A PLATFORM FOR STAKEHOLDERS IN AFRICAN FORESTRY

AN ANALYTICAL REVIEW OF FOREST GOVERNANCE AND EQUITABLE TRADE PRACTICES RELATED TO CLIMATE CHANGE IN CENTRAL AFRICA

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An analytical review of forest governance and equitable trade practices related to climate change in Central Africa

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Acronyms and abbreviations

ACP-FORENET	Africa-Caribbean-Pacific Forest Research Network
ADB	African Development Bank
AFF	African Forest Forum
AETFAT	Association for the Taxonomic Study of the Flora of Tropical Africa
CA	Central Africa (n)
CAR	Central African Republic
CARPE	Central Africa Regional Programme for Environment
CBFF	Congo Basin Forest Fund
CEMAC	Central African Economic and Monetary Community
CENADEP	People National Education and Development Support Centre
CET	Common External Tariff
COMIFAC	Central African Forest Commission
WECARD	West and Central African Council for Agricultural Research and Development
DRC	Democratic Republic of Congo
EA	East Africa
ECCAS	Economic Community of Central African States
FLEGT	Forest Law Enforcement, Governance and Trade
GDP	Gross Domestic Product
GHG	Green House Gas
GLHRP	Great Lakes Human Rights Programme
GPT	Generalized Preferential Tariff
GTZ/GIZ	German Cooperation Agency
INPI	Brazilian National Institute for Space Research

ITTO	International Tropical Timber Organisation
MECNT	Ministère de l'Environnement, Conservation de la Nature et Tourisme
MEF	Ministère de l'Economie Forestière
MINADER	Ministère de l'Agriculture et du Développement Rural
MINEF	Ministère de l'Environnement et des Forêts
MINFOF	Ministère des Forêts et de la Faune
MRV	Measuring, Reporting and Verification system
OFAC	Observatoire des Forêts d'Afrique Centrale
PFE	Permanent Forest Estate
PRASAC	Pole de Recherche Appliquée au Développement des Systèmes Agricoles d'Afrique Centrale
PSFE	Programme Sectoriel Forêt-Environnement
PT	Preferential Tariff
RAPY	Réseau des Associations Autochtones Pygmées
REC	Regional Economic Community
RRN	Natural Resource Network
SAP	Structural Adjustment Programme
SFM	Sustainable Forest Management
SOCAPALM	Société Camerounaise de Palmeraie
STIC	Standard International Classification
UDEAC	Union Douanière et Economique de l'Afrique Centrale
UFA	Unité Forestière d'Aménagement
UNCTAD	United Nations Conference on Trade and Development
UNECA	United Nations Economic Commission for Africa
VAT	Value Added Tax
VPA	Voluntary Partnership Agreement

Executive summary

Forests play a crucial role in climate change evolution and dynamics. The effects of climate change may also greatly impact forest ecosystems, which will reflect on the living conditions of local forest-dependent people. To tackle threats from climate change, the international community promotes the setting up of policies and actions that can concomitantly contribute to reducing vulnerability and mitigating climate change effects. This includes the implementation of appropriate practices of conservation and actions for sustainable management of forests, which are likely to contribute substantially to the reduction of greenhouse gas emissions as well as to the increase of carbon stock pools. Therefore, African countries, many of which are currently going through socio-economic and political changes, and are characterised by wide-spread poverty, must develop policies and concrete action plans geared at protecting their populations and forests from the threats of climate change. It is in this context that the project “African Forests, People and Climate Change”, developed and run by the African Forest Forum (AFF), is being implemented.

The objective of this study is to review and critically analyse forest governance and equitable trade practices related to climate change with a focus on the capacities of public forestry administrations in Central Africa (CA) countries. More specifically, the study focused on the following tasks:

- evaluate and profile the capacities (human, financial and physical) of national forest administrations in climate change work (including safeguards and Measuring, Reporting and Verification system (MRVs) in all CA countries;
- assess existing trade and trade potentials in forest products and services in individual CA countries and between the CA region and other sub-regions in Africa, and in the world at large;
- evaluate negative trade impacts of cross border trade between countries in CA, as well as market distortions in the context of the fuel-food nexus, and with special emphasis on deforestation and forest degradation (leakages);
- assess the efficiency in the value chain involving fibre (wood/timber products, including NTFPs) and fuel, and identify and describe approaches for improving the efficiency in the value chain. The emphasis is to assess efficiency in the value chain of key timber and non-timber products and how this can be improved, including comparisons between countries in CA on how they are moving on the value chain;
- propose recommendations to improve forest governance, trade in timber and non-timber products, and livelihoods using forest and tree resources, taking into account potential impacts of climate change on these resources in CA.

The data collection for the study was essentially based on the following approaches:

- review of forest policies and legislations for CA countries, as well as sub-regional legal instruments ratified within the framework of the Central Africa Forest Commission (COMIFAC);
- documentation and literature review relating to forest governance, trade of forest products and climate change;
- consultation of quantitative data from FAO, ITTO, UNECA and the Observatory for the Forests of Central Africa (OFAC) statistical data bases; and,
- Individual interviews with ten key experts at the sub-regional level and within forest administrations (Cameroon, Republic of Congo, Gabon and the Democratic Republic of Congo).

Therefore, this analytical review of forest governance and equitable trade practices related to climate change, with a focus on the capacities of public forestry administrations, reveals an ambivalent global picture and trend.

On the one hand, CA is characterized by high forest resource potentials that can contribute to the global concern of climate change impacts, nourish forest-dependent people and increase forest products trade flows inside and outside Africa, notably with improved processed wood. On the other hand, COMIFAC Member States are weak on MRV capacities and financial means, NTFPs trade and monitoring, forest management and related practices that contribute to high rates of deforestation, and are suffering biodiversity loss.

More precisely, this study points out that:

- CA has 37% of the total African forest resources;
- an average of 4.5 million m^3 of wood is exported from CA per year, notably to EU;
- intra-African trade flows are still weak;
- the NTFPs niche is mostly dominated by informal practices;
- fuelwood collection, chainsaw milling, illegal harvesting, land use conflicts and forest land conversion to agriculture are the main drivers of deforestation and forest degradation;
- MRV capacities and domestic financial means are weak.

However, the identified gaps and shortcomings could be partly improved with the adoption of some governance actions in the framework of the Regional Economic Communities (ReCs), that are being built in Africa, and the design and implementation processes of both the VPAs/FLEGT and REDD+ mechanisms. The following measures must be taken.

a) National public forest administration and climate change

- Each CA country should set up a recruitment plan for the coming years to overcome the lack of sufficient domestic experts in their respective forest administrations. However, in the short term, the lack of appropriate expertise in MRV to better tackle climate change mitigation issues can be supplied by participating in short training sessions and capacity development on national forest monitoring skills, which can be provided and supported by some organisations such as AFF.
- Currently, most CA countries (except CAR, DRC) have not yet built vulnerability maps and adaptation policies and related strategies. In this perspective, there is a niche for regional organisations like AFF to give technical support to those countries that are trying to develop such policies and strategies connected to forest management and forest dependent communities.

b) Forest governance and socio-economic development

- Forest and trade governance must be improved through adequate remuneration and strict disciplinary measures to reduce corruption of custom official, forest officers and local administration and police.
- Social and economic development should be promoted, particularly in remote and isolated border areas, and marketing of locally produced wood and NTFPs should be facilitated in those areas to increase competitiveness.
- Meet the expectations of the US and European markets to verify the legitimacy of imported timber by initiating or completing ongoing processes (VPA/FLEGT and Lacey Act). Also in this perspective, AFF could be involved (as independent observer) by monitoring, reporting and verifying (MRV) their implementation.

c) Forest products trade and services

- Increase local wood processing conversion rates. This could further diversify processed products by developing industrial processing and encouraging the use of timber and NTFPs in African countries.
- Provide technical support and an enabling market information system as well as value chain platforms for individual and small/medium scale enterprises in countries and cross-border areas. AFF is one of the organisations that can fulfil this role by providing support.
- Trade flows of forests products should be monitored, including the issue of cross-border trade, which should be added to the agenda of quarterly, semi-annual and annual bilateral meetings among countries. In this perspective, AFF can play a key role by elaborating and providing facilitating tools.

d) Cross border trade and deforestation and forest degradation

- Find ways of improving the performance of CEMAC and ECCAS by conducting studies that will lead to a better understanding of the weaknesses and threats to the functioning of these organizations, and advice member countries on the opportunities and strengths for effective regional integration.
- Elaborate a framework for the involvement of forest communities through a win-win business development approach with the local and international agro-industrial enterprises involved in the forest sector in the CA region.

e) Efficiency in the value chain of timber and NTFPs

- CA countries should increase the efficiency of the forest product value chains by taking stringent measures to reduce the export of raw materials and promoting the production of processed and further processed wood products such as wood based panels, paperboards, fibre boards, furniture and wooden cabinets. AFF can help by identifying improved technologies that are adapted to national and regional needs.
- There is need to strengthen intra-regional trade and remove cross-border bottlenecks. AFF can assist in conducting research that showcase what countries stand to gain from efficiency in regional trade.

CHAPTER 1 Introduction

BACKGROUND

Forests play crucial roles in climate change dynamics (Stern, 2006; IPCC, 2007). Effects of climate change may have great impacts on forest ecosystems and this in turn will reflect on living conditions of local people who dwell in forest areas. To face likely negative effects of climate change, the international community promotes the setting up of policies and actions that can contribute at the same time to reduce vulnerability to and mitigate such effects. This includes implementation of appropriate practices of conservation and actions for sustainable management of forests which are likely to contribute substantially to the reduction of greenhouse gas emissions as well as the increase of carbon stock pools. Therefore, African countries going through socio-economic and political transformations characterised by poverty and hunger, must set up policies and concrete actions geared at protecting their populations and forests from the threats of climate change. It is in this context that the project “African Forests, People and Climate Change”, developed and run by the African Forest Forum (AFF), is being implemented.

It should be underlined that the forest sector of African countries has been facing many governance challenges connected to competitive requirements of, particularly, international trade of tropical forest products, tax revenues for States, values related to subsistence of local people, the availability of public goods in terms of payment for ecosystem services, and the conversion of forest land into agriculture and mining (German et al., 2010). Therefore, challenges connected to climate change seem to further complicate forest governance issues in Africa. Hence, it is necessary to better understand and draw conclusions from the trends of forest governance, notably for trade issues likely to be connected with climate change, so as to have a real picture of the current situation which may help to correct negative externalities to the forestry sector. In this context, countries of Central Africa (CA) should be leaders at a continental scale, since they have the highest forest area of the continent, or 37% of the total coverage (FAO, 2011). In fact, gathered around the Central African Forests Commission (COMIFAC), the ten states which constitute the geopolitical organisation relating to the forest ecosystems of the Congo Basin have to establish a harmonised sub-regional forestry governance system (Assembe-Mvondo, 2006; 2009). To that effect, timber and NTFPs trade exchanges are among the concerns of the Members’ States of COMIFAC. That is why the focus of current work is to analyse forestry governance in CA countries in general and aspects of equitable trade practices and climate change in particular.

