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Managing a valuable resource: Policy notes on increasing the sustainability of the DRC's forest production

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List of Acronyms

ACIBO	<i>Permis annuel de coupe industrielle de bois d'œuvre</i> , annual industrial sawn-wood permit
DCVI	<i>Direction du Contrôle et de la Vérification Interne</i> , Internal Monitoring and Verification Directorate
DGRAD	<i>Direction générale des recettes administratives</i> , Directorate general of administrative receipts
DRC	Democratic Republic of the Congo
EU	European Union
FCPF	Forest Carbon Partnership Facility
FIB	<i>Fédération des Industriels du Bois</i> , Federation of Wood Industries
FNCP	Forest and Nature Conservation Project
GDP	Gross domestic product
IDA	International Development Association
MECND	<i>Ministère de l'environnement, de la conservation de la nature, et du développement durable</i> , Ministry of Environment, Nature Conservation and Sustainable Development
NTFP	Non-timber forest products
OCC	<i>Office Congolais de Contrôle</i> , Congolese Control Office

OGF	<i>Observatoire de la Gouvernance Forestière</i> , Independent Forest Governance Observatory
OI-FLEG	<i>Observateur indépendant FLEG</i> , Independent Forest Law Enforcement and Governance Observer
PCA	<i>Permis de coupe artisanale</i> , artisanal felling permit
PCPCB	<i>Programme de Contrôle de la Production et de la Commercialisation des Bois</i> , Timber Production and Commercialization Monitoring Program
FNCP	<i>Projet forêts et conservation de la nature</i> , Forest and Nature Conservation Project
PPP	Purchasing power parity
REDD+	Reducing Emissions from Deforestation and Forest Degradation
RWE	Round wood-equivalent
SGS	<i>Société Générale de Surveillance</i>
SIGEF	<i>Système informatique de gestion forestière</i> , Computerized Forest Management System
USD	United States dollar

Introduction

1. This set of policy notes takes stock of the evolution of the policy, social, economic and physical context of the productive forest sector of the Democratic Republic of the Congo (DRC) since the Bank's landmark 2007 study on the sector (Debroux et al. 2007), making that information available to all interested parties as a common basis for discussion. It is intended to help the government make strategic decisions and propose an agenda for the forest sector's regulatory and institutional reform over the coming years.

2. The DRC's forests constitute one of its greatest natural resources. Covering about half of the country—nearly 150 million hectares—they provide, among others, foreign exchange earnings, employment, timber, fuel wood, non-timber forest products, and environmental services of local and national importance, in addition to carbon sequestration of global importance. Representing some seven percent of the world's tropical forest surface, they are also a significant source of income and asset generation for many of the 59 percent of the country's population that live in rural areas, among them many of the country's poorest (Wunder et al. 2014).

3. However, the DRC's forest sector faces severe challenges: Forests are currently rarely managed sustainably, such that deforestation and forest degradation have accelerated. While this means that substantial areas of forests are lost annually, the DRC's forests are far from achieving their potential to contribute to national development, including delivering on their substantial poverty reduction potential. State revenues from the formal forest sector are significantly below formally assessed rates, and informal logging dominates the sector. A timber processing industry of sufficient capacity to serve even the domestic market is virtually nonexistent, such that very little value is added domestically. The forest sector faces significant governance challenges. Given the country's size, broader governance shortcomings, and the Ministry of Environment, Nature Conservation, and Sustainable Development (MECND)'^s limited budget, the government's control over forests is extremely limited. The country's resulting low level of forest governance, in addition to having detrimental effects on the sustainability of the sector and depressing its contribution to gross domestic product (GDP), also poses significant risks to ongoing efforts to establish Reducing Emissions from Deforestation and Forest Degradation (REDD+) programs.

4. The DRC has nevertheless made some important progress on its forest governance over the last years. This includes the conversion of 80 concession titles, 57 of which have been retained and have short-term management plans and social clauses attached to them. Further, an independent forest sector watchdog has been able to uncover improprieties and have them be addressed by the government in a limited way. Progress – albeit slow – has also been made in equipping the 2002 Forest Code with decrees enabling its implementation.

5. At the same time, the DRC does not currently have a forest policy, which results in a lack of strategic direction for the sector. This is not helped by the fact that the political attention the sector receives remains low owing to its comparatively limited current revenue generation. In the face of a rapidly growing population, swift economic growth, and improving infrastructure, pressures on the DRCs forests will only continue to increase, highlighting the urgency of improving control over the sector (Megevand et al. 2013). The DRC's extremely low levels of human development and economic development imply that the country can no longer afford to let languish the potential for this resource's contributions to the country's development.

6. In other words, the DRC is at a crossroads. The new community forest decree (August 2014), ongoing land reform initiatives, land-use zoning/planning, and the possible development of various emission reductions programs under REDD+, are all likely to have a significant impact on the forest cover and on forest-dependent communities. It is thus of critical importance to comprehensively assess the challenges for forest governance in DRC.

7. In the absence of a national forest policy, the Policy Notes take the stance that the country's forest resources should 1) be utilized sustainably, striking an appropriate balance between conservation and income and wealth generation with a view to ensuring a flow of benefits over the long term, 2) benefit local populations with due regard to the rights and interests of disadvantaged segments of society, including indigenous peoples, and 3) increase their contribution to national development through productive uses and innovative financing mechanisms, including REDD+.

8. In addition to taking stock of the DRC's forest sector (Setting the Context), this set of policy notes therefore builds on lessons learnt under the IDA-funded Forest and Nature Conservation Project (FNCP) to recommend a way forward in three broad areas:

- 1) Policy Note 1 presents options for regulating informal and semi-formal timber harvesting in an effort to increase government revenues, control unsustainable logging practices, reduce options for abuse of the artisanal logging permit system, ensure greater benefits to communities, resolving key legal and institutional issues, including the 2005 moratorium on new concessions, and engaging in macro-zoning and spatial planning to reduce conflicts over land use.
- 2) Policy Note 2 presents options to raise the forest sector's contribution to poverty reduction and shared prosperity by evaluating the options currently being discussed for community involvement in forestry operations.
- 3) Policy Note 3 presents options for developing cost-effective avenues for increasing the legality of wood production.

9. The policy notes focus on the productive forest sector, and primarily on wood production. The artisanal sector was included for analysis as it constitutes the near-entirety of wood production in the country. It has significant potential for improving its contributions to national development and its sustainability. The industrial sector, on the other hand, provides the sector's main current flow of financial resources for the government. Optimizing this amount should be a priority both for improving oversight – and therefore sustainability – and its financial viability. In the longer term and given substantial reforms,

this part of the sector could also increase its share to national development. However, ensuring legality across all parts of wood production is a significant challenge, and must be phased appropriately. Without it, the sustainability of production cannot be increased, and several connected forest management efforts – including those under the REDD+ process – will be significantly harder to achieve. Moreover, an adequate flow of benefits to local populations must be ensured. Finally, many stakeholders are pinning substantial hopes on community forestry as a vehicle for increasing forests’ benefits for local populations. While this potential does indeed exist, it is important that the design allows local communities and indigenous populations with legitimate claims to the forest estate to benefit appropriately, while minimizing the potential for abuse.

10. The Policy Notes identify and detail a series short-term (1-3 year time horizon) and long-term (3-5 year time horizon) policy priorities in selected key domains. These are summarized in the following table:

Table 1: Summary of priority actions

Topic	Short-Term Action	Long-Term Action
Moratorium	<ul style="list-style-type: none"> - Ensure that the legal requirements for lifting the moratorium are fulfilled - Develop a policy framework with clearly stated sustainability and poverty reduction objectives and criteria to analyze the opportunities, constraints, and risks of lifting the moratorium 	<ul style="list-style-type: none"> - Apply the policy framework on the moratorium - Develop and implement a system that can credibly ensure the sustainable use of any new concessions
Revenue Generation	<ul style="list-style-type: none"> - Simplify the tax regime by reducing the number of taxes and collection agencies, consider instituting one-stop shops for payments - Move tax collection points further downstream in the value chain - Review the level of fines in the sector - Clarify the legal basis of certain taxes - Disseminate information about the tax regime - Facilitate the expansion of the Extractive Industries Transparency Initiative to the forest sector - Analyze the possibility of creating an arms-length, self- 	<ul style="list-style-type: none"> - Increase the proportion of MECNDD staff dedicated to law enforcement, decentralize their operational bases, and improve their working conditions - Develop a publicly accessible, audited tracking system for forest-related taxes and fees - If appropriate following analysis, create an arms-length, self-financing oversight body for the forest sector

	financing oversight body for the forest sector	
Artisanal Logging	<ul style="list-style-type: none"> - Clarify the legal authority for issuing artisanal permits - Review fee levels for artisanal permits and decentralize their issuance - Publicize official tax and fee rates - Evaluate changing the basis for artisanal permits from the area harvested to the volume harvested - Subdivide the artisanal logging category to accommodate the varying scales of production, and institute gradually more stringent requirements with mounting volumes - Institute a standardized social responsibility contract for larger artisanal producers - Allow the use of mobile saws in artisanal logging 	<ul style="list-style-type: none"> - Limit exports to products of legal origin - Organize artisanal producers into associations or cooperatives
Zoning	<ul style="list-style-type: none"> - Continue micro-zoning efforts locally - Harmonize sectoral laws with the 2006 constitution to facilitate land-use planning - Commence a macro-zoning process in pilot areas 	<ul style="list-style-type: none"> - Initiate land-use planning, commencing with pilot areas
Community Forestry	<ul style="list-style-type: none"> - Develop overriding policy goals for decentralized forestry - Organize an inclusive discussion to reconcile the views of proponents favoring forestry approaches based on decentralized territorial entities and those favoring communities as a basis - Select one or several approaches to decentralized forestry 	<ul style="list-style-type: none"> - Test the approach(es) chosen in pilot sites
Illegal Logging	<ul style="list-style-type: none"> - Limit exports to products of legal origin - Improve the granting of logging permits 	<ul style="list-style-type: none"> - Apply lessons from pilot areas and increase the scope of control

	<ul style="list-style-type: none"> - Institute control of legality of fuel wood for processing units and major transport axes in a pilot area - Develop a timber tracking system in a pilot area, learning the lessons from past experience 	
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11. The topics in this set of Policy Notes are not intended to ensure comprehensive coverage of all issues related to forests, but rather to identify key intervention areas with significant potential impacts on the forest stock and the well-being of forest-dependent people. Thus, the Notes do not cover important sources of forest-derived wealth such as biodiversity and its conservation, or non-timber forest products. Furthermore, aspects relevant to REDD+, including addressing the effects on forests of subsistence agriculture and of fuel wood consumption, are covered in numerous studies and approaches funded under that process, including with financing from the Forest Carbon Partnership Facility, the Forest Investment Program, and the UN-REDD Program. More detailed lessons from the FNCP are the subject of a World Bank implementation completion report.

12. It is clear that the DRC does not have the means to tackle this agenda by itself. The substantial REDD+ financing the DRC has access to presents a significant opportunity to achieve some of the reforms and investments proposed in this study. The DRC's REDD+ National Investment Framework 2015-2010, and its derivative National Investment Framework that has been submitted to the Central African Forest Initiative (CAFI), outline many of the investments needed to increase the sustainability of the country's forest sector. Indeed, the REDD+ process has also functioned as an important locus for policy dialogue, through which it found its way into multi-sector dialogue fora, such as the Economic Governance Matrix. With REDD+ constituting by far the most important financing instrument for the DRC's forest sector, the country is well advanced in planning its priority investments. Nevertheless, current investment planning suggests that REDD+ resources in and of themselves will be insufficient for achieving the recommendations of this report. The government and donors are thus called upon to investigate opportunities for additional financing for the sector.

13. The evolution of the DRC's forests depends on a significant shift of the status quo – among producers and the government – which is leading to the accelerated depletion of the forest stock. The proposals in this set of Policy Notes are intended to contribute to that shift. Their realization depends on a recognition of the role forests play in the country's development and in the lives of many of its poorest inhabitants, and in a resulting willingness to change the way of doing business in the forest sector, led by the highest levels of government.

Setting the Context: An Overview of the State of the DRC's Forest Sector

Julian Lee, Lisa Hubert (FAO)

1. Introduction

14. This overview chapter serves to set the context for the three policy notes on the DRC's forest sector in this volume. It provides a comprehensive analysis of the formal and informal sectors, and estimates the economic role of the sector beyond what previous studies have done to date. It first briefly sets the development context of the sector, then presents the results of an economic modeling exercise to assess the sector's current economic, employment and revenue contributions; portrays deforestation trends; analyzes the actors in the forest sector; makes forecasts of future wood supply and demand; and lastly summarizes the sector's governance situation.

15. The economic value of the DRC's forests is often underestimated. This results from significant data gaps, the fact that many studies estimating the economic activities focus on only one section of forest production (e.g., industrial logging, artisanal logging, or fuel wood), that they are frequently limited in geographical scope, and the inherent difficulty in calculating some economic values (especially ecosystem services).

16. This chapter seeks to overcome some of these limitations by combining the most rigorous of the sectoral analyses carried out to date into a single model. The model then carefully extrapolates their findings to achieve broader geographic and sectoral coverage.¹ The model produces a fuller picture of the economic importance of the DRC's forests than was previously available. It further enables us to present predictions of future trends in terms of wood demand and consumption, as well as its impacts on the forest stock. The analysis conducted builds on a two-fold approach that analyses both supply- and demand-side data to bridge data gaps and triangulate information. All results provided are for 2010, the last year for which relatively complete data were available across the various themes analyzed. This approach was chosen to allow for comparability across sub-sectors. It is fair to assume that, given the broad lack of forest governance in DRC, current figures are in most, if not all respects, worse than those calculated for 2010. While the availability of reliable and detailed data on the forest sector in the DRC remains a major obstacle to accuracy, orders of magnitude can be derived using this approach. Although the model is not an econometric one, and it thus has important limitations in terms of the varying respective influences on supply and demand, it does permit the derivation of broad trends.

2. Socio-Economic Context

17. The DRC faces a challenging development context, with the 2014 Human Development Index placing the country 186th of 187 countries. GDP per capita is very low, at US\$ 484 per year (current US\$), or US\$ 809 at purchasing power parity (PPP) – by both

¹ The paper describing the model and its methodology, limitations, assumptions, and results in detail is included in Annex 1 of this compendium.

measures, the DRC is one of the very poorest countries in the world. GDP per capita growth has been quite strong (4.5% annual average 2010-2013), but since a sizeable portion of this has been driven by the mining sector, whose profits are mainly repatriated by foreign companies, the contribution to poverty reduction other than through government revenue generation is assumed to be limited. Thus the poverty rate using national the poverty line stood at 63.6% in 2012, with levels slightly higher in rural areas (64.9%) than in urban ones (61.6%) (all figures from World Bank 2015). However, when using a poverty line of US\$ 1.25/day at PPP, the poverty rate is estimated at 87.7% (data from UNDP 2014). Income inequality in the DRC is relatively high, with the latest available Gini coefficient (2006) of 44.

18. The majority—58%—of the DRC’s 67.5 million inhabitants live in rural areas. The population is growing rapidly at 2.7%, and urban population growth (4%) outpaces rural population growth (1.8%) (World Bank 2015). Combined with rural-urban migration, this reflects an urbanization trend in which Congolese cities are gaining approximately 0.5% of the country’s total population each year (based on UN-DESA Population Division 2014).

19. Economic growth has been brisk for the last few years, averaging 7.4% in between 2010 and 2013. Tax revenues are low at 13% of GDP, limiting the government’s fiscal space and its ability to invest in development while simultaneously maintaining macroeconomic stability (World Bank Group 2014). The government’s budget was US\$ 8.02 billion in 2014 (Ministère du budget 2014), but budget execution rates were low at 49.5%.

20. In short, poverty in the DRC is extremely high and persistent, rural populations are particularly affected, and the government’s ability to invest in poverty reduction is limited.

3. The role of forests in the DRC’s economy

a. Economic value

21. Based on a model constructed for the purposes of this study (see p. 15²), we estimate the total value of the forest sector—round wood, sawn wood, and energy wood—to be around US\$ 1.77 billion per year.³ This represents 8.2% of GDP. Formal wood production (industrial + formalized artisanal) accounts for around 0.37% of GDP in 2010 (US\$ 80 million), of which 0.33% and 0.04% are from industrial concessions and artisanal permits, respectively. Informal wood production (including wood fuels) is valued at US\$ 1.69 billion and represents 96% of total sector value (7.8% of GDP).

22. This figure could be higher yet if more value were added locally. However, over the years, some 85% of legally exported wood has been in the form of logs (authors’ calculation based on de Wasseige et al. 2014). The low local value added can in large part be traced back to the general difficulty of doing business in the DRC: the country ranked 184th out of

² All quantitative analytical results presented in this study not otherwise attributed to specific sources rely on outputs of this model.

³ Given the assumptions necessary to arrive at these numbers, we carried out a sensitivity analysis. The biggest impact on the value of the sector stems from per capita consumption rates of wood fuel and sawn wood (just over 1:1), followed by changes in domestic market prices (1:0.75).

189 countries in the most recent *Doing Business* report, notwithstanding significant reform progress over the previous year (World Bank 2014).

23. Not included in the above estimate of the overall sector value due to the difficulty in obtaining reliable data are: bushmeat, estimated to be about US\$ 740 million (Valimahamed 2014); some US\$ 8 billion in other forest foods; medicines, materials and implements (Debroux et al. 2007); as well as watershed protection valued between US\$ 0.1 and 1 billion (ibid.) , and other ecosystem services. The carbon resources stored in the DRC's forests – 19.6 billion tons of carbon or 71.9 billion tons of CO₂e in living forest biomass (FAO 2011) – have a value of US\$ 360 billion when using a shadow carbon price of US\$ 5 per ton of CO₂e. REDD+ pre-investment and investment projects valued at several hundred million dollars are currently seeking to capitalize on this wealth. In addition, the cultural value of forests is not accounted for.

