The timber domestic sector in Cameroon

Preliminary analysis and issues

Guillaume LESCUYER$^{1,2}$, Paolo Omar CERUTTI$^{1,3}$, Samuel ASSEMBe$^1$, Edouard ESSIANE$^1$, Joachim NGUIEBOURI$^1$, Jean Pamphile ONDOUA$^1$

$^1$Center for International Forestry Research (CIFOR) – Central Africa Regional Office

$^2$Centre de Coopération Internationale en Recherche Agronomique pour le Développement (CIRAD)

$^3$Australian National University (ANU)

Abstract

The domestic timber sector, and the drivers behind its expansions and contractions, have generally been under-researched in the countries of the Congo-Basin. Cameroon, for instance, experienced a steady and substantial growth in timber production during the economic boom, from 1970 to 1986, which was mainly driven by a growing domestic market. Later on, official timber production stagnated during the economic crisis, and then boosted again after the devaluation of the CFA Franc in 1994, but it became too expensive for the local population, and was entirely export-oriented. The gradual improvement of the economic conditions in the last 15 years, and the lack of alternative sources of income, pushed many Cameroonians to become small-scale loggers and source hundreds of local markets, as well as to develop flourishing timber exporting networks on routes reaching as far as the countries of Northern Africa. Notwithstanding
its importance for national economies, the domestic timber sector is neither part of official statistics nor considered by public policies and normative frameworks in the countries of the Congo Basin. In fact, it has kept growing in what is commonly referred to as the informal sector, with most activities taking place without logging titles, and with no formal taxes collected. The provisional results of this research quantify the unprecedented scale of the domestic timber market in Cameroon, with about 1 million m³ of processes timber products sold per year. Moreover, we show how the sector generates important revenues, making it one of the most important source of livelihoods for a growing number of people. We argue a formal legal framework is needed to regulate and professionalise the domestic timber market in Cameroon and in other countries of the Congo Basin, in order to streamline forestry operations, improve the governance of the sector, and manage its ecological impacts.

**Forest status**

The Cameroonian Ministry of Forests and Wildlife estimates the forest cover of the country at about 22.5 million hectares (PFBC 2007; MINFOF 2008). More recent estimates, however, list about 19.6 million hectares (PFBC 2007).

Over the years, Cameroonians' deforestation rates varied widely according to the method and the period used for the assessment (Ndoye and Kaimowitz 2000; Wunder 2003; Gbetnkom 2005; MINFOF and FAO 2005). In 2005, the Ministry and the FAO (2005) estimated the rate of deforestation in Cameroon over the previous 30 years at about 100,000 hectares per year (0.48%/yr), while more recent estimates focussing only on forested areas indicate much lower rates (0.14%/yr), albeit over the decade 1990-2000 (Duveiller et al. 2008). Fuelwood collection and agricultural expansion are often listed among the main causes of forest loss (MINFOF and FAO 2005), while logging is mostly mentioned in the literature as a source of forest degradation (Gbetnkom 2005).

To regulate the use of its forests, in 1994 Cameroon adopted a new forest law, and divided its forests into a permanent and a non-permanent forest domains (PFD and NPFD). In Cameroon, the PFD covers about 14 million hectares and includes land permanently allocated to forests and/or wildlife habitats, and the NPFD covers about 5
million hectares and includes forested lands that can potentially be allocated to other land uses.

The PFD is made up of production and protection forests, and they represent, respectively, about 60 percent and 40 percent of the total PFD area (MINFOF 2008). Production forests are divided into about 100 logging concessions in Cameroon, auctioned to industrial logging companies who can harvest them for a period of 15 years renewable once, and about 15 council forests, while protection forests include national parks and wildlife reserves.

Management plans, to be prepared in line with the widely used ITTO’s principles, criteria, and indicators (ITTO and OAB 2005), are required for all logging and conservation activities in the PFD. Logging companies are granted 3-years provisional harvesting contracts during which they can harvest timber but they also must prepare and submit a management plan to the Ministry, who approves it or demands modifications to be made.

Management plans started to be approved in 2004 and, as of mid-2009, about 65 concessions had approved plans, covering an area of about 4.5 million ha representing about 65% of the total concessions' area (MINFOF 2009).

Timber harvesting also takes place in the NPFD, through logging titles such as sales of standing volume (SSV) and timber recovery permits (TRP), which are allocated by the Ministry.