The purpose of the AFF Climate Change Programme (CCP) is to better understand how forests and trees, and the people who depend on them in various African

landscapes, respond to climate change and variability. The AFF-CCP focuses on three working areas:

1) Policy and advocacy;

2) Capacity building and skills development; and,

3) Learning, knowledge generation and information management.

Three specific objectives have been formulated for these working areas:

- foster awareness on forests and climate change issues and promote appropriate changes in policies and practices (Working area 1);
- build and improve capacity to address forest related climate change issues (Working area 2); and,
- ensure that production, adaptation, mitigation and policy processes involving forests and trees are backed by sound information (Working area 3).

The emphasis of the project is on the development of the forest/climate change nexus in semi-arid areas (Sahel belt), the woodlands of West, East and Southern Africa and moist forests in Central and West Africa. As an overall strategy, the three working areas of policy and advocacy, capacity building and skills development and learning and knowledge management are closely interconnected. Cross-cutting themes are integrated throughout the three working areas. AFF has a specific gender policy to favour the participation of vulnerable people.

TERMS OF REFERENCE

The objective of this study is to review and critically analyse forest governance and equitable trade practices related to climate change with a focus on the capacities of public forestry administrations in CA countries. More specifically, the study focuses on the following tasks:

1) evaluate and profile the capacities (human, financial and physical) of national public forest administrations in climate change work (including safeguards and MRVs) in all CA countries;

2) assess existing trade and trade potentials on forest products and services in individual CA countries and between the region and other sub-regions in African, and the world at large;

3) evaluate negative trade impacts of cross border trade between countries in CA, as well as market distortions in the context of the fuel-fibre-food nexus, and with special emphasis on deforestation and forest degradation (leakages);

4) assess the efficiency in the value chain involving fibre (i.e. wood/timber products, including NTFPs) and fuel; and identify and describe approaches for improving the efficiency in the value chains, including comparisons between countries in CA on how they are moving on the value chain; and,

5) propose recommendations to improve forest governance, trade in timber and NTFPs, and livelihoods using forest and tress resources, taking into account potential impacts of climate change on these resources in CA.

METHODOLOGY OF THE STUDY

Data collection has been essentially based on the following approaches:

- review of forest policies and legislations for CA countries, as well as sub-regional legal instruments ratified within the framework of COMIFAC;
- documentation and literature review relating to forest governance, trade of forest products and climate change;
- consultation of quantitative data from FAO, ITTO, UNECA and the Observatory for Central Africa Forests (OFAC) statistical data bases; and,
- Individual interviews with ten key experts at sub-regional level and within public forest administrations (Cameroon, Republic of Congo, Gabon and DRC).

In this study, data for the period 2000 to 2010 on seven FAO wood categories (industrial round wood, fibreboards, sawn wood, paperboards, pulp for paper, woodfuel and wood based panels) were used to analyse the efficiency of trade transactions in terms of import and export quantities (m3) and values (USD) by the ten CA countries under consideration. Data were downloaded from the FAOSTAT-Forestry. For each wood category, trends in exports and imports were established and indices calculated by dividing total exports by total imports for the 11 years period. Results are presented in tables and figures.

However, this study has faced some major difficulties during the data collection process. The first constraint is related to the great number of countries that constitutes the CA sub-group (10).[1] To that effect, it has been difficult to move physically in each of the ten countries to get the appropriate information. Indeed, the means of transportation between those countries are in a deplorable state, including air connections and road facilities. The second constraint is inherent to the scarcity of reliable and updated quantitative data in public administrations of African countries, and the forestry sector is not an exception. ITTO (2006) confirms the importance of this: “reliable data is the cornerstone for both practicing and assessing SFM”. To

[1] They are: Burundi, Cameroon, CAR, Gabon, Chad, Equatorial Guinea, Republic of Congo, DRC, Rwanda and Sao Tomé & Principe.

minimise these constraints, the consultant had to resort to the statistical databases of multilateral organisations such as FAO, ITTO, OSFAC (body of COMIFAC) and UNECA. The use of these databases enables, among other advantages, the triangulation and verification of information collected by international agencies. In relation to the different statistics contained in the databases, it is necessary to underline that they may be contradictory. But, these data provided by many sources should really complement each other to some extent. Finally, access to updated data in some COMIFAC member countries, like Burundi, Chad, Rwanda and Sao Tomé and Principe, involved additional obstacles, because these countries have got less forest resources than the other six, and gave less priority to forest statistics.

Despite the above mentioned hurdles, the content of this report gives a reasonable synopsis and sufficiently in-depth picture on this topic in the countries of CA.

CHAPTER 2 National public forest administrations and their capacities for climate change work

The fight against negative climate change requires that each country should have some minimum domestic technical capacities and expertise on designing sector policies of adaptation, coordination, evaluation, follow up, reporting and checking of the carbon stocks; as well as autonomous financial capacities (Herold and Skutsch, 2009). This section assesses and draws profiles of the capacities available in each of the ten Member States of COMIFAC in relation to the requirement to fight against climate change effects.

NATIONAL FOREST RESOURCES AND CLIMATE CHANGE THREATS IN CENTRAL AFRICA

Following the Amazonian forests, the forests of CA constitute the second largest area of dense tropical rainforest in the World. They stretch from the coast of the Gulf of Guinea in the west to the mountains of the Albertine Rift in the east and cover about seven degrees of latitude on either side of the equator. They are mostly within the Guinea-Congo forest structure, of which they constitute over 80% of the total area. From the West of Cameroon to the East of DRC, the forests of CA include also Afro-montane forests (Table 1). CA forests are not homogeneous. The following land cover classes were mapped for CA at 300 m resolution (Ernst et al., 2012): dense moist forest; sub-montane forest; montane forest; edaphic forest; mangrove forest; forest-savanna mosaic; rural complex and young secondary forest; tropical dry forest-miombo; woodland; shrubland; grassland; aquatic grassland; swamp grassland; sparse vegetation; mosaic of cultivated land and natural vegetation, etc.

Table 1. Countries, land area, population density and forest areas (FAO, 2011).

Country	Land area (1000 ha)	Population density (2008) (persons/km^2)	Forest area (1000 ha)	Deforestation rate 2000-2010 (%)
Burundi	2 568	314	172	-1.4
Cameroon	47 271	40	19 961	-1
CAR	62 298	7	22 605	-0.1
Congo	34 150	11	22 411	-0.1
DRC	226 705	28	154 135	-0.2
Equatorial Guinea	2 805	23	1 626	-0.7
Gabon	25 767	6	22 000	0
Chad	125 920	9	11 525	-0.7
Rwanda	2 467	394	432	2.4
Sao Tomé & Principe	96	167	27	0

The dense moist forest is found in the western part of Cameroon and also covers a major portion of the Congo Basin from Gabon and Equatorial Guinea to Kivu in DRC. Sub-montane and montane forests exist in the Albertine Rift. Small forest blocks are also found in the west of Cameroon (on the slopes of Mt. Cameroon). Given the high density of rivers, edaphic forest occupies very large areas in the central Congo Basin. In DRC, Cameroon and Equatorial Guinea, the dense moist forest is fragmented along road networks and around rural village complexes and young secondary forest is a mixture of forest fallows, personal gardens, subsistence crops and plantations. The dense dry forests in CAR and Miombo woodlands in southern DRC are associated with the tropical dry forest-miombo complex in Southern Africa. The forest-savanna mosaic contains forest and savanna elements. Mangroves are fragile ecosystems, which are present along the coasts of Cameroon, Equatorial Guinea, Gabon and Sao Tome & Principe. Finally, Chad is divided between a dry forest area and the desert area which is connected to the Sahara desert.

According to Ernst et al. (2012), local and regional forest cover dynamics impact climate, biodiversity and ecosystem services. Although our knowledge of the effect of climate change on the Congo Basin is limited, evidence from several studies

indicates a likely severe impact in the long term. Many endemic species are particularly vulnerable to even minor changes in climate. Increased inter-annual variability and extreme climate events are likely to put even more pressure on communities that depend on natural resources for their food security and other needs.

CAPACITIES OF NATIONAL FOREST ADMINISTRATION

Human resources

It is difficult to know the exact capacities and expertise available in the public forest administrations of the member countries of COMIFAC. However, there are some global indicators and approximate figures that reflect the realities characterising each of them (Table 2). FAO (2003) conducted a series of studies on training needs in countries of CA. These studies concluded that there is a shortage of human resources and a necessity to adapt existing expertise to changes connected with the forest sector (FAO, 2003). The explanatory factor to this double deficit of adequate qualified human resources and financial means, affecting public forest administrations, is partly attributed to the Structural Adjustment Programmes imposed by the Bretton Woods institutions during the 1990s, forcing the postponement of recruitments in public administrations and reduction of public expenses.

Concerning the necessity to fight negative climate change, two institutional diagnoses have recently been conducted proving that quantitative and qualitative deficiencies of financial and human expertise are the main constraints to the feasibility, ownership, design and implementation of the REDD+ mechanism in the whole of CA (COMIFAC 2010; 2012). As far as financial resources are concerned, it appears that national budgets that are usually allocated to activities related to the improvement of sustainable forest management are weak compared to the great real needs in the field.

Table 2. Summary of human resources in forest administration.

