COMPLEX AND NUANCED: DRC FORESTRY AND FOREST LOSS IN CONTEXT

This paper presents evidence-based information on forest loss in the Democratic Republic of the Congo (DRC), the role of the forestry sector in this process and how the Central African Forest Initiative seeks to support the country in halting this forest loss.

WHAT WE KNOW

Historically low deforestation compared to the rest of the world but notable increases in the past years

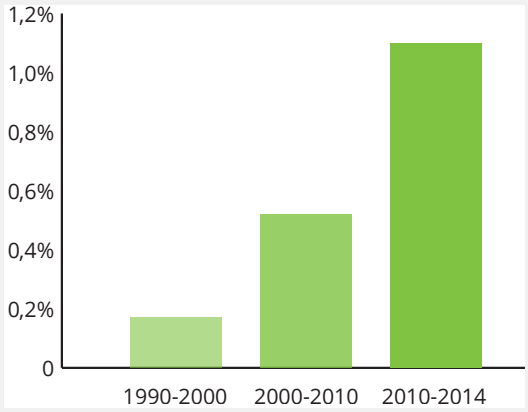
DRC harbors the second largest swath of rainforests in the world—152 million hectares[1], accounting for more than 60% of the rainforest in the Congo Basin. Despite relatively low historical rates of deforestation over the period of 1990-2010 (0.34%[2]) the country has experienced a sharp increase in deforestation in recent years. Ongoing analysis of data puts the figures as high as 1.099% for the period 2010-2014 (**Figure 1**). If these preliminary figures are confirmed[3] for the period 2000-2014, it would indicate that in total more than 13 million hectares of forest have been lost meaning almost 1 million hectares every year.

Despite these figures, Africa's forests have made a minimal contribution to global emissions from deforestation (**Figure 2**). This contribution is even smaller for Central Africa, which represents less than one fifth of the total forest area loss in Africa[4].

Forest loss cannot be reduced to a single variable: it results from a complex interaction of factors

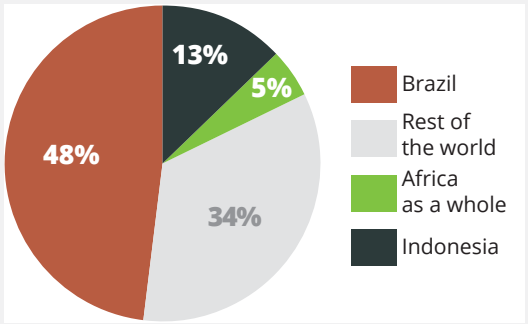
To properly address forest loss, we must understand what drives it. These drivers influence each other and their dynamics changes over time. In DRC, several converging studies[5] of current and future drivers of deforestation and forest degradation led to a national consensus in 2012. The only