The law does not require logging in the NPFD to take place following the principles of sustainable forest management as it requires in the PFD, and thus SSV and TRP are short-term logging titles lasting from few months up to a maximum of three years. An exception is represented by community forests, which are located in the NPFD but none the less need the approval of a simplified management plan before any logging activity can take place (Cerutti and Tacconi 2008).

Forest and wood industry

The industrial part of the forestry sectors of Cameroon has been fairly well researched in recent years, especially after the adoption of the new forest code, which
established well delimited production areas, mostly in the form of logging concessions, and introduced the principles of SFM to be implemented through management plans.

On the contrary, the domestic timber market, and the drivers behind its historical expansions and contractions, have generally been under-researched in the countries of the Congo-Basin, and for several years now they have also been unaccounted for in national statistics.

Cameroon, for instance, experienced a steady and substantial growth in timber production during the economic boom, from 1970 to 1986, which was mainly driven by a growing domestic market, notably for infrastructures and urban construction. Official timber production stagnated during the economic crisis, and then boosted again after the devaluation of the CFA Franc in 1994, but it became too expensive for the local population, and was entirely export-oriented.

In the last 15 years, with the country under structural adjustment but with slowly raising living standards, the introduction of the logging concession model, and the greater focus of the international donors on the revenues that the industrial timber sector could generate for the State, the domestic timber sector has kept growing as a background phenomenon.

In fact, the gradual improvement of the economic conditions and the lack of alternative source of income pushed very many Cameroonians to become small-scale loggers and source hundreds of local markets in Yaoundé, the capital city, Douala and Bafoussam, to name but the most important, as well as develop flourishing exporting networks on routes also reaching the countries of Northern Africa.

Surprisingly, official statistics and public policies in Cameroon have been ignoring this booming sector, which has kept growing in what is commonly referred to as the informal sector. Indeed, most activities take place without logging titles, and without formal taxes being collected by the administration.

The next two sections describe in more details these two different sectors.

*The industrial forestry sector*

Official timber production in recent years is shown in Figure 1.
After the 50% devaluation of the CFA Franc in 1994, the forestry sector in Cameroon became export-led and production increased to record levels, notably because the local costs of harvesting decreased while international prices were not affected by the devaluation (Ndoye and Kaimowitz 2000). In 1999, however, timber production decreased to pre-1990s levels. Several reasons can explain this abrupt decrease in timber production. First, Cameroon was not spared by the economic crisis that hit Asian countries in 1997. For instance, demand from countries such as Japan and the Philippines, which were experiencing an economic boom prior to the crisis, almost halted in 1998 with direct consequences on timber production for, and exports to, those countries. Second, the Ministry allowed logging licences that were still active in 1994 to reach their legal expiration date, which happened in the second half of the 1990s, but over the same period the pace of attribution of the new logging concessions did not follow, and thus many logging companies lost legal access to the resource while not being able to bid for new logging titles. The situation partly improved in 2000 and 2001, with two auctions taking place, but since then production has been stable around 2-2.2 million m$^3$, mostly because, as said, logging concessions must be harvested following SFM principles.
As far as timber exports are concerned, it must be noted upfront that, although the Cameroonian legal framework tried to boost its domestic processing capacity in order to create more added value, the results of this policy have been only partially fulfilled.

In fact, although the domestic processing capacity did increase from the 1980s and 1990s to more recent years (ONF-International et al. 2002), the country has not yet been able to push timber processing beyond the most rudimentary transformation on a national scale. Logging companies were forced by the legal prescriptions to build sawmills, which they did, but only few companies invested in modern and efficient sawmills able to produce valuable finished products.

Those are the main reasons why, to date, logs and sawnwood are still the most exported products (Figure 2), with veneers and plywood and further processed products representing only a tiny minority of total exports.

**Figure 2. Official timber exports (1995-2008)**

Figure 2 clearly shows the impact of the partial log-export ban enacted by Cameroon in 1999. Log exports abruptly decreased from about 1.8 million m³ in 1998 to about 200,000 m³ in 2001, a value which remained stable ever since. On a different pattern, sawnwood exports from Cameroon almost tripled from 1995 to 2008, and stabilised at about 600,000 m³ in recent years.
To date, timber processing capacity is about 2.2-2.3 million m³ (Eba'a Atyi 1998; ONF-International *et al.* 2002). Unless new logging concessions are created and auctioned, the Cameroonian timber processing capacity should not vary much in coming years.

Logging concessions provide the vast majority of the timber produced and exported by industrial logging companies. Concessions and few other logging titles also provide the vast majority of the production and exports recorded in official statistics.

