally produced timber, such as the vast majority of the chainsaw production. Data have been collected on a weekly basis in select depots located in all districts of the main cities, as well as along the main transportation routes (roads, railways, and rivers). Also, interviews have been conducted in rural areas with informal chainsaw millers, and in urban centers with timber sellers, in order to analyze their activities and to quantify their costs and profit margins.

[23]The estimates presented below for Cameroon, Gabon, CAR and DRC are based on 12 months data collection, while estimates for Congo are based on 10 months data collection and extrapolated to the year.

[24]The assessment in Kinshasa regards the points of sales instead of the outlets. Most points of sales include only a few outlets, but there are also large points of sales with dozens of outlets.

***Table 4.2: Sampled cities and depots***

| | Cameroon | Congo | Gabon | DRC | CAR |
|---|---|---|---|---|---|
| | **Bertoua, Douala, Yaoundé, Limbe, Kumba** | **Brazzaville, Pointe-Noire** | **Libreville** | **Kinshasa, Eastern Province** | **Bangui** |
| Total number of outlets | 882 | 127 | 210 | 170[24] | 140 |
| Number of depots monitored | 177 | 77 | 30 | - | 45 |
| Number of supply routes monitored | - | 4 | 6 | 3 | 5 |
| Number of surveys in rural areas | 340 | 60 | 212 | 35 | 151 |
| Period of survey | July 2008 - June 2009 | February - November 2009 | September 2008 - August 2009 | October 2008 - September 2009 | July 2010 - June 2011 |

*Source: CIFOR*

## Small scale logging in Central Africa: prior appraisals

In **Cameroon**, the amount of wood illegally harvested by individuals or small enterprises and mostly sold on the informal domestic market was roughly estimated at about 250,000 $m^3$ RWE[25] in 1996 (Enviro-Protect, 1997). A couple of years later, Plouvier *et al.* (2002) analyzed several timber markets in Yaoundé and Douala and estimated the national production of chainsaw millers at about 1 million $m^3$ RWE. Such estimates of the informal timber sector are not readily available in other countries of the region, but several documents show that it is at least not negligible.

In **Gabon**, for instance, rural citizens have been until recently using "family logging authorizations", albeit abolished by the 2001 Forest Code, to harvest and trade timber around their villages (Boevinger, 2008). Taking into account that many people have been employed and later dismissed by the industrial forestry sector as sawyers, fellers, prospectors, and have thus acquired the necessary skills, rural Gabon offers a large operational capacity and availability of resources for the production of informal timber (Mabiala, 2004). The law allows small scale operators to apply for legal logging authorizations, but the Forestry Administration has been very slow in implementing the granting of such titles; only in mid-2009 the first requests were reviewed by the administration.

In the **DRC**, the management of forest resources is strongly hampered by a difficult socio-economic environment, in a context of political and armed post-conflict. The last decade, characterized by widespread insecurity, has prompted a great number of people to turn to subsistence and informal activities. The forest sector is no exception. The logging volume produced by the informal sector is inherently difficult to quantify, but the number of rafts that can be seen on the rivers, the important volumes of sawnwood planks that can be found in many markets, or logs cut by axe visible for instance in Kinshasa clearly indicate that it covers an important role in the informal economy of the DRC. Djiré (2003) estimated that artisanal loggers produce between 1.5 and 2.4 million $m^3$ per year, i.e. between 3 and 6 times the official industrial timber production.


***Photo 4.3: Barges on the Congo River transport logs from both the formal and informal sector across long distances***

In the **Republic of Congo**, the law allows for "special permits" to be granted to small scale loggers to exploit timber and non-timber forest products. Regarding timber for commercial purposes, special permits allow the harvesting of three trees. It is issued only in areas where people face the difficulty in obtaining supplies of scraps from industrial sawmills. However, the administrative difficulty of acquiring this permit – mainly due to the costs and complexity of the procedure – pushes many operators to remain in the informal sector. The informal timber market in Brazzaville seems to have declined from the high levels of the early 90s thanks to the establishment of the checkpoints and to the provision of large amounts of timber scraps coming from the industrial sawmills located in the northern part of the country (Ampolo, 2005). However, for a decade, these companies have been exporting timber through the Cameroon border and this logging volume does not pass through Brazzaville anymore. The impact on the domestic market has not been documented for Brazzaville while the domestic consumption of sawnwood has never been studied for Pointe-Noire.