Countries	Human resources available	Planned to be recruited	Sources
Burundi	ND	ND	ND
Cameroon	1 700	1 550	MINEF (2003); Cerutti et al. (2009).
CAR	308	ND	FAO (2003)
Congo	750	ND	Bayol and Eba'a Atyi (2009)
DRC	500	2700	FAO (2003)
Equatorial Guinea	169	ND	Mugnier and Martinez-Plaza (2009)
Gabon	283	ND	Chevalier (2009)
Chad	ND	ND	ND
Rwanda	ND	ND	ND
Sao Tomé & Principe	ND	ND	ND

ND = no data

Forest governance and climate change

Despite recent efforts to improve forest governance, notably the adoption by COMIFAC of a regional agreement on forest control which provides for the implementation of a harmonised traceability system, problems persist in this arena largely because forest monitoring and enforcement institutions remain weak and ineffective. But, it should be noted that governance problems observed in the forestry sector are characteristic of the general socio-political context present in CA countries. According to ITTO/FAO (2009) and Eba'a Atyi et al. (2009), there are five dimensions of the insufficient law compliance and governance in the forest sector in CA. These are:

- ***inconsistent forest policy and legal framework***; problems arise when laws are incoherent, unrealistic and unenforceable and fail to address forest land tenure and use rights;
- ***insufficient enforcement capacity*** is often due to institutional weaknesses coupled with a lack of transparency and accountability in the implementation of the policy and legal frameworks;
- ***insufficient monitoring of forest resources*** and the supply chain makes it difficult for law enforcement agencies to know when illegal activities occur. Accurate information is needed on production activities, silvicultural operations, timber and other forest product flows, and the volume of cross-border and other trade;
- ***corruption*** in the private sector, government institutions and among local decision-makers is linked to a lack of transparency in policy implementation, marginalisation of rural people, and lack of public scrutiny; and,

- ***market distortions for wood products*** occur in domestic and export markets where there are ready outlets for low-priced illegally harvested products. In some regions, the uncontrolled cross-border trafficking of timber and NTFPs exacerbates this problem.

To tackle these governance problems, five main countries of the Congo Basin (Cameroon, CAR, Congo, DRC and Gabon) are currently either formally engaged in negotiations for, or already in the implementation process of, a VPA with the European Union within the framework of the FLEGT mechanism. Congo and Cameroon signed their VPAs in May and October 2010, respectively, whereas CAR signed their VPA in December 2010. Gabon and DRC began negotiations in 2010. By establishing a strong and reliable legal verification system, exporting CA wood and related products would become credible in international markets and the rate of illegal harvesting of timber and forest degradation may dramatically decrease. One of the main lessons learnt is that the majority of measures implemented in the fight against illegal forest practices are often initiated and/or driven by external actors, notably international donors.

Deforestation and forest degradation constitute two of the most important contributors to global warming in many countries, and form the largest source of greenhouse gas emissions (Stern, 2006; IPCC, 2007). As mentioned by FAO (2011b), a key issue in the Congo Basin is to find ways of reducing deforestation and forest degradation through means that are consistent with improving livelihoods for about 60 million local people directly dependent on forests. Forests also help people in their adaption efforts by, for example, regulating rivers or by supplying important products to communities where agriculture and livestock production have been distressed by climate change (Sonwa et al., 2009). Therefore, COMIFAC countries have been engaged in international negotiations to recognise and take account of the role of tropical forests in the fight against climate change. In this perspective, each country is developing a national REDD strategy and national adaptation management actions (NAMA).

Research, knowledge generation and funding for climate changes issues

It is difficult to know the exact capacities and expertise available in the public forest administrations of member countries of COMIFAC. However, some past studies highlight important findings. First, an assessment of the year 2004 has revealed a situation of deficiency in qualified human capacities as well as financial ones, which also portrays some institutions in charge of conducting forest research in sub-Saharan African countries (Sall, 2004). A quite similar conclusion has been made recently about forest research institutions in COMIFAC countries (Hiol, 2012). Globally, when we consider the pool of academic researchers with doctoral thesis and research students, there is a great human potential in forest research. However, this capacity is underused because of the poor structural organisation of research

institutions and great deficiencies of senior researchers that are capable of mentoring those who are inexperienced. The number of scientists is still insufficient, mostly concerning current new thematic areas of forestry research. The professional status of the researchers does not allow remedying that deficiency because of poor salaries, lack of research logistics or premature retirement for researchers, like in Cameroon.

However, this shortage of researchers has been partly compensated by many partnerships, particularly with international research organisations. There are also many research networks within the sub-region – e.g. the *West and Central African Council for Agricultural Research and Development* (WECARD), the *Réseau des Instituts de Formation Forestière et Environnementale* (RIFFEAC), the *Pôle Régional de Recherche Appliquée au Développement des Systèmes Agricoles d'Afrique Centrale* (PRASAC), the African-Caribbean-Pacific Forest Research Network (ACP-FORENET), and the *Association pour l'Etude Taxonomique de la Flore d'Afrique* Tropicale (AETFAT) - even if some face recurrent financial problems. At the institutional level, there is no sub-regional network of all forestry research institutes, no partnership of forest research institutes with the private sector, and links between ministries in charge of forest or environment and national training institutes are very little developed.

The lack of domestic sustained financial systems for research is the main constraint to the development of forestry research in COMIFAC countries. Currently, such research depends strongly on external funding, which is generally short-term, whereas many forest studies require a long-term financial investment. That is the case, for instance, with the follow up of experimental permanent sample plots or running of laboratory analyses. However, there are sub-regional financial resources for activities focussing on the fight against climate change. These funding sources are likely to be complements or substitutions to hypothetical domestic resources. COMIFAC (2012) lists the following financial opportunities:

- the World Bank Programme for sustainable forest management in the Congo basin with 40 million USD for the period 2010-2014, of which 13 million USD are managed by COMIFAC for the reinforcement of sub regional capacities of the REDD;
- the Congo Basin Forest Fund (CBFF) founded in 2009 for the support of projects relating to sustainable forest management. It is a joint financing mechanism between UK and Norway for a total amount of 120 million €. These funds are kept and managed by the African Development Bank (AfDB);
- the Forest Carbon Partnership Facility (FCPF) of the World Bank supports the designing, development and implementation of systems and policies in favour of the REDD+ mechanism;

- the Forests Investment Programme, which finances the implementation of REDD National strategies developed within the framework of FCPF. This fund, financed by US, Denmark, Norway, Australia, and UK, has at its disposal a sum of 350 million USD; so far, only DRC has received financial support in the framework of UN-REDD; and,
- the sub-regional programme named CARPE of the USAID, which entered a transitional phase in 2012 with 13 million USD for activities included within the framework of the fight against climate changes. For the period 2013-2020, a sum of 17.6 million USD will be available for the whole sub-region.

Last but not the least, a new regional initiative which will help the ten CA countries to set up advanced national forest monitoring systems (MRV) has been announced recently. This programme will be managed jointly by COMIFAC and FAO in close collaboration with the Brazilian National Institute for Space Research (INPE). The Congo Basin Forests Fund, launched by the Governments of Norway and UK through AfDB is funding the initiative with 6.1 million €. It will reinforce regional capacity and allow COMIFAC countries to strengthen their cooperation in the forestry sector, in particular with regard to their capacities to provide transparent and reliable data and information on forests. FAO will provide technical support to the countries enabling them to use remote sensing technologies to estimate extent of and change in forest cover, and estimate the amount of carbon contained in forests in the region.

CHAPTER 3 Trade in Forest Products and Services

Although the global trade in forest products is still concentrated between the great emerging and traditional industrial groups of countries, an increase in intra-geographical trade exchanges has been observed during the last decades, partly because of the development of regional economic communities. Therefore, CA has occupied its position within these movements or exchanges of goods and services, including forest products, through the two sub-regional economic institutions CEMAC and ECCAS.

FOREST PRODUCTS AND SERVICES TRADE IN CENTRAL AFRICA REGION

Timber trade in Central Africa

It appears relatively easy to get statistics relating to trade in timber products in the CA sub-region. However, figures relating to the trade of NTFPs and to environmental services are poorly known, despite the existing economic potential. This is due to the classification method used by the UNCTAD - the Standard International Classification (STIC) - that makes the following distinction among products: Food and Basics, Beverage and Tobacco, Fuels, Manufactured Goods, and Chemical and related Goods. The lack of professionalism in data collection on NTFPs also contributes to the shortage of data.

Table 3. Summary of wood exportation from six Congo Basin countries.

Country	Year	Volume of wood exportation (1000 m^3)
Cameroon	2009	822
CAR	2009	111
Congo	2009	1 012
DRC	2008	223
Equatorial Guinea	2009	35
Gabon	2009	1 994
Total		4 198

Source: FAO (2011)[2].

[2] DRC did not provide statistic of exportation in 2009. The other COMIFAC members, i.e. Burundi, Rwanda, Chad and Sao Tomé and Principe are not considered as Tropical Timber countries producers.

We know that in the Congo Basin countries, industrial wood products are mostly exported (Bayol et al., 2012). On the other side, domestic and intra-COMIFAC markets are mostly supplied by the small-scale wood production and chainsaw millers sector (Lescuyer et al., 2012). Table 3 above provides a global overview of wood exportations in each of the six countries producing tropical wood in the Congo Basin.

Other statistics on timber exportation by the Congo Basin countries are provided by Eba'a Atyi et al. (2009), based on 2008 data (Table 4). The same authors observed that the main destination of overall timber exports from CA remains the European Union (this is the main reason of the VPA/FLEGT process with EU countries), although the importance of Asia is rapidly increasing, notably China (Eba'a Atyi et al., 2009). For more details on export destinations of CA wood, see Table 5.

Table 4. Quantities and types of timber products exported through the formal sector.

Exported products (1000 m3)	Cameroon	Congo	Gabon	Equatorial Guinea	CAR	DRC	Regional total
Logs	266	522	1 938	547	193	208	3 675
Sawn wood	613	209	158	0.6	76	30	1 087
Peeled veneer	64	15	144	31	4.3	-	259
Sliced veneer	3.2	-	1.9	-	-	1.4	6.5
Plywood	22	1.8	28	-	0.7	6.8	60
Planed sawn wood	3.2	-	-	-	-	1.2	4.4
Logs for pulp/paper	-	251	-	-	-	-	251

Source: Eba'a Atyi *et al*. (2009).

Table 5. Summary of various destinations wood exportation.

From/To (m^3)	Intra-COMIFAC	Rest of Africa	North America	Asia	E U	Rest of the World
Cameroon (2009)	4 095	30 210	9 574	435 686	340 520	1 087
CAR (2009)	1 474	N/D	N/D	45 011	64 568	472
Congo (2009)	2 500	6 825	7 366	514 437	460 484	20 845
DRC (2008)	N/D	42 540	55 221	50 128	137 292	N/D
Eq. Guinea (2009)	N/D	1 565	35	16 472	17 046	N/D
Gabon (2009)	125	77 588	2 944	3 017	245 266	33 992

N/D = not declared, Source: FAO (2011).

However, the above tables do not take into account the informal wood trade sector. According to UNECA (2010), the informal trade sector, despite the limitation of data available on this topic, is the main source of job creation in Africa (except in South Africa). This observation on the informal wood production in CA countries has been confirmed by Lescuyer et al. (2012). Furthermore, recent studies (Cerutti and Lescuyer, 2011; Lescuyer et al., 2012) conducted on this topic show that:

- between Cameroon and Chad, there are at least 80 000 m^3 of chainsaw wood exported informally per year;
- between Cameroon and Nigeria, there are at least 12 000 m^3 of chainsaw wood exported per year;
- between CAR and Chad, there are at least 6 000 m3 of chainsaw wood exported per year;
- between DRC and Uganda, Burundi and Rwanda, there are at least 50 000 m^3 of chainsaw wood exported per year.