None the less, national timber production is made of industrial timber as well as timber generally produced by small- to medium-scale logging companies or individuals. Unfortunately, the latter production, and the domestic timber sector developing around it, has remained surprisingly unaccounted for in both national statistics and national policies. The next section provides a brief history of the domestic timber sector.

*The domestic timber sector*

The number of Cameroonians involved in logging activities grew significantly during the period of economic depression, at the end of the 1980s, and was further boosted in the second half of the 1990s by the delay in the attribution of concessions and the consequent lack of timber for large-scale operators. The number of national accredited loggers grew from 296 in 1987 (Eba'a Atyi 1998) to 519 in fiscal year 1997/98.

Although the number of officially accredited loggers almost doubled, the Ministry officially delivered only very few new logging titles to industrial companies or logging authorisations to small- and medium-scale loggers in the second half of the 1990s. This trend helped boosting illegal logging, both industrial and small-scale (Cerutti and Tacconi 2008), also because in 1999 the Ministry officially suspended, and made illegal, all logging titles and authorisations previewed in the 1994 law for small- and medium-scale loggers (Cerutti and Tacconi 2006).

The amount of wood harvested by individuals or small enterprises grew from 250,000 m³ in 1996 (Enviro-Protect 1997) to 500,000 m³ in 2000 (MINEFI 2000). In 2002 one short-term assessment was carried out on several markets in Yaoundé and
Douala (Plouvier et al. 2002). Its results, extrapolated to the entire country and to an entire year, estimated the timber consumption of the domestic timber sector at about 1 million m³ (Round-Wood Equivalent, RWE), of which about 10% entered the official export market, i.e. the Port of Douala, and the rest was consumed locally. In 2005, a brief analysis carried out on some markets in Yaoundé reached similar conclusions (JMN Consultant 2005).

Considering that 40% of the timber used domestically was estimated, in the same years, to be sourced from industrial scraps (ONF-International et al. 2002; Plouvier et al. 2002), the total harvest for domestic consumption could be estimated at about 540,000 m³ RWE unaccounted for in official production statistics.

We find available figures on the production of timber by small- and medium-scale loggers are a gross under-estimation. Before presenting the preliminary results of this research in a further section, let us detail the materials and methods used.

**Materials and methods**

Domestic timber markets in Yaoundé, the capital city, Douala, the business capital of Cameroon, and Bertoua and its satellites cities, in the Eastern Province, were assessed. Yaoundé and Douala were selected because they are the two largest cities in Cameroon, where construction activities are more developed and where most of the timber harvested in rural Cameroon is sold. Moreover, they had been used as sample cities in past assessments of the domestic market (Plouvier et al. 2002). Bertoua and its satellite cities in the Eastern Region were selected because, in recent years, timber harvested in the East, the largest forested Region of Cameroon, and exported through the northern Regions of Cameroon, or transported to Yaoundé via the rail, has been described as an increasing phenomenon (e.g. Koffi 2005).

Overall, 46 markets were counted in the three cities, each market including multiple points of sales with different owners (dépots in French and 'stores' hereinafter). A sample of 34 markets was selected for data collection, representing 811 stores, or about 92% of total stores counted in the three cities (Table 1). After a preliminary visit to all counted markets, the sample was selected following criteria of accessibility (not all
markets' representatives agreed to be part of the data collection effort), markets' size (the average number of stores in sampled markets is about 33 while the average number of stores in non-sampled markets is about 6), and optimisation of available funds (ceteris paribus, markets with more stores required similar financial efforts in terms of working days than smaller markets, and thus the former were selected).

Table 1. Cities and markets' sample

<table>
<thead>
<tr>
<th>City</th>
<th>A. Markets with data collection</th>
<th>B. Stores in A</th>
<th>C. Total markets</th>
<th>D. Total stores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bertoua</td>
<td>2</td>
<td>47</td>
<td>2</td>
<td>47</td>
</tr>
<tr>
<td>Yaounde</td>
<td>12</td>
<td>544</td>
<td>22</td>
<td>610</td>
</tr>
<tr>
<td>Douala</td>
<td>20</td>
<td>220</td>
<td>22</td>
<td>228</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>34</strong></td>
<td><strong>811</strong></td>
<td><strong>46</strong></td>
<td><strong>885</strong></td>
</tr>
</tbody>
</table>

Within markets, an average of 30% of stores were selected for data collection. In the largest markets, where the availability of funds was the limiting factor to a larger number of stores to be followed, stores were selected according to their size, and attention was paid to select the average size, according to preliminary visits and interviews with local experts.