24. The forest sector – in particular industrial forestry – also plays an indirect role in supporting rural economies that is not accounted for in the model. For example, barges operated by forest companies are frequently the only commercial link to urban centers, representing an important trade link (Fétiveau and Mpoyi Mbunga 2009). In addition, the 57 social contracts concessionaires have signed provide US\$ 13 million in direct contributions to local communities over the first four years of their operation. Other indirect multiplier effects are also not included in our estimate. It is important to note that much of these revenues accrue in rural areas where other sources of economic activity are limited.

b. Employment and Poverty Reduction

25. Although there is only scarce information on employment per subsector, a conservative estimate across all subsectors evaluates at 519,000 the number of full-time equivalent jobs in forestry.⁴ The formal forest sector's share in this is estimated to be about 13,250, which represents 3% of total sector employment, and 4% of formal employees in the country (authors' calculation based on data reported in EITI DRC 2014). Overall, the forest sector represents around 2.13% of the economically active population⁵ in the DRC. For comparison, the mining sector's formal employment at 78,000 (EITI DRC 2014) is larger than that of the formal forest sector, however the informal sector employs similar numbers of people in both sectors. The wood fuel subsector constitutes the majority of the forest sector's employment, at 90%. The decentralized nature of the sector means that this employment is generated in rural areas where few alternative jobs exist, increasing their relative value.

26. The large proportion of the DRC's population that lives in rural areas and the high levels of rural poverty bestow a particular importance on forests. In the primary forest provinces, a clear majority of the population lives in rural areas: 69.3 percent in Bandundu, 69.5 percent in Equateur, 75.1 percent in Maniema, and 69.8 percent in Orientale. Rural poverty rates in these provinces are high: 75 percent in Bandundu, 74 percent in Equateur,

⁴ This estimate excludes collection of rural fuel wood supplies, which would add significantly to this number.

⁵ Population available to work (employed and unemployed working age population).

69.7 percent in Maniema, and 53.5 percent in Orientale (all figures from World Bank forthcoming).

27. Forest-based income and asset generation play an important role for the rural poor: They support consumption, constitute a safety net in response to shocks, and can play a role in households' efforts to construct a pathway out of poverty. While forest dependence and income are commonly negatively related, forests play an important role in wealth creation including for wealthier households (Nielsen et al. 2012). Unsustainable forest management therefore poses a challenge for the rural poor.

c. Government Revenues

28. One of the most important information gaps in the DRC's forest governance is on the tax revenues generated. The taxation regime is so complex that it is difficult to obtain a clear picture of how many taxes and fees a forest company needs to pay. A study by the industrial forestry trade association puts the number at 108 along the supply chain (Fédération des Industriels du Bois, n.d.).

29. Our model tries to estimate the revenues from taxes and fines by triangulating the following data: (i) taxes paid by the formal and informal⁶ subsectors based on field data from empirical studies; (ii) taxes and fines collected (CTR 2012); and (iii) taxes due for the subsector where no other source of information was available. Nevertheless, it is important to stress that our results are only a rough estimate. On this basis, the formal forestry taxes paid at all levels are around US\$ 54 million. This represents only 3% of the revenues generated in the sector, which is due in part to the fact that the vast majority of forestry operations are informal. Nevertheless, the informal artisanal sector generates 78% of the tax revenues, and industrial concessions 22%. Wood fuel and sawn wood account for 62% and 27% of the forestry tax revenues, respectively. On the basis of the volumes produced and the total market value of each productive subsector, the formal industrial subsector is subject to a very high taxation rate compared to the informal subsector. Although it represents only 0.74% and 4% of the total volumes produced and the sector value, respectively, it generates more than 22% of forestry taxes. The informal sector generates US\$ 1.26 of taxes per cubic meter of round wood-equivalent (RWE) produced, whereas concessions generate US\$ 47/m³. A large share of the forestry taxes on the formal industrial production stems from the export tax. When removing these *droits de sortie*, the share of industrial forestry taxes drops from 36% to 10% and the average taxation rate decreases to US\$ 13/m³ produced, which is still an order of magnitude greater than the effective informal sector tax rate.

30. The large difference in taxation and regulation between industrial and artisanal loggers creates competitive disadvantages for concessionaires, and creates disincentives to enter the formal forestry space.

⁶ Informal actors usually escape the VAT and national taxes but do pay other taxes, especially at the local level.

Table 2: Forestry taxes paid and forestry taxes as percentage of subsector value

	Forestry taxes paid (M US\$)		Forestry taxes	
	2010	%	per RWE (US\$/m3)	% of subsector value
Consumption	54	100%	1.60	3%
Wood fuel (domestic market)	34	62%	1.18	3%
Sawn wood	15	27%	2.76	4%
Domestic and neighbouring countries' markets	11	20%	2.04	3%
International markets	4	7%	46.76	11%
Round wood (international markets)	6	11%	46.76	23%
Production	54	100%	1.59	3%
Formal industrial	12	22%	46.8	16%
Without export-related taxes	3	6%		
Formal artisanal	0.23	0.4%	2.68	3%
Informal artisanal	42	78%	1.26	3%

Formal production only	Unit	Forestry		Mining
		CTR 2012	OFAC 2010	CTR 2012
Total collected by sector				
Forestry taxes collected	US\$	6,891,693	14,514,329	na
Total taxes collected	US\$	9,043,827	na	381,834,478
Average taxation by unit of production				
Forestry taxes	US\$/m3	47	58	na
Without export related taxes	US\$/m3	13	47	na
Total taxes	US\$/m3	61	na	na

31. Tax recovery rates in the forest sector are not only dismally low, but also not transparent and therefore hard to clearly evaluate and subject to abuse. Even within the MECNDD there are several agencies that have a role in revenue assessment, but there is no unified system for monitoring revenues collected against revenues due, as amounts on the *notes de débit* issued by MECNDD to assess taxes and the *notes de perception* issued by the Ministry of Finance (DGRAD) frequently do not match. No external audits of the MECNDD have been published since 2002 (Lawson 2014). The Independent Forest Law Enforcement and Governance Observer (OI-FLEG) attempted to analyze taxes collected, but was only able to obtain data on three of the five forestry-related taxes. It concluded that on these three taxes alone, at least US\$ 3.4 million in assessed taxes remained uncollected (28% of the total due), and US\$ 1 million (7%) in 2011. This resulted in part from government not invoicing the full amounts due (REM 2013b). A more recent analysis puts subsequent recovery rates much lower (2012: 23.3%; 2013: 11.9% and 2014: 18.2%) (REGED 2014). While it is possible that the performance decreased this markedly, these grossly differing values may also simply illustrate the difficulty of obtaining a clear overview. The picture has gotten even murkier with the transfer of responsibility for area, reforestation, *permis annuel de coupe industrielle de bois d'œuvre*, and *permis de coupe de bois artisanal* (PCA) taxes and fees to the provinces, as provinces generally do not communicate the amounts assessed and collected to the central authorities.

d. Projections of future demand and production

Box 1: The model that underlies the calculations in this series

To inform the analysis, this study sought to project the growth of wood product demand and production to derive lessons and priorities for the DRC's forest sector. The availability of reliable and detailed data on the forest sector is the main obstacle to any type of quantitative analysis in the DRC. To overcome this challenge and evaluate both the current scope of the forest sector and its future trends, the present analysis built a model that uses both supply and demand data to bridge data gaps and triangulate information. The scope of the exercise did not permit the construction of an econometric model that accounts for the often interlinked nature of the explanatory variables included. In the absence of such a model and based on the limited quantitative data available, the present analysis attempted to estimate the single impact of selected variables on the various subsectors. It did so by analyzing 1) demand drivers (domestic and regional demand for wood energy and sawn wood, and international demand for round and sawn wood), the rise of non-wood energy, regional wood production, economic growth, population growth, urbanization, and international demand, and 2) supply drivers (agricultural expansion, fuel wood collection, and transport infrastructure development; prospective data on the cost of capital, mining development, and legislation on concessions was insufficient to allow for inclusion).

The analysis was performed using a combination of typologies related to the type of products (logs, sawn wood, charcoal, fire wood), geographic market (domestic, regional, international), production unit (industrial, artisanal) or producer (concessions, artisanal, informal). The model only encompassed wood products. Non-timber forest products (NTFPs), bush meat, and ecosystem services were not included. A dual approach was adopted as presented in the following table:

Consumption markets		Productive subsectors	
C1	Domestic wood fuel consumption	P1	Formal industrial production (concessions)
C2	Domestic sawn wood consumption	P2	Formal artisanal production (artisanal permits)
C3	Neighboring countries' sawn wood consumption	P3	Informal production
C4	International round wood consumption	P4	Imports (not included) ¹
C5	International sawn wood consumption ¹		

The analysis mainly capitalizes on two sets of quantitative data available on the forest sector in the DRC: (i) data related to the volumes of wood fuel and sawn wood traded on local markets (CIFOR, GIZ and IOB); and (ii) data related to the formal industrial production. The model assumed that the first set of data captures both current consumption and current production, mainly from the informal artisanal subsector. The second set of data reflects the production side only and refers almost exclusively to formal industrial production. The main information gap is for the formal artisanal subsector (artisanal permits) as the official data available are merely theoretical.

For each of the consumption markets and productive subsectors, a snapshot of the current situation was taken in terms of volumes produced, surface area-equivalent, gross

value, tax revenues and employment, whenever enough quantitative data was available. Prospective analysis estimates future trends over a 25-year period at constant prices. The model uses 2010 as the base year as this is the last year for which a reasonably comprehensive and therefore comparable set of data was available.

A number of assumptions are summarized in the following table:

Issues	Assumptions
<i>Urban vs rural (C)</i>	Both urban and rural consumption are taken into account.
<i>Domestic vs industrial (C)</i>	The consumption per capita ratios include all types of end users. There is no information on wood that might be directly procured by larger companies but we assumed that most of the volumes consumed by enterprises are transiting through wholesalers and retailers.
<i>Domestic vs regional (C)</i>	For sawn wood, the model includes domestic consumption and to some extent consumption of neighboring countries. The share of exports was quantified separately based on empirical studies. Wood fuel is assumed to be consumed at national level only (no exports).
<i>Double-counting of areas (C)</i>	Some of the wood fuel traded on local markets is a “sub-product” of artisanal sawing. When calculating the corresponding forest areas by subsector 15% was removed from the wood fuel subsector to avoid double-counting with the area corresponding to sawn wood production.
<i>Products and markets (P)</i>	Assumptions were made to estimate the share of round wood and sawn wood production sold on local markets or international markets for the formal industrial subsector and applied to the formal artisanal production as well.

Incomplete data limited the treatment of the following issues: (i) fiscal impact: no uniform, reliable and comprehensive information was available on overall tax revenues generated by the subsectors, wood-related forestry tax revenues, tax revenues per administrative entity (central, provincial), actual revenues collected vs taxes due, etc.; (ii) the regional dimension: in the absence of detailed information on regional trends, the model applied a simplified estimation of the flows going to neighboring countries; (iii) employment: no data is available on the formal artisanal subsector and only a rough estimate for the industrial subsector in 2010, with no information on what share of that labor force is “fixed” vs “variable”; (iv) the economic valuation of the subsectors: the valuation in monetary terms is limited to the financial gross value of each subsector based on market prices (no economic valuation based on economic prices and quantification of CO₂ value and other externalities); and (v) reliable production costs to evaluate and compare the market potential of domestic industrial and artisanal production and of the former with imports, in particular for processed wood. The second limitation is linked to the methodology used for the dynamic analysis. It is not possible to isolate and evaluate the differentiated impact of each driver on future trends in the absence of a rigorous econometric model.

32. Demand is expected to rise sharply by 35% by 2020 compared to the 2010 baseline, and by 77% by 2030 and 127% by 2040, respectively (see

33. Table 3), mainly as a result of the combined effect of the increase in wood fuel and sawn wood consumption per capita and urban population growth. Wood fuel demand will continue to represent most of total demand, with an estimated 81% in 2040. International demand will remain a marginal element of overall demand as a result of much lower annual

consumption growth⁷, assuming exports from the DRC do not become significantly more attractive than those from competitor markets (production costs at present are comparatively high).

34. In all scenarios, industrial production remains limited compared to the other productive subsectors even if the moratorium and the other constraints are lifted.

Table 3: Future demand and production in RWE volumes

	Volumes in RWE (M m3)							
	2010	%	2020	%	2030	%	2040	%
Consumption								
Wood fuel (domestic market)	28	84%	38	83%	49	82%	62.9	81%
Sawn wood	5.4	16%	7.7	17%	10.6	18%	14.1	18%
Domestic	4.8	14%	6.9	15%	9.4	16%	12.5	16%
Neighbouring countries	0.5	2%	0.8	2%	1	2%	1.4	2%
International markets	0.09	0.3%	0.1	0.2%	0.1	0.2%	0.1	0.2%
Round wood (international markets)	0.12	0.4%	0.2	0.4%	0.2	0.3%	0.2	0.3%
TOTAL CONSUMPTION	34		46		60		77	
	<i>Growth compared to 2010</i>		35%		77%		127%	
Production								
Formal industrial	0.25							
Expansion of concessions +40% (2010)			0.9		1.1		1.1	
Intensification of concessions (5m3/ha)			1.1		1.4		1.4	
Expansion and intensification			1.2		1.9		1.9	
Informal artisanal - agriculture expansion	33.6							
0.17% net deforestation + 38m3/ha extraction rate			9		9		9	
0.30% net deforestation + 38m3/ha extraction			16		16		16	
0.40% net deforestation + 38m3/ha extraction			21		21		21	
TOTAL PRODUCTION	34							
Minimum production			10		10		10	
% of domestic demand			22%		17%		13%	
Maximum production			23		23		23	
% of domestic demand			50%		39%		30%	

Minimum production = scenario with minimum industrial and artisanal production (low deforestation rate, low extraction rate, no expansion of concession, no intensification of industrial production)

Source: Authors' calculations

4. State of the DRC's Forests

a. Deforestation Trends

35. Large tracts of the DRC's forests are part of the Congo Basin forest complex, the second-largest tropical rainforest in the world. In 2010, they covered nearly 148 million ha (Kim, Sexton, and Townshend 2015). This tremendous resource serves as a basis for economic activity, livelihoods, and the provision of ecosystem services.

⁷ Most of the wood exports of the DRC have been shifting towards Asian markets in the past few years. In the absence of other alternative proxies and data, the model uses the annual consumption growth of Asian markets as a proxy to estimate future international demand. Limitations to this approach include among others: (i) no information on the share of Asian countries' imports coming from Africa; and (ii) no specific information on tropical wood, which represents a very specific market and cannot be substituted by non-tropical wood.

Owing to the data-poor environment of the DRC, several concepts of forest loss are used below to describe trends:

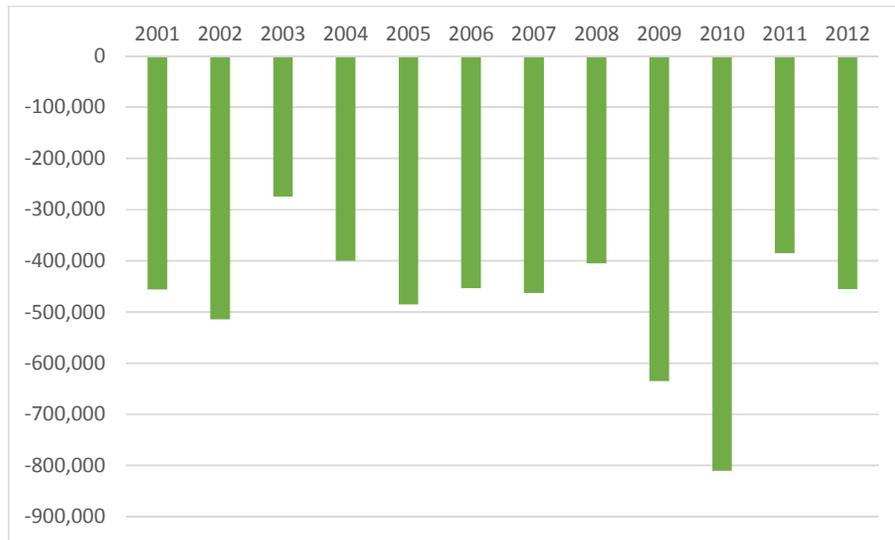
- Deforestation describes the removal of forest cover and subsequent conversion of forest to non-forest land uses.
- Gross tree cover loss: “‘Tree cover’ is not the same as ‘forest cover.’ ‘Tree cover’ refers to the biophysical presence of trees, which may be a part of natural forests or tree plantations. Thus, loss of tree cover may occur for many reasons, including deforestation, fire, and logging within the course of sustainable forestry operations. In sustainably managed forests, the ‘loss’ will eventually show up as ‘gain’, as young trees get large enough to achieve canopy closure.” (Hansen et al. 2013) Accordingly, gross tree cover loss refers only to the loss of tree cover, not accounting for potential regrowth. However, losses without commensurate gains over longer time horizons in locations with well-established deforestation trends can help confirm deforestation.
- Primary forest loss describes degradation and loss of primary forests, “defined as mature dense natural forests with tree canopy density above 60%.” (Zhuravleva et al. 2013)

While these concepts cannot be used interchangeably, they do illustrate closely related trends.

36. While still comparatively intact, the DRC’s forests are shrinking and being degraded. The overall deforestation rate is lower than in many other tropical countries, however it is by far the highest in Central Africa (see Figure 2). The decadal rate of deforestation has picked up pace over time, rising from 0.67% for the 1990s to 2.79% in the decade between 2000 and 2010 (Kim, Sexton, and Townshend 2015), and within that latter period between the 2000-2005 and 2005-2010 intervals by 13.8% (de Wasseige, Marcken, and Bayol 2012).

