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Public private partnerships in the forestry sector in Cameroon

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Public private partnerships in the forestry sector in Cameroon

Tieguhong Julius Chupezi

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Acronyms and Abbreviations

AEC	Annual Exploitation Certificate
AfDB	African Development Bank
AFF	African Forest Forum
AOP	Annual Operational Permit
AU	African Union
AUC	African Union Commission
CBD	Convention on Biological Diversity
CEMAC	Central African Economic and Monetary Community
CFs	Community Forests
CFEs	Community Forest Enterprises
CIFOR	Center for International Forestry Research
COMIFAC	Commission on Central African Forests
DRC	Democratic Republic of Congo
ECA	Economic Commission for Africa
ECCAS	Economic Community of Central African States
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FLEGT	Forest Law Enforcement, Governance and Trade
FSC	Forest Stewardship Council
GDP	Gross Domestic Product
GESP	Growth and Employment Strategy Paper
Ha	Hectare
ICRAF	World Agroforestry Centre
ITTO	International Tropical Timber Organization
NGOs	Non-governmental Organizations
NTFPs	Non-Timber Forest Products
NWFPs	Non-Wood Forest Products
PES	Payment for Environmental Services
PPP	Public -Private -Partnership
RECs	Regional Economic Communities
REDD+	Reducing Emissions from Deforestation and forest Degradation
SFM	Sustainable Forest Management
Sida	Swedish International Development Cooperation Agency
SMP	Simple Management Plan
UK	United Kingdom
USA	United States of America
WTO	World Trade Organization
WWF	World Wide Fund for Nature

Executive Summary

Cameroon's land area covers about 46 million ha with 16.8 million ha as dense tropical forests and 29.8 million ha as degraded humid forests. The almost double proportion of degraded forests to dense forests is a good indication of human induced disturbance of the forest ecosystem in Cameroon. History has its role to play in the current state of Cameroonian forests but the contemporary influences are governed by the legal and regulatory texts in place. Today, total surface area of Cameroon's forests is 23 035 630 ha representing 48.73% of the national territory. The forests are classified as production and protection forests or remain unclassified. Production forests are exploited and managed under four forest management regimes, and in keeping with several management conventions, standards or multi-lateral environmental agreements (MEAs) such as the UN Forest Principles/Agenda 21 and also with several partnerships. The management regimes may be tagged as production forest management models representing varying proportions of total forests:

- Forest concessions/forest management units - 30.64% (government in partnership with private sector)
- Community forests - 8.04% (government in partnership with communities)
- Council forests - 6.71% (government in partnership with local councils)
- Sale of standing volumes - 1.65% (government in partnership with the private sector)

Indeed, the four production management models cover 47.04% of Cameroonian forests or 23% of the national territory. Aside from these production models, protected forest management models target protected areas (16.6%), forest reserves (6.69%) and unclassified forests in the national domain (29.41%) that are basically under the control of the state and forest plantations (0.25%) that are either state property or private.

In Cameroon, there are 111 forest management units covering a total of 7 058 958 ha out of which 66% (5 071 000 ha) are managed concessions and 34% (2 393 061 ha) are certified. The mean size of forest concessions is 63 594 ha. From 2007 to 2015, the evolution of the total area covered by community forests in Cameroon shows an increasing trend with the total area demanded by communities increasing from 1.3 million ha in 2006 to over 1.8 million ha in 2015. In 2014, there were a total of 111 short duration sale of standing volume (SSV¹) rights (ventes de coupe, in French) awarded covering a total area of 235 783 ha and worth over 413 million FCFA (US\$ 690, 635) to the government.

Under the aforesaid four logging regimes, five main wood products categories exist in Cameroon, and are: logs (48%), sawnwood (47%), veneers (2.8%), and plywood and parquets less than 2%. The production and trade in secondary processed wood products (SPWPs) is still weakly developed in Cameroon. The key SPWPs are wood furniture, mouldings, builder wood and cane and bamboo products with observed trade deficit of over US\$19 million for Cameroon from 2006 to 2013.

¹ Short duration logging titles of a maximum of three years allocated to private sector through an auction process for a maximum area of 2500 ha but that does not necessitate a management plan

From 2009 to 2014, about 3.5 million m³ of logs were exported from Cameroon to different continents of the world with Asia leading with about 89%, Europe 9% and Africa 2%. Out of a total of 96 companies that exported logs from Cameroon during this period, top five and ten companies exported 47% and 62% of the 3,502,217 m³ respectively. During the same period about 8300 tons of NTFPs were exported from Cameroon to other countries in the world. Most of the products were imported by European countries (48%) followed by Asian countries (25%), American continent (23%) and other African countries imported a mere 4%. The production and export of NTFPs was carried out by 37 companies in Cameroon with leading five, ten and twenty companies producing and exporting 66.4%, 88% and 96% respectively.

In this study, secondary forest production is discussed based on the production and exportation of three processed wood products categories (Sawnwood, Veneers, Plywood). Between 2009 and 2014, about 3.45 million m³ of sawnwood was exported from Cameroon to five continents including Europe (67%), Asia (19.3%), Africa (7.4%), Americas (4%) and Oceania (2.3%). 150 companies were involved in the production and export of the sawnwood with top five, ten and 20 companies respectively exporting 41%, 60% and 80% of the 3 539 297 m³ of sawnwood from Cameroon. The remaining 130 companies exported a mere 20%.

During the same period, about 82% of the 203 799 m³ of veneers were exported to Europe, 11% to Africa and the remaining 7% to America, Asia and Oceania. A total of 11 companies exported veneers from Cameroon to other countries with leading five companies exporting 97% of the 226 514 m³ of veneers from Cameroon. With respect to plywood, European countries (67.8%) were the highest importers of plywood from Cameroon followed by countries in Africa (29.7%), Asian countries with only 1.9% and countries in the Oceania (0.6%). Leading five companies exported over 99% of the 108 692 m³ of plywood from Cameroon.

In terms of exports by timber tree species, from 2009 to 2014, a total of 37 tree species were subjected to timber export in the form of logs. Many of these were promotion category 1 and 2 species such as Tali (*Erythroleum ivorense*) with 22.25%, Okan (*Cylicodiscus gabonensis*) with 22.22%, Dabéma (*Piptadeniastrum africanum*) with 7.36% and Bilinga (*Nauclea diderrichii*) with about 4%. Species that require a specified annual quota for exportation in the form of logs such as, Ayous/Obéché (*Triplochyton scleroxylon*), and Azobe (*Lophira alata*) were also among the most demanded with 13.5% and 4.6% respectively (Table 35). It is important to remark that some principal wood species with a total ban on their exportation in the form of logs, requiring their primary or secondary processing in Cameroon like Sapelli (*Entandrophragma cylindricum*), Movingui (*Distemonanthus benthamianus*) and Mukulungu (*Autranella congolensis*) also featured among the 20 top timber tree species exported in the form of logs.

With respect to sawnwood production and export, 29 timber tree species were documented to be of interest to timber companies. Top five species (Ayous, Sapelli, Iroko, Azobe and Frake) constituted about 70% of the sawnwood exported from Cameroon and the top 20 species made up about 91% of the 3 658 881 m³ exported during the reporting period

(2009-2014). Among the top 20 species, 11 were principal species (Acajou de bassam, Sapelli, Iroko, Assamela, Bossé clair, Dibétou, Doussié blanc, Doussié rouge, movingui, Padouk rouge and Sipo); 4 were species with specified quotas (Ayous, Kossipo, Koto and Azobe); and the remainder were promotion category 1 and 2 species. With respect to NTFPs, eight special forest products were exported with a total weight of 8067 tons with top five species (Ebene, pygeum voacanga, yohimbe and raphia nuts) commanding over 98%. From precolonial and colonial periods, and until the early years of the last decade, most of the wood produced in Cameroon was exported to Europe in the form of logs, sawn wood, veneer, plywood and wood floorings. In recent years, the Cameroon forestry sector has largely been dominated by new investors from emerging markets from the Asian continent, especially China. The four forest management models in Cameroon have their merits and demerits depending on the primary beneficiary (private sector, councils, communities) and the socioeconomic focus of the government to increase local participation in forest management or to ensure an increased financial contribution of the forestry sector to the country's GDP.

In conclusion, all the PPPs discussed in this report are well-represented in Cameroon, but a key drawback to all of them is their linkage to a narrow product base (logs, sawnwod, plywood, veneers and small quantities of parquets) that cannot galvanise Cameroon to tap the real financial benefits of value added products from its forests. This makes Cameroon have huge trade deficits with respect to trade in forest products that arises from imports of very expensive processed wood products such as wood furniture, builder wood and cane and bamboo products. Cameroon needs to reverse this tendency through better negotiations with multinational partners on how best to ensure value addition to their primary forest products as well as ensure that raw materials produced from community and council forests are processed to furnish local, regional and international markets. This however, will require creating an enabling business environment that will promote investments in technologies and equipment for increased processing capacities.



Vehicles transporting semi-processed timber from the forest. (Credit: Tieguhong Julius Chupezi)

1.0 INTRODUCTION AND OBJECTIVES OF THE STUDY

The African Forest Forum (AFF) commissioned this study in Cameroon as part of its activities under the Swedish International Development Agency (Sida) funded project entitled “Strengthening Sustainable Forest Management in Africa”. The project seeks to generate and share knowledge and information through partnerships in ways that will provide inputs into policy options and capacity building for improved forest management in order to better address poverty eradication and environmental protection in Africa. African governments have their economic development based on market forces and strong private sector leadership. The private sector in forestry is almost non-existent as an organized entity that one can dialogue with in many African countries. It has to be organized and developed from the many diverse actors who largely operate informally in order to better coordinate their role in forestry development. At the heart of public and private sector development in forest products industry are diversified groups of individuals including young men and women, youth and marginalized/disadvantaged/vulnerable groups. Facilitating the development of the industry demands the identification and understanding of the interactions between the different groups of people and the forest resources as well as their differing needs, privileges, contributions, challenges and priorities. Gender disaggregated information about the categories and activities of users of forest resources in rural communities and their contributions to the local economy are seldom available. The private sector development has a particularly strong role to play in poverty alleviation and environmental protection, and could have significant impact on women and other marginalised groups. Gender disaggregated data and analysis is therefore crucial to helping fill this information gap.

This consultancy task will contribute to a better understanding of the key actors in both primary and secondary forestry production in selected regional economic communities (RECs), the intention being to evaluate how to strengthen and/or develop an all-inclusive actors into an organized and cohesive sector that can articulate its issues, be heard, and attract attention and resources for its development and growth. These are in-depth studies that would require identification of the different actors, assessment of their modus operandi, and an evaluation of the modalities for strengthening the evolving private sector, in addition to also map the public sector in forestry. The studies will be undertaken in all forest types in the study countries, including but not limited to parklands, woodlands and savannah, moist forests, plantations and woodlots, and mangroves.

The studies also seek to identify, promote promising public private partnership (PPP) models or approaches for forest compatible sustainable livelihoods development and strengthen the capacity of the industry to address both social and environmental concerns in ways that can contribute to more sustainable, equitable and effective private sector development.

To progress with the study, it is important to define PPP. Although there is no single and internationally accepted definition of PPP, in this study, PPP is understood as: a short or long-term contract between a government agency and a private party, for providing a public asset (in this case forest), in which the private party bears significant risk and management responsibility (World Bank 2012). The definition encompasses contracts in many sectors and for many services, provided that there is a public interest in the provision of the service, and that significant risk and management responsibility have been transferred to a private party (World Bank 2012).

1.1 PURPOSE OF THE WORK

To facilitate the development of an organized private sector in forestry, including the identification and promotion of promising public private partnership (PPP) models or approaches for an all-inclusive forest compatible sustainable livelihoods development, including gender considerations.

1.2 BACKGROUND AND JUSTIFICATION OF THE STUDY

Cameroon is a lower middle income country with a population of 21.7 million people. Situated in Central Africa, it shares its border with Nigeria, Chad, Central African Republic, Equatorial Guinea, and Gabon. Two regions are Anglophone (the northwest and southwest regions that border Nigeria) while the rest of the country is Francophone. Cameroon is endowed with significant natural resources, including oil and gas, high value timber species, minerals, and agricultural products such as coffee, cotton, cocoa, maize, cassava (World Bank, 2015). With respect to the social context of Cameroon, there was a significant decrease in poverty rates in the 1990s but have since stagnated at an average of about 40%, and chronic poverty at about 26%. According to the World Bank (2015), Cameroon is off track to meet most of the MDGs by 2015, despite improvements in universal education and access to water. After years of weak economic growth, growth continues to strengthen but is still too low (at 4.6 and 4.8% in 2012 and 2013 respectively) to address poverty and development needs (World Bank 2015). In terms of development challenges, Cameroon suffers from weak governance, which affects the country's development and ability to attract investments (World Bank, 2015). The 2010 - 2013 Growth and Employment Strategy Paper - GESP (2010-2020) envisions a strengthened partnership with nontraditional donors, including the BRIC countries (Brazil, Russia, India and China), Korea and the Islamic world (World Bank, 2015). Cameroon has for the first time embarked upon the formulation of a long-term development Vision, which projects an image of the country up to 2035. The Vision aspires to make Cameroon a democratic emerging country that is united in its diversity. The Vision serves as a reference framework for: (i) reducing poverty to a socially acceptable level; (ii) reaching middle-income country status; (iii) becoming a newly industrialized country; (iv) consolidating the democratic process and strengthening national unity. Indeed, the main issue concerning the implementation of GESP will be to focus on growth acceleration, the creation of formal jobs and poverty reduction (GESP, 2009).

Considering these lofty objectives, the forestry sector in Cameroon will have a significant role to play given that about half of the country's population lives in the rural zones mainly as indigenous or forest-dependent peoples.

From pre-colonial through colonial times up to independence and today, the Cameroon's forest sector has undergone reforms of unprecedented scope and depth (Topa et al. 2009). Rightly stated, Topa et al. (2009) noted that the barriers to placing Cameroon's forests at the service of its people, its economy, and the environment originated with the extractive policies of successive colonial administrations. These barriers were further consolidated after independence through a system of political patronage and influence in which forest resources became a coveted currency for political support. Things stated to change in 1994 with a series of legal and policy interventions to de-link the sector from the commercial and political interests. In 1994, the government introduced an array of forest policy reforms, both regulatory and market based, which changed the rules on determining who could gain access to forest resources, how access could be obtained, how those resources could be used, and who would benefit from their use (Topa et al. 2009).

1.2.1 Classification of forest cover types in Cameroon

Cameroon's land area covers about 46 million ha with 16.8 million ha as dense tropical forests and 29.8 million ha as degraded humid forests (Cerutti et al. 2009). The dense humid forest represents about 36.2% of the national territory (including water and land totaling 475 440 km²). According to Cerutti et al. (2009), the land cover types are represented in Cameroon as in Table 1.

Table 1: Distribution of land cover types in Cameroon

Land cover type	Surface area (ha)	%
Dense forests	16,876,143	36.2
Other vegetation types	14,066,352	30.2
Forest savanna mosaic	5 867 865	12.6
Farm land	4,873,077	10.4
Forest mosaics	4,501,395	9.7
Mangrove	120,348	0.3
Deciduous dense forest	105,984	0.2
Other landuses (towns, villages, industrial sites etc.)	341,766	0.7
National total	46,632,582	100.0

Source: Cerutti et al. 2009

The total surface area of Cameroon's forests is 23 035 630 ha representing 48.73% of the national territory. The forests are classified as production, protection or remain unclassified. Production forests are exploited and managed under four forest management models and conventions or partnerships, representing varying proportions of total forests:

- Forest concessions/forest management units - 30.64% (government in partnership with private sector)
- Community forests - 8.04% (government in partnership with communities)
- Council forests - 6.71% (government in partnership with local councils)
- Sale of standing volumes - 1.65% (government in partnership with the private sector)

Indeed, the four production management models cover 47.04% of Cameroonian forests or 23% of the national territory (Table 2).

Table 2. Status of forest endowment in Cameroon

Forest Land Use regimes	Area (ha)	% of forest area	% of national territory	Data source
Forest Management Units	7,058,958	30.64	14.93	de Wasseige et al, 2014
Protected areas (National parks, wildlife reserves/sanctuaries)	3,825,024	16.60	8.09	de Wasseige et al, 2015
Community forests	1,853,116	8.04	3.92	MINFOF 2015
Council forests	1,545,316	6.71	3.27	MINFOF 2015
Forest reserves	1,541,111	6.69	3.26	Alemagi 2011
Sale of standing volumes	379,745	1.65	0.80	Alemagi 2011
Plantations	578,286	0.25	0.12	Mbile et al, 2009
Estimated unclassified forests	6,774,531	29.41	14.33	Mbile 2009
Total estimated forest area	23,035,630	100.00	48.73	
Total land area	47,271,000	NA	100.00	

There are 111 forest management units in Cameroon covering a total of 7 058 958 ha out of which 66% (5 071 000 ha) are managed concessions and 34% (2 393 061 ha) are certified. The mean size of forest concessions is 63594 (de Wasseige et al. 2015).

1.3 METHODOLOGY

The methodology for data collection included focus group discussions, interviews with key informants and desk reviews of relevant reports, policy and legal texts information from various websites and scientific articles. Timber-based and NTFP-based enterprises were targeted to identify stakeholders and beneficiaries, the challenges and ways forward for value addition to forest products and their marketing. Based on the results some recommendations are proffered to policy makers (specific to forest/product type) and recommendations for further research are formulated on the possible public/private partnerships for further processed wood and NTFP in Cameroon.

Methodology used in forecasting future wood production and export up to 2020 by continents

There are a number of approaches to modeling time series but in this study the approach to decompose a time series into trend, seasonal and residual component was applied. The form of the equations was determined through a visual view of the graph of the series, whether additive, multiplicative or exponential. All the graphs showed additive patterns in accordance with the linear regression model as indicated in the following equation:

$$WE_t = c + at + \epsilon_t \dots\dots\dots (1)$$

Where WE_t is wood exports over period t , a is the slope of the trend and c is a constant. ϵ_t is a white noise (normal distribution).

The following equation was used to forecast wood export in this study up to 2020.

$$WE_{t+h} = \hat{c} + \hat{a}(t+h) \dots\dots\dots (2)$$

where \hat{c} =estimated constant, \hat{a} = estimated slope and h = number of steps (6) ahead to 2020.

Assumptions of the model:

- We assume that the set of variables [current wood exports, past wood exports] is stationary and weakly dependent
- The conditional mean of the error term is zero; there is no relationship between the error term and wood exports.
- The variance of the error term is constant.
- The covariance between any pair of error terms is a constant
- Wood exports of the current year depend exclusively on wood exports of past years.
- Wood exports increase at a linear rate and will not change in the future.