In sampled stores, data were collected following a questionnaire developed for this study by taking into account all available previous studies (Plouvier et al. 2002; JMN Consultant 2005), in order to be able to compare results to the maximum extent possible.

A major difference with all previous assessments, however, was that data were collected weekly on each store, for a minimum period of 12 months, in order to account for differences in the domestic market due to seasonality of activities.

The same procedure (development of a questionnaire, interviews and data collection) was followed for the economic and commodity chain analysis, with the main difference that, instead of city markets, about 180 small-scale forestry operations were followed in 33 councils located in the Center, South, East, and Littoral Regions. Data on the costs and benefits of forestry operations were collected as well as data on the location of harvesting.

Collected data were then entered into a database, checked for consistency, and eventually analysed.
The chainsaw lumber production situation

The legal framework of the domestic timber market

One of the general objectives of the Cameroonian forest policy is to support the participation of nationals in the forestry sector. As said, the 1994 forest law provides several types of logging titles and authorisations for nationals to access the forest resources, notably in the NPFD. They are in particular the licenses/permits of exploitation, the personal/individual authorizations of harvesting wood, community forests and the user rights by the people who live along the forest areas. These titles and authorizations can be granted only to Cameroonian nationals.

According to provisions of the Article 56 of the 1994 law, the license/permit of exploitation is an administrative authorization of harvesting of the particular forest products, in the NPFD, for a maximum of 500 m$^3$. Licenses are granted for one year and the holder must sign and respect book specifications with the local forest administration.

Personal/individual authorization of cutting wood are defined as an individual permit of harvesting wood which cannot exceed 30 m$^3$, but only for non-commercial use. The personal authorization is delivered by the regional delegate of the forests department, for a period not exceeding 3 months. In principle, personal authorizations are intended for those people who cannot use the user rights granted exclusively to the local native neighbours of a given forest area.

The tax system in place for these logging titles appears rather vague when one examines the provisions of the law. According to article 66(2) the owners of the licences of exploitation and the personal authorizations must pay the selling prices of timber to the owner, but further clarification on the nature of such taxes is missing.

In 1999, the Ministry suspended all small-scale logging titles, on the ground that they were used to source illegal timber. Although the suspension remained active until 2006, the Ministry had no means to control and manage activities on the ground, and thus small-scale logging continued unabated (Cerutti and Tacconi 2008). In fact, instead of
reducing illegal logging, the 1999 suspension forced an entire sector to follow the rules of informality, with no possibility of legal harvesting titles and no formal taxes to be paid.

In 2006, when small-scale logging titles were re-activated and almost a hundred of them were auctioned by the Ministry, not a single one was requested by and granted to small-scale loggers, who had developed an informal domestic timber sector which, in fact, did not need formal logging titles to function properly. Indeed, during interviews held for this study, small-scale loggers listed the absence of formal logging titles as one of the least important problems in carrying out their job.

Changes in methods of production over the years

Because of the poor road system and other limiting factors, logging was not an attractive business for rural Cameroonians until the mid-1980s, and only few logging companies, mostly owned by foreigners and using industrial machineries, were operating during that period.

Moreover, the country received its wealth mainly from the export of oil and agricultural products such as cocoa, coffee and cotton, and timber played a marginal role for the national economy. While local energetic needs were filled with hand-sawn or collected fuel wood, the needs in sawnwood for construction or carpentry were filled by the logging industry.

The introduction of the chain-saw in rural areas gradually changed, first and foremost, the traditional shifting cultivation systems, which involve the clearing and burning of primary and old secondary forest just before the rainy season. Secondly, it allowed farmers to start providing building materials also to the local timber market, covering at least part of the role of the timber industry.

In 1986, when the economic crisis struck, the prices of timber products proved more stable than agricultural or oil products, and the relative importance of the forestry sector in the national economy rose progressively, with local loggers replacing industrial companies in the domestic sector.

From 1994 to 1995, just after the 50% devaluation of the CFA Franc, the total number of the enterprises in logging industry grew from 194 to 351, an increase of about
81% (Eba’a Atyi, 1998). The devaluation attracted the business community of Cameroon to logging, certainly because of the available profit margins. The same margins, meanwhile, pushed industrial logging companies to cease supplying the local market, because of the highest prices they could get on the international market (Ndoye and Kaimowitz 2000).

To make the domestic timber sector more efficient and create integrated local small industries, local investors introduced portable saws which replaced in most cases chainsaws. Portable saws are used today in all harvesting operators for processing timber sourced to the domestic market.