Also, according to Forest Monitor (2007), timber volumes exported informally from DRC to the Upper Great Lakes region (mainly Uganda, Rwanda and Kenya) in 2006 was 50 500 m^3. Another relevant global picture on CA forest products flows and related export can be found in FAO (2011), which, however, does not include statistics on NTFPs production and related trade (see Table 6). The below data are complementary to the data provided by COMIFAC in the Congo Basin State of the Forest publication (see Tables 3, 4 and 6). From 2005 to 2009, the six Congo Basin countries have exported an average wood volume of around 4.5 million m^3/y (see Table 7).

Table 6. Production and trade of woodfuel, roundwood and sawnwood in 2008.

Country	Woodfuel production	Roundwood production	Roundwood export	Sawnwood production	Sawnwood export
	1 000 m^3				
Burundi	8 965	333	3	83	-
Cameroon	9 733	2 616	157	773	258
CAR	6 017	841	57	95	11
Chad	683	761	-	2	-
Congo	1 2950	2 431	251	268	40
DRC	7 4315	4 452	156	15	29
Equatorial Guinea	189	419	82	4	1
Gabon	534	3 400	217	230	62
Rwanda	9 591	495	-	79	-
Sao Tomé & Principe	-	9	-	5	1
Total	117 469	15 757	2 884	1 555	402

Source: FAO (2011).

Table 7. Evolution of total wood products exports in the Central African region 2005-2009 (1 000 m^3).

Country/Year	2005	2006	2007	2008	2009
Cameroon	897	996	N/A	915	822
CAR	204	270	274	218	152
Congo	906	956	999	1 068	1 012
DRC	170	212	280	285	N/A
Equatorial Guinea	N/A	482	579	N/A	35
Gabon	2 000	2 144	2 270	1 872	1 994
Total	4 177	5 061	4 403	4 358	4 015

N/A = not available. Source: de Wasseige et al. (2012).

Wood energy products

Wood energy is an essential source of energy throughout the CA region, although differences exist between countries (Schure et al., 2012). In CA, the supply of fuelwood and charcoal is normally linked to the practice of shifting cultivation, but high demand also results in cutting of wood for the sole purpose of producing fuelwood. In forest areas, producers seek and select specific species that produce high quality charcoal. Other sources for wood fuel include tree plantations and waste wood from timber processing companies, which are transformed into charcoal or wood chips. The wood fuel sector is associated with forest depletion and increasing prices in areas of high demand, particularly in peri-urban areas such as Kinshasa (Marien, 2009; Ernst et al., 2012).

The estimate by FAO (2011a) shows that in CA countries at least 117.5 million m3 of wood were used for fuel in 2008. Therefore, improved management of the wood fuel sector needs to be urgently implemented as demand continues to increase and alternative energies will not be available at a level adequate to address demand in the short term (Table 8).

Table 8. Summary of wood fuel production in 2008

Country	Wood fuel production 2008 (1 000 m^3)	Country	Wood fuel production 2008 (1 000 m^3)
Burundi	8 965	Equatorial Guinea	189
Cameroon	9 733	Gabon	534
CAR	6 017	Chad	6 830
Congo	1 295	Rwanda	9 591
DRC	74 315	Sao Tomé & Principe	N/D

N/D = not declared. Source: FAO (2011).

Non-timber forest products

As rightly observed by Ingram et al. (2012), the production and related trade of NTFPs are characterised by a paradox in the CA sub-region. Thus, despite their daily importance and use there is a lack of knowledge on their ecology and socio-economic values, which hinder the ability to monitor, regulate and manage them. Consequently, their value chains are mainly informal and unknown in terms of statistics. Informal trade covers export activities, cross-border trade, domestic trade along roads and in marketplaces, informal trade contracts based on trust and spoken words, and a great portion of official trade that goes unrecorded and/or under-recorded (UNECA, 2010). Therefore, it is difficult to assess the true extent of informal trade due to fraud and related smuggling practices. Certainly, a number of indigenous forest products became increasingly important during the colonial period, including rattan cane from W/C Africa exported to Europe and other colonies for furniture manufacture along with large quantities of Shea butter for the production of margarine and candles (Hédin, 1929). More recently, high value international markets for a number of NTFPs have developed as a result of migration of people from Africa to Western Europe and North America (Sunderland et al., 2004). These people are prepared to pay a premium for genuine African products. Today, most trade in CA NTFPs is within and between African states (Clark and Sunderland, 2004). This trade has been facilitated by the development of better transport networks and greater access to forest areas. Ndoye et al. (1999) found that the value of four important NTFPs sold in markets in the humid forest region and border markets of Cameroon amounted to 753 000 USD from January to June 1995.

NTFPs are often classified by their use: food, forage, tools, construction, medicines, aromatic products, dyes and colorants, and art and cultural objects. The exiting

potential of NTFPs has remained unknown in CA due to lack of systematic inventories and understanding the real values of various species. However, Eyog Matig et al. (2003) identified 74 NTFP fruit species in Cameroon alone in their work. Reviews and market assessments of NTFPs in Cameroon, CAR, Congo, DRC, Equatorial Guinea, and Gabon in 2010 by the Forestry Research Network for ACP countries (ACP-FORNET) indicate that over 500 plant species and at least 85 animal species are currently used as NTFPs, notably in Cameroon (Ingram et al., 2012). These uses are similar in other countries. For example:

- in CAR at least 57 plant and animal species with food and medicinal uses have been recorded (Ngasse, 2010);
- in Congo, at least 166 plant species are used for food and 176 have medicinal values used in 289 treatments (Profizi et al., 1993);
- in DRC, over 169 plant species have been recorded for food and 166 for medicine uses (Toirambe, 2006); and,
- in Gabon, 58 botanic families containing food species, 29 medicinal uses, and 15 construction uses have been identified (Walter, 2001).

Despite the informal aspect of the NTFPs trade, some observers have tried to document the export flows between Congo Basin countries and European counterparts (Tabuna, 1999; Kendo and Seppanen, 2007; Nasi et al., 2011). Table 9 gives some statistics collected by Tabuna (1999) on importation of NTFPs to the France and Belgium markets, with a total value of 12 million USD. Another example of trade flow value has been provided by Ingram et al. (2012) for *Gnetum africanum* (a leafy vegetable), viz. 3.8 million USD/y in the southwest region of Cameroon (bordering Nigeria) and 1.2 million USD/y in Kinshasa, DRC.

Table 9. Quantities of some NTFPs imported into France and Belgium in 1998, and countries of origin.

Products	Quantities imported	Exporting countries
Gnetum africanum	100 tons	DRC: 35 tons; Gabon: 3 tons; Congo: 12 tons ; Cameroon: 50 tons
Dacryodes edulis	105 tons	Cameroon: 100 tons ;DRC: 3 tons ; Congo: 2 tons
Ricinodendron heudelotti	4 tons	Cameroon
Cola acuminata and *C. nitida*	2 tons	Cameroon
Garcinia kola	3 tons	Cameroon
Monodora myristica	5 tons	Cameroon
Xylopia aethiopica	1 ton	Cameroon
Tetrapleura tetraptera	1 ton	Cameroon
Irvingia gabonensis	5 tons	Cameroon
Manihot esculenta	130 tons	DRC: 65 tons; Cameroon: 65 tons
Vernonia sp.	4 tons	Cameroon
Elaeis guinensis	10 000 bottles of 65 cl	

Source: Tabuna (1999).

CA countries are to some extent weak as far as exports of NTFPs are concerned. Indeed, despite the existing real potential of NTFPs in this sub region, the trade flows have remained weak and dominantly informal (Tieguhong et al., 2010). In other

words, the global value chain is currently characterized by a lack of accurate data and statistics in comparison with the formal timber sector. Therefore, such a trend can deeply affect both the management of the resources and any related political action and strategy.

Forest- based agro- industrial products

Market distortions related to the fuel-food nexus are mostly associated with the creation and expansion of large scale agro-industrial palm oil and other tree crop plantations in the CA region, particularly in Cameroon, Gabon and Congo. Most of the land allocated to these activities is located in the tropical forest, and sometimes in biodiversity hotspot areas.

The production of palm oil has constantly increased over the past ten years while the area harvested has been stable in CA region (FAO, 2011a). The current trend of investment in the palm oil sector indicates that, within the next few years, 'palm oil will be the world's most produced and internationally traded edible oil. But as foreign investors descend on Africa to develop large-scale palm oil plantations, the livelihood of local people is being threatened as they lose control of the land and water on which they depend for their food production (Baxter, 2011). Apart from its use as cooking oil, it is also found in an astonishing range of processed foods and cosmetics. One in ten supermarket products contains palm oil. Government targets for the use of agrofuels in Europe, China and North America are making palm oil, which can be used to produce biodiesel, an even hotter commodity. The burgeoning demand for palm oil is fuelling a war of words over its pros and cons, and fuelling a new scramble for land in Africa.

In a recent publication, Baxter (2011) shows that while Africa appears as the latest investment frontier, there is limited detailed information showing the full extent of foreign investments in land for oil palm in W and C Africa. Consequently, information on land deals, many lacking any transparency, is piecemeal at best. In many countries of WA and CA (Cameroon, Gabon, Republic of Congo, and DRC), foreign investors from Asia, USA and Europe are rapidly securing enormous land areas, often in fragile forested areas, for palm oil estates. As an example of this extension, in DRC, a Chinese company is working to secure 2.8 million ha for oil palm for biodiesel production while in Cameroon, Herakles Farms (a USA-based agricultural firm) plan to cultivate a 83 000 ha of plantation in the middle of one of Africa’s most biodiversity rich and threatened landscapes (Baxter, 2011). Butler and Hance (2012) give further examples:

Cameroon:

- the French Bolloré group is the main actor in the oil palm sector in this country, producing 80% of the national production of palm oil and holding some 40 000 ha

of plantations through its companies SOCAPALM, SAFACAM and Ferme Suisse. The company also has industrial plants and has recently declared its interest in the production of biodiesel.

- six other foreign companies.

Congo:

- spanish company Aurantia announced its intention to invest in oil palm plantations for the production of biodiesel;
- italian energy company ENI achieved access to c. 70 000 ha of land for planting oil palm;
- another Italian energy company, Fri-El Green, signed an agreement for the planting of oil palm in 40 000 ha.