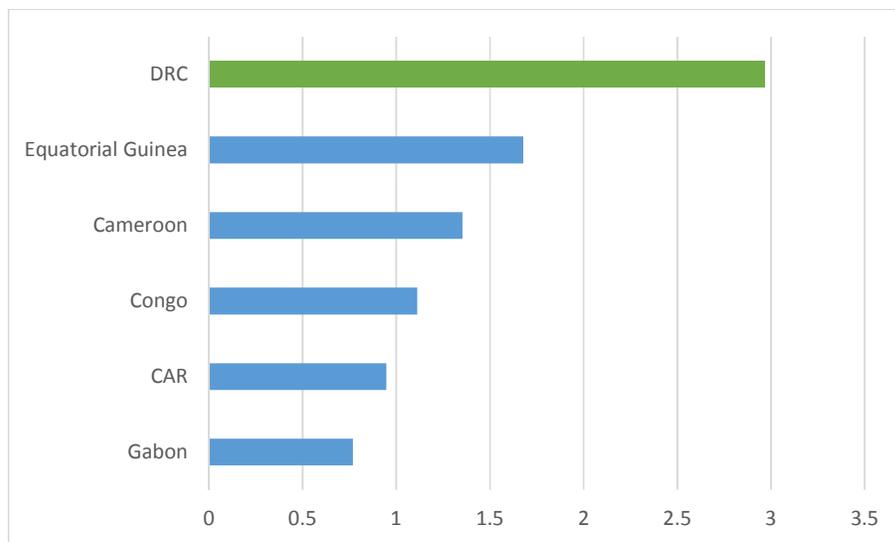
37. Gross tree cover loss between 2001 and 2012 was 5,735,793 ha (see (Hansen et al. 2013), an area roughly the size of Togo or Croatia. Forest degradation and deforestation, which are highly correlated, are highest in the vicinity of major urban areas (UN-REDD 2012). Deforestation is concentrated in Kinshasa and Bas-Congo provinces, the eastern DRC, and around cities along the Congo River (Ickowitz et al. 2015), while primary forest loss increased the fastest in Kinshasa, Nord-Kivu, Kasai-Occidental and Bandundu provinces (Zhuravleva et al. 2013).

Figure 1: Gross forest loss in the DRC 2001-2012 (ha).



Source: (Hansen et al. 2013)

Figure 2: Cumulative gross tree cover loss (>30% canopy cover, 2001-2013 Period)



Source: Author's calculations based on (Hansen et al. 2013)

Wood Production and Consumption

38. We estimate the total current consumption and production of wood to be around 34 million m³ of RWE. Around 84% of the total wood consumption (28.5 million m³) serves domestic energy needs. Another 16% (5.4 million m³) is consumed as sawn wood in the DRC and neighboring countries.

39. The informal artisanal subsector dominates production with around 99.2% of the production volume. The production of the industrial concessions has been decreasing since 2009, but even when considering the highest past production levels (500,000 m³) the subsector remains marginal compared to the informal subsector. Artisanal permits

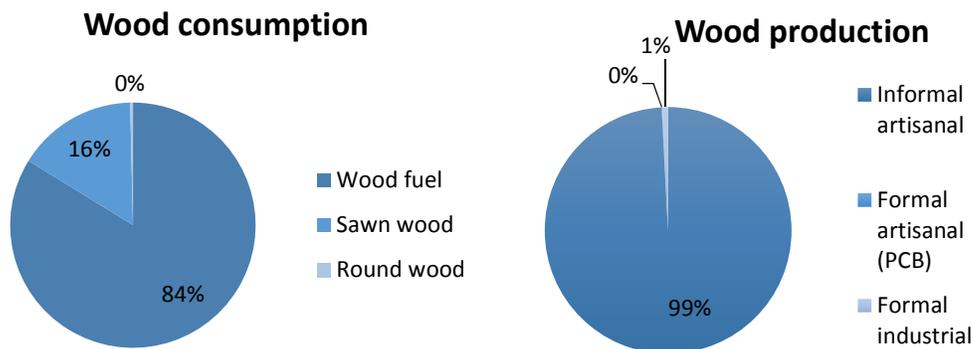
contribute an insignificant share of the current national production with around 0.03%, and only 0.001% when considering overall permits and permits respecting the legal framework, respectively. In short, industrial forestry is marginal, and small-scale logging is almost exclusively informal.

Table 4: Aggregate wood consumption and production in the DRC.

	Volumes in RWE (M m3)	
	2010	%
Consumption	34	100%
Wood fuel (domestic market)	28.5	84%
Sawn wood	5.4	16%
Domestic and neighboring countries' markets	5.3	16%
International markets	0.09	0.3%
Round wood (international markets)	0.1	0.4%
Production	34	100%
Formal industrial	0.25	0.74%
Formal artisanal	0.03	0.10%
PCB respecting legal framework	0.001	0.00%
Informal artisanal	33.6	99.2%

Source: Authors' calculations

Figure 3: Wood consumption and production shares in the DRC



40. In a business-as-usual scenario, the increase in wood demand in the DRC, driven primarily by domestic factors, is expected to lead to an increase in the rate of forest loss (see below). In a similar vein, Zhuravleva et al. (2013) predict a loss of intact primary forest area at current agricultural and infrastructure expansion rates. They conclude that 2.4 million ha of such areas – 4% of the 2010 area – could be lost by 2020.

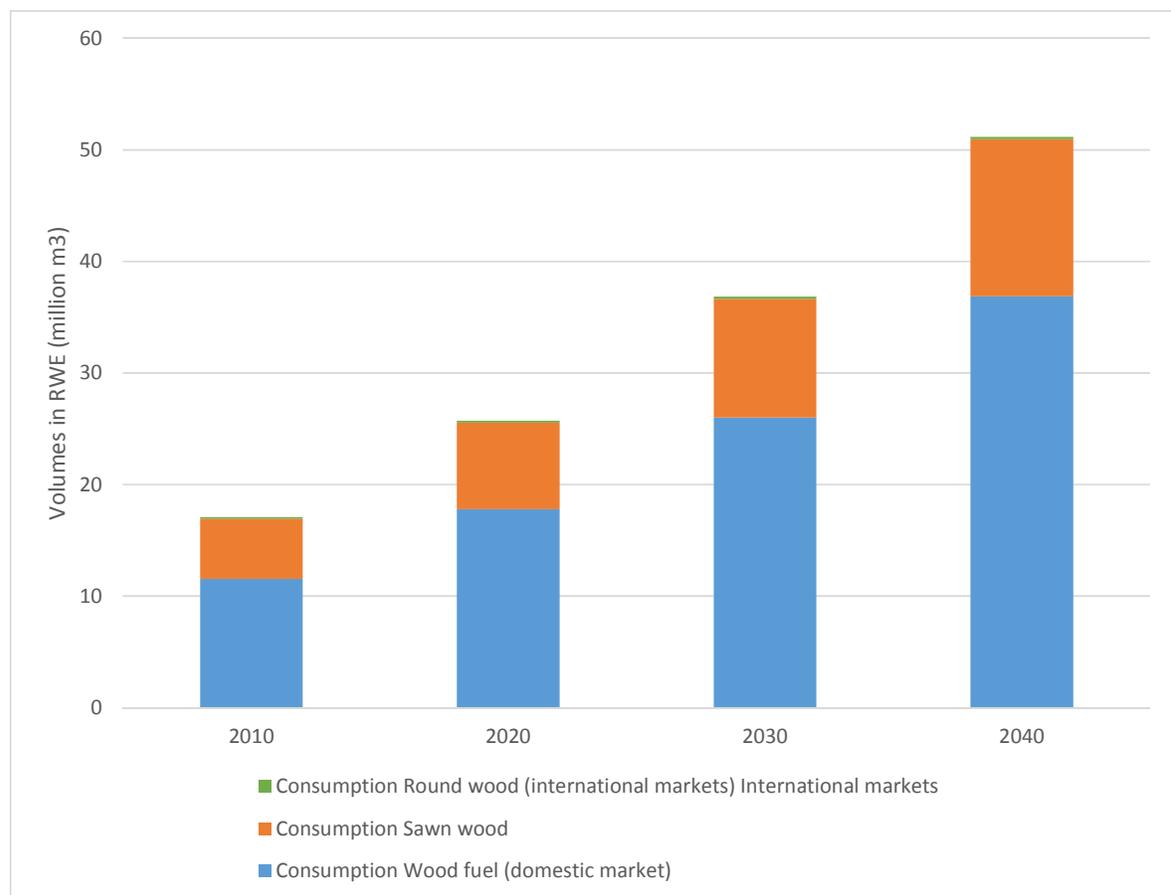
b. Drivers of Deforestation and Degradation

41. Deforestation in the DRC is driven primarily through the immediate triggers of slash-and-burn agriculture, artisanal wood production, wood energy and charcoal production, and mining activities (UN-REDD 2012). Among these, agriculture appears to be the principal factor (Ickowitz et al. 2015). Economic growth, population growth, and urbanization are

underlying indirect drivers that amplify these processes by driving demand for agricultural space and wood products. Weak governance and infrastructure expansion are factors that enable unregulated activity, and open up new areas, respectively. Furthermore, drivers such as industrial agriculture and mineral extraction are likely to gain in importance in the future. Deforestation and degradation are closely correlated with the presence of previously degraded forests and the occurrence of forest fragmentation (UN-REDD 2012), suggesting that processes of degradation and deforestation, once they gain a foothold, take on a life of their own in the absence of control mechanisms.

c. Projections of Future Impacts on the Forest

Figure 4: Projected wood consumption in DRC



Source: Authors' calculations

42. Our model predicts a growing gap between demand for wood products and business-as-usual domestic production. The gap is growing mainly due to steady population growth. In the scenario with maximum production (higher deforestation rate, higher extraction rate, expansion of concessions), the share of the total domestic demand covered by business-as-usual domestic production is estimated to be 50% in 2020 and only 30% in 2040. The gap could in theory be filled by imports for sawn wood, but this is unlikely to occur for wood fuel. In the absence of supply of non-wood energy through conventional

means, deforestation due to fuel wood collection will likely accelerate to meet demand, following patterns similar to those currently observed surrounding large cities such as Kinshasa or Kisangani. Sensitivity analyses show that the biggest factor affecting the supply gap is the per capita consumption of wood fuels, followed by greater efficiency in carbonization efficiency. However, even a 20% reduction in per capita wood fuel consumption would still leave a supply gap of 49% by 2030 and 62% by 2040. In the absence of effective governance, it is all but a given that the forest resource base will continue to decline and deteriorate.

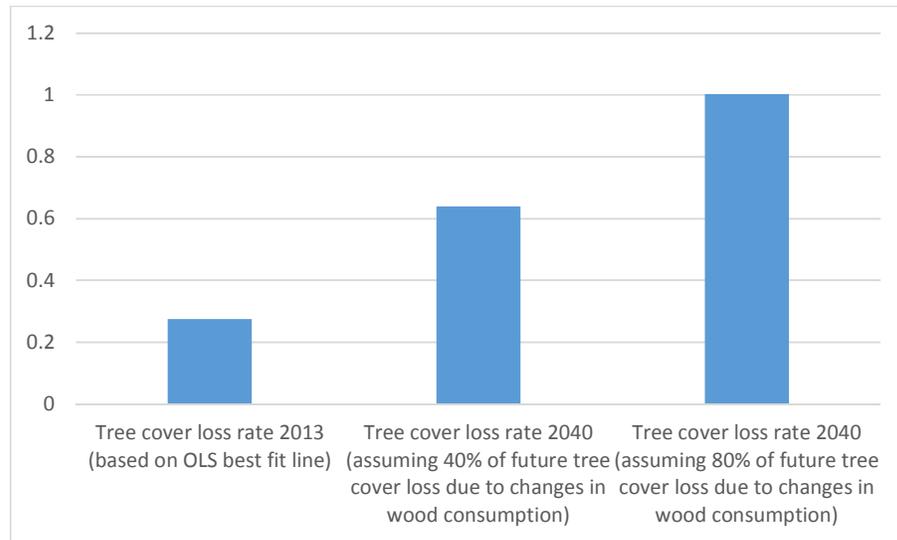
43. In the absence of annualized data on deforestation, and given the variation in estimates of deforestation rates between sources, we use tree cover with a density of 30% or more as a proxy for deforestation to illustrate the potential effects of the increase in consumption projected above. It is important to note that deforestation and tree cover are not the same.⁸ However, their similar nature can help illustrate broad trends. Figure 5 displays estimated projections of the net tree cover loss rate in the DRC using historical net tree cover loss rates from 2001 to 2013 (Hansen et al. 2013) as a basis, and projects them forward on the assumption that the growth in loss rates is increasing exponentially as a result of the double effect of increasing demand and decreasing forest stocks.⁹ Assuming that 80% of all future tree cover loss stems from increased demand for wood,¹⁰ under business-as-usual practices the net tree cover loss rate in 2040 would be about 1% per annum - nearly four times as high as the 2013 rate (based on an ordinary least squares best fit line and 2001 and 2013 data). Even halving the assumption to 40% would still imply more than a doubling of the tree cover loss rate from 0.28% to 0.64% by 2040.

⁸ Hansen et al. (2013) provide the following definitions and qualifiers: “‘Tree cover’ does not equate to common definitions of ‘forest.’ ‘Tree cover’ refers to the biophysical presence of trees, which may be a part of natural forests or tree plantations. Thus, loss of tree cover may occur for many reasons, including deforestation, fire, and logging within the course of sustainable forestry operations. Similarly, tree cover gain may indicate the growth of trees within natural or managed forests.” Also see Box 2.

⁹ The projections employ data on projected consumption growth (see Table 2) and observed historical net tree cover loss rate (data from Hansen et al. 2013). Using the correlation between the two, they project consumption backward and the loss rate forward.

¹⁰ The two are intimately linked, making disaggregation of the two drivers virtually impossible. This study thus attributes a higher range of deforestation to wood demand as a driver than for example UN-REDD (2012), which estimated the proportion to be 20%.

Figure 5: Projected annual net tree cover loss rates (% , >30% canopy density, exponential projection)



Source: Authors' calculations based on data from Hansen et al. (2013)

44. Under an assumption of no forest gain – through natural regrowth or planting – the DRC's tree cover would decrease markedly. Of course some of that loss is offset by gains even in an overall context marked by high loss, as Hansen et al.'s data illustrates. However, for methodological reasons, net loss and forest gain cannot be aggregated to yield gross loss.¹¹ That said, the above data suggest that net loss will increase markedly. Increased wood consumption, using the above assumptions of increases in wood demand driving 40% and 80% of future tree cover loss, respectively, would lead to tree cover loss by 2040 of an additional 14.1 or 27.3 million ha, respectively. This represents roughly the entire land area of Tajikistan or Nepal (40%) or Gabon or New Zealand (80%), respectively. This amount is in addition to the surface areas lost due to agricultural expansion, which are similarly significant.¹²

45. It is important to note that these are only rough projections with a high margin of error, and that they provide at best orders of magnitude. They serve primarily to illustrate likely trends if the DRC does not gain greater control over its forest resources. However, this much can be stated with certainty: An increase in the DRC's wood consumption will inevitably accelerate the rate of loss of forest resources under business-as-usual projections. Under current conditions, this increase may be dramatic. The impact of this process will be most acutely felt by forest communities, who in most cases receive little if any compensation for the exploitation of what is for many rural Congolese the basis of their income and wealth. More broadly, the country's resource base will erode, precluding future productive use of such resources. To remedy this threat, it is urgent that forest governance be improved. The Policy Notes in this volume provide some suggestions for priority actions.

¹¹ In the 14 years between 2001 and 2013, the DRC's canopy cover (measured at 30% density) lost 6.7 million ha, while in the 13 years between 2001 and 2012 it gained 1.4 million ha.

¹² Assuming 40% of net forest loss is driven by wood demand, agriculture would represent an additional 21 million ha. Assuming 80%, it would represent 6.8 million ha.

5. *State of the Forest Industry*

46. Logging in the DRC can be categorized in three ways: 1) Industrial concession forestry (conducted by companies that have obtained a concession area in keeping with the Forest Code), 2) formal artisanal forestry (conducted by individuals who have obtained a license in keeping with Forest Code), and 3) informal forestry (which does not follow the regulatory framework). Industrial concession forestry is formally regulated, albeit with significant weaknesses in implementation. Artisanal forestry in theory represents a second category of regulated forest exploitation, however the majority of this activity is *de facto* unregulated and beyond the reach of government authorities. The line between formal and informal forestry is thus blurred, as the vast majority of logging eschews even the artisanal permitting system.

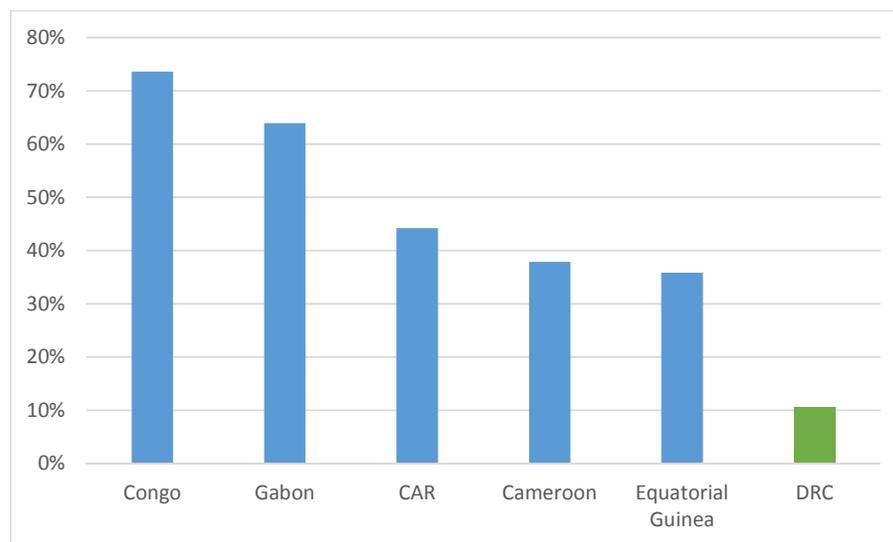
a. Industrial Concession Forestry

47. Industrial forest production in the DRC has been low for a long time (see

48. Figure 7), and stood at 249,539 m3 in 2010, or 1.5% of total wood production.¹³ This figure is particularly low when compared to other countries in the region (see Figure 8), all of which have substantially smaller forest areas. This points at once to the low utilization rate of the DRC's forests and to the low productivity of its concessions.¹⁴

49. After a major reform process, the country's 57 concessions now cover 10,656,432 ha¹⁵, only 7.3% of the country's total forest area. This is a low proportion by regional standards (see Figure 6). The 57 concessions are managed by 16 companies, four of which dominate production. In spite of this concentration, profitability in the sector is low. A lack of transport infrastructure, a weak business environment, insecurity in parts of the country, a low density of high-value species, and the 2002 moratorium prohibiting the attribution of new forest concession areas combine to explain the low coverage of the total forest area by concessions. In light of the DRC's extremely weak governance capacity this may not be inappropriate. In the absence of other reforms, expansion of concession areas under a business-as-usual scenario would further weaken the oversight the government is able to exert over its existing concessions.