Forecasts of wood exports per type of wood and by continent up to 2020

Estimated equations were derived for each continent based on trends for the export of each product over the last six years (2009 to 2014).

a) Logs production and exports

R^2 = coefficient of determination, sig=global significance of the model

Asia: $WE_t = 2088,31 + 50170,45t$ ($R^2=0.78$), (sig=0.012)

Africa: $WE_t = 859 + 560,7t$ ($R^2=0.68$), (sig=0.023)
America: $WE_t = -9,333 + 18,2857t$ ($R^2=0.80$), (sig=0.014)
European Union: $WE_t = 84163,83 - 9273,625t$ ($R^2=0.78$), (sig=0.023)
Others: $WE_t = 64963,85 + 10718,275t$ ($R^2=0.72$), (sig=0.021)

b) Sawn wood exports

Asia: $WE_t = 14854,0857t + 39915,533$ ($R^2=0.67$), (sig=0.04)
AFRICA: $WE_t = 2520,2t + 21585,5667$ ($R^2=0.64$), (sig=0.03)
America: $WE_t = 4696,14286t + 7201,333$ ($R^2=0.58$), (sig=0.02)
European Union: $WE_t = -28096,35t + 533689,9$ ($R^2=0.78$), (sig=0.025)
Others: $WE_t = -485t + 10155,6$ ($R^2=0.68$), (sig=0.045)

c) Veneers exports to different continents

Asia: $WE_t = 92,2t + 296,55$ ($R^2=0.88$), (sig=0.035)
Africa: $WE_t = 304,771429t + 1419,8$ ($R^2=0.68$), (sig=0.022)
America: $WE_t = 385,775t + 182,475$ ($R^2=0.7$), (sig=0.023)
European Union: $WE_t = -5097,275t + 52584,65$ ($R^2=0.58$), (sig=0.014)
Others: $WE_t = -61,125t + 829,08333$ ($R^2=0.64$), (sig=0.023)

d) Plywood exports to different continents

Asia: $WE_t = -63,5t + 543$ ($R^2=0.78$), (sig=0.033)
Africa: $WE_t = -177,2125t + 7834$ ($R^2=0.81$), (sig=0.012)
America: $WE_t = 14,65t - 0,8$ ($R^2=0.66$), (sig=0.032)
European Union: $WE_t = 922,885t + 4050,733$ ($R^2=0.73$), (sig=0.022)
Others: $WE_t = 1,3t + 2,4$ ($R^2=0.64$), (sig=0.024)

e) NTFPs exports to different continents

Americia: $WE_t = 49270,75t + 127430,8$ ($R^2=0.68$), (sig=0.032)
Europe: $WE_t = 57930,75t + 393788,8$ ($R^2=0.83$), (sig=0.012)
Asia: $WE_t = 103841,75t - 53312,5$ ($R^2=0.80$), (sig=0.02)
Africa: $WE_t = 340571$ ($R^2=0.58$), (sig=0.001)

R^2 = coefficient of determination, sig=global significance of the model are the two statistics used to capture the explicative power and global significance of our models. R^2 determines the percentage of current wood exports explained by past values of wood exports. When R^2 is closer to one, it means the independent variables explain the dependent variable better, thus the model is good for forecasting. The global level of significance shows the global robustness of the model. When the value is less than 0.05, we say our model is globally significant, thus predictions from the model are valid. Most of the models were tested to be globally significant predictors of the forecast of wood exports from Cameroon by 2020 at 5% level with coefficient of determination (R^2) values of over 60% for the different wood categories to the different continents. The models for exporting veneers to Europe and NTFPs to other African countries were found to be globally significant but with lower R^2 values of 58%, implying that 42% of the exports by 2020 will be explained by other factors rather than by the assumptions of the models.

2.0 RESULTS OF THE STUDY

In Cameroon, forest products enterprises eligible for public-private partnerships (PPPs) fall under community forest enterprises (CFEs), council forests, forest concessions and sale of standing volumes. The engagement of larger companies (forest concessionaires) is more or less a direct business partnership with the government. However, the local communities form part of the benefit sharing mechanism.

2.1 TYPOLOGY OF SECTORS AND KEY ACTORS OF THE FORESTS

Aside from illegal logging, four legal or formal logging regimes are found in Cameroon

- (a) forest concessions.
- (b) council forests.
- (c) community forests, and
- (d) sales of standing volume (Sonwa et al. 2015).

2.2 ORGANIZATION OF THE FOREST PRODUCTION SECTORS AND GENDER GROUPS' REPRESENTATION IN EACH SEGMENT

Five main wood products categories exist in Cameroon, and are logs, sawnwood, veneers, plywood and parquets. From 2009 to 2014, a total of 7281710 m³ of these products in varying proportions was produced and exported to various countries in the world. The export of logs represented over 48%, sawnwood 47%, veneers 2.8% and the remaining products less than 2% (Table 3).

Table 3. Timber exports by wood category from 2009 to 2014

Product category	2009	2010	2011	2012	2013	2014	Total	%
Logs	412,637	607,646	579,108	496,870	624,176	780,223	3,499,560	48.06
Sawnwood	360,268	738,124	625,443	483,156	589,977	588,394	3,450,370	47.38
Veneers	33,013	173,58	46,986	4,2038	36,115	30,469	203,799	2.80
Plywood	11,349	52,549	13,115	18,119	18,628	13,164	126,924	1.74
Parquet	979	78	0	0	0	0	1,057	0.01
Total (m³)	818,246	1415,755	1,264,652	1,040,183	1,268,896	141,2250	7,281,710	100.00

Source: COMCAM data 2009-2014 (own calculations).

For policy reasons, these total volumes do not tell us the destination of the products, the species of wood cut, the companies responsible for producing and exporting and the future trends. In order to respond to these concerns, further analyses were conducted to show exports to different continents and countries within each continent by product type and by companies.

2.2.1 Primary forest production

2.2.1.1 Logs production and export to different continents

From 2009 to 2014, about 3.5 million m³ of logs were exported from Cameroon to different continents of the world with Asia leading with about 89%, Europe 9% and Africa 2% (Table 4).

Table 4. Logs export by continents

Continent	2009	2010	2011	2012	2013	2014	Total	%
Asia	361684	496595	466691	452645	591657	744006	3112178	88.93
Europe	50041	87160	72493	40673	31452	32495	314314	8.98
Africa	912	23891	39806	3479	1067	3585	72740	2.08
Americas	0		118	73		137	328	0.01
Total	412,637	607,646	579,108	496,870	624,176	780,223	3,499,560	100.00

Source: COMCAM data 2009-2014 (own calculations).

The proportions of logs exported to different continents fail to tell exactly which countries were responsible for their importation. The following section tries to give specifications by importing countries in each continent.

2.2.1.2 Logs production and export to countries within continents

Log exports to African countries

From 2009 to 2014, at least seven African countries imported logs for at least one year from Cameroon. A total of 72740 m³ of logs were exported to other African countries with over 97% to Morocco, Algeria and Tunisia. The remaining 3% were exported to Tanzania, Nigeria and South Africa (Table 5).

Table 5. Log exports to African countries (m³)

Country	2009	2010	2011	2012	2013	2014	Total	%
Morocco	274	20,980	39,197	1,247	896	2,530	65,124	89.53
Algeria	89	1,946		1,966		43	4,044	5.56
Tunisia	92	89	389	266	171	513	1,520	2.09
Senegal	393	876					1,269	1.74

Country	2009	2010	2011	2012	2013	2014	Total	%
Tanzania	46		83			499	628	0.86
Nigeria			137				137	0.19
South Africa	18						18	0.02
Total	912	23,891	39,806	3,479	1,067	3,585	72,740	100.00

Source: COMCAM data 2009-2014 (own calculations)

Logs export to countries on the American continent

Only two countries imported logs from Cameroon between 2009 and 2014 totaling some 328 m³ with 44% to USA and 16% to Canada (Table 6).

Table 6. Logs exports to countries on the American continent (m³)

Country	2009	2010	2011	2012	2013	2014	Total	%
USA	0		118	73		84	275	83.84
Canada						53	53	16.16
Total	0		118	73		137	328	100.00

Source: COMCAM data 2009-2014 (own calculations)

Logs export to European countries

From 2009 to 2014, 14 European countries imported only about 9% of the total volume of 3499560 m³ of logs exported from Cameroon. Out of this volume, slightly over 92% went to five countries including Turkey (36%), France (24%); Italy (22%); Belgium (6%) and Germany (5%) (Table 7).

Table 7. Log export to European countries (m³)

Country	2009	2010	2011	2012	2013	2014	Total	%
Turkey	11,407	28,605	356,23	9,713	15,422	12,315	113,085	35.98
France	10,911	30,381	13,884	9,905	5,467	5,504	76,052	24.20
Italy	15,814	12,434	14,769	13,693	5,748	6,945	69,403	22.08
Belguim	4,913	3,959	2,872	2,829	1,374	2,404	18,351	5.84
Germany	3,463	4,742	2,893	1,197	652		12,947	4.12
Portugal	2,378	2,221	1,570	1,036	650	3,002	9,287	2.95
Spain	683	3,462	933	970		411	6,459	2.05
UK	379	1,194	951	775	612	218	4,129	1.31
Netherlands	19	162	272	314	1,453	1,544	3,764	1.20
Greece			216	88	41	152	497	0.16
Switzerland				153			153	0.05
Poland	19		80				99	0.03
Romania	55						55	0.02
Ireland					33		33	0.01
Total	50,041	87,160	72,493	40,673	31,452	32,495	314,314	100.00

Source: COMCAM data 2009-2014 (own calculations).

Logs export to Asian countries

From 2009 to 2014, 15 Asian countries imported 3112178 m³ of logs from Cameroon, representing 88.9% of all logs exported from the country. Five Asian countries imported 99.52% of the logs from Cameroon including China (70.5%), Vietnam (23.1%), India (4%), Bangladesh (1.4%) and United Arab Emirates (0.6%) (Table 8).

Table 8. Log export to Asian countries (m³)

Country	2009	2010	2011	2012	2013	2014	Total	%
China	266,568	381,017	315,128	309,175	418,218	503,278	2193,384	70.48
Vietnam	85,444	787,75	115,052	105,167	147,197	187,518	719,153	23.11
India	82,40	28,191	27,436	22,115	17,944	21,165	125,091	4.02
Bangladesh		786	4,187	10,304	3,253	23,945	42,475	1.36
United Arab Emirates	1,100	3,971	2,504	3,320	2,328	4,903	17,026	0.55
Pakistan		2,942	1,627	1,903	1,123	1,897	7,865	0.25
Korea d	120	420	502	101	1,002	655	2,800	0.09
Japan	165	348	361	106	457		1,437	0.05
Israel			959	351	57		1,367	0.04
Thailand	47	79				645	771	0.02
Malaysia			308				308	0.01
Lebanon			52		53		105	0.00
Indonesia		66		89			155	0.00
Saudi Arabia			108		25		133	0.00
Qatar			94	14			108	0.00
Total	361,684	496,595	466,691	452,645	591,657	744,006	311,2178	100.00

Source: COMCAM data 2009-2014 (own calculations)

NTFPs exports by continents

Non-timber forest products (NTFPs) are products from the forests other than timber that are of great socio-economic importance for the livelihoods of rural populations as well as a source of income for the national economy. From 2009 to 2014, about 8300 tons of NTFPs were exported from Cameroon to other countries in the world. Most of the products were imported by European countries (48%) followed by Asian countries (25%), the American continent (23%) and other African countries imported a mere 4% (Table 9).

Table 9. NTFPs export to different continents (kg)

Continent	2009	2010	2011	2012	2013	2014	Total	%
Europe	1021178	292861	506940	583815	930737	605234	3940765	47.65
Asia	24100	253956	137805	738203	386529	563459	2104052	25.44
Americas	243157	303265	227269	221299	609136	280043	1884169	22.78
Africa						340571	340571	4.12
Total	1288435	850082	872014	1543317	1926402	1789307	8269557	100.00

Source: COMCAM data 2009-2014 (own calculations)

NTFPs exports by country

The only African country that imported the NTFPs of interest from Cameroon was South Africa to a total weight of about 340.6 tons in 2014 only. Five countries in Asia imported over 2104 tons of NTFPs between 2009 and 2014 with the over 99% going to China, India and United Arab Emirates. During the same period, four countries from the American continent imported a little over 1884 tons of NTFPs with over 97% going to USA and Guatemala. Indeed, during the reporting period (2009-2014), nine European countries imported about 3941 tons of NTFPs from Cameroon with over 97% going to France, Spain, Germany, Italy and the Netherlands. Belgium, Cyprus, UK and Turkey imported the remaining 3% into Europe during the reporting period (Table 10).

Table 10. NTFP exports to different countries by continents (kg)

	Country	2009	2010	2011	2012	2013	2014	Total	%
Africa	South Africa						340,571	340,571	100
	Total						340,571	340,571	100
Asia									
	China	24,100	157,090	69,500	344,203	284,529	354,117	1,233,539	58.63
	India		93,286	68,305	204,000	82,000	167,752	615,343	29.25
	United Arab Emirates				190,000	20,000	40,020	250,020	11.88
	Pakistan						1,570	1,570	0.07
	Vietnam		3,580					3,580	0.17
	Total	24,100	253,956	137,805	738,203	386,529	563,459	2,104,052	100.00
America									
	USA	14,955	23,507	5,150	221,299	609,136	248,733	1,122,780	59.59
	Guatemala	209,687	279,758	222,119				711,564	37.77
	Canada						31,310	31,310	1.66
	Costa Rica	18,515						18,515	0.98
	Total	243,157	303,265	227,269	221,299	609,136	280,043	1,884,169	100.00
Europe									%
	France	460,500	124,220	252,000	260,000	445,618	353,297	1,895,635	48.10
	Spain	494,108	135,056	175,040	142,792	397,755		1,344,751	34.12
	Germany	9,034	8,585	12,400	140,699	7,2282	100,513	343,513	8.72
	Italy				16,324	15,082	124,300	155,706	3.95
	Netherlands			47,500	24,000		5,524	77,024	1.95
	Belguim	50,000	25,000					75,000	1.90
	Cyprus						21,600	21,600	0.55
	UK	1,236		20,000				21,236	0.54
	Turkey	6,300						6,300	0.16
	Total	102,1178	292,861	506,940	583,815	930,737	605,234	3,940,765	100.00

Source: COMCAM data 2009-2014 (own calculations)

2.2.2 Secondary forest production

Secondary forest production is discussed based on the production and exportation of three processed wood products categories, namely: sawnwood, veneers, and plywood.

2.2.2.1 Sawn wood production and export to countries within continents

Between 2009 and 2014, about 3.45 million m³ of sawnwood was exported from Cameroon to five continents as follows: Europe (67%), Asia (19.3%), Africa (7.4%), America (4%) and Oceania (2.3%) (Table 11).

Table 11. Sawnwood export by continents (m³)

Continent	2009	2010	2011	2012	2013	2014	Total	%
Europe	272,264	628,860	375,950	300,914	378,890	355,723	2,312,601	67.02
Asia	53,204	68,000	124,764	122,498	139,020	161,858	665,456	19.29
Africa	25,360	25,424	97,206	35,126	37,927	33,737	254,780	7.38
America	9,383	15,283	26,614	23,326	31,476	3,1371	137,453	3.98
Oceania	57	557	909	1,292	2,664	5,705	80,080	2.32
Total	360,268	738,124	625,443	483,156	589,977	588,394	3,450,370	100.00

Source: COMCAM data 2009-2014 (own calculations).

2.2.2.2 Sawn wood production and export to countries within continents

Sawn wood to African countries

Of the 3450370 m³ of sawnwood exported from Cameroon between 2009 and 2014, only 7.4% of was exported to other African countries out of which 94.9% was imported by five countries. The top five African countries importing sawnwood from Cameroon were Senegal (51.9%), Libya (25.7%), Tunisia (11.2%), Morocco (3.5%) and Mauritius (2.6%). 13 other African countries also imported relatively smaller quantities of sawnwood from Cameroon during the reporting period (Table 12).

Table 12. Sawnwood export to countries in the African continent (m³)

Country	2009	2010	2011	2012	2013	2014	Total	%
Senegal	13,940	15,225	22,387	24,443	28,616	27,582	132,193	51.89
Libyan Arab			65,581				65,581	25.74
Tunisia	5,456	5,062	5,694	5,722	4,107	2,487	28,528	11.20
Morocco	1,628	1,646	914	1,897	1,536	1,280	8,901	3.49
Mauritius	1,465	1,500	840	983	1,291	461	6,540	2.57
Egypt	856	831	478	949	834	555	4,503	1.77
South Africa	439	575	963	561	966	553	4,057	1.59
Algeria	748	100	147	205	114	589	1,903	0.75
Ivory Coast	138	57	34	275	162	121	787	0.31
Ghana	152	249	88				489	0.19
Gabon	216	122	64				402	0.16
Seychelles		35	16		301	16	368	0.14

Country	2009	2010	2011	2012	2013	2014	Total	%
Congo Democratic	145						145	0.06
Gambia	141						141	0.06
Togo				91			91	0.04
Kenya						93	93	0.04
Nigeria		22					22	0.01
Tanzania	36						36	0.01
Total	25360	25424	97206	35126	37927	33737	254780	100.00

Source: COMCAM data 2009-2014 (own calculations)

Sawnwood exported to countries in the American continent

Thirteen countries from the American continent imported about 4% of the sawnwood produced and exported from Cameroon between 2009 and 2014 but about 99.4% went to five countries: USA (92.8%), Guadalupe (4.5%), Argentina 1.1%), Mexico (0.5%) and Canada (0.5%). (Table 13)

Table 13. Sawnwood export to countries in the American continent (m³)

Country	2009	2010	2011	2012	2013	2014	Total	%
USA	8,510	13,813	24,123	22,556	29,128	29,355	127,485	92.75
Guadalupe	528	1,133	1,240	260	1,449	1,639	6,249	4.55
Argentina			373	376	566	143	1,458	1.06
Mexico			660	39			699	0.51
Canada	345	337			1,322	2,019	682	0.50
Haiti			136	64	51		251	0.18
Brazil			16		100	109	225	0.16
Cuba					151		151	0.11
Guatemala			66	15			81	0.06
Costa Rica						54	54	0.04
Martinique				16		39	55	0.04
Chile					31		31	0.02
Dominican Republic						32	32	0.02
Total	9,383	15,283	26,614	23,326	32,798	33,390	137,453	100.00

Source: COMCAM data 2009-2014 (own calculations).