[25]RWE: Round Wood Equivalent.

In the **Central African Republic**, the Forest Law provides for "artisanal timber harvesting permits" issued for a period of one year renewable once, covering a maximum area of ten hectares, and only deliverable to Central African citizens. However, this legal provision has not yet been coupled by the required implementing decree, which means that formal chainsaw milling in CAR cannot take place. In addition, the total forest area is already licensed to logging companies in the form of concessions, and available forest areas to support legal artisanal logging or to create community forests are reduced. Like in Cameroon and DRC, the political and economic situation over the last decades has not allowed a real understanding and official acknowledgement of the domestic timber sector, while much effort has been put to promote sustainable forest management in industrial, export-oriented logging concessions. Two recent trends contribute to boost the domestic sector however, the political stability and the (relative) economic growth, on the one hand, and the international crisis, on the other hand, which drastically reduced timber exports and pushed some logging companies to turn to the urban demand, mainly in the capital city, Bangui. As of yet, however, this evolution has not been documented.

A recent study was carried out by the NGO ANDEGE (2010) in **Equatorial Guinea** to assess the scope of the informal chainsaw milling sector. Based on a six-month monitoring in the main cities combined with field surveys with chainsaw millers, the national production of informal timber amounts to 86,800 $m^3$ per year. Half of this informal production reaches Bata and Malabo while the other half fills rural demand. However, only 21,206 $m^3$ is recorded in the 102 sale points registered in Bata and Malabo. This means that roughly 75 % of the national production is consumed without passing by urban markets. Okoumé (*Aucoumea klaineana*) is by far the most harvested species as it covers 60 % of the total production. This activity remains largely informal; ANDEGE (2010) estimates that 250 chainsaws are today operating in the Equatorial Guinea's forest but very few are owned and used according to national regulations.


***Photo 4.4: Urban market for wood products from the informal sector***

## Timber sales from chainsaw milling

In **Cameroon**, average annual sales, estimated over the period July 2008 – June 2009, total about 990,000 $m^3$ of sawn timber only for the cities of Yaoundé, Douala and Bertoua. Total consumption is estimated at about 860,000 $m^3$ (table 4.3), as about 130,000 $m^3$ are double-counted since sold from markets to other markets before reaching the final user. Timber sold is largely sourced from chainsaw milling operations in the forest. Nonetheless, about 23 % of sold products is sourced from industrial sawmills, with varying degrees among cities. Sawn timber sold on the market and sourced directly from chainsaw milling operations is thus estimated at about 662,000 $m^3$ for Cameroon, that is to say more than 2 million $m^3$ RWE. This suggests a twofold increase from 2002 values estimated by Plouvier *et al*. (2002) for the entire country. Most notably, domestic timber sales are larger than the industrial production and exports of sawn timber, which has been decreasing in recent years, from 580,000 $m^3$ in 2008 to 343,000 $m^3$ in 2009.

In **Gabon**, the amount of lumber consumed in Libreville alone is about 70,000 $m^3$ per year. This estimate is supported both by figures of outlets' sales and by monitoring the flow of supplies to the city by roads and waterways. Compared to the total official industrial production, at about 150,000 $m^3$ in 2009, the informal sector production remains more modest than in Cameroon.

Data collected in the **Republic of Congo** show sawnwood sales at about 110,000 $m^3$ per year on the domestic market. These figures surpassed the sawnwood exported in 2009 and represent about 25 % of the official industrial sawnwood production of 2006, irrespective of product.