Figure 6: Percentage of lowland dense moist forest under concession management.



Sources: MECNDD DEP 2015, de Wasseige et al. (2012); Ministerio de Agricultura y Bosques and WRI (2013)¹⁶

50. Despite its low production volume, the industrial sector plays a comparatively important role in promoting the sustainable management of wood resources, as concessionaires have to produce and follow management plans, pay fees and taxes, consult with local populations and contribute to their infrastructure development through the social

¹³ The primary species logged commercially are sapelli, wenge, sipo, afromosia, and iroko.

¹⁴ Data on the DRC's annual allowable cut could not be obtained in time for publication.

¹⁵ Forest titles passed from 45 million ha to 25 million ha during the fiscal reform of the early 2000s. This number was further reduced to 14,679,133 ha during the conversion process that was completed in 2014. This process maintained 81 concessions. Of these, concessionaires returned 24 to the state, leaving 57 covering 10,656,432 ha. This latter figure is based on statistics provided by the Studies and Planning Department (DEP). However, one concession's surface area was still be evaluated at the time of writing and needs to be added to this total.

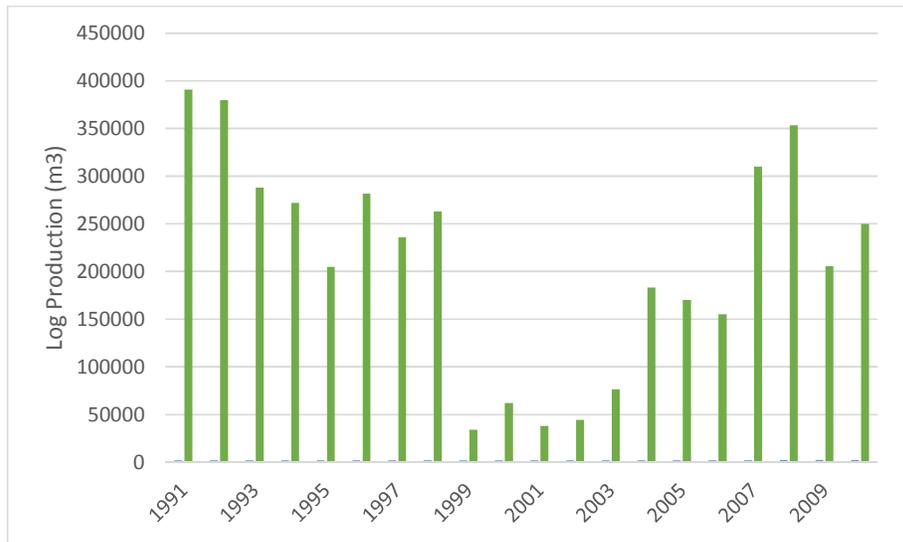
¹⁶ Equatorial Guinea has canceled all concession contracts.

responsibility contracts (*clauses sociales*) (Lescuyer et al. 2014a). As such, they provide in theory a model of forest production that, although far from perfect in its application,¹⁷ has a better governance framework and somewhat more oversight than its alternatives as currently practiced (also see discussion of governance below). However, forestry companies in the DRC, with a few notable exceptions, are generally poorly managed, and have underdeveloped technical skills at all levels, including in management positions. Combined with a severe lack of oversight, this results in systematic illegal activity and breaches of regulations by the industry (Lawson 2014; REM 2013a).

51. Zhuraleva (2013) has documented that degradation rates in concessions are 3.8 times higher than in other primary forests. While this is to be expected given their designation for timber extraction (in contrast to non-concession areas, which contain vast tracts of forest that are still inaccessible even to small-scale producers), it does illustrate that the DRC's concessions are still far from practicing sustainable forest management. However, anecdotal information suggests that the practices of artisanal loggers are more destructive than those of the forest industry as they do not follow any sustainable forestry practices.

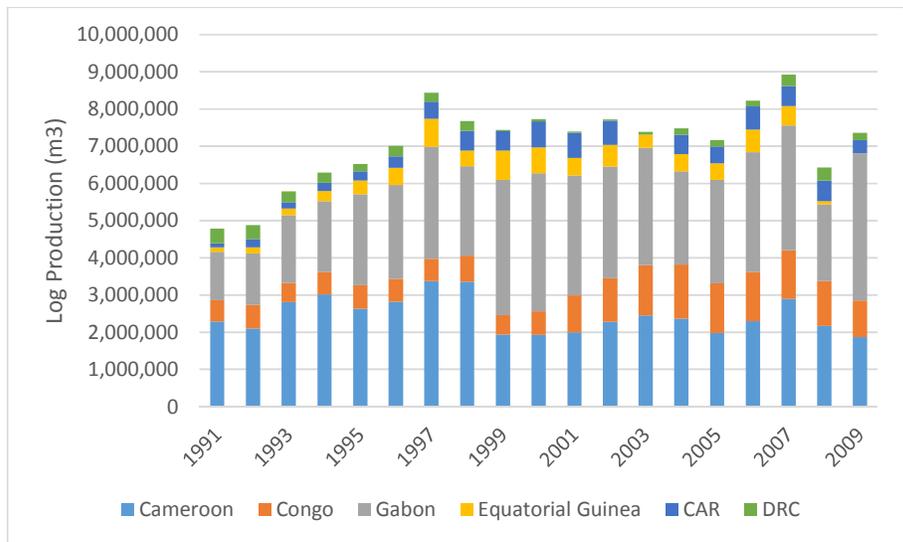
¹⁷ For example, only four management plans have been submitted to MEDD for validation, but MEDD has yet to validate any of them, thus preventing their application.

Figure 7: Log production in the DRC



Sources: 1991-2009: de Wasseige, Marcken, and Bayol (2012); 2010: authors' calculations

Figure 8: Log production in Central Africa



Based on: de Wasseige, Marcken, and Bayol (2012)

b. Formal Artisanal Forestry

52. In theory, the regulatory framework requires a permit to conduct artisanal forestry. Permits are limited to 50 ha, and are only supposed to be issued to Congolese individuals, who can apply for a maximum of two permits per year. We estimate that the formal artisanal sector produced about 30,000 m³ of timber a year. Only a small fraction – about 910 m³ – was harvested respecting the regulatory framework represented by the PCAs, according to the OI-FLEG. However, it should be noted that this proportion increased significantly to 15% in 2012, the year the timber tracking system came into force.

53. In practice, however, the artisanal sector is composed of legal and quasi-legal and illegal/unregulated activities. While a total of 221 permits were issued to 106 permit holders between 2010 and 2012, the abuse of the permitting system has been widely documented (REM 2013a; Global Witness 2012; Greenpeace Africa 2013). As a result, the majority of actors are not only essentially operating in an informal space due to legal shortcomings, but also because of gross irregularities in the issuing of PCAs (Lescuyer et al. 2014a).¹⁸ One consequence of the misapplication of the system is the emergence of “semi-industrial” operators. These include foreign-owned companies with substantial technical and financial means who obtain PCAs intended for private Congolese individuals. The result of this abuse is logging that is not subject to any oversight, and that has no formal social obligations to the communities in whose forests it takes place, nor any requirements for sustainable logging practices (REM 2013a). It is, however, important to distinguish this mode from the more wide-spread informal forestry that is carried out throughout the country (see below).

54. In the many instances in which abuse of the system has taken place, it has certainly had important negative consequences in environmental, socio-economic and institutional terms. Not only are forest management practices generally not sustainable, the government and the population also derive little benefit from the permitting system. According to one account, “companies typically pay US\$2,500 for a logging permit that will allow them to cut timber worth up to US\$400,000 on the Chinese market” (Global Witness 2012).

c. Informal Artisanal / Illegal Forestry

55. By far the largest portion of timber harvesting in the DRC is small-scale artisanal logging. This activity is by and large not in compliance with national laws. It is therefore *de jure* illegal, but mostly referred to as informal. Nevertheless, local authorities may exercise a degree of control over this mode of production, in particular by demanding payments of fees or taxes for production.

56. Excluding wood harvested as wood fuel, Lawson (2014) estimates the proportion to be at least 87%, Lescuyer (2014a) to be 93%. Our model has this proportion even higher, at 99.2%, for a total of 33.6 million m³. The volume of informally harvested wood has increased quickly, doubling depending on the estimate in the six years preceding 2012 (Lawson 2014) or in the last 20 years, according to Lescuyer. Lescuyer calculates that 85% of this wood serves the domestic market, leaving exports from this sector at 525,000 m³ - far outstripping formally recorded exports. The vast majority of the wood harvested using this mode goes towards energy production, although a significant portion constitutes sawn wood.

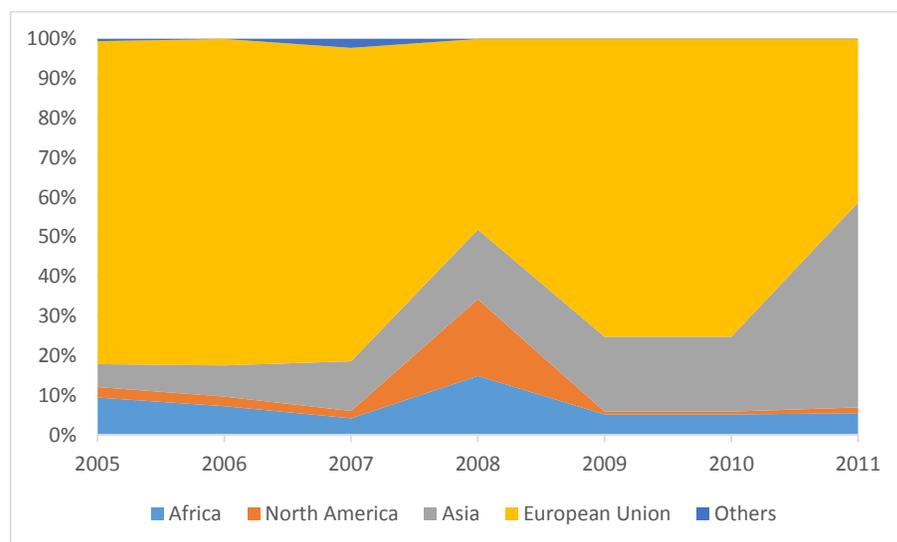
¹⁸ The *Direction de Gestion Forestière* determined that out of the 221 permits issued in that period, only 13 fulfilled the legal criteria: permits issued to an individual, no more than two permits per year, maximum 50 ha/permit.

d. Wood Uses and Markets

57. The majority of the DRC's timber is consumed domestically as wood fuel (28 million m³, or 84% of total consumption) or sawn wood (4.8 million m³, or 16%). Only a very small fraction is formally exported as round wood (0.1 million m³) or sawn wood (0.09 million m³), representing a total of 0.7% of total production. The DRC's recorded wood exports are composed of legal and illegal exports. Formally recorded export volumes have been quite low for some time, fluctuating between 170,000 and 280,000 m³ per year between 2005 and 2011 (de Wasseige et al. 2014). In 2014, the value of exports reported to the industry association was US\$ 33.7 million (private communication with FIB). In addition, at least an equivalent volume is estimated to be exported illegally to eastern neighboring countries, although estimates on this vary widely.

58. While historically, most exports went to Europe, Asia (and in particular China) has more recently overtaken Europe as the largest export market. It is unclear whether this shift is driven by concerns over illegally sourced timber (as Europe tightened its regulations on timber origin) or whether, to the contrary, it is the cause of heightened exports of questionably sourced timber (as Asian markets are generally less sensitive to environmental standards). Either way, to once again become attractive to European (and US) markets, the DRC's forest industry would need to undergo substantial governance improvements, as is evident in the protracted duration of the Voluntary Partnership Agreement negotiations with the European Union (EU), which are still ongoing. Meanwhile, Asian demand is strong enough to permit the continuation of the status quo, to say nothing of demand from the DRC's neighbors. The gradual decline in exports to the EU reduces the DRC's incentive to improve governance as long as this is the case.

Figure 9: Destination markets for DRC log exports.



Based on data from de Wasseige et al. (2014)

6. Governance

59. Governance of the DRC's forest sector has long been weak. The MECNDD is only able to carry out its central administrative functions – policy development, norm setting, and control – to a very limited degree. Its actual role – for example, as both norm setter and implementer in the case of forest inventories – often involves conflicts of interest. Its reach into the provinces is extremely limited, and there is frequent overlap between the ministry's and the provinces' roles. In general, it would be sensible for the provinces to take on a stronger implementation role, and for the ministry to limit itself to its central functions. The decentralization process in the DRC is still young and ongoing, and this process will take time.

60. The lack of a forest policy compounds the already great governance challenges. Such a policy is intended to guide decision-making and constitute a general vision for utilization and governance of the forests. Without such a policy, forest management and the functionality of its administration relies on a weak basis (REM 2013a). There are indications that a forest policy will be developed in the near future, and this process should be encouraged. If such a policy were to be adopted, however, care would have to be taken to minimize disruptions to the already weak law enforcement in the sector in the process.

61. While the country has a modern Forest Code, its application is lacking in many respects. It conflicts in several points with the constitution (adopted four years after the code itself), and many of its application texts contradict one another.

62. In terms of control, the logistical challenges are enormous: The DRC's forests cover an area the size of Germany, France, and Spain combined. However, the country as a whole only has 6% of the length of the road network of those countries. Only a small portion of that total transects its forests, and of those roads, the majority is in very poor condition. Forest law enforcement is under-resourced in human, technical, and financial terms. Parliament allocated MECNDD and its arms-length institutions a budget for 2014 of US\$ 70 million, but of this the ministry only actually received US\$ 14.6 million (excluding arms-length institutions; Ministère du budget 2015), indicating the lack of priority the central government accords to forest issues. In human resource terms, the provinces have 23 OPJs at their disposal, while *Direction de Contrôle et Vérification Interne* has 14, for a total of 37. The latter represents only 0.5% of the total MECNDD staff of 2,701¹⁹. Each officer thus covers on average 3.9 million ha, an area nearly the size of Switzerland – an obvious impossibility. In addition, the OPJs are mostly stationed in the provincial capitals, and receive little to no budget to travel in the course of their duties.

63. Monitoring and control of forestry activities by MECNDD and the provincial authorities are thus minimal. In addition, the *Observatoire de la Gouvernance Forestière* (OGF, the successor to the OI-FLEG) has been conducting two to three missions per year. However, both the OGF and the MECNDD rely entirely on outside financing for their missions. The detection rate of infractions is thus very low. Even when they are in a position to do so, the authorities often don't apply their own laws, instead finding informal

¹⁹ An additional 2,673 posts are currently vacant, among them 672 management posts.

arrangements to deal with taxation or violations of the legal and regulatory framework. Prescribed penalties for illegal practices are derisory, and often open to negotiation, compounding the problem.

64. The current state of legality in the forest sector has been best summarized by the independent forest monitor financed through EU funding between 2011 and 2013:

“The [Independent Monitor] has observed a forest sector that is developing largely outside the scope of existing legislation. Despite the lack of a global forest policy and the cumulative delays in signing its implementing texts, the 2002 Forest Code does offer a relatively simple legal basis capable of ensuring a good level of resource control while satisfying the needs of numerous stakeholders. And yet the IM’s observations and analyses reveal a severe lack of appropriation of forest law on the part of both the private sector operators and the administration responsible for ensuring that the legislation is completed and enforced. Law enforcement failures can be seen at virtually all levels and take a multitude of forms; it is, however, rare for legal proceedings to be commenced, which undermines the credibility of the law in the eyes of the different actors, resulting in widespread fraud and illegal logging.” (REM 2013a)

65. As described above, revenue collection is low (we estimate that the total taxes and fees paid to all levels of government in the forest sector are US\$ 54 million, the majority of which is paid outside of the bounds of the regulatory framework), and even reliably assessing the taxes and fees collected is virtually impossible with current systems. This problem was exacerbated with the transfer of the responsibility for collection of the area tax to the provinces, who maintain no information links with the central authorities on their revenue collection.

66. A participatory assessment of the state of forest governance in the DRC in 2015 established the greatest challenges for the sector as viewed by Congolese stakeholders (see Box 3) and largely confirmed the governance challenges.

Box 3: The PROFOR Governance Assessment

In the first half of 2015, the World Bank carried out a participatory governance assessment in the DRC with funding from the Program on Forests. In four one-day workshops in Kisangani, Bandundu, Mbandaka and Kinshasa, facilitators administered a questionnaire to 74 stakeholders from public administration, civil society, private sector, and development partners.

In the four rounds of consultations, the main issues expressed by the stakeholders were:

1. the weaknesses of the forest laws and local populations’ poor knowledge of them;
2. the lack of resources (human, material and financial) allocated to the administration in charge of inventorying/protecting/monitoring forested areas, in particular very little means and recognition given to the consultative counsels;
3. the high level of corruption and interference by political leaders, thus discouraging formal private sector actors;

4. lack of implementation and enforcement of the law causing widespread illegal artisanal logging, unsustainable forest management practices, cross-border leakages, and very little tax revenue generation;
5. the high level of poverty and absence of revenue-generating activities inciting populations to continue slash and burn agriculture and collect wood in the forests in an unplanned and uncontrolled fashion, causing deforestation and forest degradation.