DR Congo

- GAP (Groupe agro-pastoral), a company owned by the Blattner Group (Belgium/USA), has 10 000 ha of plantations;
- Canadian company TriNorth Capital announced that its subsidiary Feronia had purchased Unilever's "Plantations et Huileries du Congo". Within its holding of 100 000 ha it would plant some 70 000 with oil palm;
- ZTE Agribusiness Company Ltd, a Chinese company, announced its intention of establishing oil palm plantations over 1 million ha of land.

Gabon*:*

- the formerly state-owned company Agrogabon was privatised and is now controlled by the Belgian company SIAT. It has 6 500 ha of plantations ;
- Singapore-based Olam International would plant some 140 000 ha with oil palms. In the framework of the same project, an additional 60 000 ha would be planted by 3 000 local entrepreneurs.

Sao Tomé and Principe:

- Belgian/French company Socfinco (part of the French Bolloré group), through its subsidiary Agripalma has a concession of 5 000 ha for planting oil palms. The aim is the production of palm oil for its further processing into biodiesel in Belgium.

Several others companies are still in negotiations to secure thousands of hectares of lands to implement oil palm plantations. Most of these negotiations do not necessarily involve all sectors that are using land and are often characterised by a lack of transparency. However, what does not emerge from the foregoing is that the

expansion of palm oil is one of the main causes of deforestation, leading to significant changes in land and resource use, radical changes in vegetation and local ecosystems, with substantial investment in new infrastructure, movements and relocation of populations, and large changes in the local and international trade that affect local communities. Several potentially negative social and environmental impacts of oil palm development are common to African countries (Carrere, 2010), including and not limited to the violation of land rights of indigenous people and local communities, loss of land as a safety net, human rights violations, lack of attractive project employment opportunities to the local communities, destruction of community-based economies, exposure to health risks, loss of cultural heritage and values, to depletion of forest products, deforestation, draining of wetlands, impact on micro-climate, pollution of watercourses and reduced wind breaks.

In more specific ways, such impacts have been described in Cameroon (by Ricq, 2009 and 2010; ROSP, 2010; Hoyle and Levang 2012) as follows:

- there is a loss of HCV forest and Biodiversity;
- loss of permanent forest estate - Forest Management Units (UFAs) and Protected Areas (PA);
- social costs through negative impacts on livelihoods of local people and plantation workers - agribusinesses currently seeking large tracts of land in Cameroon do not seem willing to involve smallholders in their projects;
- environmental costs and risks - in cases where new developments do not adhere to the highest environmental standards, palm oil production can have major negative environmental consequences on soils (erosion potential on steep slopes, such as in the South West region) and water quality (palm oil mill effluent/pollution by pesticide run-off);
- opportunity costs to the State through loss of alternative revenue – the conversion of forest for palm oil production has a potentially huge opportunity cost resulting from the loss of alternative incomes from other proven land-use options (including logging, mining, hunting, NTFP collection, etc.) as well as several other potential land-use options (such as conservation concessions, payments for environmental services, REDD+ etc.); and,
- loss of carbon and low carbon development - while some companies are stating that they desire their operations to be carbon neutral, this can be possible but not when natural forest has been cleared to make way for the oil palm plantation (the threshold being 40 tons C/ha above which carbon neutrality cannot be achieved). According to MINADER (pers. comm.), there are further undisclosed companies also negotiating with the Government of Cameroon to secure large tracts of suitable land for the production of oil palm and other large-scale agro-industry products (e.g. rubber and other biofuels from sunflower and maize).

CROSS BORDER TRADE

Status of cross border trade

Trade flows in CA are, in principle, governed by both ECCAS and CEMAC ReC, which gives rise to conflicting rules. ECCAS was created in July 2004 with the aim of establishing a customs union of common external tariffs by 2008, whereas CEMAC groups only those CA countries that share the common currency CFA (Cameroon, CAR, Congo, Equatorial Guinea, Chad and Gabon). Political and financial obstacles delayed the plan, and political instability has also postponed the implementation of protocols to facilitate the movement of goods and services. As a result, UNECA (2010) concluded that ECCAS lags behind in helping to ensure regional integration, particularly in the free movement of persons, goods and services. This is mainly caused by the region's poor infrastructure network and the imposition, for security reasons, of visas between some member states.

Therefore, most intra-regional trade flows in CA are governed dominantly by the informal market rules. Whether it is cross-border or domestic, informal trade remains the mode of trade best suited, from a social efficiency perspective, to the distribution of forest goods to meet the diversity of consumers' demands (Lescuyer et al., 2012; Ingram et al., 2012). Indeed, despite its limits, informal trade of forest related products may overcome a number of constraints, for example: i) the landlocked nature of economies and inadequate communication infrastructure; ii) the gaps in the supply of public goods; iii) contradictions in national and ReC rules and regulations; iv) economic crises; and, v) consequences of civil wars.

Cross border trade impacts

Two countries in CA have often been reported as places of concentration of illegality, illicit practices and corruption when it comes to timber trade: DRC because of its long borders with neighbouring countries and due to its large size between 5º N and 13º S of the Equator (with very low capacity to control these vast areas) and Cameroon both for wood trade with neighbouring countries and as a country of transition of forest products from CAR and Congo as presented below. Since 2002, several UN groups of experts on the illegal exploitation of natural resources have reported on the development of fraudulent channels of illegal export from the Eastern Province of DRC to East Africa, particularly Kenya and Uganda (Debroux et al., 2007; Forest Monitor, 2007). In 2009, some mission reports indicated that these channels were further strengthened, but also that new ones had developed from the provinces of North Kivu, South Kivu and Maniema to Rwanda, Burundi and Tanzania. This situation has been largely due to the many common borders between DRC and all the other countries of the African Great Lakes region. The porosity of borders is high and the level of control is low leading to an intensive flow of illegally sourced forest products, driven to some extent by the increased demand from the East African countries as a result of growth of both their populations and economies. The illegal

trade flows include craft lumber, logs, timber, fuel-wood and charcoal (Forest Monitor, 2007).

This situation has accelerated as a result of the policy of decentralisation that unconsciously facilitated the creation of networks of export of natural resources to EA. For instance, wood exploited from eastern DRC and sold directly to EA countries constitutes a source of economic income that the absence of payments and repayments from Kinshasa makes legitimate, despite their informal nature (Mayange Nkubiri, 2012). The value of forest products exported illegally from DRC is of a magnitude of tens of millions of dollars per year, comparable to the value and role played by conflict mineral products arrangements. All these illegal trade and economic activities contribute to the destabilisation of the regions in eastern DRC (CIRAD, 2009; 2010). The general context of socio-political instability in the Great Lakes region, however, is very delicate because the responsibility of leaders, both public and private, which have personal stakes in the exploitation and trade of both forest and mining products. There is a need to address the question of the regulation of cross-border flows of forest products in the context of a win-win solution where nobody is supposed to be a complete loser and where all stakeholders could together consider ways of improving economic performance, political stability, tax revenues and social conditions.

The second area of concentration of illegal trade is Cameroon serving both as a transit route for neighbouring countries with wood flowing from Congo and RCA to the exit port in Douala and also across borders to WA countries, such as Nigeria and Chad. There is no clear available data on this trade since most of the products come from illegal sources. In the case of NTFPs, according to Ingram (2012), there is a “bricolage” in governance resulting from the weak/imperfect statutory system that is ineffective in regulating NTFPs with high commercial, social and cultural values. The ability and will of stakeholders to legally participate in the sector is undermined. Operating legally does not prevent corruption (Tieguhong et al., 2010). Some actors, for example in the raffia and cola chains, continue to operate informally, using traditional customary arrangements. However, where customary arrangements are weak or not beneficial for trade or sustaining livelihoods, new rules and institutions are created, or local rules are reshaped to support access and activities of local people. This is common with the bamboo, eru, honey and pygeum chains, characterised by increasing resource scarcity and increased commercial value. While Government and donor-driven reforms have largely focused on the statutory framework, this has created fresh bricolage opportunities, giving rise to new markets, coalitions and collaboration with support organisations. However, the ambiguous status of forest land and resources, and high bureaucratic hurdles, hinder communities and individuals who wish to become legal entities to manage, harvest and trade in what they consider their own forests.

Another constraint that may hamper the development of the sector is the high taxes that reduce the incentive to formalise business, leading to high levels of informality -

only 32% of groups are legal entities and most trade is carried out without permits (Ingram, 2012). Thus, a combination of different, sometimes contradictory, overlapping governance arrangements is created. Small-scale harvesters and traders, operating informally, have crafted governance arrangements to maximise benefits. Such operations are often economically inefficient, focused on short term issues, and do not internalise environmental costs. The formal framework does not promote or support a vibrant NTFP-based entrepreneurship. Although simple processing may prolong products' shelf life and generally increases profits, this does not occur often in the chains. Even when it does, the value added is generally low, particularly for exported NTFPs, where the end processors gain significant margins from processing.

The lack of harmonisation between governance agencies means there is no differentiation between wild and cultivated NTFPs and little promotion of value-adding. Most of the value chains have little political visibility. Although informality avoids state interference, it is a barrier to gaining support from government, research and support organisations. It is also associated with lack of policy attention and the importance of the NTFP sector's contribution to national economies, livelihoods, food security and health has been unknown or under-estimated. Another impact of bricolage is that benefits from trade may be controlled by the actors with the most economic or political power. The poorest and most marginalised people, and those most dependent on NTFPs, may have little control, as illustrated by the pygeum and eru chains (Ingram, 2012). NTFP chains are most likely to be unsustainable in the absence of a functioning, legitimate statutory framework, and where market or voluntary arrangements are weak. When these governance weaknesses combine with strong commercial pressure or market arrangements that have a short-term profit focus, customary laws have proved to be incapable of counteracting unsustainable harvesting techniques and over-exploitation. This is particularly the case for outsiders, but also for local communities. The result is unsustainable exploitation.

In the absence of inventories for any of the products (except pygeum), perception-based indicators highlight the effects of trade. Across all nine value chains studied, 97% of harvesters indicated longer collecting distances than five years ago (Ingram, 2012). Nearly 25% indicated that NTFPs were becoming scarcer and 23% reported increased forage time. Threats include an increasing number of new harvesters. In addition, more than half of the harvest techniques were unsustainable and the majority of products came from the wild, with only 42% cultivated. Deforestation for farm clearance was a threat for eru, bush mango, raffia and cola. Forest degradation through multiple uses (e.g., fuelwood and grazing) prevented regeneration of pygeum and bamboo and is problematic for apiculture. Unsustainability levels were highest for eru (*Gnetum africanum*) and pygeum (*Prunus africana*), followed by bush mango, safou and bamboo chains (Ingram, 2012).

