Date: 5th August 2020

Assessment of the Impact of the Implementation of Intact Forest Landscapes related management and Protection Measures in the Congo Basin

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Document version	V6
Date of document	05-08-2020
Reference	FSC-IFL-V6

Content

Acronyms

AAC: Assiette Annuelle de Coupe (Annual Cutting Area)
ACA: Annual Cutting Area
AFD : Agence Française de Développement
ATIBT : Association Technique Internationale des Bois Tropicaux – International Tropical Timber Technical Association
CB: Certifying Body
CH : Certificate Holder (FSC certified Forest Management Organisation)
CIRAD : Centre de coopération internationale en recherche agronomique pour le développement Centre for international cooperation on agronomic research for development
COMIFAC: Commission of Central African Forests
DMA : Diamètre Minimum d'Aménagement - Management felling diameter
DME : Diamètre Minimum d'Exploitabilité – Minimum felling diameter
DRC: Democratic Republic of Congo
FAO: Food and Agriculture Organization
FCFA: Franc de la Communauté Financière Africaine - Franc of the African Financial Community
FFEM : Fonds Français pour l'Environnement Mondiale
FM: Forest Management
FMO: Forest Management Organisation
FMP: Forest Management Plan
FMU: Forest Management Unit
FPU: Forest Production Units (Unités Forestières de Production)
FSC: Forest Stewardship Council
GFW: Global Forest Watch
GIS: Geographical Information System
HCV: High Conservation Value
IDH: Initiatief Duurzame Handel (Sustainable Trade Initiative)
IFL: Intact Forest Landscape
INS: Interim National Standard
IUCN : International Union for the Conservation of Nature
KFW: Kreditanstalt für Wiederaufbau (German Development Bank)
NFSS: National Forest Stewardship Standard
NGO: Non-Governmental Organization
NTFP: Non-Timber Forest Product
PAO: Annual Plan of Operations
PEFC: Program for the endorsement of Forest Certification
PPECF : Project Promotion de l'Exploitation Certifié des Forêts
REDD+: Reducing Emissions from Deforestation and forest Degradation
RIL (+): Reduced Impact Logging
RWG: Regional Working Group
TTAP: Timber Trade Action Plan
UFG : Forest Management Unit - Unités Forestières de Gestion

UFIGA: Union des Forestiers Industriels du Gabon et Aménagistes (Union of Industrial Forestry of Gabon and Forest Managers)
UFP : Forest Production Units - Unités Forestières de Production
WCS: Wildlife Conservation Society
WWF: World Wildlife Fund

Table of Tables

Table of Figures

1. Executive summary

This report is the result of a study into the impacts of the application of FSC motion 65 on the protection of intact forest landscapes (IFL). The study evaluates the economic, social and environmental impact of the implementation of motion. The study considers the effect of different IFL protection scenarios comprising 80%, 50% and 20% of the IFL inside FSC certified concessions. IFL still covers some 80 million hectares in the Congo Basin, the majority of which receives little formal protection. 25% of IFLs in the Congo Basin are in protected areas and about 1.4 % are found in FSC concessions.

Protecting IFL inside FSC concessions means that the portion of the management unit that will need full protection increases. This fact has a consequence that the area originally planned for controlled harvesting will need to be reduced. Companies facing this, have to redo their management plans to reduce the size of annual harvesting areas. This can only be done by temporarily shorting the harvesting cycle and by investing heavily in the plans revisions. The combined effect of the temporary shortening of the harvest cycle and the reducing of the size of the annual working areas, means that the volume for harvesting is considerably reduced (up to 21% of original volume). There is also the problem that temporary reduction in cutting cycle or the reduction of the annual working areas are not legal and will need special dispensation from the relevant authorities, who have indicated they will probably not allow it.

Analysis of the **economic impacts** shows that motion 65 puts companies that have large areas of IFL in their concessions in a very difficult situation. Only the interpretation of motion 65 as proposed by the regional working group requiring 20% of the IFL to be protected is an option that the economic operators are willing to sustain. The 50% and 80% protection scenarios will both have negative economic and social impacts. In some cases the companies concerned will have to give up their FSC certificates because they can no longer comply with all the principles and criteria.

The **social impacts** of the motion are linked directly to the economic effects. The sustainable forest management provides employment, services like health care and education as well as income from benefit sharing mechanisms. By reducing the harvestable volume or causing loss of the certificate, companies will have reduced funding and motivation for social programs that go beyond the legal requirements in this respect. This will affect the local communities. The exact extent of this impact could not be determined, but it is likely to be considerable.

The **ecological impact** of the implementation of motion 65 at a first glance seems to be positive. There are however many examples of protected areas being eroded from within through unchecked poaching. National parks are not a guarantee for adequate protection. However, studies have shown that inside well managed FSC certified concessions the impact of forest management and harvesting on fauna population is limited. In addition, these studies also show that the impact of forest management on the composition and the richness of flora is very limited. Some of the main commercial species even benefit from some levels of canopy opening and disturbance. The ecological impact of the implementation of motion 65 can in theory be very positive, but in reality, a

situation where there are reduced funds for protection and prevention of poaching and other illegal activities such as small scale gold mining could more than offset the gains from reduced logging. If the portion to be protected is too large, the funding for the protection will not be available due to reduced economic returns from harvesting activities and, in some cases, the loss of FSC certificates. As the area of IFL inside FSC concessions is also only 1.4 % of the IFL area, it is better to protect less inside FSC concessions, but maintain the concessions certified and well managed.

The overall impact of protecting 80% of the IFL area inside FSC concessions is negative. The same goes for the protection of 50% of the IFL area. The protection of 20% of the IFL area inside FSC concessions is a burden for the forest management companies, but one they are ready to accept. The consultants therefore propose that the implementation of motion 65 is done in the manner that the regional working group has proposed, which means 20% of IFL protected but with additional measures such as active destruction of roads after use, design of narrower roads and the application of more stringent “Reduced Impact Logging” measures known as RIL-plus.

2. Introduction

The purpose of this report is to make a comparative assessment of the short- and long-term economic, social, and environmental impacts - both positive and negative - of implementing the two options for measures to manage and protect the intact forest. The intact forest landscape management measures associated with the default indicator prescribed by Motion 65 FSC-GA-2014 on the one hand, and the regional intact forest landscape management indicators proposed by the Regional Working Group on High Conservation Values (RWG-HVC) on the other hand. Later (3 April 2020) an interpretation by FSC was published INT-DIR-20-007_16 which indicates that because of the wording “vast majority” in motion 65 proposals for protection should not be for less than 50% of the IFL within forest concessions if these constitute core areas. Motion 65 FSC-GA-2014 requires organizations to confirm whether intact forest landscapes (IFLs) exist in or near FMUs using Global Forest Watch's IFL maps or a more recent inventory of IFLs using the same methodology as a baseline, and to include these IFLs in a management plan for HCV 2.

The restriction presented in Motion 65 is that forest management operations, including harvesting and road construction, may take place in IFLs, if these activities:

- do not impact more than 20% of the intact forest landscapes in the Management Unit (FMU), and
- Do not reduce IFLs below the 50,000 ha threshold in the landscape.

3. The consultants

The consortium that was selected to carry out the study consists of Van der Hout Forestry Consulting and Form International of the Netherlands.

3.1.Form international

Form International is a consultancy based in the Netherlands that has, since its creation in 1995, been working in the field of sustainable forest management in the Congo Basin. It has for example initiated the professional training of chainsaw operators in the forest on controlled felling training which was developed in cooperation with IPC Groene Ruimte. In Cameroon, the Republic of Congo and Gabon a large number of chainsaw operators have been trained. Together with the TFF foundation, Form has developed further practical training courses such as skidding, road construction etc. To further assist companies with the implementation of sustainable forest management, Form has prepared several forest management plans. Form has also assisted companies to obtain FSC certification with a first for the Congo Basin when Wijma Cameroon become certified.
Based on among others these experiences IDH Sustainable Trade Initiative asked Form to assume the secretariat of the Congo Basin Program which ran from 2011 to 2015. This program was created to assist timber companies aspiring certification with technical and financial support. The program was able to support a significant increase in FSC certified surface area. In addition to the activities in natural forest management, Form has developed forest plantation activities and set up of carbon certification projects.
Form is based in the Netherlands. The Form consultant who worked on this study is Tieme Wanders who is a MSc graduate from Wageningen University and has more than 20 years of experience in tropical forestry.

3.2.Van der Hout Forestry Consulting

Van der Hout Forestry Consulting is the trade name of independent forestry consultant Peter van der Hout. Van der Hout Forestry Consulting was established in 2005 and its consultant, Peter van der Hout has carried out various assignments in the fields of Forest Law Enforcement, Governance and Trade; Capacity building and institutional support; FSC® Forest Management auditing; Forest policy implementation; Design and Implement REDD+ Pilot Activities and Studies in the field of Sustainable Forest Management in 19 countries worldwide including Cameroon, Democratic Republic of Congo and Gabon.

Peter van der Hout is an FSC Forest Management auditor in association with Soil Association Certification since 2012 and has conducted 25 FSC Forest Management audits as lead auditor in 10 different countries. Audits were conducted in Guyana in an FMU that contains Intact Forest Landscape. He adapted the FSC Interim National Standard for Guyana based on the Generic Forest Stewardship Standard (GFSS) Template in 2018.