Participants offered a number of priority recommendations to address those challenges:

1. revising/updating the 2002 forest code and disseminating it to the public and populations in their respective local languages and dialects, in strong synergy with the land tenure reform to address conflicts between customary rights and state ownership;
2. drafting a national forest policy (based on the notion of sustainable resource management and resulting from a national vision/land use plan) with a focus on developing the wood value chain (including small and medium enterprises), training professionals (capacity building and research programs), putting in place a timber tracking system, imposing management plans and certification/standards, and clarifying revenue-sharing mechanisms (between national and provincial administrations, between the state and communities, between private concessionaires and communities);
3. reducing the informal aspects of the sector to the extent possible and creating disincentives for illegal logging and other forest crimes, as well as promoting win-win economic rural practices, such as agroforestry and reforestation;
4. revamping and simplifying the fiscal system (it is estimated that 150 various taxes exist for the sector), namely through reestablishing the fundamental role of the *Fonds Forestier National* (National Forest Fund) in charge of collecting taxes (reforestation, deforestation, and logging) and implementing the national reforestation plan;
5. decentralizing the forest authority and management power to the decentralized territorial entities for a smoother local process.

67. The weak state of forest governance and the resulting illegality harm the socio-economic development of forest-dependent populations, as it deprives them of natural resources – not only wood – that they often depend on and have customarily utilized, whether they wish to monetize them or not. Moreover, illegality results in state coffers receiving significantly fewer resources than what they are due. Neither is propitious to the country's development.

7. Conclusions

68. The current models of forestry are not maximizing forests' contributions to the DRC's economic growth and poverty reduction. Productivity is low, rent seeking is rife, and communities and the state benefit little from forestry operations. The sustainability of forest exploitation in its current form is in severe doubt, as illustrated by accelerating net

forest loss rates. While industrial concessions are subject to a degree of regulation and oversight and are required to contribute to local development, implementation still displays significant shortcomings. In addition, industrial forestry suffers from an uneven playing field as compared to artisanal / semi-industrial actors, who face significantly lower *de facto* administrative burdens and therefore cost advantages. While artisanal loggers are in theory banned from exporting their products, in reality the absence of a timber tracking system and the permeability of controls enables them to do so without much interference. There thus is a risk that industrial forestry, the one model of forestry that has a modicum of development impact, is pushed out of business by a *de facto* entirely unregulated competitor.

69. Informal loggers operating outside the bounds of national forest laws dominate the DRC's timber production, and will do so for the foreseeable future. This has significant negative consequences for the DRC's forest stock. Given the importance of the sector for employment and livelihood provision, the answer cannot be to outlaw the activity. Rather, efforts must be made to formalize current activities in an effort to increase their economic value, contributions to development, and sustainability.

Policy Note 1: Framework Conditions

Julian Lee (World Bank)

70. This first of three Policy Notes in this collection provides recommendations for a set of key issues affecting the forest sector: The moratorium on issuing concessions, revenue generation for the state, artisanal logging, and zoning. Each of these issues is tied to the capacity of the state to govern its forest space and to bring it to bear in its efforts to reduce poverty in the DRC. Each is debated widely in policy circles, and the hope is that the recommendations issued herein can shed light on this debate in an effort to advance the agenda.

1. The Moratorium on Issuing Concessions

71. Forest concessions currently only cover 7.3% of the DRC's total forest area. Given this limited coverage – especially when compared to much larger surfaces covered by concessions in other Central African countries – as well as the weak state of the DRC's forest industry, it is understandable that some voices in the DRC would like to expand the area subject to concession forestry.

72. However, such expansion is currently limited by a ministerial order issued in 2002²⁰, which was reaffirmed in 2005 and 2008.²¹ This moratorium has its origins in the substantial weaknesses of forest governance, as well as the problematic history of the allocation of forestry titles. Its lifting is subject to three conditions being fulfilled: First, the conversion of old logging contracts to concession titles. This process was completed in 2014. Second, the adoption of a transparent mid-term allocation process for concessions, which the government argues has been fulfilled through the prime ministerial decree 08/09 of April 8, 2008. And third, the development of a three-year geographical planning process of future allocations. This vaguely worded third condition has been the subject of debate, not only because interpretations of the article can reasonably differ, but more importantly because of the implications of lifting the moratorium, which could theoretically lead to an increase in forest exploitation, which in turn, in current conditions, would mostly likely occur in a vacuum of control. The condition could in theory be met quite easily, since it does not explicitly state that non-forest actors need to be included. As such, the allocation plan could be developed with the involvement of industry, civil society, and on the basis of local consultations.

73. However, there are often multiple claims to a particular tract of land. The resulting land-use disputes – including between various actors of the forest sector, with other sectors such as agriculture and extractive industries, as well as between the sectors and communities and between different communities themselves – bears significant potential for social conflict. Conflicting land-use claims not only create the potential for social conflict

²⁰ Ministerial Order No. CAB/MIN/AF.F-E.T/194/MAS/02 of 14 May 2002

²¹ Presidential Decree No. 05/116 of 24 October 2005 and Decree No. 08/02 of 21 January 2008

and violence, they also can cause investment uncertainty and interrupt business. As a result, it would be highly desirable for a coordinated land-use planning process involving all interested sectors to take place as well. Once a land-use plan has been established, a forest macro-zoning process could follow, which would not only build on existing terms of reference, but also on existing micro-zoning processes in many landscapes, deferring to the latter where conflicts between the two emerge.

74. Several drivers of deforestation other than industrial forestry have a higher impact on the DRC's forests (UN-REDD 2012), however where industrial forestry is practiced, forest degradation is comparatively higher than in other recorded zones (Zhuravleva et al. 2013). Historically, logged forests are more quickly turned into degraded forests – especially where forest roads are present, and eventually into cleared areas. As a result, any areas subject to new concessions should be closely circumscribed. The concessions that have been returned to the state after the conversion process could form a reasonable starting point for such a process. In addition, revegetation of logging roads should be part of concession management plans to reduce the risk of the degradation-deforestation continuum once a concession tract is abandoned.

75. By preventing new actors from entering the market, the moratorium has arguably contributed to the emergence of a “semi-industrial artisanal sector”, which operates under lesser control and with greater impunity, and which contributes less to the development of the DRC than the industrial sector. However, it is unclear whether in the current environment, lifting the moratorium would lead to significant expansion of industrial logging: The business climate in the DRC is among the worst in the world, and the low profitability of the sector combined with the hurdles it faces probably will deter many serious putative investors. Already at this point, numerous concessionaires are said to be on the brink of folding. Only 23 out of 57 concessions actually were operational in 2014. However, some low-cost producers are able to operate in the “semi-industrial” space with its lower cost of doing business, and it cannot be excluded that their cost structure could allow them to enter the industrial space. It is further unclear whether markets for significantly increased industrial production are accessible: As long as semi-industrial and artisanal actors enjoy a cost advantage over industrial producers, concession timber faces an uphill battle domestically, so it is unclear that significant domestic demand exists for concession timber, especially for the high-value species concessions specialize in. In its present form, foreign demand for official wood exports from the DRC is primarily limited to Asian domestic markets (as in theory, the EU Timber Regulation prevents the importation of wood whose origin cannot be determined, as does the Lacey Act in the USA). Asian market growth is likely to continue, and has been predicted to grow from 1% to 1.6% for sawn wood, but with a drop for round wood (from 3.1% to 1.6%/year) (FAO 2009). At the same time, there is a continuous discrepancy between the DRC's timber production and timber exports that cannot be explained by domestic demand alone. Anecdotal evidence suggests that timber producers are not able to sell their entire harvests on the world market even at current rates.

76. Exports from western DRC are limited by the capacity of the port of Matadi (currently at 500,000 m³/year), such that even in the face of increased production, export capacity would remain limited without significant investments. However, for the time being,

current capacity is twice the annual industrial production, and significantly more than the DRC has produced since at least 1991 (see

77. Figure 7), a period which includes many years during which its production area was significantly higher than today. So the economic case for such an expansion is unclear. Exports from the east, while facing high transport costs for the time being, face no such logistical bottleneck. Indeed, they are estimated to be significantly higher than those through Matadi. While better export controls here would be highly desirable, it is again unclear that expanded concession forestry could compete with artisanally or illegally produced exports.

78. Whether to lift the moratorium is largely a political decision. However, the DRC should exercise great caution before moving ahead with such a decision. Beyond the legally mandated requirements for doing so, it would be advisable to establish a clear economic rationale, especially as it is clear that a greater total concession area would face less oversight and law enforcement, holding all other governance factors constant. Thus, any lifting of the moratorium should be accompanied by a credible, costed and financed plan for providing the governance and oversight that can ensure the development contributions of such an expansion. In addition, the rationale for lifting the moratorium should include a demonstration of how the expansion of concessions would provide value to local communities and the country as a whole, rather than simply serving private interests. This may include consideration of the social contracts (*clauses sociales*) that form part of concession requirements, and which, if accompanied by support to communities for their negotiation and implementation, have the potential to deliver tangible benefits on the ground. If a proposal can illustrate how enforcement of forest laws will be ensured in new concessions and how social contracts can deliver on their promises, the argument for lifting the moratorium would be significantly bolstered.

79. If the goal is to increase the DRC's forest production, MECNDD could provide ultimatums to existing concessionaires whose concessions have been inactive for extended periods of time to either resume production or rescind their concessions. Any newly attributed concessions should take into account relevant land-use planning processes. Lastly, the auctioning system Decree 08/09 prescribes for the allocation of new concession is as yet untested, such that a limited test phase should precede any further rollout of such systems. Given these considerations, the government would do well to get ahead of the curve and put in place the conditions that can ensure that any decision on lifting the moratorium, were it to be taken, does not backfire. This may require external assistance. In any event, the focus on the moratorium should not detract from the fact that significantly more important surface areas and wood volumes are exploited by other forest practices than concession forestry, which will need to be addressed accordingly.

Summary of Recommendations:

Short-Term Action	Long-Term Action
<ul style="list-style-type: none"> - Ensure that the legal requirements for lifting the moratorium are fulfilled - Develop a policy framework with clearly stated objectives and criteria to analyze whether to lift the moratorium from a sustainability and poverty reduction perspective 	<ul style="list-style-type: none"> - Apply the policy framework on the moratorium - Develop and implement a system that can credibly ensure the sustainable use of any new concessions

2. Revenue Generation

80. As described above, the tax recovery rate is low both due to the fact that most logging takes place outside of the scope of control of the authorities, and due to the fact that the authorities do not fully apply the law on taxation, fees, and fines. The fact that tax revenues are too low is not limited to the forest sector in the DRC, and calls for reforms addressing this symptom have been made elsewhere already (for example World Bank Group 2014).

81. The transparency of tax receipts could be greatly increased by simplifying the tax regime and consolidating both the number of different taxes and fees levied and the number of institutions to which they are due. This would also reduce transaction costs for both the government and tax payers, facilitating conformity with the tax code. The challenge, however, is that the current system serves the vested interests of the agencies with taxation and fee levying power and those of their employees (Fétiveau and Mpyoi Mbunga 2009). The political will would need to be mustered at the highest levels to cut through the current situation.

82. To further facilitate the clarity of the tax regime, it would also be useful to settle the legal basis for some taxes, such as for example the surface tax (*taxe de surface*). The logging industry interprets this tax to be based on the “exploitable area” of a concession, but this contravenes the law in the absence of approved management plans (Global Witness 2013). This is another reason for MECNDD to set and respect standard processing times for approving management plans. The adoption of a new *arrêté* on forest management should speed up this process. In addition, MECNDD, jointly with the Ministry of Finance, should broker an acceptable level of overall taxation that balances the respective taxes to be paid while setting them in such a way that they enable it to pursue its policy goals. Among others, the *taxe sur le permis de coupe* will become obsolete once management plans are approved, so that a methodology for rolling it into the area fee should be devised. In addition, clarifying the taxation regime to actors in the forest sector through public information campaigns, especially in the artisanal sector, would help empower tax payers to better distinguish legal from illegal taxes (Lescuyer et al. 2014a).

83. The establishment of a publicly accessible, audited tracking system for all forest-related taxes and fees assessed and received would help identify performance weaknesses. This would further be aided by moving tax payments as far down the value chain as possible to where profits are higher – e.g., to export points, timber markets in ports or transport depots – as this centralizes tax payments, not only reducing the number of transactions and the associated costs, but also increasing their visibility. To further increase transparency and reduce transaction costs, one-stop-shops for tax payments could be instituted at provincial and national levels, ideally with a single agency in charge of handling revenue collection that would then distribute revenues to ministries and agencies. This approach would include consolidating the currently operating multiple control points on transport axes (Lescuyer et al. 2014a). Such a system should be bolstered by independent civil society monitoring, and could be combined with the simplified timber tracking system proposed in Policy Note 3 of this compendium. However, it is important that such monitoring can provide the analytical depth and inclusive review processes modeled by the independent observer (OI-FLEG and OGF) so that a dialogue on performance issues can be maintained with the authorities. This has uncovered wrongdoing in the past and led to some reversals. The current expansion of the Extractive Industries Transparency Initiative to the forest sector should strengthen independent oversight of the industrial sector’s tax and fee payments, even if it will likely face significant challenges given the low capacity of forestry enterprises.

84. Some simple reforms of the legal code would also be helpful to improve tax collection. For example, currently MECNDD agents are not allowed to operate at border posts. However, only they are able to correctly calculate timber export taxes based on an assessment of volumes and species. Rectifying this situation would greatly increase the reliability of such assessments (REM 2013a). This would require revising Decree N° 036/2002/ of 28 March 2002 on service allocation and public bodies authorized to operate within the DRC.

85. More generally, the imbalance between law enforcement and other staff within the Ministry needs to be addressed (REM 2013a). First steps in this direction have already been taken with the recent addition of nine judicial police officers (*OPJs*) at provincial level since 2013. However, the proportion of MECNDD staff dedicated to law enforcement should still rise significantly, given the geographical challenges of operating in the DRC. Furthermore, they need to be stationed closer to the areas they are supposed to supervise, rather than in provincial capitals. This should go hand-in-hand with improving the working conditions of the *OPJs* to reduce the incentive to engage in fraudulent behavior, as outlined above.

86. While it should not be considered primarily as a revenue-generating tool, the current regime of penalties for illegal logging is insufficient to deter violations, and would benefit from review. Current fines for illegal logging are around US\$ 8/m³, while the wood’s value can be between 12 and 129 times that, depending on the species. In addition, in practice these fines are open to negotiation. The combined effect is hardly dissuasive. For comparison, in the Republic of Congo, damages are levied at US\$ 200/m³ (Lawson 2014). When reforming the regime of fines, care should be taken to distinguish between organized and systematic abusers, and those logging informally primarily for subsistence purposes.

87. Given the current levels of taxation and the precariousness of the formal industry, increasing revenue generation by raising taxes is not advisable. However, there is an opportunity to broaden the tax base by formalizing the artisanal logging sector (see Policy Note 2). In addition, Decree No. 35 could be revised to allow for tax collection on fuel wood, although the poverty impacts of such a measure should be closely evaluated.

88. The goal of increased revenue generation should be to enable better oversight of the sector, ensuring it follows the principles of sustainable forest management, and contributes to the development goals of the country. However, all of the above suggestions will carry start-up costs. Development finance would be needed to kick-start some of these initiatives, but this depends on the right political environment.

89. The long-term operating costs of any measures, however, will need to be ensured by the Government. To this end, the incentive structure of the MECNDD could be reviewed, in particular in light of the limited budgetary allocations the Ministry receives. The incentive to increase tax and fee recovery rates would best be accommodated in an arms-length institution whose control and supervision services were self-financing on the basis of the tax and fee receipts they generate (similar to the *Société de développement des forêts de la Côte d'Ivoire*). This would need to include appropriate provisions for integrating provincial control and tax collection functions given the decentralization process, but would also offer a chance to harmonize control functions with the already partially decentralized collection function of forest taxes. If transparently structured and provided with effective checks and balances and internal control mechanisms, this could shift the incentive structure away from rent-seeking and corruption to ensuring legality and good forest management.

90. In this scenario, the Ministry would keep the revenues it collects, rather than sending them on to the central government. The Ministry and provincial agencies would then have to invest the funds in the control of legality and in the supervision of sound forest management, including by significantly increasing the proportion of staff dedicated to oversight and law enforcement. This system would make the forest administration less dependent on the vagaries of central budget allocations. We estimate that the current system generates US\$ 54 million in taxes and fees across all levels of government.²² Even if the recovery rate were only 50%, the resources thus generated would be in excess of the US\$ 14.6 million in budget allocations the MECNDD currently receives, of which none at all was allocated to the *Direction de Contrôle et Vérification Interne*, and a derisory 0.04% (\$60,000) of which went to the other departments involved in control and supervision of forest operations (*Direction d'Inventaires et d'Aménagement Forestier*, *Direction de Gestion Forestière*). If the Ministry's control and supervision functions were to be converted into an arms-length institution, performance payments could be introduced for agents who ensure the legality of production (e.g., on the basis of the absence of illegal activity in their assigned area and the amount of revenue generated), thus at once reducing incentives for accepting bribes and increasing those for performance of their duties. Certain monitoring functions could also be delegated to civil society or local levels of government. This may especially apply in the context of community forestry (see Policy Note 2), where the control of

²² Lescuyer (2014a) estimates partial data for the artisanal sector which would markedly increase this amount.

artisanal loggers operating on behalf of communities could be supplemented by the very communities who grant the right to log in their forests.

91. This proposal – which would still require a thorough financial, legal and institutional analysis that is beyond the scope of this paper – would require significant capacity building and unprecedented levels of cooperation among and between national and provincial authorities. No less is necessary to remedy the revenue collection situation and governance overall. The DRC needs to make the choice at the highest levels of whether to pursue increased revenue collection and sustainable and efficient management in the forests sector.

Summary of recommendations:

Short-Term Action	Long-Term Action
<ul style="list-style-type: none"> - Simplify the tax regime by reducing the number of taxes and collection agencies, consider instituting one-stop shops for payments - Move tax collection points further downstream in the value chain - Review the level of fines in the sector - Clarify the legal basis of certain taxes - Disseminate information about the tax regime - Facilitate the expansion of the Extractive Industries Transparency Initiative into the forest sector - Analyze the possibility of creating an arms-length, self-financing oversight body for the forest sector 	<ul style="list-style-type: none"> - Increase the proportion of MECNDD staff dedicated to law enforcement, decentralize their operational bases, and improve their working conditions - Develop a publicly accessible, audited tracking system for forest-related taxes and fees - If appropriate following analysis, create an arms-length, self-financing oversight body for the forest sector

3. Artisanal Logging

92. The DRC’s forest code creates a clear vision for the artisanal logging sector by granting artisanal permits only to Congolese citizens who can obtain no more than two such permits per year, by limiting the means of production to low-end technologies, and by limiting the size of the area to be exploited under such permits to 50 ha. These limits illustrate the vision that artisanal logging is intended to serve the small-scale logging needs of the population.

