



**International Tropical
Timber Organization**



**de la part du
Peuple japonais**

PD 700/13 Rev.2 (I) :

**DEVELOPMENT OF INTRA-AFRICAN TRADE AND FURTHER PROCESSING IN
TROPICAL TIMBER AND TIMBER PRODUCTS – PHASE I [STAGE 1]**

**Domestic markets, cross-border trade and the role of the informal sector in
Côte d'Ivoire, Cameroon and the Democratic Republic of the Congo**

(Activities A4.1.1 and A4.1.2)





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**Domestic markets, cross-border trade and the role of the informal sector in
Cote d'Ivoire, Cameroon and the Democratic Republic of the Congo**

(Activities A4.1.1 and A4.1.2)

Executed by : *CIFOR* (Center for International Forestry Research)



Executive Summary

Studies conducted by CIFOR and partners in the Congo Basin and Ghana have shown that domestic timber markets in ITTO-producer countries are mainly supplied by small-scale sawmillers who are operating more or less legally. It is therefore critical to focus on small-scale timber producers when studying the dynamics of the domestic timber sector in African countries. It is also important to understand how policies and tools can be used to promote intra-African timber trade while strengthening legality in the domestic sector in the different countries with national realities.

The studies reported in this document addressed this need by conducting an in-depth country study in Cote d'Ivoire. It also built and expanded on the recent assessments of the inter-African timber trade conducted in Cameroon and the DRC.

The objective of this work which contributes to the general objectives of project PD 700/13 Rev.2 (I) and notably to its activities A4.1.1 (Baseline study on domestic markets, cross-border trade and the role of the informal sector in one pilot country in West Africa) and A4.1.2 (Baseline studies in two pilot countries in the Congo Basin), is to prepare baseline studies on the domestic market situation, cross-border trade and the role of the informal sector to serve as a basis for (i) policy design for promoting domestic and intra-regional trade of timber and timber products, (ii) improving legal compliance of production and trade, (iii) better integration of the informal timber sector in the formal activities, and (iv) design of future support to production and trade from legal and sustainable sources.

To study the domestic timber market in Côte d'Ivoire, a scoping survey of the timber market in the main cities of Côte d'Ivoire was conducted in May 2015. Five cities were selected for data collection: Abidjan, Bouake, Gagnoa, San Pedro and Yamoussoukro. From a total number of 645 inventoried in the five main cities of Côte d'Ivoire, 77 were monitored for 6 months. Data were collected on 1 day per week, always the same day (while avoiding the busiest days). The data collected entailed: number of employees (full time and part time), salary estimates, type of products sold, timber species, size of products, origin of the products, stocks, daily deliveries, number of pieces of wood sold on the survey day and the sales prices.

The estimation of timber flows between neighboring countries started with a scoping mission to identify the main routes for timber export/import between the countries and to locate the key transit sites where surveys could be conducted and data collected. Once the transit sites had been identified, data collectors were chosen and trained to fill in standardized survey forms. The survey forms were tested over a couple of weeks. Data was mostly collected from timber laden at each key transit site on: time, type of vehicle, load (one-quarter full, half full, three-quarters full, full or overloaded), products transported and species.

The main constraints of the study were related to the time frame. In some cases, there was less than six months of field data collection in each survey site. Because of seasonal variations in timber harvesting and export flows, the results of the studies would have gained in robustness were it possible for data collection to be carried out during a full seasonal cycle (12 months) to encompass rainy and dry seasons.

Additional constraints came from exceptional difficult socio-political contexts. Political unrest that erupted in mid-2015 at the border between DRC and Burundi where the first task was to collect data on timber product flows affected the data collection. Similarly, northern Cameroon where a significant proportion of timber products destined for transit to Nigeria was a war zone (Boko Haram insurgency) during the data collection period. As a result, part of the timber flows from Cameroon to Nigeria could not be monitored.

Furthermore, the first intention was to monitor the exchange of timber products between Côte d'Ivoire and Liberia. Here, it was hypothesized that because of differences with neighboring countries, Côte d'Ivoire would instead import timber from Liberia rather than export it. But the outbreak of the Ebola virus disease forced the Government of Côte d'Ivoire to temporarily close the border.

The domestic consumption recorded in Côte d'Ivoire (over 7–8 months and extrapolated to all markets and over an entire year) totals about 1.9 million m³ of sawn wood. About 17% of the recorded sales were “double counts”, i.e. the timber sold to the final consumer had been bought from another market. This is especially the case in large markets in Abidjan, such as Koumassi, where timber might have been bought as far away as San Pedro. Also, 73% of the total consumption is from industrial or semi-industrial sawmills, while the remaining (27% or 515,000 m³) is produced by artisanal millers.

By applying a standard processing rate of 50% for the industry in Côte d'Ivoire (i.e. 2 m³ of logs are needed to produce about 1 m³ of sawn wood), total consumption in roundwood equivalent (RWE) would correspond to about 3.9 million m³ of harvested timber.

Such figures are not too distant from what one would expect in terms of domestic timber consumption from a country like Côte d'Ivoire, which is experiencing an absolute boom in terms of development of infrastructures and construction works. In particular, a study conducted by FAO (1991) estimated the domestic consumption of timber at about 0.13 m³ of roundwood (i.e. logs) per inhabitant. Fifteen years later, our estimates in consumption per inhabitant (population of 23 million) of about 0.17, indicate an increase from 1991, which seems to be justified by the current economic condition in the country.

Data also indicate that artisanal logging is an important source of income for people in both rural and urban areas. About 57% of chainsaw millers operate in their region of origin and the income generated is mainly reinvested in cocoa, coffee and cashew plantations.

Since 2013, artisanal sawmilling has been banned by decree in Côte d'Ivoire. Yet, as data indicate, such a ban has had very little effect on the local demand for and consumption of timber. In fact, partly because of the generalized criminalization of chainsaw milling occurring under the ban, the forestry administration has had very little incentives to put in place both an adapted regulatory framework and a monitoring system for the socioeconomic and environmental impacts of the artisanal sector, which thus operates largely in the informal economy.

The estimated total volume exported per year by land from Côte d'Ivoire to neighboring countries totals about 113,000 m³ of sawn wood. About 30% of recorded trucks transported timber that originated in sawmills, while 70% originated from operations conducted by artisanal means in the forest.

There exist stark differences in the relative importance of export points, with the two major transit points being Korhogo and Odienné, through which the majority of the timber is directed north, towards Burkina Faso and Mali.

In 2013, Côte d'Ivoire enacted a regulation on land export. This regulation provided a list of documents to be issued by the forestry administration in order to facilitate the land export of forest timber products. Also, the document aims to collect statistics on timber trade between Côte d'Ivoire and ECOWAS countries and beyond. It provides information on the nature of the product, its origin and destination.

Alongside sawn the official procedure, various arrangements exist to simplify export of formal and informal wood. These multiple arrangements raise the issue of the governance in this sector both in terms of reliability of official statistics on exports by land and loss of revenue for the government.

The monitoring of land exports of timber products from Cameroon focused on Chad and Nigeria, two neighboring countries that were hypothesized as timber deficient due to the nonexistence of natural tropical forests (Chad) and high demographic pressure (Nigeria).

Our estimate of the actual volume of sawn wood imported into Chad stands at 79,000 m³ for the last 6 months of 2015. Since this activity is seasonal, it is estimated that the total volume of sawn wood consumed in Chad is around 150,000 m³ per year. This estimate indicates a very important development of the activity when compared to previous reviews. Within a period of 6 years, the actually imported volume of sawn wood in Chad has more than doubled. Such an increase is partially explained by the annual rate of GDP growth – from 3.4% to 13.8% between 2009 and 2015 – and by a significant increase in urban population and real estate investments. It is likely that this sector will continue to grow in the medium and long term as Chad aspires to become an emerging economy in 2030, although the recent oil crisis could undermine the economic dynamism of the country in the short term.

The two countries in this current study have different status in terms of economic and diplomatic ties with Cameroon. Chad and Cameroon are both member countries of the Economic Community of Central African States (ECCAS) and of the Economic and Monetary Community of Central Africa (CEMAC). Being members of these two economic groupings, Chad and Cameroon use the same currency and have reduced their trade barriers to the minimum. Citizens of the two countries are free to travel from one country to the other without a visa. Nigeria does not belong to ECCAS or CEMAC and is part of the Economic Community of West Africa States (ECOWAS). Trade barriers are higher between two countries although they have agreed on freedom of movement for their citizens.

Although Cameroon and Chad are both part of CEMAC and should have facilitated trade procedures, the import of forest products is a complex and lengthy process. The State and the current operation at customs checkpoints are causing significant delays in clearing the goods. It takes a full week in Ngueli, when all documents are up to date. Such bottlenecks in cross-border trade can be explained by the poor technical and logistical resources, the low level of qualification of staff, and the difficulty most traders have in submitting the required documents for clearance. There is much confusion at these checkpoints, which prevents an effective and non-personalized treatment of clearance records. To overcome these shortcomings, a "short chain" has been put in place and this eases the clearance of sawn wood from Cameroon.

The amounts paid at the two checkpoints Ngueli and Moundou as informal payments are estimated averagely between XAF 5,700 and 6,600 per cubic meter. This is a much lower value than the current rates of customs duties. These informal payments are a must for any trader who wants to quickly clear his goods at the customs post.

In spite of the difficulties linked to insecurity in the study area between Cameroon and Nigeria, investigators were able to collect data on a total of 13,758 m³ of wood informally exported from Cameroon to Nigeria for a time period of 6 months, which might be extrapolated to a total flow of about 27,000 m³ annually. All timber exports by land observed from Cameroon are informal and most are illegal. Information gathered indicates that the intensity of activity increases during the dry season when there is a decrease in the level of water in the river. The volume of activity and the water level trigger an increase in the operators in the business which equally pushes up the amount

of informal taxes that must be paid. A minimum XAF 80,000 is paid for a truckload of logs bound for Nigeria. According to our informants, this activity will grow in importance in the next five years.

Because of the availability of results of a recent study conducted by CIFOR in 2014 to estimate the timber flows from DRC to Uganda and Rwanda and to avoid the wasting of the limited financial and other resources allocated to the current study, we decided to consider the estimates of CIFOR's 2014 study as topical. The said study estimated that DRC exports annually about 60,000 m³ and 5,600 m³ of sawn wood to Uganda and Rwanda, respectively produced locally through chainsaw milling. The three main types of timber products exported from DRC to Uganda and Rwanda are planks (44% of the total volume exported), beams (27%) and lintel (16%). The exports to Uganda and Rwanda consist mainly of high value redwood species such as the *Entandrophragma* spp. (36%) and *Khaya* spp. (also 36%) also known as African mahogany.

Observations were made along the DRC–Zambia border and along the DRC–Angola border. Along the DRC–Zambia border, observations were made at the frontier posts of Kasumbalesa, Mokambo and Kipushi. It was noticed that timber movement across Kasumbalesa border was frequent and consisted of both softwoods and hardwoods. However, it was observed that most of the timber crossing from Zambia to DRC were softwoods while all the hardwood timber recorded was from DRC to China through exit points in Zambia such as Katima Mulilo (Namibia–Zambia border) and Nakonde (Tanzania–Zambia border). The mean for three days in a month is about 401.7m³ of timber. Extrapolation based on the 3-day average suggests that about 12,451 m³ of timber is moved per month. In a year, about 50,000 m³ of timber are traded per annum through the three borders.

The total volume of the trade between DRC and Angola remains low on the survey sites. If the data is extrapolated to a whole year, this will correspond to an annual volume of about 3,500 m³ of timber between DRC and Angola.

The Democratic Republic of Congo is estimated to export about 120,000 m³ of sawn wood to its neighboring countries through the southern and eastern borders (i.e. Uganda, Burundi, Rwanda, Tanzania and Zambia).

All surveyed countries have official estimates of exports of timber products to neighboring countries, but all of them are at best incomplete and at worst missing for long periods of time. This in turn leads to the underestimation of actual timber production and trade in each country, as well as a related lack of monitoring of their financial, environmental, social and governance impacts. Also, national policies and regulations remain largely incomplete in relation to the consideration of the entire national forest sector and are biased towards production and exports of timber products overseas. Overall, the tendency is for regional exports to be under the actual responsibilities of local administrations closer to the border points, or simply directly managed by local communities that sell standing timber to business people from neighboring countries. This is especially true on the Cameroon–Nigeria border with very poor road infrastructure and on the eastern and southern border of DRC. On these borders, informal, direct payments to local officials are the norm, while regular and formal taxation remains the exception.

The study arrived to the following recommendations for each participating country and for ITTO:

Côte d'Ivoire

- i. Côte d'Ivoire has an industrial plan for its forest sector. The existing plan does not include the chainsaw milling sector, and it is thus flawed because based on the unrealistic assumption that banning a sector leads to halting its operations. **The Government of Côte d'Ivoire should thus revise its industrialization plan and include artisanal chainsaw milling as an integral part of the larger forest sector.** Such a plan would be more credible; it will allow the MINEF to start considering artisanal operators as counterparts with whom official discussions can be held, and monitoring plans can eventually be devised that will monitor the impacts of chain saw milling on the remaining resource.
- ii. Although the domestic timber market is the most important market for Côte d'Ivoire, currently there is no monitoring system that covers its extent and dynamics. Given the rapidly dwindling forest resources in the country, **Côte d'Ivoire should design and implement at least a simplified monitoring system for urban timber markets.**
- iii. As Côte d'Ivoire has many neighboring countries that rely on it for their timber supply, overland exports are therefore important (and possibly growing) and their monitoring should be strengthened. **Côte d'Ivoire should design and implement a more reliable monitoring system for its timber exports to neighboring countries and such a system should include timber products from chainsaw milling.** In this way, the country will have a better view of its forest resources and can design more realistic rules for their uses. Also, informal arrangements that could lead to unethical behavior would be minimized.
- iv. The ban on chainsaw-milling and that on the exploitation of timber resources above the 8th parallel have precluded neither the domestic timber demand to grow and be sourced by chainsaw millers, nor harvesting to occur above the 8th parallel. Thus, unless such bans are strictly enforced and alternative supplies of timber are found to cover the growing demand, **both bans should be lifted to give way to constructive dialogues on possible ways forward for the entire forest sector and better enforceable rules on timber exploitation in the country.**

Cameroon

- v. With support from IITO, Cameroon has developed an efficient monitoring system for the monitoring of all of its oversea exports of timber products. This study has shown that land export is equally important as it can have both positive economic impacts and negative environmental impacts if it is not monitored and well regulated. **The Government of Cameroon should design, implement and maintain a monitoring and traceability system for exports of transborder timber products.** Such a system can be based on current efforts linked to FLEGT VPA.
- vi. The export of Cameroonian timber products to Chad is currently regulated by the general trade agreements covering all commodities within the Economic and Monetary Community of Central African States (CEMAC) without specific regulations on timber products. **Cameroon should take the initiative to have a specific agreement with Chad on the trade on timber product in order to harmonize legal documents and control procedures on both sides of the border.** Such an agreement can draw inspiration from the VPA between Cameroon and the EU with a number of procedural simplifications.
- vii. Cameroon has been working for a number of years on its internal timber market. There are places where legal timber products are sold to consumers in Cameroon. **The government should also set up regional timber markets especially around the Cameroon-Nigeria border where timber products can be easily and legally obtained.** Such marketplaces

would function better as a result of the upgrading of the road infrastructure that is currently underway in Cameroon. Also, there should be an official agreement between Cameroon and Nigeria to ease the trade in legal timber products between the two countries. Such an agreement would include traceability procedures and reduced tariff barriers to discourage corruption and other unethical practices, while also taking into account products from chainsaw milling.

The Democratic Republic of Congo

- viii. Given the size of the country and the poor status of its road network and communication infrastructure, it is very difficult for the Government of DRC to have close control of timber trade with neighboring countries. **The Government of DRC should thus set up a general framework for timber trade with neighboring countries and empower the provincial governments to control all the procedures and practical aspects of regional trade in timber products that entail product from chainsaw milling.** To be up to the tasks, custom officers should be trained in specific timber trade-related issues.
- ix. At most border points, differences in language between the exporting and the importing documentation are exploited to launder timber or to cover the export of illegally harvested timber. **The Government of DRC should thus initiate discussions with neighboring countries on the best way to set up harmonized documentation for the export of timber products.**
- x. Currently, export of timber products by land in DRC is mainly conducted by small- and medium-sized operators known mostly at local or provincial levels. **The government should facilitate the procedure to grant a legal status to such operators in the export-import business in order to better keep track of their activities and monitor the environmental impacts of their operations.**

Recommendations for ITTO

- xi. The results presented here are based on data collected over a 6-month period. This does not cover a full seasonal cycle. For a fuller and exact picture of the situation, ITTO should support data gathering for a full seasonal cycle in order to obtain more robust results on which better policy options could be based.
- xii. In Côte d'Ivoire, ITTO should support the establishment of monitoring system for national timber market in at least five of the largest cities of the country.
- xiii. Encourage neighboring members States such as Cameroon and Nigeria, Liberia and Côte d'Ivoire, Côte d'Ivoire and Mali, or Côte d'Ivoire and Ghana, and DRC–Uganda and DRC–Zambia to establish specific agreement on timber trade by land including harmonized procedures for control and enforcement.
- xiv. To successfully contribute to national economies of ITTO member countries, intra-African timber trade promotion strategies need to involve both ITTO timber-producing member countries and non-ITTO timber-importing countries. ITTO should work with regional economic bodies such as ECCAS, ECOWAS, CEMAC and ECEAS to design strategies that have the potential to promote overland trade of timber products in each subregion.

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- 5 a Fiche d'enquête Aupres des transitaires / commissionnaires / contrôleurs de bois a la frontiere
- 5 b Etude sur le sciage artisanal (fiche d'enquete aupres des vendeurs)

List of Abbreviations and acronyms

AFDB	Africa development bank
AMINISTAD	Actions pour la mobilisation des initiatives et stratégies d'aide au développement
BEAC	Banque des États de l'Afrique centrale
BAE	Bon à Enlever
CAR	Central Africa Republic
CEMAC	Communauté économique et monétaire de l'Afrique centrale
CIFOR	Center for international forestry research
CODELT	Conseil pour la défense environnementale par la légalité et la traçabilité
DEIF	Direction de l'exploitation et des informations forestières
DAU	Document Administratif Unique
DRC	Democratic Republic of Congo
FAO	Food and agriculture organization
FD	Forestry Department
GDP	Gross domestic product
ITTO	International tropical timber organization
MINEF	Ministère des eaux et forêts
NGO	Non-governmental organization
OIBT	Organisation international des bois tropicaux
REM	Resource extraction monitoring
RWE	Round wood equivalent
SEP CONGO	Services des Entreprises Pétrolières Congolaises
SODEFOR	Société de développement des forêts
SMS	Short message service
UDEAC	Union douanière et économique de l'Afrique centrale
VPA	Voluntary partnership agreement
FLEGT	Forest law enforcement governance and trade
ZRA	Zambia Revenue Authority

1. Project background

The project is aimed at removing the main identified constraints in the expansion of further processing of tropical timber into value added products and trade development, particularly through intra-African trade in nine areas of action: facilitation of trade; elaboration and implementation of national strategies for industrial and trade development; business development in pilot enterprises; improvement of market transparency; trade promotion measures; training; strengthening of national industry and trade associations; innovative financing and technology transfer. Implementation involves effective engagement of stakeholders and close cooperation with the identified international, regional and national partners in the private and public sectors. The activities are implemented in a logical sequence divided in two three-year phases to ensure mainstreaming and sustainability of impacts. Phase I is divided into two stages of which the first focuses on strengthening capacities in industry and trade development three pilot countries.

Studies conducted by CIFOR and partners in the Congo Basin and Ghana have shown that domestic timber markets in ITTO producer countries are mainly supplied by small scales saw millers operating more or less legally. It is therefore critical to study and understand the dynamics of the domestic timber sector in timber producing countries with special attention on small scale timber producers. It is also important to understand how policies and tools can be used to promote intra-African timber trade while strengthening legality in the domestic sector in the different countries with national realities. An understanding of the way national policies are applied in the domestic sector and small and medium-sized operations will, on the other hand, suggest a practical approach. All these issues urgently need attention from donor agencies, the scientific community and policy makers.

The baseline studies addressed this need by conducting an in-depth country study in Cote d'Ivoire. It also built and expanded on the recent assessments on inter-African timber conducted in Cameroon and the DRC. The studies aimed at initially generating knowledge on the scope and dynamics of domestic and regional timber sectors and hopefully contribute to Phase II of the ITTO project by proposing policy options for better integration in current regulatory frameworks.

1.1 Objectives and scope

The objective of this work which contributes to the general objectives of project PD 700/13 Rev.2 (I) and notably to its activities A4.1.1 (Baseline study on domestic markets, cross-border trade and the role of the informal sector in one pilot country in West Africa) and A4.1.2(Baseline studies in two pilot countries in Congo basin), is to prepare baseline studies on the domestic market situation, cross-border trade and the role of the informal sector to serve as a basis for (i) policy design for promoting domestic and intra-regional trade of timber and timber products, (ii) improving legal compliance of production and trade, (iii) better integration of the informal timber sector in the formal activities, and (iv) design of future support to production and trade from legal and sustainable sources.

The results of the baseline studies will inform national strategies for trade and industry development with particular reference to the artisanal, domestic and regional timber sector, that will be promoted in Stage 2 of the ITTO Project. The baseline studies will build on and complement the available

analytical work already carried out in the regions, primarily by the Center for International Forestry Research (CIFOR).

The baseline studies focused on three pilot countries, Cote d'Ivoire in West Africa and in Cameroon and the Democratic Republic of the Congo (DRC) in Central Africa.

1.2 Expected results

The baseline studies were targeting two main results:

Result 1 (R-1): Knowledge generation and learning

The scope of the domestic timber sector and its dynamics and impacts on forest management and livelihoods are analyzed. Also, the regional dimension assumed by illegally/informally produced timber is assessed by conducting research in key cross-border points in selected countries.

Result 2 (R-2): Capacity building, outreach, and dissemination

Capacity will be built through the integration of national partners in each phase of data collection, analysis and final publication. Where possible, MSc students will be integrated in the research. The capacity of key national actors such as government officials and operators in the domestic timber market will also be built through regular formal and informal working sessions on methodological settings, data collection, preliminary findings and problems encountered. Acquired knowledge and data will be widely disseminated through national workshops and the CIFOR's list server, as well as through ad-hoc POLEX and blogs developed by CIFOR scientists and disseminated through CIFOR network.

2. Study methods

Methods for estimating domestic consumption in Côte d'Ivoire

A scoping survey of the timber market in the main cities of Côte d'Ivoire was done in May 2015. Five cities were selected for data collection: Abidjan, Bouake, Gagnoa, San Pedro and Yamoussoukro (Figure 1). Except in Abidjan where data were collected in two timber markets (Koumassi and Yopougon), the main timber market in each town was monitored. As indicated in Table 1, from a total number of 645 inventoried in the five main cities of Côte d'Ivoire, 77 were monitored for 6 months. The market outlets that constituted the sample were all classified as medium size, based on their annual sales volumes as indicated by sellers.



Figure 1: Cities surveyed for domestic timber consumption in Côte d'Ivoire

To monitor the markets, a local NGOs named AMINISTAD was selected and its members trained in filling the surveys form both manually and electronically. Nevertheless, the field data collectors were chosen among timber products salesperson in the market who could easily fill the form provided. AMISTAD supervised the data collection by collecting the paper-form filled by field data collectors, verifying the quality of the information provided and registering data in computers with ACCESS. The first month of data collection was mainly considered as training and data so-collected was not included in the data set.

The data collection protocol was very similar to the one already used in Cameroon by CIFOR (Cerutti and Lescuyer, 2011). Data were collected one day per week, always the same day while avoiding the busiest days (often Saturday and Monday). The data collected entailed: number of employees (full time and part time), salary estimates, type of products sold, timber species, size of products, origin of the products, stocks, daily deliveries, number of pieces of wood sold on the survey day and the sales prices.

Table 1: Number of timber market outlets sample in Côte d'Ivoire

City	Market	Total number of outlets	number of sample outlets
Abidjan	Yopougon	35	2
	Koumassi	178	36
Yamoussoukro	Yamoussoukro	34	6
Bouaké	Bouaké	75	9
Gagnoa	Gagnoa	67	13
San Pedro	SOTREF	256	11
Total		645	77

Methods for estimating cross-borders timber flows

Two survey methods were used to implement the two parts of this study. In all cases, the survey protocols were pre-tested to amend and facilitate the collection of information. They also relied on the experience of CIFOR to conduct such studies in several countries of the Congo Basin. The two survey methods aimed at 1) estimating the timber flows between neighboring countries, and 2) understanding the governance issues that shape timber exports and imports between African countries with special emphasis on the informal sector.

The estimation of timber flows between neighboring countries always started by a scoping mission to identify the main routes for timber export/import between the countries and locating the key transit sites where surveys can be conducted and data collected. Once the transit sites had been identified, data collector were chosen and trained to fill standardized survey forms. The survey forms were tested during a couple of weeks based on the methods used by CIFOR in DRC earlier (Lescuyer et al., 2014). Data was mostly collected from timber-laden at each key transit site on: time, type of vehicle, load (one quarter full, half full, three quarter full, full or overloaded), product transported and species.

The governance sub-studies were based on the analysis of available government documentation and structured surveys of key stakeholders. The information collected entailed: the features of the timber transportation vehicle, steps followed to cross the border, export options, the quality of middlemen and the perception on the future of the activity.

The general methodological approach was adapted in each specific case as needed and described below.

Data collection methods on cross-border exports of timber from Côte d'Ivoire

Five countries have land borders with Côte d'Ivoire; these countries are Ghana, Liberia, Guinée, Mali and Burkina Faso. On the one hand, Liberia and Ghana are endowed with tropical natural forest capable of producing timber, even though the forests have been substantially degraded due to high population density and very active agriculture and timber sectors. Compared to Côte d'Ivoire, Liberia still possesses considerable forest resources and preliminary inquiries informed us that Côte d'Ivoire would rather import timber from Liberia. On the other hand Mali, Burkina Faso and to some extent Guinea are sahelian countries where natural tropical forest does not grow and one would expect these countries to import timber from Côte d'Ivoire.

The preliminary investigations conducted during the scoping missions led to the identification of six transit site where the largest proportion of timber exported by land from Côte d'Ivoire would go to. These transit sites are: Korhogo, Odiene, Agnebelikrou, Bondoukou, Ferke and Bouna.

Data collectors were posted at these sites for six months and they recorded timber export for one time slot of 24 hours (day and night) per week.



Figure 2: Main transit sites for timber exports from Côte d’Ivoire to neighboring countries

Data collection methods on the Cameroon-Chad Border

The first survey focused on tracking the flows of timber from Cameroon to Chad. In June 2015, a preliminary field visit was done to confirm the timber routes from Cameroon to Chad, and to recruit the enumerators. This visit tested the survey protocol for a 2 week period before the regular survey started at the beginning of July 2015 and lasted for 6 months.