In the Congo Basin, Peter van der Hout delivered training in Reduced Impact Logging in six concessions – Cameroon (2), DRC (3) and Gabon (1)

4. FSC in the Congo Basin

FSC certification for the sustainable management of forests in the Congo Basin is recent and the first company to obtain certification was Wijma in Cameroon, who obtained the FSC label in 2005.

Today, when combining legality and sustainable management, about 16% of the area of forest concessions allocated in the Congo Basin are certified, and about 10% of the area is FSC certified, totalling more than 5 million hectares.

The commitment to forest certification was supported by the various donors who funded projects in this direction: The IDH program funded by the Netherlands (2011-2015), the project "Promotion of certified forest exploitation" funded by Germany (COMIFAC-KFW PPECF 2011-2022 in two phases), the Ecoforaf project funded by France (FFEM-AFD), the TTAP project funded by the European Union, etc. (Picquenot et al, 2012).

Since the first FSC certifications in the Congo Basin, the Program for the Endorsement of Forest Certifications (PEFC) has accepted one of the African standards as compliant. Gabon's PAFC has been accepted by PEFC since 2009, and in recent years more work has been done to develop a standard for the Congo Basin (PAFC, 2019). A first case of double certification exists on the CFAD of CEB-Precious Woods in Gabon.

Times have not been easy for certification in the Congo Basin. The economic crisis of 2008-2012 particularly affected the timber sector in Africa and for several years only few companies considered pursuing certification. The adoption of the European Union Timber Regulation, which obliges importers to prove the legality of timber they bring on the European market, has created a kind of baseline to be reached and several companies have indicated that they no longer pursue FM certification as legality "suffices".

For various reasons, unrelated to the FSC requirements, FSC certification in Cameroon, has seen its area diminish considerably in recent years. In 2011 TRC in Cameroon went bankrupt and a forest of 104,000 lost its FSC certificate. With the closure of Rougier operations in Cameroon and the Central African Republic in 2018, 548,000 hectares of forest have lost their FSC sustainable management. Unrest in South-Western Cameroon forced Wijma and CAFECO to abandon certification on 313,000 hectares of forest. The Decolvenaere group voluntarily allowed its certification to lapse on 70,000 hectares. This loss of more than 1 million hectares in Cameroon shows that even for these pioneering companies convinced of certification, it is not a given that once certification is achieved it will be maintained.

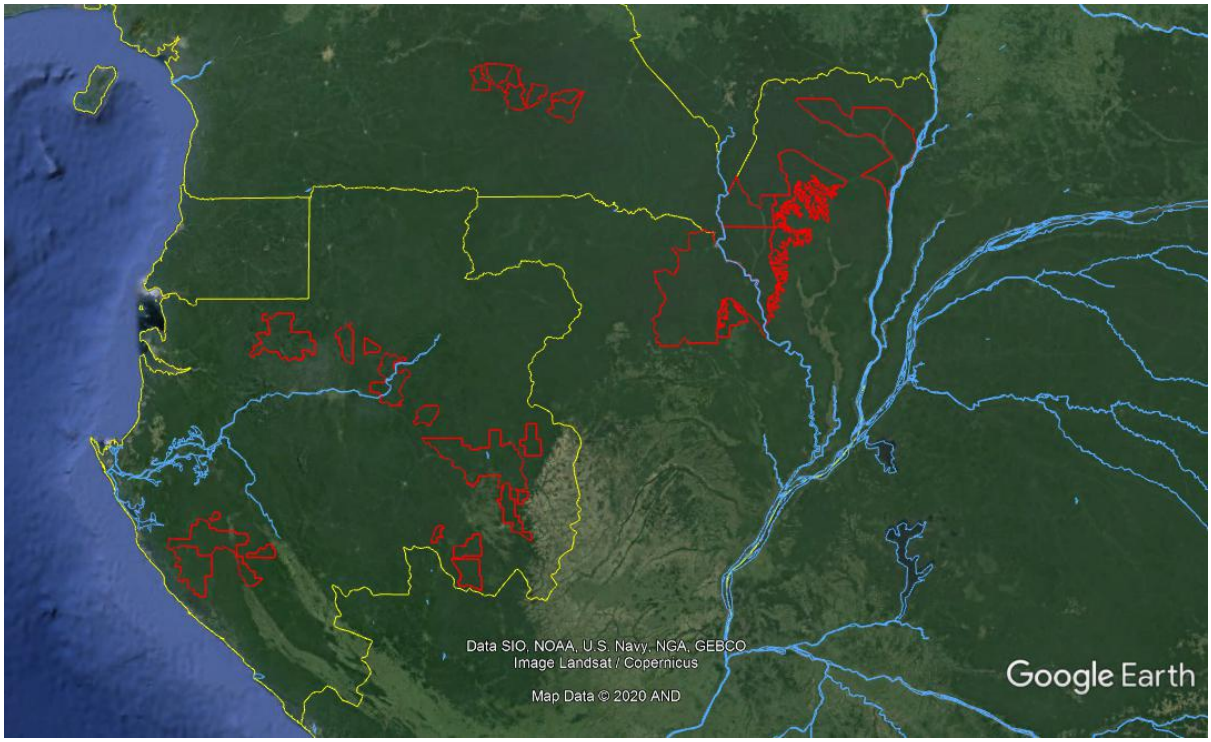

Figure 1: FSC certified logging concessions in the Congo Basin

For long it was not clear what the impact of FSC certification is. Important studies have now been done that clearly show the social benefit of FSC (Cerutti et al., 2014), the impact of certification on wildlife (Maisels et al., 2014) and the economic impact on companies (Oréade Brèche & Nature +, 2017). It can therefore be said that FSC certification and its benefits are well known in the sub-region. The satellite image also shows that large areas of forest do not yet benefit from certified responsible forest management and certification is currently far from being consolidated. Motion 65 plays a delicate role in the discussions on FSC in the sub-region and the plans that forestry companies are making.

5. History of the motion 65 and the process leading to this impact study

5.1. Intact Forest Landscapes - Introduction

Considering the limited resources that are available for environmental conservation, the setting of conservation priorities has become a key process in landscape management. Identifying and securing areas that have been least impacted by human disturbances has been a conservation priority since the early 1990s (several quotations in Haurez et al., 2017). The concept of "intactness" led to the introduction, by Greenpeace, of "Intact Forest Landscapes" (IFLs) in 2001. IFLs, as defined by Greenpeace and World Resources Institute (WRI), are areas of forest and naturally treeless ecosystems, which do not exhibit any remotely detectable signs of human disturbances or habitat fragmentation and are large enough to maintain biological diversity, including viable populations of wide-ranging animal species (Potapov et al., 2008). IFLs are reported to have high conservation value and to be critical for stabilizing terrestrial carbon storage, harbouring biodiversity, regulating hydrological regimes, and providing other ecosystem functions.

The IFL concept was introduced to help create, implement, and monitor policies concerning the landscapes alteration and fragmentation at the regional-to-global levels. The essence of the IFL method is to use freely available medium spatial resolution satellite imagery to establish the boundaries of large undeveloped forest areas, so called Intact Forest Landscapes (IFL), and to use these boundaries as a baseline for forest degradation monitoring.

The first global IFL map was prepared in 2005-2006 under the leadership of Greenpeace showing IFL extent for year 2000 and enabled measuring of forest degradation at the global, biome and national levels. A global IFL map update was performed in 2014 by Greenpeace, The University of Maryland and Transparent World, with support from the World Resources Institute and WWF Russia. The analysis showed the extent of IFL by the end of year 2013, and the change in its extent since year 2000. The 13-years monitoring results revealed the speed at which the world's intact forests are being degraded. At the end of 2016, The University of Maryland, Wildlife Conservation Society, Greenpeace, and Transparent World completed a further update of the global IFL map. The update IFL layer represents the situation at the beginning of the year 2017 and is used in the framework of FSC certification.

All IFL maps are available online on http://www.intactforests.org in formats suitable for use in professional GIS as well as in freeware GIS browsers. The IFL map can be viewed on-line on http://www.intactforests.org as well as on Global Forest Watch platform and on the Global Forest Change web-map supported by the Google Earth Engine.

5.2. The IFL Method

The *IFL Method* (Popatov et al 2009) is an approach for mapping and monitoring the extent of forest degradation. The purpose of the *IFL Method* is to map large, possibly inaccessible forest landscapes at a cost that is non-prohibitive in terms of time and resources. The results are replicable and consistent in time and space. The essence of the approach is to establish the boundaries of large undeveloped forest areas. IFLs are defined as large unbroken expanses of natural ecosystems in the zone of current forest landscapes extent without signs of significant human activity.

In the *IFL Method* forest landscapes are classified as being either intact (un-degraded) or non-intact (altered, including possibly degraded). The degree of alteration within non-intact landscapes is not captured by this scale. Intact and non-intact landscapes are separated on the basis of two types of criteria: degree of human-caused alteration and fragmentation. The entire area of study is assessed for its eligibility to be a part of an IFL. First, the level of human-caused alteration is determined, and ineligible parts are rejected. Remaining eligible parts are then assessed for their degree of fragmentation and ineligible parts rejected. Criteria and indicators for the eligibility assessment are described below.