93. The reality of the difficulty of issuing such permits across a vast territory, and the near-total absence of control over the sector imply that it is rife for abuse. Accordingly, estimates suggest that the damage artisanal logging in all its forms inflicts on the DRC’s forests far outweighs that of industrial forestry. In addition, even where it is subject to

permitting (mostly in the ‘semi-industrial’ space), it is rare that the associated taxes (permit, logging, reforestation) are paid (Lawson 2014). Lescuyer (2014a) estimates that only about 10% of the net revenues of the sawn wood value chain are captured as forest-specific taxes, but that a significant portion of the payments actually collected is likely directly captured by representatives of the government.

94. Due to its focus on the industrial timber sector, the legal and regulatory framework pays little attention to small forest enterprises, which are thus constrained to illegality or partial legality (Megevand et al. 2013). Most observers agree that, given its importance in meeting the demand for wood and wood fuels and its significance for employment and income generation, the solution is not to eradicate this type of logging, but rather to formalize it.

95. Because of its decentralized nature, the steps required to achieve this goal must be designed to the greatest extent possible as incentives rather than as command-and-control measures, as well as with the involvement of decentralized entities. To illustrate, artisanal production (legal and illegal) in the DRC is about 33.6 million m³. Assuming each permit generated the full 350 m³ allowed, this would necessitate more than 96,000 permits – a number that clearly will exceed the administrative and oversight capacity of the authorities for the foreseeable future.

96. The current permitting system, applied rather randomly and often not following laws and regulations (both provincial and central authorities have issued permits), provides perverse incentives to permit holders: The permits are annual, such that there is no incentive for sustainable management. In addition, they are area-based (50 ha), which not only is too small an area to manage sustainably, but also incentivizes maximum extraction. Longer-term, volume-based permitting would help correct these perverse incentives, and the surface area could also be reviewed. In addition, at US\$ 2,500 the cost of PCAs is sufficiently high to dissuade potential seekers from obtaining the permits, especially if paying informal “fees” is more cost-effective. Lowering this barrier to entry would therefore also be advisable (Lescuyer et al. 2014a).

97. In the current environment, industrial concessionaires have little incentive to follow their management plans, since artisanal loggers can export their product, and do so at a lower cost as they are not subject to the same regulatory and taxation requirements. The market is thus distorted. Since foreign demand has been a driver of production (while domestic demand depends largely on relatively predictable population and economic growth), artisanal exports should remain banned unless legal origin can be verified and chain-of-custody is in place. This also holds the potential to reduce abuse of the artisanal system—which was never designed to serve export markets—as it would lower the incentives for foreign actors to invest in the system, while enhancing the reputation of exports from industrial concessions (see Policy Note 3).

98. Management of artisanal logging would also benefit from land-use planning, which should allocate areas of the “protected forests” intended for artisanal exploitation. Similarly, there currently is no transparent information on PCAs, as both provincial and central administrations have been issuing them. Increased information sharing between

provincial and central institutions would facilitate a degree of planning. This could be accomplished by better information sharing using ongoing forest information systems, such as the SyGI AF and the Forest Atlas the World Resources Institute maintain together with the MECNDD. The legal framework would benefit from clarification to attribute clear responsibility for allocating permits and to eliminate the dual permitting authority for national and provincial authorities. This could be accomplished by repealing Article 11 of Arrêté 011 of 12 April 2009 and maintaining Arrêté 035 as the only valid text regulating chain-saw milling. In addition, numerous contradictions and incompletenesses need to be resolved (for details, see Lescuyer et al. 2014b).

99. In its current incarnation, artisanal logging delivers few if any benefits to communities, especially when carried out for extractive purposes. To remedy this, the *clauses sociales* the permitting process requires should be standardized into a simple format that reduces the discretionary element by allocating to the community a fixed monetary (or in-kind) equivalent of percentage values of the permit volumes. A standardized template for contractual agreements entered into upon the issuance of PCAs would further help ensure fairer benefit-sharing for communities. This template should require signing by the artisanal loggers and representatives of each lineage in the concerned villages, and specify the end-use of funds collected (Lescuyer et al. 2014b). Community committees should be placed in charge of monitoring disbursements, and should receive ongoing training to this effect.

100. To formalize the artisanal sector, a number of steps to create incentives could be taken:

101. Reducing the cost of access to permits would reduce incentives to operate illegally, and reduce debt levels among legal operators. This should be done in a harmonized fashion across provinces (Lescuyer et al. 2014a). At the same time, an outreach campaign to publicize official tax rates to artisanal loggers should be organized (Cerutti et al. 2014). In addition, the fact that permits are currently issued in provincial capitals combined with the difficulty of travel in the DRC makes it difficult and costly for putative permit seekers to obtain their permit. Devolving the authority to issue permits to lower levels of government could help address this hurdle, though it should be accompanied by appropriate oversight measures, which also implies that oversight of decentralized procedures by more central levels of government should still be retained. This could be accomplished by amending Arrêté No. 11 of 12 April 2007 and restoring the authority of Arrêté No. 35 of 5 October 2006 (Réseau Ressources Naturelles 2013).

102. Turning area-based permits into volume-based ones would facilitate monitoring, as it is easier to monitor roads than forest plots. The further downstream in the value chain taxes are levied, the easier control becomes, while also increasing the transparency of transactions. In fact, giving downstream actors, such as markets, depots, or sawmills part of the technical and financial responsibility for the formalization of their suppliers, would make it easier for government to exercise control. This process could be encouraged by providing incentives (e.g., tax rebates) to enterprises that invest in the formalization of their supply chain (Cerutti et al. 2014). Rolling the payment of artisanal fees and taxes into the one-stop-shop approach outlined above would further facilitate payments and transparency.

103. At present, there is only one type of artisanal permit, which lumps together semi-industrial operators with individual loggers seeking only to fell a few trees for their own use or small-scale sawn wood production. This oversimplifies the resources that different operators have at their disposal, the impact they have relative to their production volume, and the concomitant benefits they gain from logging. It would therefore be worth investigating the possibility of subdividing the artisanal category, and instituting gradually more stringent requirements as production methods and volumes covered by each category increase. Thus, very simple management plans could be required of the largest operators producing the greatest volumes, while small operators would not face such requirements. Fees and requirements for social contracts could also be staggered progressively. In addition, liberalizing production methods could increase efficiency, reduce waste, and increase incomes (Réseau Ressources Naturelles 2013).

104. Requiring artisanal loggers to be members of producers' associations or cooperatives would better enable communications and contact with individual producers. This would facilitate outreach and training, while also potentially improving information on production. Such associations would require capacity building, and regional representation would need to be assured (Cerutti et al. 2014). Their attractiveness to putative members could be increased by enabling them to represent their members' interests vis-à-vis the authorities (Schmitt and Belani Masamba 2012), and by seeking to improve the value chains for their products. In addition, by grouping artisanal loggers in a pre-defined area, synergies between producers could be exploited, at the same time as facilitating support and control by authorities. This arrangement, however, would depend on land-use planning processes being carried out (see below).

105. Furthermore, Article 23 of Arrêté 35 could be revised to allow PCA owners to use mobile saws. These would improve the quality of sawn wood and make operations easier, thus creating more value for the operator (Lescuyer et al. 2014b) and reducing waste. Similarly, incentives for local processing would help add value locally.

Summary of recommendations:

Short-Term Action	Long-Term Action
<ul style="list-style-type: none"> - Clarify the legal authority for issuing artisanal permits - Review fee levels for artisanal permits and decentralize their issuance - Publicize official tax and fee rates - Evaluate changing the basis for artisanal permits from the area harvested to the volume harvested - Subdivide the artisanal logging category to accommodate the varying scales of production, and institute gradually more stringent requirements with mounting volumes 	<ul style="list-style-type: none"> - Limit exports to products of legal origin - Organize artisanal producers into associations or cooperatives

<ul style="list-style-type: none"> - Institute a standardized social responsibility contract for larger artisanal producers - Allow the use of mobile saws in artisanal logging 	
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4. Zoning

106. The absence of a national land use policy and an accompanying inclusive planning process that could clarify the status of land and natural resource tenure is leading to increased spatial conflicts among different ministries and between land users. It is thus not unusual to see overlaps between a forestry concession with a long-term land lease, a protected area, or a mining concession. Sectoral laws, each with their own jurisdiction over certain land uses (mining, hydrocarbons, land, fauna, nature conservation, water resources) organize the management of the state’s estate, and several ministries have corresponding land allocation plans. This creates uncertainty for potential land users and investors, but also for communities. As industrial agricultural concessions are increasingly sought, this problem may intensify (Deininger and Byerlee 2011). Zoning is particularly important for managing the forest estate given that agricultural intensification, a commonly proposed solution for decreasing deforestation rates, often does not achieve the desired land sparing effect, and thus cannot be relied upon to decrease deforestation driven by agricultural expansion (ref. Carrasco et al. 2014; Ickowitz et al. 2015; Megevand et al. 2013).

107. Zoning can also help conservation goals by determining conservation hotspots, where to implement infrastructure investments and avoiding intact forest areas, while leaving peripheral areas open for sustainable use. This was successfully carried out in Cameroon, where the “permanent forest zone” prohibits conversion to agriculture or plantations, and which is further divided into protected areas and concessions (WRI 2007). In a country such as the DRC, whose transportation infrastructure network is among the worst in Africa, infrastructure expansion is key to development and poverty reduction. Yet it also poses a threat to the forest resource, as access is closely linked with agricultural expansion and deforestation. It is clear that not all future deforestation can be prevented. Instead, efforts must be made to manage it, to reduce biodiversity and carbon loss to a minimum, and to maximize benefits to local communities (Ickowitz et al. 2015). Land-use planning is key to achieving these goals.

108. As of 2014, the DRC has a Ministry of Land Use Planning. However, this ministry is weak, operates without an institutional framework, and does not enjoy high-level governmental support. Nevertheless, some progress is being made: The ministry is constructing a land use database with support from the World Resources Institute and funding from USAID. There is a need to make sectoral laws more coherent with the 2006 constitution (World Bank Group 2014). A macro-zoning process should then balance competing land use interests, and could be based on the terms of reference for the process that were developed by the World Bank-supported Forest and Nature Conservation Project. National-scale forest zoning in DRC has been supported by a National Steering Committee

for Forest Zoning since 2009, but no actual activities have taken place to date. Macro-zoning would have to involve community consultations and free, prior, and informed consent (FPIC), especially when identifying traditional and customary forest use (Lawson 2014).

109. However, land use planning is a long-term process, and macro zoning would have to depend on the completion of such a process. Meanwhile, community-based micro-zoning has been carried out extensively and cost-effectively in the DRC, and a guide for micro-zoning already exists. Micro-zoning, carried out prospectively, could be continued even while awaiting national processes so as to reduce land use conflicts at the local level. The two processes – bottom-up micro-zoning and top-down but consultative macro-zoning – would eventually need to be harmonized, and priority should be given to micro-zoning wherever possible so as to take into account pre-existing customary land uses and rights. However, such processes cannot substitute over the long-run for a coordinated land use planning process.

Summary of recommendations:

Short-Term Action	Long-Term Action
<ul style="list-style-type: none"> - Continue micro-zoning efforts locally - Harmonize sectoral laws with the 2006 constitution to facilitate land use planning - Commence a macro-zoning process in pilot areas 	<ul style="list-style-type: none"> - Initiate land use planning, commencing with pilot areas

5. Conclusions

110. The opportunities for increasing the development contributions of the DRC’s forest sector are manifold, as outlined above. Reducing informality in the artisanal sector, increasing revenue generation, and land use planning all provide avenues for doing so. However, recent experience suggests that, as long as forest issues don’t receive higher political priority, general forest governance will not improve significantly. Many of the reforms outlined above will require substantial political will from the highest levels of government, or else they will create at best partial results.

111. Similarly, the forest administration in its current state is not able to ensure proper oversight of the sector, and will need continued, substantial capacity building to exercise its role. However, without the aforementioned direction from higher echelons of power, such efforts are likely to be limited in their effectiveness.

112. Following the decentralization process, which has transferred substantial revenue gathering power to the provinces, any future activities in the sector need to closely involve the provinces, as well as lower decentralized entities. The transparency of the actions at provincial level is weak, which in part is a result of the similarly weak relationship between the MECNDD and its decentralized counterparts. While working at both central and

decentralized levels adds an additional layer of complexity to an already difficult sector, it does follow the decentralization course the government has charted. As the country's administrative structure moves from 11 to 26 provinces, the support needs of the new administrations will be substantial.

Policy Note 2: Community Forestry

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1. Introduction

113. Community forestry offers a potential avenue for increasing the revenues of forest communities. Since the publication of the 2002 Forest Code, and in light of the publication of Decree 14/018 on community forestry in 2014, the assumption was that the DRC would follow the model set forth in these legal texts. However, more recently, the MECNDD has favored an approach that bases itself of decentralized territorial entities instead of communities. The political process is therefore in flux. This policy note analyzes the advantages and disadvantages of the two currents to 1) inform the debate such that the DRC can choose the model that holds most promise for sustainable forest management, rural income generation, and poverty reduction, and 2) to help manage the risks that either model presents.

2. Background to Community Forestry in the DRC

114. Although the concept of social forestry emerged in the 1970s, it was only truly incorporated into forestry policies following the Rio de Janeiro summit, notably in the form of decentralized resources management. Among the Congo Basin countries, Cameroon was the first to institute and then apply the concept of community forestry, followed by Gabon. In both countries, at least five years elapsed between the publication of forest codes ratifying this innovative form of resource management and the first steps being taken to implement it through pilot projects financed by the international community. The DRC is now following a similar path, with the Forest Code (Law no. 011/2002 of August 29, 2002) having been complemented in August 2014 by Decree 14/018, which defines the rules for granting local community forest concessions. During this period, several projects were conducted to launch pilot initiatives for community forestry. These include, among others:

- The Belgian-funded Forcom Project (carried out by the Food and Agriculture Organization, FAO), which drafted implementing provisions and launched several pilot experiments;
- The Forcol Project (carried out by Forests Monitor, with British funding), which drafted implementing provisions, staged a major campaign designed to involve local communities in the process, and launched a number of participatory mapping initiatives;
- A Dutch-funded project by the Tropenbos Foundation, which examined the role of community forestry in developing artisanal logging;
- The Makala Project (conducted by CIRAD, with European Union funding), which drafted Simple Management Plans (SMP) for firewood collected on village lands;
- A Norwegian-funded project led by Océan, which conducted an examination of the management of customary lands and the potential role of the REDD process.

115. These initiatives share a common philosophy of community forestry that aims to introduce decentralized management of customary lands on the basis of institutions backed by rules proposed in models of common goods management and that seek to include communities' traditional practices. This generic approach to community forestry seeks an alternative to what is often considered a top-down approach by the state, which consists of designating and managing "forêts classées" or earmarked for continuous production in the DRC.

3. Evolution of the Legal and Regulatory Framework for Community Forestry

116. The "local community forest" (LCF) concept is an innovative provision of the 2002 Forest Code. Article 22 stipulates the general terms for obtaining such a forest.²³ Articles 111 to 113 stipulate the conditions for the exploitation of such forests, either by the communities themselves, by artisanal operators, or by outsourcing their exploitation to third parties under a management contract.

117. Decree 14/018 of August 2, 2014, which defines the rules for granting LCF concessions, supplements the provisions of the Forest Code. An LCF may be requested by a local community, defined as a population traditionally organized on the basis of custom and bound by ties of clan or family solidarity. The Chief of the Sector (or Chiefdom) is required to identify the members of the applicant community by presenting a list of the families, lineages, or clans that make up that community. Within the LCF, the community may request a forest concession, but must first obtain legal personality as a non-profit organization, a cooperative company, or a local development committee (LDC). Although the size of local community forest concessions must not exceed 50,000 ha, the community retains its customary rights to the area not under the LCF and may continue to exercise them in accordance with the law.

118. However, these forestry regulations do not appear to be fully compatible with two major pieces of legislation laying down the framework for decentralization in the DRC. First, in 2006, the Constitution established the provinces as well as four Decentralized Territorial Entities (DTEs), namely cities, municipalities, sectors, and chiefdoms, all of which have legal personality. Second, Organic Law no. 08/016 of October 7, 2008 on the composition, organization, and functioning of the DTEs and their relationship with the state and the provinces confirmed the relevant articles of the constitution and stipulated their implementation. However, this law also reiterates that several levels of decentralization exist in rural areas, with provinces being made up of territories, which are subdivided into sectors or chiefdoms, which are further subdivided into village groupings, themselves subdivided into villages. Village groupings and villages are decentralized territorial entities without legal personality, unlike sectors and chiefdoms, which enjoy free administration and autonomy to manage their human, economic, financial, and technical resources. Communities, clans, lineages, and families are not considered legal entities in the DRC.

²³ "A local community may, on request, obtain by way of a forest concession all or part of the protected forests among those forests possessed by virtue of custom."

4. Approaches to the Implementation of Decentralized Forestry

119. From the publication of the Forest Code in 2002 until 2014, there appeared to be broad consensus on the guiding philosophy for the implementation of LCFs in the DRC, enshrined in Decree 14/018. However, the MECNDD recently seemed to be aiming for a different approach to community forestry by embedding it in the DTEs.

120. Thus, there are currently two competing notions of community forestry in the DRC. On the one hand, LCFs and, more specifically, local community forest concessions may be requested and managed by a “population traditionally organized on the basis of custom and bound by ties of clan or family solidarity that form the basis of its internal cohesion” on the scale of a given farmed tract. However, this community-based definition of local forest management conflicts with the state-centered trend in community forestry as administered by the DTEs, in particular at the level of sectors or chiefdoms.