Figure 1 **Annual deforestation rates in DRC**



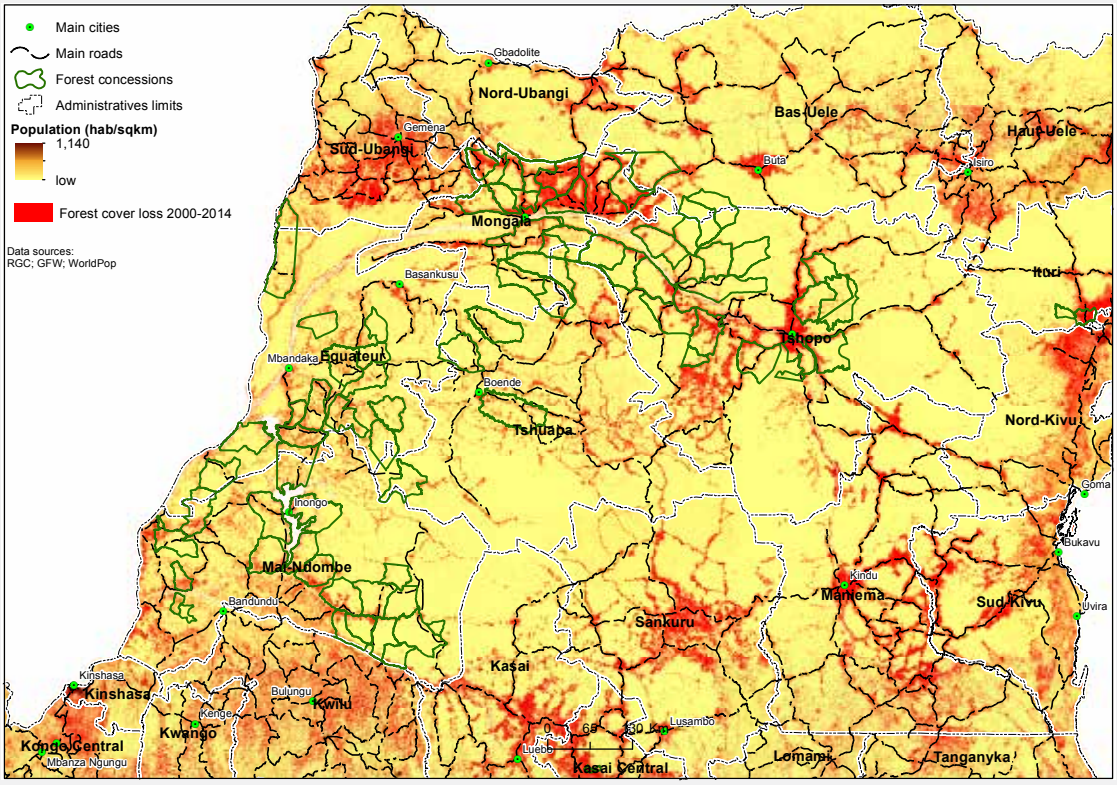
Source FAO unpublished

Figure 2 **Who contributes to emissions from deforestation**



Source Hansen et al. (2008)

Figure 3 **Deforestation patterns, roads and settlements**



quantitative and country-specific study[6] to date shows that **the expansion of subsistence activities (slash and burn agriculture and fuel wood collection) have been the main direct causes of deforestation and forest degradation**, so the latter are **highly correlated with the spatial distribution of the population** as it is shown in **Figure 3**.

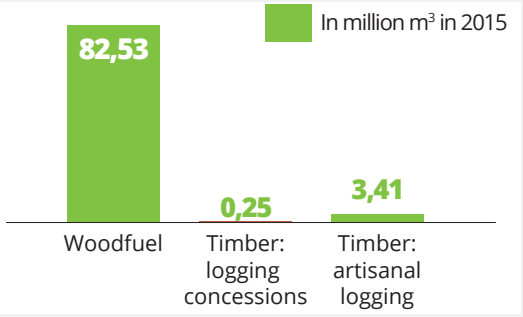
This phenomenon is reinforced by a mix of underlying factors, demographic pressure being the major one. DRC has the third largest population growth in absolute terms (growing from the current 80 million to 120 million by 2030, almost 200 million by 2050 and reaching almost 380 million by 2100)[7]. DRC is already a highly food insecure country, ranked 107th out of 113 countries in the Global Food Security Index. This growing population will need more food, more shelter, more fuel.

Wood use and means of wood extraction show major share of fuel wood and artisanal logging

It is estimated that **96% percent of the total volume of wood harvested in DRC is for fuelwood** (**Figure 4**)[8]. This is because fuelwood represents more than 90% of the total energy consumption of Congolese households.

One cubic meter of fuelwood is required on average by a person per year, which is nearly twice the average in Western Africa (0,58 cubic meter)[9]. DRC is the largest producer of fuelwood in the region, reflecting the country's share of the regional population, with a total production of 82.5 million cubic meters in 2015[10]. Wood energy supply for the sole city of Kinshasa amounted to 5 million m³ in 2008, almost exclusively from informal harvesting

Figure 4 **What is wood used for in DRC?**

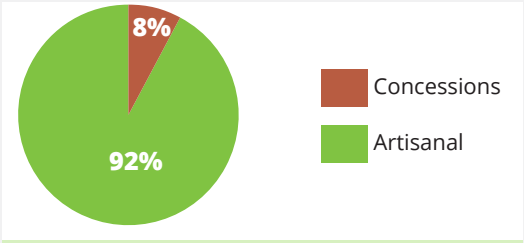


Data sources: FAO Stat and Lescuyer (2014) CIFOR

of degraded forest galleries within a radius of 200 km[11]. Fuelwood is also unsustainably sourced from natural forests, creating vast barren "fuelwood-sheds" around main urban centers.