Sawnwood exports to Asian countries

From 2009 to 2014, 23 Asian countries imported 665456 m³ sawnwood from Cameroon representing about 19.3% of total sawnwood exported during that period. Five countries imported about 86% of the sawnwood from Cameroon as follows: China (57.7%), Vietnam (11.6%), Saudi Arabia (6.3%), Pakistan (5.2%) and Malaysia (5%) (Table 14).

Table 14. Sawnwood exports to countries in Asia (m³)

Country	2009	2010	2011	2012	2013	2014	Total	%
China	28,335	393,545	50,085	67,607	86,598	117,396	384,206	57.74
Vietnam	6,977	7,116	10,734	11,928	20,784	19,397	76,936	11.56
Saudi Arabia	5,847	3,605	4,068	11,912	10,566	6,072	42,070	6.32
Pakistan	137	386	33,647	323	168		34,661	5.21
Malaysia	2,017	6,395	9,489	4,776		58	33,479	5.03
United Arab Emirates	3,888	2,446	5,422	7,413	3,598	6,086	24,965	3.75
Lebanon	1,439	1,581	4,811	7,035	3,754	3,395	22,015	3.31
India	1,452	3,464	2,847	5,819	1,713	2,767	18,062	2.71
Indonesia	335	591	591	2,168	1,300	2,418	7,403	1.11
Japan	1,190	322	1,427	1,198	324	243	6,155	0.92
Thailand	465	257	134	411	650	877	2,794	0.42
Réunion		1,693	365	150	66		2,274	0.34
Russian Federation	35	105	159	248	487	966	2,000	0.30
Philippines		54	253		1,322		1,629	0.24
Qatar	275		234	311	268	511	1,599	0.24
Kuwait	367	240	162	134	246	310	1,459	0.22
South Korea	245	264	86	420	41	255	1,311	0.20
Jordan	69	84	81	453	871	1,147	1,254	0.19
Singapore	15			35	513		563	0.08
Bangladesh			115	123			238	0.04
Syrian Republic	116		54				170	0.03
Israel		43		34	78		155	0.02
Oman					5,673	5,129	58	0.01
Total	53,204	422,191	124,764	122,498	139,020	167,027	665,456	100.00

Source: COMCAM data 2009-2014 (own calculations).

Sawnwood exports to countries in Europe

European countries are the main importers of sawnwood from Cameroon taking about 67% of the 3 450 370 m³ exported from Cameroon between 2009 and 2014. Indeed, 26 European countries imported sawnwood from Cameroon during this period. Top five countries imported about 80.5% of the sawnwood: Italy (22%), Spain (17.9%), Belgium (17.3%), France (12.6%) and UK (10.8%) (Table 15).

Table 15. Sawnwood exports to countries in Europe (m³)

Country	2009	2010	2011	2012	2013	2014	Total	%
Italy	57,808	94,209	81,671	81,497	115,224	78,518	508,927	22.01
Spain	34,137	258,548	35,043	25,319	28,333	31,464	412,844	17.85
Belguim	35,801	55,317	112,781	1,530	86,605	106,865	398,899	17.25
France	46,056	55,563	50,334	44,098	51,995	43,703	291,749	12.62
UK	16,815	59,751	21,837	84,589	41,479	24,018	248,489	10.75
Netherlands	54,957	61,662	33,647	26,346	22,332	19,133	218,077	9.43
Turkey	9,660	13,421	15,860	12,743	12,779	21,245	85,708	3.71
Portugal	7,605	14,858	8,576	8,180	5,649	5,365	50,233	2.17
Ireland	134	8,185	4,742	4,858	5,793	12,954	36,666	1.59
Germany	4,808	4,268	8,134	6,137	4,577	7,254	35,178	1.52
Greece	2,242	1,278	764	654	562	496	5,996	0.26
Malta	530	429	152	663	292	1,371	3,437	0.15
Lithuania	200	126	653	884	564	731	3,158	0.14
Finland	248	32	570	812	347	592	2,601	0.11
Poland	329	557	247	224	622	529	2,508	0.11
Denmark	318	238	527	618	232	19	1,952	0.08
Cyprus	161	163	79	789	57	467	1,716	0.07
Romania	226	70	69	100	607	353	1,425	0.06
Croatia	37	63	80	164	259	197	800	0.03
Estonia	0	36			248	309	593	0.03
Yugoslavia	19	17	92	271	141	25	565	0.02
Switzerland	104		44	104		96	348	0.02
Albania	32			334	99		465	0.02
Sweden	37	69	48				154	0.01
Ukraine					22		22	0.00
Bulgaria			1 209		72	19	91	0.00
Total	272,264	628,860	375,950	300,914	378,890	355,723	2,312,601	100.00

Source: COMCAM data 2009-2014 (own calculations).

Sawnwood exports to countries in the Oceania

A little over 2.3% of sawnwood from Cameroon, totaling 80080 m³, went across the Pacific Ocean into countries such as New Zealand (80.9%), Australia (14.7%) and New Coledonia (4.4%) between 2009 and 2014 (Table 16).

Table 16. Sawnwood to countries in the Oceania (m³)

Country	2009	2010	2011	2012	2013	2014	Total	%
New Zealand		26		780	1,180	2,629	4,615	80.89
Australia	226	31	474	71		35	837	14.67
New Coledonia			83	58	112		253	4.43
Total	226	57	557	909	1,292	2,664	5,705	100.00

Source: COMCAM data 2009-2014 (own calculations).

2.2.3 Veneers export by continents

Veneers from Cameroon are exported to four continents in the world with some 203799 m³ exported between 2009 and 2014. About 82% of the exports went to Europe, 11% to Africa and the remaining 7% to America, Asia and Oceania (Table 17).

Table 17. Veneers exports by continents (m³)

Continent	2009	2010	2011	2012	2013	2014	Total	%
Europe	29,739	6,262	41,637	34,967	30,920	24,136	166,645	81.77
Africa	1,288	10,378	2,542	3,315	2,739	2,978	23,240	11.40
America	896	147	1,137	2,522	1,891	1,164	7,757	3.81
Asia	638	571	506	972	525	1,850	5,062	2.48
Oceania	452		1,164	262	40	341	1,095	0.54
Total	33,013	17,358	46,986	42,038	36,115	30,469	203,799	100.00

Source: COMCAM data 2009-2014 (own calculations).

2.2.3.1 Veneers production and export from Cameroon to countries within continents Veneers exported to African countries

From 2009 to 2014, 13 African countries imported 23,240 m³ (11% of veneer exports) from Cameroon. Five of the 13 countries imported over 82% of the veneers: Senegal (31%), Tunisia (21%), Egypt (12%), Morocco (10%) and Gabon 9.7% (Table 18).

Table 18. Veneer exports to African countries (m³)

Country	2009	2010	2011	2012	2013	2014	Total	%
Senegal		5,270	58		670	1,219	7,217	31.05
Tunisia	639		1,151	1,954	654	370	4,768	20.52
Egypt	125	29	798	555	889	308	2,704	11.64
Morocco		866	157	494	100	704	2,321	9.99
Gabon	427	1,816					2,243	9.65
Equatorial Guinea		1,607					1,607	6.91
South Africa	66		167	244	204	295	976	4.20
Congo		644					644	2.77
Seychelles			158		170	67	395	1.70
Democratic Republic of Congo	31	49	53	68	52		253	1.09

Country	2009	2010	2011	2012	2013	2014	Total	%
Ghana		50					50	0.22
Central African Republic		47					47	0.20
Comoros						15	15	0.06
Total	1,288	10,378	2,542	3,315	2,739	2,978	23,240	100.00

Source: COMCAM data 2009-2014 (own calculations).

Veneer exports to American countries

From 2009 to 2014, five countries on the American continent imported about 7757 m³ of veneers from Cameroon: USA (79%), Brazil (17.4%), Mexico (2.6%), Venezuela and Argentina (0.4%) each (Table 19).

Table 19. Veneers exports to countries on the American continent (m³)

Country	2009	2010	2011	2012	2013	2014	Total	%
USA	719	98	1,110	2,443	1,124	657	6,151	79.30
Brazil	177	49		79	584	459	1,348	17.38
Mexico			27		173		200	2.58
Venezuela						30	30	0.39
Argentina					10	18	28	0.36
Total	896	147	1,137	2,522	1,891	1,164	7,757	100.00

Source: COMCAM data 2009-2014 (own calculations).

Veneer exports to Asian countries

From 2009 to 2014, a little over 91% of 5,062 m³ of veneers from Cameroon were imported by five Asian countries: China (57%), Thailand (13.3%), Japan (9%), South Korea (7.6%) and Russia (4.3%). Eight other Asian countries imported the remaining about 9% over the reporting period (Table 20).

Table 20. Veneer exports to countries on the Asian continent (m³)

Country	2009	2010	2011	2012	2013	2014	Total	%
China	272	246	252	550	214	1,355	2,889	57.07
Thailand	33	325	94	63		160	675	13.33
Japan				115	135	203	453	8.95
Korea d	203		120	20	41		384	7.59
Russian Federation	30			158	30		218	4.31
United Arab Emirates				33	44	57	134	2.65
Lebanon					34	63	97	1.92
Syrian Republic	68						68	1.34
Vietnam	17		13	33			63	1.24
Philippines					27		27	0.53
Iran (Islamic Rep.)			27				27	0.53
Pakistan	15						15	0.30
India						12	12	0.24
Total	638	571	506	972	525	1,850	5,062	100.00

Source: COMCAM data 2009-2014 (own calculations).

Veneer exports to European countries

From 2009 to 2014, a little over 87% of 166 645 m³ of veneers from Cameroon were imported by five European countries, namely: Italy (76%), Spain (7%), Turkey (1.7%), Greece (1.5%) and France (1.4%). 14 other European countries imported the remaining 13% over the reporting period (Table 21).

Table 21. Veneer exports to countries in Europe (m³)

Country	2009	2010	2011	2012	2013	2014	Total	%
Italy	26,354	3,867	33,563	23,855	20,804	17,645	126,088	75.66
Spain	941		2,412	2,509	3,156	2,513	11,531	6.92
Turkey		665	101	977	911	201	2,855	1.71
France	40	20	964	479	590	299	2,392	1.44
Greece		1416	188	233	385	203	2,425	1.46
Romania			739	853	172	181	1,945	1.17
Portugal	173		164	357	557	543	1,794	1.08
Belguim	199		1016	375	269	92	935	0.56
Germany	240		203	169			612	0.37
Ireland					91		91	0.05
Poland				17	33	32	82	0.05
Switzerland					72		72	0.04
Bulgaria			13	29		28	70	0.04
Finland					37	24	61	0.04
Estonia						47	47	0.03
UK					50		50	0.03
Netherlands				47			47	0.03
Cyprus				23			23	0.01
Hungary					11		11	0.01
Total	29,739	6,262	41,637	34,967	30,920	24,136	166,645	100.00

Source: COMCAM data 2009-2014 (own calculations).

Veneer exports to Oceania countries

In the Oceania, only Australia imported a total of 1095 m³ of veneers from Cameroon between 2009 and 2014 (Table 22).

Table 22. Veneers exports to countries in the Oceania (m³)

Country	2009	2010	2011	2012	2013	2014	Total	%
Australia	452	1,164	262	40	341		1,095	100
Total	452	1,164	262	40	341		1,095	100

Source: COMCAM data 2009-2014 (own calculations).

2.2.4 Plywood exports by continents

European countries are the highest importers of plywood from Cameroon, at 67.8% of all plywood exports, followed by countries in Africa (29.7%). Asian countries with only 1.9% remain relatively low importers of plywood from Cameroon as well as countries in the Oceania (0.6%) (Table 23).

Table 23. Plywood exports by continents (m³)

Continent	2009	2010	2011	2012	2013	2014	Total	%
Europe	4,532	48,536	7,341	6874	10,188	8,540	86,011	67.77
Africa	6,745	2,206	5,401	10,807	8,103	4,428	37,690	29.69
Asia	72	1,183	373	438	228	100	2,394	1.89
Oceania		624			109	96	829	0.65
Total	11,349	52,549	13,115	18,119	18,628	13,164	126,924	100.00

Source: COMCAM data 2009-2014 (own calculations).

2.2.4.1 Plywood production and export from Cameroon

Plywood export to African countries

From 2009 to 2014, 14 African countries imported about 29.7% plywood from Cameroon totaling 37690 m³. Top five of the 14 countries imported over 92% of the plywood were: Senegal (64.4%), Equatorial Guinea (13.5%), Gabon (5.6%), Congo (4.8%) and Tunisia (3.9%) (Table 24).

Table 24. Plywood exports to countries in Africa (m³)

Country	2009	2010	2011	2012	2013	2014	Total	%
Senegal	2,751	80	2,415	8,682	6,722	3,609	24,259	64.36
Equatorial Guinea	811		1,840	738	1,119	597	5,105	13.54
Gabon	1,987		128				2,115	5.61
Congo	478		624	694			1,796	4.77
Tunisia		1,176		103	89	83	1,451	3.85
Morocco	718	80	298	77	43	87	1,303	3.46
Egypt		523		332	95		950	2.52
South Africa		205		18			223	0.59
Ghana		142					142	0.38
Gambia			47	73			120	0.32
Algeria				90			90	0.24
Burkina Faso			49				49	0.13
Seychelles					35	46	81	0.21
Ivory Coast						6	6	0.02
Total	6,745	2,206	5,401	10,807	8,103	4,428	37,690	100.00

Source: COMCAM data 2009-2014 (own calculations).

Plywood exports to American countries

From 2009 to 2014, only four countries on the American continent imported about 829 m³ of plywood from Cameroon, namely: USA (58.4%), Brazil (35.5%), Argentina (3.4%), and Mexico (2.3%) (Table 25).

Table 25. Plywood exports to countries on the American continent (m³)

Country	2009	2010	2011	2012	2013	2014	Total	%
USA	484						484	58.38
Brazil	129			97	68		294	35.46
Argentina					28		28	3.38
Mexico	11			12			23	2.77
Total	624			109	96		829	100.00

Source: COMCAM data 2009-2014 (Own calculations)

Plywood exports to Asian countries

From 2009-2014, five countries in Asia imported 92.8% of the 1930 m³ of plywood exported by Cameroon to that continent. They are: Thailand (39.5%), China (35.7%), South Korea (9.5%), Syrian Republic (5.5%) and Japan (3.3%). India, Vietnam and Iran imported the remaining 7.2% of plywood from Cameroon to Asia during the reporting period (Table 26).

Table 26. Plywood exports to countries in Asia (m³)

Country	2009	2010	2011	2012	2013	2014	Total	%
Thailand	32	193	210	211	102	15	763	39.53
China	22	341	114	84	75	52	688	35.65
Korea d	18		49	80	19	18	184	9.53
Syrian Republic		107					107	5.54
Japan				63			63	3.26
India		14			20	15	49	2.54
Vietnam		35			12		47	2.44
Iran (Islamic Republic)		29					29	1.50
Total	72	1,183	373	454	228	100	1,930	100.00

Source: COMCAM data 2009-2014 (own calculations).

Plywood exports to European countries

From 2009 to 2014, about 97% of 86 011 m³ of plywood from Cameroon were imported by five European countries, namely: Italy (74%), Turkey (10.3%), Greece (7.2%), Belgium (2.7%) and France (2.5%). Ten other European countries imported the remaining 3% over the reporting period (Table 27).

Table 27. Plywood exports to countries in Europe (m³)

Country	2009	2010	2011	2012	2013	2014	Total	%
Italy	3,397	43,258	3,851	3,509	5,567	4,076	63,658	74.01
Turkey	85	83	1,924	1,663	2,790	2,302	8,847	10.29
Greece	901	245	1,332	1,366	1,241	1,084	6,169	7.17
Belgium		395	234	293	512	917	2,351	2.73
France	88	1,951				119	2,158	2.51
Spain	46	1,700		43	42	42	1,873	2.18
Germany		471					471	0.55
Portugal		219					219	0.25
Netherlands	15	80					95	0.11
Romania		40					40	0.05
Sweden		40					40	0.05
Finland					36		36	0.04
Cyprus		26					26	0.03
Bulgaria		15					15	0.02
UK		13					13	0.02
Total	4,532	48,536	7,341	6,874	10,188	8,540	86,011	100.00

Source: COMCAM data 2009-2014 (own calculations).

Concerning the Oceanian countries, it is only in 2010 that Australia imported 464 m³ of plywood from Cameroon.

2.2.5 Trade balance in secondary processed wood products (2006-2013)

Secondary processed wood products (SPWP) such as wood furniture, builder wood, mouldings, cane and bamboo products and other SPWP are produced and exported from Cameroon but they are also imported in large quantities. Looking at the trade balances for these products, Cameroon is a net importer of wood furniture, builder wood and cane and bamboo products. From 2006 to 2013, Cameroon had a negative trade balance (trade deficit) of over US\$ 19 million that was associated with the importation of SPWPs (Table 28).

Table 28. Trade balances for secondary processed wood products in Cameroon (US\$ x1000)

Year	Wood furniture	Builder wood	Mouldings	Cane Bamboo	Other SPWP	Total
2006	-3,320,221	-57,084	10,215,864	-261,23	814,799	7,392,128
2007	-9,392,593	-1,189,844	9,594,381	-1,363,185	2,026,136	-325,105
2008	-8,635,199	281,109	8,316,443	-1,925,913	1,676,338	-287,222
2009	-7,061,702	966,391	5,941,231	-1,270,501	603,285	-821,296

Year	Wood furniture	Builder wood	Mouldings	Cane Bamboo	Other SPWP	Total
2010	-9,329,364	-1,368,69	2,673,943	-2,481,854	1163,933	-9,342,032
2011	-1,0776,81	-294,084	6,088,958	-2,535,332	1,643,553	-5,873,715
2012	-1,1375,822	536,456	9,351,694	-2,776,847	771,017	-3,493,502
2013	-1,1174,526	487,522	6,469,746	-3,522,537	1,301,173	-6,438,622
Total	-71,066,237	-638,224	5,865,226	-16,137,399	10,000,234	-19,189,366

Source: ITTO 2015.

The questions that require urgent responses in Cameroon and other central Africa countries reside on: why Asian countries are restricting forest harvesting and export of logs but countries in the Congo Basin, apart from Gabon, take comfort in exporting logs and primary processed products such as sawnwood, veneers and plywood? How can Cameroon and other countries in the sub-region move ahead to address the impediments that discourage investment in downstream production of secondary processed wood products such as wood furniture, builder wood, mouldings and other SPWPs? How can national policy changes tackle and reverse this trend?