Based on the knowledge of the national expert and on technical reports (SCET 2010), 4 survey sites were selected and monitored by our investigators (Figure 3):

- i. Entry road to N’Djamena through the border post of Ngueli, on the road from Kousseri (Cameroon);
- ii. Exit road from N’Djamena to Abeche;
- iii. Entry road to Moundou, from the southern border of Cameroon;
- iv. Exit roads from Moundou to cities located South of Chad, where human density is the highest (Gazel et al. 2010).

In these 4 sites, the survey lasted 48h per week, with 2 x 12h by day (6AM-6PM) and 2x 12h by night (6PM-6AM) during a 6 month period. Data was collected according to a standard questionnaire provided by CIFOR. (Find survey form in Annex I). Enumerators distinguished industrially-processed timber and timber processed with artisanal means but it was not usually possible to identify the timber species loaded on trucks.

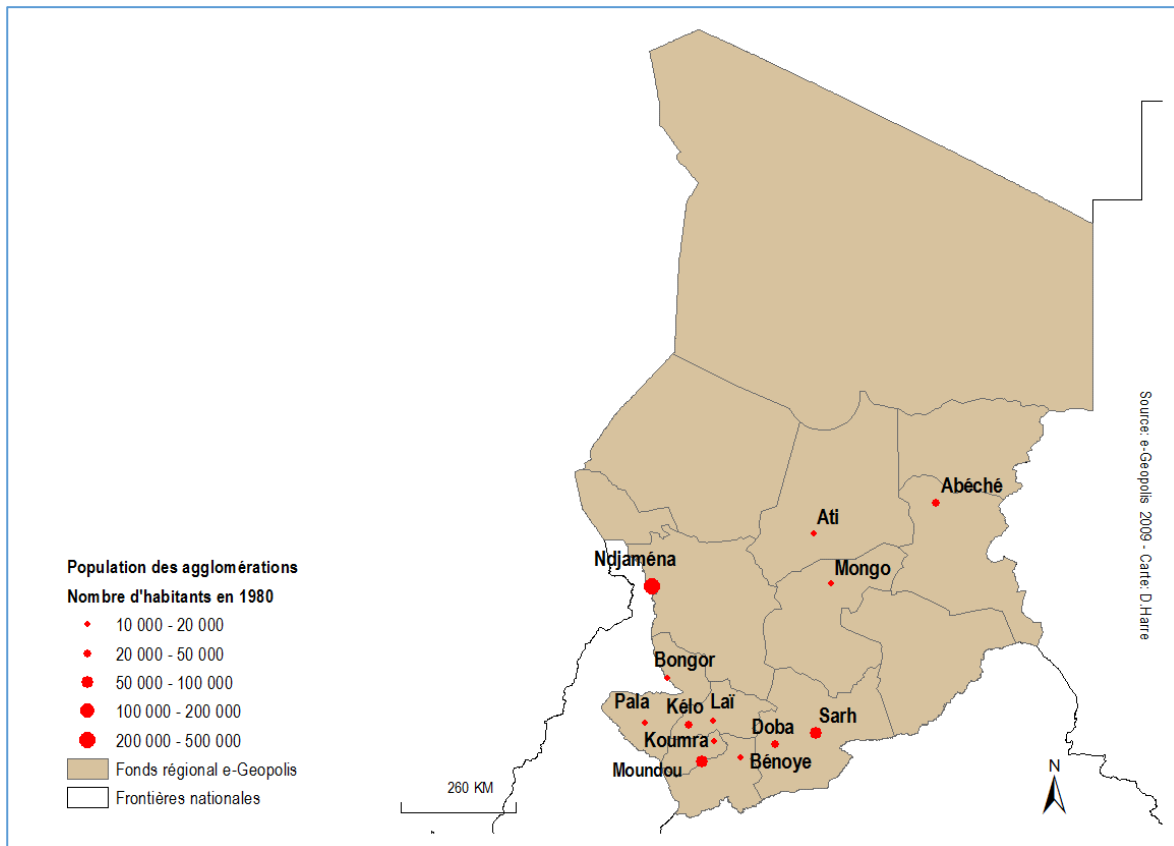


Figure 3: Survey sites to monitor timber flows to Chad

Data collection methods on the Cameroon Nigeria border

To collect data presented below, a literature review was carried out to identify the exit point of Cameroon timber to Nigeria, site exploration was carried out to confirm what is found in the literature review and to identify and train data collectors. The data collection procedure was not uniform on all the identified sites. The methodology had to be adapted to the context and to the environment. 3 sites were identified as the main exit points of Cameroon timber to Nigeria (Fig. 4); namely Mundemba in Ndian division (South-West Region) Mamfe in Manyu division (South West Region) and Nkambe in Donga and Mantung division (Northwest Region). The table below presents the data collection points, monitoring sites and the methodology used.

Around Mamfe and Mundemba the sawn timber is transported to Nigeria mainly by boat through the Manyu River (Manfe) or by sea in Bakassi Peninsula (Mudemba). In the two zones, data collectors tried to conduct systematic surveys whenever they were informed about timber boats being loads. On the contrary sawn timber from the Nkambe area is transported to Nigeria by roads that are all unpaved and in very bad state. The data collectors also worked in a systematic way to capture all timber exports by road, by first collecting information at the sites of active sawmilling.

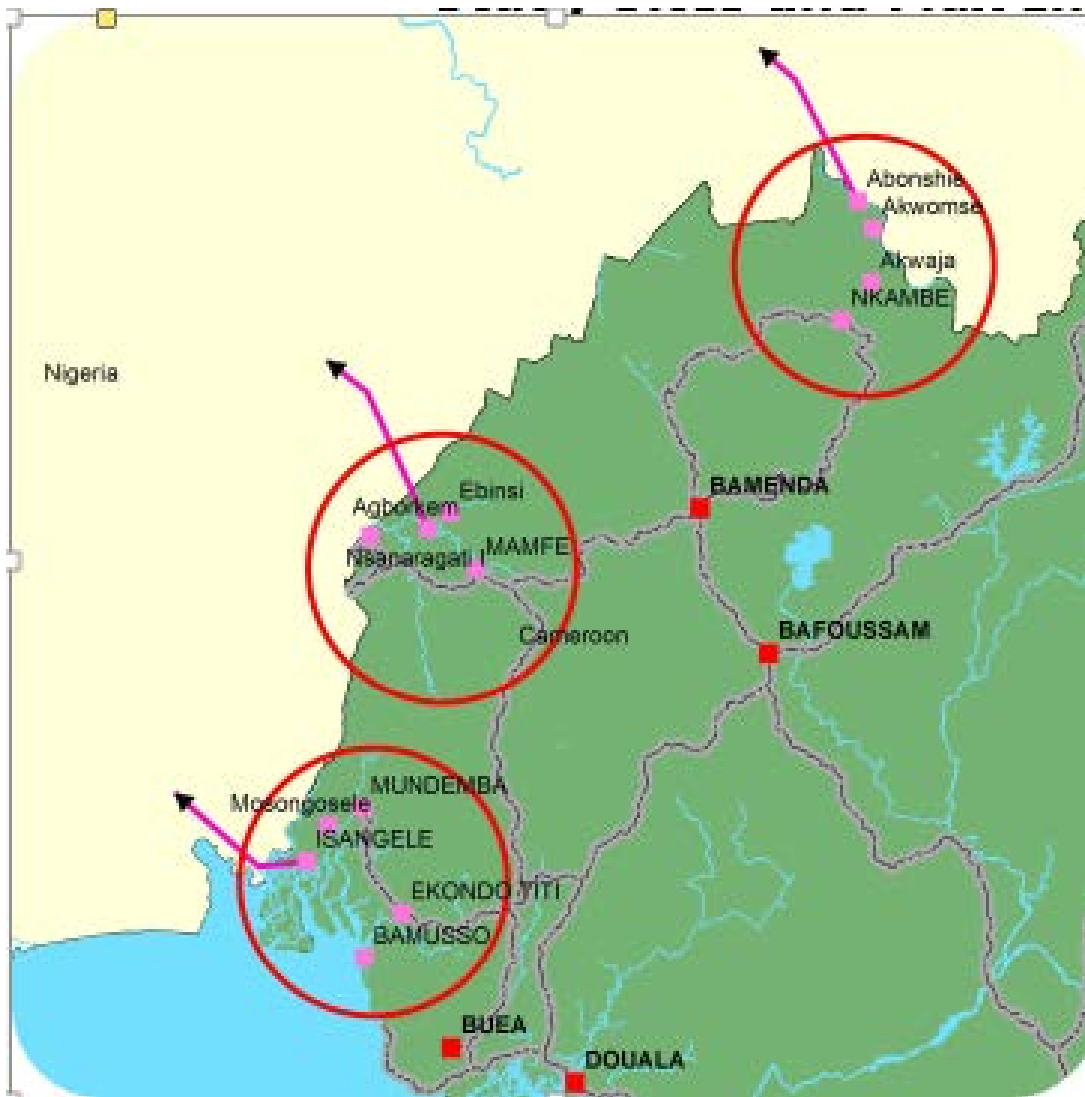


Figure 4: survey sites to monitor timber flows from Cameroon to Nigeria

Data collection methods on the DRC Zambia Border

Four research interns completed a pre-designed data collection form, in the form of a matrix or table at Kasumbalesa, Mokambo and Kipushi on the Zambia- Democratic Republic of Congo (DRC) borders (fig. 5). This was for three days and over a period of 4 months; from the 27th to 30th day of each month. The interns visited a different border every month during the study period. They equally conducted interviews and made observations about informal movements. The research day started at 8 am and ended at 6 pm. During the study, data sources included government officers especially those working for the Forestry Department (FD), Police, Office of the President, Customs and Zambia Revenue Authority (ZRA) at border points and transporter as well as tally sheets. The other data sources were traders/entrepreneurs, clearing agents, transporters (truck drivers) and local people at the border areas.

Through this design, the following data was collected: mode of transport, typology of timber, size, shape, quantity, origin and destination of timber. The other data was Lorry typical size (tonnage, etc.) and waiting times at the borders.



Figure 5: surveyed timber transit sites between DRC and Zambia

Data collection methods on the DRC-Angola border

Two Congolese provinces can supply Angolan market with soft wood. On the one hand the Bandundu province lies on the north east border of Angola but the forest is far of and the road network is not in a good condition for lorries carrying timber. Interlocutors during the launch of the project confirmed that there is no longer timber flow from south Bandundu to Angola. On the other hand, the province of Bas Congo in DRC lies along the north border of Angola (and Cabinda enclave). Many potential timber passage routes between the two countries have been assessed like the Kindoolo center situated in the district of Lukaya in Inkisi and at the frontier post of Lufu situated in the Cataractes. In the two sites, commercial exchange is dominated by manufactured and agricultural products. The absence of informal transportation of energy wood can be linked to the absence of forest in the area and the high militarization of the border. As a consequence, the main transport route for energy wood between Bas Congo and Angola can only be on high way or through the ports mostly at night and with the complicity of local administrators.

Five passage points were identified to monitor the trans-border timber flow. In these different sites, Congolese and Angolan traders at times turn to the military protecting both borders for assistance for illegal exit of timber. The following 5 sites were identified:

1. Lukula - Kakongo Songo. This site was chosen because it is often the most visited by Angolans in search of timber from DRC. Buying of timber to Angola was very intensive activity here especially when the Angolan currency was stable (before the current economic crisis the country is going through).

2. Boma-Seme: It is a site which is near a buffer zone between the two countries which makes it possible to avoid the administration at the Boma port. The assistance of the military is much sought at for illegal transit of soft wood. This site facilitates complete avoidance of State officials located at Boma port.
3. Boma- Luangu Nzambi: This site which lies near Moanda is the preferred choice of traders in order avoid all administrative control.
4. Nzadi Kongo (Moanda): Located between Boma and Moanda, this site offers a roundabout road often used by traders in order to transport timber to Angola.
5. Matadi - Ango Ango : This border post is a dozen kilometers from the port. It is often considered as the most important timber passage point to Angola

The methods used to carry out the surveys were uniform in all the countries under study in this project. The method was presented to the various partners in Kinshasa during a workshop to launch the project in May 2015.

Conducting the survey was later outsourced to a local NGO called CODELT but under the methodological supervision from CIFOR. In this context, a first back up mission by CIFOR staff was in September 2015. This was to select the sites, test the follow up method, train surveyors and then launch data collection.

Due to the limited number of vehicles transporting wood in the selected sites, the survey frequency initially schedule at 2 days and 2 nights per meek was revised. A continuous monitoring of the sites was set with back up from informers resident or working on the passage sites. The data collectors functioned through an alert system by SMS each time legal or illegal timber was transported at night and by day. At each alert, the data collectors went to the site to fill out a notification form while verifying the quantity of timber to be conveyed. At the end of the month, the collected data was sent to CODELT to be entered on an Excel spreadsheet which was later sent to CIFOR for verification and analysis.

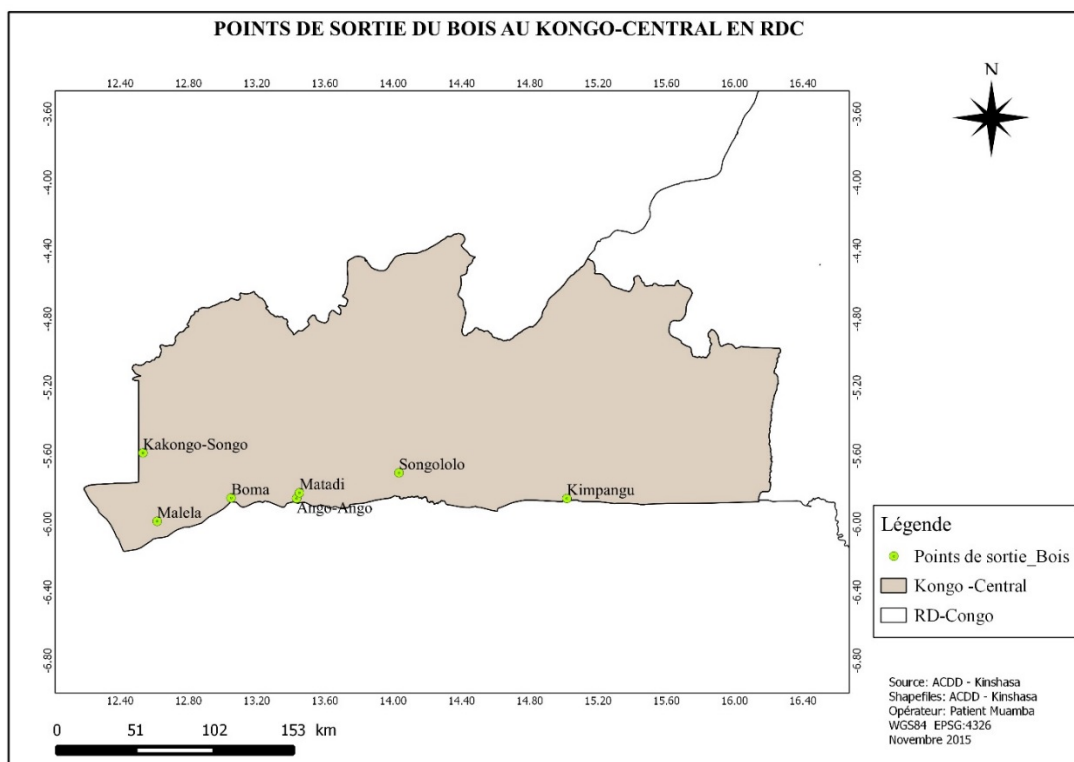


Figure 6: Timber exit routes in Central Kongo in DRC

3. Limitations and constraints

The main constraints of the study were related to the time frame. The CIFOR team had about 11 months to carry out the study which entailed scoping visits to identify survey sites, identification of relevant stakeholders and partners in each participating country, designing the data collection methodology, training data collectors, testing the questionnaires, field data collection, data analysis and reporting. At the end, there was less than six months of field data collection in each survey site. Because of seasonal variations in timber harvesting and export flows, the results of the studies would have gained in robustness were it possible for data collection to be carried out during a full seasonal cycle (12 months) to encompass rainy and dry seasons.

Additional constraints came from exceptional difficult socio-political contexts. This was the case at the border between DRC and Burundi where the first task was to collect data on timber product flows but the political unrest that erupted in mid-2015. It was a deterrent to the data collectors to reach the concerned border. Similarly, northern Cameroon where a significant proportion of timber products destined for transit to Nigeria was a war zone (Boko Haram insurgency) during the whole data collection period. As a result, part of timber flows from Cameroon to Nigeria could not be captured.

Finally, the first intention was to monitor the exchange of timber products between Côte d'Ivoire and Liberia. Here, it was hypothesized that because of differences with other neighboring countries, Côte d'Ivoire would instead import timber from Liberia rather than export. But the outbreak of the Ebola Virus Disease forced the government of Côte d'Ivoire to temporarily close the border.

4. Findings

4.1 Domestic timber consumption in Côte d'Ivoire

Country background

The area of natural forest in Côte d'Ivoire was estimated at 16 million hectares in 1960 and less than 2 million hectares in the early twenty-first century, marking a deforestation rate of 300,000 hectares per year. This decline in forest cover is due to the economic path chosen by the country, which has been based for many years (both before and after independence in 1960) on the exploitation of natural resources for agricultural development (Balac, 2000, Léonard and Ibo, 1994, Seudieu, 1996, Léonard, 1997). Between 1960 and 1980, timber production grew exponentially, from about 1 million cubic meters to 5.3 million cubic meters. Currently, timber production is estimated at about 1,2 million m³ (MINEF, 2014). The contribution of timber industry to the national economy is in sharp decline. According to the Directorate for Operations and Forest Industries (DEIF), the timber industry represents less than 1% of GDP since 2010 (MINEF, 2012). Nevertheless, the forest sector still ranks fourth in export earnings in value and represents an important pool of jobs estimated at 50 000 people in the formal sector (OIBT,2008,Finifter,2010).

Logging is presently taking place mainly in rural areas (under the official titles of forest perimeters) and generate 90% of wood collected by industries (Kadio, 2009). Such areas are, in the words of Verdeaux (1997) a "[...] conflicting space between competing modes of appropriation which are mutually exclusive." In 1994, Côte d'Ivoire adopted a regulation that aimed at laying the foundations for further industrialization and sustainable management of the remaining forests, a process which is on-going though with new regulations issued in recent years.

A major challenge to the country has historically been the sourcing of the domestic timber market. This has generally been "ignored" by the forest policy and successive reforms of the legal framework. Decree No. 73-490 of 11 October 1973 required the industrial sector to deliver part of its annual production to sourcing the domestic timber market, but a decree establishing such 'part' has never been adopted. Officially, the current percentage sourced by the industry is between 10 and 20 percent, although available statistics differ. The statistics from DEIF indicate that in 2013, the local market was supplied up to about 101,000 m³ of wood, or 15% of the industrial production (MINEF, 2014).

The decline in industrial production and the fact that only the products of second and third choices are supplied to the domestic market by the timber industry, have led to the development of an informal artisanal sector designed to satisfy a growing national demand. The informal artisanal sector is generally made up of small-scale non-industrial sawyers who specialize in this activity, individual farmers who cut down trees to prepare their fields, and farmers grouped in micro enterprises. In the letter of the Ivorian law, artisanal or "chainsaw milling" operations refer to the 'sawing of raw wood into semi-finished products, using a chain- or a mobile-saw'. This type of non-industrial exploitation of forest resources is prohibited in Côte d'Ivoire following the adoption of Decree No. 2013-815 of 26 of November 2013. The same decree thus placed artisanal loggers and their production under the banner of illegal logging.

However, such a ban has had very little effect on the operators of this sector, who occupy an increasingly important role. Unfortunately, there are no official statistics on the volume of timber consumed in the major cities of the country, and to our knowledge this report is the first of its type, that tries to provide such statistics. Existing estimates, based on data from the 1990s, put the production between 1.5 and 3 million cubic meters per year.

Domestic timber consumption estimates

Data was collected from June 2015 to January 2016 in 6 markets in 5 cities (Abidjan, Yamoussoukro, Gagnoa, San Pedro and Bouake). A total of 70 depots were regularly monitored (see methodology) over this period in the 6 markets, or about 11% of the total 645 depots existing. A total estimate of about 2,120 depots found in about 10 markets (all in Abidjan) were not part of the sample. Consumption data for these depots were thus extrapolated from monitored depots.

The consumption recorded (over 7-8 months and extrapolated to all markets and over an entire year) totals about 1.9 million cubic meters of sawn-wood. About 17% of the recorded sales were 'double counts', i.e. the timber sold to the final consumer had been bought from another market. This is especially the case in large markets in Abidjan, such as Koumassi, where timber might be bought as far as San Pedro. Also, 73% of the total consumption is from industrial or semi-industrial sawmills, while the remaining (27% or 515,000 cubic meters) was produced by artisanal millers. Consumption increased from June 2015 towards the end of the year, while it decreased towards the beginning of 2016 (Figure 7).

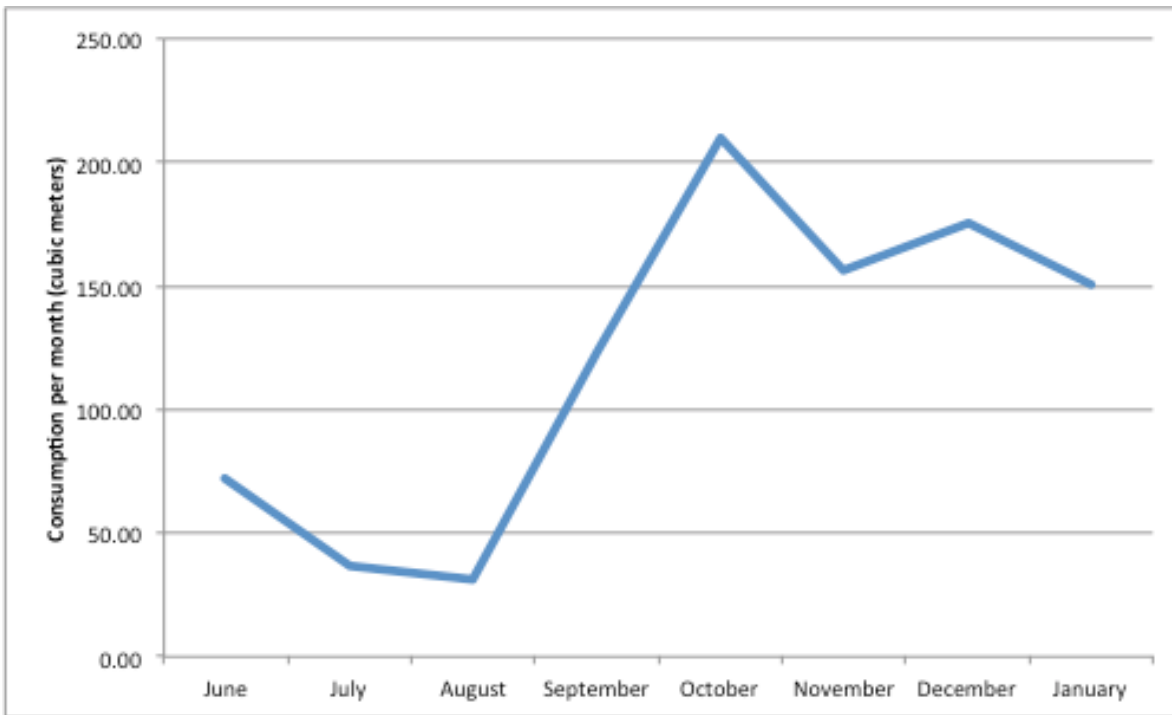


Figure 7: Seasonal Consumption

By applying a standard processing rate of about 50% for the industry in Cote d'Ivoire (i.e. 2 cubic meters of logs are needed to produce about 1 cubic meter of sawn-wood), total consumption in round-wood equivalent (RWE) would correspond to about 3.9 million cubic meters of harvested timber. In particular, consumption would result in about 2.8 million cubic meters RWE harvested and processed by industrial companies, and about 1 million cubic meters RWE harvested by artisanal loggers.

On the one hand, such figures are problematic. Industrial harvesting as recorded by the MINEF has been fairly regular over recent years, at about 1.2-1.3 million cubic meters RWE. So one may wonder how it is possible for the industry to 'sell' about 2.8 million cubic meters RWE in the domestic market when that volume is nowhere to be found in the official production statistics. One plausible explanation could be that domestic traders have a tendency to record the origin of their timber as 'industrial sawmill' because of the problematic and criminalized nature of artisanal harvesting in Cote d'Ivoire. Another possible explanation, albeit less plausible given the level of control shown by the MINEF, is that official declarations of production by the industrial sector are lower than what they should be.

Yet, on the other hand, such figures are not too distant from what one would expect in terms of domestic timber consumption from a country like Cote d'Ivoire, which is experiencing an absolute boom in terms of development of infrastructures and construction works. In particular, a study conducted by FAO (1991) estimated the domestic consumption of timber at about 0.13 cubic meters of round-wood (i.e. logs) per habitant. 15 years later, our estimates in consumption per inhabitant (population of 23 millions) of about 0.17, indicate an increase from 1991 which seems very well justified by the current economic condition in the country.

Also, when consumption per person of sawn-wood is reported, it indicates about 0.08 cubic meters per person. Such consumption is very similar to that recently recorded in several countries of the Congo basin in similar economic situation. For example, consumption per person was estimated at about 0.072 in three major Cameroonian cities, 0.064 in Libreville, Gabon and 0.083 in Bangui,

CAR. The big qualitative difference between Cote d'Ivoire and the Congo basin forests is, of course, that the latter has a much higher forest cover than the former.

Ten species make up about 85% of total consumption (Figure 8). The remaining 16% of total consumption is made up of about 24 other species.

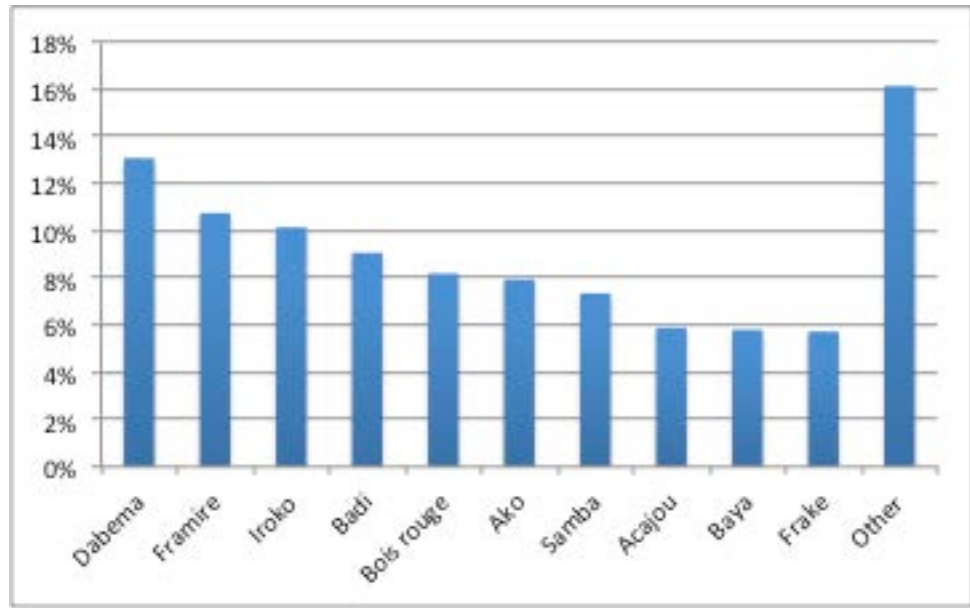


Figure 8: Consumption species

About 98% of consumption is sold in 3 types of products, with planks dominating the market (Figure 9).