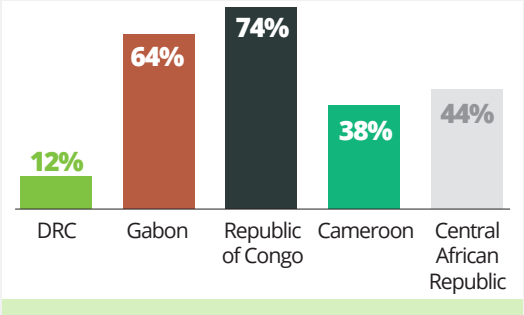
In contrast, **timber** production amounts to 3-4 million cubic meters/year[12], a fraction in comparison with wood extraction for fuelwood purposes (82.5 million) (**Figure 4**). The vast majority of this timber (>90%) is from artisanal logging[13] (**Figure 5**). Artisanal logging is defined as a series of operations carried out, with or without permits, by individual small-scale millers whose main purpose is to supply sawnwood to the domestic market[14]. It is also worth noting that there has been an important misappropriation of artisanal logging permits by industrial companies, especially in the Bandundu province[15]. This sector, which mainly operates in forests near access routes and provides jobs and income to rural workers, offers inexpensive products to the urban consumer and thus is complementary to logging concessions. There has been a substantial increase in artisanal timber production over the last 15 years due to a growing demand for construction timber due to urban population growth and a relative increase of the purchasing power of certain urban classes. This sector is largely informal because of legal loopholes and the dubious process for granting Permis de Coupe Artisanale (PCA), small-scale logging permits, especially in the Orientale province[16].

Figure 5 **How does timber volume from concessions compare with artisanal logging?**



Data sources in Figure 4

Figure 6 **Percentage under forest concession compared to forest area**



Sources: Wasseige et al. (2012) & (2015)

Despite the Democratic Republic of Congo's vast forest resources, **timber harvest volumes from logging concessions are the lowest among Central African countries**, with about 300,000 cubic meters per year of formal timber production[17], representing 3% of the Basin's production[18]. Since 1991, the industrial timber production never exceeded 400,000 cubic meters a year[19] and is estimated to 250,000 cubic meters in 2015[20].

In terms of land use, DRC also has the smallest share of forest under logging concessions in the region (**Figure 6**)[21]. The area under operation in even smaller. The overall political context, heavy fiscal and parafiscal load and unlawful competition of the informal sector have all taken a toll on the viability of the sector. Indeed, of the 57 permits allocated, 25 concessions were operational in 2015, and only 18 in 2016[22]. In 2016, 73% of legal timber came from concessions with a management plan.

A moratorium was established in 2002 and a subsequent presidential decree of 2005 banned the allocation of new logging permits. This is still in force. The decree sets the terms and conditions for converting forest permits into forest concession contracts as well as the criteria to be met to lift the moratorium. However, it has not succeeded in preventing forest loss, that has been sharply increasing (**Figure 1**).

The link between logging concessions and deforestation in DRC: historically weak

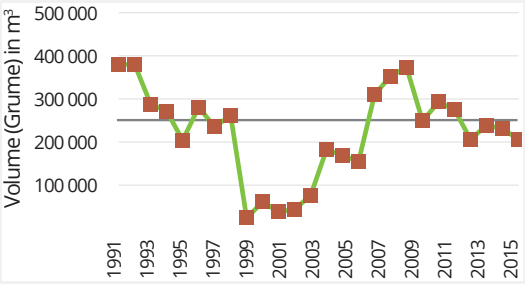
Unlike other tropical regions, logging in the Congo Basin does not entail a transition to another land use such as cattle ranching or plantations. The contribution of the few logging concessions to forest loss originates mostly from road openings, which leads to subsistence agriculture area expansion through slash and burn and the establishment of settlements. Direct impacts of logging are limited by the adoption of principles for the Sustainable Management of Forests (Forest Code, 2002) as well as the high selectivity of logged species.