121. How timber resources are exploited is a second variable that will play a major role in determining the impact of community forestry in the DRC. Three possible choices may emerge from the ongoing review of Decree no. 035 of October 5, 2006 on forestry: (1) small artisanal loggers with no land management obligations; (2) medium-sized artisanal loggers operating under sustainable management constraints; and (3) industrial operators working with a sustainable forest management objective. In light of current experience in Gabon and Cameroon, the sustainable management of a 50,000 ha concession seems to be a realistic option for the industrial exploitation of timber resources.

122. Altogether, three scenarios are envisaged for the implementation of community forestry in the DRC in the medium term: (1) the implementation of local community forests in the spirit of the Forest Code and the Community Forestry Decree, concessions for which would be operated by artisanal loggers; (2) implementation of local community forests in the spirit of the Forest Code, concessions for which would be operated by an industrial company within the framework of a forest management plan (FMP); and (3) community forestry implemented by the DTEs, not local communities. The features of these three scenarios are shown in more detail in Table 5.

Table 5: Scenarios for community forestry in the DRC

	Tenure holder	Area	Governance method	Uses	Resources management mode	Links with rural land development
<i>Scenario 1: LCF managed by communities with artisanal exploitation</i>	Local community defined by custom (Constitution Articles 34 and 207; Land Law Article 388; Forestry Law Article 22; Decree 14/018); however, this is not a DTE and has no legal personality	An LCF has no size limit but includes a concession of a maximum area of 50,000 ha, which may be dedicated to the exploitation of timber (Decree 14/018)	The LCF is requested by a customary chief; however, the concession's operation requires a local association or cooperative committee to be established with legal personality	Multi-use management of the LCF, without predominance given to timber exploitation (RRN document 01/06/15)	SMP applied throughout the LCF	Uncertain integration of the achievements of the communities with an LCF in rural land planning and development
		Several forest concessions may be combined (Decree 14/018)		Artisanal logging either by the community or through legal operators (Forest Code, Decree 14/018)		Links between community associations and chiefdoms or sectors to be worked out and formalized
				Two types of artisanal loggers: (1) Category 1, with maximum of 50 ha per year for local needs; (2) Category 2, with maximum 500 ha per year on the basis of an annual operating plan	Annual operating plans for Category 2 artisanal loggers	
<i>Scenario 2: LCF managed by the communities with industrial exploitation</i>	Local community defined by custom (Constitution Articles 34 and 207; Land Law Article 388; Forestry Law Article 22; Decree 14/018); however, this is not a DTE and has no legal personality	An LCF has no size limit but includes a concession of a maximum area of 50,000 ha, which may be dedicated to the exploitation of timber (Decree 14/018)	The LCF is requested by a customary chief; however, the concession's operation requires a local association or cooperative committee to be established with legal personality	Multi-use management of the LCF, without predominance given to timber exploitation (RRN document 01/06/15)	SMP applied throughout the LCF	The achievements of the industrial operators under community concessions complement those already made under industrial concessions (as per their Terms of Reference)
		Several forest concessions may be combined (Decree 14/018)		Industrial logging (as implied by Article 113 of the Forest Code, which envisages that "exploitation of the community forests may be entrusted to a third party by way of a management contract")	FMP applying only to the community concession	Links between community associations and chiefdoms or sectors to be worked out and formalized

<i>Scenario 3: LCF managed by a DTE with industrial exploitation</i>	Sector or chiefdom (Constitution, Organic Law 08/016) with legal personality	Large forest area sought for promoting sustainable development under industrial exploitation (without legal basis at present)	The statutes and governance of sectors or chiefdoms are stipulated by Organic Law 0/016	Predominance of timber exploitation under sustainable management	FMP	Existence of formal and clear links between chiefdoms or sectors and other policymaking levels
		Possibility of merging several LCFs (Decree 14/018)	These DTEs are still not operational in the field	Other uses managed either in the FMP or in the DTE development plan	DTE development plan	The DTE is the level chosen by the constitution for managing and developing rural lands

5. Impact Assessment of the Three Scenarios

123. Rapid impact analyses were conducted for these three scenarios for community forestry implementation in the DRC, drawing on the available scientific and technical literature as well as on some 15 interviews with key stakeholders. Seven criteria were selected for conducting this brief impact assessment of community forestry, the outcomes of which are presented below. Table 6 summarizes these estimates by classifying them into five categories: negative impact (--), concerning impact (-), neutral or unknown impact (o), favorable impact (+), and positive impact (++).

Table 6: Summary of impacts of the three community forestry scenarios

	Scenario 1	Scenario 2	Scenario 3
Legal soundness (Compatibility with existing legal texts)	o	-	-
State of resources and forest cover (Change in forest cover and presence of commercial timber species)	+	-	o
Revenues from timber exploitation (Direct and indirect revenues from artisanal or industrial timber exploitation)	+	++	++
Revenues from non-timber forest products (NTFP) (Direct and indirect revenues from NTFPs)	o	+	+
Ability to cover initial expenses (Ability of local community or public actors to recover the investment of setting up the formal management of the forest)	-	+	+
Social infrastructure (Change in number or quality of dispensaries, schools, pumps, roads etc.)	--	+	++
Customary institutions (Role of traditional rules and organizations in formal forest management)	++	+	--

124. None of the scenarios appears superior on the basis of the criteria selected. Although Scenario 1 promotes social forestry embedded in local customs, it does not have a major impact on either living standards or the state of resources. It is therefore unclear how much revenue generation it adds. On the other hand, this scenario has a high political and symbolic value as it formally recognizes the role of communities in rural land use and management. How it ties in with the decentralization process remains to be clarified.

125. Although Scenario 2 both adds real value to timber resources and provides substantial revenues for local populations, its implementation requires clarification of the regulations concerning the type of exploitation envisaged in community forests. In addition, it requires safeguards to ensure that communities are able to supervise the forestry outsourced to an industrial operator. It is probably the most practical scenario in the medium term in terms of poverty reduction as it strengthens the capacities of communities to use their lands and the revenues they generate.

126. Scenario 3 establishes the DTEs as administrators of the community forests, the management of which supports and fits into the local development plan and the decentralization process, building social infrastructure. However, this vision of community forestry would require a modification of the legislation and clarification of the relationships linking the DTEs and customary institutions.

6. Recommendations for Maximizing Gains and Minimizing Risks

127. In the absence of an optimal scenario for the implementation of community forestry, this section reviews the outcomes expected in the short to medium term and presents a number of recommendations for maximizing the benefits and reducing the risks inherent under each regime.

Scenario 1: Artisanal Exploitation of Local Community Forests

128. Under Scenario 1, the development of community forests follows the community-based approach that has guided most projects in the past decade. However, it overlooks – at least in the short term – how community forestry fits into the formal decentralization process.

Expected Outcomes

- Over the next five years, approximately ten communities will have acquired and be managing LCFs according to a Simple Management Plan (SMP);
- They will be supported by international donors;
- A large area of these forests will be dedicated to logging, with contracts to this end signed with artisanal operators, who may nevertheless encounter difficulties with obtaining legal permits;
- The establishment of community associations or cooperatives will attract other donors wishing to support rural development projects at the village or community level; and
- The SMP will probably pave the way for improved organization of some activities within the community, such as gathering NTFPs or protecting some ecosystem services.

Risks

- Legal vulnerability of community associations in owning and managing protected forest areas;
- Weak integration of community forests or the activities they enable in rural land development at the sector or chiefdom level;
- Weak capability of communities for producing an SMP and managing 50,000 ha;
- Risk of weak oversight by the community of the numerous artisanal operators required for the annual exploitation of the area; and
- Large tracts of the forestry concession may be too difficult to access to be exploited without industrial means.

Technical Recommendations (Short Term)

- Publish the decree setting forth the conditions for the management of LCFs;
- Study the costs of implementing the LCFs and propose simplification measures;
- Continue pilot experiments building on existing initiatives, work out a formal framework for the SMP, and insert into the SMP a test for financial feasibility;
- Draw up a model outsourcing contract for artisanal logging in the LCFs consistent with the terms of reference or the management plan for artisanal operators; and
- Strengthen the technical, legal, and commercial capacities of communities for oversight of forestry activities.

Policy recommendations (Long Term)

- Clarify the relationship between the associations in charge of the LCF concessions and the DTEs. Rather than community-based management, a village or village grouping, both of which are DTEs but without legal personality, could conceivably form an association, cooperative, or rural agricultural management committee with the aim of obtaining legal personality so that they may request and operate a community concession;
- Monitor the socioeconomic impact of LCFs in the villages concerned, in particular the distribution of revenues and profits;
- Monitor the ecological impact of logging in LCFs; and
- Enable communities to access financing to better cover the costs of setting up and monitoring LCFs.

Scenario 2: Industrial Exploitation of Community Forests

129. Scenario 2 rests on the assumption that industrial exploitation in the LCFs under a sustainable management constraint is feasible. However, it requires clarification of regulations regarding the possibility of this mode of exploitation and consideration of how the management of these community concessions fits into the development of areas under DTE administration.

Expected Outcomes

- Over the next five years, a number of community concessions will test the outsourcing of timber exploitation to industrial companies within the context of an FMP. These initiatives will be supported by international donors;
- The exploitation of a sizeable forest area by a single operator will maximize community benefits – whether financial or in kind –, reduce transaction costs, and secure revenues over the long term; and
- The establishment of community associations or cooperatives will attract other donors aiming to support rural development projects at the village or community level.

Risks

- Industrial exploitation may not be legally recognized as an option for the use of timber resources in the LCFs;
- Weak oversight of industrial operating practices by communities in their concessions due to insufficient technical capacities or a balance of power that is unfavorable for the communities;
- Community leaders may fail to use revenues from the industrial exploitation of timber for the benefit of collective well-being; and
- Industrial logging in the community concession may open up feeder roads conducive to the illegal expansion of agricultural and hunting practices.

Technical Recommendations (Short Term)

- Introduce in the regulations currently being drafted the possibility of industrial timber exploitation in the community concessions;
- Strengthen the supervision capacities of local communities in collaboration with the forest administration; and
- Draw up a model outsourcing contract between a community and an industrial operator with the aim of exploiting the timber resources of the community concession under sustainable management;
- Ensure transparency of benefit-sharing schemes for the distribution of revenues and profits from timber production.

Policy Recommendations (Long Term)

- Clarify the relationship between the associations in charge of local community forest concessions and the DTEs. Clarify the links between the SMP and FMP of the LCF on the one hand, and the development plan of the DTE on the other;
- Monitor the socioeconomic impact of LCFs; and
- Monitor the ecological impact of logging in the LCFs.

Scenario 3: Creation of forests under Decentralized Territorial Entities

130. Under Scenario 3, DTE forests replace local community forests.

Expected Outcomes

- Over the next five years, no DTE forest will become operational;
- Future DTE forests will be dedicated to logging, operate under sustainable management, and be granted to industrial companies, which will generate royalties, some social infrastructure, and jobs at the level of the DTE; and
- The FMP will have become an important component of rural land management and development.

Risks

- Obstacles to the creation of this new form of forest in the revision of regulations;
- Weak capacity of DTEs to produce an FMP and manage a large forest area;
- Unequal contracts between DTEs and logging operators;
- Competition in the forest area with the concessions granted by the state;
- Few direct benefits from industrial logging for neighboring communities; and
- Industrial logging in the community concession may open up feeder roads conducive to the illegal expansion of agricultural and hunting practices.

Technical Recommendations (Short Term)

- Take advantage of the review of the Forest Code in order to create DTE forests;
- Support capacity building among the DTEs for the management of their lands; and
- Draw up a model outsourcing contract for logging in the DTEs;
- Ensure transparency of benefit-sharing schemes for the distribution of revenues from timber production.

Policy Recommendations (Long Term)

- Clarify the links between DTE forest management and land development;
- Monitor the ecological impact of industrial logging in DTE forests; and
- Monitor the distribution of profits generated by timber production at the level of sectors or chiefdoms.

7. Conclusion

131. Community forestry in the DRC has been in deadlock in recent months. On one side of the debate are actors who see this regime as a major opportunity to give greater legitimacy in the land planning process to communities, their interests, their knowledge, and their views. On the other side are proponents of formal decentralization, who favor DTEs, which are supposed to shoulder this process and operate in the collective interest. There is now a pressing need to bring these stakeholder groups together to reconcile their views. A discussion workshop conducted by the MECNDD could be organized to flesh out points of view, weigh the advantages and disadvantages of the various approaches, and evaluate trade-offs. Several international donors are willing to support such an initiative. The overriding principles in the selection of a suitable model should be its potential for poverty reduction, the empowerment of the rural population, the minimization of social conflict, and the ability to implement sustainable forest management practices.

132. Regardless of which concept – or concepts – of community forestry the DRC eventually selects and implements, it would be useful to subsequently test them in a number of pilot sites. If community forestry is to be managed by communities, as in the case of several initiatives by

past projects, it would be practical to build on these previous efforts. Selecting sites in the humid forest would make it possible to test both options for timber exploitation. However, if community forestry is to be implemented by the DTEs, the selection of pilot sectors or chiefdoms could be guided by the presence of industrial operators involved in the planning of their forest concessions.

133. In all three scenarios described above, support will need to be provided to the administrators of the community forests, in particular to strengthen the capacities of the managers and of those responsible for oversight. However, as witnessed in Cameroon, there exists a significant risk that this one-off support for kick-starting community forestry may morph into essential support for the day-to-day running of community forests. A major long-term challenge is therefore for community forests to become viable and profitable without external subsidies. This should take place within a time frame over which external support can be reasonably provided, and will require building business models in which a portion of the revenues is used to implement and oversee established rules.

Summary of recommendations:

Short-Term Action	Long-Term Action
<ul style="list-style-type: none"> - Develop overriding policy goals for decentralized forestry - Organize an inclusive discussion to reconcile the views of proponents favoring forestry approaches based on decentralized territorial entities and those favoring communities as a basis - Select one or several approaches to decentralized forestry 	<ul style="list-style-type: none"> - Test the approach(es) chosen in pilot sites

Policy Note 3: Illegal Logging

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1. *Illegal Logging*

134. As identified in the overview chapter, the vast majority of logging in the DRC is unregulated and/or illegal. This policy note seeks to prioritize government action to reduce illegality.

135. Article 7 of the 2002 Forest Code stipulates that logging includes “activities consisting specifically of felling, hewing, and transporting timber or any timber products as well as harvesting other forest products for economic gain.” Illegal logging includes all forest activities that run counter to the law and its implementing decrees.

136. An analysis of the legal framework is imperative for identifying key issues and priorities in the fight against illegal logging. A brief summary of this framework is presented below (Table 7). Its primary intent is to present the classification of the different types of forests in the DRC along with the conditions for their exploitation.

137. The DRC’s Forest Code distinguishes three types of forests: Classified forests, protected forests, and permanent production forests. While classified and protected²⁴ forests can carry burdensome and varied usage rights mainly for domestic needs, only protected forests and permanent production forests can be used for commercial felling. Commercial felling is organized into three distinct types of logging permits: Ordinary logging permits, carbonization and firewood permits, and artisanal logging permits.

Table 7: *The legal framework on forests*

Law N°011-2002 of August 29, 2002 on the Forest Code			
Classified Forests Art.10 to 19 of the Forest Code	Protected Forests Art.10 and 20 to 22 of the Forest Code	Permanent Production Forests Art.10 and 23 of the Forest Code	
Restrictive Legal Regime	Forest not officially classified	Forests taken from protected forests following a public inquiry to grant concessions, or forests that, following a public inquiry, are intended to be placed on the market	
		Such forests are subject to the rules of use provided by Law No. 011-2002 of August 29, 2002 on the Forest Code	
		Logging concessions allocated to local communities Implementation Decree no. 14/018 of August 2, 2014	Other logging concessions

²⁴ Protected forests are neither classified nor designated as permanent production forests. They are therefore considered to be *domaniales*, i.e., belong to the state domain.

		setting the terms for allocating logging concessions to local communities	
Art. 39 of the Forest Code	Ministerial Decree N° 035/CAB/MIN/ECF-EF/2006 of October 5, 2006 on logging Supplemented by Ministerial Decree N° 105/CAB/MIN/ECN-T/15/JEB/009 of June 17, 2009		
Classified Forests	Usage Permits		
	Protected Forests	Permanent Production Forests	
<i>Usage rights for collecting dead wood, harvesting wood for the construction of dwellings and for artisanal use,</i>	Logging Permit		
	Artisanal Logging Permit Art. 8 of Ministerial Decree No. 035: <i>Authorized individuals in local community forests.</i> Carbonization and Firewood Permits Art. 9 of Ministerial Decree No. 035: <i>Any DCR citizen who is member of a local community</i>	Ordinary Logging Permit Art. 7 of Ministerial Decree No. 035: <i>Industrial operators for timber harvesting in accordance with the provisions of the land use plan</i> Art.19 Implementing Decree N° 14/018 of August 2, 2014 <i>implies that ordinary logging permits also apply to local communities with concession grants</i>	
	Harvesting Permit		
	Art. 10 of Ministerial Decree No. 035: <i>Any DRC citizen harvesting NTFPs</i> Art. 11 of Ministerial Decree No. 035: <i>The provisions of Art. 10 do not apply to local communities harvesting NTFPs for domestic needs</i>	<i>Concession holders are not authorized to harvest NTFPs</i>	
	Special Permits		
	Art. 12 of Ministerial Decree No. 035 distinguishes two types of special permits: <i>Logging permits for protected timber species</i> <i>Special harvesting permits for protected NTFPs</i>		
	Usage Permit for Private Woodland		
Art. 21 of Ministerial Decree No. 035: <i>A permit must be obtained before any exploitation of private woodland or forest products resulting from private planting can take place</i>			

138. The legal and regulatory framework contains all of the necessary provisions for the sustainable management of forest ecosystems. Specifically, it details all of the terms for granting logging and harvesting permits, monitoring logging activities, and applying penalties in the case of offenses or crimes committed against the environment. Nevertheless, there is room for improvement. For one, the legal and regulatory framework is still only partially implemented. To wit, 99.2% of the DRC's timber is harvested informally and thus illegally, as no logging permits are granted upstream. While corruption likely accounts for a significant portion of the failure of timber monitoring, a lack of human and financial resources is the main cause of that failure – a near inevitability in a country as vast as the DRC, with annual timber harvesting of the order of 34 million m³. Given these circumstances, applying the legal and regulatory framework nationwide and to all types of forests and forest products cannot succeed for the foreseeable future as it would automatically result in the watering down of already very modest available resources, thus reducing them to the point of insignificance. Although the fight against illegal logging must be built from the ground up, this must be done step by step by identifying priorities and ensuring that the means for their implementation are in place. Scope for progress is vast, with multiple areas ripe for improvement. In this context, the fight against illegal exploitation should consist of consolidating a monitoring system before planning the next step.