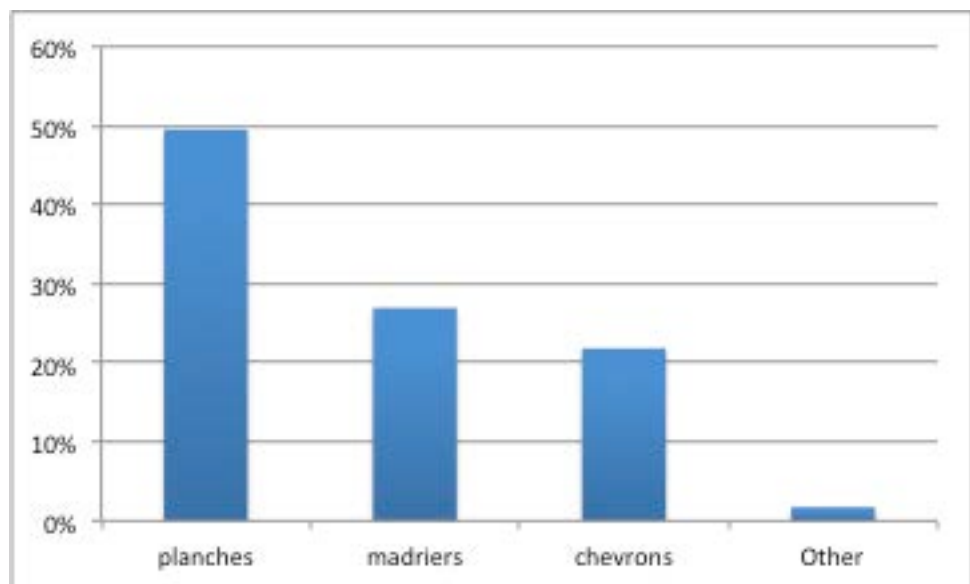


Figure 9: Consumption products

The socio-economic and governance settings of the domestic timber markets in Côte d'Ivoire

Small-scale logging is an age old activity in Côte d'Ivoire, though it was officially banned in 2013 by the authorities. The oldest sawyers contacted entered the trade in 1970. The development of small-scale sawing in Côte d'Ivoire has been gradual similar to that of the Congo basin. Historically, the domestic market was supplied by processing units. According to Decree No. 73-490 of 11 October 1973 primary processing industries are required to market part of their production on the domestic market.

In practice, this provision has hardly been followed, creating a de facto reverting to the small-scale sector in a backdrop of increasing demand for wood.

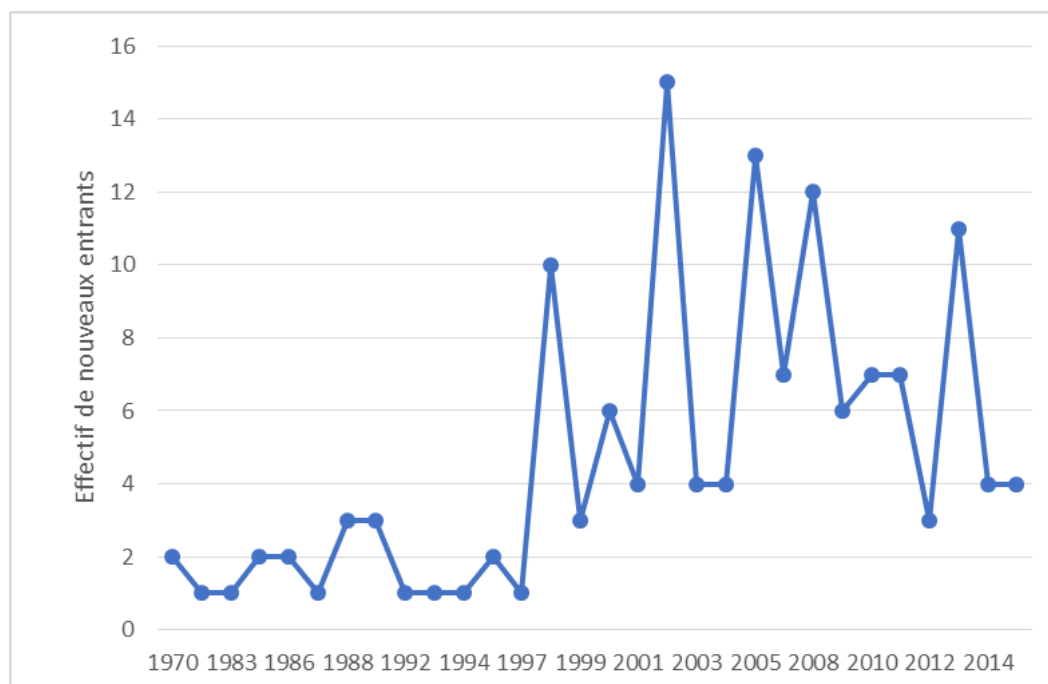


Figure 10: Number of sampled sawyers

There seems to have been a significant change between 2000 and 2003 due to the sociopolitical crisis that hit the country. It is gathered from interviews that the crisis seems to have played a positive role in developing the activity. On the one hand because sawmills ceased to operate, leaving a "void" in terms of satisfying local demand for wood. On the other hand, because of low control carried out in the sector (during the crisis), informal payments exacted on the road plummeted, which may have also helped to attract new actors to engage in an activity that had become lucrative.

Moreover, with the end of the post-election crisis in 2010 and the upturn in economic activity that ensued, chainsaw purchases by sawyers interviewed have changed over the same period. In recent years, the government of Côte d'Ivoire effectively implemented a national development plan that should lead the country to emergence by 2020. Since 2012, public investments in the infrastructure sector and household consumption have accelerated economic growth estimated at 8.3% in 2014 with similar projections for the following years (AfDB 2015). Increased investment and the expansion of the middle class will likely have a significant impact on increasing demand for sawn wood in the years ahead.

Small-scale logging certainly attracts part of the rural and urban youth anxious to be financially independent. The reasons given by the sawyers to join the sector stem mainly from the lucrative nature of small-scale logging and the quest for a source of income (fig. 12). The profiles of these actors can be grouped under four categories:

- Sawyers who joined the trade through relatives who were themselves sawyers or traders.
- Former employees of logging companies who reverted to small-scale sawing due to lack of financial resources necessary to carry out logging operations under the conditions laid down by law.
- Actors acting concurrently as vendors and sawyers.

- Operators who joined the trade because of hard times, unemployment or opportunists such as some farmers.

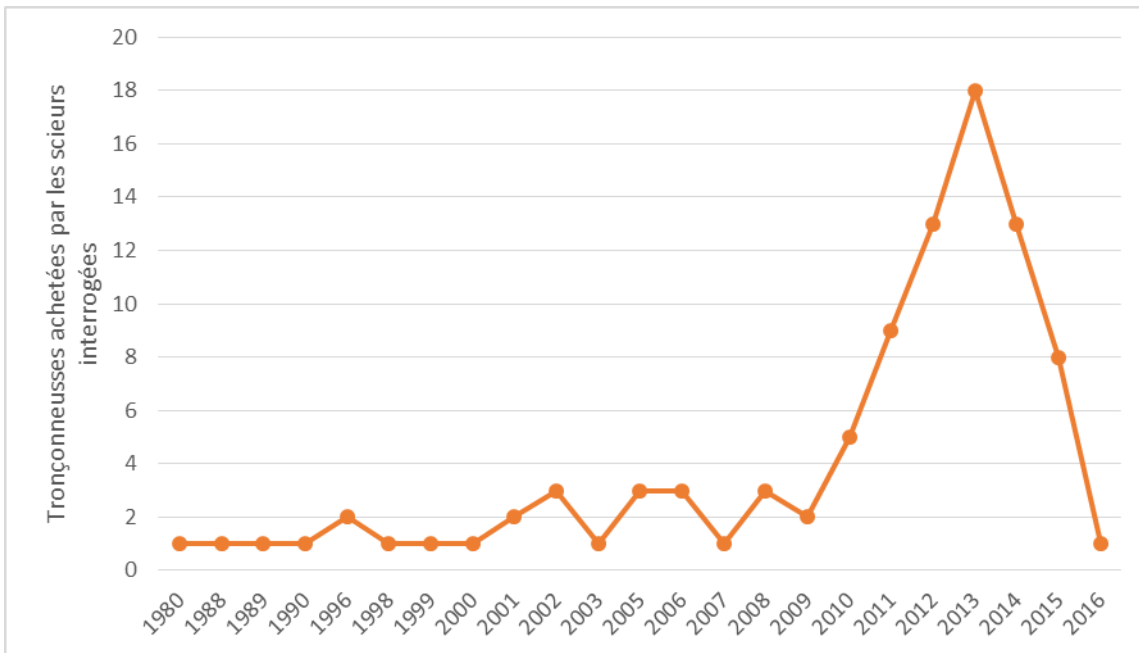


Figure 11: Number of chainsaws bought per year by sampled sawyers

Incomes generated by this activity are mostly used to satisfy daily household needs (61%). This means that small-scale logging as a whole is an important source of income for people in rural areas and that those operating in this sector have a long-term goals given that apart from recurrent expenditures, a significant proportion of incomes generated is used to undertake large-scale investments such as cocoa, coffee and cashew plantations (fig. 12).

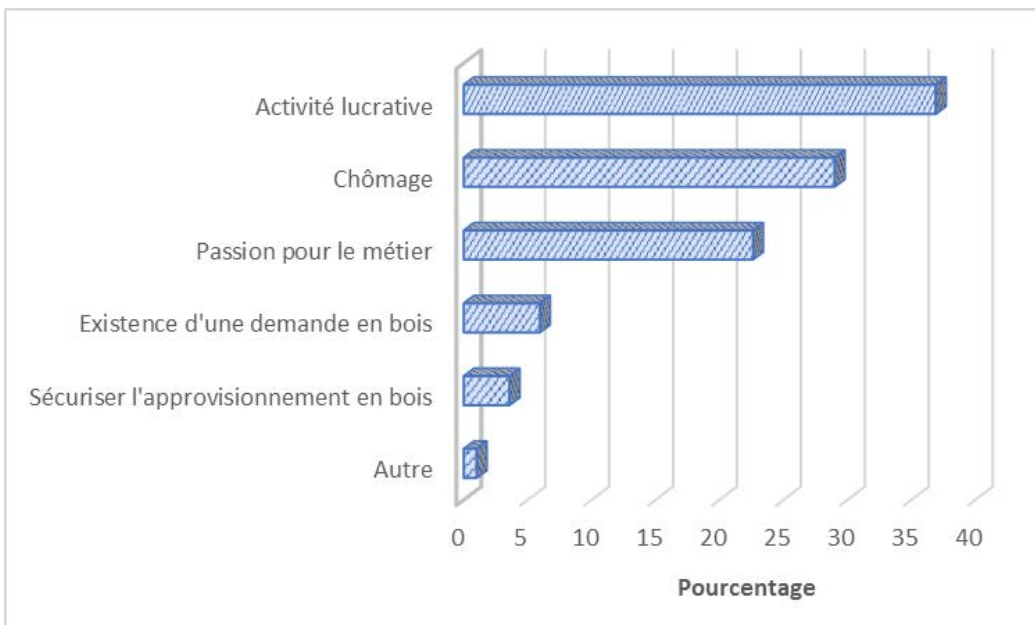


Figure 12: Motivation for involvement in small scale sawmilling

Incomes are reinvested in rural areas since 95% of the sawyers are Ivorian and 57% of them operate in their region of origin. This situation is a contrast with what obtains downstream the industry where there are, on the contrary, more of non-Ivorian actors.

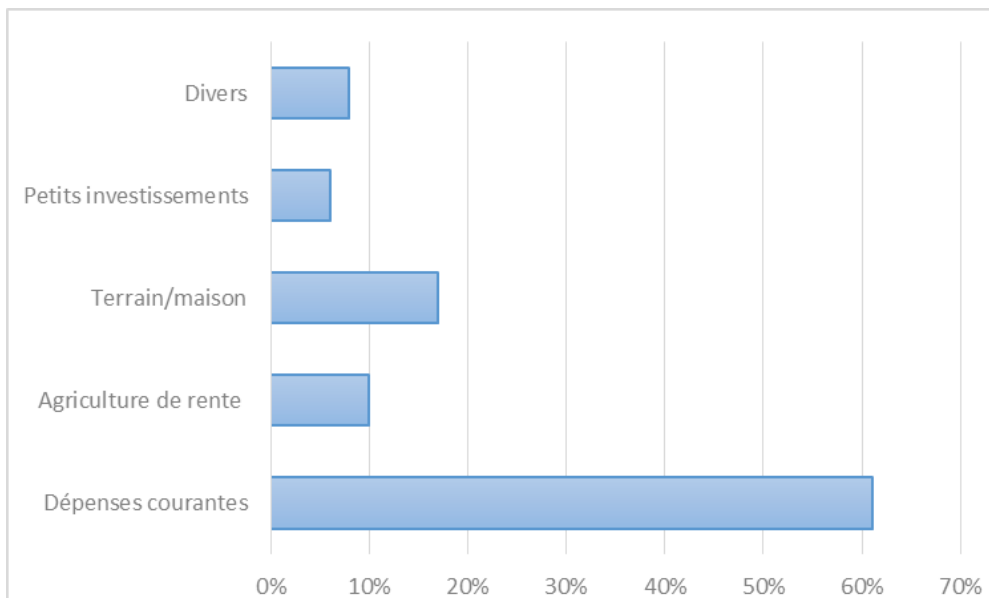


Figure 13: Use of incomes from small-scale sawing

Timber production sites

Forests are the ecosystems most coveted by small-scale loggers (fig. 14). The term forest here refers to perimeters of logging areas which are titles leased to industrial operators but also to gazetted forests that are areas managed by SODEFOR for sustainability. Small-scale loggers are barred from Gazetted forests but interviews have indicated that it is possible to agree with some officials of the public body to allow small-scale sawyers to recover logs abandoned in the forest by industrial loggers. Difficulties in implementing such agreements have prompted sawyers to prefer clandestine harvesting of the resource in gazetted forests. Infiltrations by sawyers operating in logging areas and gazetted forests show that resources are scarce. These areas are in fact the only places where the resource is still available. Fallows are the second favorite area for sawyers, which put into perspective the important role of customary owners in the process of accessing the resource.

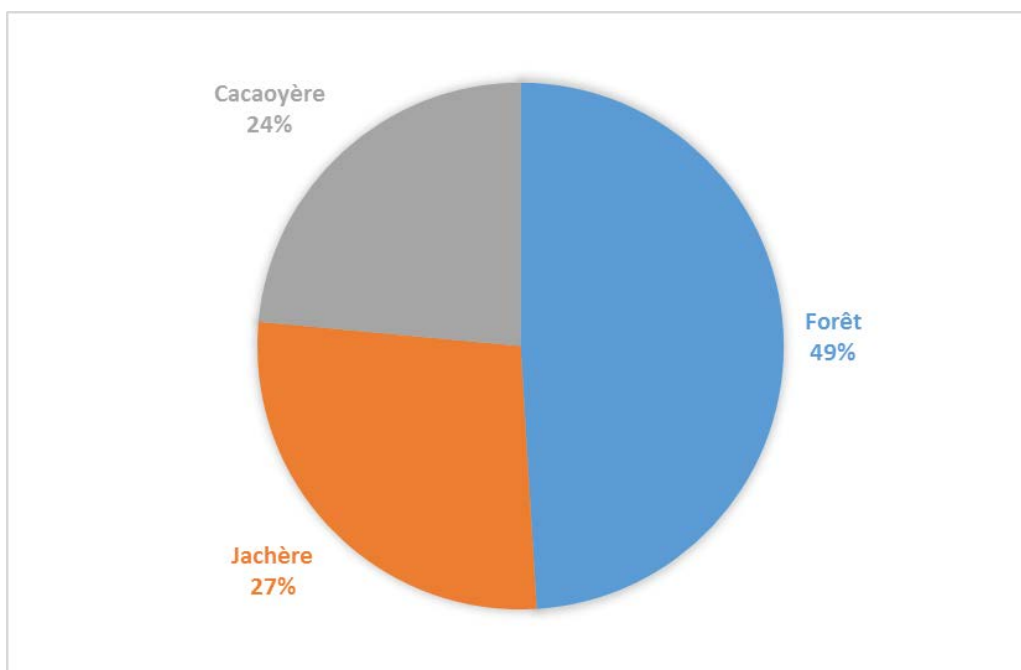


Figure 14: Ecosystems preferred by small-scale sawyers

Access to the resource follows a pattern at the center of which there are prospectors (i.e. People who go into a rural area in search of wood following orders received from traders or carpenters in the city). Prospectors are sometimes sawyers. Prospectors are responsible for identifying trees according to the desired species and negotiate prices with the customary owners. The sought-after species include fraké, samba, fromager and ako used to produce boards, beams or rafters. Trees are sold whole for prices ranging between 3,000 and 30,000 FCFA depending on the species and the quality. This relatively low cost is in contrast to the scarcity which is attested by all forest actors. One explanation for this phenomenon, to be verified through further research, could be on the one hand asymmetric information between sellers and buyers, and on the other hand the perception of the tree as "a hindrance" to farming. Logging is therefore often seen as a "favor" that the sawyer is doing to the farmer, by relieving the latter of a resource that is not given its real value.

Linked to this last hypothesis is the fact that in some cases it is the customary owners who contact prospectors or sawyers to offer trees that may interest them. The explanation commonly accepted by customary owners to justify this relationship with small-scale loggers is that small-scale logging reduces the risk of crop damage. Unlike industrial loggers who use heavy equipment for hauling operations, sawyers convert logs on the spot and evacuate them with the help of carters before transporting the products (eg. boards) to the market.

Logging sites are located approximately between 3 and 20 km from evacuation points. In Congo Basin countries, sawyers are usually closer to the evacuation point. Several factors seem to contribute to the long distance in the case of Côte d'Ivoire and further analyses are necessary. However, the interviews show that scarcity of the resource is the most important factor, with trees that are in inaccessible and remote areas from the main tracks.

Given that the activity is banned, none of the actors interviewed ever obtained documents authorizing logging of any kind whatsoever. The ban however represents only one side of the coin, the other being the fact that the rights of customary owners on trees located in "their" own farms – even if they are in logging perimeters – often prevail over the claims by the State that it is the sole proprietor of forests. In other words, customary owners endorse logging operations on land and a resource they consider theirs.

Broadly speaking, this issue falls within the scope of land tenure and land use, as is often the case in other countries that have signed VPAs. The new forestry law gives tree ownership to customary owners. On the sidelines, Côte d'Ivoire has also initiated a land reform process. Unfortunately, this process is moving very slowly and although it is essential for the sustainability of action undertaken under the FLEGT process, especially with regard to the possibilities of sustainable forest use, it is not desirable to link the progress of FLEGT discussions to the implementation of land reform. It is certain that tree ownership and land reform will surely lead to changes in how the resource is used today. These changes and policy processes related to land reform should have priority in discussions and negotiations related to the signing of the VPA in Côte d'Ivoire, but they should not block the progress of the FLEGT process because it risks delaying, by at least a decade, the implementation of the VPA.

Among the constraints faced by sawyers, administrative bottlenecks come in first position (Table 2). The increase in administrative bottlenecks must be related to the official ban on sawing in 2013. The ban has had very little effect on the day-to-day activities of sawyers. On the ground, government services practice a form of administrative tolerance, while sawyers adapt to the new situation. Far from ending the activity, the ban has rather led to an increase in informal payments, which occur especially during transportation of the resource but also during delivery in the markets. According to 39% of sawyers, administrative bottlenecks are settled subject to informal

harvesting. Sawyers are well aware of this reality on the ground, and their perception of the situation is well described by statements such as: "For the administration, what is important is not to be in order."

Table 2: Problems faced by small-scale loggers

Problems faced	Response rate
"Administrative bottlenecks "	31%
Resource scarcity	8%
Accidents and hardness of the work	13%
Lack of capital	6%
Poor quality equipment	10%
Breach of trust (boss, customer, worker)	10%
Difficult relations with owners of perimeters	10%
Sundry	4%
Precarious occupation	9%
Difficult evacuation of products	0%

Economic impacts

The direct permanent jobs (i.e. salaried staff declared as permanent employees by the depot owners) created in city markets across the country are about 3,000, while another 4,900 jobs are created on a temporary basis, i.e. staff called upon by depot owners when need be. The average monthly salary for permanent staff is about USD88, while it is about USD50 for temporary staff, which is generally paid on a daily basis.

The average selling price of sawn-wood sourced from artisanal operations is about USD180/m³ (or about FCFA 105,000/m³, which is higher than the estimated price of Louppe and Ouattara (2013), at FCFA 60,000/m³). This means that the total value of the domestic timber market sourced with artisanal timber is about USD93 million. These figures exclude the domestic consumption of timber sourced from industrial sawmills, which would add another USD250 million. By way of comparison, the official total value of the industrial timber export market in Cote d'Ivoire represented some USD165 million in 2011 (Louppe and Ouattara, 2013).

4.2 Cross-border timber flows from Côte d'Ivoire to neighboring countries

Cross-border timber flows estimates from Côte d'Ivoire

Six main locations were surveyed for a period of 6 months, from July 2015 to January 2016. The estimated total volume exported per year (from the data collection basis of 6 months) totals about 113,000 cubic meters of sawn-wood. About 30% of recorded trucks transported timber originating from sawmills, while 70% originated from operations conducted with artisanal means in the forest.

Seasonality seems to play a certain role in the trade, as exports increased from July 2015 to January 2016 (Figure 15).

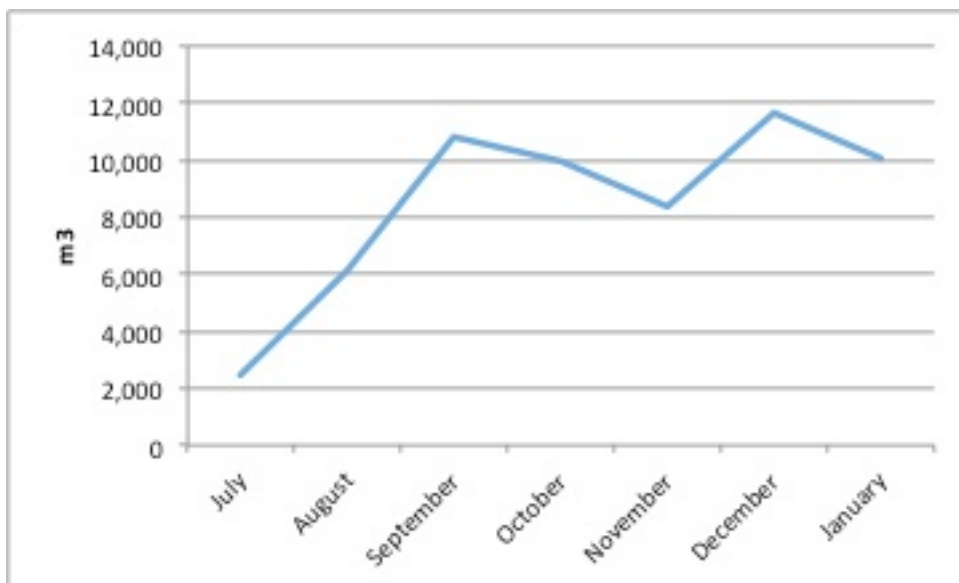


Figure 15: Fluxes, seasonality

There exist stark differences in the relative importance of export points, with the two major transit points being Korhogo and Odienné, through which the majority of the timber is directed North, towards Burkina and Mali.

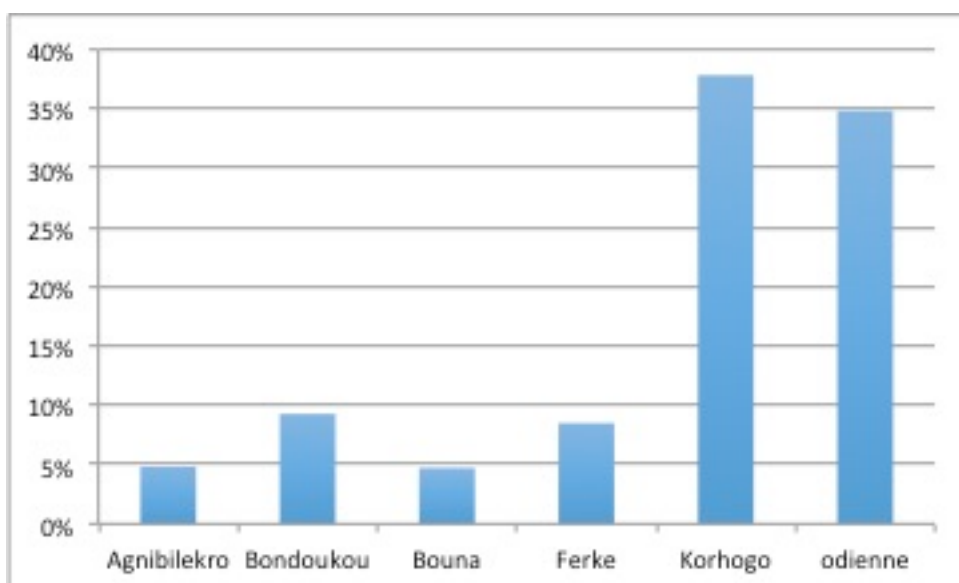


Figure 16: Fluxes, export points

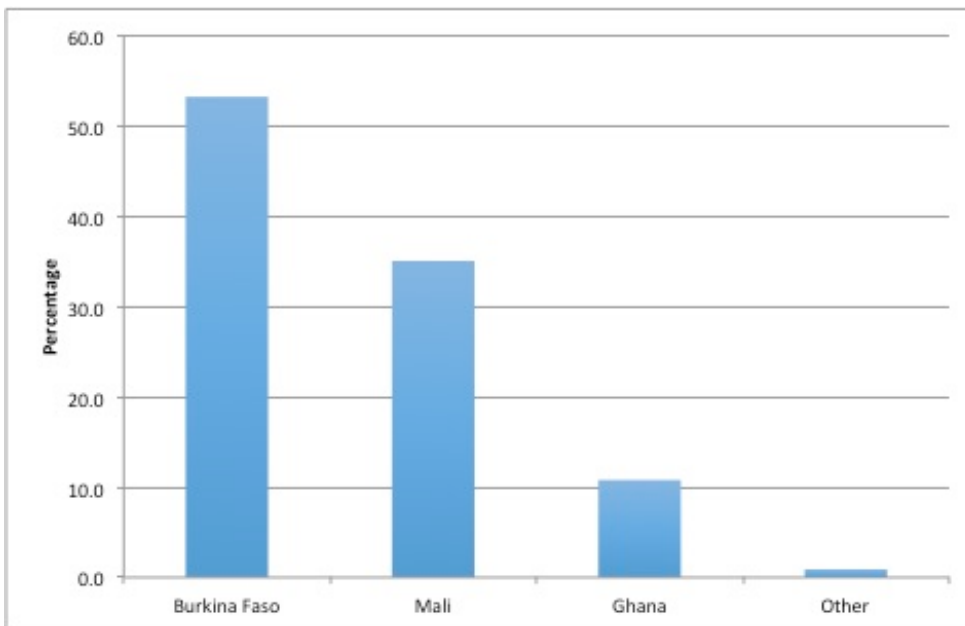


Figure 17: Fluxes, destinations

Given the methodology adopted (see above), it has not always been easy to clearly identify the species exported, which could only be identified by being soft or hardwood (bois blanc or bois rouge, respectively). Yet, the largest exported species is the one identified by the common name ‘chior’ (or Acajou de savane), followed by samba (Triplochyton spp.) and acajou (Figure 18).