5.2.1. Human-caused alteration

Areas with evidence of certain types of human influence are considered disturbed and consequently not eligible for inclusion in an IFL:

1) Settlements (including a buffer zone of 1 km);
2) Infrastructure used for transportation between settlements or for industrial development of natural resources including roads (except unpaved trails), railways, navigable waterways, pipelines, and power transmission lines (including in all cases a buffer zone of 1 km on either side);
3) Agriculture and forest plantations;
4) Industrial activities during the last 30–70 years, such as logging, mining, oil and gas exploration and extraction;
5) Areas affected by wildfires during the last 30–70 years if located in the vicinity of infrastructure or developed areas.

Old or low intensity human influence is considered *insignificant*. Portions with such "background" influence remain eligible for inclusion in an IFL. Sources of background influence include diffuse grazing by domestic animals, low-intensity selective logging, and hunting.

5.2.2. Fragmentation

Portions of the study area that remain eligible for inclusion in an IFL are then assessed for fragmentation (see figure below). Otherwise eligible portions that are too small or too narrow are eliminated. An IFL must satisfy the following criteria:

1) Larger than 50,000 ha;
2) At least 10 km wide at the broadest place (measured as a diameter of the largest circle that can be fitted inside the patch);
3) At least 2 km wide in narrow parts connecting wider patches and in appendages.

The IFL mapping approach is based on 'inverse logic', i.e. on mapping the opposite of intactness: altered and fragmented forest areas. The initial assumption of the assessment process is therefore that the entire area of study is intact. A map on which intact forest landscapes is then created as a residual after eliminating all non-intact areas by applying the criteria and indicators for the eligibility assessment. For further details refer to Popatov et al. (2009).

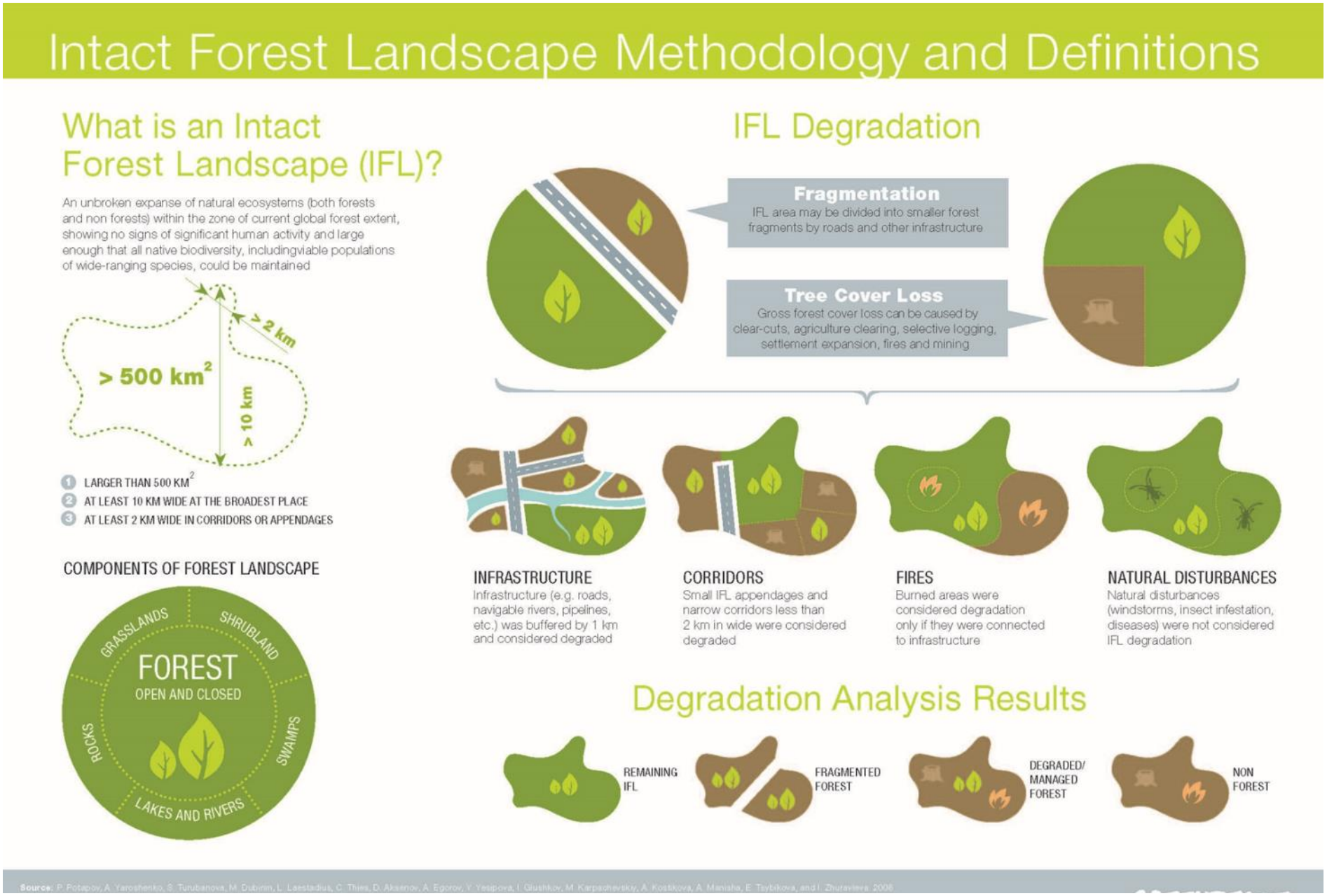

Figure 2: Graphic presentation explaining IFL

5.3.Advantages, disadvantages, and limitations of the IFL Method

The IFL method presents many advantages, particularly for landscape scale management (Popatov et al., 2009):

a) satellite data are available anywhere at low cost, even for inaccessible areas, and can be rapidly compiled;
b) remote-sensing data are collected according to rigorously defined methods and thus can be statistically analysed and are comparable in space and time;
c) the remote-sensing analysis is easy to apply and suitable for all continents (Laestadius et al., 2011; Potapov et al., 2009); and
d) The global pattern of the IFL analysis is helpful for a general consideration of the management and preservation of valuable forests.
e) The ease of remote sensing allows to follow the evolution of the world's intact forests at regular short intervals.

Popatov et al. (2009) also recognize disadvantages. Skills in GIS and interpretation of remote-sensing data are required. The method is only capable of assessing the presence or absence of human impact. The method is only suitable for large areas (province, country, region, the world) and not sensitive to variations in the understanding of "intactness" and "disturbance" within the area of study. The method is biased towards overestimating the area of IFLs, because its basic assumption is that all landscapes are considered intact until the opposite can be proven. The method may fail to register human influence that is difficult to detect in satellite imagery, such as selective logging, small-scale slash-and-burn agricultural practices, and hunting (for example poaching in Central Africa).

The IFL concept has been subject to several studies in recent years. Haurez et al. (2017) conducted a literature review involving 105 studies to evaluate the IFL concept and raise several concerns regarding the use of the IFL method as a tool to identify and implement conservation priority areas in Central Africa.

IFLs have been integrated into FSC standards and therefore have huge environmental and economic impacts for forest concessionaires and government policies in the Congo Basin. Motion 65, approved in the general assembly of FSC in 2014, mandates the protection of the vast majority of the IFLs that are located in FSC certified logging concessions. The effects of Motion 65 on FSC-certified logging concessions, could be far reaching if the strict protection of a large area of IFL is applied within FSC-certified FMUs as prescribed by the motion.

5.4.IFL in the Congo Basin

The total area of IFLs within the Congo Basin is 84.5 million hectares (GFW figures). The highest concentration of IFLs is in eastern Cameroon and Gabon, northern Congo, and northern DRC. Of the 85.4 million hectares of IFL, 3.6 million hectares are in Cameroon, 8 million hectares are in Gabon, 11 million hectares are in the Republic of Congo and 0.25 million hectares are in Equatorial Guinea. The remainder (62 million hectares) are in the Democratic Republic of Congo.

The Congo Basin countries have created national parks in which intact forests are conserved. When looking only at the areas that have IFL in them, we see that in Cameroon there are 12 protected

areas with a total area of 2.5 million hectares of which nearly two million are classified as IFLs. In Gabon there are 16 protected areas with a total area of 5.2 million hectares of which 2.2 million hectares are classified as IFLs. In the Republic of Congo 8 protected areas with a total area of 7.8 million hectares host 2.6 million hectares of IFLs. In DRC, the 16 parks in which there are IFL areas total nearly 23.5 million hectares with a total IFL area of 12.8 million hectares.

Table 1 IFL in context.