2. Short-Term Priorities for Monitoring Forest Products

139. Given the DRC's size and lack of resources, systematic monitoring of logging activities at the local level remains beyond reach in the short term. Monitoring operations themselves would need to be inspected to ensure their proper execution and the integrity of the agents who conduct them. This would require considerable human resources capable of covering the national territory, a personnel the DRC cannot deploy at present. In addition, it should be noted that the local consumption of forestry products—including NTFPs—plays an important role in meeting the vital needs of rural, often disadvantaged, populations.

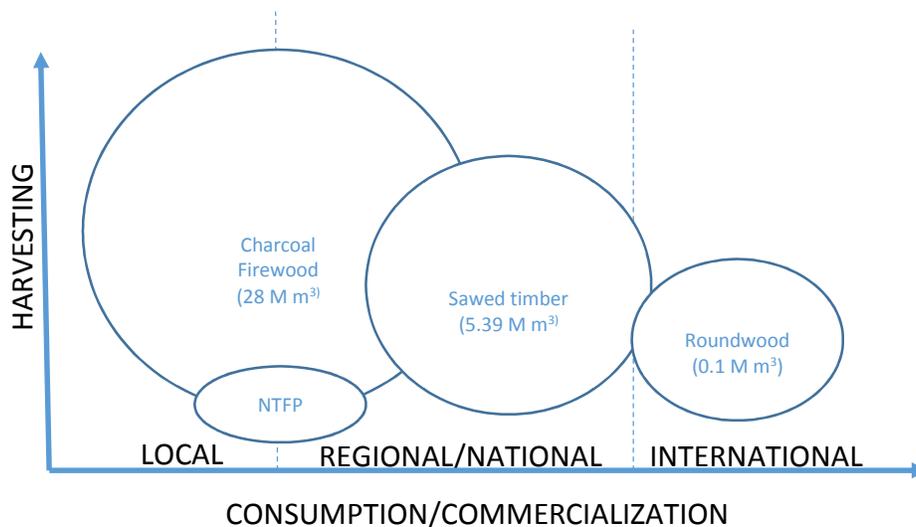
140. For cost-effectiveness purposes, it would be reasonable to first focus on forestry products being transported along the major land and river arteries of the country. These products and their transportation costs are generally subject to margins that increase in proportion to the distance between production site and place of consumption. As taxing these products could finance a timber tracking system, the DRC should give priority to controlling forest products with the highest margins (i.e., products destined for export) while ensuring that artisanal production is oriented toward legal operations to reduce market distortions (see Chapter 1).

141. Finally, if the DRC opts, as proposed, to develop a timber tracking system in stages, it would be judicious to start with the forestry products with the smallest volumes, which in this case again are products destined for export. Once mastered, the tracking system could be expanded to other categories of products.

142. The short-term focus on certain categories of forestry products does not prevent the decentralized services of the MECNDD from pursuing their judicial monitoring plan in the provinces to its fullest extent, including recording all infractions.

143. On this basis, and taking into consideration the figure below, which sorts forestry products by two categories (volumes harvested and type of trade), an initial ranking of the possible elements of control is proposed as follows:

- Priority 1: Roundwood and sawn timber for export
- Priority 2: Sawn timber for the domestic market
- Priority 3: Coal and firewood for trade at the regional level
- Priority 4: Forest products other than NTFPs (charcoal, firewood, sawn timber) for trade at the local level
- Priority 5: Forest products other than NTFPs for own consumption at the local level
- Priority 6: NTFPs for own consumption at the local level



3. Monitoring Strategies

144. The monitoring strategies developed in this section are limited to Priorities 1 to 3, as identified above:

Priority 1: Roundwood and Sawn Timber for Export

145. Given the requirements of Western markets, the credibility of a tracking system for export products is of particular importance. Were it to fail, the country would deprive itself of growth in an industry likely to contribute to its GDP, not to mention job opportunities. Regrettably, the DRC today is known on international markets for its illegal operations. In part as a result of this, export volumes have fallen to 0.25 million m³ per year, and margins are low. This is in part the result of allowing the combined export of illegally exploited products (with fines paid if at all, after the illegal activity has been discovered) and timber from sustainably managed forests. Being concerned with their image, Western buyers are unable to tell the wheat from the chaff and thus turn away from DRC products. As a result, the DRC must limit the export of forest products to only timber of legal origin (irrespective of the sub-sector from which it comes).

Priority 2: Sawn Timber for the Domestic Market

146. Sawn timber for the domestic market must come from protected forests with artisanal logging permits, or sustainably managed permanent production forests with ordinary logging permits. However, at present, almost all of the timber leaving protected forests is produced without logging permits, or with permits based on faulty allocation terms. This implies that a significant effort must be made to systematically grant logging permits in line with current laws and regulation.

147. Rough timber to be hewn as well as loads leaving the mills can be monitored while being transported on the road and river network, as is currently the case. However, a short-term

alternative could be to focus monitoring activities on the few operating processing units. An alternative could be to transfer the responsibility for monitoring legal timber to the sawmill operators and/or markets by penalizing them for any use of illegal timber. Such a system could be implemented in stages, beginning with sawing operations and/or markets handling more than a certain volume of raw timber per year²⁵, and then expanding to all operators nationwide. The mission of the DCVI of the MECNDD would then be reviewed and limited to the inspection of primary processing units and/or markets and to auditing their monitoring procedures (See Policy Note 1 for other proposed solutions, particularly in the artisanal sector)

Priority 3: Charcoal and Firewood for Trade at the Regional Level

148. Charcoal and firewood represent around 84% of the annual harvest. Monitoring the legal origins of such wood can only be done gradually. An initial step could be to seek to control only the Kinshasa supply basin, focusing particularly on the production area of the Mai Ndombe Province, which falls under the Emission Reductions Program examined by the Carbon Fund of the Forest Carbon Partnership Facility (FCPF).

4. Lessons Learned from the Timber Production Monitoring and Commercialization Program (PCPCB)

149. Inter-ministerial Decrees No. 001/CAB/MIN/ECN-T/15/BNME/2012 and 615/CAB/MIN/FINANCES/15/2012 of December 5, 2012 established the PCPCB and specified the terms of its implementation. The PCPCB monitors both raw timber and sawn wood from artisanal and ordinary logging permits. However, the scope of the PCPCB does not extend to logging permits for firewood or charcoal making.

150. All operators in the sub-sector are required to use the MECNDD's Computerized Forestry Management System (*SIGEF*). This system automates the regulatory processing of information concerning the operation and management of the sub-sector. To facilitate monitoring operations, companies holding forest resource licenses are required to identify any timber leaving the forest as soon as it is cut by affixing a barcode. Processing companies are also required to apply this labeling to their product.

151. Implementation of the PCPCB was entrusted to a contractor on January 20, 2010 through a contract funded by the Forest and Nature Conservation Project (FNCP).²⁶ This contract required the service provider to ensure deployment of the SIGEF, including hosting and maintaining the HELVETA software upstream and providing training to sub-sector actors and the MECNDD downstream. The provider was also expected to sell barcode labels, proceeds from which were to fund the PCPCB. This contract was amended several times as revenues

²⁵ An alternative could be to monitor all sawmill operators in a number of pilot areas (Kinshasa, large regional cities, etc.).

²⁶ World Bank Project, with IDA Funding.

from label sales proved insufficient to cover costs. In April 2014, when the FNCP no longer had the resources to cover the PCPCB's deficits, the MECNDD then committed to picking up the financial slack in a further amendment on July 1, 2014. This amendment was never implemented, and the PCPCB finally collapsed on August 21, 2014.²⁷

152. Afterwards, the FNCP focused on mitigating the consequences of this collapse and to maintain a modicum of control over illegal logging. Funding of USD 600,000 was allocated from the annual budget to reinforce the Department of Control and Internal Verification's (DCVI) monitoring missions for activities extending to June 2015, the FNCP's closing date. As of July 1, 2015, the DCVI's missions were interrupted as a result of a lack of resources.

153. Although the inadequacy of revenues from the sale of barcode labels was at the source of the collapse of the PCPCB, these revenues could have been significantly enhanced. In fact, concession operators did not all initially support the PCPCB, thereby slowing its build-up and making it impossible to achieve a balanced budget within the required time (the lifespan of the FNCP). In addition, the SIGEF platform and its HELVETA software malfunctioned repeatedly, at times making their use impossible. Moreover, with no way of distinguishing sustainably grown raw timber for export, the flat price of the rough lumber labels, which the Fédération Industrielle des Bois (FIB) deemed too high, was much less of an incentive than had been expected. In addition, staffing control posts only during the day encouraged many carriers to work at night in order to avoid the controls. Finally, lumber seized in successful monitoring operations was not sold at auction to raise additional funds.

5. Proposals for Tracking Legal Wood

154. The following proposals concern the priority product categories identified above:

- Roundwood and sawn timber from sustainable forestry concessions for export;
- Sawn, un-barked logs for the domestic market, initially limited to the largest processing units; and
- Firewood and charcoal from the future Mai Ndombe Province.

155. Once it is successfully implemented in this area, tracking can be deployed more broadly. However, unless it is successful on a small scale, progress at the national level will be elusive. There are two options for implementing the tracking of legal lumber within this restricted area:

156. The authorities can conduct such an operation while retaining all of their sovereign missions. This will require major awareness-raising and training efforts on the part of both

²⁷ In brief, a change in strategic orientation occurred on July 1, 2014 as the Government expressed the desire to use the services of the Congolese Monitoring Agency (OCC) rather than those of SGS to make the PCPCB operational. On this new basis, the Government would no longer honor the terms of the July 1, 2014 amendment, which had just been signed with SGS.

MECNDD staff and the authorities for better application of the legal and regulatory framework. Special attention will need to be paid to issuing logging permits. Significant investments (particularly in control posts) will also be essential. Substantial financial support from the international community will be a prerequisite. While capacity building results and government ownership could be substantial, the risk of fraud will remain high given the civil service salaries.

157. The second option is a delegated management contract that would transfer all or part of the timber tracking missions to an independent third party. Conceptually, this approach is far removed from the previous PCPCB contract, which was simply a contract for service provision. In this case, the assignee would not only bear the costs of operations and current upkeep but also of investments (including control posts, SIGEF, etc.) and would be compensated based on payment of a tax paid by users, including exporters, sawmill operators, and charcoal carriers levied on the basis of every cubic meter or ton tracked. The tax could also financially support the sovereign missions of the DCVI. This option would be more transparent and could more easily benefit from outside expertise, however it may be viewed critically given the history of the PCPCB.

158. As the operating risks in the DRC are high, it is possible that the international community may have to make special efforts to support part of the investment to make the call for proposals more attractive, and is probably a prerequisite for the DRC's capacity to identify potential operators. However, how such an option performs will also depend on the quality of the contractual arrangements made and on the fair compensation of the assignee. This is one of the lessons learned from the PCPCB. In addition to technical qualifications, the criterion for selecting the assignee would be the compensation level the assignee proposes to bill the users, with the lowest compensation being favored. When preparing their bids, applicants for the delegated management contract would need to have volume estimates for each of the categories of forestry products to be monitored, which will strongly influence the level of investment required.

159. Timber seized by the DCVI should be sold at auction or by submission of sealed bids. The lack of such a system seriously impaired the effectiveness of the PCPCB, as seized lumber, given a lack of provision for its utilization, became part of the illegal timber trade after its seizure. The auctions would be intended for national sawmill operators for domestic use of final products. No seized timber could be exported in any form whatsoever so as to protect the reputation of regular timber exports.

Table 8: Forest product categories to be monitored

	Forestry Product Categories to Be Monitored		
	Roundwood and sawn timber from sustainable forestry concessions for export	Sawn, un-barked logs for the domestic market, initially limited to the largest processing units	Firewood and charcoal from the future Mai Ndombe Province
Investments in the river and road network	Control post(s) at Matadi	Option A: Controls on the river and road network Control post construction	Construction of a control post at Mushie, at the confluence of the Kasai and Fimi rivers Construction of 2-3 road control posts, one of which on National Highway 1
Other Investments	Implementation of a PCPCB (including SIGEF) for the international market	Implementation of a PCPCB (including SIGEF) for the domestic market in selected intervention areas Option B: Controls at processing units and/or markets Local offices	
Basis for cost recovery	m ³ /exporter	Option A: m ³ /carrier Option B: m ³ /sawmill operator/market	Tons/Carrier

160. Training and awareness-raising regarding the proper application of the legal and regulatory framework would complete this commitment, with the particular objective of increasing the rate of issuance of legitimate logging permits. Legal assistance will likely be needed for adjusting the legal and regulatory framework to authorize certain new provisions, including the possibility of selling seized timber.

6. Conclusion

161. Only the most basic application of what is a reasonably sound regulatory framework currently takes place in DRC. Any response that seeks to control illegal logging must carefully prioritize its actions. Focusing on controlling major transport axes would be a start. The control of export products should be prioritized, as they have the highest margins. Meanwhile, artisanal production needs to be nudged toward legality, which could be partially achieved by controlling legality at sawmills. Charcoal could be checked along major transport axes as well. A renewed PCPCB is fathomable provided significant design improvements, and should limit itself to a restricted pilot area and products before scaling up. It would need to be implemented through a competitively tendered delegated management contract.

Summary of recommendations:

Short Term	Long-Term
<ul style="list-style-type: none">- Limit exports to products of legal origin- Improve the granting of logging permits- Institute control of legality of fuel wood to processing units and major transport axes in a pilot area- Develop a timber tracking system in a pilot area	<ul style="list-style-type: none">- Apply lessons from pilot areas and increase the scope of control

Conclusion

162. The DRC's forests constitute one of the country's greatest assets. They are the source of livelihoods, energy, building materials, export earnings, ecosystem services, and cultural value, among others. Their economic contribution to the country's GDP is significant, even when estimated conservatively.

163. However, this resource is not only declining rapidly, but is doing so without a view to maximizing its development returns. The DRC's forest sector is in dire need of reform. Absent significant changes, the current trend of relatively high deforestation and degradation will further accelerate, and its contributions to poverty reduction will not increase appreciably.

164. No single initiative or actor can stem this tide in the short term. This compendium, while not pretending to hold a comprehensive solution to the sector's manifold challenges, proposes a suite of approaches to address some priority strategic issues.

165. **Moratorium:** While the moratorium on attributing new forest concessions attracts significant political attention, the decision of whether or not to lift it should be taken in the context of the overall sustainability and economic contribution of the forest sector. Following a legal assessment of the conditions of lifting the moratorium, any such decision should therefore be informed by a sound socio-economic rationale, and, in the event that a decision to lift it should be taken, it should be accompanied by a clear and credible plan for ensuring that resulting forest exploitation can be sustainably implemented and will benefit both local populations and government entities.

166. **Revenue generation:** Simplifying the tax regime and broadening its basis, alongside greater transparency of revenues collection at all levels would go a long way toward improving revenue collection. The political sensitivity of such an undertaking would be considerable, however, and the implementation challenge would be commensurate. Rebalancing the MECNDD's staffing structure to include more enforcement officers on the ground, and empowering those staff key in implementing such a plan. Placing revenue collection points downstream in the value chain could help to do so cost-effectively. In the longer term, the feasibility of reforming the financing and incentive structure of forest oversight services could be evaluated with a view to achieving greater independence from political processes and structures.

167. **Artisanal logging:** Increasing the incentives for more sustainable management and joining the formal artisanal space need to be key reforms in a sector that is currently responsible for by far the largest portion of timber production. Rethinking how artisanal permits are issued, as well as their types, would better respond to the reality of artisanal operations, which often include semi-industrial actors. However this is advisable only if

increased control can be ensured. Instead of seeking to control a highly decentralized production sector, control points for legality and tax collection should be placed as far downstream in the value chain as possible. Simultaneously, incentives could be provided by organizing the sector.

168. **Zoning:** Land use planning could optimize productivity as competition for land, especially from larger land interests, increases. As pressure on the DRC's forests will increase with time, it is crucial that a coordinated process be adopted whereby promising areas of production and conservation can be designated. This is also important as the country ponders its options for community, artisanal, and industrial forestry, since the allocation for each should be optimized alongside competing sectors. This process needs to be led at high levels, as it involves all land-using sectors. The ministry of land use planning is currently not in a position to provide such leadership. Micro- and macro-zoning in forest areas can fill temporary gaps and clarify land use at local levels, however they are not strategic enough to be able to do so over the longer term.

169. **Illegal logging** could be curbed for certain timber categories and in certain areas by operating an improved version of the PCPCB. There currently is no alternative to such a system, and although it has its risks, learning from past failure could mitigate the risks that torpedoed a previous attempt. However, such a system can only be expected to work within a ministry that sees a genuine interest in curbing illegal logging, and would need to have buy-in from higher political levels.

170. **Community forestry** holds the potential to leverage forest resources for poverty reduction. The DRC will need to decide which of two currently proposed models it wishes to follow. Its priority in taking this decision should lie with maximizing returns to local populations, ensuring sustainable forest management, and mitigating conflicts over land use rights. If implemented, the DRC's low-capacity context implies that strong, long-term support for safeguards needs to be ensured so that the flow of benefits to local populations can be ensured.

171. For the suggested reforms to achieve the desired impact, it would be helpful if the highest levels of government attributed greater importance to the sector. Commensurate investments in the forest administration's resources and capacity, and improved collaboration between the various levels of government can further drive progress. The international community's support will be important to provide the necessary financing in a resource-constrained environment, but this must be accompanied by governance improvements before it can have its desired effect.

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