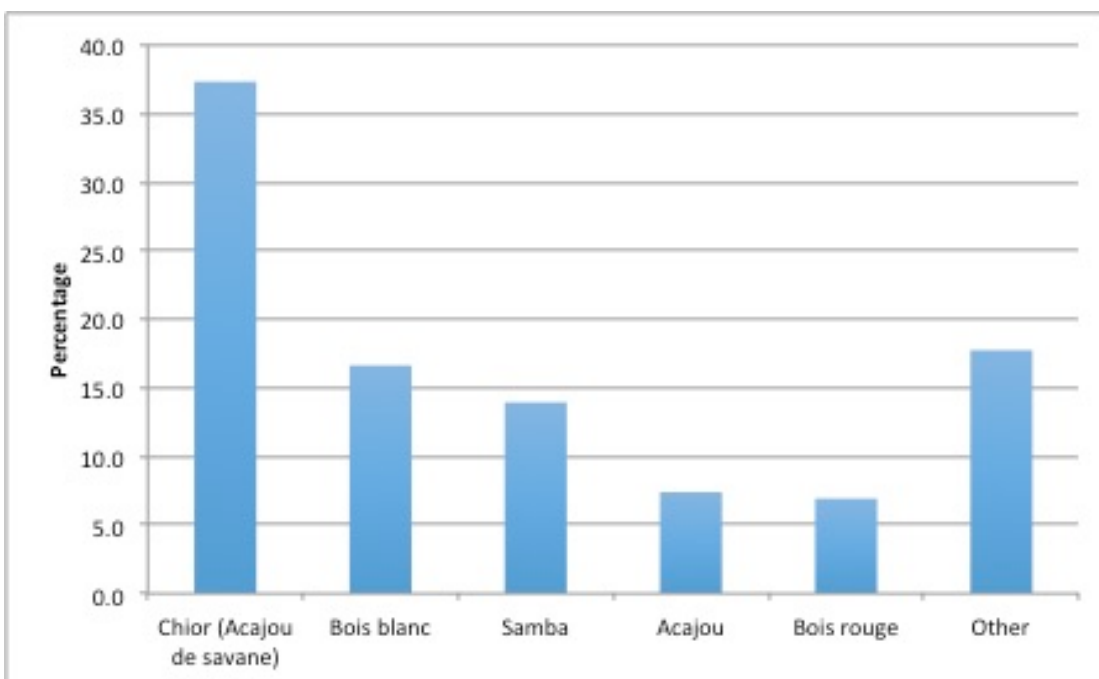


Figure 18: Fluxes, species

The findings about ‘chior’ are relevant because this species is only found in the Northern part of the country, i.e. above the 8th parallel, where harvesting activities are officially banned. Indeed, most records on this trade occurred at night, a possible indication that operators well know that such exports may not be considered entirely legal by the controlling authorities.

The governance settings for timber products exports from Côte d'Ivoire to neighboring countries

Besides the local market, Côte d'Ivoire Coast supplies the regional market with sawn wood (Duhesme Sepulchre and 2013). The data recorded by the administration in 2013, show that Africa is the third destination of the Ivorian wood with 19.40%, against 44.10% of exports and 28.47% for Europe and Asia respectively.

Overall, Mali, Burkina Faso and Mauritania are the destination of sawn wood at the regional level as they represent about 95% land exports. Other countries in West Africa such as Nigeria, Ghana, Liberia and Guinea are also involved in this trade, but in marginal proportions. According to Duhesme and Sepulchre (2013), the current volumes of business transactions on the timber in the West African sub-region largely escape official statistics.

Formal and informal procedures for timber exports from Côte d'Ivoire

In 2013, Côte d'Ivoire enacted a regulation regarding land export (MINEF 2013). This regulation provided a list of document to be issued by the forestry administration in order to facilitate the land export of forest timber products. Also, the document aims to collect statistics on timber trade between Côte d'Ivoire and ECOWAS countries and beyond. The document provides information such as the nature of the product, its origin and destination. As exporting country of sawn wood, the procedure in Côte d'Ivoire has no major constraints. A thorough study should however take into account the procedures to be followed by importers from Mali or Burkina Faso. The export process of timber from Côte d'Ivoire to neighboring countries and beyond includes the following steps:

- An exportation licence of forest products issued by the Ministry of Water and Forests;
- An official road slip for the export of forest products (BREPF) issued by the Ministry of Water and Forests; (bordereau de route pour l'exportation des produits forestiers)
- A control specification sheet be established by the exporting company;
- An itinerary product route form issued by the Ministry of Water and Forests (Une fiche d'itinéraire du produit délivrée par le ministère des eaux et forêts).
- The customs declaration (D6) of forest products for export, which will be issued by the Customs Administration;
- The payment of export duties to the customs administration

Once the documents are obtained from the central and decentralized forestry services and customs administration, the cargo and the accompanying documentation are subject to control at each check point of the Ministry of Water and Forests. At the border, the documents are covered and allowed to cross the border without further formalities. When the cargo has all the required official documents, it can be exported to neighboring countries in about 24h. Information gathered from customs clearance agents, officials of customs and Water and Forests installed at border reveal that it takes less than two hours to cross the border.

Alongside the official procedure, various arrangements exist to simplify export formal and informal wood:

- The first relates to the reported volumes that are often lower than the actual volumes. The practice is to record a standard volume of 30 m³ regardless of species or the actual volume.

- The second arrangement is to mix timber from processing units with informal timber, as the access of legal sawn wood is quite tricky.
- The third agreement concerns informal payments to official at various check points.

These multiple arrangements raise the issue of the governance in this sector both in terms of reliability of official statistics on exports by land and loss of revenue for the government.

4.3 Cross-border timber flows from Cameroon to Chad and Nigeria

Cross-border timber flows estimates from Cameroon to Chad

Past studies

Over the last ten years, Chad has experienced a strong economic growth that has required importing a large volume of commodities to support its development. Timber is among these commodities at least in the public works and furniture sectors. Cameroon and, to a lesser extent, the CAR are the two sources of timber for Chadian importers. Some studies have looked at this activity but did not provide an accurate and integrated diagnosis of this sector in Chad.

Three reports have tried to assess the exported timber volume to Chad. In 2009, Cerutti & Lescuyer (2011) estimated the timber flow from Cameroon to Chad around at 68 000m³/yr, including 27 000m³ of sawmill scraps. During the one-year study period, data collected in the East Region indicate that sawn wood was transported to northern Cameroon via approximately 500 railway carriages and 550 trucks. The destination most often mentioned was the Cameroon–Chad border. These results matched those obtained by Koffi (2005), who estimated annual informal exports at 40 000–60 000 m³ of sawn wood.

The supply of Chadian markets originates mainly from the eastern region of Cameroon. These are complex commodity chains that are dominated by Alhaji composed of wealthy Fulani traders and often related to Chadian exporters (Danboya 2011). Ngaoundere and Kousseri are the two hubs of the trade, which remain largely informal and plagued by corruption (SCET 2010).

In 2011, Lescuyer et al. (2014) assessed that at least 6 000 m³ of sawn wood were exported from Bangui to Chad every year. The vast majority of this timber was not legally-sourced.

Between 2008 and 2011, neither Cameroon nor RCA had officially exported wood products to Chad (Vautrin, 2011). There is now a statistical monitoring of these products by the Chadian administration, whose estimates are presented in Table 3 for the third quarter of 2015 for the checkpoints of Ngueli (for N'Djamena) and Moundou.

Table 3: Official statistics of imports of sawn wood to Chad between July and September 2015 (m³)

<i>Checkpoints</i>	<i>July 2015</i>	<i>Aug 2015</i>	<i>Sept 2015</i>	Total
N'Gueli	785	2 625	1 175	4 585
Moundou	1 320	1 045	990	3 355

Extrapolation of these figures to the whole year provides a total estimate around 32 000 m³ of sawnwood imported into Chad every year.

To our knowledge, there is no study on the consumption of sawnwood in the Chadian cities. Vautrin (2011) mentioned a number of 150 to 200 hardware stores throughout the country, that will sell about 90 000 m³ of wood products, but her estimates are based on a small number of interviews. Similarly, by questioning a few stakeholders, Koffi (2005) estimated the volume consumed by the inhabitants of N'Djamena at 10 000m³ per year.

Few hardware holders can provide the names of timber species and there is no specific request for species from the end consumers. All buyers, traders and controllers in Chad only identify «white wood" and "red wood" (Vautrin 2011).

Lastly, on the basis of a couple of interviews, Koffi (2005) estimated that part of the timber exported to Chad passed in transit through N'Djamena to feed the soudano-sahelian area and even north African countries.

Based on this brief state of the art, our report aims to contribute to the updating of data on timber imported by Chad from Cameroon and to analyze the evolution of this sector. Secondly, it details the formal and informal processes followed by the various stakeholders for this cross-border trade. Finally, several ways are considered to legalize and to better regulate this activity in both Chad and Cameroon.

Estimates of current flows
to the southern part of Chad.

Table 4: Sawn wood flows from Cameroon to Chad between July and December 2015 (m³)
4 and Figure 19 present our assessment of timber flows from the Cameroonian borders to N'Djamena and to the southern part of Chad.

Table 4: Sawn wood flows from Cameroon to Chad between July and December 2015 (m³)

<i>Survey sites</i>	<i>July</i>	<i>August</i>	<i>Sept</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>TOTAL (m3)</i>
N'Djamena-Ngueli	7,392	7,102	5,061	7,368	10,346	11,043	48,311
N'Djamena → Abeche	179	70	28	4	9	18	306
Moundou	1,645	2,667	2,373	2,475	1,540	1,582	12,282
Southern cities (via Moundou)	1,271	3,647	2,688	5,422	2,240	2,797	18,064

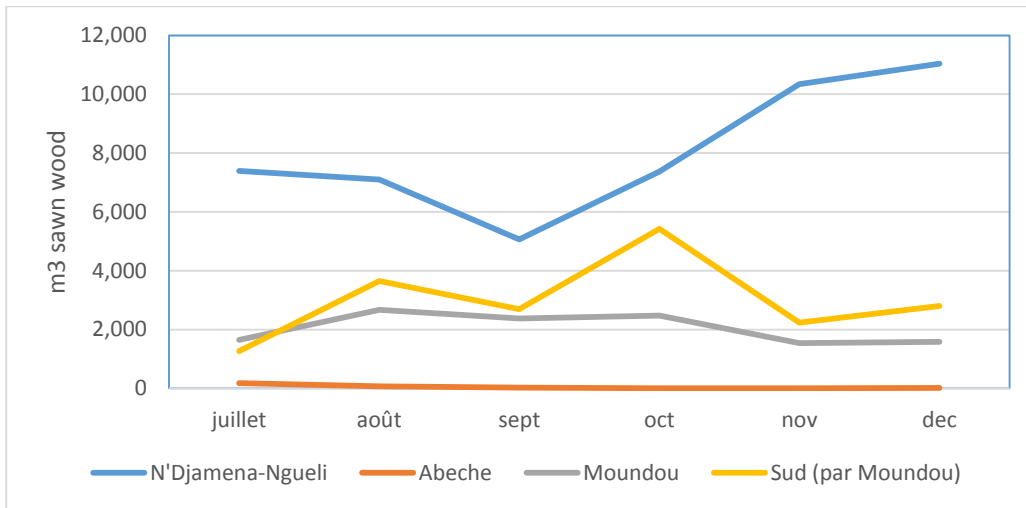


Figure 19: Sawn wood flows from Cameroon to Chad between July and December 2015

Data collection started at the beginning of the rainy season, which is characterized by the reduction of road traffic. This explains the low estimates of the volumes recorded between July and September. Against this backdrop, the flow of timber is constantly growing in N'Djamena in the last quarter of the year.

After six months of investigation, N'Djamena constitutes the main point of consumption of timber from Cameroon with about 60% of total volume. A very small amount of this timber goes out of N'Djamena to supply the city of Abeche or any other destination, contrary to the assumption made by Koffi (2005) ten years ago. Chadian cities are the final points of consumption of sawn wood imported to Chad.

In N'Djamena as in Moundou, white wood represent almost the entire volume. The products are similar in the two sites, with a predominance of wall plates, planks and rafters (Figure 20). They are almost all produced with artisanal means, except plywood.

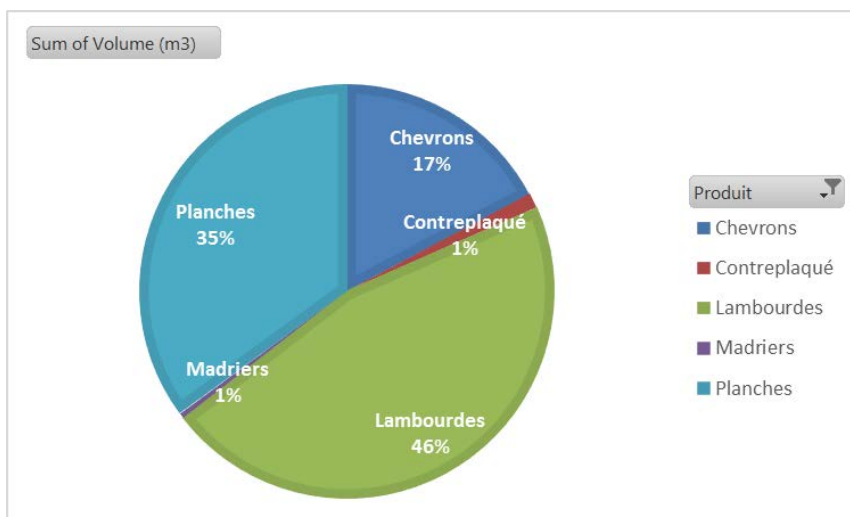


Figure 20: Importance of the types of sawn wood observed in N'Djamena

However, the commodity chain varies according to the two sites. Trucks entering through Moundou are registered in Cameroon and the average volume of their timber cargo is 70m³ per truck. They come directly from Ngaoundere markets found in the northern part of Cameroon. Conversely, the timber in N'Djamena is transported by trucks registered predominantly (79%) in Chad and contain an average of around 50m³ of wood. This is due to the stop over point in Kousseri in

Cameroon (Danboya 2011). In this city, timber is off-loaded from Cameroonian large-size trucks to be reloaded in smaller volume Chadian trucks that will supply N'Djamena.

But in the two sites, and whatever the size of the vehicle, an overwhelming majority of trucks are overloaded.

Our estimate of the actual volume of sawn wood imported into Chad stands at 79 000m³ for the last six months of 2015. Since this activity is seasonal, it is estimated that the total volume of sawn wood consumed in Chad is around 150 000m³ per year. This estimate indicates a very important development of the activity when compared to previous reviews. Between 2009 and 2010, Cerutti & Lescuyer (2011) and Lescuyer et al. (2014) estimated that about 68 000m³ and 6 000m³ of sawn wood were exported respectively from Cameroon and CAR to Chad yearly. Within a period of 6 years, the actually imported volume of sawn wood in Chad has more than doubled. Such an increase is partially explained by the annual rate of GDP growth from 3.4% to 13.8% between 2009 and 2015 and then by a significant increase in urban population and real estate investments (Gazel et al. 2010). It is likely that this sector continues to grow in the medium and long term since Chad aspires to become an emerging economy in 2030, though the recent oil crisis could undermine the economic dynamism of the country in the short term.

When our estimates of sawn wood imported into Chad are compared with the official statistics, there are signs of poor regulation in the sector. On the one hand, customs services recorded a volume of 7 940m³ of sawn wood for the third quarter 2015 while, for the same period, we observed more than 34 000m³ in Moundou and in Ngueli. This depicts that an important volume of sawn wood is not subject to official registration with the authorities, either because the vehicles are not identified, or because the volume transported is not fully recorded.

Cross-border timber flows estimates from Cameroon to Nigeria

Data collection started in July 2015 and end in January 2016 and this is a relatively short period of time to have an exhaustive estimate of activity. In spite the difficulties linked to insecurity in the study area, investigators were able to collect data on a total of 13758 cubic meters of wood for a time period of six month which might be extrapolated to a total flow of about 27,000 m³ annually. The species exported varied from site to site. Data collection on the Otu site ended in September (3 months after the start of the project). This is because the investigator could not continue working for the project for personal reasons. The table below summarises the quantity of wood recored by site.

Table 5: Volume of timber exported during the monitoring period

	July	August	September	October	November	December	Total
Akwese	129.159	175.989	315.9865	688.58	556.654	777.231	2643.5995
Abonshie	197.838	406.474	216.063	331.77	153.9	397.605	1703.65
Akwancha	181.89	303.054	256.889	171.635	596.203	846	2355.671
Nsanagarati	68.9568	63.4236	51.1611	50.5086	102.459	46.5862	383.0953
Agbokem G	51.2428	336.5203	222.06	161.032	69.162	52.618	892.6351
Otu	1.9092	11.192	44.67				57.7712
Ebinsi	73.677	91.3152	68.265	93.89	73.554	58.425	459.1262
Bamusso	127.98	40.176	106.74	143.73	85.392	270.66	774.678
Isangele	151.038	139.59	223.62	344.46	250.5	288.92	1398.128
Kumbe Balondo	301.2	138.93	222.18	194.58	173.43	279.3	1309.62
Mossongisele	215.49	571.2	135.3	700.8	46.4	111.255	1780.445
Total	1500.3808	2277.8641	1862.9346	2880.9856	2107.654	3128.6002	13758.419

The investigators were not able to identify all the species; some even have names that are unknown or unrecognizable to us. We therefore grouped the different species varying. Those that we were able to identify are shown below in volume. From our observation, it stands out that the most exported species by order of importance are: *Ceiba pentandra*(fromagers), *Entandrophragma* spp. (Mahogany), les *Terminalia superba*(Frake/White Afara), *Milicia esculsa*(Iroko), and *Dibetou Nauclea diderrichii* (Opepe/Bilinga) *Terminalia ivorensis* (Framire/ Black Afara), and *Obeche/Ayous* (*Triplochiton scleroxylon*).

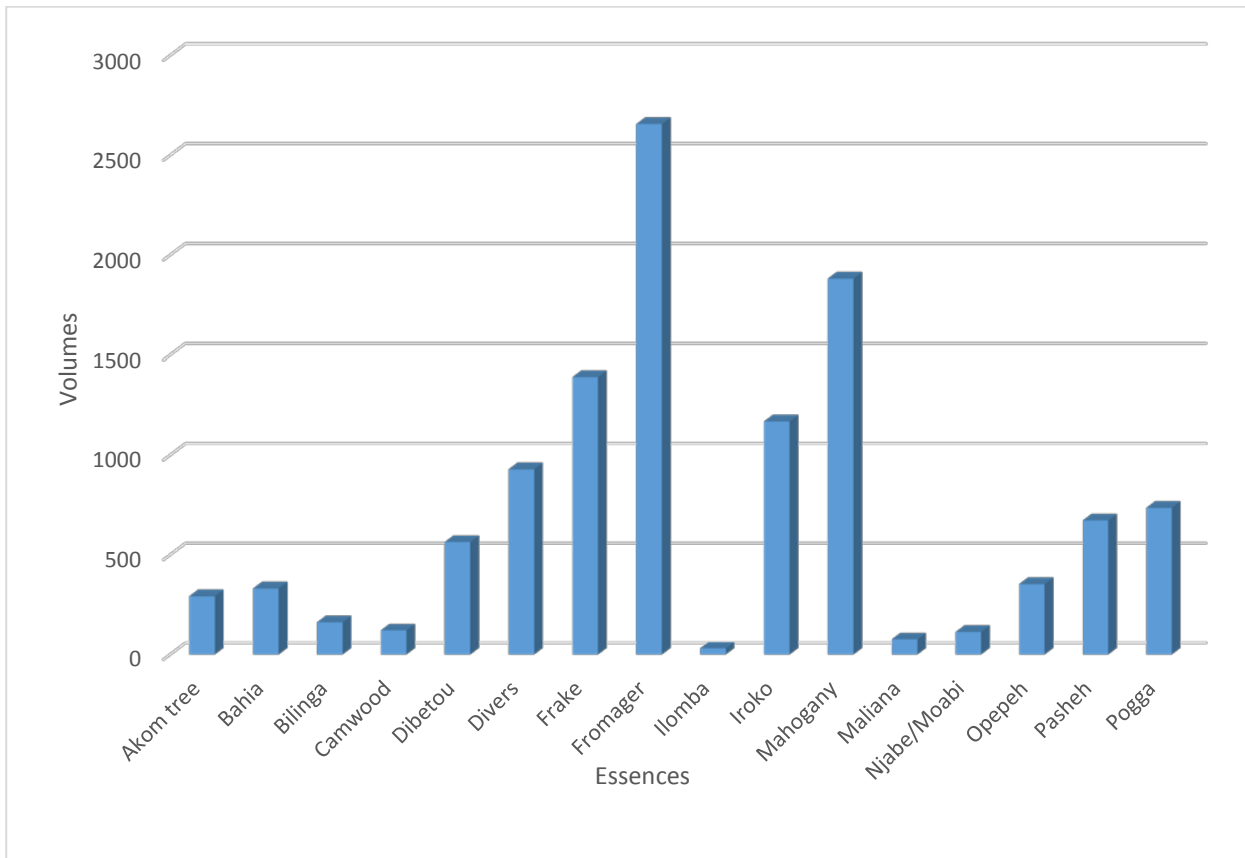


Figure 21: volume exported by species from Cameroon to Nigeria

Traditional species which are exported and at the same time preferred by the local market included Iroko (*Milicia* spp.), Mahogany (*Entandrophragma* spp.), Moabi (*Baillonella toxisperma*), Padouk Rouge (*Pterocarpus soyauxii*) and Doussie (*Azelia* spp.). These are also reported to be scarce on the market. Other species such as Framire (*Terminalia ivorensis*) and Fraké (*Terminalia superba*) had, however, slowly emerged as substitutes.

End-uses determined the various size specifications. In a significant number of cases, timber beams are the original inputs. The dominant cross-sectional sizes reported earlier in literature (Fuashi & Mosua, 2008) and still observed on markets are 1”x12”, and 2’x6” mostly used for doors and joinery; and 1”x12” and 2”x2” in Iroko and Opepe for furniture. The most transformed products are in a large majority found in « 1x12 » and « 2x2 » and are used in carpentry according to the figures below.

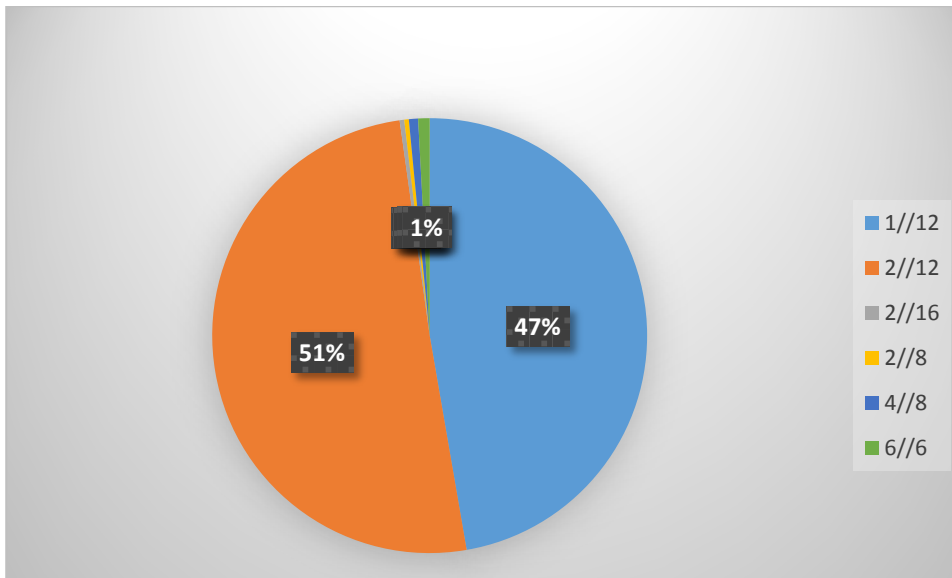


Figure 22: Exported products

The governance settings of timber exports from Cameroon to neighboring countries

The two countries on which the current study focusses have different status in terms of economic and diplomatic ties with Cameroon. In one hand, Chad and Cameroon are both member countries of the Economic Community of Central African States (ECCAS) and of the Economic and Monetary Community of Central Africa (CEMAC). Being members of these two economic groupings, Chad and Cameroon use the same currency and have reduced trade barriers to the minimum. Citizens of the two countries are free to travel from one country to the other without visa.

On the other hand, Nigeria does not belong to ECCAS or CEMAC and is rather part of the Economic Community of West Africa States (ECOWAS). Trade barriers are higher between two countries although they have agreed of freedom of movement for citizens.

Formal procedures to import timber products in Chad

Although Cameroon and Chad are both part of CEMAC and should have facilitated trade procedures, import of forest products remains a complex and lengthy process.

In the first instance, five type of documents are required by the customs and the administrations of tax and forestry to export from Cameroon (Koffi 2005):

1. The international safe-conduct, which is supposed to facilitate traffic and reduce police harassment between CEMAC countries.
2. The slip road, which describes the type of transported goods, volumes, and the destination of the products.
3. The transportation receipt, certifying that the carrier has paid transport taxes.
4. A movement certificate issued by the UDEAC (Customs Union of Central African States).
5. A customs declaration (type D6, D15 or D16), which specifies the nature and origin of the goods and their destination.

All Chadian traders must also follow several preliminary steps before being allowed to import forest products from Cameroon (Vautrin 2011): These include:

1. The establishment of an import request
2. Visit to BEAC and to BIVAC offices
3. An inspection or verification of the goods from the supplier
4. Issuance of an audit certificate

The importer then recruits a customs clearance agent who imports the products and follows the clearance procedure. Clearance is done at customs checkpoints (Ngueli for N'Djamena; Koutere or Belaba for Moundou) and follows several steps (STEC 2010, Vautrin 2011):

This admissibility of goods necessitates the presentation of legal importation documents by the supplier. These include a certificate of origin, a movement certificate, a health certificate, and a bill of goods. A Single Administrative Document (“Document Administratif Unique” - DAU) is then delivered to the agent to start clearance procedures which include;

1. Inspection of goods by the commercial brigade
2. Issuance of the invoice for the duties and taxes
3. Payment of fees customs fee
4. Issuance of a receipt and release warrant (“Bon A Enlever” - BAE)
5. Signature of BAE by the Office Manager
6. Visa BAE by the commercial brigade
7. Release of the goods

The calculation of customs duties is based on the tax value of timber determined by the Chadian administration and presented in Table6.