Country	Total area of forests (mHa)	IFL area (mHa)	PAs containing IFL (mHa)	IFL in these PAs (mHa)	Total forest concessions (mHa)	Total IFL in Forest concessions (mHa)	Area of FSC concessions (mHa)	IFL in FSC concessions (mHa)
Cameroon	46.6	3.6	2.5	1.9	8.8	1.4	0.3	0.013
Gabon	26.3	8.0	5.1	2.2	13.4	4.4	2.0	0.301
Congo	34.0	11.0	7.8	2.6	14.9	3.8	2.7	0.829
DRC	244.1	61.8	23.5	14.7	10.2	4.9	-	-
Total	**351.0**	**84.4**	**38.9**	**21.5**	**47.3**	**14.5**	**5.0**	**1.144**

Table 2 IFL in protected areas and in FSC concessions

Country	Area of IFL (mHa)	IFL in Protected Areas (mHa (%))	IFL in FSC Concessions (mHa (%))
Cameroon	3.6	1.9 (53%)	< 0.1 (~0%)
Gabon	8.0	2.3 (28%)	0.3 (4%)
Congo	11.0	2.6 (24%)	0.8 (8%)
DRC	61.8	14.7 (24%)	0 (0%)
Total	**84.4**	**21.5 (25%)**	**1.1 (1%)**

Based on this information it becomes clear that 25% of the IFL area in the Congo Basin is covered by protected areas (21.5 million hectares). Only 1.1 million hectares of IFLs are found within FSC certified forests, corresponding to 1.4% of the total IFL area. Much of the further available IFL is outside forest concessions (70 million hectares) or in forest concessions that do not currently have FSC certificates (13.3 million hectares). From this information it becomes clear that even if the proportion of forest concessions that are FSC certified grows substantially they will only hold a relatively small proportion of the IFLs in the region. It is however uncertain if concession holders having concessions containing large expanses of IFL will pursue FSC certification if the application of motion 65 asks them to preserve large parts of the FMU. Thus it makes little sense to consider the protection of those IFLs in certified concessions in isolation, but instead it must be viewed in the context of management of IFLs at a wider scale.

5.5. Motion 65

5.5.1. Initial requirements proposed in Motion 65

On 11 September 2014, the General Assembly of FSC voted in favour of Motion 65 proposed by Greenpeace International and seconded by Amata S.A., a plantation forestry company of southern Brazil and the Danish NGO Forests of the World, which requires FSC to direct Standard Development Groups (SDGs) and Certification Bodies (CBs), where no SDG exists, to develop indicators within

National Standards and CB standards that aim to protect the vast majorities of IFLs. This process was to:

1) Be based on best available, independent, peer-reviewed science and other information;
2) Take into consideration IFL degradation in FSC FMUs since 2000;
3) Respect Free Prior and Informed Consent of indigenous Peoples, traditional peoples, and forest dependent communities in affected FMUs;
4) Within IFL ***cores*** ensure that Certificate Holders implement protection measures (for example, set-asides, legal protected areas, conservation reserves, deferrals, community reserves, indigenous protected areas etc.) ensuring management for intactness, in areas within their control;
5) Require a comparative assessment of the viability and effectiveness of alternative land use options, in maintaining and enhancing intactness of IFLs including in areas outside FSC FMUs (landscape level);
6) In limited circumstances, allow limited development of IFL **cores** if such operations produce clear, substantial, additional, long-term conservation and social benefits;
7) Where applicable, address the need to reduce timber harvesting rates to reflect any reduction in the timber volume due to removal of IFL areas from harvesting;
8) Prioritize development of low-impact/small scale forest management, non-timber forest products in unallocated IFL areas, and provide first access to local communities and taking into consideration section 3);
9) Promote alternative models for forest management/conservation (for example, ecosystem services etc.) within the IFLs.

If by the end of 2016 no relevant standard would have been implemented, a default indicator was to be applied that mandated the full protection of a core area of each IFL within the management unit. For this purpose, the core area of the IFL was defined as an area of forest comprising at least 80% of the intact forest landscape falling within the FMU.

5.5.2. Advice Note for the interpretation of the default clause of Motion 65 (ADVICE-20-007-018 V1-0)

Subsequently, FSC released an advice note on 1 January 2017 to advise certificate holders and certification bodies to minimize further destruction of IFLs before the full set of National Forest Stewardship Standard (NFSS) or Interim National Standard (INS) indicators for Motion 65 would become effective. This Advice Note expires in each country once the NFSS or INS have become effective.

The background to this advice note was that the FSC Board of Directors (BM 72.31, July 2016) had concluded that the Motion 65 default clause could not be implemented as written in the motion, due to the significant undesired side effects in some of the most important countries for FSC. Therefore, the Board had mandated the Secretariat to revise the default clause as laid out in the 'proposal for the Motion 65 Default Clause' together with the involved Network Partners and the participants in the IFL Solutions Forum held in Bonn on 6-8 July 2016. In addition, there was a Public Consultation in October – December 2016, prior to release of the first draft of the Advice Note.

5.6. Motion 34/2017 - Assessment of the economic viability of IFLs

5.6.1. Motion 34/2017 - introduction

In October 2017, the General Assembly of FSC voted in favour of Motion 34 proposed by Benoît Jobbe Duval of the ATIBT and seconded by Dr Marie Mbolo, Social South, and Mr Elie Olivier Ngoa, Environmental South, to conduct an assessment of the overall direct economic impacts of the management and protection measures linked with the implementation of Motion 65 on the IFLs of natural tropical forests.

The assessment of the economic impacts associated with the implementation of Motion 65 (including the full protection of additional forest areas) should take the following into account:

- Local populations, who will suffer a decline in economic benefits associated with payments of forestry taxes and local development.
- Forest-owning Sovereign States, who will see a decline in their forestry taxation (surface taxes, harvesting taxes, etc.);
- Forestry companies, who will have to make operational sacrifices in order to protect the IFLs and modify their management plan.

5.6.2. Background/rationale:

The proposers of Motion 34/2017 provided the following rationale for tabling the motion (literal quote):

“Implementation of Motion 65 will entail additional forest area management and protection measures. To date, the economic impact has not been assessed (as planned in item 5 of Motion 65). An economic assessment is therefore imperative before the default indicator of this Motion is applied. The economic viability of forestry activities must be ensured (Principle 5).

The forestry model in natural tropical forests differs significantly from the industrial tropical plantation model, whether in terms of logging and harvesting methods, impacts, or protective measures.

Today, even though the increase in certified surface areas in natural tropical forests is one of the major challenges faced by FSC, these very same surface areas are no longer growing and are even on the decline. The low profitability of the certified logging model in natural tropical forests is a major factor.

Any additional management and/or protective measures in the context of the implementation of Motion 65 could undermine this fragile economic balance that is difficult to maintain. The consequences, in addition to being in contradiction with the requirement of economic viability of Principle 5, would be disastrous, not just for the local populations (who benefit from local growth thanks to local forestry companies, even though these populations are increasing in the various tropical basins' forest zones) and for administrations, but also for the forests' preservation and protection. Indeed, forests abandoned by certified responsible stakeholders could be subjected to other destructive practices, unsustainable forest management practices and agro-industrial or mining activities.”

5.7.High Conservation Values Regional Working Group

In 2013, FSC developed a programme of activities to develop the *Regional HCV Guidelines for the Congo Basin* and *National HCV interpretations* in the countries in which National Forest Stewardship Standards are being developed. The project called "Congo Basin Road Map Project" targets the harmonization of the identification, management and monitoring of High Conservation Values (HCVs) with FSC certification procedures for the Congo Basin region.

The first HCV-RWG workshop, bringing together the HCV-RWG and experts in the field of HCV and IFL, was held in Brazzaville, Republic of Congo, 15-18 June 2016, with the goal of setting the stage for the development of FSC's regional guidelines for HCVs in the Congo Basin.

During the first HCV-RWG workshop in Brazzaville, the HCV-RWG commissioned the FSC HVC Officer to carry out a review of the existing national HVC interpretations and HVC assessments in certified concessions relevant for the Congo Basin and to develop a first draft of the regional HCV guidelines. The initial analysis of existing guidelines revealed the lack of readily available data and decision making tools for a sound identification of HCV 2 and 3. Relevant experts from different NGOs and research institutions were invited to an expert meeting at CIRAD in Montpellier in September 2016 to decide on the best possible data and approaches to develop such tools.

This meeting was followed by a second HCV-RWG meeting on 2-3 November 2016 in Brazzaville, Republic of Congo. From 6 to 10 of March 2017 a second Key Expert meeting took place in Brazzaville, Republic of Congo during which a consortium of experts (Djoan Bonfils (WRI), Hedley Grantham (WCS), Valery Gong (CIRAD), Aurélie Shapiro (WWF Germany)), coordinated by the FSC HCV-Officer for the Congo Basin (Olivia Rickenbach (FSC International)), continued to elaborate on the approach and to develop the tools.

A third HCV-RWG meeting took place from 5-6 April 2017, in Brazzaville, Republic of Congo. The main objective of this third workshop was to discuss, adapt and validate the approach for the identification and management of Intact Forest Landscapes (IFLs) and core areas in the Congo Basin. The workshop also aimed to inform the members of the Regional Working Group (RWG)-HVC on the latest developments regarding the tools to assist in the identification of HCV 2 and 3.

The Fourth HCV-RWG meeting took place from the 22nd to 25th August 2017, in Brazzaville, Republic of Congo. The moderator of this meeting was assisted by a team of researchers from ETH ForDev/CIRAD who intervened in order to facilitate consensus on regional indicators for the management of Intact Forest Landscapes. The facilitation team used a participatory approach based on a role-playing game to support the decision-making process.

The fifth HCV-RWG meeting held from 5 to 7 April 2018, in Brazzaville, Republic of Congo. During this meeting, a task force for the implementation of Motion 34/2017 was created as required and the HCV-RWG formulated sub-regional indicators for the management of Intact Forest Landscapes .