As a result, logging concessions are not uniformly a cause of deforestation and forest degradation in DRC[23]. Recent studies show that "*intact forest*

fragmentation remains stable (over 2000-2010) and even decreased slightly"[24]recognizing that "*forest fragmentation in the DRC is mostly connected with agriculture expansion and not with selective logging*[25]".

Link between concessions and deforestation patterns

Figure 7 **Annual timber production**

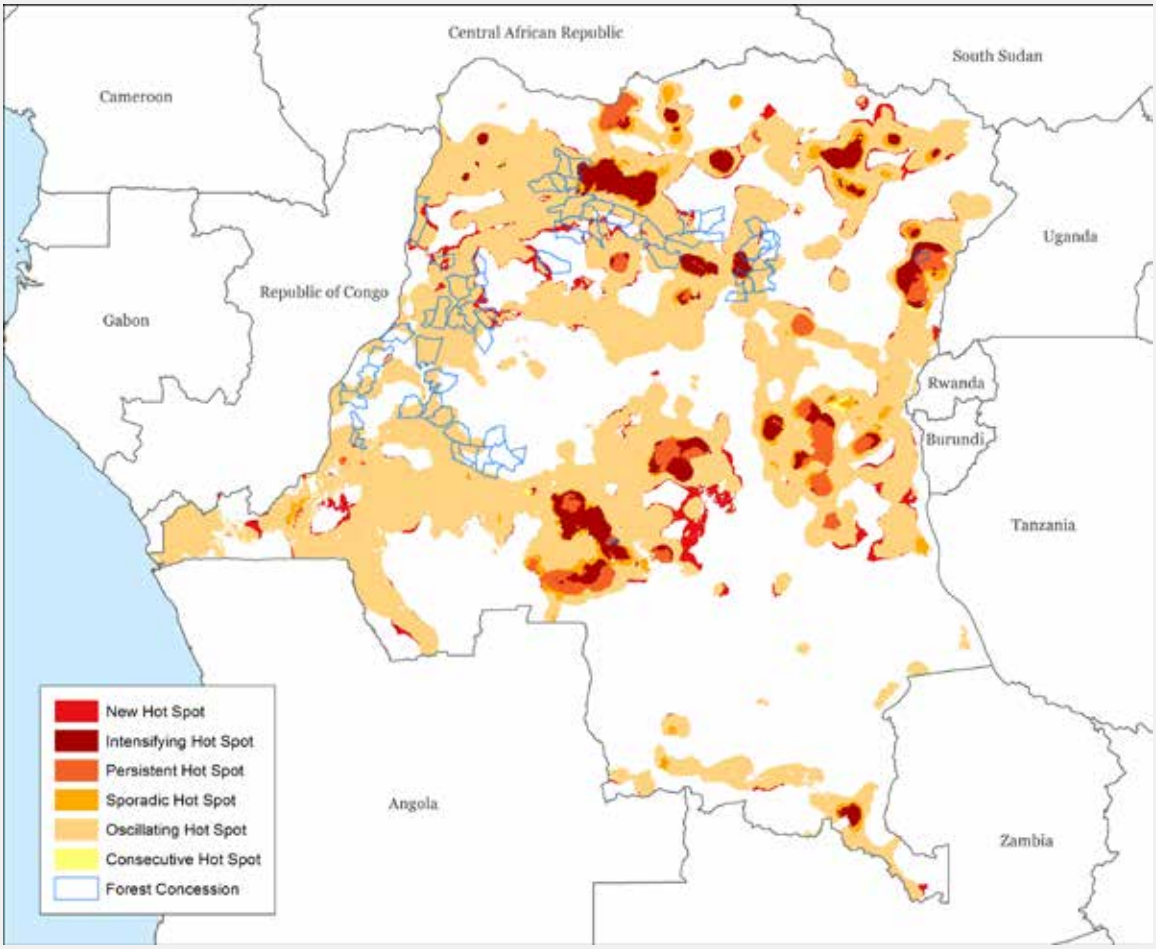


Data sources: source AGEDUFOR

These findings are corroborated by **Figure 7** and **Figure 1** comparing the oscillating annual timber production with the unrelenting and sharp increases in deforestation rates. This is further demonstrated when overlaying forest concessions with the hotspots of deforestation (**Figure 8**).