According to ITTO (2016) log export restrictions would be fine if there were signs of growing investment in processing, however most West and Central African producer countries have a long way to go to put in place the conditions that encourage investment in downstream production capacity. Until this is addressed it will be difficult to see production in many countries move beyond sawnwood, plywood and veneer (ITTO, 2016).

2.3 GENDER GROUPS' REPRESENTATION IN SME

The forest sector has been noted to have a broad range of opportunities to empower women to equitably contribute to development (Duflo 2012) and the need to empower women in order to strengthen gender equality in rural societies is generally recognised as a prerequisite for increasing agricultural productivity, reducing poverty and promoting economic growth (FAO 2012; Sun et al. 2011). Gender groups' representation in the forestry sector in Cameroon is weakly developed and documented, especially with respect to the timber sector. The FAO (2013) supported this view by stating that gender roles in forest product value chains are generally poorly understood and not well supported by policy makers and service providers. This situation prevails despite the possibility of empowering women economically and socially through user groups (CIFOR 2012; Mala et al. 2012; Shackleton et al. 2011; Awono et al. 2010). However, with the respect to the NTFP sector more than 94% of 1100 NWFP traders surveyed in rural and urban markets in Cameroon were women (Ndoye et al. 1997). Over 39 female beekeeper groups exist in the Adamaoua and Northwest regions of Cameroon (Ingram et al. 2014).

Moreover, trainings on the promotion of SMFEs based on NTFPs in Cameroon and DRC involved 3515 people, 43% of whom were women (Tieguhong et al. 2012). Enhancing the

participation of women in forest user groups and in forest oriented resource centres conform to the consensus among development actors in acknowledging the strategic roles of participatory rural organisations in overcoming the obstacles that female small producers usually face in rural areas. As rightly put by Agarwal (2010), women are generally underrepresented in forest user groups such as village forest committees and community forest associations. The situation is more evident when rules allow only one person per household (usually the men) to participate in such groups, consequentially leading to the poor reflection of women's strategic interests and needs in all decisions taken (Agarwal 2001). On the contrary, in a situation of gender-balanced groups and female only groups, women tend to have more property rights to trees and collect more fuelwood than in male dominated groups (Sun et al. 2011). Indeed, gender-balanced groups that capitalise on complementary roles of men and women (collective action, better access to information and services) have been documented to perform consistently better in all forestry functions such as the protection of plantings, forest regeneration, biodiversity and watersheds and the allocation of forest permits (Sun et al. 2011).

2.4 ANALYSIS OF THE TECHNICAL AND COMMERCIAL ORGANIZATION OF FORESTRY PRODUCTION

Technical and commercial organisation of forestry production is better discussed under the performance of the private sector as a major partner of the state in managing its forests. Details on how companies engage and export wood primary and secondary products from Cameroon are also reported.

2.4.1 Technical and commercial organization in primary forest production

Primary forest production and exports are usually in the form of logs and many NTFPs in the raw state.

Trends in logs exports by companies (2009-2014)

Out of a total of 96 companies that exported logs from Cameroon between 2009 and 2014, leading five and ten companies exported 47% and 62% of the 3502217 m³ respectively. Indeed top 20 companies exported 82.82% of logs from Cameroon while the remaining 76 companies exported about 21% (Table 29).

Table 29. Trends in logs exports by logging companies from 2009 to 2014

Company	2009	2010	2011	2012	2013	2014	Total	% total
SIM	42,510	67,249	83817	94070	97326	84953	469925	13.42
SFID	61885	70308	72268	64167	73167	69109	410904	11.73
CCT		16,298	31164	37585	93319	138874	317240	9.06
ALPICAM	27,865	38,718	41361	46743	44701	49673	249061	7.11
PALLISCO	35,964	42,474	34070	31036	35913	24729	204186	5.83
FIPCAM	26,336	37,174	22867	25421	40394	20689	172881	4.94
KIEFFER	50,870	34,491	16158	6598			108117	3.09
TRC	19,907	38,182	35664	5507			99260	2.83
SEEF	8,021	15,901	5480	11583	9309	23366	73660	2.10
CFC	12,551	17,342	11390	6982	6599	15101	69965	2.00
JDF	1,398	6,242	8560	6998	20275	22186	65659	1.87
BOISCAM		0	0	0	14430	48495	62925	1.80
SLES		8,901	14466	13968	6986	14473	58794	1.68
NAMBOIS	7,707	14,886	14099	9565	4591	7807	58655	1.67
GWZ	17,051	22,914	13024	2862			55851	1.59
TTS	28,580	16,763	10339				55682	1.59
MPACKO JP		17,104	23363	14073			54540	1.56
FEEMAN		0	0	1083	12418	39679	53180	1.52
CUF	6,195	12,707	5195	2911	3806	10844	41658	1.19
SEFAC	10,152	9,686	4528	8900	2312	3601	39179	1.12
Top 20	36,7144	497,026	452,341	398,952	467,858	577,180	2,760,501	78.82
76 others	4,5493	110,624	129,960	97,919	154,679	203,041	741,716	21.18
Grand total	412,637	607,650	582,301	496,871	622,537	780,221	350,2217	100

Source: COMCAM data 2009-2014 (own calculations).

NTFPs export by company and trends

Generally, NTFPs from Cameroon are exported in the raw form or as primary products. From 2009 to 2014, the production and export of NTFPs was carried out by 37 companies in Cameroon. Leading five, ten and 20 companies produced and exported 66.4%, 88% and 96% respectively. The remaining 19 companies exported a mere 4% (Table 30).

Table 30. Trends in NTFPs exports by companies from 2009 to 2014

Company	2009	2010	2011	2012	2013	2014	Total	% Total
CRELICAM	228205	296266	244079	572878		355553	1696981	20.52
AFRIMED	525890		159200	150000	389180	271310	1495580	18.09
CALOMBA	41989	89491	19500		686262		837242	10.12
PHARMAFRIC	80000	116640	128000	160000	189540	162873	837053	10.12
MARTIAL et Cie			50000	436097	135171		621268	7.51
BIC			35719	60000	180136	197502	473357	5.72
SGP	279800				115000	57500	452300	5.47

Company	2009	2010	2011	2012	2013	2014	Total	% Total
SAH JEROME	74,418	129,928	72,221	18782	52,231	94,411	441991	5.34
AGRODENRE		66,000	67,800			169,300	303,100	3.67
JS						188,266	188,266	2.28
ERIMON		61,866	48,005				109,871	1.33
ETS BELINGA	26,500	5,112		60,000			91,612	1.11
ETS MOKOM						89,520	89,520	1.08
CATRACO		60,000					60,000	0.73
JOSI					56,118		56,118	0.68
HIS					46,000		46,000	0.56
M.Y et B					42,000		42,000	0.51
FF						37,972	37,972	0.46
ITTC		3,580		24,000	240		27,820	0.34
ETS GEORGE						27,000	27,000	0.3
Top 20	1,256,802	828,883	824,524	1,481,757	1,891,878	1,624,207	7,908,051	95.66
19 others	31,636	21,200	47,490	61,560	34,524	165,100	361,510	4.34
Grand total	12,884,38	850,083	872,014	1,543,317	1,926,402	1,789,307	8,269,561	100.00

Source: COMCAM data 2009-2014 own calculations).

2.4.2 Technical and commercial organization in secondary forest production

Companies involved in the technical and commercial organisation of processing and exporting timber from Cameroon can better be captured by looking at the performance of the companies involved over a given period of time. In this light, the trends for processed timber products (sawnwood, veneers parquets and plywood) exports are highlighted for the exporting companies from 2009 to 2014.

Sawnwood exports and trends

From 2009 to 2014, leading five, ten and 20 companies respectively exported 41%, 60% and 80% of the 3 539 297 m³ of sawnwood from Cameroon. The remaining 130 companies exported a mere 20%. The trend in the export of sawnwood from Cameroon shows a wavy pattern increasing from 364986 m³ in 2009 to 591173 m³ in 2014 with a peak in 2010 at over **808623** m³. This trend could simply be in respond to market demands and economic down turn in some importing countries (Table 31).

Table 31. Trends in sawnwood exports by companies from 2009 to 2014

Company	2009	2010	2011	2012	2013	2014	Total	% Total
ALPICAM	7,790	238,001	28,692	28,007	33,643	31,078	367,211	10.38
SFID	43,938	126,544	48,786	46,862	50,066	47,683	363,879	10.28
GRUMCAM	22,481	65,343	34,094	97,511	37,831	31,728	288,988	8.17
SIM	30,833	35,180	43,604	43,201	45,747	52,387	250,952	7.09

Company	2009	2010	2011	2012	2013	2014	Total	% Total
STBK	20,082	2,6179	27,616	29,673	33,394	33,821	170,765	4.82
GWZ	26,938	21,867	88,914	23,912	4,465		166,096	4.69
SEFAC	15,700	26,573	24,601	17,199	21,270	31,645	136,988	3.87
CIFM	19,365	23,040	22,801	20,727	21,958	21,277	129,168	3.65
CCT	6,606	9943	12,240	14,968	57,622	19,221	120,600	3.41
FIPCAM	13,461	11691	17,100	18,114	34,802	16,210	111,378	3.15
SMK	13,666	18,159	17,800	18,505	17,787	20,520	106,437	3.01
CUF		6,461	13,055	16,541	26,029	26,606	88,692	2.51
CFC	12,465	14,121	14,818	12,909	13,778	15,601	83,692	2.36
TRC	25,801	26,703	18,425	9,782	2,160		82,871	2.34
SEEF	12,052	15,012	15,121	11,284	12,767	13,430	79,666	2.25
SFIL	12,243	13,249	12,035	9,652	10,316	11,829	69,324	1.96
CAFECO		8,295	12,569	13,042	11,680	17,653	63,239	1.79
SEBC	4,613	10,891	11,810	11,171	11,533	12,756	62,774	1.77
SEBAC	7,426	10,121	11088	10,529	7,841	2,691	49,696	1.40
GVI	5,416	8,771	9,617	8,344	6,628	8,649	47,425	1.34
Top 20	300,876	716,144	484,786	461,933	461,317	414785	283,9841	80.24
130 others	64,110	92,479	108,585	129,296	128,598	176388	699,456	19.76
Grand total	364,986	808,623	593,371	591,229	589,915	591173	3,539,297	100.00

Source: COMCAM data 2009-2014 (own calculations).

Veneer exports and trends

From 2009 to 2014, a total of 11 companies exported veneers from Cameroon to other countries. Leading five companies exported 97% of the 226 514 m³ of veneers from Cameroon. The remaining six companies exported a mere 3%. The trend in producing and exporting veneers follows a decreasing pattern with a maximum volume of 52548 m³ exported in 2010 and only 28143 m³ in 2014. This could be associated with weak market demand in Italy with consequential reduction in production and export from Italian based companies (APILCAM, PLACAM, SCBK) (Table 32).

Table 32. Trends in veneers exports by companies from 2009 to 2014

Company	2009	2010	2011	2012	2013	2014	Total	% total
APILCAM	18,512	22,356	25,438	19,823	18,798	13,747	118,674	52.39
PLACAM	5,551	8,591	7,616	6,747	4,297	4,853	37,655	16.62
ECAM VENEERS	315	16,470	5,596	5,007	5,140	4,767	37,295	16.46
SNCOCAM	672	1,354	1,408	3,056	3,812	3,481	13,783	6.08
TRC	1,348	3,329	4,664	2,813			12,154	5.37
ECAM VENEERS		4,180					4,180	1.85
CS						1,269	1,269	0.56
SALCAM	232	285		69	22		608	0.27
SCTB	411	102	68				581	0.26
ETF					228	26	254	0.11

Company	2009	2010	2011	2012	2013	2014	Total	% total
STBK		61					61	0.03
TOTAL	31,221	52,548	44,790	37,515	32,297	28,143	226,514	100.00

Source: COMCAM data 2009-2014 (own calculations).

Plywood exports and trends

From 2009 to 2014, a total of six companies exported plywood from Cameroon to other countries. Leading five companies exported over 99% of the 108,692 m³ of plywood from Cameroon. The remaining one company exported a very small proportion of 0.02%. The trend in producing and exporting plywood follows a weakly evolving pattern with a maximum volume of 35,338 m³ exported in 2012 and only 13,164 m³ in 2014. This could be associated with weak market demand in Italy with consequential reduction in production from Italian based companies (APILCAM, SNCOCAM, PLACAM) (Table 33).

Table 33. Trends in plywood exports by companies from 2009 to 2014

Company	2009	2010	2011	2012	2013	2014	Total	% total
ALPICAM	7,540	12,613	10,297	15,964	16,268	11,696	74,378	68.43
SNCOCAM	484	38	177	17,942	988	675	20,304	18.68
PLACAM	2,430	2,480	2,200	1432	1386	793	10,721	9.86
TRC	408	1,190	441				2,039	1.88
SCTB	488	741					1,229	1.13
IBC		21					21	0.02
Total per year	11,350	17,083	13,115	35,338	18,642	13,164	108,692	100.00

Source: COMCAM data 2009-2014 (own calculations).

Parquet exports and trends

From 2009 to 2014, only two companies exported parquets from Cameroon to other countries. A company known by its trade name as IBC exported about 92% of the parquets in 2009 and 2010 but went out of operations since 2011, which could be associated with weak market demand. Between 2011 and 2014, no exports of parquets was made by either of the two companies, probably due to weak market demand (Table 34).

Table 34. Trends in parquets exports by companies from 2009 to 2014

Company	2009	2010	2011	2012	2013	2014	Total	% total
IBC	910	61	0	0	0	0	971	91.86
PAQUETCAM	69	17	0	0	0	0	86	8.14
Total	979	78	0	0	0	0	1,057	100.00

Source: COMCAM data 2009-2014 (own calculations).

2.5 IDENTIFICATION AND ASSESSMENT OF GENDER BASED CONTROL AND ACCESS TO REQUIRED ASSETS/RESOURCES FOR THE DEVELOPMENT OF FOREST SECTOR

According to IFAD (2008), forest products value chains are crucial for the incomes and livelihoods of many small producers, including many indigenous women and men in rural areas of developing countries, particularly with respect to the marketing of NTFPs such as essential oils, medicinal plants, gum Arabic, rattan, bamboo, natural honey, edible nuts, mushrooms, wild nuts and seeds, wild fruits and other types of forest product used for cooking, skin care and other purposes. Notwithstanding their importance, there is still paucity of data on gender based control and access to assets and resources for the development of the forest sector in Cameroon. However, women and men are often known to have highly specialized knowledge of forest flora and fauna in terms of species diversity, location, harvesting and hunting patterns, seasonal availability, uses for various purposes, and conservation practices (FAO 2013, 2012). Other authors (CIFOR 2012; Sun et al. 2011; Awono *et al.*, 2010; Marshall et al. 2006; Colfer, 2005) pinpoint that NTFPs value chains are gender-specific and both women and men derive their knowledge from their gender-specific ways and roles in accessing forests and trees, which products they harvest and how they use them, what markets they access, and the extent to which they rely on forest products for their livelihoods.

For instance, while men tend to specialize in harvesting of timber products and bushmeat for cash income and marketing, women are known to specialize in the collection, domestication and sale of NTFPs, indigenous fruit trees and medicinal plants (Sunderland et al. 2012; Sunderland, 2011; Tchoundjeu et al., 2010; Kumar and Nair, 2004). However, the participation of women in the domestication of fruit trees has been hindered by limited access to and control over land and trees, insufficient information on the requirements and advantages of tree domestication (Shackleton et al. 2011; Degrande, 2009; Degrande *et al.*, 2007). The marital status of women matters in accessing trees and forests because according to Degrande (2012) married women tend to have easier access to land and labour through their husbands than single women and widows. Overall, the future looks bright for women because; for example, increasingly women's access to rural resource centres² on tree domestication in Cameroon, DRC and Nigeria have provided evidence that women and young people should not be overlooked in agroforestry development projects (Degrande et al., 2012; Franzel and Kiptot 2012). For instance, out of a total of 5331 people involved in the establishment of 315 small-scale nurseries producing improved germplasm of 83 agroforestry species in Cameroon, the Democratic Republic of the Congo and Nigeria 38% were women and 30% younger than 35 years who gained insights on professional, productive and entrepreneurial skills within communities (Degrande et al., 2012; Tchoundjeu et al., 2010).

² Innovative participatory approach based on the philosophy of building rural development from the grassroots using technologies that are simple, practical and cheap to implement

2.5.1 Evaluation of marketing and trade opportunities in forestry sector

Opportunities in the marketing and trade opportunities in the forestry sector may be linked to the availability of desirable tree species, the type and quality of products. The export of logs and sawnwood are the two types of products examined against the desirable timber tree species.

Classification of wood exported by species

Despite recurrent regulatory and policy interventions in Cameroon, logs still constitute about 50% of timber exported from the country. Timber tree species in Cameroon can be classified into five major categories (Tegantchouang, 2014):

- Species with total ban on their exportation in the form of logs; 31 tree species known by their trade names as: Acajou à grandes folioles, Acajou de bassam/Ngollon, Aningré A, Aningré R, Assamela/Afromosia, Bété/Mansonnia, Bossé clair, Bossé foncé, Bubinga, Dibétou, Bibolo, Doussié blanc/Pachyloba, Doussié rouge (*bipendensis*), Fromager, Ilomba, Iroko, Longhi/Abam, Makoré/Douka, Moabi, Movingui, Mukulungu, Ovengkol/Bubinga E, Padouk blanc, Padouk rouge, Pao rosa, Sapelli, Sipo, Teck, Wengé, Zingana/Amuk. These species are also known as the principal timber trees species in Cameroon.
- Species with exportation in form of logs based of annual quota allocations; six tree species are in this category including: Ayous, Azobe, Framire, Kossipo, Koto and Tiama.
- Promotion species of first category³: 13 tree species including: Bilinga, Ekaba/Ekop ribi, Eyong, Fraké/Limba, Gombé/Ekop Ngombé, Kotibé, Naga/Ekop Naga, Niové, Okan/Adoum, Okoumé, Onzabili/Angongui, Ozigo, and Tali.
- Promotion species of second category⁴: 64 tree species including: Abalé/Abing, Abam à poils rouge, Abura, Agba/Tola, Aiélé/Abel, Ako/Aloa, Alep, Alumbi, Amvout, Andok ngoé, Andoung brun, Andoung rose/Ekop mayo, Angueuk, Asila koufani/Kioro, Asila omang, Avodiré, Awoura/Ekop béli, Bahia, Bodioa, Bongo H/Olon, Cordia/Ebe/Mukumari, Dabéma/Atui, Dambala, Diana/Celtis/Odou, Difou, Ebiara Edéa, Ebiara Yaoundé/Abem, Ekop ekusek, Ekop G.H., Ekop ngombe G.F, Ekouné, Emien, Essak/Alow kouaka, Esseng/Lo, Essesang, Esson/Ekop A, Etimoé, Eveuss/Ngon, Eveuss PF, Eyek, Eyoum blanc, Faro, latandza/Evouvous, Kanda, Kapokier/Bombax/Esodum, Kondroti, Kumbi, Landa, Lati/Edjil, Lati parallèle, Limbali, Lotofa/Nkanang, Mambodé/Amouk, Miama, Moambé, Mutondo, Naga parallèle, Oboto/Abotzok, Osanga/Sikong, Ouochi/Albizia/Angoyemé, Ovoga/Angalé, Tchitola, Vessambata, Wamba.