For IFL core areas, the three chambers of the HCV-RWG unanimously agreed:

- to adopt the management methods defined for existing conservation zones in Management Plans (where a core area is located in a conservation zone);

- to respect the rights of indigenous and local populations as regards cultural and religious activities, the gathering of wild produce, subsistence hunting and recreation;
- to step up efforts to prevent poaching;
- not to build roads except in cases of extreme necessity;
- if roads are necessary, their positioning should take into account connectivity with adjacent protected areas and/or neighbouring Intact Forest Landscapes;
- to maximize the representativeness of landscapes in core areas.

In defining the core area of IFLs in FMUs two options are proposed by the HCV-RWG:

- If the conservation zone is entirely included in the IFL area contained in the FMU, it is defined as a core area on the basis that the conservation zone accounts for at least 10% of the area of the FMU;
- If the conservation zone overlaps with or is outside the IFL area contained in the FMU, the organization is required to mark out a core area covering either a minimum of 10% of the FMU area or 20% of the IFL contained in the FMU.

In addition, the HCV-RWG unanimously agreed to adopt the following "FSC-RIL+" management methods outside of IFL core areas:

- The forest road network shall be planned in relation to the density of the resource and specific HCVs in Intact Forest Landscapes and to reduce the density of roads in Intact Forest Landscapes;
- A maximum density (trees/ha or m3/ha) and a maximum diameter for harvesting shall be established;
- No heavy machines shall circulate in the event of heavy or prolonged rains and, in the event of significant compacting or rutting, degraded skid trails and log landings should be rehabilitated;
- Roads shall be re-used as much as possible in future rotations and the road width shall be limited, whereby the dimensions of the road network shall match the season and the harvestable resource;
- Secondary roads shall be closed, and access shall be controlled on the main road – with supplementary measures applied, to be defined in consultation with the agencies responsible for wildlife management;
- Deforestation and other disturbances shall be monitored using satellite imaging, drones, or other means;
- Measures to prevent poaching shall be stepped up in Intact Forest Landscapes;
- The impact of logging on Intact Forest Landscapes shall be monitored, in particular: the impact on wildlife, vegetation cover and forest dynamics; and
- The recolonization of roads by way of ecological succession shall be monitored, and native vegetation on roads shall be rehabilitated, particularly in case of secondary roads, if natural recolonization appears inadequate.

These sub-regional indicators were to be assessed as part of the impact study for the Congo Basin.

5.8. Instruction to the Standard Development Groups to focus on 50% protection of IFL.

The initial purpose of this study was to conduct a comparative assessment of the short and long-term economic, social and environmental impacts – positive and negative – of two implementation options of the management and protection of Intact Forest Landscapes (IFL) measures associated with the default indicator prescribed by the Motion 65 on the one hand, and on the other, the proposed regional IFL indicators by the Congo Basin Sub-Regional Working Group on High Conservation Values (HCV-SRWG). The default indicator as prescribed in Motion 65 defines the core area of an IFL as an area of forest comprising at least 80% of the IFL falling within the FMU.

For practical purposes, the authors decided to interpret the proposed indicators by the HCV-SRWG as defining the core area of an IFL as an area of forest comprising at least 20% of the IFL falling within the FMU.

It is the responsibility of Standard Development Groups to define the vast majority of IFLs that should be designated as core areas consistent with IGI 9.2.5. A National Forest Stewardship Standards (NFSS) can thus deviate from the default definition for vast majority of an IFL of 80% of the IFL. Nevertheless, Motion 65 calls for “the vast majority” of IFLs to be protected inside core zones, meaning that SDGs cannot define a standard in which less than 50% of the IFL is so protected. Unfortunately this stipulation was not well understood, and on the 24th of January 2020 the FSC Director General issued guidance to the FSC Standard Development Groups in the Congo Basin that thresholds far below a majority portion of IFL areas would pose difficulties in terms of conflicts with the existing policy framework. The FSC Director General further informed certificate holders in the Congo Basin that a clear floor of at least 50% threshold for core areas within individual management units could be accepted by the Board as an interim solution to allow relevant Certificate Holders to continue their operations for now but the proposal that the local SDG had submitted which contained 20% protection was going to be refused. In February and March 2020, the Standard Developing Groups of the Republic of Congo, Cameroon, and Gabon submitted to FSC International new versions of draft national standards requiring 50% of the IFL to be protected.

The authors were therefore urged to include this third option in the impact assessment whereby the core area of an IFL is defined as an area of forest comprising at least 50% of the IFL falling within the FMU.

6. Method of the study

The study focuses on documenting the views, expectations, and concerns of affected and interested stakeholders as well as analysing data on the impacts of the implementation of the IFL management and protection using three scenarios shortly called 80%, 50% and 20%.

Semi-structured interviews were conducted using a standard questionnaire. In addition, the current management and protection measures and practices of FSC certificate holders in the Congo Basin were examined. On the basis of the information and data collected, an assessment of the economic, social, and environmental impact of the implementation of IFL management and protection measures was carried out.
Recommendations were made to FSC International to inform decision-making processes related to the management and protection of IFLs.

The main questions for the open and semi-structured discussions/interviews were:
- What is the overall impact of Motion 65 on your business?
- How do companies integrate Motion 65 into their management?
- What is the impact of Motion 65 on business-government interaction?
- What is the impact of Motion 65 on the interaction between businesses and local populations?
- Is information available on the impact of Motion 65 on the environment?
- Are there any cost savings associated with the impact of implementing IFL management and protection measures?
What is the impact on business, government, and local populations?
- Is it possible to obtain management texts concerning the implementation of IFL management and protection measures?
-Can we receive an overview of costs and benefits of the company in order to evaluate the impact of the motion?
- Can maps be obtained on the implementation of IFL management and protection measures?
- Company's recommendations to the FSC regarding the management of Motion 65 in the concessions.

Additional information will be gathered through a web search of the companies and other stakeholders consulted. The stakeholders were chosen to represent the three chambers of FSC. Also government officials were interviewed.

Information from scientific literature, interviews, and others information sources such as company documents have been used to describe the factors that can have ecological, social and economic impact. Literature is widely available on fauna in logging concessions. On flora there is less literature but still significantly more than on the interaction between forest managers and the population living in and around the forests. Least information is available on the economics of forest management units so the latter two subjects depended heavily on the information provided by the timber companies.

The impacts described are either, positive or negative. The intermediary in this case means there is no impact. Positive impact means that the proposed action will lead to improvements on the economic, social, or ecological side of FSC forest management. Negative impact means that the proposed action has a negative effect on the economics of forest management or on social and ecological performance.

For the three elements (social, economic, and ecological) the impacts was evaluated as broad as possible and covered both direct and indirect impacts.

For the economic impact part of the evaluation of the impact depended on simulations which will be illustrative also in showing indirect effects.

7. Description of the stakeholders consulted during the study

In order to learn about the impacts Motion 65 is having on SFM in the Congo Basin region, we held interviews with stakeholders from all three chambers of the FSC in the Congo Basin region as well as interested individuals. A considerable effort was made to hold interviews with economic operators, environmental NGOs and stakeholders and social stakeholders. These interviews took place during a visit to Gabon and the Republic of Congo but also by telephone, skype and meetings in person in Switzerland.

7.1. Economic operators

The economic stakeholders are the FSC Certificate Holders in the countries of the Congo Basin. These companies are :

- PALLISCO in Cameroon with 341,708 hectares certified since 2008;
- Rougier in Gabon with 895,825 hectares certified in 2013, 2018 and 2019 (two FMUs);
- CBG in Gabon with 568,543 hectares certified since 2009;
- CEB-Precious Woods in Gabon with 596,822 hectares certified since 2008;
- IFO-INTERHOLCO in Congo with 1,159,643 hectares certified since 2009 and 2014; and
- CIB-OLAM in Congo with 1,829,525 hectares certified since 2008, 2011, 2016 and 2020.

The total certified forest area held by these companies is 5,392,066 hectares.

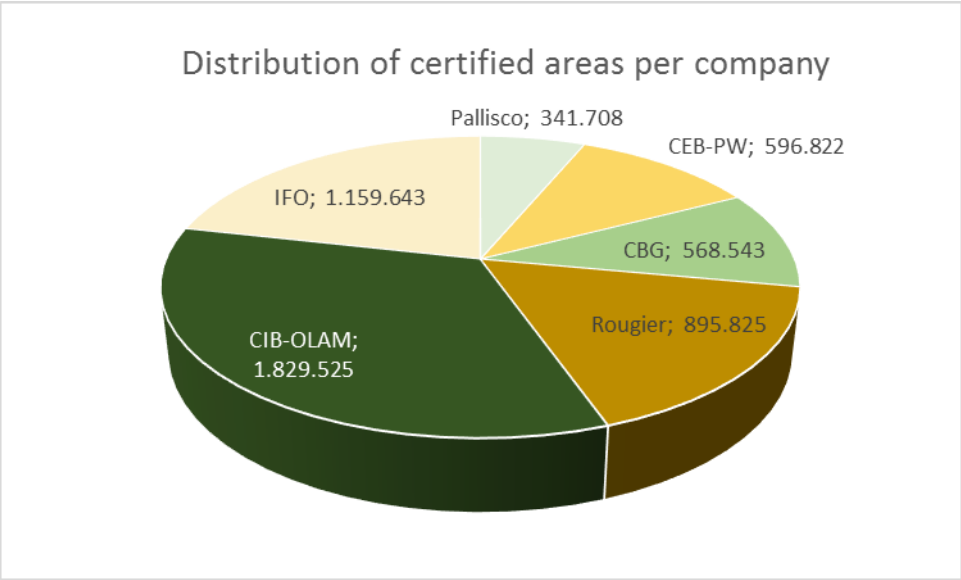

Figure 3: Concession area per FSC company in the Congo Basin.