Although the footprint of logging concessions is considered low, the artisanal sector can be potentially detrimental. It already harvests ten times as much as the logging concessions without taking into consideration the exponential population growth presented before. In addition, artisanal loggers also operate without management plans. **Figure 3,** as well as the historical evolution observable on the Global Forest Watch site, clearly show the increase in forest clearings around main infrastructure and urban settlements where artisanal loggers operate.

Figure 8 **Geographical distribution of deforestation and logging concessions**



Sources: WRI

WHAT WE WANT TO ACHIEVE

Giving forestry the attention it deserves

In the complex web of interventions to halt forest loss in DRC, forestry is one piece of the puzzle. The DRC's forest sector faces severe challenges: forests are currently rarely managed sustainably and they 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. Furthermore, the forest sector faces significant governance challenges. Given the country's size, broader governance shortcomings, and the Ministry of Environment and Sustainable Development'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, also poses significant risks to ongoing efforts to reduce emissions from deforestation and forest degradation (REDD+).

To respond to these challenges, the DRC Investment Framework supported by CAFI and the DRC/CAFI Letter of Intent set out an ambitious list of results to achieve in the forest sector: operationalize the forest monitoring system, reduce the share of illegal timber production, foster the establishment and validation of management plans and increase the share of certified timber for exports, support the implementation of community forestry models including community structuring and organization, design an appropriate legal framework to formalize small scale timber production, professionalize chainsaw millers and incentivize civil servants to decrease current corrupt practices, and find formal ways to meet local demand for timber.

However, if we **concentrate on forestry in isolation from the rest of the deforestation dynamics presented in the first part of this paper, we are bound to fail.**

Addressing drivers holistically instead of treating symptoms

To address the systemic destruction of DRC's forests we must:

- tackle all the direct AND underlying causes of forest loss across all sectors and over the whole national territory
- implement programs and support reform processes to create environments conducive to forest friendly economic development
- identify and promote explicit win-win development-forests interventions - or at least win- "lose-less-forest" scenarios
- broker trade-offs between diverse and sometimes conflicting interests among various actors and sectors, and translate those trade-offs into land use that account for the forest capital of the country
- capacitate forest dwellers, indigenous peoples and the government to level power and knowledge asymmetries and enable a better outcome for forests and people.

Successfully achieving the desired results depends on the capacity of the DRC government to combine and sequence the different sectoral interventions together to mitigate rebound effects (such as agricultural investments triggering further forest clearing) and create mutually enabling conditions that will facilitate forest-conscious sectoral investments. Therefore, CAFI does not support project-based approaches or programs that only concentrate on one direct driver of forest loss without simultaneously addressing other interconnected direct drivers (such as wood energy, timber and slash-and-burn agriculture on the same plot) or improving the enabling environment (land use and tenure rules, governance or fiscal policies). The latter are important not only to ensure the sustainability of the results but also to avoid or reduce the rebound effect.

To develop and implement these complex interventions that span over different sectors entails a high level political commitment. It also requires a government institution with a broad inter-sectoral mandate to effectively manage inter-sectoral coordination and broker and enforce

compromises between different land uses and land users. The efforts that governments are willing to make are spelled out in Investment Frameworks supported by CAFI and Letters of Intent signed between the governments and CAFI. These propose alternative sustainable development models based on the dynamics of deforestation and forest degradation both at the macro-and micro level.

In line with the above, CAFI supports the implementation of the DRC Investment Framework, which is based on the **National REDD+ Strategy**, aiming to stabilize forest cover to 63.5% by 2030, and maintain it thereafter. The basic premise of the Strategy is that the forest will continue to be used and contribute to economic development. Leading up to 2030 this will result in deforestation but with a lot smaller impact than what the trends under a business-as-usual scenario would indicate.