³ In Cameroon, a promotion wood species has the potential physio-chemical and technical wood characteristics that allows for increasing market interest over time. Despite its comparable characteristics with other known principal wood species it is not yet sufficiently known in the market and its full potential is still to be explored. The category I promotion species are those that export in the form of logs is authorised because the market for the processed wood is uncertain or non-existent but provide an opportunity for earning foreign revenues and ensuring ecological stability in the forest.

⁴ The Category II promotion species are those with authorisation for export in the form of logs but that already have local or international markets and the physio-chemical properties of their wood are known and they need to be selected on a case by case basis for promotion and could be moved to principal species or species requiring a special quota for exports in the form of logs.

- Other species⁵ (42 tree species), not included in the four other categories above such as Abam ékuk, Abam fruit jaune, Abam vrai, Abem, Ako W, Akodiakédé, Akpa, Anzem, Assam à poils, Atom, Doussié Sanaga, Ebène, Efok afum/Poré poré, Efok ayous nkol, Ekobem Edéa, Ekop I, Ekop J, Ekop leke, Ekop Mfang, Ekoussek, Eyoum foncé, Eyoum rouge, Izombé, Kekele, Kibakoko à feuilles argentées, Kibakoko à feuilles roussâtres, Moka, Monghinza, Mubala/Ebaye, Ngando, Niangon, Nieuuk, Nom andok, Nom naga, Odouma, Ohia, Onzabili M, Osip, Ozouga, Padouk de rivière, Rikio, Sougué G F (Tegantchouang, 2014).

Export of logs by tree species

From 2009 to 2014, a total of 37 tree species were subjected to timber export in the form of logs. Many of these are promotion category 1 and 2 species such as Tali (*Erythroleum ivorense*) with 22.25%, Okan (*Cylicodiscus gabonensis*) with 22.22%, Dabéma (*Piptadeniastrum africanum*) with 7.36% and Bilinga (*Nauclea diderrichii*) with about 4%. Species that require a specified annual quota for exportation in the form of logs such as, Ayous/Obéché (*Triplochyton scleroxylon*), and Azobe (*Lophira alata*) are also among the most demanded, at 13.5% and 4.6% respectively (Table 35). It is important to note that some principal wood species with a total ban on their exportation in the form of logs, requiring their primary or secondary processing in Cameroon like Sapelli (*Entandrophragma cylindricum*), Movingui (*Distemonanthus benthamianus*) and Mukulungu (*Austranella congolensis*) also feature among the 20 top timber tree species exported in the form of logs. This suggests a governance compliance problem that is contrary to the specifications of the 1994 Forestry Law. However, comparatively, China imports 5 and 19 of the principal species mentioned above in the form of logs and sawnwood respectively (Appendices 2 and 3).

Table 35. Export of logs by tree species

Tree species	2009	2010	2011	2012	2013	2014	Total	%
Tali	17,844	124,831	141,964	129,889	163,833	201,283	779,644	22.25
Okan / Adoum	97,249	96,862	123,946	127,339	155,813	142,097	743,306	21.22
Ayous/Obéché	12,232	147,509	94,969	74,716	68,157	76,526	474,109	13.53
Dabéma	53,005	45,971	19,577	33,654	51,725	53,879	257,811	7.36
Azobé	6,878	12,254	34,290	24,020	43,030	38,816	159,288	4.55
Bilinga	13,705	17,998	21,239	27,430	30,842	28,367	139,581	3.98
Ekop ekusek	5,413	6,043	19,700	13,669	28,896	34,919	108,640	3.10
Naga	3,572	19,073	31,008	7,321	1,346	13,384	75,704	2.16
Fraké	10,811	9,740	10,029	9,915	3,887	13,963	58,345	1.67
Eyong	5,827	10,900	16,292	5,372	6,134	10,091	54,616	1.56
Niové	2,495	3,881	7,967	10,597	9,725	10,070	44,735	1.28
Awoura	4,994	2,500	5,802	1,922	8,305	20,154	43,677	1.25
Kossipo	1,868	6,430	2,390	6,156	2,001	23,551	42,396	1.21
Onzabili /Angongui	3,586	5,536	11,236	4,478	5,948	5,447	36,231	1.03
Padouk blanc	7,589	22,722	0	0	0	0	30,311	0.87
Sapelli	10,373	15,371	1,016	28	0	0	26,788	0.76

⁵ Species not belonging to the first four categories that can be exported in the form of logs but need further research to understand their physio-chemical and technical characteristics to facilitate their promotion.

Tree species	2009	2010	2011	2012	2013	2014	Total	%
Ebiara Edéa	0	1,029	1,288	3,552	6,583	4,646	17,098	0.49
WAMBA	1,643	1,971	2,485	3,524	2,485	2,135	14,243	0.41
Mukulungu	435	2,814	1,912	1,781	3,942	4,690	13,793	0.39
Ekaba	3159	2,646	2,130	1,082	3,012	929	12,958	0.37
Total (20 top spp)	262,678	556,081	549,240	484,664	595,664	68,4947	313,3274	89.43
17 others	149,959	51,566	33,061	12,207	28,285	95,190	370,268	10.57
Grand total	412,637	607,647	582,301	496,871	623,949	780,137	3,503,542	100.00

Source: COMCAM data 2009-2014 (Own calculations)

Export of sawnwood by tree species

Over the last six years (2009-2014), 29 timber tree species have been of interest to timber companies for sawnwood production and export. Top five species (Ayous, Sapelli, Iroko, Azobe and Frake) of interest constitutes about 70% of the sawnwood exported from Cameroon and the top 20 species make up about 91% of the 3658881 m³ exported during the reporting period (2009-2014). Among the top 20 species, 11 were principal species (Acajou de bassam, Sapelli, Iroko, Assamela, Bossé clair, Dibétou, Doussié blanc, Doussié rouge, movingui, Padouk rouge and Sipo); 4 were species with specified quotas (Ayous, Kossipo, Koto and Azobe); and the remainder were promotion category 1 and 2 species (Table 36).

Table 36. Export of sawnwood by tree species (m³)

Species	2009	2010	2011	2012	2013	2014	Total	%
Ayous/Obéché	82,482	136,183	137,957	134,255	150,641	157,231	798,749	21.83
Sapelli	79,376	136,759	102,417	172,154	134,054	154,656	779,416	21.30
Iroko	45,235	275,178	53,104	47,258	73,955	48,215	542,945	14.84
Azobé	36,646	4,1975	50,708	52,537	45,244	55,126	282,236	7.71
Fraké	12,188	12,188	83,374	28,548	26,878	25,357	188,533	5.15
Tali	18,910	17,711	21,885	18,171	22,502	22,385	121,564	3.32
Padouk rouge	7,847	11,771	19,024	21,118	13,151	18,347	91,258	2.49
Moabi	11,860	12,829	12,931	14,023	12,254	9,066	72,963	1.99
Sipo	8,468	13,139	11,955	2,200	11,515	11,674	58,951	1.61
Acajou de bassam	3,378	11,555	11,555	10,589	10,582	10,649	58,308	1.59
Dibétou	6,474	9,859	11,636	8,814	9,977	9,662	56,422	1.54
Movingui	6,018	10,213	11,029	9,207	8,735	7,721	52,923	1.45
Kossipo	7,675	7,146	8,345	9,107	8,005	6,923	47,201	1.29
Doussié rouge	5,336	3,704	6,215	6,557	8,078	6,439	36,329	0.99
Doussié blanc	5,645	7,981	5,094	4,832	2,214	5,226	30,992	0.85
Assamela	4,588	5,295	6,625	5,379	2,001	6,488	30,376	0.83
Okan / Adoum	4,867	5,003	5,505	4,216	4,912	2,476	26,979	0.74
Bossé clair	1,560	2,982	3,930	3,059	3,176	3,306	18,013	0.49
Koto	2,375	2,718	3,268	2,995	2,556	2,544	16,456	0.45
Bilinga	2,985	2,002	3,290	1,981	2,629	2,074	14,961	0.41
Top 20 spp.	353,913	726,191	569,847	557,000	553,059	565,565	3,325,575	90.89
9 others	1,1072	200,484	23,516	34,222	36,869	27,143	333,306	9.11
Grand total	364,985	926,675	593,363	591,222	589,928	592,708	3,658,881	100.00

Source: COMCAM data 2009-2014 (own calculations).

Exp

ort of NTFPs by species

In addition to timber, the forestry sector in Cameroon contributes to rural livelihoods and the country's GDP through the exploitation and trade in special forest or non-wood forest products (Tieguhong et al. 2015b). From 2009 to 2014, eight special forest products were recorded as exported at the Douala seaport with a total weight of 8067 tons with Ebene and pygeum commanding about 57% and 26% respectively (Table 37).

Table 37. Export of NTFPs by species (kg)

NTFP	2009	2010	2011	2012	2013	2014	Total	%
Ebene	40,2748	541,997	449,009	1,183,257	1,183,488	833,704	4,594,203	56.95
Pygeum	505,690	0	269,200	250,000	602,674	491,683	2,119,247	26.27
Voacanga	350,000	87,640	28,005	85,743	70,000	0	621,388	7.70
Yohimbe	30,000	195,366	125,800	24,000	70,240	80,400	525,806	6.52
Raphia nuts	0	0	0	0	0	107,500	107,500	1.33
Gum Arabic	0	21,500	0	0	0	0	21,500	0.27
Rattan	0	3,580	0	0	0	0	3,580	0.04
Charcoal	0	0	0	0	0	73,600	73,600	0.91
Total	1,288,438	850,083	872,014	1,543,000	1,926,402	1,586,887	8,066,824	100.00

Source: COMCAM data 2009-2014 (own calculations).

2.5.2 Evaluation of policies and strategies facilitating or constraining the development of forest products industry

It is at the Rio Earth Summit, held in Rio de Janeiro, Brazil, in 1992, that the principles of sustainable forest management were highlighted to safeguard tropical forests and the habitat and carbon reserves they contain, while also providing for the social and economic needs of the people who depend on them. According to FAO (1999), sustainable forest management (SFM) aims to integrate the social, environmental and economic values of forests. In this regard, forests could be managed to provide not only saleable timber, but also food and jobs for local communities, while at the same time protecting biodiversity and carbon stocks. Just after the Rio Summit, Cameroon vigorously embarked on policy reforms and placed its production forests under the policy and regulatory guidance of the 1994 Forestry Law and its Decree of Application of 1995. The total area where timber could be legally harvested by a single concessionaire was reduced from more than 400,000 hectares in 1998/99 to 200,000 hectares in 2006 with a 30 years rotation. The reduction in area was accompanied by an equally important shift in the type of management models used in the areas where timber was harvested, from mostly rural areas, where logging was less regulated and more destructive, to forest management units (FMUs), where regulations were applied more rigorously. By 2005, harvesting rights had been allocated for 55 forest management units with approved management plans covering a total of 4 million ha (Topa et al. 2009). Today there are over 111 FMUs covering a total of over 7 million ha. However, it is important to note that under these new forest management arrangements, the annual volume harvested, harvesting intensities and the range of tree species harvested have not significantly changed.

As clearly explained by Topa et al. (2009), this phenomenon probably results from a combination of factors, such as new limits on the size of harvestable trees and declining stocks of traditional commercial species in forests that often have already been harvested at least once. Higher taxes and rising transport costs have brought the costs of less valuable species closer to free-on-board (fob) prices, reducing their margin of profitability (Topa et al. 2009). However, the structure of the forest industry and product mix has changed significantly over the course of the reforms. In 1990, the forest industry predominantly focused on the production and export of logs. To comply with the wood processing quota enforced between 1994 and 1999, and in response to the log export ban in 1999, practically all companies started to build processing units and integrated logging and processing. Today, a little less than 50% of wood is exported in the form of logs. Another important evolution in the forestry industry in Cameroon has been the adoption of third-party certification that enables companies to distinguish themselves in the marketplace as trustworthy partners of forest owners (governments) and buyers. This started in 2004 because of an increasing number of management plans that were approved and implemented in compliance with basic forest management regulations as enshrined in the 1994 Forestry Law and regulations. It is important to note that certification is purely voluntary and commonly assumed to make sense for companies only when there is a discerning market (Tsanga et al. 2014, Topa et al. 2009). Another important policy engagement of Cameroon with respect to transforming and improving forest governance is its engagement with the European Union Forest Law Enforcement Governance and Trade Voluntary Partnership Agreement (EU-FLEGT-VPA). Indeed Cameroon began informal pre-negotiation in 2005, formal negotiations started in 2007 and VPA was agreed in 2010 and is now at the stage of implementation. It is also important to note that most forest policy reforms in Cameroon have targeted the timber sector, focusing on sustainability, legality and informality (Cerutti and Tacconi 2006) and the fiscal regime (Betti 2004). In contrast, the non-timber sector has been invisible for policy makers, both in terms of its social and economic importance and of the negative impacts of illegality, informality and unsustainable practices (Tieguhong et al. 2015a). Furthermore, serious concerns on the evolution of the forestry and other primary sectors of the Cameroonian economy reside on the inadequacy of basic infrastructure, governance and weak capacity, as well as an unfriendly private sector environment (AfDB, 2009).

2.5.3 Evaluation of employment opportunities and wealth creation in processing and marketing of timber and non-timber forest products.

According to de Wasseige et al. (2014), formal logging leads to the creation 13,000 direct jobs and 150,000 indirect jobs. Other estimates by Eba'a Atyi et al. (2013) put total direct employment in the forest sector at 22,722 with 21,902 linked to the timber sector and 802 to sport hunting. The informal sector employs several thousands of Cameroonians with about 44,000 in artisanal sawing, 460,000 in village hunting by villages in their adjoining forests and 90,000 for the production and commercialisation of fuelwood and charcoal in urban centres (Eba'a Atyi et al. 2013).

2.5.4 Identification and assessment of the factors inhibiting and/or promoting the full and equal participation of marginalised groups

According to Olivero et al. (2016), there are about 900,000 pygmies in Central African forests who live in dispersed groups in camps due to activities linked to extractive industries, habitat destruction, random demographic events, natural disasters, agricultural expansion and occasional conservation agendas. The same study suggests that Cameroon has the fourth concentration of these indigenous people distributed in over 240 camps. Other studies such as those of Topa et al. (2009) suggested that about 30,000 individuals—Aka, Baka, and Kola peoples are gathered in or around 300 settlements in 33 councils that constitute Cameroon's indigenous peoples. Although they legally have equal rights like all other Cameroonians, they generally lack the *de facto* political influence, legal status, and organizational, technical, and economic capacity enjoyed by other groups (Topa et al. 2009). Hitherto, they had no legally sanctioned access to the forests from where hunting and gathering take place; these two activities contribute over 65% to their livelihoods. Indeed, the 1994 Forest Law began restoring some of the rights that by making provisions for user rights (rights to harvest and use forest products within households) to forest-dependent communities but not the rights to commercialise forest products to generate income.

Another limitation of the reforms to help indigenous people was associated with forest zoning that allocated a significant area of indigenous community land to the permanent forest domain with no secure rights to their forest resources (rights to hunt, gather, or fish). Moreover, in the non-permanent estate, where community forests can be established, the dominant Bantu communities claim the land, perpetuating a history of marginalization of Pygmy people. Lastly, some aspects of community forests such as timber extractive activities or heavy administrative procedures are inconsistent with the traditional livelihood support systems and resources of indigenous people (Topa et al. 2009). At the Paris Climate Change Conference in December 2015, many scientists came to the conclusion that establishing clear and secure community land rights is a pre-requisite for much needed sustainable investments and will enable sustainable economic development as well as lessen the impacts of climate change. The hypothesis is that helping indigenous populations secure their land may significantly reduce the risk of deforestation, becoming a vital tool in mitigating climate change, and therefore lending support to projects that are recommended by local people and their governments; and this has potential to improve land rights in developing countries.

2.5.5 Identification and assessment of gender based control and access to required assets and resources for the development of forest sector

It has been documented that men dominate many of the forest products value chains and often have customary ownership over tree-based products, comprising 60% of people involved in Cameroon (Ingram 2014). According to Eba'a Atyi et al. (2013), the economic crisis of the 90s led to a massive contraction of the public and private services with drastic reduction in salaries and the devaluation of the local currency, which triggered men to join women in the collection and sale of NTFPs to earn additional income. This tendency differed from what was previously practised whereby women were generally engaged in specific activities such as harvesting, processing and retailing and in 'women's' products known as NTFPs (Ingram *et al.*, 2013). Women play an important role in the management and commercialisation of NTFPs. For example, while the men are generally in control of fruit trees, women remain the main traders of the fruits from the trees. Indeed, according to Ndoye *et al.* (1997), 94% of the estimated 1,100 NTFP retailers in 18 major markets in the humid forest zone of Cameroon were female. The situation is different when it comes to wholesale of NTFPs whereby 71% are controlled by men and women only 29% because wholesale require huge capital that are more accessible to men (Eyebe et al. 1999). When it comes the youths, young girls and boys usually assist their parents in the entire value chain of NTFPs. However, when it comes to the collection of NTFPs like *Prunus africana* that require tedious debarking of trees, only the boys assist their parents (Noubissie et al. 2008).

2.6 EVALUATION OF THE RELATIONSHIP AND LINKAGES BETWEEN ACTORS IN PRIMARY AND SECONDARY FOREST PRODUCTION

From pre-colonial and colonial periods, and until the early years of the last decade, most of the wood produced in Cameroon was exported to Europe in the form of logs, sawn wood, veneer, plywood and wood floorings (Tieguhong et al. 2015b). In 2005, 66% of logs and 88% of processed timber were destined for Europe, with Italy being the main destination (MINFOF, 2012). In more recent years, the Cameroon forestry sector has largely been dominated by new investors from emerging markets from the Asian continent, especially from China (Tieguhong et al. 2015b). In total, 158 wood companies operate in the Cameroonian wood industry, 19 of which are fully Chinese funded investments and 14 of which are in partnership with Chinese investors, 58 of which export to China and the remaining 67 have no direct Chinese links (Table 38; Figure 1). Although the total number of companies with Chinese direct investment represents only 19% of all the companies, some additional 59 companies, including most of the big companies owned by Europeans today export most of their wood products to China. Moreover, the 67 companies which do not export directly to international markets are potential domestic sellers of wood to Chinese and non-Chinese companies located in Cameroon that export wood to China (Tieguhong et al. 2015b).