Estimates for the **DRC** show that the city of Kinshasa alone consumes a volume of informal sawnwood of about 146,000 $m^3$ per year, most of which is processed inside the city. This assessment only considers the timber inflows in Kinshasa by day and not by night. It is therefore conservative. Official figures show that industrial sawnwood exports amounted to about 28,645 $m^3$ in 2008. Although official figures are notoriously incomplete in DRC, collected data in Kinshasa show that the informal timber production for domestic markets is far above the formal one.

Finally, in **CAR**, assessments of timber sales in Bangui indicate a volume of about 67,000 $m^3$ per year, while CAR officially exported 41,000 $m^3$ of sawnwood in 2009. On top of that, part of the small scale sawnwood is bought by Chad traders and is thus not sold in urban markets.

***Table 4.3: Informal production and export of sawnwood ($m^3$)***

| | Cameroon (Yaoundé, Douala, Bertoua) | Gabon (Libreville) | Congo (Pointe-Noire, Brazzaville) | DRC (Kinshasa) | CAR (Bangui) |
|---|---|---|---|---|---|
| Annual consumption on domestic market: | 860,000 | 70,000 | 109,500 | 146,000[26] | 67,000 |
| - industrial scraps or small scale permits | 198,000 | 20,000 | 10,500 | | 34,000 |
| - informal chainsaw milling | 662,000 | 50,000 | 99,000 | | 33,000 |
| Annual domestic consumption *per capita* | 0.072 | 0.064 | 0.047 | 0.018 | 0.083 |
| Sawnwood export - formal sector (2009) | 343,000 | 150,000 | 93,000 | 29,000 | 41,000 |

*Source: CIFOR*

The ratio of timber consumption per inhabitant (table 4.3) in Gabon (about 1.1 million inhabitants in the Libreville area), Cameroon (about 12 million inhabitants in the southern part of the country), in Bangui (800,000 inhabitants) and Congo (2.3 million inhabitants in Pointe-Noire and Brazzaville) is close. It remains quite low in Kinshasa (about 8 million inhabitants), probably in connection with the average livelihoods level in this city, a yet-to-be-completed survey of all timber routes entering the city, and the absence of monitoring of the timber inflows by night.

[26] This assessment only regards artisanal timber coming into Kinshasa by day, with no consideration for the night inflows.

*Photo 4.5: Lengthwise sawing of logs is a regular activity*


Overall, chainsaw timber production in the Congo Basin, albeit largely informal, is much more important than suggested in the regulatory frameworks and official data. In all these countries, the reported timber volumes and the social dynamics behind the informal timber sector call for its long-awaited acknowledgement by policy makers and its better integration in current and future forest policies.

Results also show that the informal timber sector provides thousands of jobs in the different countries considered. In Pointe-Noire, Brazzaville and Libreville, approximately 1,000 people derive their income directly from timber sales, while in the cities sampled in Cameroon, about 4,000 people sell timber. These estimates only consider the last, and easiest to quantify, part of the value chain[27]: the selling. But they do not include the thousands of jobs provided in rural areas as harvesters, carriers, and many other. In Cameroon alone, the total number of people employed by chainsaw milling is estimated at about 45,000, about 3 times the number of direct jobs provided by the industrial timber sector. This sector constitutes an important source of revenue for rural people and provides urban consumers with cheap timber commodities. However, its influence on the national economies depends on the long-term availability of the resource: a rough analysis of the ecological impacts of chainsaw milling in Cameroon indicates that this activity must be better regulated to become a persistent source of development at the country level (Lescuyer *et al.,* 2009a).