Table 6: Taxable values of sawn wood in Chad (F.CFA/m3)

Type of sawn wood	Soft wood (“white”)	Hard wood (“red”)
Wall-plate	30 000	50 000
Rafter	35 000	55 000
Plank	55 000	115 000
Beam	115 000	125 000
Plywood	50 000	55 000

Timber products are considered as “usual goods” (fourth category) by the Chadian authorities and are levied a custom fee of 62% of their taxable value. However, as Chad and Cameroon belong to CEMAC, a reduced rate (“Tarif Préférentiel Généralisé”) of 38% can be applied as soon as a certificate of origin is provided. This almost never happens, except for plywood that systematically comes from industrial sawmills (Vautrin 2011).

Official and of-the-record arrangements at the customs check points

The state and the current operation at customs checkpoints are causing significant delays in clearing the goods. It takes a full week in Ngueli, when all documents are up to date (SCET 2010). Such bottlenecks in cross-border trade can be explained by the low technical and logistical resources, the low qualification of staff, and the difficulty of the vast majority of traders to submit the required documents for clearance to Chad. There is much confusion at these checkpoints to the detriment of an effective and non-personalized treatment of clearance records (SCET 2010). To overcome these shortcomings, a "short chain" has been put in place and this eases the clearance of sawn wood from Cameroon. The “short chain” procedure has the following characteristics.

Firstly, goods are clear in a time lapse of less than 24 hours. Many brokers and intermediaries installed at the checkpoints manage to 'get out' commodities in less than 24 hours thanks to collusion with customs officials (SCET 2010). It is no longer necessary to submit all the documents required by Chadian customs. From 16 interviews we conducted with brokers and traders, 14 had the invoice to start the customs clearance procedure, 2 also held a certificate of origin, 2 had another administrative document, and 1 did not have any document at all. All invoices were from Cameroon

(Kousseri, Bertoua, Ngaoundere) and, according to respondents, an important part of the timber came from community forests in the Eastern region.

Secondly, many personal payments are granted to employees at the checkpoints to speed up the formal and informal customs clearance procedures. This money represents a significant part of the income they earn. The amounts paid at the two checkpoints Ngueli and Moundou are presented in Tables 7 and 8.

Table 7: Formal and informal clearance costs of freight of sawn wood through customs in Ngueli (in F.CFA/truck)

Location	Task to be done	Authority/person in charge	Cost (F.CFA)	Official payment	Evidence of payment
After the bridge from Kousseri	Visa of security services	Police, gendarmerie, customs	38,000	Yes	No
In front of the Ngueli checkpoint	Open the gate to enter the customs point	gendarmerie	7,000	No	No
Ngueli checkpoint	Customs clearance	custom clearance agent	25,000	Yes	Document Administratif Unique (DAU)
	Recordings in the customs store	Customs - Manifest and visit sections	40,000	No	DAU
	Recordings in the customs software Sydonia	Customs - Sydonia service	5,000	No	DAU
	Stamping DAU	Customs - Admissibility service	5,000	No	DAU
	Stamping DAU	Customs - Control service	5,000	No	DAU
	Stamping DAU	Customs - Chief of the visit section	100,000	No	Form
	Payment of clearance tax	Bank CBT	62% of taxable value	Yes	payment note
	Recordings of payment	Customs Régisseur	5,000	No	Receipt
	Recordings of receipts	Customs Accountant	2,000	No	

	Stamping DAU	Customs - Chief bureau	5,000	No	DAU
	Stamping DAU	Customs - Trade section	35,000	No	DAU
	Exiting the customs point	Customs - Chief of the exit section	25,000	No	Exit receipt
Outside the Ngueli checkpoint	Check up	National security branches	5,000	No	Signature
	Searching	Customs - Mobile squad	30,000	No	Stamp
N'Djamena city	Check up	Customs - Mobile squad	25,000	No	
	Check up	Council	25,000	Yes	Receipt
	Weighing	Weighbridge	50,000	No	Receipt

Table 8: Formal and informal costs to clear a freight of sawn wood through customs in Moundou (in F.CFA/truck)

Location	Task to be done	Authority/person in charge	Duration (min)	Cost (F.CFA)	Official payment	Evidence of payment
Koutere checkpoint	Check up	Customs Bureau chief	30	150,000	No	Visa
	Check up	Police	10	20,000	No	Visa
	Check up	National security branch	20	10,000	No	Visa
	Check up	Gendarmerie	5	50,000	No	
Between Koutere and Moundou	Searching	Gendarmerie	10	10,000	No	
Moundou checkpoint	Check up	Customs Captain	10	50,000	No	Visa
	Check up	Police	5	20,000	No	
	Check up	National security branch	5	10,000	No	
	Check up	Other administrations	10	20,000	No	

	Check up	Gendarmerie	10	10,000	No	
	Recordings	Customs Bureau chief	5	50,000	No	
Moundou or Koutere checkpoint	Payment of clearance tax	Trésor public	120	62% of taxable value	Yes	payment note

At both checkpoints, informal payments are estimated averagely between 5 700 and 6 600 F.CFA per cubic meter. This is a much lower value than the current rates of customs duties.

These informal payments are a must for any trader wishing to quickly clear his goods at the customs post. Such “payment for officialising legally problematic transactions” is current in Africa (Dobler 2016). However, the amounts vary, particularly for large sums which are almost always debated between customs officers and brokers, whereas smaller sums are paid on a more regular basis. Personal relationships equally play an important role in modulating the total amount of these informal payments, as seen in Cameroon (Cerutti et al. 2013) and more broadly in most cross-border trade in Africa (Dobler 2016). The balance of power is generally in favor of the customs who have the power to prolong the customs clearance procedure, but the vast majority of brokers can appeal to "resource persons" to limit abusive claims from customs. The role of these intermediaries is to convince customs officials to reduce the amount from the clearing agent. But this service is not free of charge and the intermediary often gets part of the cash/kind that was saved by the broker thanks to his intervention.

The third feature of this alternative customs clearance system is the reduction of the declared volumes of goods in order to reduce the amount of customs duty and save money to cover informal payments. In Ngueli, the most frequently declared volume to customs by our 11 respondents is 11 m³, while the average volume that we observed during the 6 months of follow-up was 52m³ per truck. In Moundou, our respondents declared 55m³ of timber per truck although our monitoring indicated an average volume of 70m³. Overloading of trucks and the under-assessment of the declared timber volumes to customs are described in all reports (Koffi 2005, SCET 2010, Vautrin 2011). These are illegal practices that are fully institutionalized today.

Governance arrangement for timber exports to Nigeria

It should be noted that all timber exports by land observed from Cameroon are iformal and most illegal. On the Mundemba site, customs services are not concerned with exportation of timber to Nigeria but the forestry post takes care of the exported timber on the Ekondo Titi site. The process begins with the operators negotiating with forestry chief of post for authorization to transform the resource. This is possible after a down payment of an informal tax ranging from 50 to 200.000FCFA with no supporting documents issued. This payment is more like a kick back to seal the lips of the authority. The second phase of the negotiation is at the level of the village committee where the informal tax paid varies between 15 000 and 50 000CFCA. After this payment, the operators can now begin their transformation activity at the end of which the products are loaded into the canoe for Nigeria. At times the noise from humming machines calls the attention of the Cameroon military who appear at the production site and receive their own booty which ranges from 10 000 FCFA to 30 000FCFA depending on the circumstances and volume of wood. In all, a minimum amount of 75 000FCFA is paid each time a load of wood leaves Cameroon for Nigeria.

On the Mamfe and Nkambe sites, the Nigerian operators enter the Cameroonian territory and their first port of call is forestry post at Ako. Here, the operators indicate the quantity and species of wood sought for. In these two forest reserves, the remaining tree species is mainly gallery forest where transformation is easier. The forestry post collects 50 000 FCFA for 220 pieces of wood (Mainly 1x12), the council 6000FCFA and the police 10 000FCFA. The various phases of the negotiation are done in no time. After these payments, the operator now gains access to the site. But before the transformation phase begins, the village advisory board has to receive its own share which stands at 15000FCFA.

After the transformation phase, the logs are transported by lorry to the river banks which serves as a forestry post. Here, the operator pays another 30 000 FCFA to the customs agents on duty. At the end of it all, our investigator makes a round of the production site and to the various services to ensure that each service receives its due according to the truck load of logs. The wood is then transported to the river side to be transported by canoe.

Information gathered indicates that the intensity of activity increases during the dry season with the decrease in the level of the river. The volume of activity and the water level trigger an increase in the operators in the business which equally pushes up the amount of taxes paid. A minimum 80 000FCFA is paid for a truck load of logs bound for Nigeria. According to our informants, this activity will grow in importance in the next 5 years.

4.4 Cross border timber flows from DRC to Neighboring countries

Background on DRC

Cross-border timber flows estimates from DRC to neighboring countries

Timber flows from DRC to Uganda and Rwanda

Because of the availability of results of a recent study conducted by CIFOR to estimate the timber flows from DRC to Uganda and Rwanda (Lescuyer et al., 2014) and to avoid the wasting of the limited financial and other resources allocated to the current study, we decided to consider the estimates of Lescuyer et al. (2014) as topical. It is worth mentioning the study of Lescuyer et al. used the same methodological approach but for a longer time period. Lescuyer et al. estimated that DRC exports annually about 60,000 m³ and 5,600 m³ of sawn wood to Uganda and Rwanda respectively produced locally through chainsaw milling. The three main types of timber products exported from DRC to Uganda and Rwanda are Planks (44% of the total volume exported), Beams (27%) and lintel (16%). Concerning the species, the exports to Uganda and Rwanda consist mainly of high value red wood species such as the *Entandrophragma* sp (36%) and the *Khaya* sp (also 36%) also known as African Mahogany.

The case of Zambia

The Zambian context

Zambia is a landlocked country situated in the Southern African Sub-region. It covers some 752,617 km² of land and lies between latitudes 8 or 18 degrees south and longitudes 22 and 34 degrees east. Zambia is surrounded by eight (8) neighboring countries namely Tanzania and the Democratic Republic of Congo to the north; Malawi and Mozambique to the east; Zimbabwe;

Botswana and Namibia to the south; and Angola to the west. Zambia is endowed with an abundance of Natural resources and a rich biological diversity. Biogeographically, Zambia falls into the Zambezian biome. The country is dominated by miombo woodlands where the dominant genres are *Brachystegia*, *Julbernadia* and *Isoberlinia*. Deciduous forests are also found in Luangwa and Zambezi Valleys and are equally widespread in the northern and western parts of the country. These woodlands carry the country's commercial timber species which are harvested though a mix of small scale and large scale loggers.

The charcoal industry contributes close to 2.3% of GDP, while the rest of the forest sector (including commercial timber) contributes about 3% to the GDP. With the exception of a few hard woods, such as Mukusi (*Baikiaea Plurijuga*) teak and Mukwa (*Pterocarpus Angolensis*), indigenous forests in Zambia are poor in commercial timber species, the stocking rate of these valuable hard woods ranges from 0.5 to 2.0t per ha and there are only five main commercial timber areas in the country. Harvesting for both domestic and international markets is carried out under the Forestry department but lately, other species such as *Pterocarpus chrysothrix* (Mukula); *Swartzia Madagascariensis*; and *Coleophospermum Mopane* are entering the market through Chinese influence. Some of these three species are also found in the neighboring countries but different rules are used to control exploitation. Timber does move between these countries as well.

Timber flows between DRC and Zambia

It was noticed that timber movement across Kasumbalesa border was frequent and consisted of both soft and hard woods. However, it was observed that most of the timber crossing from Zambia to DRC were soft woods while all the hard wood timber recorded was from Congo DR to China through exit points in Zambia such as Katima Mulilo (Namibia-Zambia border) and Nakonde (Tanzania-Zambia border). It has never been clear as to why this is the case.

At the contrary, timber movement between Zambia and Congo DR at the Mokambo Border post was less active. During the four months of data collection most of the soft woods recorded crossed over this border post with some of the timber moving between Copperbelt Province and Luapula Province of Zambia. Cross country movement between Zambia and Congo consisted of some Mukula most of which was in transit to China.

Kipushi border is the least active in terms of timber movement. From data collected during the visits to the border post between September and December 2015 no timber was recorded as crossing the Kipushi border. This could be attributed to the poor road network on the Zambian side. In addition, according to the traders, the border was not well equipped in terms of licensing and certification of cross border permits especially on the Zambian side. It was noted that there is one individual who does sell softwoods using a 2 ton truck. The border post does record high levels of charcoal movement to the DRC. (A lot of charcoal crosses formally at Kipushi. The Forestry Department monitors its movement).

Both hardwood (90%) and soft wood timber are traded and moved across the borders. The hardwood species recorded are two Mukula species *Pterocarpus chrysothrix* and *Pterocarpus tinctoris*. The softwood types are *Pinus oocarpa* and *Pinus Kesiya* (Table 9).

Table 9: Timber species traded

Name of Species	Percent, (n=57)
Pterocarpus tinctorius	27.5
Pterocarpus chrysothrix	62.5
Pinus Oocarpa	2.5
Pinus kesiya	7.5
	100.0

The timber is traded both round (52%) and sawn form including cants (37.5%) (Table 10). For round hardwood diameter sizes range from 9 cm to 20 cm, while the size of blocks/cants or semi-processed timber ranged from 15 cm x 20 cm. For softwood, the timber was in form of planks with sizes: 150mm x 50 mm and 100 mm x 50 mm.

Most of the timber volumes were captured in October 2015 (33%) and the least volumes in September 2015 (17.8%). By border point, most of the timber movement was recorded at Kasumbalesa border (80%) and no movement of timber was recorded across Kipushi border. The average volume over four months is 40.2 m³.

The mean for three days in a month is about 401.7m³ of timber. Extrapolation based on the three days average suggests that about 12, 451 m³ of timber is moved per month. In a year, about 50,000cubic meters (49,803.98 m³) of timber are traded per annum through the three borders.

Table 10: Form in which timber is traded

Form in which Timber is traded	Percent (n=57)
Roundwood Debarked	52.5
Cant/Block	37.5
Plank	10.0
	100.0

The origin of the timber from DRC was Lubambashi (75%), Katanga (10%) and other areas within DRC (5%). For Zambia, the timber was supplied from Copperbelt towns of Mufulira (7.5%) and Ndola (2.5%) (Figure 23). The timber from Zambia was all pine i.e. softwood.

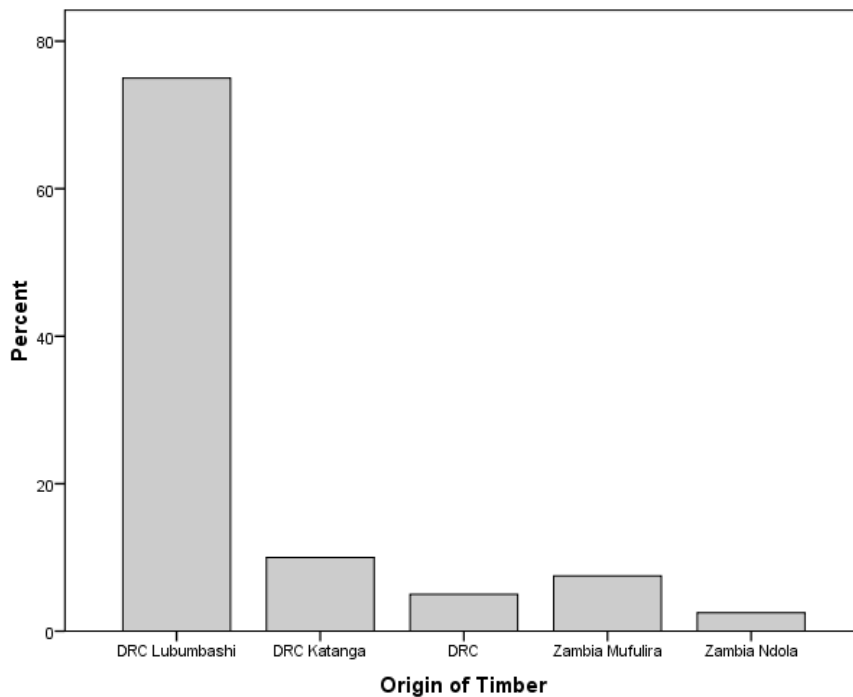


Figure 23: Origin of timber traded across the three Zambia-DRC borders

The case of Angola

Context and past studies

Many studies (Benneker et al. 2012, Lee 2015, Lescuyer et al. 2014) have been published these last years which give a global picture of the artisanal exploitation of the timber sector in the Democratic Republic of Congo. Some of these studies focus specifically on the Bas Congo province or Central Kongo according to imposed decentralization classification. In general, the actual exportation of timber from DRC to Angola is not well known. Only a few reports present an assessment of the across border flow. These reports are presented chronologically below.

In early 2000, Djiré (2003) identified three disposal sites of artisanal sawn wood produced in Bas Congo of which Angola absorbed almost 40% of the volume, about 47 120 m³, mainly in the form of shelves. However, the calculation assumptions are arguable as they are based on declarations made by a few operators which are then later probably excessively extrapolated. During the same period he indicates that statistics from Congolese board of Commerce at Boma, estimates the volume of timber exported to Angola at about 2 300 m³ in 2001 and 2002. Very little sawn wood to Angola is of industrial origin which is a confirmation of earlier studies. However part of artisanal sawn wood is still produced from logging concessions. The quantity of timber sold in Angola originates mainly from Boma, Lemaba, Tshela and Lukula.

In 2007, the Bas Congo province decided to officially ban artisanal exploitation of wood energy value chains in order to primarily preserve the last tracts of forest mainly in the Luki reserve. However, this measure hardly had the desired effect. Mbemba et al. (2009) observe that Bas Congo remains the main source of artisanal sawn wood in markets in Kinshasa. But Ndam (2010) indicates that timber and charcoal flow to Angola saw a considerably reduction without explaining how this conclusion came about.

Timber flows estimates from DRC to Angola

The survey of the trans-border flow of timber started partially in October 2015 and was updated until February 2016. Results of the monitoring are presented in the table below as well and in Figure 24.

Table11: Estimates of the flow of timber between le Bas Congo and Angola (m³)

	Oct.-15	Nov.-15	Dec.-15	Jan.-16	Feb.-16	TOTAL
Boma - Cema	20.00	40.00	155.50	168.60	150.00	534.10
Boma - Luangu Nzambi		38.15	119.18	80.20	106.00	343.53
Moanda - Nzadi Kongo		16.00	87.00	148.50	79.00	330.50
Lukula - Kakongo Songo	3.30	14.60	82.60	59.80	81.00	241.30
Matadi - Ango Ango	36.33	35.96	47.48	0.00	0.00	119.77
TOTAL	59.63	144.71	491.75	457.10	416.00	1569.19

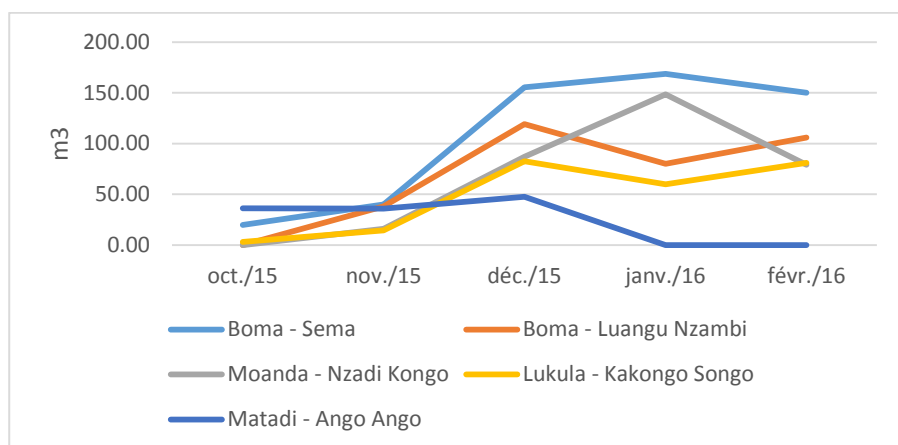


Figure 24: Evolution of timber flows between le Bas Congo and Angola

Because of the partial beginning of the survey in October, the estimates presented are conservative, however, with increases in timber flow from November 2015. The border post of Sema a Boma looks like the main entry point for timber far ahead of the Ango Ango port at Matadi.

The total volume of the trade remains low on the survey sites. If the data is extrapolated to a whole year, this will correspond to an annual volume of about 3 500m³ of timber between DRC and Angola.

The next estimates drawn from the observations in March 2016 will either confirm or refute this pattern. The volume is far less than Djiré (2003) estimates though 15 years down the line. Regardless of methodological lapses in the initial study, our estimate confirms the serious drop in trans-border trade for some years now as recent studies also indicate.

Many reasons can be advanced to explain such a decline in trade. Firstly, forestry resources especially species which are commercially attractive are becoming more scarce in the province of Bas Congo. Secondly, the drop in the value of Kwanza since the start of 2015, has limited commercial transaction between the two countries. Lastly, it is possible that the halt in the ban on artisanal sawn wood in the province in 2014 pushed the public authorities to take their

responsibilities and apply the regulations specific to the sector. Future study on trans-border trade governance will allow the hypothesis of this study to be verified.

In 2011 REM (2011) noted that forest exploitation continues in the Bas Kongo, stimulated mainly by the demand from Kinshasa. These illegal loggings equally fuels timber export flow to Angola and to a lesser extent towards Cabinda and neighbouring Congo as well as to the local markets in Boma, Matadi and Tshela.

By letter N° 883/VB/BC/2012 of 29 September 2012, and under the recommendation of the Provincial Minister of Environment and Conservation, the mayor of Boma banned trade in sawn wood to Angola. Again, this decision has had very little influence on the activity which already operates informally. Belesi et al. (2013) also observed timber flow between Boma and the Angolan border. The provincial production of timber which serves the territories of Tshela and Moanda is transported partially by beach SEP CONGO Nkungu and Luangu Nzambi in Angola.

However, cross border timber trade from Bas Congo to Angola and Congo is only 15% of activities monitored in this study. Iroko (*Milicia excelsa*) and tola (*Prioria balsamiferum*) are the wood species most sought after especially after they have been transformed into plank. Part of the timber trade is refinanced by Angolan traders.

In 2014, provincial authorities lifted the ban on artisanal exploitation of soft wood with the intention of easing the formalization of the sector but there has been no follow up to this effect. The transportation of energy wood which serves of Tshela and Moanda is partly conveyed through the SEP CONGO and Luangu Nzambi in Angola.

5. Conclusions and recommendations

5.1 Main conclusions on Domestic timber consumptions in Côte d'Ivoire

The baseline study conducted on domestic markets and the role of the informal sector in Côte d'Ivoire has shown that the national market in Côte d'Ivoire consumes about 1.6 million cubic meters of sawn wood annually, about 27% (or 515,000 m³) of which is produced by artisanal millers. The most important share comes from industrial and semi-industrial sawmills. Knowing that Côte d'Ivoire exports by sea to industrial countries about 370,000 m³ of sawn wood annually (DEIAF, 2015), it is needless to say that the most important market for Ivoirian timber is the domestic market. This is also in line with studies conducted earlier in DRC (Lescuyer et al. 2014) and Cameroon (Eba'a Atyi et al., 2013).

Officially artisanal sawmilling is ban by a government decree in Côte d'Ivoire since 2013. However, such ban has had very little effect on the operators of this sector, which occupy an increasingly important role.

Small-scale logging as a whole is an important source of income for people in rural areas and that those operating in this sector have a long-term goal given that apart from recurrent expenditures, a significant proportion of incomes generated is used to undertake large-scale investments such as cocoa, coffee and cashew plantations.

Incomes are reinvested in rural areas since 95% of the sawyers are Ivorian and 57% of them operate in their region of origin. This situation is a contrast with what obtains downstream the industry where there are, on the contrary, more of non-Ivorian actors. From the government side, there is no

system or tool to monitor domestic consumption and its consequences on the country's permanent forest estate.

It is urgent to design a real effective policy for the supply of the domestic market and such a policy cannot be limited simply to a ban on artisanal timber production.

5.2 The role of the informal sector in cross-border trade of timber products in Africa

Cross border timber products has enormous potentials and is growing already very fast. The Democratic republic of Congo is estimated to export more than 120,000 m³ of sawn-wood to its neighboring countries through the southern and eastern borders. In comparison, the sawn wood export of DRC to industrialized countries is estimated at 26,000 m³ per year (de Wasseige et al., 2014). Similarly, Cameroon exports at least 175,000 m³ to Chad and Nigeria yearly and we believe that this figure is underestimated for we did not cover all the timber routes between Cameroon and Nigeria. Chad alone imports about 150,000 m³ from Cameroon annually, which is the highest volume of lumber exported from Cameroon to any single country in the world, the second largest importer of Cameroonian sawn wood being Belgium with about 130,000 m³ per year (MINFOF, 2016). As for Côte d'Ivoire, it is estimated that it exports 113,000 m³ by land to neighboring countries per year, which is more than the volume of about 72,000 m³ given by official reports (DIEF, 2015).

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Annexes

Annex 1: Intra-African trade of timber: the Cameroon-Chad case in 2015

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February 2016

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Résumé

L'importance et les moyens mis en œuvre pour importer des sciages au Tchad en provenance du Cameroun demeurent très peu documentés. Deux enquêtes ont été réalisées pour dresser le diagnostic actuel de cette filière. D'une part, un suivi des flux de sciages a été fait à N'Djamena et à Moundou de juillet à décembre 2015. D'autre part, des entretiens ont été conduits avec 16 personnes ressources pour caractériser les processus suivis pour importer et dédouaner le bois provenant du Cameroun.

Selon nos enquêtes, le volume de sciages arrivant au Tchad à partir des frontières camerounaises s'établit à 79 000m³ sur la période d'enquête, soit probablement environ 150 000m³ par an. C'est un doublement de l'activité par rapport aux estimations réalisées en 2009 sur la base d'un suivi de ce commerce à partir du nord Cameroun. 60% de ce bois est consommé à N'Djamena et n'est pas réexporté vers d'autres pays. Les villes du sud du pays sont également des points importants de consommation. Presque la totalité des sciages importés au Tchad est constitué de « bois blancs » et ils sont produits avec des moyens artisanaux. Les camions livrant ces sciages au Tchad portent des volumes moyens compris entre 50 et 70m³ chacun. Seulement 25% de ce volume est enregistré par les douanes tchadiennes.

Les procédures officielles d'importation sont longues et coûteuses au Tchad. Les acteurs de la filière ont donc mis en place une « filière courte » de dédouanement du bois, qui se caractérise par une sous-déclaration des volumes importés et le versement de pots-de-vin. Ce système parallèle est aujourd'hui complètement institutionnalisé, notamment car il diminue le coût de dédouanement de 28% par rapport au coût de la procédure légale. Cette pratique engendre un manque à gagner fiscal autour de 2 milliards de F.CFA pour l'Etat tchadien, mais elle produit des bénéfices importants aux officiers des douanes, aux transitaires, aux commerçants et aux consommateurs finals de sciages.