Table 38. Partnerships and forest products mix

Type of partnership	Type of forest products exported to China?			Total	%
	Logs	Sawnwood	Logs and Sawnwood		
Pure Chinese investments	8	4	7	19	12.0
Chinese in partnership with other nationalities	6	2	6	14	8.9
Export to China with unidentified partnerships	8	16	34	58	36.7
No direct link with China	15	37	15	67	42.4
Total	37	59	62	158	100.0
%	23.4	37.3	39.2	100.0	

Source: Tieguhong et al. 2015b.

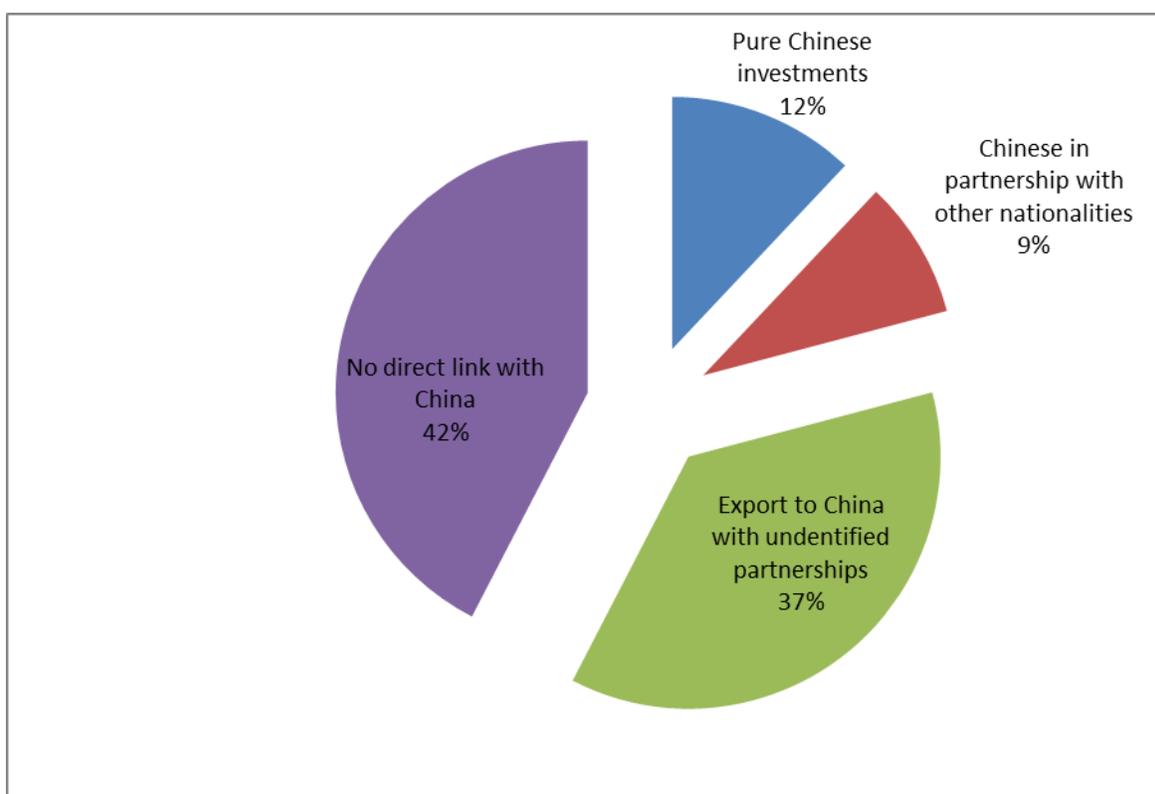


Figure 1: Chinese partnerships and investments in the forestry sector in Cameroon

Out of the 158 companies in the wood industry in Cameroon, 23% deal only with log production and export, 37% with processing logs into sawnwood and 39% with both logs and sawnwood (Figure 2). Most companies that produce sawnwood do not have a production forest of their own through a concession, but buy their timber from community forests, national forests and agroforestry farms.

Most of the companies use first category processing machines like chainsaws and Lucas mills and extract wood from the forest in the form of sawn timber (Tieguhong et al. 2015b). Most of the companies that deal with logs and sawnwood have either a forest concession or sale of standing volume (ventes de coupe) authorisation. Most of those that deal only on logs have sales of standing volumes authorisations or are purely merchants of logs. An example of a big company that does not have a production forest and which depends on purchases and export of wood to China is the Lebanese owned company "Compagnie de Commerce et Transport (CCT)", which today is the leading company in terms of exported volumes (over 76,945 m³ in 2013 and 38,831 m³ in the first quota of 2015). According to information from the Douala Regional Delegation of Forestry, the CCT Company buys almost all the wood it exports from other companies who own and manage different forms of production forests (Tieguhong et al. 2015).

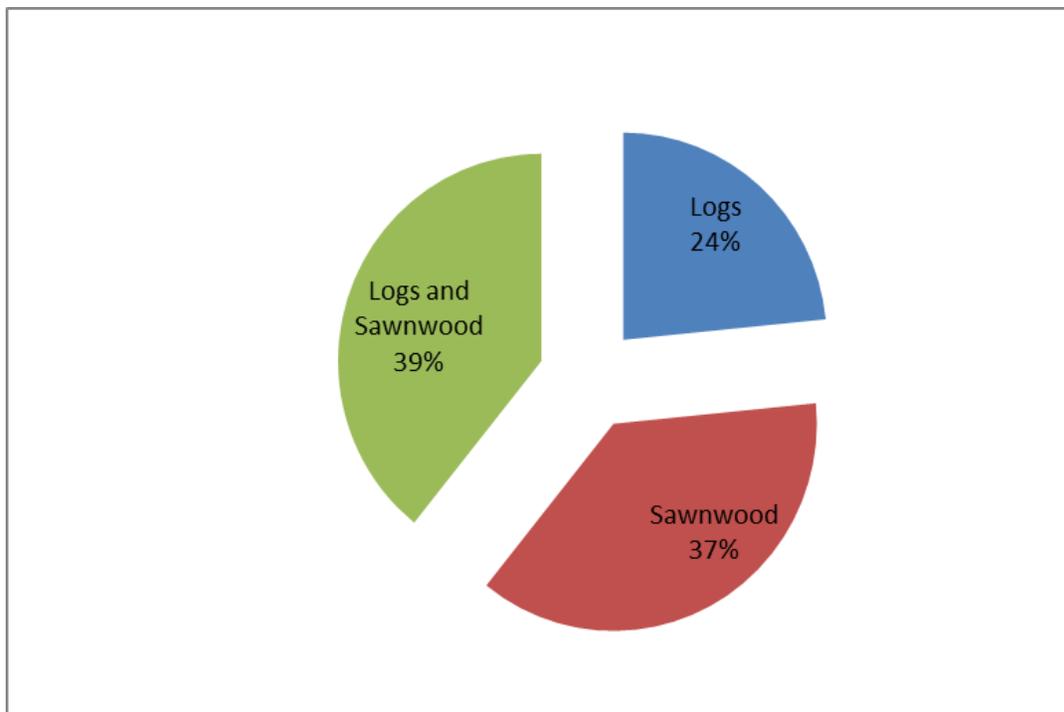


Figure 2. Forest product types or combinations exported by timber companies in Cameroon

2.7 SCOPE OF PUBLIC PRIVATE PARTNERSHIP

The scope of public-private partnerships in the forestry sector in Cameroon resides in the management of forest concessions, sales of standing volumes, council forests and community forests.

2.7.1 Identification of current capabilities of public private partnership in forestry

The structure of the Cameroon forest industry has been changing over the years with the implementation of sustainable forest management guidelines and forest management plans as well as the introduction of an auction system in the attribution/allocation of forest concessions and sales of standing volumes. These have facilitated public-private partnerships in the management of most of the Cameroonian production forests under the preconditions on adapting their business models to cost structures that include higher fixed costs, new investments for management plans, greater emphasis on in-country processing and increased social and environmental responsibility (Topa et al. 2009). These changes have brought about new investment partners from Asia that are gradually sidelining most of the old investors from Europe. More recently, there has been a remarkable increase in the adoption of public-council partnerships and public-community partnerships that have respectively led to the creation of council and community forests. The merits from these new partnerships reside in greater emphasis on development at the local level that is based on forest products as well as increased local employment opportunities.

2.7.2 Analysis of promising public private partnership models and approaches for an all-inclusive forest compatible sustainable livelihoods development and supporting measures needed.

In Cameroon, until the late 1990s, rights were awarded to harvest relatively small forested areas or volumes of timber under short-term contracts. These contracts did not appear to be awarded in a rational or orderly way that reflected the sustainable management goals of the 1994 Forest Law. At that time it was not unusual for more than one person or company to be given the right to harvest the same area or for harvesting rights to be granted within protected areas. To rectify these problems, in 1999 the government adopted a planning strategy and disseminated a booklet that summarized the features of all harvesting rights and indicated how they would evolve over the coming years (Topa et al. 2009). The evolution of social responsibility contracts in the management of forest concessions, council forests, community forestry; in addition to taking into account indigenous peoples' rights, and exposing local timber markets to various policy and legislative reforms provided the breeding ground for the evolution of a considerable number of elements that shaped promising public-private partnership models and approaches that are considerably all-inclusive and promote sustainable livelihoods development that offers better means for sustaining forest-dependent communities and the resource bases. These are highlighted in the following sections.

Concession forest management model

The concession forest management model came with the timber harvesting rights as defined in the 1994 Forest Law that included mainly the long-term rights to forest management units (FMUs), short-term sales of standing volumes and small logging titles (30-cubic-meter personal authorizations, 300-cubic-meter cutting permits, and the recovery of timber following land conversion or special authorization). With this, the government intention to sustainably manage FMUs was structured in ways to replace all licenses issued before 1994; and this approach gradually became the main source of commercial timber supply for Cameroon and by 2006 forests concessions operating with management plans already supplied 85% of commercial timber compared to only 30% in 1998 (Topa et al. 2009). The concession forest management model is guided by the establishment, approval and implementation of economic, social and environmental safeguards by the public forest administration as detailed in forest management plans that need to be scrupulously followed by the private sector while managing allocated forest areas. The public sector monitors compliance of the private sector to SFM guidelines.

Forest management plans are prerogatives for the European Union-Forest Law Enforcement, Governance and Trade (EU-FLEGT) and the Forest Stewardship Council (FSC) forest management tools (Tsanga, 2014, Cerutti et al. 2011). In 2002, there were 72 allocated forest management units or concessions with 55 of them having approved management plans and covering a total of a little over 4 million ha. By 2005, the total number of forest management units with harvesting rights had a total surface area of 5.6 million ha. Today, Cameroon, has 111 forest management units covering a total of 7 058 958 ha out of which 66% (5 071 000 ha) are managed concessions and 34% (2 393 061 ha) are certified. The mean size of forest concessions is 63594 ha. This shows a steady increase in the concession model of forest management in Cameroon. To buttress this point, some recent authors pinpoint that forest concessions with approved management plans can significantly influence the effective contribution of logging companies to the socio-economic wellbeing and improved relationship between companies and local communities (Cerutti et al. 2015, Tsanga et al. 2014).

However, other authors (Brandt et al. 2016) do not seem to agree on any significant differences in the social and environmental performances of forest concessions with management plans against those without in the Republic of Congo. They have cautioned that there may not be significant differences between concessions with approved management plans and those without, depending on the extent to which technical, social and environmental management guidelines are implemented or not.

In 2014, there were a total of 99 concessions rights awarded covering a total area of 6419362 ha and worth over 15.45 billion FCFA (US\$ 25,832,357) to the government. Unit area fees from a minimum of 1010 FCFA (US\$ 1.7)/ha to a maximum of 8050 FCFA (US\$13.5)/ha averaging 2462 FCFA (US\$4.12) and STD=1454 FCFA (US\$2.43) (Table 39).

Table 39. Characteristics of concession areas, volumes and values in Cameroon (N=99)

Characteristics	Area (ha)	Price/ha CFAF (US\$)	Total value CFAF (US\$)
Minimum	15,435	1,010 (1.7)	33,907,650 (56,702)
Maximum	149,079	8,050 (13.5)	542,862,069 (907,796)
Mean	64,842	2,462 (4.12)	1,560,378,705 (260,933)
STDev,	28,172	1,454 (2.43)	108,574,072 (181,562)
Sum	6,419,362	243,698 (408)	15,447,749,184 (25,832,357)

Source: MINFOF 2014 data (own calculations).

As may be observed in Table 39, the prices per ha vary from one concession to another because each concession is offered on a competitive bases through an auction process. The concessions are not contiguous and prices are affected by accessibility as well as the type private sector competitors interested and making a bid for each concession. However, the fact that the STDev of the price per ha is far lower than the mean, implies that there are no significant variations associated with the bidding process. Rather, minor differences could be associated with accessibility and the inherent quality of the concessions (e.g. density of desirable timber species, topography etc.). The sum represents the total value of all the products of the concession areas and their individual area fees offered by the private sector to the government during the auction process.

The council forest management model

Local councils and their people get financial benefits from their forests in three forms: revenue generated from the sale of timber from their council forests, annual forestry fees from nearby forest concessions and salaries paid to locally recruited forestry staff (Eba'a Atyi et al. 2013). This PPP model requires the government to completely transfer the management and land ownership of designated forests from the State to the council with government giving technical and monitoring supports to the management of the forests. The councils act as managers of the forests for profit gain to the councils that operate as private entities. The concept of council forest is one of the innovations of Cameroon forest law in 1994 that designates to a natural forest as part of the permanent forest estate requiring classification on behalf of the concerned councils, or a tree plantation on council territory (Republic of Cameroon 1994; 1995). With this legal reform, there is a complete transfer of management of forests from the State to the council as well as land ownership and with the opportunity provided to several councils to join together in order to create and manage one council forest (Cuny 2011). The first council forest was classified in 2001 and by 2015 there are 63 council forests demanded, 26 classified, 20 with management plans and 10 with annual exploitation permits (Table 40; Figure 3) (MINFOF 2015). The evolution of the total area covered by different categories of council forests is provided in Figure 4 showing total area requested, total area classified, total area under management plans and total area with exploitation permits to be 1545316 ha, 721912 ha, 554828 ha and 241466 ha respectfully (MINFOF 2015).

Table 40. List of valid council forest titles in Cameroon for year 2015

Years	Demand of Council forests		Classified council forests		Management Plan approved		Annual operational permit (AOP)		
	Number	Total area (ha)	Number	Total area (ha)	Number	Total area (ha)	Number	Total area (ha)	Total Authorised volume (m ³)
2012	45	1,079,647	15	381,835	10	266,198	8	10,913	173,242
2013	52	1,146,007	16	402,230	10	266,198	6	7,788	179,947
2014	52	1,146,007	19	498,150	11	283,424	11	11,023	271,879
2015	63	1,545,316	26	721,912	20	554,828	10	10,350	241,466