Accordingly, the **Investment Framework** defines the priority investments to address all direct and underlying drivers in a systematic and comprehensive way. It includes a portfolio of transformative programs to foster: i) structural reforms on land use planning, land tenure, governance agriculture and forestry; and ii) investments at provincial level to drive a sustainable, inclusive model of rural development and create new socioeconomic opportunities for local communities, farmers and smallholders, who are among the world's most vulnerable people.

Stemming from the National Strategy, the Investment Framework identifies eight outcomes corresponding to each driver of deforestation. The bulk of investments targets the agriculture and energy sectors as slash and burn agriculture and charcoal production are the main drivers of deforestation (**Figure 9**). In terms of geographic focus, the investment plan differentiates between hotspots of deforestation where the human-forest interaction must be managed, areas of conservation, as well as non-forested areas where alternative economic activities must be developed.

The forestry interventions will be implemented through a matrix of sectoral interventions at the national level and provincial programs. The former include the national forest monitoring system, the sustainable forest management program, the support program to indigenous peoples on different models of forest management and provincial programs. They will be coordinated with other sectors, especially in land use planning, governance, land tenure and energy (**Table 1**).

In addition to CAFI funding, it is expected that bilateral support to community forestry and conservation will be aligned with the investment plan.

Figure 9 **Budget of the Investment Framework per outcome**

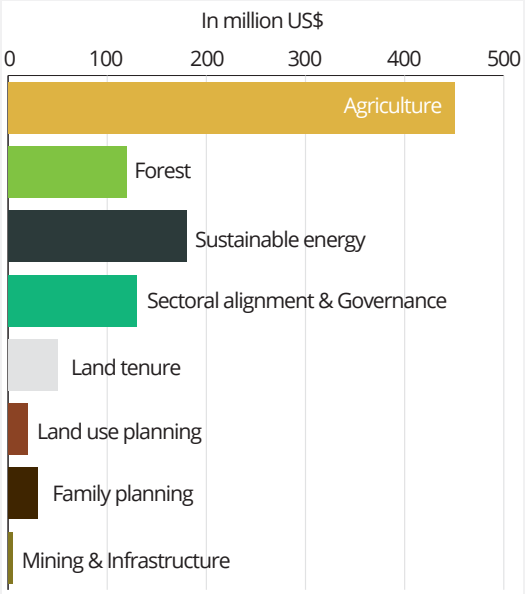


Figure 10 **CAFI Funding to DRC**

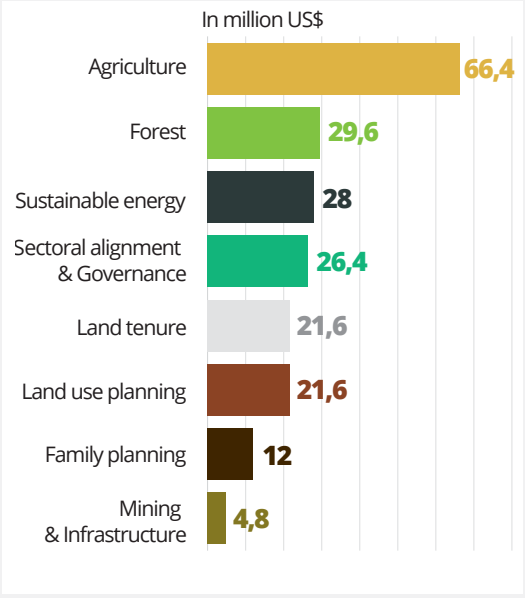


Table 1 Logic of interventions addressing timber production as a driver of deforestation and forest degradation