## Socio-economic impacts at the local scale

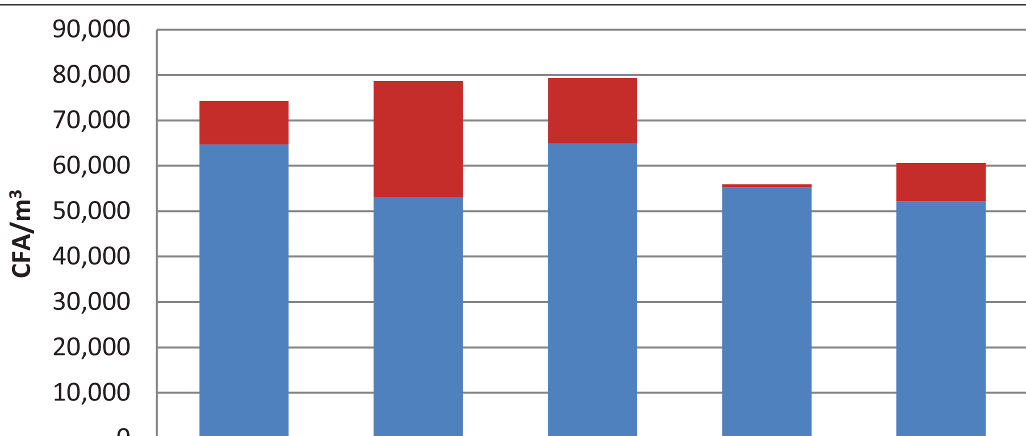
About 800 surveys were conducted in rural Cameroon (Cerutti & Lescuyer, 2011), CAR (Lescuyer *et al.,* 2010), Gabon (Lescuyer *et al.,* 2011a), the Eastern Province of DRC (Lescuyer, 2010a) and Congo (Lescuyer *et al.*, 2011b) to appreciate the dynamics of upstream operations, i.e. regarding all that happens before timber is sold to an urban trader or consumer. Data collected and information from interviews indicate informal logging and wood processing activities to be usually profitable (figure 4.1).

[27]Value chain that goes from harvesting to transport to selling.

**Box 4.1: *Small scale logging for export***

Apart from feeding national consumptions, many small scale loggers are export-oriented. This informal activity is pushed by substantial demands for timber in the neighboring countries or beyond. Most of this timber is not recorded in the national export statistics while it may provide significant revenues to concerned stakeholders. Four main exit points of informal timber have been documented in the Congo Basin countries:

- **From Cameroon to Chad**: 80,000 $m^3$ of timber reach the northern regions of Cameroon every year, most of it being in transit to the Chad border (Cerutti & Lescuyer, 2011). Around 60 % of the volume comes from informal chainsaw operations. This timber from Cameroon may reach North Africa urban markets;
- **From Cameroon to Nigeria**: the south-west region of Cameroon provides around 12,000 $m^3$ of sawnwood to Nigeria every year (Cerutti & Lescuyer, 2011). This trade is entirely informal;
- **From CAR to Chad**: At least 6,000 $m^3$ are exported every year from Bangui to Chad. Most of this sawnwood originates from informal activities;
- **From DRC to Uganda**: while the official export of timber to Uganda amounts to an average of 5,000 $m^3$ over the recent years (Umunay & Makana, 2009), the actual flows seem to reach between 30,000 and 50,000 $m^3$ every year (Adebu & Kay, 2010). Part of this DRC timber goes to Kenya and other East African markets.




| | Cameroon | Gabon | Congo | CAR | DRC |
|---|---|---|---|---|---|
| Total profit | 9,591 | 25,646 | 14,423 | 624 | 8,389 |
| Total cost | 64,692 | 53,045 | 64,899 | 55,300 | 52,221 |

*Figure 4.1: Upstream costs and benefits of chainsaw milling*
*Sources: Cerutti & Lescuyer, 2011; Lescuyer et al., 2010; Lescuyer et al., 2011a; Lescuyer, 2010a and Lescuyer et al., 2011b*

On average in Cameroon, profits for chainsaw loggers are about CFA 10,000 per cubic meter of sawn timber, while operating costs are at about CFA 65,000 per cubic meter. The profit margin is about 13 % in Cameroon and DRC, but rises to 18 % in Congo and even 32 % in Gabon. Surprisingly, the profit is very low in CAR, mainly in reason of the low price of timber on the domestic market and of the high number of administrative seizures (Lescuyer *et al.*, 2010). However, this low profit is partly compensated by the wage of the sawyer who, most of the time, is also the trader of the sawnwood. But, all in all, most sawyers are largely indebted in CAR, which tends to push them to harvest new trees to extinguish their debts.