Source: MINFOF 2015

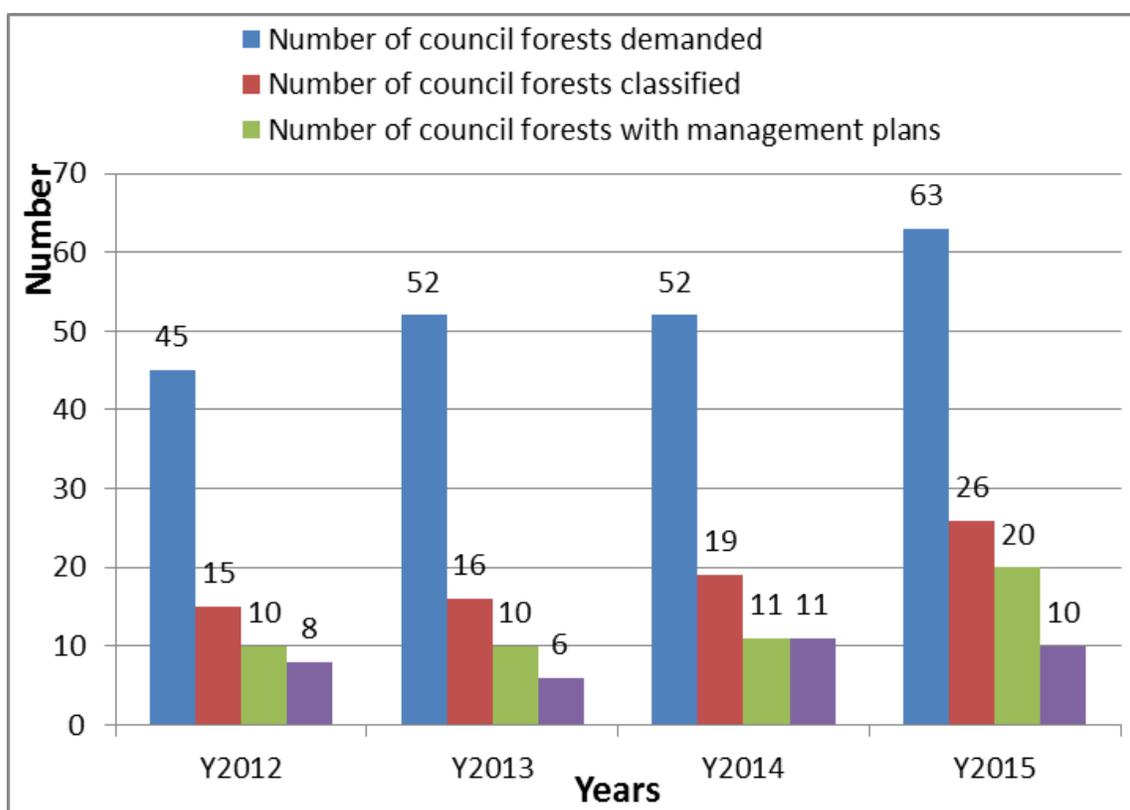


Figure 3. Evolution in numbers and categories of council forests

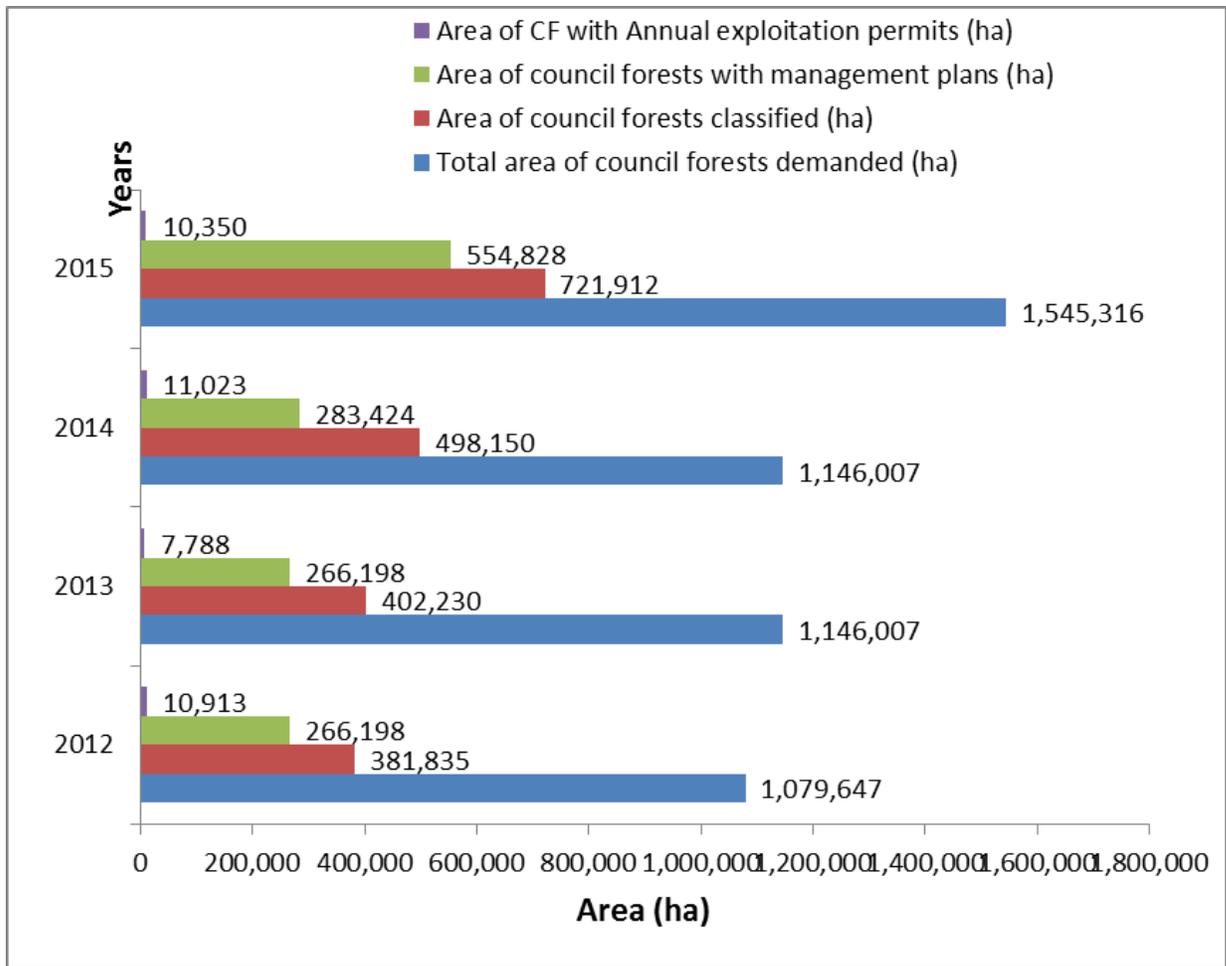


Figure 4: Evolution in areas of various categories of council forests

It is important to highlight that the request for council forests by councils in Cameroon currently cover almost all the agro-ecological zones of the country (MINFOF 2015). Moreover, despite the progress made since 2001, the development of council forests faces some challenging governance issues related to the accountability mechanism between the councils and the management entities headed by the mayor of the council (Assemble 2006). Several constraints still hamper the development of the process of council forest allocation, and low socioeconomic benefits realised by local populations (Cunny 2011). The principal issues under discussion are the simplification of procedures of classification, land registration free of charge, requirements of a provisional management agreement, afforestation incentives, and creation of regional forests (Topa 2009). Almost all council forests are exploited in partnership with logging concessions using the log selection system as generally practised by the concessionaires.

The community forests model

The Cameroonian Forestry Law N° 94/01 of 20 January 1994 and its Decree of implementation 95/531PM of 23 August 1995, define community forestry with the aims to: increase the participation of local populations in forest conservation and management in order to contribute to improving their living standards and secure substantial benefits for village communities as well as to motivate them to better protect forest cover (MINEF 1998). In this PPP model, a community makes a request to the central government to manage a specific forest area in their locality and the government studies the file before accepting or refusing to allocate the said forest to the community. In case, the government approves the request of the community, the community will be in charge of harvesting and managing the forests for the benefit of the community while the government will play a supervisory role with some technical supports provided to ensure sustainable management. The prerequisites for exploiting a community forest by a local community include the necessity to have a legalised associations or Common Initiative Groups, the need to conduct an inventory to determine the resources found in the forest, and the elaboration of a comprehensive simple management plan (SMP). The communities have customary rights to their community forests that do not involve the transfer of land ownership, but rather the transfer of the right to manage and use the forest land. Community forests are actually a subset of the forests used by communities (Topa, 2009). From 2006 to 2015, the number of community forests demanded increased from 352 to 622. Those with simple management plans and annual exploitation permits increased from 157 and 21 to 326 and 163 respectively (Table 41; Figure 5).

Table 41. Evolution in the number of community forests in Cameroon

Year	Total number of CFs demanded	Provisional mgt conventions	No of SMPs	Number of final mgt convention	Number of AEC
2006	352		151	85	21
2007	386		169	135	51
2008	408		236	159	64
2009	425		257	164	75
2010	477		291	182	142
2011	494	45	299	209	141
2012	510	61	302	262	151
2013	539	74	306	263	117
2014	560	112	320	267	117
2015	622	141	326	274	163

Source: MINFOF 2015.

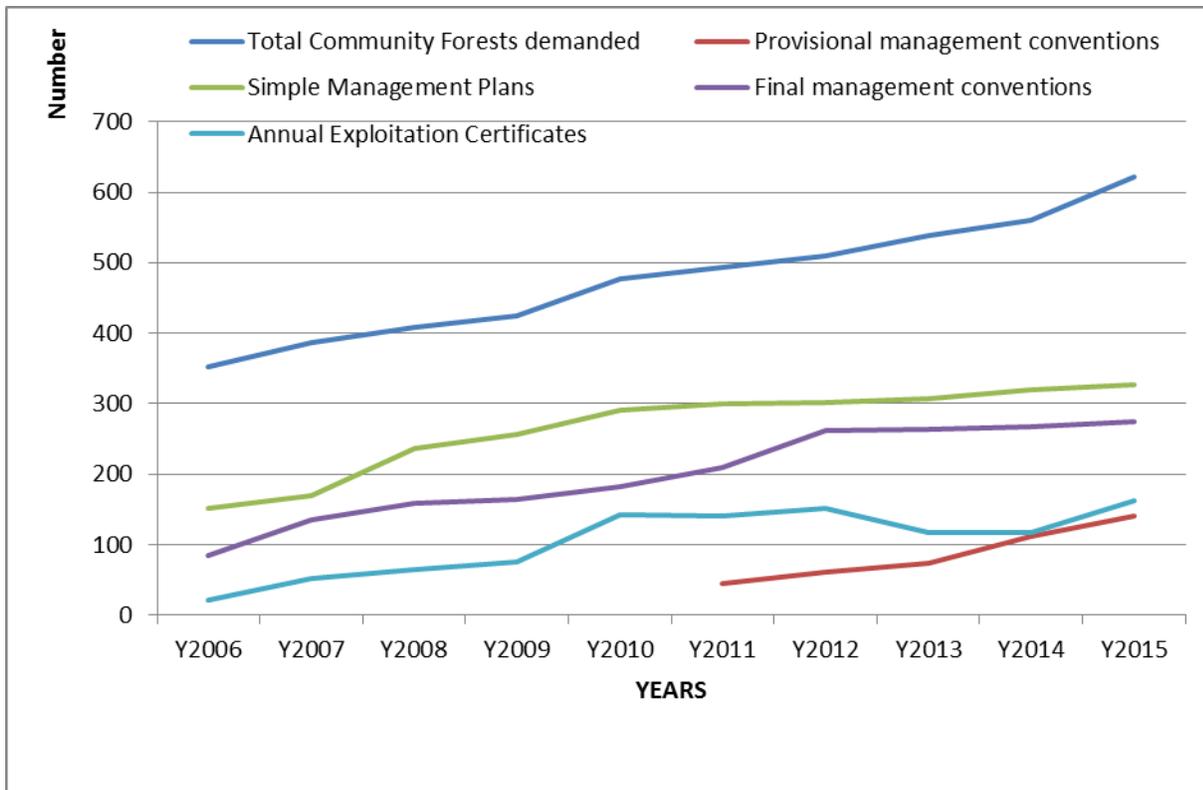


Figure 5. Evolution on the status of community forests

In terms of the evolution of the total land area covered by community forests in Cameroon, the total area demanded by communities increased from 1.3 million to over 1.8 million in 2015. This increase goes alongside the increase in the area of community forests with simple management plans and having annual exploitation permits as well as overall increases in the volume of wood exploited (Table 42).

Table 42. Evolution of the area and volumes exploited from community forests

Year	Total area demanded (ha)	Area under provisional management conventions (ha)	Area under SMP (ha)	Area under final mgt convention	Area under AEC (ha)	Authorised cutting volume (m ³)	Volume actually exploited (m ³)
2006	NA						
2007	1,306,708						
2008	1,321,271					57,000	11,887
2009	1,393,629				12,504	73,490	9,672
2010		1,502,348			21,644	139,567	16,412
2011	1,562,228	178,499	991,292	750,795	21,644	146,579	31,367
2012	1,617,683	331,033	1,009,723	909,459	22,338	147,107	9,452
2013	1,684,833	393,858	1,070,779	899,872	17,563	119,528	13,530

Year	Total area demanded (ha)	Area under provisional management conventions (ha)	Area under SMP (ha)	Area under final mgt convention (ha)	Area under AEC (ha)	Authorised cutting volume (m ³)	Volume actually exploited (m ³)
2014	11,743,594	449286	1,122,228	918,034	16,444	420,114	32,795
2015	1,853,116	104799	1,144,140	940,206	23,428	198,306	NA

Source: MINFOF 2015.

Sale of standing volumes (SSV) model

Under the 1994 Forest Law, short-term logging rights include the sale of standing volumes (ventes de coupe) and small titles (30-cubic-meter personal authorizations, 300-cubic-meter cutting permits, and the recovery of timber following land conversion or special authorization). Sale of standing volume models are established on a maximum of 2500 ha by government in the rural domain or in the non-permanent forests (forests that can be converted to non-forest uses if local communities so decide) and auctioned to the private sector in a competitive process with harvesting permits executed for a maximum of three years (Topa et al. 2009). It has been argued that the short-term logging rights give room for corruption and mismanagement of forests because they are free from the obligations for management plans with long term vision. In 2014, there were a total of 111 SSV rights awarded covering a total area of 235 783 ha and worth over 413 million FCFA (US\$ 6,911,086) to the government. Unit area fee seems to be very high under the SSV rights averaging 16154 FCFA (US\$ 27) and STD=15064 FCFA (US\$ 25) with a maximum of 67500 FCFA (US\$ 113)/ha and minimum of 600 FCFA (US\$ 1)/ha (Table 43).

Table 43. Characteristics of sale of standing volume rights in Cameroon (N=111)

Characteristics	Area (Ha)	Price/ha (CFAF) (US\$)	Total Value (CFAF) (US\$)
Maximum	3,200	67,500 (113)	155,220,000(259,565)
Minimum	250	600 (1)	609,000(1,018)
Average	2,124	16,154 (27)	37,232,699(62,262)
Standard Deviation	481	15,064(25)	36,246,944(60,614)
Sum	235,783	-	4,132,829,576(69,11,086)

Source: MINFOF 2014 data (and own calculations).

As may be observed in Table 43, the prices per ha vary from one SSV to another because each SSV is offered on a competitive basis through an auction process. The SSVs are not contiguous and prices are affected by accessibility as well as the type private sector competitors interested and making a bid for each. However, the fact that the STDev of the price per ha is slightly lower than the mean, implies that in absolute terms there are no significant variations associated with the bidding process. Rather, some differences could be associated with accessibility and the inherent quality of the SSVs (e.g. density of desirable timber species, topography, size, etc.).

The sum represents the total value of all the products of the SSVs and their individual area fees as offered by the private sector to the government during the auction process.

2.7.3 Production, trade and consumption of timber and non-timber products from 2015 to 2020

From this analysis, projections for timber production and exports from Cameroon show that by 2020, Cameroon will export a total of 1,642,812 m³ of wood, out of which 62%, 36% and 1% each will be logs, sawnwood, veneers and plywood respectively based on the assumptions that wood exports of the current year depend exclusively on wood exports of past years and the rate of change is linear with no significant change in the future. Similarly, by 2020, European countries may no longer be importing logs and veneers from Cameroon based on the Under the same assumptions China will indeed take the overall leadership in importing all forms of wood from Cameroon at about 63% by 2020 because Chinese operators may continue to import large volumes of logs to meet the needs of their burgeoning economy. The forecasting models suggest that intra African trade in wood from Cameroon will remain at very low levels at 4% while imports by European countries will drop to about 13% (Table 44a). Nevertheless, the results of the forecasting models could be treated with caution because in a number of cases, by 2020 the export figures some of the wood products could be determined by 42% of other unexplained factors.

Table 44a. Projections on wood exports from Cameroon to different continents to 2020

Products	Asia	Africa	America	Europe	Others	Total	% total
Logs	810,859	7,587	210	0	193,583	1,012,239	61.6
Sawnwood	218,165	51,828	63,555	196,534	68,077	598,159	36.4
Veneers	1,403	5,077	4,812	0	96	11,388	0.7
Plywood	0	5,708	175	15,125	18	21,026	1.3
Total	1,030,427	70,200	68,752	211,659	261,774	1,642,812	100.0
% total	62.7	4.3	4.2	12.9	15.9	100.0	

Source: Author calculation

By 2020, about 3,341 tons of NTFPs will be exported from Cameroon with about 36% going to Asia, 33% to Europe, 22% to the American continents and the remaining 10 will furnish intra-African trade (Table 44b).

Table 44b. Projections on NTFP exports from Cameroon to different continents to 2020

Products	America	Europe	Asia	Africa	Total
Total NTFP (kg)	718,680	1,088,958	1,192,789	340,571	3,340,997
% total	21.51	32.59	35.70	10.19	100.00

Source: Author calculation

The overall picture is that by 2020 Asia will be main importer of timber and NTFPs from Cameroon. To capture the benefits of value addition, policy interventions and negotiations can be geared at ensuring in-country processing of various product categories before exporting rather than promoting the status-quo of exporting in the raw forms.

2.8 EVALUATION OF THE CONTRIBUTION OF THESE PRIVATE FORESTRY SECTOR ACTIVITIES TO LOCAL LIVELIHOODS AND NATIONAL ECONOMY

The adoption of management plans in production forests with social responsibility clauses has generally consolidated the customary rights of forest and indigenous people to benefit from the use of forest resources to generate income and other benefits. Through community and council forests, considerable progress has been made in formally linking communities and councils to forestland, thus enabling them to have rights under traditional law and customary arrangements. Local markets and small-scale enterprises are the source of numerous jobs and overall impacts on poverty alleviation and livelihoods improvement may tremendously increase as progress in decentralization and local governance continues (Topa et al. 2009).

2.8.1 Contribution of these private forestry sector activities to local livelihood

The benefits (food, income, medicine) from the production and trade of *Gnetum* spp. accrue to both men and women with women sometimes earning more, depending on the segment of the value chain (Ingram et al. 2014b; Tieguhong et al. 2011). For instance, in Cameroon a *Gnetum* spp. trader earns on average 1,469 US\$ annually, an exporter 6,121 US\$ and a retailer 1,458 US\$ (Ingram et al. 2014). According to van Dijk (1999) *Gnetum* spp. retailers can earn a daily wage of around US\$ 1.5 in Cameroon. Based on these high economic values and potentials to individuals and traders, the Central African Forest Commission (COMIFAC) has emphasized the importance of NTFPs including *Gnetum* spp. that are found in six of the ten member countries (Cameroon, Central African Republic, Gabon, Equatorial Guinea, Democratic Republic of Congo and Republic of Congo) as strategic products in realising its three objectives: to fight poverty, enhance economic development and conserve biodiversity through sustainable development of forest resources (Tieguhong et al. 2015a). In Cameroon most NWFPs are not yet being included in national statistics, meaning that their economic roles are ignored in the calculation of GDP (Tieguhong and Ndoye. 2006). However, past research results have shown that NWFPs are of immense economic importance to households, traders and the national economy of Cameroon (Tieguhong and Ndoye 2006, Ndoye and Tieguhong 2004, CARPE 2001, Awono et al. 2002). For example, Ndoye (1995) found high economic values of edible NWFPs: *Ricinodendron heudelotii* (US\$ 460000), *Irvingia* spp (US\$ 302000), *Dacryodes edulis* (US\$ 244000) and *Cola acumulata* (US\$ 212000) to the economy of the humid forest region of Cameroon. In 1999, the commercial value of medicinal plants such as *Prunus africana* and *Pausinystalia johimbe* to the economy of Cameroon were estimated at US\$ 700,000 and US\$ 600,000 respectively (CARPE 2001). Between 1999 and 2003, the Cameroon government could have earned over US\$ 700,000 from only regeneration tax paid by NWFP licensees given 100% tax recovery rate (Betti 2004). This amount does not include other taxes such as export tax and taxes paid by NWFP processing industries. According to

Tabuna (2000), the international market values of NWFP in Cameroon are also significant with export value for 206 tons of *Dacryodes edulis* to Paris and Bruxelles in 1999 worth US\$ 1.7 million to the exporters. Apart from the international export value the annual market value of *Dacryodes edulis* in Cameroon was estimated at over US\$ 7 million (Awono et al. 2002). Intra-African and international trade in NTFPs is also important. The Gnetum spp. trade from Cameroon to Nigeria was at least 3.8 million US\$ in 2010, with a tenfold increase in the volume of exports estimated since 1991, and this business involved about 1,885 people and at least 20 SMEs (Ingram et al. 2012).