Le Tchad a donc peu d'intérêt économique ou politique à changer rapidement ces pratiques informelles d'importation du bois du Cameroun. Toutefois une évolution peut être envisagée en développant des incitations financières à appliquer la réglementation au Tchad et en réduisant les sources de bois illégal au Cameroun. Au Cameroun, cela requiert de (1) vérifier les possibilités réelles de production de bois dans les forêts communautaires, (2) contrôler effectivement la légalité des documents de transport du bois dans les villes de Ngaoundéré et de Kousséri, et (3) fournir aux douanes tchadiennes la liste des documents démontrant spécifiquement la légalité des produits forestiers provenant du Cameroun.

Abstract

The importance and the processes used to import timber to Chad from Cameroon remain poorly documented. Two surveys were conducted to establish the current diagnosis of this sector. First, the monitoring of the timber flows was done in N'Djamena and Moundou from July to December 2015. In addition, interviews were conducted with 16 key people to characterize the processes used to import and customs clear timber from Cameroon.

According to our investigations, the volume of sawn wood arriving in Chad from the Cameroon borders is 79 000m³ on the investigation period, probably about 150 000m³ per year. This is a doubling of the activity from the estimates made in 2009 on the basis of a monitoring of this trade from northern Cameroon. 60% of this wood is consumed in N'Djamena and is not re-exported to other countries. The cities of the south are also important points of consumption. Almost all sawn wood imported into Chad consists of "white wood" and are produced with artisanal means. The trucks delivering the timber in Chad carry average volumes of between 50 and 70m³ each. Only 25% of this volume is recorded by Chadian customs.

Official import procedures are lengthy and expensive in Chad. The actors of the timber commodity chain have therefore set up a "short track" clearance system, which is characterized by underreporting in imported volumes and the payment of bribes. This parallel system is now fully institutionalized, especially as it decreases the cost of clearance of 28% from the cost of the legal procedure. This practice creates a tax shortfall of around 2 billion F.CFA for the Chadian state, but it produces significant benefits to customs officials, brokers, traders and end-consumers of timber.

The Chad has little economic or political interest to quickly change these informal practices of importing timber from Cameroon. However, a change can be expected by developing financial incentives to enforce the regulations in Chad and by reducing the sources of illegal timber in Cameroon. In Cameroon, this would require to (1) check the actual possibilities of timber production in community forests to avoid timber laundering, (2) control the legality of transportation documents of timber in the cities of Ngaoundere and Kousseri, and (3) provide Chadian customs with the list of specific documents that demonstrate the legality of forest products from Cameroon.

Background

Over the last ten years, Chad has experienced a strong economic growth that has required importing a large volume of commodities to support its development. Timber is among these commodities for at least the public works and furniture sectors. Cameroon and, to a lesser extent, the CAR are the two sources of timber for Chadian importers. Some studies have looked at this activity but did not provide an accurate and integrated diagnosis of this sector in Chad.

Three reports have tried to assess the exported timber volume to Chad. In 2009, Cerutti & Lescuyer (2011) estimated the timber flow from Cameroon to Chad around 68 000m³/yr, including 27 000m³ of sawmill scraps. During the one-year study period, data collected in the East Region indicate that sawn wood was transported to northern Cameroon via approximately 500 railway carriages and 550 trucks. The destination most often mentioned was the Cameroon–Chad border. These results matched those obtained by Koffi (2005), who estimated annual informal exports at 40 000–60 000 m³ of sawn wood.

The supply of Chadian markets originates mainly from the eastern region of Cameroon. These are complex commodity chains that are dominated by Alhaji composed of wealthy Fulani traders and often related to Chadian exporters (Danboya 2011). Ngaoundere and Kousseri are the two hubs of the trade, which remains largely informal and plagued by corruption (SCET 2010).

In 2011, Lescuyer et al. (2014) assessed that at least 6 000 m³ of sawn wood were exported from Bangui to Tchad every year. The vast majority of this timber was not legally-sourced.

Between 2008 and 2011, neither Cameroon nor RCA had officially exported wood products to Chad (Vautrin, 2011). There is now a statistical monitoring of these products by the Chadian administration, whose estimates are presented in Table 1 for the third quarter of 2015 for the checkpoints of Ngueli (for N'Djamena) and Moundou.

Table 1 – Official statistics of imports of sawn wood to Chad between July and September 2015 (m³)

<i>Checkpoints</i>	<i>July 2015</i>	<i>Aug 2015</i>	<i>Sept 2015</i>	Total
N'Gueli	785	2 625	1 175	4 585
Moundou	1 320	1 045	990	3 355

Extrapolation of these figures to the whole year provides a total estimate around 32 000 m³ of sawn wood imported into Chad every year.

To our knowledge, there is no study on the consumption of sawnwood in the Chadian cities. Vautrin (2011) mentioned a number of 150 to 200 hardware stores throughout the country, who would sell about 90 000 m³ of wood products, but her estimates are based on a small number of interviews. Similarly, by questioning a few stakeholders, Koffi (2005) estimated the volume consumed by the inhabitants of N'Djamena to 10 000m³ per year.

Few hardware holders can provide the names of timber species and there is no specific request for species from the end consumers. All buyers, traders and controllers in Chad distinguish only between "white wood" and "red wood" (Vautrin 2011).

Lastly, on the basis of a couple of interviews, Koffi (2005) estimated that part of the timber exported to Chad passed in transit through N'Djamena to feed the soudano-sahelian area and even north african countries.

Based on this brief state of the art, our report aims to contribute to the updating of data on timber imported by Chad from Cameroon and to analyze the evolution of this sector. Secondly, it details the formal and informal processes followed by the various stakeholders for this cross-border trade. Finally, several ways are considered to legalize and to better regulate this activity in both Chad and Cameroon.

Methods

Two survey methods were used to implement the two parts of this study. In all cases, the survey protocols were previously tested to amend and facilitate the collection of information. They also rely on the experience of CIFOR to conduct such studies in several countries of the Congo Basin.

Moreover, the survey team paid visits in June, July and November 2015 to Ministry of Forestry, Ministry of Trade, and customs administration to introduce the project and to collect their feedbacks and expectations on this study.

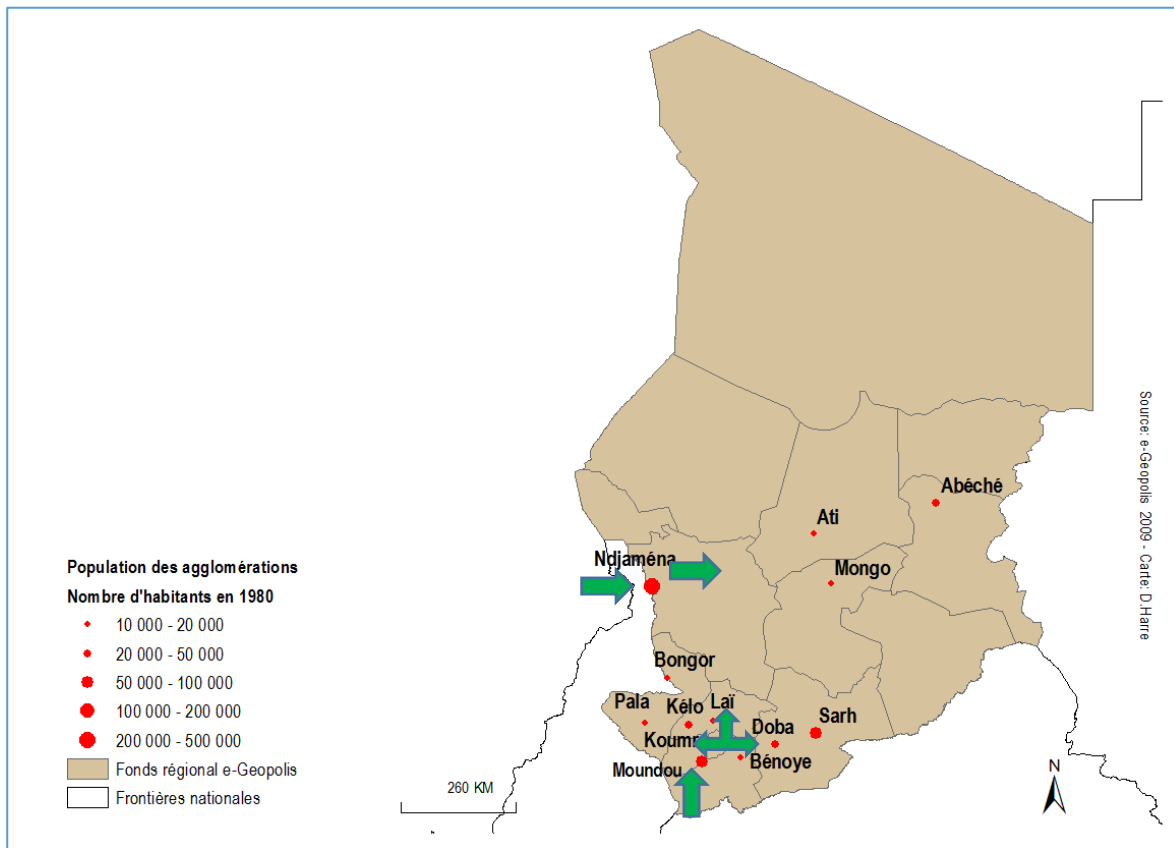
The first survey focused on tracking the flows of timber from Cameroon to Chad. In June 2015, a preliminary field visit was done to confirm the timber routes from Cameroon to Chad, and to recruit the enumerators. This visit tested the survey protocol for a 2 week period, before the regular survey started at the beginning of July 2015 for 6 months.

Based on the knowledge of the national expert and on technical reports (SCET 2010), four survey sites were selected and monitored by our investigators (Figure 1):

1. Entry road to N'Djamena through the border post of Ngueli, on the road from Kousseri (Cameroon);
2. Exit road from N'Djamena to Abeche;
3. Entry road to Moundou, from the southern border of Cameroon;
4. Exit roads of Moundou to cities located South of Chad, where human density is the highest in Chad (Gazel et al. 2010).

In these four sites, the survey last 48h per week, with 2 x 12h by day (6AM-6PM) and 2x 12h by night (6PM-6AM) during a 6 month period. Data were collected according to a standard questionnaire provided by CIFOR. This survey form is presented in Annex I. Enumerators distinguished industrially-processed timber and timber processed with artisanal means but it was not usually possible to identify the timber species loaded on trucks.

Figure 1 – Survey sites to monitor timber flows to Chad



Another study on the formal and informal processes for cross-borders trade of timber from Cameroon to Chad was done by the national consultant through semi-structured interviews with people involved in this trade. This survey was tested in November and conducted in November and December with 16 people (5 based in or around Moundou, and 11 persons based in N'Djamena). Respondents were either owners of the conveyed timber, or formal and informal controllers of the chain of custody, or brokers between the owners and the administration at the border points. Qualitative and quantitative information were collected on vehicles, freight, formal and informal procedures and costs. The survey form is presented in Annex II.

Results

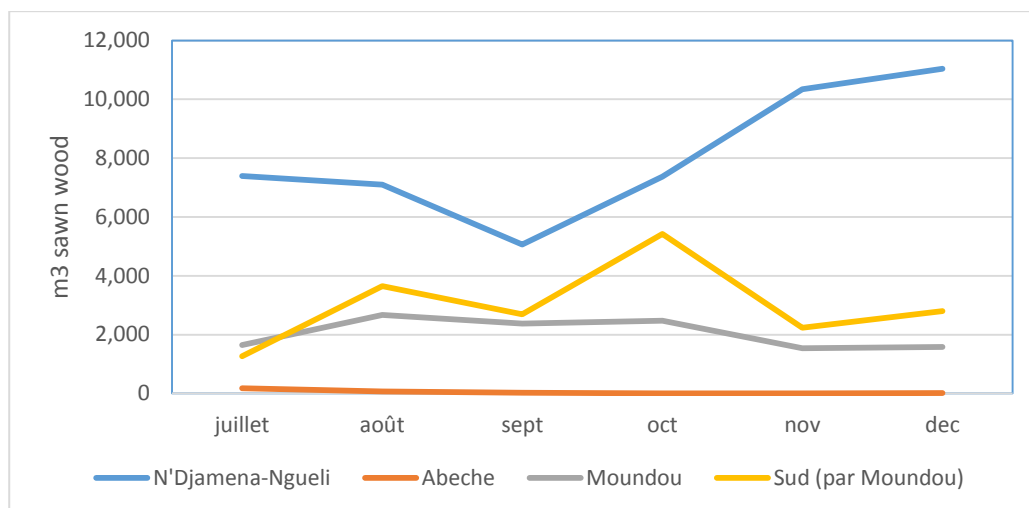
Timber flows from Cameroon to Chad

Table 2 and Figure 1 present our assessment of timber flows from the Cameroonian borders to N'Djamena and to the southern part of Chad.

Table 2 – Sawn wood flows from Cameroon to Chad between July and December 2015 (m³)

<i>Survey sites</i>	<i>July</i>	<i>August</i>	<i>Sept</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>	<i>TOTAL (m3)</i>
N'Djamena-Ngueli	7,392	7,102	5,061	7,368	10,346	11,043	48,311
N'Djamena → Abeche	179	70	28	4	9	18	306
Moundou	1,645	2,667	2,373	2,475	1,540	1,582	12,282
Southern cities (via Moundou)	1,271	3,647	2,688	5,422	2,240	2,797	18,064

Figure 2 - Sawn wood flows from Cameroon to Chad between July and December 2015

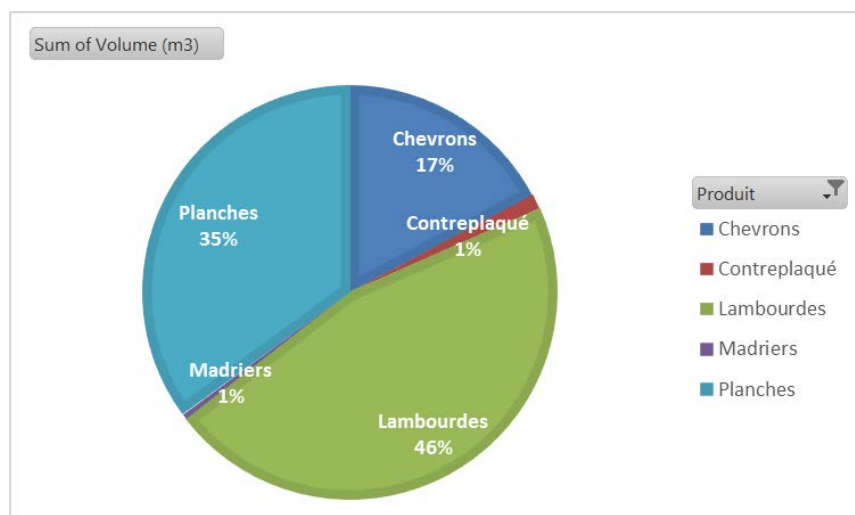


Data collection started at the beginning of the rainy season, which is characterized by the reduction of road traffic. This explains the low estimates of the volumes recorded between July and September. On the opposite, the flow of timber is constantly growing in N'Djamena in the last quarter of the year.

After six months of investigation, N'Djamena constitutes the main point of consumption of timber from Cameroon with about 60% of total volume. A very small amount of this timber goes out of N'Djamena to supply the city of Abeche or any other destination, contrary to the assumption made by Koffi (2005) ten years ago. Chadian cities are the final points of consumption of sawnwood imported to Chad.

In N'Djamena as in Moundou, white woods represent almost the entire volume. The products are similar in the two sites, with a predominance of wall plates, planks and rafters (Figure 3). They are almost all produced with artisanal means, except plywood.

Figure 3 – Importance of the types of sawn wood observed in N'Djamena



However, the commodity chain varies according to the two sites. Trucks entering through Moundou are registered in Cameroon and the average volume of their timber cargo is 70m³ per truck. They come directly from the markets settled in the northern part of Cameroon, as Ngaoundere. Conversely, the timber arrived in N'Djamena is transported by trucks registered predominantly (79%) in Chad and bear an average volume of wood around 50m³. This is due to the breaking point in Kousseri in Cameroon (Danboya 2011): in this city, timber is unloaded from Cameroonian large-size trucks to be reloaded on Chadian smaller volume trucks (Picture 1) that will supply N'Djamena.

Picture 1 – A medium-size truck used to convey timber from Kousseri to N'Djamena (source: Emmanuel Danboya)



But in the two sites, and whatever the size of the vehicle, an overwhelming majority of trucks is overloaded.

In total, our estimate of the actual volume of sawn wood imported into Chad is 79 000m³ for the last six months of 2015. This activity being only partly seasonal, it is estimated that the total volume of sawn wood consumed in Chad is around 150 000m³ per year. This estimate indicates a very important development of this activity when compared to previous reviews: around the years 2009-2010, Cerutti & Lescuyer (2011) and Lescuyer et al. (2014) estimated that about 68 000m³ and 6 000m³ of sawn wood were exported respectively from Cameroon and CAR to Chad every year.

In a period of 6 years, the actually imported volume of sawn wood in Chad has more than doubled. Such an increase is explained, firstly, by the annual rate of GDP growth between 3.4% and 13.8% between 2009 and 2015 and, secondly, by a significant increase in population urban and real estate investments (Gazel et al. 2010). It is likely that this sector continues to grow in the medium and long term since Chad aspires to become an emerging country in 2030, but the recent oil crisis could undermine the economic dynamism of the country in the short term.

Comparing our estimates of sawn wood imported in Chad with the official statistics shows the poor regulation of the sector: on one hand, the customs services recorded a volume of 7 940m³ of sawn wood for the third quarter 2015 while, for the same period, we observed more than 34 000m³ in Moundou and in Ngueli. Therefore an important part of this sawn wood volume is not subject to official registration with the authorities, either because the vehicles are not identified, or because the volume transported is not recorded in full.

The governance of importing timber in Chad

Formal procedures to import sawn wood in Chad

Although Cameroon and Chad are both part of CEMAC and should have facilitated trade procedures, import of forest products remains a complex and lengthy process.

First, five types of documents are required by the customs and the administrations of tax and forestry to export from Cameroon (Koffi 2005):

- The international safe-conduct, which is supposed to facilitate traffic and reduce police harassment between CEMAC countries.
- The slip road, which describes the type of transported goods, volumes, and the destination of the products.
- The transportation receipt, certifying that the carrier has paid transport taxes.
- A movement certificate issued by the UDEAC (Customs Union of Central African States).
- A customs declaration (type D6, D15 or D16), which specifies the nature and origin of the goods and their destination.

All Chadian traders must also follow several preliminary steps before being allowed to import forest products from Cameroon (Vautrin 2011): establishment of an import request, visit to BEAC and to BIVAC offices, inspection, verification of the goods from the supplier, and then issue of an audit certificate. The importer then recruits a customs clearance agent who will import the products and proceed the clearance procedures. Clearance is done in customs checkpoints (Ngueli for N'Djamena; Koutere or Belaba for Moundou) and follows several steps (STEC 2010, Vautrin 2011):

1. Admissibility of goods and presentation of legal import documents produced by the supplier of goods, i.e. (1) the certificate of origin, (2) the movement certificate, (3) the health certificate, and (4) the bill of goods. A Single Administrative Document (“Document Administratif Unique” - DAU) is then delivered to the agent to carry out clearance procedures.
2. Inspection of goods by the commercial brigade.
3. Issuance of the invoice for the duties and taxes.
4. Payment of fees at the customs manager.
5. Issue of the receipt and the release warrant (“Bon A Enlever” - BAE).
6. Signature of BAE by the Office Manager.
7. Visa BAE by the commercial brigade.
8. Release of the goods

The calculation of customs duties is based on the tax value of timber established by the Chadian administration and presented in Table 3.

Table 3 - Taxable values of sawn wood in Chad (F.CFA/m3)

Type of sawn wood	Soft wood (“white”)	Hard wood (“red”)
Wall-plate	30 000	50 000
Rafter	35 000	55 000
Plank	55 000	115 000
Beam	115 000	125 000
Plywood	50 000	55 000

Timber commodities are considered as “usual goods” (fourth category) by the Chadian authorities and are submitted to a custom fee of 62% of their taxable value. However, as Chad and Cameroon belong to CEMAC, a reduced rate (“Tarif Préférentiel Généralisé”) of 38% can be applied as soon as a certificate of origin is provided. This almost never happens, except for plywood that systematically comes from industrial sawmills (Vautrin 2011).

Official and off-the-record arrangements in the customs checkpoints

The state and the current operation of customs checkpoints are causing significant delays for clearing the goods. It takes a full week in Ngueli, when all documents are available (SCET 2010). Such bottlenecks in cross-border trade can be explained by the low technical and logistical resources, the low qualification of overstaffing, and the difficulty of the vast majority of traders to submit the required documents for clearance to Chad. There is much confusion in these checkpoints to the detriment of an effective and non-personalized treatment of clearance records (SCET 2010). To overcome these shortcomings, a "short chain" has been established and has become common practice to clear at least sawn wood from Cameroon. It has three characteristics.

First, it becomes possible to clear the products in a time shorter than 24 hours. Many brokers and intermediaries installed around checkpoints manage to 'get out' commodities in less than 24 hours thanks to collusion with customs (SCET 2010). It is no longer necessary to submit all the documents required by Chadian customs: on the basis of the 16 interviews we did with brokers and traders, 14 had the invoice of the product to start the customs clearance procedure, 2 also held a certificate of origin, 2 had another administrative document, and one did not have any document at all. All invoices originated from Cameroon (Kousseri, Bertoua, Ngaoundere) and, according to respondents, an important part of the timber came from community forests located in the Eastern region.

Second, many personal payments are granted to employees in the checkpoints to speed up the formal and informal procedures of customs clearance. This money represents a significant part of the income they earn. The amounts paid in the two checkpoints Ngueli and Moundou are presented in Table 4 and Table 5.

Table 4 – Formal and informal costs to clear a freight of sawn wood through customs in Ngueli (in F.CFA/truck)

Location	Task to be done	Authority/person in charge	Cost (F.CFA)	Official payment	Evidence of payment
After the bridge from Kousseri	Visa of security services	Police, gendarmerie, customs	38,000	Yes	No
In front of the Ngueli checkpoint	Open the gate to enter the customs point	gendarmerie	7,000	No	No
Ngueli checkpoint	Customs clearance	custom clearance agent	25,000	Yes	Document Administratif Unique (DAU)
	Recordings in the customs store	Customs - Manifest and visit sections	40,000	No	DAU
	Recordings in the customs software Sydonia	Customs - Sydonia service	5,000	No	DAU
	Stamping DAU	Customs - Admissibility service	5,000	No	DAU
	Stamping DAU	Customs - Control service	5,000	No	DAU
	Stamping DAU	Customs - Chief of the visit section	100,000	No	Form
	Payment of clearance tax	Bank CBT	62% of taxable value	Yes	payment note
	Recordings of payment	Customs - Régisseur	5,000	No	Receipt
	Recordings of receipts	Customs - Accountant	2,000	No	
	Stamping DAU	Customs - Chief bureau	5,000	No	DAU
	Stamping DAU	Customs - Trade section	35,000	No	DAU
	Exiting the customs point	Customs - Chief of the exit section	25,000	No	Exit receipt
Outside the Ngueli checkpoint	Check up	National security branches	5,000	No	Signature
	Searching	Customs - Mobile squad	30,000	No	Stamp
N'Djamena city	Check up	Customs - Mobile squad	25,000	No	
	Check up	Council	25,000	Yes	Receipt
	Weighing	Weighbridge	50,000	No	Receipt

Table 5 - Formal and informal costs to clear a freight of sawn wood through customs in Moundou (in F.CFA/truck)

Location	Task to be done	Authority/person in charge	Duration (min)	Cost (F.CFA)	Official payment	Evidence of payment
Koutere checkpoint	Check up	Customs - Bureau chief	30	150,000	No	Visa
	Check up	Police	10	20,000	No	Visa
	Check up	National security branch	20	10,000	No	Visa
	Check up	Gendarmerie	5	50,000	No	
Between Koutere and Moundou	Searching	Gendarmerie	10	10,000	No	
Moundou checkpoint	Check up	Customs - Captain	10	50,000	No	Visa
	Check up	Police	5	20,000	No	
	Check up	National security branch	5	10,000	No	
	Check up	Other administrations	10	20,000	No	
	Check up	Gendarmerie	10	10,000	No	
	Recordings	Customs - Bureau chief	5	50,000	No	
Moundou or Koutere checkpoint	Payment of clearance tax	Trésor public	120	62% of taxable value	Yes	payment note

In both checkpoints, informal payments are estimated on average between 5 700 and 6 600 F.CFA per cubic meter. This is a much lower value than the current rates of customs duties.

These informal payments are a must for any trader wishing to quickly clear customs his goods, and such a “*payment for officialising legally problematic transactions*” is current in Africa (Dobler 2016). However, their amounts vary, particularly for large sums which are almost always debated between customs officers and brokers, whereas smaller sums are paid on a more regular basis. Personal relationships play an important role in modulating the total amount of these informal payments, as seen in Cameroon (Cerutti et al. 2013) and more broadly in most cross-border trade in Africa (Dobler 2016). The balance of power is generally in favor of the customs that have the power to prolong the customs clearance procedure, but the vast majority of brokers can appeal to “resource persons” to limit abusive claims from customs. The role of these intermediaries is to convince the customs to revise down its demands on the clearance agent. But this service is not free and the intermediary often gets part of the cash/kind that was saved by the broker thanks to his intercession.

The third feature of this alternative customs clearance system is the reduction of the declared volumes of goods in order to reduce the amount of customs duties and save money to cover informal payments. In Ngueli, the most frequently volume reported to customs by our 11 respondents is 11 m³, while the average volume that we observed during the 6 months of follow-up was 52m³ per truck. In Moundou, our respondents declared 55m³ of timber per truck although our monitoring indicated an average volume of 70m³. Overloading of trucks and the under-assessment

of the declared timber volumes to customs are described in all reports (Koffi 2005, SCET 2010, Vautrin 2011). These are illegal practices that are fully institutionalized today.

Discussion

Offset the tax gap, but at what price?

Our surveys allow to assess the tax shortfall experienced by the Chadian Treasury of timber cross-border trade with Cameroon. There are now about 150 000m³ of timber that is imported into Chad each year, but only a quarter of this volume is recorded by customs, based on official data collected between July and September 2015. 115 000m³ of timber do not undergo any tariffs, which minimum amount would be 30 000F.CFA per cubic meter (for white wooden wall-plate, as a low case) multiplied by 0.62%. The tax shortfall to the Treasury is about 2.14 billion F.CFA a year.

Besides the Chadian state, three other types of actors also derive economic benefits of this sector. First, many officials have a parallel but substantial source of informal income related to this activity. In both checkpoints of Ngueli and Moundou, it is around 6 000F.CFA/m³ that are informally paid to administration officials, about 900 million F.CFA per year as a whole. It is unlikely that most of these civil servants agree to significantly reduce their personal income to maximize tax revenue by fully enforcing the law.

Second, the Chadian traders make profits from this activity. And, as shown in the following example (Table 6), informal clearance practices maximize profit compared with a law enforcement scenario.

Take the case of a truck arriving at Ngueli with 70m³ of white wooden wall-plates. In the first case of partial implementation of the law, only 35m³ are declared to customs and taxed. The trader also pays other formal duties as identified in our surveys. It finally pays all informal costs required to customs clearance. In the second case of a full implementation of the law, the trader does not face any informal expense but must pay the customs fees for the full cargo of timber.