***Photo 4.6: Portable circular saws are increasingly used by local operators***

It is useful to distinguish different modes of operation and/or marketing of sawnwood in rural areas. There exists, in fact, a significant difference between on the one hand, semi-professional sawyers producing timber products on the basis of specific market prior requests and, on the other hand, rural loggers in need of cash who cut and then find a customer. Although the difference between these two business models is negligible in Gabon, it is important in Cameroon. Semi-professional millers, with better equipment, financial means and political sponsors, produce a profit of about CFA 15,000 per cubic meter, while the profit of freelance rural sawyers tends to zero. The latter are frequently subjected to external pressures, including the seizure of all their wood, which reduces their average profit margins.

All in all, chainsaw milling provides financial contributions to rural economies which are largely ignored in official statistics and policies. In fact, most expenses paid by sawyers are revenues for the rural people living close to harvesting sites (figure 4.2). In Cameroon for example, almost 50 % of the operating costs are made up of payments to the local workforce while 7 % of the total cost is the remuneration of the customary owner of the felled tree. In Gabon, wages make up 55 % of the total cost, while compensation to the customary owner is lower than in Cameroon. In CAR, the significant cost related to spare parts and oil is due to the poor equipment of the sawyers based around Bangui. In the Eastern Province of DRC, transportation costs are the major expenses due to the focus by the distant urban markets – mainly from Kivu and Uganda – on timber red species. In Congo, mainly around Pointe-Noire, the level of the informal taxes and transportation costs is impressive at about CFA 12,000 per cubic meter produced: it is due to the location of the chainsaw milling that operates near or even within a national park.

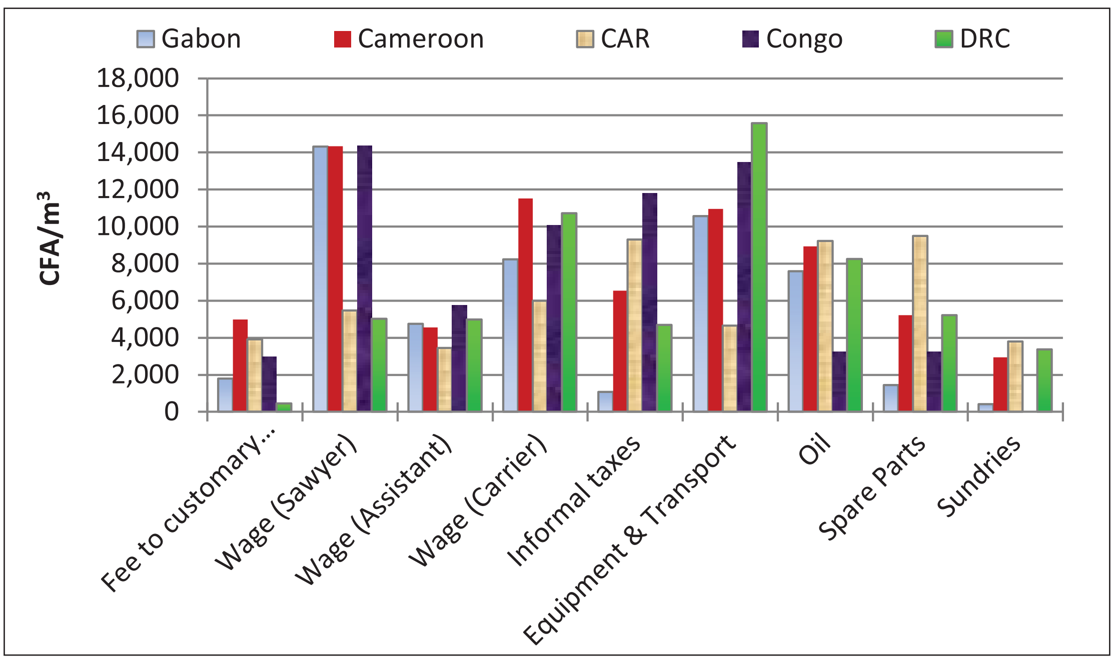



*Figure 4.2: Distribution of chainsaw milling costs by production factors*
*Sources: Cerutti & Lescuyer, 2011; Lescuyer et al., 2010; Lescuyer et al., 2011a; Lescuyer, 2010a and Lescuyer et al., 2011b*