The six FSC Certificate Holders all have forests identified on the Global Forest Watch (GFW) website as IFL. For some of them Motion 65 presents a very acute problem because the 20% threshold of IFL they are allowed to harvest according to the Advice Note for the interpretation of the default clause of Motion 65 has been reached; i.e. continuing to harvest according to their existing FMPs would

involve exceeding that 20% limit. All FMO's have been certified for several years and are companies that are well convinced of the benefits of certification.

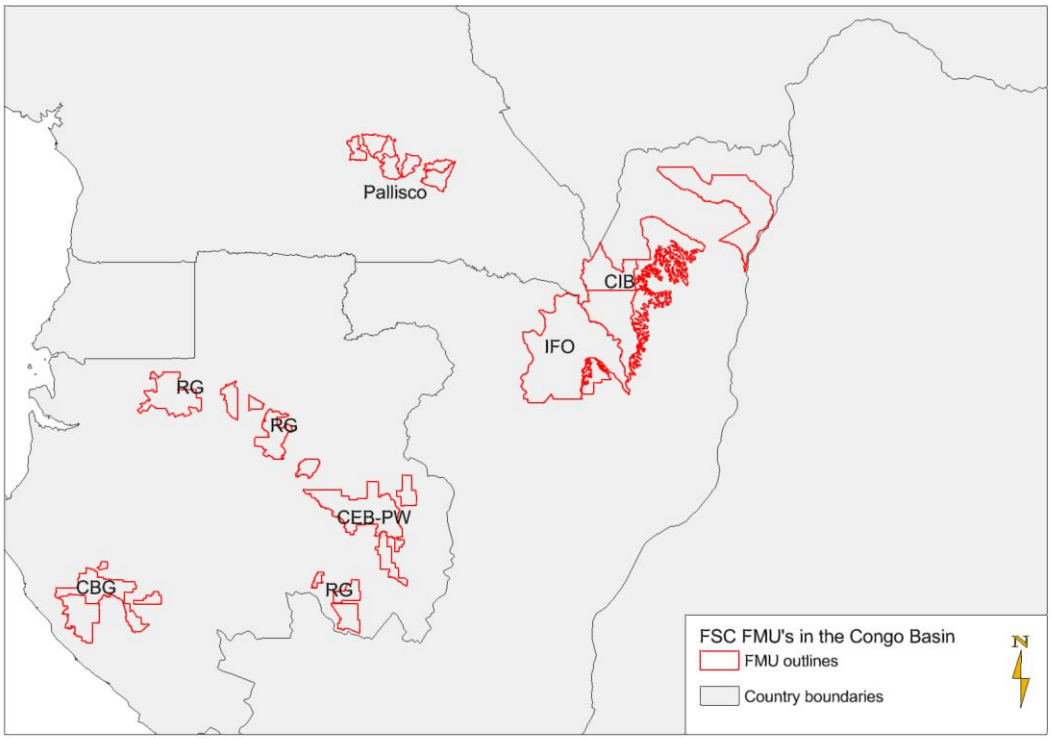

Figure 4: Locations of the FSC certified companies in the Congo Basin.

In addition to the economic operators, trade associations representing the interests of FMO's in the Congo Basin such as ATIBT and UFIGA were met.

7.2. Members of the social chamber

During the study we met with several members of the social chamber. This group was diverse and consisted of Brainforest, members of the social chambers of the FSC Gabon Standard Development Group, FSC Congo Standard Development Group. We also met with individual members of the social chamber.

7.3. Environmental NGOs

Several organisations active in the field of nature protection were consulted. These organisations are WCS Gabon, WCS Congo, WWF International, WWF Gabon and WWF Congo, The Nature Conservancy, and the US Forest Service.

7.4.Government officials

Representing the forest owner (the state) both also the various other interests covered by the three chambers, the members of the forest ministries of the Republic of Congo and Gabon are a special category to be mentioned separately.

8. Mapping of the concessions and the IFLs

FSC certified concessions in the Congo Basin are located in Cameroon, Gabon, and the Republic of the Congo. When looking at the timing of the modification from IFL to non-IFL we see that in most cases this occurred in the period from 2000 to 2013 and is mostly prior to FSC certification (2005).

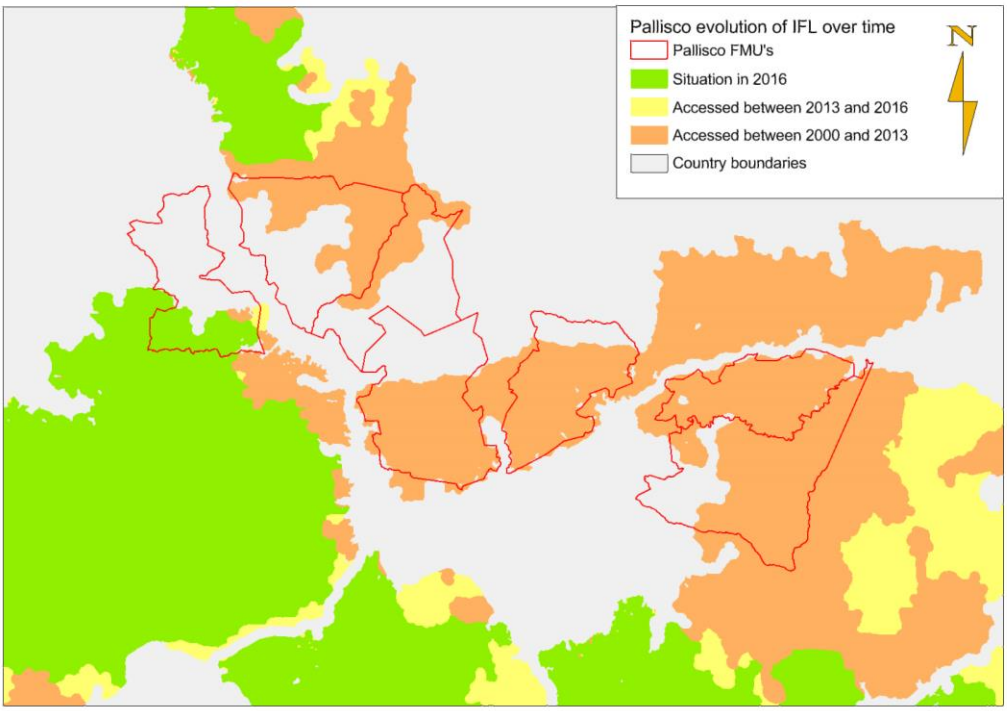

Figure 5: Evolution of the IFL area in the concessions of PALLISCO in Cameroon.