2.8.2 Contribution of these private forestry sector activities to national economy

The forestry sector in Cameroon contributes to the national income (i.e. GDP) and the creation of employment opportunities. In terms of tax revenues, 21 301 131 011 FCFA (US\$ 35620620) and 18 369 471 958 FCFA (US\$ 30718181) were generated in 2011 and 2012 respectively (de Wasseige et al. 2014). The contribution forestry sector to GDP was about 6% in 2004 (de Wasseige et al. 2010) but has since dropped to 3.95% in 2013 (Eba'a Atyi et al. 2013) (Table 45). According to de Wasseige et al. (2014), formal logging leads to the creation 13,000 direct jobs and 150,000 indirect jobs. Other estimates by Eba'a Atyi et al. (2013) put total direct employment in the forest sector at 22722 with 21,902 linked to the timber sector and 802 to sport hunting. The informal sector employs several thousands of Cameroonians with about 44,000 in artisanal sawing, 460,000 in village hunting by villagers in adjoining forests and 90,000 for fuelwood collection and sale in urban centres (Eba'a Atyi et al. 2013).

Table 45: Contribution of the forestry and wildlife sector to the GDP of Cameroon

Sector	Value added (US\$)	Contribution to GDP minus oil sector (%)
Industrial wood	296086,957	1.52
Fuel wood	254,180,602	1.31
NTFPs	10,210,723	0.52
Artisanal sawing	75,033,448	0.39
Village hunting	27,608,696	0.14
Sport hunting	62,040,134	0.06
Ecotourism	27,759,197	0.01
Total	764,046,823	3.95

Source: Eba'a Atyi et al. 2013.

2.8.3 Proposals on promising and strong public private partnership models and approaches in forestry

The four forest management models in Cameroon have their merits and demerits depending on the primary beneficiary (private sector, councils, communities) and the socioeconomic focus of the government to increase local participation in forest management or to ensure an increased financial contribution of the forestry sector to the country's GDP.

In Table 46 below, an attempt is made to bring out the key positive and negative attributes of the different forest management models in Cameroon.

Table 46: Positive and negative attributes of forest management models in Cameroon

Model	Primary beneficiary	Key positive attributes	Key negative attributes
Concession	Private sector	<ul style="list-style-type: none"> -Attributed through auction by government that collect area based forestry fees -Require approved management plan from ministry in charge of forests -Forest remains state property and monitoring of management standards done by the state -Greater technical skills available in timber companies -Primary processing capacity available at the level of enterprises -Good knowledge of international markets for wood available by the private sector -Supply to international markets secured by multinational companies 	<ul style="list-style-type: none"> -Low area fees averaging US\$4/ha (N=99) -Misuse or misdirection of annual forestry fees by the government -Low tertiary processing capacities -Big role of multi-national companies*
Council forest	Councils	<ul style="list-style-type: none"> -Government allocates forests to councils to manage sustainably on behave of the state. -Require approved management plan, this enhances SFM -Forest ownership vested to concerned councils, increases accountability -Poverty reduction and promotion of rural development enhanced -Supply to international markets secured 	<ul style="list-style-type: none"> -Poor governance of revenue generated, leading to what? -Weak technical skills leading to what? -Business engagement with multi-national companies low -Low tertiary processing capacities leading to low revenue capture and employment
Community forest	Communities	<ul style="list-style-type: none"> -Government allocates forests to communities to manage sustainably on behave of the state. -Community participation that increases ownership, sense of responsibility and accountability -Poverty reduction at the local level enhanced from forest benefits -Require simple management plan that enhances SFM -Supply to local markets secured 	<ul style="list-style-type: none"> -No area fees paid, thus denying central government revenues -Forest remains state property, so no incentive for communities to invest in forest regeneration -Weak processing capacities and low value addition, thus, lower revenue capture -Elite capture of financial resources through under reporting of revenue generated from sales

3.0 CONCLUSION AND RECOMMENDATIONS

Cameroon is endowed with forest resources. Policy changes and varying institutional arrangements have been attempted to ensure sustainable social, economic and ecological management the forest resources. One of the strides have been in the direction of adapting and implementing four public-private partnerships with the private sector, communities and more recently with local councils. All these PPPs are well-represented in Cameroon, each with its own merits and demerits, but a key drawback to all of them is linked to a narrow product base (logs, sawnwood, plywood, veneers and small quantities of parquets) that cannot galvanise Cameroon to tap the real financial benefits from its forests. Worst, from the analysis of this study, Cameroon has net negative trade balance with respect to several further processed wood products such as wood furniture, cane and bamboo products. Moreover, projections in wood products exports from Cameroon to different continents of the world by 2020 do not seem to provide any consoling avenues as log exports and primary processed wood products will continue to flood the markets, unless drastic policy changes are made and enforced.

The key recommendations from this study may include:

- The Cameroon government needs to better negotiate with multinational partners and to also look inwards to on how best to ensure value addition to forest products in the country,
- The Cameroon government needs to ensure that industrial wood raw material produced from community and council forests are processed to furnish local, regional and international markets. This however, will require securing an enabling business environment to facilitate investment in technologies and equipment that can increase processing capacities.
- The concession forest management model need to be promoted with strict application of the SFM guidelines while the SSV model may be suspended until management the requirement for implementing SFM guidelines and standards are fulfilled
- Council forests and community forest models could be promoted to ensure development at the local level but caution is needed to increase revenue capture at the local level.

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APPENDICES

Appendix 1: List of persons contacted

Name	Post or company full name	Address/Tel/email
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Obama leopold	Leboudi Market	Yaounde. Tel: 673029504
Ndonfack Elve	Nkolbikok	Yaounde. Tel: 675236201
Tsegué Beltine	Damas market	Yaounde. Tel: 677077757
Ndomo Berlice	Damas Market	Yaounde Tel: 699756101
Mvoa Basile	Nkomo	Yaounde Tel: 675972380
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CIBC	Compagnie Industrielle du Bois au Cameroun	Tel: 674 32 60 24. Douala laurent.cerbonney@vicwoodthanry.com
LEF	LEFANG SARL	Tel: 670 72 01 83 Douala
SEBC	Société d'Exploitation des Bois du Cameroun	Tel: 674 32 60 24 Douala laurent.cerbonney@vicwoodthanry.com

Appendix 2: Volumes of logs exported to China per category of species

Commercial name	Scientific name	2009	2010	2011	2012	2013	2014	Total	Category
Kotibé	<i>Nesogordonia papaverifera</i>	150	0	10	5	39	24	228	PSC 1
Naga	<i>Brachystegia cynometrioides</i>	3,126	6940	4441	6625	1,296	12,370	34,798	PSC 1
Bilinga	<i>Nauclea diderrichii</i>	11,774	6,930	13,364	15699	25,977	20,258	94,002	PSC 1
Ekaba	<i>Tetraberlinia bifoliolata</i>	0	0	322	232	489	484	1,527	PSC 1
Eyong	<i>Eriobroma oblongum</i>	4,045	4,311	4,743	5,058	5,481	6,227	29,865	PSC 1
Fraké	<i>Terminalia superba</i>	109	849	0	66	587	9,621	11,232	PSC 1
Gombé/Ekop Ngombé	<i>Didelotia letouzeyi</i>	0	0	657	521	0	692	1870	PSC 1
Niové	<i>Staudtia kamerunensis</i>	2,367	3,267	6,939	7,589	8,406	8,628	37196	PSC 1
Okan / Adoum	<i>Cylicodiscus gabonensis</i>	96,770	95,439	122,632	126,726	152,780	130,940	725,287	PSC 1
Okoumé	<i>Aucoumea klaineana</i>	0	4,017	0	0	0	0	4,017	PSC 1
Onzabili /Angongui	<i>Antrocaryon klaineanum</i>	0	682	146	420	941	697	2,886	PSC 1
Tali	<i>Erythroleum ivorense</i>	5,180	41,572	15,288	13,134	13,318	15,856	104,348	PSC 1
Abalé / Abing	<i>Petersianthus macrocarpus</i>	948	736	308	0	761	2,475	5,228	PSC 2
Agba / Tola	<i>Gossweilerodendron balsamiferum</i>	0	0	170	0	0	0	170	PSC 2
Aiélé / Abel	<i>Canarium schweinfurthii</i>	0	0	750	20	219	88	1,077	PSC 2
Ako / Aloa	<i>Antiaris spp</i>	0	0	0	0	0	74	74	PSC 2
Alep	<i>Desbordesia glaucescens</i>	0	217	0	0	106	0	323	PSC 2
Alumbi	<i>Julbernardia seretii</i>	0	0	0	0	0	11	11	PSC 2
Andoung brun	<i>Monopetalanthus microphyllus</i>	3,472	1,515	0	574	0	20	5581	PSC 2
Andoung rose	<i>Monopetalanthus letestui</i>	0	0	309	174	0	84	567	PSC 2
Asila Akung/Sougue	<i>Maranthes chrysophylla</i>	0	0	0	0	0	5	5	PSC 2
Awoura	<i>Paraberlinia bifoliolata</i>	0	845	5,260	1,243	8,074	78,707	94,129	PSC 2
Bongo H / Olon	<i>Fagara heitzii</i>	0	0	18	0	0	0	18	PSC 2
Dabéma	<i>Piptadeniastrum africanum</i>	52,823	42,054	14,397	29,372	47,165	48,356	23,4167	PSC 2
Diana /Celtis / Odou	<i>Celtis spp</i>	0	0	0	0	0	3	3	PSC 2
Ebiara Edéa	<i>Berlinia bracteosa</i>	1,029	764	993	3,050	5,145	4,328	15,309	PSC 2
Ebiara Yaoundé /Abem	<i>Berlinia grandiflora</i>	0	0	0	3	50	0	53	PSC 2
Ekop ekusek	<i>Gilbertiodendron brachystegioides</i>	5,127	627	5,861	11,307	28,896	30,560	82378	PSC 2
Ekop G.H.	<i>Talbotiella batesii</i>	0	0	0	674	0	478	1,152	PSC 2
Ekop ngombe G.F	<i>Didelotia africana</i>	0	0	0	0	0	3,352	3352	PSC 2
Essia	<i>Petersianthus macrocarpus</i>	77	260	324	0	754	1,095	2510	PSC 2
Eveuss / Ngon	<i>Klainedoxa gabonensis</i>	94	0	0	0	221	349	664	PSC 2
EyeK	<i>Pachyelasma tessmannii</i>	205	63	0	0	1,926	5,112	7,306	PSC 2
EYOUM	<i>Dialium zenkeri</i>	19	0	0	0	0	243	262	PSC 2

Commercial name	Scientific name	2009	2010	2011	2012	2013	2014	Total	Category
Faro	<i>Daniellia ogea</i>	0	0	0	30	0	0	30	PSC 2
Iatandza / Evouvouss	<i>Albizia ferruginea</i>	0	77	0	14	36	1781	19,08	PSC 2
Lati / Edjil	<i>Amphimas ferrugineus</i>	0	0	0	0	0	146	146	PSC 2
Limbali	<i>Gilbertiodendron dewevrei</i>	1076	2,496	0	0	86	1,615	5,273	PSC 2
Lotofa / Nkanang	<i>Sterculia rhinopetala</i>	0	1,269	685	93	1,272	308	3,627	PSC 2
Mambodé / Amouk	<i>Detarium macrocarpum</i>	0	0	0	7	0	617	624	PSC 2
Miama	<i>Calpocalyx heitzii</i>	0	0	598	0	0	0	598	PSC 2
Naga parallèle	<i>Brachystegia mildbreadii</i>	0	0	0	1,551	835	0	2,386	PSC 2
Oboto / Abotzok	<i>Mammea africana</i>	25	155	0	0	0	61	241	PSC 2
Osanga ,/Sikong	<i>Pteleopsis hyloendron</i>	0	0	0	98	0	0	98	PSC 2
Ovoga / Angalé	<i>Poga oleosa</i>	0	0	0	0	0	14	14	PSC 2
WAMBA	<i>Tessmannia anomala</i>	1,643	1,971	2,238	3,524	321	2,135	11,832	PSC 2
Bété	<i>Mansonia altissima</i>	318	0	0	0	0	0	318	PS
Movingui	<i>Distemonanthus benthamianus</i>	1,711	831	71	0	0	0	2,613	PS
Mukulungu	<i>Autranella congolensis</i>	397	2,637	17,87	1,781	1,138	1,616	9,356	PS
Padouk rouge	<i>Pterocarpus soyauxii</i>	5461	11,554	2,051	0	0	0	19,066	PS
Sapelli	<i>Entandrophragma cylindricum</i>	4,800	7327	916	0	0	0	13,043	PS
Ayous/Obéché	<i>Triplochyton scleroxylon</i>	584,40	133,398	82633	65,668	61,951	68,569	470,659	SSQ
Azobé	<i>Lophira alata</i>	58,440	133,398	82,731	66443	61,951	68,569	471,532	SSQ
Dibétou	<i>Lovoa trichilioides</i>	180	47	0	0	0	0	227	SSQ
Framiré	<i>Terminalia ivorensis</i>	328	0	0	0	388	859	1,575	SSQ
Kossipo	<i>Entandrophragma candollei</i>	237	32,88	12,71	4,528	11,658	18,688	39,670	SSQ
Koto	<i>Pterygota macrocarpa</i>	406	12	363	499	820	632	2732	SSQ
Tiama	<i>Entandrophragma angolense</i>	0	280	195	39	961	1,066	2,541	SSQ
Total		322,786	511,838	374,580	369,554	446,061	549,827	256,2577	

PSC1=Principal species category 1, PSC2= Principal species category 2, PS=Principal species, SSQ=Species with specified quota

Source: COMCAM data 2009-2014 (own calculations).

Appendix 3: Volumes of sawn timber exported to China per category of species

Commercial name	scientific name	2009	2010	2011	2012	2013	2014	Total	Category
Bilinga	<i>Nauclea diderrichii</i>	0	0	269	0	60	235	564	PSC 1
Eyong	<i>Eribroma oblongum</i>	0	0	0	0	123	49	172	PSC 1
Fraké	<i>Terminalia superba</i>	0	0	0	0	266	1,011	266	PSC 1
Gombé / Ekop Ngombé	<i>Didelotia letouzeyi</i>	0	0	0	18	0	0	18	PSC 1
Kotibé	<i>Nesogordonia papaverifera</i>	0	0	22	0	0	0	22	PSC 1
Naga	<i>Brachystegia cynometrioides</i>	0	0	0	50	25	1,836	75	PSC 1
Niové	<i>Staudtia kamerunensis</i>	0	0	19	142	171	10	342	PSC 1
Okan / Adoum	<i>Cylicodiscus gabonensis</i>	72	1,030	0	172	81	492	1,847	PSC 1
Okoumé	<i>Aucoumea klaineana</i>	0	0	287	0	0	0	287	PSC 1
Onzabili / Angongui	<i>Antrocaryon klaineinum</i>	0	0	0	0	191	79	270	PSC 1
Tali	<i>Erythroleum ivorense</i>	68	190	28	92	630	1,122	2130	PSC 1
Abalé / Abing	<i>Petersianthus macrocarpus</i>	0	0	0	85	456	217	758	PSC 2
Awoura	<i>Paraberlinia bifoliolata</i>	0	0	609	2,677	38	0	3,324	PSC 2
Bahia	<i>Mitragyna ciliata</i>	0	0	0	0	0	7	7	PSC 2
Dabéma	<i>Piptadeniastrum africanum</i>	112	62	152	41	391	101	859	PSC 2
Ebiara Edéa	<i>Berlinia bracteosa</i>	0		111	46	159	148	464	PSC 2
Ekop ekusek	<i>Gilbertiodendron brachystegioides</i>	0	0	174	24	678	32	908	PSC 2
Eyeke	<i>Pachyelasma tessmannii</i>	0	0	0	0	0	14	14	PSC 2
Iatandza / Evouvouss	<i>Albizia ferruginea</i>	0	0	0	0	0	13	13	PSC 2
Limbali	<i>Gilbertiodendron dewevrei</i>	0	0	0	16	0	0	16	PSC 2
Mambodé / Amouk	<i>Detarium macrocarpum</i>	74	0	0	0	0	85	159	PSC 2
Naga parallèle	<i>Brachystegia mildbreadii</i>	0	0	0	630	0	0	630	PSC 2
Osanga / Sikong	<i>Pteleopsis hyloidendron</i>	0	0	0	44	0	0	44	PSC 2
Ayous / Obéché	<i>Triplochyton scleroxylon</i>	7,064	16,168	3,368	24,720	0	102	51,422	SSQ
Azobé	<i>Lophira alata</i>	0	0	843	0	653	116	1,612	SSQ
Kossipo	<i>Entandrophragma candollei</i>	0	310	323	1,301	628	476	3,038	SSQ
Koto	<i>Pterygota macrocarpa</i>	0	0	0	0	63	92	155	SSQ
Acajou de bassam	<i>Khaya ivorensis</i>	26	0	133	598	317	565	1,639	PS
Assamela	<i>Pericopsis elata</i>	247	22	116	50	102	501	1,038	PS
Bété	<i>Mansonia altissima</i>	0	0	0	0	0	68	68	PS
Bossé clair	<i>Guarea cedrata</i>	0	117	0	11	63	4	195	PS
Bubinga rose	<i>Guibourtia tessmannii</i>	781	2,130	4	1,126	613	0	4,654	PS
Dibétou	<i>Lovoa trichilioides</i>	0	0	17	313	193	1,330	523	PS
Doussié blanc	<i>Azelia pachyloba</i>	483	296	418	154	37	860	2,248	PS

Commercial name	scientific name	2009	2010	2011	2012	2013	2014	Total	Category
Doussié rouge	Afzelia bipindensis	92	5	5	2	0	422	526	PS
Iroko	Milicia excelsa	216	113	472	177	115	457	1,550	PS
Moabi	Baillonella toxisperma	0	2	0	0	16	104	122	PS
Movingui	Distemonanthus benthamianus	0	0	0	4	467	473	944	PS
Ovengkol / Bubinga E	Guibourtia ehie	0	0	0	0	0	20	20	PS
Padouk rouge	Pterocarpus soyauxii	20	372	0	1342	18	31	1,783	PS
Pao rosa	Swartzia fistuloides	189	170	123	20	202	53	757	PS
Sapelli	Entandrophragma cylindricum	1,8891	18,011	17,839	31,769	34,028	59,136	179,674	PS
Sipo	Entandrophragma utile	0	85	43	22	69	108	327	PS
Tiama	Entandrophragma angolense	0	27	372	414	289	520	1,622	PS
Wengé	Millettia barteri	0	0	0	0	0	14	14	PS
Zingana	Microberlinia bisulcata	0	25	313	117	202	2,408	3,065	PS
Total								270,185	

PSC1=Principal species category 1, PSC2= Principal species category 2, PS=Principal species, SSQ=Species with specified quota

Source: COMCAM data 2009-2014 (Own calculations)



African Forest Forum

A platform for stakeholders in African forestry



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