Given the total volume of sawnwood sold on the domestic market (see the Timber sales section), the financial gain (aggregating local wages, fees and profits) generated by the informal sector is estimated around CFA 30 billion per year for Cameroon, 6.4 billion for Congo, 2.7 billion for Gabon (around Libreville only) and almost 640 million in CAR (around Bangui only). In all countries, this activity has become a significant source of revenues for the rural economies.

The informal use of timber is a source of income also for actors outside the village economy, such as government officials and local elites, as they require payments for allowing smooth execution of activities by chainsaw millers and timber sellers. These payments are on average about 2-3 % of total operating cost in Gabon, up to 9 % in Cameroon and DRC, and 17-18 % in CAR and Congo (figure 4.2). This may represent a small transaction cost for chainsaw millers, given the overall positive impact of harvesting activities on the village economies. However, informal payments – indicating how much the millers are willing to pay – may also be considered as revenue losses by the State, and if they are extrapolated to the overall volume of informal production, those losses result in about CFA 4.3 billion in Cameroon, 1.1 billion in Congo, 307 million in CAR, and 53 million in Gabon.

Indeed, when asked about the most important problems encountered in carrying out their activities, chainsaw millers and timber sellers list administrative harassment and abuses of power by various authorities on top of their lists (table 4.4).


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***Photo 4.7:* Log sawn into lengthwise planks**

***Table 4.4: List of problems reported by chainsaw millers and timber sellers (in % of the answers)***

| | Gabon | Cameroon | Congo | CAR |
|---|---|---|---|---|
| Administrative hassles | 41 | 71 | 90 | 93 |
| Abuse of power (businessmen, clients, workers) | 10 | 41 | 5 | 25 |
| Technical (mechanical) problems | 17 | 13 | 55 | 68 |
| Difficulty in accessing a legal title | 13 | 10 | 11 | 4 |
| Lack of infrastructures | 8 | 11 | 20 | 7 |
| Relations with customary owners | 5 | 22 | - | 14 |
| Lack of capital | 3 | 7 | - | 7 |
| Rarity of the resource | 2 | 11 | 3 | 4 |

*Sources: Cerutti & Lescuyer, 2011; Lescuyer et al., 2010; Lescuyer et al., 2011a; Lescuyer et al., 2011b*

Similar concerns have been identified in Cameroon, Gabon, CAR and in Congo, ranging from technical issues to problems related to establishing effective trade networks. Importantly, table 4.4 also shows that only a small fraction of interviewees list the difficulty in accessing a legal title as a problem. Thus, not only the vast majority of chainsaw millers harvest without a legal title, but the lack of the latter is clearly not even a major concern for operators in these four countries. This may indicate that, if one agrees to play by the rules of well established informal networks, illegal timber harvesting is not a very difficult task to be carried out, as can also be gauged from the number of people engaging in this activity over the last decade.

Although concerns are often raised on the ecological sustainability of chainsaw milling, small scale loggers do not perceive their activities as having negative ecological impacts. In fact, according to interviews conducted with operators, the timber resource is not getting scarcer. Nonetheless, such perception needs be mitigated on a per country basis. In Cameroon and Gabon, for instance, the distance between the logs and the road/river is almost always below 2 km, meaning that most of chainsaw milling activities occur in crop areas, fallows or secondary forests. By contrast, in Congo and DRC, this distance is usually above 3 km for two reasons: (i) the exhaustion of various timber species, like okoumé in the southern part of Congo; and (ii) the search for big trees likely to produce large pieces of sawnwood to answer urban demands, like in the Eastern Province of DRC.

At the Congo Basin scale, the informal nature of chainsaw milling does not necessary go with a quick degradation of the forest resources: policies to reduce the environmental impacts of chainsaw milling must be conceived on the basis of the specific socio-economic contexts and dynamics.