In DRC, local communities see the impact of logging practices, which do not allow the forest to regenerate naturally or the nutrient cycle to be maintained. "*Everything is in the process of disappearing, beginning with the animals, the caterpillars, the mushrooms, even the honey. These things will never return*" (Réseau des Associations Autochthones Pygmées - RAPY community leader, 2005). Industrial logging is often perceived by local people as a cause of impoverishment. Selective cutting of a few very high value trees per ha for export results in the waste of a huge amount of exploitable timber. Research by the Great Lakes Habitat Restoration Program (GLHRP, 2006) has shown that in a forest of 200 ha, only 395 m3 were harvested (around 3% of the potential exploitable volume) and the remaining 97% (10 955 m3) was simply left abandoned on site. These first cuts generally result in the cutting area being subsequently burnt for conversion to agricultural use, often by migrant or displaced people, which causes conflict with local communities. There is an attempt to set up networks to monitor the proper use of natural resources. For example, the Natural Resource Network (or RRN) which is coordinated from Kinshasa by CENADEP (the People's National Education and Development Support Centre), has 'focal points' in each province and territory in North and South Kivu. These 'focal points' are responsible for disseminating and collecting information on environmental and social impacts of natural resource extraction.

Opportunities and challenges for development

Forests and woodlands are declining, mainly due to overharvesting and bush fires, agricultural expansion and overgrazing. User rights in the forests are allocated by governments through administrative or competitive processes (FAO, 2005). In Gabon, for example, there are 221 concessions covering over 11.9 million ha or 56% of the forest area (Global Forest Watch, 2000). Cameroon has allocated 81% of its forests to concessions (White and Martin, 2002). Although the allocation process takes advantage of market forces, sometimes monitoring and enforcement of regulations in the permit areas by the governments are inadequate, leading to illegal practices such as felling of protected species, wrong classification of logs, felling undersized trees and transportation or removal of more logs than permitted (UNEP, 2004).

One of the challenges to finance local and national development is the huge loss of taxes associated with illegal activities in the forest sector, particularly in fragile states. In DRC, the value added tax (VAT) amounts to USD 143-185 per m^3 of wood, as opposed to USD 184-258 per m^3 for importer countries. VAT in DRC amounts to just 36-48% of the VAT along the complete supply chain. It is important to note that all taxes represent between 46 and 63% of the VAT in the DRC – depending on which timber export routes are taken – as opposed to 41-43% for Rwanda and Burundi, 18 % for Uganda and 24% for Kenya (Forest Monitor, 2007). In summary, the profits generated by the forestry sector benefit the importer countries more than they do

DRC. Most of the VAT generated in the DRC is levied in the form of taxes. Given that there is no redistribution of tax revenues at the local level (territory, province), it is likely that only a small proportion of DRC's VAT is invested in the economic and social development of the region.

The VAT of the forestry sector in eastern DRC is estimated at USD 6.5 million per year, taking into account official figures of sawn timber export volumes (Forest Monitor, 2007). It is impossible to provide an accurate assessment of the importance of the forestry sector to eastern DRC's economy, due to a lack of good regional data on GDP. However, it is probably very important in terms of VAT generation, especially when timber for local consumption (for fuel wood and charcoal) is considered (Forest Monitor, 2007). The contribution of the forestry sector to VAT could be even higher if the timber was processed - at the moment, timber is exported predominantly in unprocessed form. The contribution of the timber sector to local development would increase considerably if taxes levied were locally redistributed and spent on items such as schooling and sanitation.

Most of these conflicts of access and use arises when the same tree species provides both timber and NTFP values (Rist *et al*., 2012; Guariguata *et al.,* 2010) and this is exacerbated when different stakeholders are involved in the extraction of each (Ndoye and Tieguhong, 2004). This situation is widespread in most tropical forest regions, including CA. For example, in Cameroon, 61% of the 23 top timber species being exported also have NTFP value (Ndoye and Tieguhong, 2004). In both Cameroon and Central African Republic, the three most exploited timber species - *Triplochiton scleroxylon*, *Entandrophragma cylindricum* and *Milicia excelsa* - are also sources of medicine and food (Tieguhong and Ndoye, 2007). In both Cameroon and DRC, Forestry Laws have clarified logging companies' obligations towards local people with provisions to avoid timber exploitation obstructing villagers in exercising their user rights.

To meet this objective, local communities and timber companies are working together to reach agreements on maintaining tree species with multiple uses. Yet, at least in Cameroon, inventorying (plant) NTFPs as part of timber enumerations is done at the discretion of the concessionaire (GTZ, 2006). Others have suggested that government agencies assign harvest quotas for those timber species with high NTFP value and compensate timber companies for any forgone revenue (Tieguhong and Ndoye, 2007). An alternative intervention for minimising conflict of use includes legal protection from logging when both the NTFP economic and social value equals or exceeds the timber value. However, the extent of conflict of use is often culturally and geographically specific, thus complicating taking of necessary steps towards legal protection at broad spatial scales. For example, in the Pokola–Kabo–Loundoungou forest concession in Congo, five species extracted for timber were noted as having no NTFP value yet they were commonly used as NTFPs in south-western and eastern Cameroon. Conversely, one of the most commercially valuable timber species (*E. cylindricum*), is documented as a medicine in central and eastern

Cameroon, but not in the south-west (N'Zala, 2002). The potential for combining timber and non-timber product extraction has been examined in the context of diversified forest management (Rist et al., 2012). Many tropical forests are exploited both commercially for timber and by forest-dependent communities for NTFPs. Divergences between the two uses may have significant implications for forest-dependent livelihoods.

In summary, in the process of forest exploitation, a balanced approach is needed to take into account the interests of both rural communities and timber companies. This will require, among other things, the development and implementation of SFM plans by timber companies, exclusion from harvesting of timber species that are important to local communities, compensation of timber companies for compliance with management plans, and the involvement of rural communities in monitoring the activities of timber companies.

EFFICIENCY IN THE VALUE CHAINS OF WOOD PRODUCTS, FUEL AND NTFPS

Export and import quantities and values of wood and wood products

For the ten countries in CA, the total volume of wood and wood products exported from 2000 to 2010 was about 52.4 million m^3 with mean of 4.8 million m^3 while total imports was 0.5 million m^3 (Table 10). The value of these exported wood products was c. USD 17.4 billion with mean of USD 1.6 billion while the total import value was only USD 880 million (Table 11).

Export and import data on the seven FAO wood categories (industrial round wood, fiberboards, sawn wood, paperboards, pulp for paper, fuelwood and wood based panels) showed varying results across the countries from 2000 to 2010. CA countries are net exporters of industrial round wood, sawnwood, fuelwood and wood based panels, while they are net importers of fiberboards, paperboards and pulp for paper (Figure 1), the latter three being higher value added products. Statistics on further processed wood products, such as furniture, are missing. The most important wood exports were industrial round wood and sawnwood while the most important imports were wood based panels and sawnwood. Countries in CA export and import insignificant volumes of wood fuel.

Trade balances of wood and wood product quantities and values by countries

In terms of trade value balances, Burundi, Chad, Rwanda and Sao Tomé and Principe are net importers, while Cameroon, CAR, Congo, DRC, Equatorial Guinea

and Gabon are net exporters of wood products over the 11 years reporting period (Table 11). However, in terms of quantity imported, Chad and Rwanda are net importers of wood in the region over the reporting period.

Efficiency in trade transactions

CA countries turn out to be less efficient in trade transactions because they earn less from exporting wood raw materials. Indices of exports and imports of wood and wood products volumes and values glaringly show such inefficiencies in the performance of CA countries. The curve on the indices of export/import volumes is consistently above the curve of the indices of export/import values (Figure 2).

Table 10. Export and import volumes of wood and wood products (1000 m^3) from 2000 to 2010

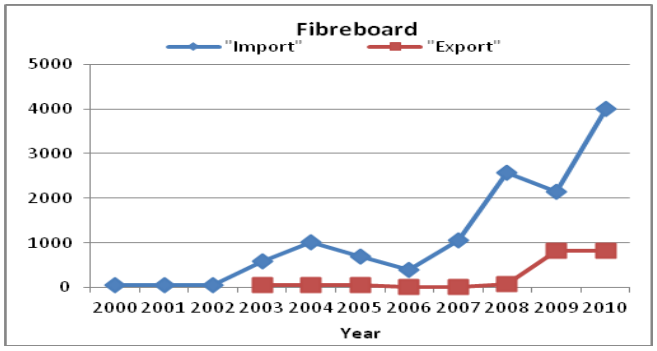
Item	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total
Export												
Fibreboard				0.13	0.14	0.14	0.13	0.13	0.20	0.23	0.23	1.33
Industrial Roundwood	4 572.9	4 059.5	3 174.0	3 553.8	2 977.3	3 311.0	3 722.1	4 082.3	3 776.5	2 943.0	2 782.1	38 954.6
Sawnwood	1 004.1	895.9	828.0	818.3	983.1	1 070.0	1 073.0	1 181.8	1 065.4	849.2	1 245.2	11 013.8
Wood-Based Panels	295.3	202.6	213.5	157.6	236.7	268.8	188.8	223.8	209.2	180.9	221.2	2 398.3
Total export	5 872.2	5 158.0	4 215.5	4 529.9	4 197.3	4 650.1	4 983.8	5 488.5	5 051.8	3 973.8	4 248.9	52 369.9
Import												
Fibreboard	0.44	0.44	0.53	1.46	3.50	2.47	1.31	1.84	3.36	3.33	4.68	23.35
Industrial Roundwood	0.5	0.2	0.2	0.2	0.6	0.6	7.4	7.9	23.5	21.3	6.8	69.1
Sawnwood	18.0	17.6	18.9	19.8	18.8	21.4	30.4	19.3	11.6	7.0	16.9	199.8
Wood-Based Panels	4.8	6.5	18.0	26.4	32.9	18.9	19.6	17.8	23.8	20.4	28.6	217.7
Total import	23.8	24.7	37.6	47.8	55.8	43.4	58.7	46.9	62.2	52.1	56.9	510.0
Index (export/import)	247	209	112	95	75	107	85	117	81	76	75	103

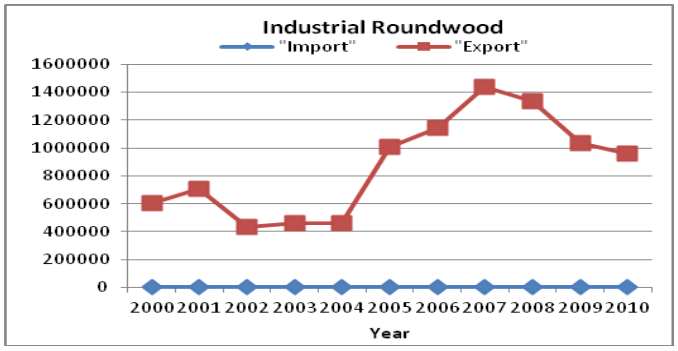
Source: FAOSTAT-Forestry (2011).