Cause of deforestation and forest degradation	Sectoral programs: (Implementation geared towards supporting provincial programmes)	8 provincial programmes	Principal linkages with other programs addressing different drivers
4. Timber production (mainly informal/ artisanal logging)	*General objective: sustainable management of wood resources and the improvement of living conditions*		Land use planning (macro and micro): wood resource use spatial planning via LUP schemes across the various levels of government Governance: structuring community and collaboration/monitoring platforms across the various governance levels Land tenure: clarification and securing of land tenure rights (mainly collective) supported by the national reform Energy: sustainable charcoal production through agroforestry
	Sustainable Forest Management, National Forest Monitoring System, Support to Indigenous Peoples: • Forest policy, updating of the Forest Code and zoning • Community forestry in synergy with the DTEs • Control of legality (administration at various levels of governance and an independent observer) • Forest Monitoring	Support to the sustainable exploitation of wood resources within the framework of community-based forestry, including stock management plans, community structuring and organization, the formation of small enterprises, support to the organization of value chains, etc. Support to decentralized administration to improve enforcement capacity Agroforestry Clarification and securing of local communities and indigenous peoples' land tenure rights	

Endnotes

1. MECNDD, 2015. Protocole méthodologique et résultats de l'analyse de changement de couvert forestier 1990-2010 de la RDC

2. MECNDD, 2015. Protocole méthodologique et résultats de l'analyse de changement de couvert forestier 1990-2010 de la RDC

3. Expected by October 2017

4. Megevand, Carole & al., 2013. Deforestation trends in the Congo Basin: reconciling economic growth and forest protection. Directions in development. Environment and sustainable development. Washington DC: World Bank http://documents.worldbank.org/curated/en/175211468257358269/Deforestation-trends-in-the-Congo-Basin-reconciling-economic-growth-and-forest-protection

5. Rapport de synthèse présentant et comparant les résultats des différentes études menées sur les causes de la déforestation et de la dégradation des forêts en RDC, FAO – The synthesis report which sets the national consensus on the drivers of deforestation was based on four qualitative and quantitative studies, by the Université Catholique de Louvain, civil society, FAO and UNDP

6. Defourny, Pierre; Delhage, Céline; Kibambe Lubamba, Jean-Paul, 2011, Analyse quantitative des

causes de la déforestation et de la dégradation des forêts en République Démocratique du Congo, UCL

7. United Nations, Department of Economic and Social Affairs, Population Division (2017). World Population Prospects: The 2017 Revision, Key Findings and Advance Tables. Working Paper No. ESA/P/WP/248.

8. FAO Stat, all data for 2015, except for artisanal logging, where is it based on Lescuyer 2014. CIFOR, for the years 2011 and 2012

9. Marien J-N, 2009, "Peri urban forests and wood energy: what are the perspectives for Central Africa?" in The Forest of the Congo Basin, 2008.

10. FAO, Stat

11. Marien J-N, 2009.

12. For the different estimate for artisanal logging see Lescuyer (2014) CIFOR

13. Lescuyer G, & al. 2014. The domestic market for small-scale chainsaw milling in the Democratic Rep of Congo, Occasional Document 110. CIFOR, Bogor

14. Lescuyer 2014. CIFOR

15. Greenpeace, 2012, 2013. Global Witness, 2012

16. Lescuyer 2014. CIFOR

17. De Wasseige and all, 2009. The Forests of the Congo Basin – State of the Forest 2008, Luxembourg, Publications office of the EU

18. And Central Africa represents only 3% of global tropical timber log production (De Wasseige et al., 2012. The Forests of the Congo Basin – State of the Forest 2010, Luxembourg, Publications office of the EU)

19. De Wasseige and all, 2012. The Forests of the Congo Basin – State of the Forest 2010, Luxembourg, Publications office of the EU

20. AGEDUFOR/AFD

21. De Wasseige et al., 2012.

22. AGEDUFOR

23. UCL, Defourny et al. 2011,

24. Zhuravleva, I. & al. 2013 Satellite-based primary forest degradation assessment in the Democratic Republic of the Congo, 2000-2010.Environmental Research Letters, 8 024034.

25. Zhuravleva, I. 2011. Intact forest landscapes in the tropics: mapping and monitoring in 2000-2010 Abstracts of Fifth Int. Conf. Earth from the Space: the most Effective Solutions (Moscow: Scanex)

CAFI was established in 2015 to accelerate reforms so that forests in the Central African region are recognized and preserved for their positive impact on the fight against climate change, poverty reduction and sustainable development.

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