## Products and prices from chainsaw milling

Selling prices of sawn timber vary by quality, type, origin of product and timber species. In Cameroon, average prices for planks and formworks of ayous (21 % of total sales) can reach respectively up to € 26 and € 24 per cubic meter RWE (table 4.5).

***Table 4.5: Selling prices of the most used products of ayous in Cameroon***

| A. Product | B. Sales on the domestic market (%) | C. Selling price Chainsaw milling (€/m$^3$ RWE) | D. FOB price Formal sector in 2009 (€/m$^3$ RWE) | E. Price on the domestic market compared with the export price (C/D) (%) |
|---|---|---|---|---|
| Plank | 4.7 | 26 | 140 | 18.6 |
| Formwork | 16.3 | 24 | 140 | 17.1 |

*Source: Cerutti & Lescuyer, 2011*

In Cameroon, the prices of products sold on the domestic market (column C, table 4.5) are on average about 80 % lower for timber sourced from chainsaw milling than the FOB prices – linked to the international market – applied for the industry (columns D and E, table 4.5). Several reasons may justify such differences. First and foremost, the quality of the final product required by the international market is higher, and specifications stricter. Also, domestic timber is not charged with formal taxes - stumpage, sawmill entry, export - and production costs are thus lower than industrial ones. Prices may also be lower because there is much more competition on the domestic market, with thousands of chainsaw millers able to source the market, than on the industrial one, where only a handful of logging companies specialise on few products and species. Also, access to timber is much cheaper for chainsaw millers, as the commercial value of trees is under-estimated by customary owners, makes it possible for chainsaw millers to pay very low prices for valuable tree species.

## Conclusion and future prospects

The role of chainsaw lumber production in the forestry sectors of the countries of the Congo Basin has generally been neglected by official policies and is under-researched. Overall, there has been a trend for chainsaw and informal lumbering to develop in parallel with the industrial timber sector, which has been facilitated by the lack of adapted legal frameworks and the widespread vested interests (decentralised civil servants, urban businessmen, military forces ...), among other factors. As a consequence, data about the sector, as well about its impacts on rural and national economies, are often excluded from official statistics. On the other hand, all Congo Basin countries (except the CAR) are today involved in the FLEGT/VPA (see chapter 2) process that requires that all wood commodities – be it for export or for domestic consumption – are legally produced and tracked. This puts a massive pressure on States to recognize, legalize and organize the informal sawnwood sectors.

Results of this chapter show that the domestic timber market has been booming in recent years, with an overall annual production – about 1.25 million m$^3$ of processed products – greater than the industrial one, and with important impacts on local economies, rural livelihoods, and governance.

The challenges ahead, however, in order to professionalize, formalize and improve the sector's contribution to the formal national economies, are many. Results show that public policies and national strategies have not yet been developed to drive the sector through a formal, transparent, and equitable growth. This forces thousands of people to produce and sell illegal timber, because of the lack of a legal framework where to develop their activities, and also because many vested interests challenge the development of a national formal timber market.

Although illegality is not considered as a problem by most chainsaw millers and even constitutes a profitable source of money for corrupt civil servants, the States of Central Africa will find a great economic and financial interest to formalize this activity. Both coercive and incentives measures are to be considered. First and foremost, they should aim at facilitating access to legal authorisations for chainsaw millers, with the development of *ad hoc* legal frameworks more adapted to the needs of local actors than those of the central administrations. In that sense, the adoption and decentralised granting of logging authorisations is a necessary first step. Second, reform should aim at professionalizing chainsaw millers, while concurrently providing workable incentive schemes for civil servants, in order to decrease current corrupt practices. Coupled with incentive schemes, though, an effort is also urgently required by the concerned governments to issue and implement effective sanctions for civil servants that participate in corrupt practices, in order for the overall governance of the sector to be improved.


***Photo 4.8: Logs serve as the primary building material for pirogues and locally constructed fishing boats***