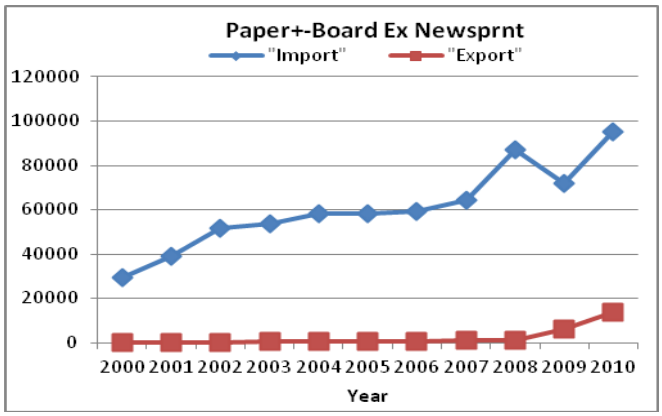
Table 11. Export and import values (1000 US$) of wood and wood products from 2000 to 2010

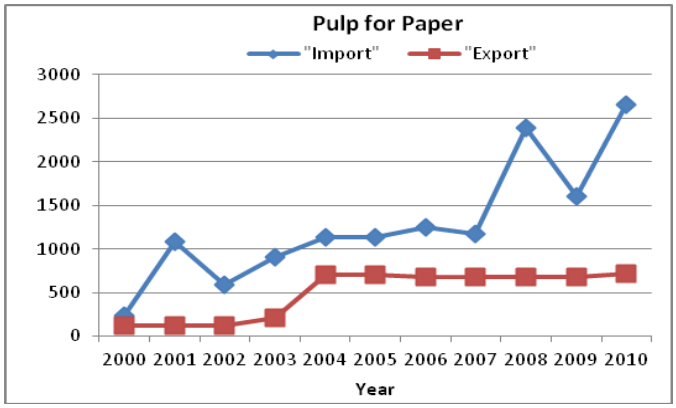
Item	Transaction	Burundi	Cameroon	CAR	Chad	Congo	DRC	Eq. Guinea	Gabon	Rwanda	Sao Tomé Principe	Total
Fibreboard	Export		40	164	1 460	6	105	6	139	11		1 931
	Import	2 893	123	186	1 113	2 003	3 551	745	772	944	287	12 617
	Index	-	0.3	0.9	1.3	0.0	0.3	0.0	0.2	0.0	-	0.2
Industrial Roundwood	Export	3 815	1 182 316	475 526		2 012 897	551 394	999 611	4 358 815	1 299	264	9 585 937
	Import	320	4 427	0	335	118	9 844	0	0	991	100	16 135
	Index	12	267	-	-	17 058	56	-	-	1.3	3	594
Paper Board Ex Newsprint	Export	1 348	1 514	978	8 739	24	6 618	63	1 609	2 780	1 669	25 342
	Import	20 475	372 962	7 481	10 663	51 649	101 504	1 833	67 790	25 352	8 471	668 180
	Index	0.1	0.0	0.1	0.8	0.0	0.1	0.0	0.0	0.1	0.2	0.0
Pulp for Paper	Export			88	1 276	0	699			0	3 304	5 367
	Import	962	6 184	1 056	335	721	1 408	396	1 426	647	1 021	14 156
	Index	-	-	0.1	3.8	-	0.5	-	-	-	3.2	0.4
Sawnwood	Export	563	3 585 219	193 285	6 485	615 276	330 036	15 048	766 390	59	2 936	5 515 297
	Import	47	4 038	754	9 409	503	7 052	892	764	7 182	184	30 825
	Index	12	888	256	0.7	1223	47	17	1003	0.0	16	179
Wood-Based Panels	Export	115	707 027	1 965	2 279	101 700	14 024	168 678	1 247 215	285	718	2 244 006
	Import	9 362	2 880	988	2 293	13 266	16 011	9 904	64 523	17 824	1 108	138 159
	Index	0.0	246	2.0	1.0	8	0.9	17	19	0.0	0.7	16
Total	Export	6 135	5 476 132	672 006	20 239	2 729 903	902 909	1 183 406	6 374 480	4 437	8 891	17 378 538
	Import	34 064	390 614	10 465	24 151	68 260	139 380	13 770	135 275	52 940	11 171	880 090
	Index	0.2	14	64	0.8	40	6	86	47	0.1	0.8	20

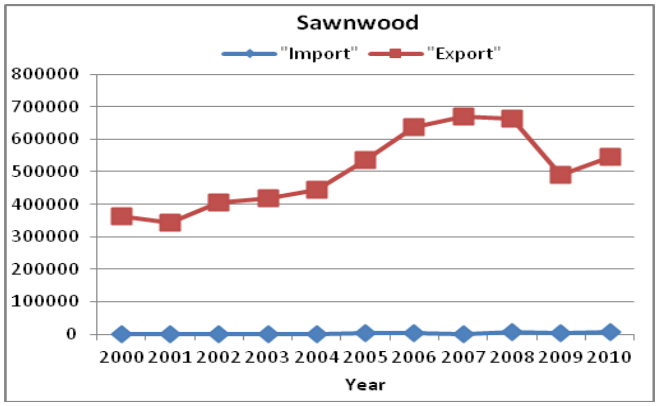
Source: FAOSTAT-Forestry(2011).











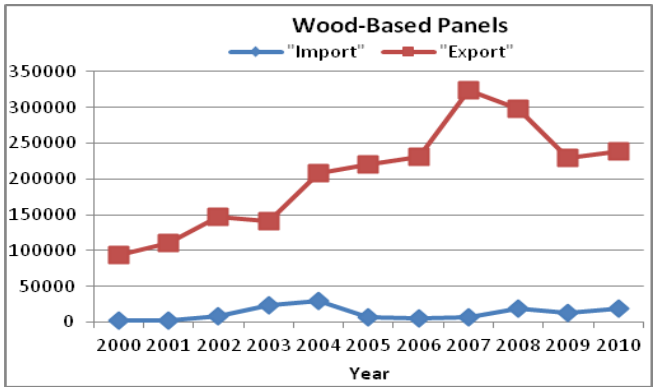


Figure 1. Exports and imports of different wood and wood products from 2000 to 2010 (m^3)

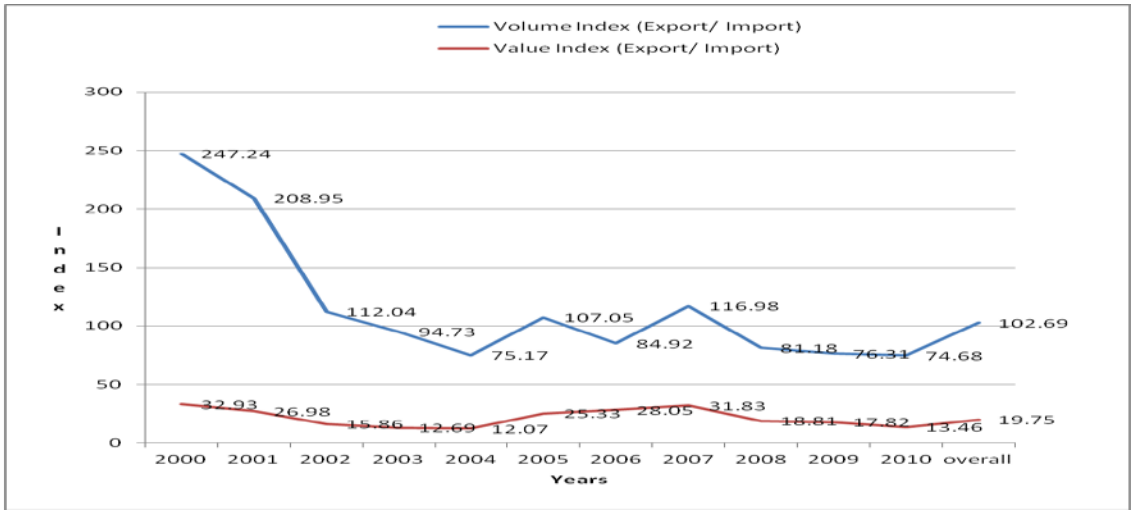


Figure 2. Indices of export/import volumes and values

Variation of export and import quantities of wood and wood products by countries

In the CA region, signification variations exist between countries in terms of the mean quantity of wood and wood products exported and imported. For the period 2000 to 2010, Gabon was the highest exporter (Figure 3) while Chad was the highest importer (Figure 4) of wood and wood products.

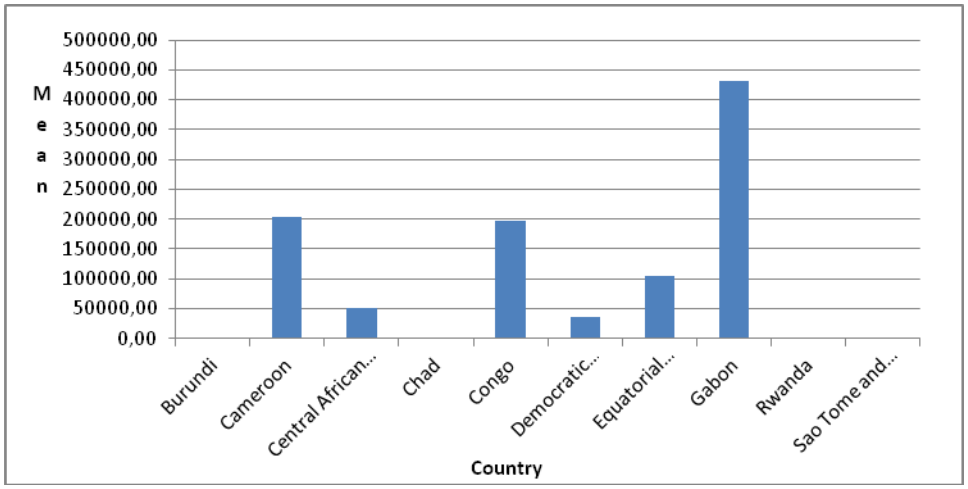


Figure 3. Mean export volume (m^3) of wood and wood products by country (2000-2010)