Portable saws are often rented from local timber businessmen by small-scale loggers, but the number of them directly bought by small-scale loggers to start their own timber activity is increasing. The most common portable saw used in Cameroon is the brand "Lucas Mill", which is sold now on the market for about 20 million CFA Francs.

According to the timber species and local conditions, portable saws guarantee higher recovery rates and better products than chainsaws, and they can be carried around from one operation to another via the common pick-up trucks used on the roads of rural Cameroon.

Quantitative analysis

The most recent and comprehensive analysis of the domestic timber sector was conducted in 2002 (Plouvier et al. 2002). The authors estimated the annual national volume sold on the domestic market at about 300,000 m³ of sawnwood, produced from about 1 million m³ RWE harvested. They also estimated that 10% of the produced timber entered the export market through Douala and was then shipped to international destinations. Data were collected over a period of 19 days in 2 markets in Yaoundé and 10 days in 2 markets in Douala, the two major cities in Cameroon, between August and September 2002 (Plouvier et al. 2002).

We opted for collecting data over a period of at least 12 months, as explained above, so as to better account for seasonality, which is very important for the timber
market, not only in terms of sales, but especially in terms of the periods when timber can be harvested in the forest.

At present, only data over a 8 months period have been collected and processed, thus an extrapolation over the entire year has been made to estimate annual sales.

Overall, for the 38 existing markets in Yaoundé, Douala and Bertoua, data collected show an estimated total annual amount of sales of about 1.4 million m³ of sawnwood. However, about 15% of sold timber was sourced from industrial sawmills, and thus not directly harvested by small-scale loggers. Moreover, about 14% of the sales recorded, notably in Douala but also in Yaoundé, were sourced from the largest market in Yaoundé (Messa) for re-sale.

Thus, the total estimated annual sales directly sourced from small-scale logging operations amount to about 1 million m³ of sawnwood, which represent more than a threefold increase as compared to the 300,000 m³ estimated by Plouvier et al.'s in 2002 (Plouvier et al. 2002).

As expected, seasonality is very important (Figure 3).

**Figure 3. The effect of seasonality on timber sales**

Data vary among cities, but overall the impact of the rainy season, starting in August and lasting throughout November, is clear and results in a decrease of the amount of timber sold per counter (Figure 3).
Harvested and sold species do not differ much from the species harvested and exported by the industrial sector, with ayous (*Triplochiton scleroxylon*) representing about 42% of total sales, followed by iroko (*Milicia excelsa*) and sapelli (*Entandrophragma cylindricum*) on top of the list (Figure 4).

**Figure 4. Sold species (percentage of total sales)**

![Graph showing species distribution](image)

*Distribution and marketing*

The urban surveys conducted in Douala, Yaoundé and Bertoua clearly show that domestic timber markets are supplied by a very broad range of locations. In fact, informal logging occurs almost in every council in the forested part of Cameroon.

To assess the impacts of informal logging activities on rural economies, 278 in-depth surveys were conducted in 33 councils located in the regions of the East, South and Center, which represent the vast majority of the Cameroonian forest.

On average, informal logging is a profitable activity as the net benefit of small-scale loggers is estimated at about 7,800 CFA/m³ of roundwood. This gain is shared among the sawyer, the conveyor of sawnwood, and the employer, when present, of the sawyer and/or the conveyor.

The average cost to log and saw one cubic meter is close to 22,200 CFA. The financial margin rate is then around 35%.
If we roughly apply this margin to the global informal timber volume sold in Douala, Yaoundé and Bertoua (1 million m³ sawnwood estimated at about 3.3 million m³ RWE with the average transformation rate for Cameroon of about 30%), the overall financial gain estimated at national scale is about 26 billions CFA per year.

It is however important to distinguish two types of informal timber marketing networks.

On the one hand, professional or semi-professional businessmen or loggers who look for timber in rural areas only after securing an order, normally from the cities, from identified and reliable buyers and consumers. Usually, this activity is carried out with good equipment and harvesting and delivery activities very often takes place under the protection of an influential person (politician, businessman, or army officer). Loggers live in or around the village only until they have enough timber to fulfill their order, they are well connected to the urban markets, and they bear operational costs of about 25,000 CFA/m³. Their benefit margin is on average at about 12,000 CFA/m³. This kind of informal logging takes place in about 62% of our case studies.