In total, the cost of a legal customs clearance is 28% higher than that of a partial declaration of products and the distribution of bribes and kickbacks. In this context, it is difficult to convince entrepreneurs to respect the law.

Table 6 – Financial comparison between informal and official customs clearance processes (F.CFA/truck)

<i>Categories of cost</i>	<i>Cost of semi-official import (35m³ declared out of 70m³ transported)</i>	<i>Cost of official import (total volume declared)</i>
Visa of security services	38,000	38,000
Customs clearance	25,000	25,000
Payment of clearance tax (62% of taxable value of declared volume)	651,000	1,302,000
Council tax	25,000	25,000
Other informal costs	344,000	0
Total cost	1,083,000	1,390,000

Finally, Chadian urban consumers are the last group of actors interested in importing sawn wood of Cameroon. For 6 years, they have been buying more and more small-scale lumber, indicating that the price levels of these products in urban markets are acceptable to the majority of customers. Assuming all imported timber are submitted to customs fees, it is likely that part of this additional cost be transferred on the final sale price of lumber. From a financial point of view, the end consumers have today therefore little interest in supporting a legalization of this import sector.

Possible drivers of change, in Chad or in Cameroon?

As already stated by SCET (2010), the political will to fight against corruption related to cross-border trade remains hardly noticeable in Chad or Cameroon, especially when it comes to natural resources. Speeches or posters (Picture 2) declaring war on corruption are forgotten as soon as one sets foot in a customs checkpoint.

Picture 2 - A sign promoting the anti-corruption fight in front of the entrance to the Ngueli checkpoint (source Guillaume Lescuyer)



In Chad, there are few effective levers to legalize the import of timber from Cameroon, for several reasons. First, the non-enforcement of the legal framework has not prevented the activity from flourishing in recent years, offering Chadian private and public consumers large quantities of timber at affordable prices. There is an economic (and partly politic) risk to change this established fact.

Second, the large sums paid illegally to officials involved in customs clearance procedures can be considered as premiums to compensate for low levels of wage. Again, why taking the risk of lowering the level of income of these officials to maximize tax revenue whose use remains little known and not necessarily effective? The institutionalization of this everyday corruption obviously helps maintain social peace at least with concerned officials and brokers.

Finally, in recent years, Chad has faced major challenges both to ensure the political stability of the Lake Chad Basin and to facilitate the country's economic take-off associated with the growing exploitation of oil. The legalization of imports of forest products from Cameroon is a very minor

concern in this political agenda, as we have been told by all ministerial representatives met during this study.

Without political will and without major economic interest, we cannot expect a rapid change in import timber practices in Chad. Several complementary approaches may however be taken to gradually reduce the financial shortfall associated with legalized importation of timber in Chad. A frequent request is to classify timber products as “essential goods”, which are subject to reduced tariffs, in order to lower the cost of legality (Vautrin 2011). One can also consider increasing the cost of illegality, for example by effectively penalizing some fraudsters (SCET 2010): increased risk of being blamed for embezzlement might be enough to increase the price of corruption and contribute to reducing the differential with the cost of legal practices. Finally, it will be difficult to improve the enforcement of regulations if it is to the detriment of customs officials. Financial incentive mechanisms, such as individual bonus or premiums, must be designed to allow representatives of administrations to draw at least as much benefit from law enforcement than they now receive with illegal practices. The purpose of the bonus would be to enable all the public officials to benefit from the legalization of the sector: the bonus should be high enough to partially compensate for the income lost by the elimination of the ‘administrative hassle’, which is currently an important source of personal revenue for a large number of civil servants.

However, one may question the relevance of proposing such reforms in Chad if Cameroon is not also involved in legalizing this commodity chain. Two main reasons should lead Cameroon to try to legalize and better regulate the timber flow to Chad. On the one hand, most of this trade is done without valid documents, indicating an illegal and probably unsustainable exploitation of timber resources in Cameroon. The extent to which this trade generates significant ecological impacts (for instance on the ayous species) is completely ignored today. On the other hand, community forests are said to be the main sources of timber for this cross-border trade, but the exported volume from Cameroon is in total disconnection with the productive capacities of the legalized community forests in the Eastern region. It is highly likely that community forests serve to launder illegally felled timber (Lescuyer et al. 2015). Improving the control systems of the community forests is a necessary step to promote the legalization of timber exports to Chad. In each community forest, it would be useful to check that the harvested volume for each timber species actually corresponds to the capacity of the forest, as assessed in the Simple Management Plan. The legal origin of timber can be easily controlled during the transportation chain as most of this trade to Chad goes through the hubs of Ngaoundere and Kousseri (Danboya 2011, Koffi 2005).

However, one difficulty comes from ignorance by Chadian customs of the specific documents certifying the legality of forest products in Cameroon. Almost always, Chadian customs just check the documentation required for import of commodities without requiring the specific documents that ensure timber legality. Beyond the simplified system of trade among the CEMAC countries, it would be good to harmonize between Cameroonian and Chadian authorities the list of documents demonstrating the legality of forest products.

Annex 2 : Intra-African trade of timber: the Cameroon-Nigeria case in 2015

Edouard Essiane

March 2016

Background

In the past, Nigeria was endowed with abundant timber resources, which were well spread throughout the geographical land area. Today, due to excessive exploitation and indiscriminate logging activities, less than 10% of the nation land area is under high forest cover (Adekunle, 2005; Adepoju & Salau, 2007; Aijeloja & AJewole, 2006; Andel 2006). The country is facing an ever increasing demand for timber and non-forest timber products from Cameroon. For a couple of years now, the supply of Nigerian markets with forest products from Cameroon is mainly by illegal trans-border trade carried out by a number of actors. This wood is mainly transported by canoe and by floating or rafting them down stream at night. The wood is often transformed along the borders and onsite which makes controlling it very difficult and risky.

The forest reserves of Takamanda and Korup in the South West and Fungom and Mbembe in the North West regions which are located along the Nigeria-Cameroon borders are among the sources of these supplies. The actors engaged in this activity pay their informal taxes regularly to the local authorities and the local population who supervise the activity equally benefit from it. About 12000m³ of wood produced illegally and exported from Cameroon to Nigeria between June 2008 and July 2009 was generated by this activity (Cerutti and Lescuyer 2011).

Various studies which tried to quantify exported wood from Cameroon to Nigeria in the past, faced a number of challenges which were mainly the absence of a legal exportation framework, the mastery of supply sources, the place of customary laws in relation to access to resources, the absence of formal internal timber markets in Cameroon and the putting in place of a system of timber legality which is a minimum requirement of FLEGT (Birikorang, 2013).

Moreover, commercial trade in general and exportation of timber in particular from Cameroon to Nigeria, have been carried out informally for a long time. Main while, trade mechanism that regulate the sector, function normally on both sides of the borders.

From this brief state and based on its preliminary results, our report aims at rising once more the emergency behind the necessity for the two countries to put into place a legal framework for the exportation of timber from Cameroon to Nigeria.

Methods

To collect data presented below, a literature review was carried out to identify the exit point of Cameroon timber to Nigeria, Site exploration was carried out to confirm what is found in the literature review and to identify and train data collectors. The data collection procedure was not uniform on all the identified sites. The methodology had to be adapted to the context and to the environment. 3 sites were identified as the main exit points of Cameroon timber to Nigeria; namely Mundemba in Ndian division (South-West Region) Mamfe in Manyu division (South West Region) and Nkambe in Donga and Mantung division (Northwest Region). The table below presents the data collection points, monitoring sites and the methodology used.

Sites retenus



Figure 1: Location of data collection sites.

Site of Mundemba: Person in charge Eyambe Victor Itoe

Post	Data collector	Methodology
Bamuso	Kingsley Ekwe	Monitoring the embarkation station by canoe
Ekondo titi	Terence Nati Okah	Monitoring the embarkation station by canoe
Mosongisele	Ojoe George Essono	Monitoring the embarkation station by canoe
Isangele	Ndongo Henry Anjeh	Monitoring the embarkation station by canoe

Site de Mamfe : Person in charge Tajoacha Alexander

Post	Data collector	Methodology
Otu	Agbor Ntui Vincent	Monitoring the embarkation station by canoe
Nsanagarati	Okon Martin Abe	Monitoring the embarkation station by canoe
Agbokem German	Mpame Kenneth Etta	Monitoring the embarkation station by canoe
Ebinsi	Enu Nelvis Egbe	Monitoring the embarkation station by canoe

Site de Nkambe : Person in charge Humphrey Mbelli Menyong

Post	Data collector	Methodology
Abonshie	Ethe Pobwa Harrison	Followed production sites by motorcycle
Akwacha	Ethe Pobwa Harrison	Followed production sites by motorcycle
AKwese	Ethe Pobwa Harrison	Followed production sites by motorcycle

In all, 11 monitoring sites were identified for data collection; investigators were trained on how to fill the forms. It was not feasible to have a systematic frequency of data collection as investigators had to go back to the sites and fill the forms as soon as they were informed of any activity.

One-on-one interviews with small operators, local stakeholders have been employed as research instruments in order to appreciate procedures and the perceptions of the activity by these stakeholders.

Locality	Nombre	Quality	Questions
Kumbe balondo	1	commissioner	1. Characteristics of cargo 2. Steps followed to cross the border 3. Export Options 4. The quality of canvassers 5. Perception of future activity.
Ekondo titi	1	Brigade Commander	
Mamfe	1	staff MIN commerce	
Nsanagarati	1	Data collector	
Ako	1	Chief of Forest post	
Akwancha	1	Data collector	

Results

Volumes

Data collection started in July 2015 and end in January 2016 and this is a relatively short period of time to have an exhaustive estimate of activity. In spite the difficulties linked to insecurity in the study area, investigators were able to collect data on a total of 13758 cubic meters of wood. The species exported varied from site to site. Data collection on the Otu site ended in September (3 months after the start of the project). This is because the investigator could not continue working for the project for personal reasons. **The table below summarises the quantity of wood recored by site.**

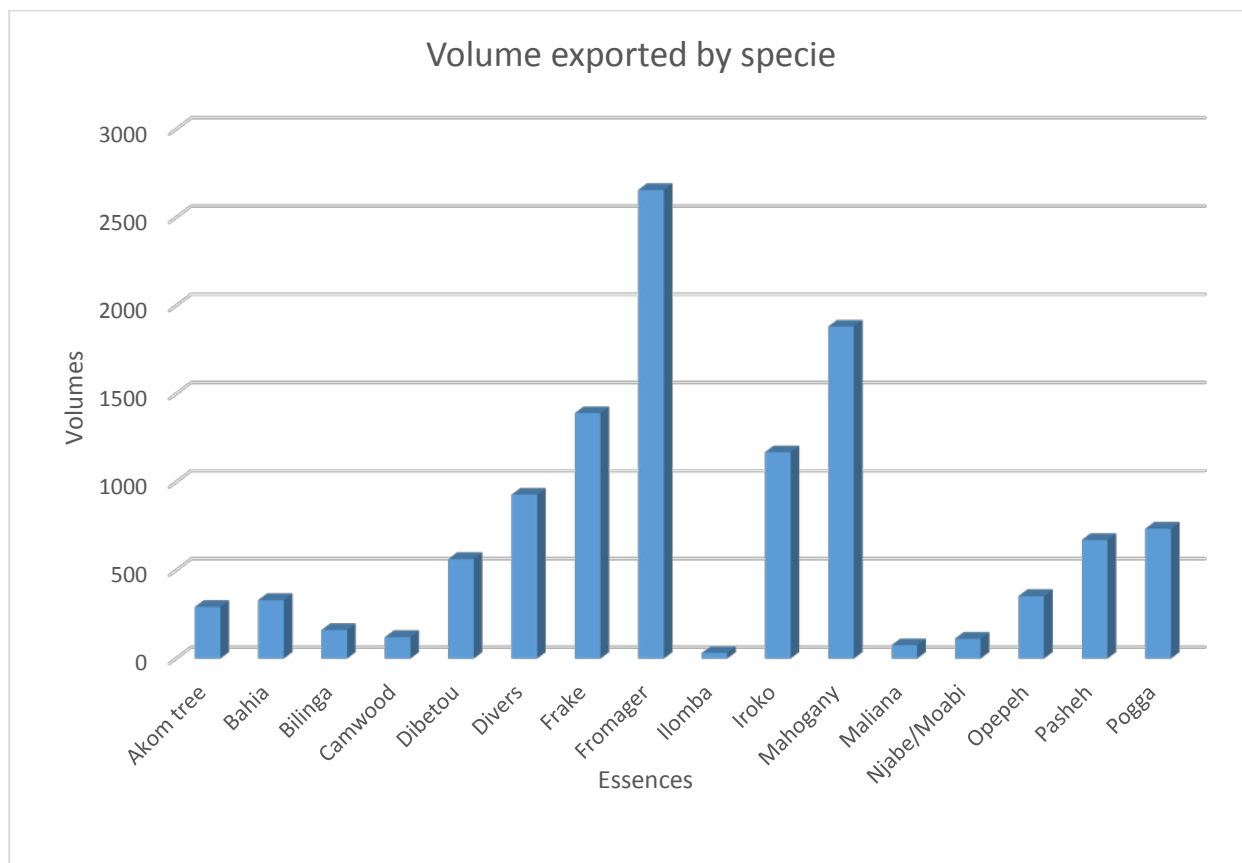
Table 5: Volume of timber exported during the monitoring period

	July	August	September	October	November	December	Total
Akwese	129.159	175.989	315.9865	688.58	556.654	777.231	2643.5995
Abonshie	197.838	406.474	216.063	331.77	153.9	397.605	1703.65
Akwancha	181.89	303.054	256.889	171.635	596.203	846	2355.671
Nsanagarati	68.9568	63.4236	51.1611	50.5086	102.459	46.5862	383.0953
Agbokem G	51.2428	336.5203	222.06	161.032	69.162	52.618	892.6351
Otu	1.9092	11.192	44.67				57.7712
Ebinsi	73.677	91.3152	68.265	93.89	73.554	58.425	459.1262
Bamusso	127.98	40.176	106.74	143.73	85.392	270.66	774.678
Isangele	151.038	139.59	223.62	344.46	250.5	288.92	1398.128
Kumbe Balondo	301.2	138.93	222.18	194.58	173.43	279.3	1309.62
Mossongisele	215.49	571.2	135.3	700.8	46.4	111.255	1780.445
Total	1500.3808	2277.8641	1862.9346	2880.9856	2107.654	3128.6002	13758.419

Exported species

Our investigators were not able to identify all the species; some even have names that are unknown or unrecognizable to us. We therefore grouped the different species varying. Those that we were able to identify are shown below in volume. From our observation, it stands out that the most exported species by order of importance are: *Ceiba pentandra*(fromagers), *Entandrophragma spp.* (Mahogany), les *Terminalia superba*(Frake/White Afara), *Milicia escelsa*(Iroko), and Dibetou *Nauclea diderrichii* (Opepe/Bilinga) *Terminalia ivorensis* (Framire/ Black Afara), and Obeche/Ayous (*Triplochiton scleroxylon*).

The table below summarizes the most sought out species



Traditional species which are exported and at the same time preferred by the local market included Iroko (*Milicia spp.*), Mahogany (*Entandrophragma spp.*), Moabi (*Baillonella toxisperma*), Padouk Rouge (*Pterocarpus soyauxii*) and Doussie (*Azelia spp.*). These are also reported to be scarce on the market. Other species such as Framire (*Terminalia ivorensis*) and Fraké (*Terminalia superba*) had, however, slowly emerged as substitutes.

Products

End-uses determined the various size specifications. In a significant number of cases, timber beams are the original inputs. The dominant cross-sectional sizes reported earlier in literature (Fuashi & Mosua, 2008) and still observed on markets are 1"x12", and 2"x6" mostly used for doors and joinery; and 1"x12" and 2"x2" in Iroko and Opepe for furniture. The most transformed products are in a large majority found in « 1x12 » and « 2x2 » and are used in carpentry according to the figures below.



Governance

On the Mundemba site, customs services are not concerned with exportation of timber to Nigeria but the forestry post takes care of the exported timber on the Ekondo Titi site. The process begins with the operators negotiating with forestry chief of post for authorization to transform the resource. This is possible after a down payment of an informal tax ranging from 50 to 200.000FCFA with no supporting documents issued. This payment is more like a kick back to seal the lips of the authority. The second phase of the negotiation is at the level of the village committee where the informal tax paid varies between 15 000 and 50 000FCFA. After this payment, the operators can now begin their transformation activity at the end of which the products are loaded into the canoe for Nigeria. At times the noise from humming machines calls the attention of the Cameroon military who appear at the production site and receive their own booty which ranges from 10 000 FCFA to 30 000FCFA depending on the circumstances and volume of wood. In all, a minimum amount of 75 000FCFA is paid each time a load of wood leaves Cameroon for Nigeria.

On the Mamfe and Nkambe sites, the Nigerian operators enter the Cameroonian territory and their first port of call is forestry post at Ako. Here, the operators indicate the quantity and species of wood sought for. In these two forest reserves, the remaining tree species is mainly gallery forest where transformation is easier. The forestry post collects 50 000 FCFA for 220 pieces of wood (Mainly 1x12), the council 6000FCFA and the police 10 000FCFA. The various phases of the negotiation are done in no time. After these payments, the operator now gains access to the site. But before the transformation phase begins, the village advisory board has to receive its own share which stands at 15000FCFA.

After the transformation phase, the logs are transported by lorry to the river banks which serves as a forestry post. Here, the operator pays another 30 000 FCFA to the customs agents on duty. At the end of it all, our investigator makes a round of the production site and to the various services to ensure that each service receives its due according to the truck load of logs. The wood is then transported to the river side to be transported by canoe.

Information gathered indicates that the intensity of activity increases during the dry season with the decrease in the level of the river. The volume of activity and the water level trigger an increase in the operators in the business which equally pushes up the amount of taxes paid. A minimum

80 000FCFA is paid for a truck load of logs bound for Nigeria. According to our informants, this activity will grow in importance in the next 5 years.

DISCUSSIONS

A price differential exists between the overseas export and domestic market because of different facts related to the domestic market: no tax payment, lower quality standards, high competition, low household income. The extent of differential is demonstrated by CIFOR using the Round Wood Equivalent (RWE) estimates of 2009 prices in selected species. For example, in the case of chainsaw milling, overseas export and domestic price differences ranged from CFA 75,000/m³ for Obeche to about CFA 111,000/m³ for Iroko and for laths from industrial waste about CFA 104,000 (Table). There is an unequal level playing field between the formal and the informal sectors as the latter did not pay forest taxes. This has created a distortion on the domestic market, as prices do not reflect the true value of timber.

Source	Product	Species	Domestic sale price	FOB price	Difference
Chain saw milling	Plank	Ayous/Obeche	17000	92000	75000
		Iroko	33500	145000	111500
	Formwork	Ayous/Obeche	15700	92000	
		Ceiba	13800	67000	53200
Industrial waste	Plank	Ayous/Obeche	5200	92000	86800
		Movingui	7900	109000	101100
	Lath	Sapelli	26900	131000	104100

Source: Cerutti & Lescuyer, 2011

Nigeria is a large country of approximately 923,000 km² with a population of about 150 million. Rapid population growth and the increase of poverty create significant pressure on the country's forest resources. The annual deforestation rate of more than 400,000 ha, according to a study by the World Bank, and mainly from southern Nigeria forests, but large-scale deforestation in arid zone also because firewood severe decline forest resources and land degradation. Quite often, many local lumbers see the forests as open assets resources for easy exploitation without any recourse to constituted authorities. Illegal and indiscriminate tree felling activities of these lumbers are more pronounced in the 'free areas', which are considered to be beyond the control of the forest guards and officials. Nigeria stands out in the sub region by a traditionally protectionist trade policy. This trend, partly called into question today, causing some hiatus in the West African regional integration process. There is a certain alignment of tariffs Nigeria the Tec ECOWAS, but also of the tariff regime, Abuja regularly enacts a list of prohibited imports to strengthen the protection of its agriculture and industry. The return to the practice reflects a discordant trade policy in the region, particularly between Nigeria and its neighbors.

According to private and public operators, there is no domestic demand for imported wood products, so trade with Cameroon are hardly conceivable. Moreover, there is no awareness in Nigeria on the need to commit to a rational management of forest resources, so there is no market for legal timber from the Congo Basin.

The timber sector is mainly export oriented towards European markets and Asian. While domestic demand is more modest in terms of turnover but they still represent significant volumes. Unfortunately the available data on these subjects are scattered and in smaller quantities. Indeed,

recognized as belonging to the informal sector, economic operators working in the local industry are subject to little monitoring by the authorities. Moreover, the sector is dominated by foreign companies, which perfectly control the exploration of markets through their relays and their parent companies based in their countries of origin, and who leave local needs from markets with higher margins beneficiary.

One of the obstacles to the expansion of sub regional trade is the lack of the right information at the right time on products, materials, marketing conditions. Indeed, industrial producers have little visibility in local markets, a phenomenon accentuated by the lack of use of information technology to identify and apprehend new markets. Thus, the informal sector replaces the formal sector in regional and sub-regional markets, because of red tape in operational areas such as along transit corridors, and distribution channels for legal timber turned to distant markets. Therefore, the formal market is not sufficiently developed to regulate supply and local demand, enabling the chainsaw milling to position itself in the market and constitute a response to local needs.

CONCLUSION

In six months of data collection, we estimated that about 13700m³ of wood were informally exported from Cameroon to Nigeria. This quantity is already above the amount indicated in 2011 by Cerutti and Lescuyer between June 2008 and July 2009 at the same border. As years go by, this activity is increasing in importance despite the red tapes and the scarcity of the resource. A systemization of data collection was not possible for obvious reasons. For a better management of national forestry resources, it is important to follow up data collection during an entire year as was the case between 2008 and 2009. The forestry administration should conceive a legal frame work for the exporting legal timber and should equally be implicated in this research results and facilitate the setting up of the much awaited border timber market in these areas.

Annex 3 : Zambia-Congo DR Intra-African Timber Trade

Introduction

This report covers four of the six scheduled months of the study at three Zambia-Congo DR borders of Kasumbalesa, Mokambo and Kipushi that started in September 2015 and ending in February 2016. It highlights the methods used in data collection and analysis. Preliminary results on the cross-border timber trade are also presented on timber species, volumes traded, origin and destination among others.

Method and Materials

Four research interns¹ completed a predesigned data collection Form, in the form of a matrix or table at Kasumbalesa, Mokambo and Kipushi Zambia- Democratic Republic of Congo (DRC) borders for three days in and over four months from the 27th to 30th day of each month. Interns visited a different border every month during the study. During the study, the interns also conducted interviews and made observations about informal movements. The *research* day started at 8 am and ended at 6 pm. During the study, data sources included government officers especially those working for the Forestry Department (FD), Police, Office of the President, Customs and Zambia Revenue Authority (ZRA) at border points and transporter and tally sheets. The other data sources were traders/entrepreneurs, clearing agents, transporters (truck drivers) and others like local people at the border areas.

Through this design, the following data were collected: mode of transport, typology timber, size, shape, quantity, origin and destination of timber. The other data were Lorry typical size (tonnage, etc.) and waiting times of at the borders.

Data analysis

Quantitative data were analysed using Statistica Version 16 and SPSS 12 while qualitative data were analysed through summarizing text.

Research Findings

Overview of results

Data collected continue to show that timber is moving across the borders and is dominated by Mukula (*Pterocarpus chrysothrix* (Pc) and; *Pterocarpus tinctorius* (Pt). *Pterocarpus tinctorius* comes from DRC in through Zambia in transit to China. Interviews and documents explicitly show this (Appendix 1). However, the cutting and export of Mukula is banned in Zambia. Timber movement across the borders is both formal and informal.

The formal aspects are:

- Commercial timber coming into Zambia from DRC (even in transit) must conform to Zambian national standards and guidelines and these have been availed to DRC.
- Timber from DRC is inspected and if containerized - the container will be unsealed, inspected and resealed in the presence of Zambia Revenue Authority (ZRA) and FD officials. The inspection is supposed to be for phytosanitary reasons but often officers from Ministry of Agriculture who carry out such work are not present as they are centralized in Lusaka, the country's capital city.

¹ Nawa Sanny, Moonga Hamwaata, Lubomba Bwembelo and Peter Makoni

- The District Forestry Officers (DFOs) keep tally sheets for all the timber passing through the borders under their jurisdiction.

The informal aspects include:

- **Zambian nationals** – at times with the support of Chinese timber merchants - may be or are actually involved in the harvesting of Mukula (i.e. Pt) in DRC and rebranding it as Zambian for the Chinese market (i.e. Pc). The opposite is also true Mukula (Pc) to DRC and rebranded as being from DRC). It is claimed that it is easy to obtain papers for the export of such timber in DRC. The documented species from DRC is Pt (see Annex 1). Some of the information is obtained from Tally sheets.
 - In case of DR Congo, it would appear as if timber export documents are obtained prior to the actual harvesting. This has been noted in the many cross border documents.
 - In some cases Zambian DFOs may not be aware of the type of timber species (tropical versus sub-tropical) being traded.
 - Timber is smuggled across the border in small quantities (carrying manually, through hand-pulled carts, bicycles) at Kasumbalesa through many illegal routes.
- For Kipushi border, only illegal timber movement through informal route is talked about.
- Clearing Agents facilitate formal movement of timber across the Kasumbalesa and Mokambo borders. However, there is no specific timber forwarding and clearing entity at any of the three borders.

Table 1 provides an overview of the information from the study with additional information after the table.

Table 1 Summary of the results of timber movement in four months at three borders

Date	September 2015 – December 2015
Mode of Transport	<ul style="list-style-type: none"> - Containerised trucks or lorries - Bicycles - Hand-carts - Motor cycles
Typology of Pieces	<ul style="list-style-type: none"> - Round wood – debarked - Cants - Planks
Volume, m³ (Empirical)	<ul style="list-style-type: none"> - Mean 40.2 m³ over four months - Total for four months 1606.58 m³ - Average amount per month 401.6 m³
Volume, m³ (Extrapolation)	<ul style="list-style-type: none"> - About 4150 m³ per month - About 49,803 m³ per annum at the three borders
Species	<ul style="list-style-type: none"> - <i>Pterocarpus tinctorius</i> - <i>Pterocarpus chrysothrix</i> - <i>Pinus Oocarpa</i> - <i>Pinus kesiya</i>

Origin	<ul style="list-style-type: none"> - DRC: <ul style="list-style-type: none"> o Lubambashi (75%), o Katanga (10%) o Other areas within DRC (5%). - Zambia, Copperbelt towns: <ul style="list-style-type: none"> o Mufulira (7.5%) o Ndola (2.5%)
Destination	China

The following are the key observation made during the study:

- Documentation is not uniform across the countries; they are not harmonized with French being used in DRC and English in Zambia, which makes verification and checking of documents challenging. It is also difficult to tell which of these documents will have been forged along the trade chain.
- A lot of illegal activities take place close or around the border posts between Zambia and DRC and corruption is rife at the same borders and involves all categories of nationals including politicians (who even threaten forestry officers, in some cases),
- Law enforcement is weak in both countries and institutional coordination within and between the two countries is difficult.
- It can be difficult to obtain timber through legal process due to high fees for example the fee unit is 30 ngwee²/m³ or US\$0.03/m³.