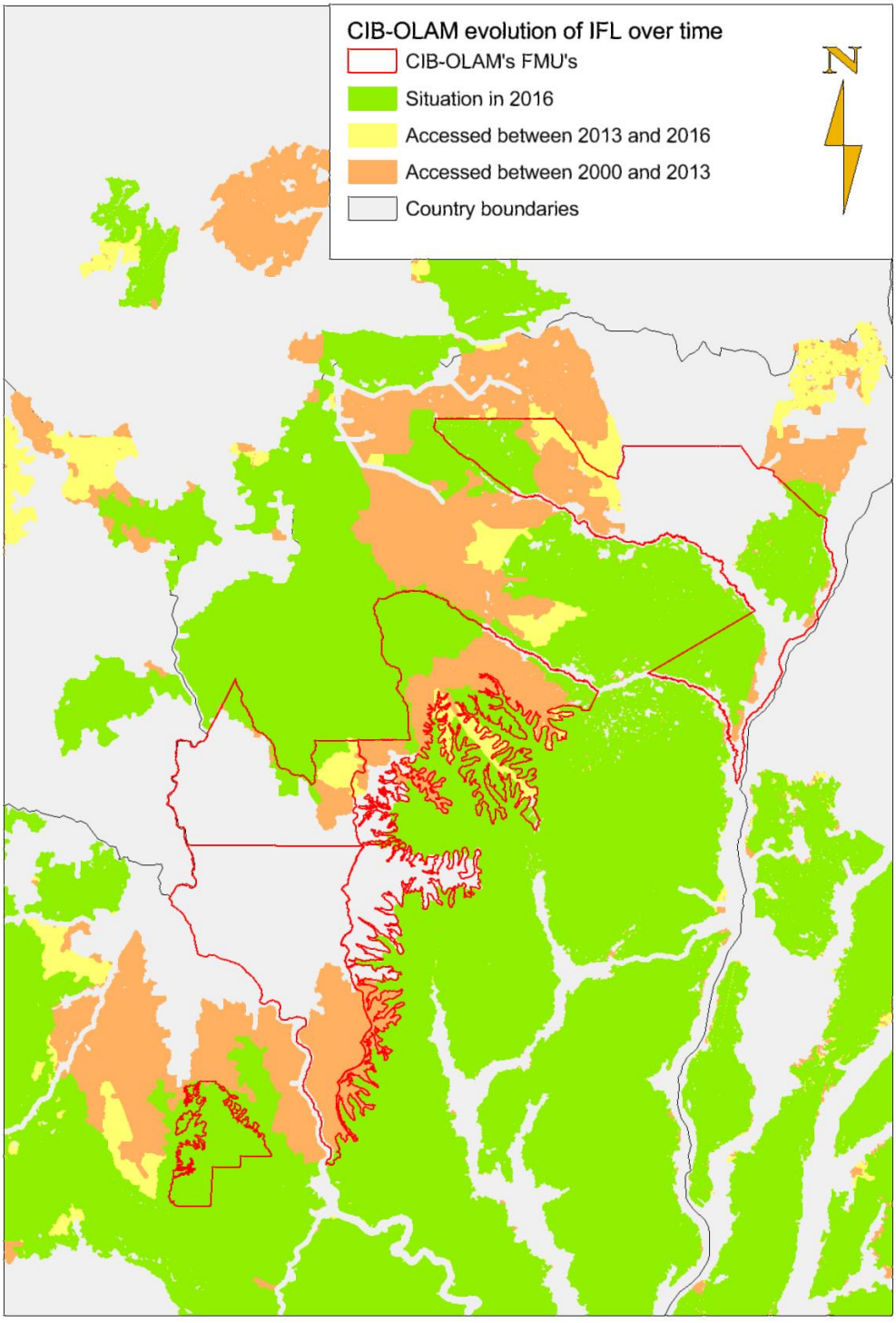

Figure 6: Evolution of the IFL area in the concessions of CIB-OLAM in the North of the Republic of Congo.

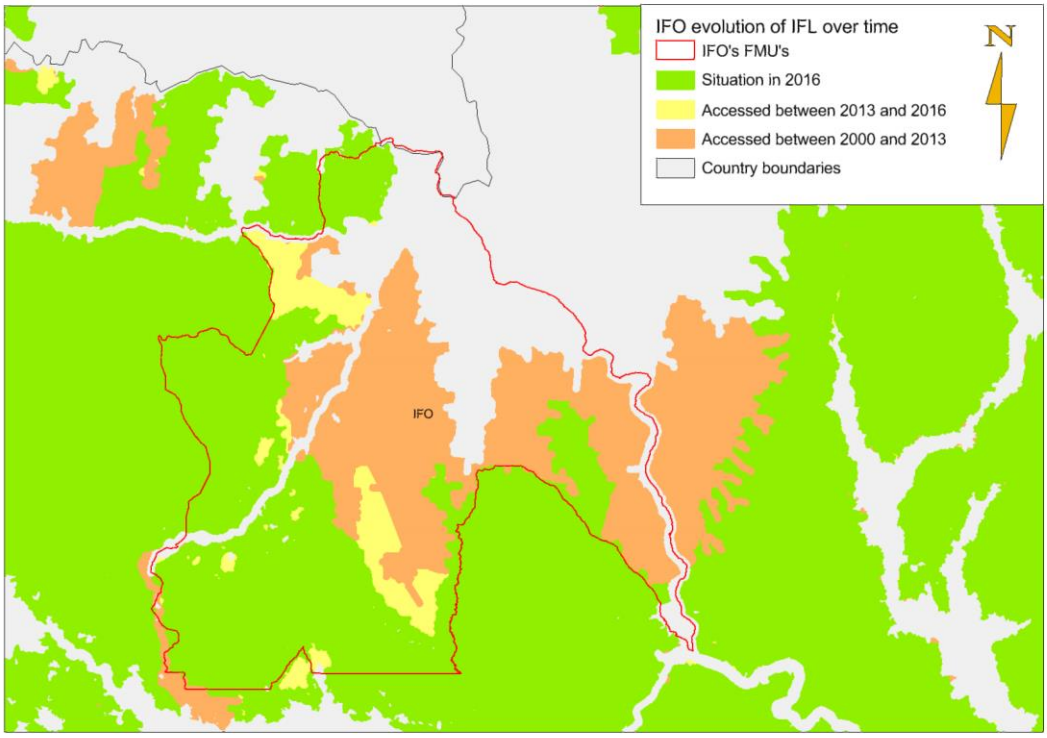

Figure 7: Evolution of the IFL area in the concession of IFO in the North of the Republic of Congo.

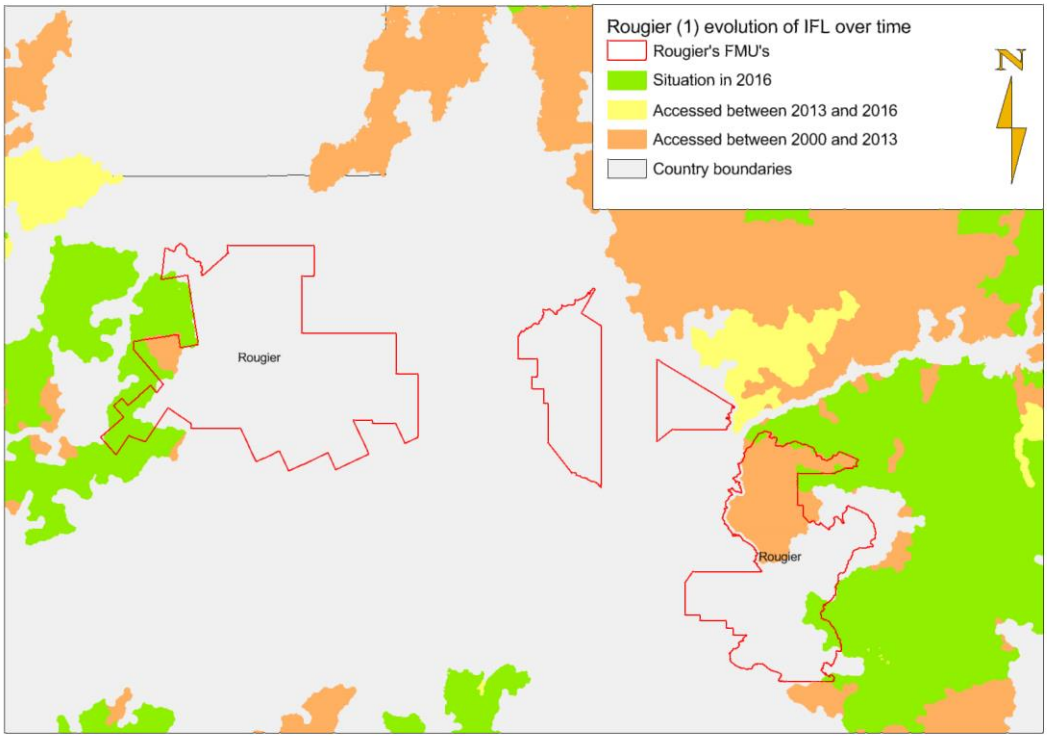

Figure 8: Evolution of the IFL area in the concessions of Rougier in Gabon (northern part).

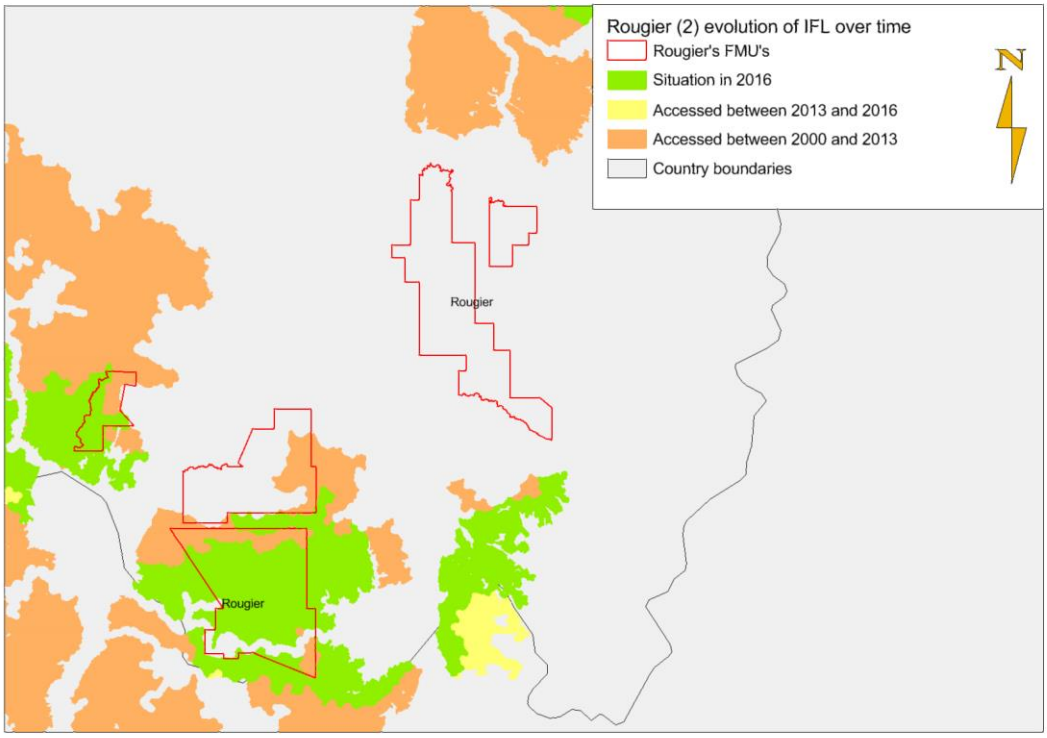

Figure 9: Evolution of the IFL area in the concessions of Rougier in Gabon (Southern part).