On the other hand, freelance loggers, who are usually native from the area where logging takes place. Contrary to what happens with professional loggers, marketing of processed timber takes place only after the trees are already logged and sawn. Thus, this type of logger is in a weak position to negotiate the final price with consumers or intermediary buyers. Moreover, freelance loggers also bear all the risks associated with their informal activities, often lacking a "good" protection, and their produce is frequently seized by the authorities. As a result, their benefit margin is almost reduced to zero, at an average of about 130 CFA/m³, while their operational costs reach 15,700 CFA/m³ (Figure 5).

Figure 5. Net benefits and costs per type of informal marketing
It is important to note that the costs borne by the informal logger may constitute a substantial revenue at the local level. Indeed, when considering the structure of above-mentioned average operational costs (22,200/m³), we found that about 50% of the cost is due to the payment of wages to local manpower, mainly sawyer, carriers and assistants, while an average of about 7% (1,600 CFA/m³) is paid to the customary owner of the tree to be logged (Figure 6).

Figure 6. Costs' structure

In other words, an informal logging economy is in place at the village level and brings substantial revenues to many poor rural people. An indirect effect of the expansion
of the informal logging at the village level is that many people employed by this activity devote less time to their traditional extensive cultivations. As a consequence, the new loggers recruit workers to cultivate their food crops fields and pay them with the money earned through informal logging. That is, revenues generated through informal logging are disseminated in the local economic network.

Informal logging revenues also reach external stakeholders, like administration or different elites, mostly in the form of informal taxes. We found that off-the-record, or informal, taxation is often collected by administrative, military, or political authorities, at all levels of the marketing structure. Due to their nature, such informal taxes are difficult to quantify comprehensively. None the less, from the operations followed for this analysis, we could estimate it at about 2,000 CFA/m³, or 9% of the total operational costs (Figure 6).

The latter may seem a reasonable transaction cost, considering the very positive impact of this sector on the local economies. However, from the viewpoint of the State, and when applied to the total volume of informal timber sold on the domestic market as estimated above (in RWE), this transaction cost can be considered as a loss of direct and formal revenues of about 6,6 billion CFA per year.

The majority of the informal timber comes from degraded ecosystems, mainly degraded forests, young/old fallows and cocoa plantations (Figure 7). However, primary, undegraded, forest remains an important source of timber for the informal loggers.

Figure 7. Origin of informal timber
It is noteworthy that primary forests from where informal timber is sourced are almost entirely located in the NPFD. Thus, although the ecological impact remains the same whether a forest is harvested in the PFD or in the NPFD, from a legal point of view forest degradation in the NPFD should not be a concern.

Conflicts and their resolution

The adoption, interpretation, and application of the forest law, and of its gaps and weaknesses, as well as the informal nature of the economic networks described above and the rate of poverty found in rural Cameroon, are at the origin of many conflicts found in rural Cameroon around chainsaw lumber production.

The types of conflicts found in sampled locations are listed and described below:

- At the village level, logging activities foster conflicts among people, such as disputes about the traditional ownership of the resource, or conflicts on revenue sharing. Along the same line, it often happens that the owner of a given trees wants to renegotiate a pre-established selling price after processing has taken place, because he or she has a better idea of the amount of timber that can be sold after the tree has been processed into sawnwood;
• Conflicts are also frequent between the (mostly allochthonous) sawyers and local inhabitants, because when sawyers reside and operate in a village, they manage to contact debts that they are not able to pay at the end of their work;

• Conflicts may also take place between the city-based businessmen or loggers and the local sawyers, often on working conditions and remunerations which are discussed but not respected or maintained by the former;

• Another type of conflicts arise when the prescriptions of the law and customary rights are misinterpreted by the agents supposed to enforce it. For instance, it often happens that customary owners are not aware that a logger has been authorised (formally or informally) by the administration to harvest timber within their customary land.

Despite the multiple forms that conflicts may take on the grounds, we also found that most parties prefer to negotiate their way out of conflict, avoiding violent or physical confrontations.

Three main forms of conflict management were found, according to the actors involved.

At the level of the villages, it is the council of the eldest that is consulted when the conflict is about the ownership of the litigious space containing the resource. Negotiations and payments occur following customary laws, except when there is aggravation, in which case the conflict is brought forward to the qualified administration.

If conflicts occur between businessmen or loggers and their employees, they are usually solved through the use of formal contracts and the acknowledgement of debts by the defaulting party.

When conflicts arise between the administration and other concerned parties, the payment by the defaulting party is made by application of the laws in force, or by an arrangement, which occur through negotiations, between the contravener and the officer in charge of the execution of the law.
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