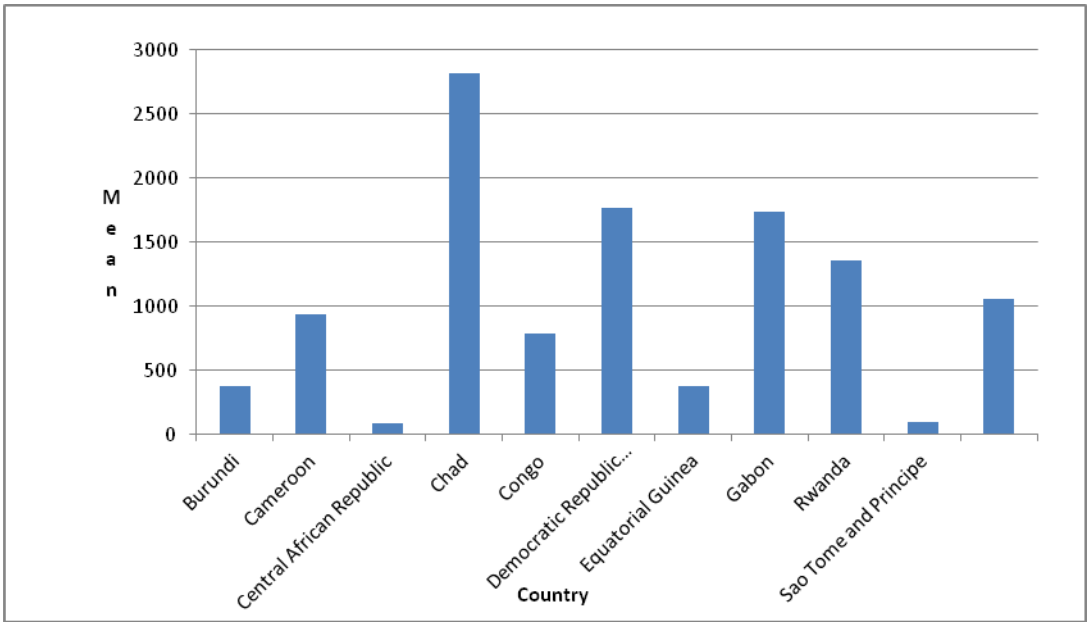


Figure 4. Mean import volume (m^3) of wood and wood products by country (2000-2010)

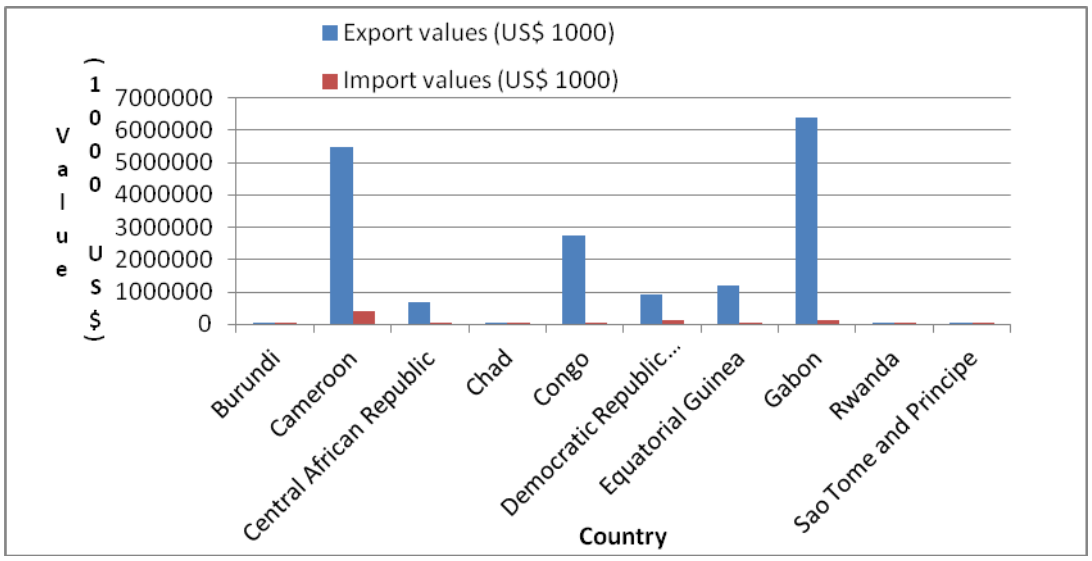


Figure 5. Export and import values (USD) of wood and wood products by countries

Variation of export and import values of wood and wood products by country

As with volumes, signification variations exist between countries in the CA region in terms of the mean values of wood and wood products exported and imported. For the period 2000 to 2010, Gabon was the highest exporter followed by Cameroon and Congo while in aggregate Cameroon was the highest importer (Figure 5 above) of wood and wood products, probably because Cameroon forms the transit point to the port of export for wood and wood products from CAR and the northern part of the Republic of Congo. Moreover, for the reporting period, Cameroon exported no paperboards but imported the same product worth about USD 373 million. This trade imbalance could be avoided by investing in the production of paperboards in Cameroon, given that the raw materials are available within the country.

Trends in volumes of wood and wood products export and import by year (2000-2010)

There is a tendency of no significant differences in the mean annual volume of wood exported from, or imported into the region (Figure 6). This could be associated with the fact that intra-regional trade is still very weak and all the countries depend largely on the same international clients for their exports.

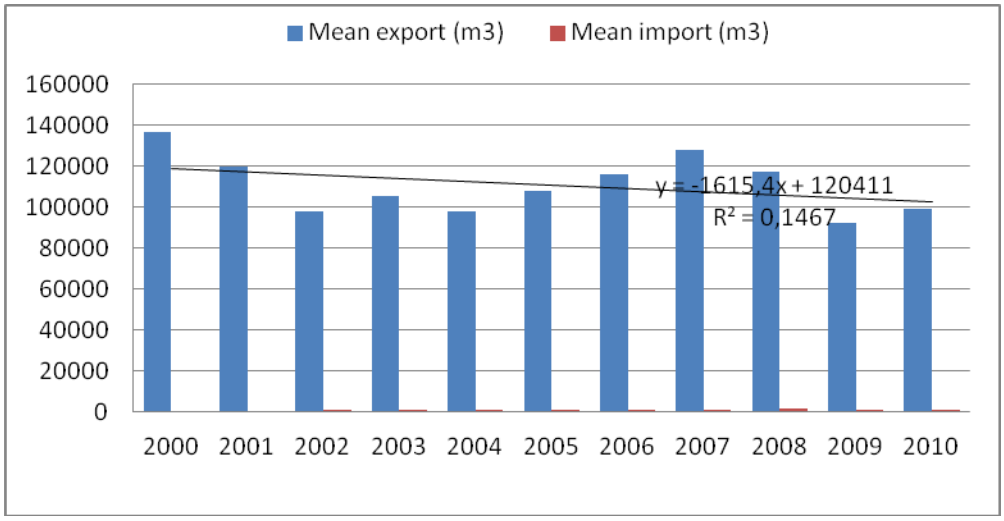


Figure 6. Trends in volumes of wood and wood products export and import by year (2000-2010)

General remarks

The timber sector could form a major driver for economic growth in CA, especially for countries such as Cameroon, DRC, Gabon and Congo. This will require a reduction in the export of industrial round wood and sawnwood and the promotion of the export of wood based panels, paperboards and fibre boards. Further, processed wood products such as furniture and wooden cabinets need to be promoted through improved technologies.

CHAPTER 4 Conclusions and Recommendations

In summary, this analytical review of forest governance and equitable trade practices related to climate change with a focus on the capacities of public forest administration in CA countries, reveals a contradictory overall picture and trend. On one hand, CA is characterized by a high potential of forest resources to contribute to the global concern against climate change issues, nourish forest-dependent people and increase forest products trade flows inside and outside Africa, notably with improved processed wood trade flows. On the other hand, COMIFAC Member States are weak on MRV capacities and financial means, NTFPs trade and monitoring, forest management and related practices, all of which contribute to high rates of deforestation and biodiversity loss.

However, the identified gaps and shortcomings could in all likelihood be improved with adoption of some integrated governance actions in the framework of the Regional Economic Communities (ReCs) that are being built in Africa and the design and implementation processes of both VPAs/FLEGT and REDD+ mechanisms.

To improve and overcome the above identified problems with the current situation of forest governance and trade in timber and NTFPs, and how these relate to climate change, COMIFAC countries must take the following measures:

National public forest administration and climate change:

- each CA country should set up a recruitment plan for the coming years to overcome the lack of sufficient domestic experts in their respective forest administrations. However, in the short term, the lack of appropriate expertise in MRV to better tackle climate change mitigation issues can be supplied by participating in short training sessions and capacity development on national forest monitoring skills, which can be provided and supported by some organisations such as AFF;
- currently, most CA countries (except CAR, DRC) have not yet built vulnerability maps and adaptation policies and related strategies. In this perspective, there is a niche for regional organisations like AFF to give technical support to those countries that are trying to develop such policies and strategies connected to forest management and forest dependent communities.

Forest governance and socio-economic development:

- forest and trade governance must be improved through adequate remuneration and strict disciplinary measures to reduce corruption of custom official, forest officers and local administration and police;
- social and economic development should be promoted, particularly in remote and isolated border areas, and marketing of locally produced wood and NTFPs should be facilitated in those areas to increase competitiveness;
- meet the expectations of the US and European markets to verify the legitimacy of imported timber by initiating or completing ongoing processes (VPA/FLEGT and Lacey Act). Also in this perspective, AFF could be involved (as independent observer) by monitoring, reporting and verifying (MRV) their implementation;

Forest products trade and services:

- increase local wood processing conversion rates. This could further diversify processed products by developing industrial processing and encouraging the use of timber and NTFPs in African countries;
- provide technical support and an enabling market information system as well as value chain platforms for individual and small/medium scale enterprises in countries and cross-border areas. AFF is one of the organisations that can fulfil this role by providing support;
- trade flows of forests products should be monitored, including the issue of cross-border trade, which should be added to the agenda of quarterly, semi-annual and annual bilateral meetings among countries. In this perspective, AFF can play a key role by elaborating and providing facilitating tools;

Cross border trade and deforestation and forest degradation:

- find ways of improving the performance of CEMAC and ECCAS by conducting studies that will lead to a better understanding of the weaknesses and threats to the functioning of these organisations, and advice member countries on the opportunities and strengths for effective regional integration;
- elaborate a framework for the involvement of forest communities through a win-win business development approach with the local and international agro-industrial enterprises involved in the forest sector in the CA region;

Efficiency in the value chain of timber and NTFPs:

- CA countries should increase the efficiency of the forest product value chains by taking stringent measures to reduce the export of raw materials and promoting the production

of processed and further processed wood products such as wood based panels, paperboards, fibre boards, furniture and wooden cabinets. AFF can help in identifying improved technologies that are adapted to national and regional needs;

- there is need to strengthen intra-regional trade and remove cross-border bottlenecks. AFF can assist in conducting research that showcase what countries stand to gain from efficiency in regional trade.

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