Timber Movement

Kasumbalesa Border

From the data collected between September and December 2015, it was noticed that timber movement across this border was frequent and consisted of both soft and hard woods. However, it was observed that most of the timber crossing from Zambia to Congo were soft woods while all the hard wood timber recorded was from Congo DR to China through exit points in Zambia such as Katima Mulilo (Namibia-Zambia border) and Nakonde (Tanzania-Zambia border). It has never been clear as to why this is the case.

Mokambo Border

Timber movement between Zambia and Congo DR at the Mokambo Border post was less active. During the four months of data collection most of the soft woods recorded crossed over this border post with some of the timber moving between Copperbelt Province and Luapula Province of Zambia. Cross country movement between Zambia and Congo consisted of some Mukula (see Annex 1) most of which was in transit to China.

² US \$1 ≈ ZMW 11.5 (Zambian Kwacha)

Kipushi Border

This border is the least active in terms of timber movement. From data collected during the visits to the border post between September and December 2015 no timber was recorded as crossing the Kipushi border. This could be attributed to the poor road network on the Zambian side. In addition, according to the traders, the border was not well equipped in terms of licensing and certification of cross border permits especially on the Zambian side. It was noted that there is one individual who does sell softwoods using a 2 ton truck. The border post does record high levels of charcoal movement to the DRC. (A lot of charcoal crosses formally at Kipushi. The Forestry Department monitors its movement).

Mode of Transport³

For formal movement, foreign and local open and containerized trucks/lorries of varying tonnage are used to transport timber across the borders. Illegal or smuggling of timber into DRC from Zambia is carried out manually, through hand-pulled carts, bicycles (e.g. at Kasumbalesa border) and motor cycles (Kipushi border) (Figure 1).

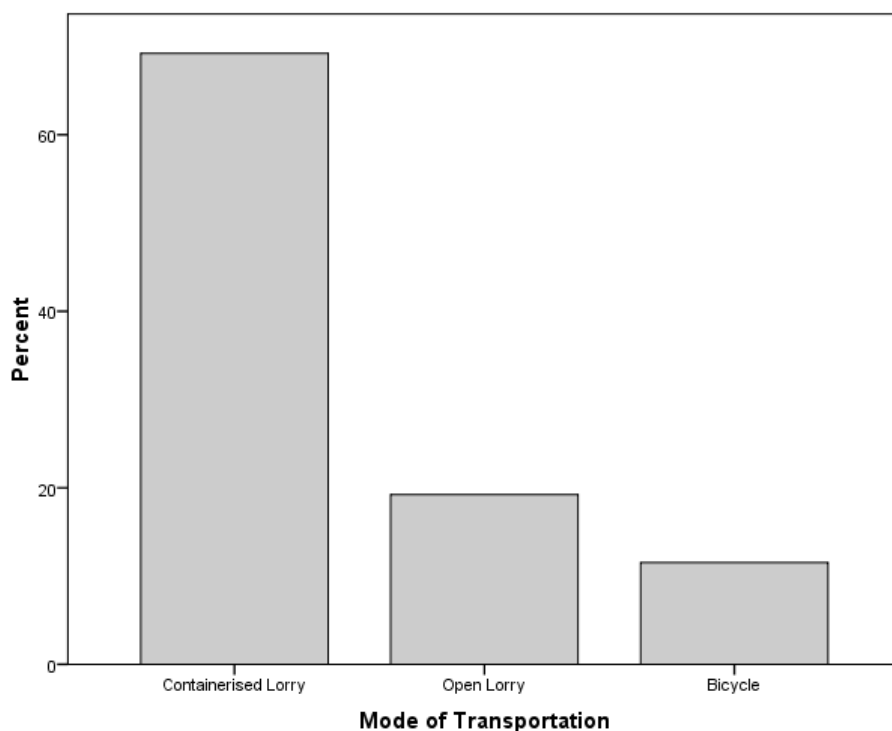


Figure 1 Mode of transporting timber

³ Photos are available

Timber Species

Both hardwood (90%) and soft wood timber are traded and moved across the borders. The hardwood species recorded are two Mukula species *Pterocarpus chrysothrix* and *Pterocarpus tinctoris*. The softwood types are *Pinus oocarpa* and *Pinus Kesiya* (Table 2).

Table 2 Timber species traded

Name of Species	Percent, (n=57)
<i>Pterocarpus tinctorius</i>	27.5
<i>Pterocarpus chrysothrix</i>	62.5
<i>Pinus Oocarpa</i>	2.5
<i>Pinus kesiya</i>	7.5
	100.0

Timber shapes and sizes

The timber is traded both round (52%) and sawn form including cants (37.5%) (Table 3). For round hardwood diameter sizes range from 9 cm to 20 cm, while the size of blocks/cants or semi-processed timber ranged from 15 cm x 20 cm.

For softwood, the timber was in form of planks with sizes: 150 mm x 50 mm and 100 mm x 50 mm.

Table 3 Form in which timber is traded

Form in which Timber is traded	Percent (n=57)
Roundwood Debarked	52.5
Cant/Block	37.5
Plank	10.0
	100.0

Volume/Number of Pieces

Most of the timber volumes were captured in October 2015 (33%) and the least volumes in September 2015 (17.8%). By border point, most of the timber movement was recorded at Kasumbalesa border (80%) and no movement of timber was recorded across Kipushi border. The average volume over four months is 40.2 m³ (Table 4).

Table 4 Mean timber volumes traded over four months

Parameter	N	Range	Minimum	Maximum	Mean
Volume in M ³	40	74.74	.26	75.00	40.1646
Number of Pieces	40	793	7	800	215.20

The mean for three days in a month is about 401.7m³ of timber. Extrapolation based on the three days average suggests that about 12, 451 m³ of timber is moved per month. In a year, about 50, 000 cubic metres (49,803.98 m³) of timber are traded per annum through the three borders.

Origin

The origin of the timber from DRC was Lubumbashi (75%), Katanga (10%) and other areas within DRC (5%). For Zambia, the timber was supplied from Copperbelt towns of Mufulira (7.5%) and Ndola (2.5%) (Figure 2). The timber from Zambia was all pine i.e. softwood.

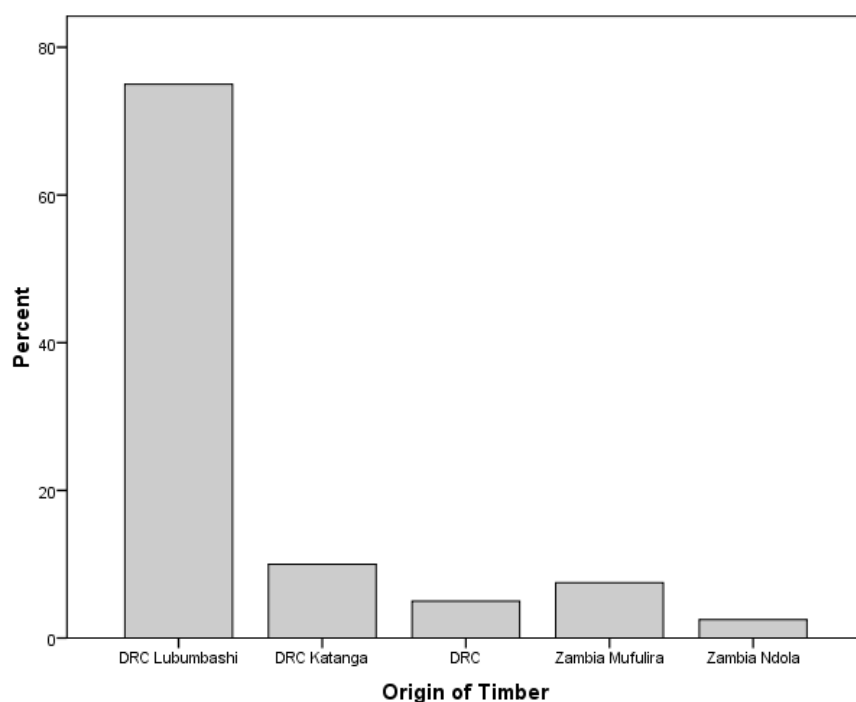


Figure 2 Origin of timber traded across the three Zambia-DRC borders

Destination

All timber moved across the borders was recorded as destined for the Chinese markets in China. The timber exit points included Nakonde (via Tanzania), Katima Mulilo (via Namibia) and Livingstone (via Zimbabwe) and Kazungula (via Botswana) in addition to the three study border points.

Prices

The study did not collect prices of timber systematically. However, timber (i.e., hardwoods) fetches good money on international markets but the local level traders pay as much as \$175/ha to extract timber (\$26 000/ 150 ha) – subject to timber densities.

Challenges/Issues/Experiences

- Porous borders at Kipushi and Kasumbalesa make the tracking of illegal timber movement very difficult. Mokambo is better in this respect
- Cooperation/joint operations involving the two countries' law enforcement, customs, and intelligence officers is weak and may not be called upon to help track timber movement
- Constant failure of the online clearing system (e.g. Mokambo), causing delay in clearing timber and for all border posts waiting times varies from 10 to 14 working days. Complaints have been heard of on waiting times of up to six months but these are related to poor paper work
- Limited description of the goods on gate passes (e.g., assorted goods)

- Corruption around timber movement/clearing involving a number of actors at the borders (e.g. papers to move timber from Zambia are easily obtainable (and easily) from the DRC side of the border because it is more expensive to get licenses from Zambia than papers from DRC)
- Minimal presence of forestry officers at the borders to monitor timber movement (as is done for charcoal at Kipushi).
- Volumes of timber moved vary by period e.g., seasonality which can affect accessibility to harvesting areas. It is claimed that there is more wood moved in the dry cool period May to September
- Accessibility to the Kipushi border due to poor road

Annex 4 : Rapport intermédiaire sur le suivi des exportations de bois de la République démocratique du Congo vers l'Angola

Guillaume Lescuyer (CIFOR-CIRAD), André Hilaire Kashikisha (CODELT)

Mars 2016

Contexte

Plusieurs études (Benneker *et al.* 2012, Lee 2015, Lescuyer *et al.* 2014) ont été publiées ces dernières années et donnent une image globale des filières d'exploitation artisanale du bois d'œuvre en République démocratique du Congo (RDC). Certains travaux portent même spécifiquement sur la province du Bas Congo - ou Kongo central dans la nouvelle classification imposée par la décentralisation. Mais, de manière générale, les exportations réelles de bois de la RDC vers l'Angola demeurent très mal connues. Seuls quelques rapports proposent une appréciation de ce flux transfrontalier. Ils sont présentés ci-après de manière chronologique.

Au début des années 2000, Djiré (2003) identifie trois points d'écoulement des sciages artisanaux produits dans le Bas Congo, dont l'Angola qui capterait près de 40 % de ce volume, soit autour de 47 120 m³, principalement sous forme de plateaux. Ses hypothèses de calcul sont toutefois discutables puisqu'elles s'appuient sur les seules déclarations faites par un petit nombre d'opérateurs, qui sont ensuite extrapolées probablement à l'excès. Sur la même période, il note que les statistiques de l'Office congolais du Commerce de Boma estiment le volume de bois exporté vers l'Angola autour de 2 300 m³ pour les années 2001 et 2002. Très peu des sciages exportés vers l'Angola sont alors d'origine industrielle, ce que confirmeront toutes les études postérieures. Mais une partie des sciages artisanaux demeure produite par le biais de permis de coupe. Les quantités écoulées vers l'Angola proviennent principalement de Boma, Lemba, Tshela et Lukula.

En 2007, la province du Bas Congo décide la suspension officielle de l'exploitation artisanale du bois d'œuvre, principalement pour tenter de préserver les derniers massifs forestiers, notamment la Réserve de Luki. Toutefois, cette mesure semble peu réfréner l'activité. Mbemba *et al.* (2009) notent que le Bas Congo demeure la première source de sciage artisanal sur les marchés de Kinshasa. Mais Ndam (2010) indique que le flux de bois et de charbon en direction de l'Angola se réduit de manière considérable à cette période, sans expliquer cependant comment il établit ce constat.

En 2011, REM (2011) constate que l'exploitation forestière subsiste toujours dans le Bas Congo, stimulée principalement par la demande de Kinshasa. Ces abattages illégaux alimentent également un flux d'exportation vers l'Angola et, dans une moindre mesure, vers le Cabinda et le Congo voisin ainsi que vers le marché local, constitué principalement par les villes de Boma, Matadi et Tshela.

Par sa lettre N° 883/VB/BC/2012 du 29 septembre 2012, et sur recommandation du Ministère provincial de l'Environnement et Conservation, le maire de la ville de Boma interdit le commerce de bois scié vers l'Angola. Là encore, cette décision semble peu influencer l'activité, qui opère déjà dans l'informalité. Belesi *et al.* (2013) observent toujours un flux de bois entre Boma et la frontière angolaise. La production provinciale de bois d'œuvre qui alimente les territoires de Tshela et de

Moanda est acheminée en partie par le beach SEP CONGO Nkungu et Luangu Nzambi en Angola. Toutefois, le commerce transfrontalier du Bas Congo vers l'Angola et le Congo est la destination de seulement 15 % des opérations suivies dans cette étude. L'iroko (*Milicia excelsa*) et le tola (*Prioria balsamiferum*) sont les espèces ligneuses les plus recherchées, notamment lorsqu'elles sont transformées sous forme de planche. Une partie de ce commerce de bois bénéficie d'un préfinancement par des commerçants angolais.

En 2014, les autorités provinciales lèvent la suspension sur l'exploitation artisanale du bois d'œuvre dans une perspective de faciliter la formalisation du secteur. Aucun suivi n'a encore été fait de cette mesure.

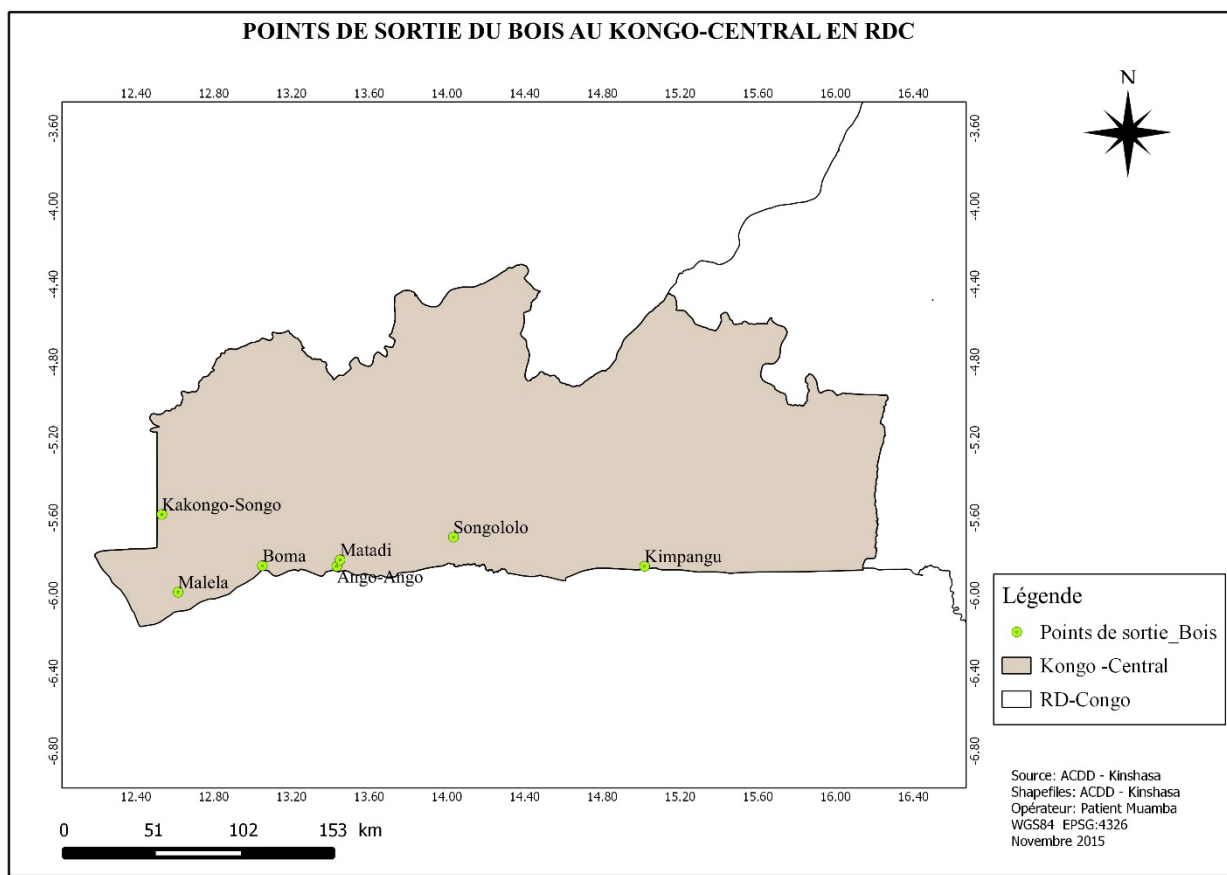
Choix des sites

Deux provinces congolaises pourraient alimenter en bois d'œuvre l'Angola. D'une part, la province du Bandundu borde la frontière nord-ouest de l'Angola, mais la forêt y est trop lointaine et les voies de transport peu carrossables pour des camions transportant du bois. Les interlocuteurs rencontrés lors de la phase de démarrage du projet nous ont tous confirmé qu'il n'existe plus de flux de bois vers l'Angola provenant du sud Bandundu. D'autre part, la province du Bas Congo longe la frontière nord de l'Angola (et l'enclave du Cabinda). Plusieurs points de passage potentiels du bois d'œuvre entre les deux pays ont été investigués, comme le centre Kindopolo localisé dans le district de Lukaya à Inkisi ou le poste-frontière de Lufu situé dans les Cataractes. Dans ces deux sites, les échanges commerciaux sont dominés par les produits manufacturiers et agricoles. L'absence de transport informel de bois d'œuvre s'expliquerait par la raréfaction de la forêt dans ces zones et la militarisation importante de la frontière. En conséquence, l'essentiel du commerce de bois d'œuvre entre le Bas Congo et l'Angola transiterait par les axes et ports officiels, principalement de nuit et avec la complicité des responsables administratifs locaux.

Cinq points de passage ont ainsi été identifiés pour réaliser le monitoring de ces flux transfrontaliers. Dans ces différents sites, les commerçants congolais et angolais recourent parfois aux militaires commis à la protection de deux frontières pour la sortie illégale du bois. Il s'agit des sites de :

1. Lukula - Kakongo Songo. Ce site a été choisi parce qu'il est souvent le plus visité par les Angolais en quête du bois en RDC. Les activités d'achat du bois à destination de l'Angola y étaient intenses, surtout quand la monnaie angolaise était stable, avant la crise économique actuelle que connaît le pays.
2. Boma – Sema : c'est un site proche de la zone neutre entre les deux frontières, qui permet d'éviter les administrations implantées au port de Boma. La collaboration des militaires y est généralement recherchée pour le transit illégal des sciages. Par ce site, l'administration de l'Etat située au port officiel de Boma est souvent efficacement évitée.
3. Boma - Luangu Nzambi : ce site proche de Moanda est souvent le choix préféré des commerçants pour échapper à tout contrôle administratif.
4. Nzadi Kongo (Moanda) : situé entre Boma et Moanda, ce site offre une voie détournée empruntée par les commerçants pour évacuer le bois vers l'Angola.
5. Matadi - Ango Ango : ce poste-frontière est situé à une dizaine de kilomètres du port. Il est souvent considéré comme le plus important point de passage du bois à destination de l'Angola.

Figure 3 – Carte des points potentiels et avérés de passage du bois d’œuvre à la frontière angolaise



Méthodes d’enquête et d’analyse

Les méthodes utilisées pour réaliser les enquêtes sont globalement les mêmes dans tous les pays retenus pour ce projet. Elles ont été présentées à Kinshasa lors d’un atelier de démarrage du projet en mai 2015 aux différents partenaires intéressés. La réalisation des enquêtes a ensuite été sous-traitée à l’ONG CODELT sous la supervision méthodologique du CIFOR. Dans ce cadre, une première mission d’appui du CIFOR a eu lieu en septembre 2015 pour sélectionner les sites d’enquête, tester les méthodes de suivi, procéder à la formation des enquêteurs puis lancer la collecte des données.

En raison du faible nombre de passages de véhicule transportant du bois dans les sites sélectionnés, la fréquence des enquêtes – initialement fixée à 2 jours et 2 nuits par semaine – a été révisée. Un suivi continu des sites a été établi en s’appuyant sur un relais d’informateurs résidant ou travaillant sur les sites de passage. Les enquêteurs ont alors opéré via un système d’alerte par SMS chaque fois qu’un mouvement de bois formel ou informel était signalé, de jour comme de nuit. A chaque alerte, l’enquêteur partait sur le site pour remplir une fiche de passage et vérifiait l’existence de stocks de bois en attente de transit. En fin de mois, l’ensemble des données collectées était transmis à CODELT pour une saisie des informations sur une feuille Excel, qui était ensuite transmise au CIFOR pour vérification et analyse.

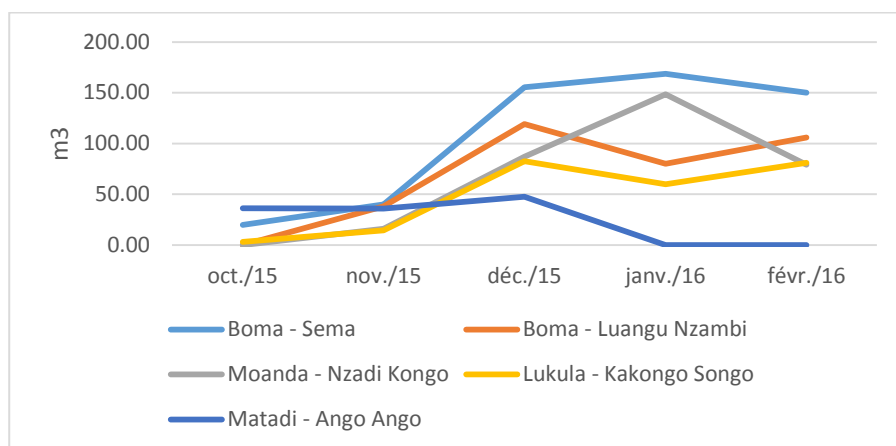
Résultat du suivi des exportations

Les enquêtes de suivi des flux transfrontaliers de bois ont démarré partiellement en octobre 2015 et sont actualisées jusqu'en février 2016. Les résultats de ce suivi sont présentés dans le Table 5 et la Figure 4.

Table 5 – Estimation des flux de bois d'œuvre entre le Bas Congo et l'Angola (m³)

	oct.-15	nov.-15	déc.-15	janv.-16	févr.-16	TOTAL
Boma - Cema	20.00	40.00	155.50	168.60	150.00	534.10
Boma - Luangu Nzambi		38.15	119.18	80.20	106.00	343.53
Moanda - Nzadi Kongo		16.00	87.00	148.50	79.00	330.50
Lukula - Kakongo Songo	3.30	14.60	82.60	59.80	81.00	241.30
Matadi - Ango Ango	36.33	35.96	47.48	0.00	0.00	119.77
TOTAL	59.63	144.71	491.75	457.10	416.00	1569.19

Figure 4 – Evolution des flux de bois d'œuvre entre le Bas Congo et l'Angola



En raison du démarrage partiel des enquêtes en octobre, les estimations présentées sont conservatrices. On constate toutefois une croissance des flux de bois à partir de novembre 2015. Le poste-frontière de Sema à Boma apparaît comme la principale voie de passage des sciages entre les deux frontières, loin devant le port d'Ango Ango à Matadi.

Le volume total de ces échanges demeure faible dans les sites enquêtés. En extrapolant ces données à une année entière, cela correspondrait à un volume annuel de sciages autour de 3 500m³ entre la RDC et l'Angola. Les prochaines estimations tirées du suivi de mars 2016 confirmeront ou infirmeront cette tendance. Ce volume est très largement inférieur à celui estimé par Djiré (2003) il y a presque 15 ans. Indépendamment des défaillances méthodologiques de l'étude initiale, notre estimation confirme la diminution forte de ce commerce transfrontalier depuis quelques années, comme l'indiquaient les travaux plus récents.

Plusieurs raisons peuvent être évoquées pour expliquer une telle décroissance de ce commerce. Premièrement, les ressources ligneuses, notamment les essences commercialement intéressantes, se raréfient dans la province du Bas Congo. Deuxièmement, la chute du cours du kwanza depuis début 2015 a restreint les échanges commerciaux entre les deux pays. Enfin, il est possible que l'arrêt de

la suspension du sciage artisanal dans la province en 2014 ait poussé les autorités publiques à prendre leurs responsabilités et à appliquer davantage la réglementation spécifique à ce secteur. La prochaine étude sur la gouvernance de ce commerce transfrontalier devrait permettre de vérifier cette hypothèse.

**Annex 5 a : FICHE D'ENQUÊTE AUPRES DES TRANSITAIRES / COMMISSIONNAIRES
/ CONTROLEURS DE BOIS A LA FRONTIERE**

1. Identification du répondant

1.1 Fonction du répondant:

1.2 Nom (et sexe) du répondant:

1.3 Age:

1.4 Niveau d'instruction:

1.5 Durée dans la fonction:

2. Caractéristiques de la dernière cargaison transportée ou contrôlée

2.1 Date :

2.2 Type de véhicule :

2.3 A qui appartient le véhicule et où est-il immatriculé ?

2.4 Contenu du véhicule :

2.5 Provenance(s) et vendeur(s):

2.6 Destination(s) et acheteur(s):

2.7 Documents présentés pour le passage en douane :

2.8 Qui s'occupe de réaliser les démarches administratives ?

2.9 La cargaison a-t-elle été enregistrée complètement ou partiellement dans le registre des douanes ?

3. **Étapes pour le passage à la frontière** (pour la dernière cargaison, mentionnée ci-dessus)

Tâche à accomplir	Lieu	Autorité en charge	Durée de la tâche	Preuve de réalisation	Coût (avec ou sans justific)	Mode de résolution de conflit

4. Y a-t-il d'autres façons pour exporter du bois de la Côte d'Ivoire ? Sont-elles régulièrement utilisées et si oui, dans quels endroits ?

5. Y a-t-il des personnes qui sont contactées régulièrement pour aider à résoudre certaines difficultés du passage en douane ?

Type de difficulté	Nom et fonction de la personne	Quel type de soutien ?	Combien de contacts par mois ?	Quelle contrepartie ?

6. Comment voyez-vous l'évolution de ce commerce transfrontalier dans 5 ans ?

7. Dernier commentaire ?

Annex 5 b : ETUDE SUR LE SCIAGE ARTISANAL

FICHE D'ENQUETE AUPRES DES VENDEURS

Marché de :

Date :

Stock et flux de bois dans le dépôt N° :

Nom du vendeur :

Nombre d'employés permanents.....

Nombre d'employés temporaires :.....

Salaires permanents.....

Salaires temporaires :.....

Nature du produit	Dimension			Espèce	Nombre en stock	Origine	Prix achat unité	Nombre vendu	Prix de vente
	L(m)	l(cm)	E(cm)						