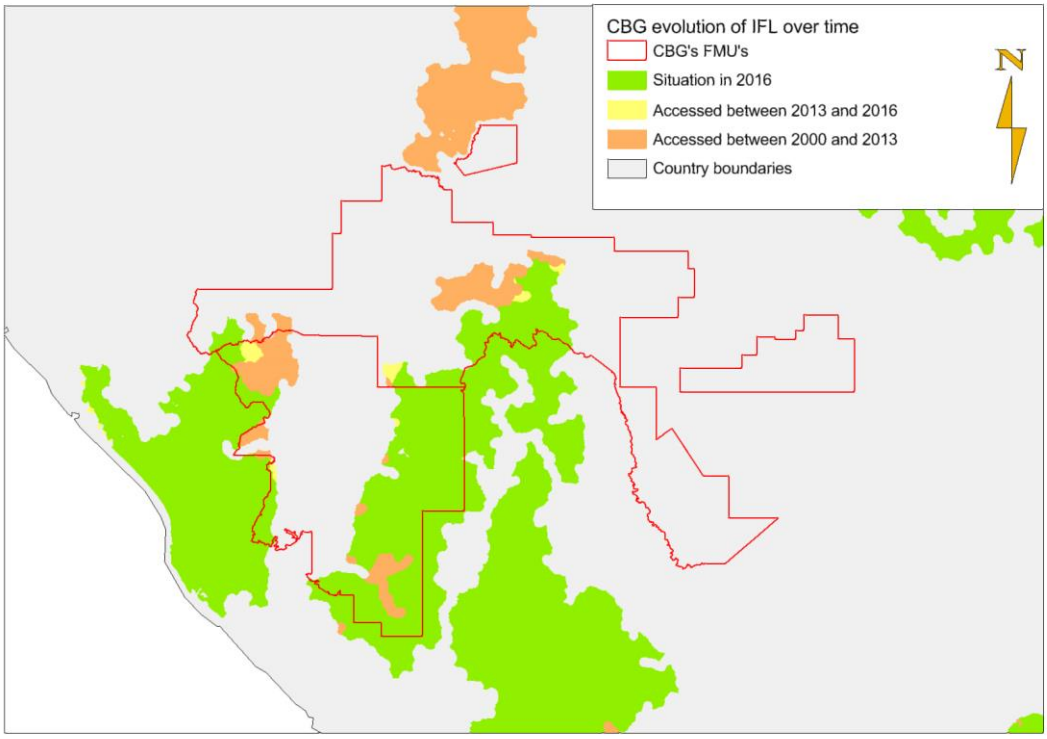

Figure 10: Evolution of the IFL area in the concessions of CBG in Gabon

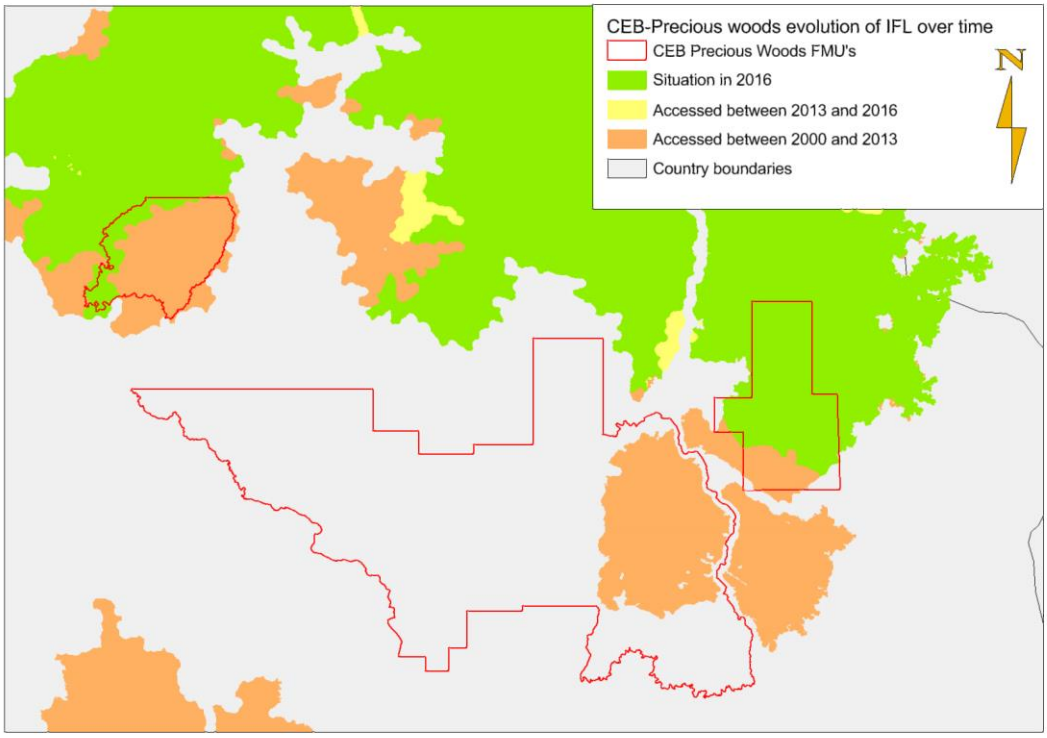

Figure 11: Evolution of the IFL area in the concessions of CEB-Precious Woods in Gabon.

9. Economic Impacts

9.1. Direct impact on productive forest area

Full protection of a core area of IFL will have a direct impact on the extent of the productive forest area within forest management units (FMU) as part of the productive forest area will have to be taken out and set aside as conservation area. In order to quantify the reduction in productive forest area within the FMUs of FSC Certificate Holders in the Congo Basin, data were gathered on the subdivision of the certified FMUs into management series such as productive forest area, conservation, and protected areas. Subsequently, data were gathered from the certificate holders on the areas of those management series that fall within IFL.

Data concerning the size of the productive forest area, conservation and protected areas and other areas (management series) within the FMUs were derived from information available in the public domain such as FSC audit reports available from www.info.fsc.org and summaries of forest management plans available on the websites of the certificate holders (see references in Chapter 15). One certificate holder has partial certification whereby one of its FMUs is not yet certified. Because of FSC's Policy for Association which stipulates that no significant damage can be inflicted to high conservation values in non-certified concessions in case of partial certification, IFLs contained in those non-certified FMUs should be considered and that FMU has therefore been included in this analysis as well. It should be noted that for some operators, the IFL area covers a significant part of their future harvesting blocks. If they are to respect Motion 65 in its original form, they have to either stop working for the year coming until they can return to the first block, reduce the size of the harvesting areas or abandon their FSC certification.

Table 3 shows the subdivision in management series of the total FSC certified area in the Congo Basin by certificate holder while Annex A provides information per individual FMU. The consolidated data by certificate older can be misleading because the variation among FMUs is substantial, also for individual certificate holders. The average productive forest area amounts to 81% of the certified area, varies considerably among certificate holders: i.e., ranging from 69% to 93%, but more so when considering individual FMUs where the area ranges from 66% to 96%. The strictly protected area - *areas protected from any commercial harvesting and managed for conservation purposes* – amounts to 9% of the certified forest area, varying considerably between FMUs; i.e., ranging from 1% to 27%.

Data on the IFL expanse within the FMUs and the subdivision of IFL into productive forest areas, and conservation and protected areas were provided by the certificate holders. *Table 4* shows that 25% of the certified area in the Congo Basin classifies as IFL, ranging from as low as 3% to as high as 46% among certificate holders. When considering the individual FMUs, it appears that 6 out of 19 FMUs do not contain any IFL at all, while IFL takes up as much as 49% of the FMU with the highest IFL coverage.

A similar portion of 23% of the productive forest area within FSC certified forests classifies as IFL, while a distinctively higher proportion of 51% of the area that is managed for conservation purposes

classifies as IFL. The latter indicates that about half of the current conservation area coincides with IFL. Still, the majority of IFLs are situated in productive forest: 75% of IFLs are situated in productive forest areas. Looking at the individual FMUs it is shown that the share of the productive forest area that classifies as IFL varies between 0% and 51%, while the share of the strict conservation areas that classifies as IFL varies between 0% and 99%. It is clear that the overall average and/or the average by certificate holder conceals a significant variation in IFL area at the FMU level.

Table 5 shows that in all cases where certificate holders manage more than one FMU, one of the FMUs has a high IFL cover while other FMUs contain little IFL or even none. FSC rules require a minimum 10% of each FMU be zoned for conservation, so Motion 65 calls for a larger increase in the area of forest that must be zoned for conservation than is apparent from looking at the concessions in aggregate which ignores that some conservation zones will contain very little IFL.

The variation in the implied reduction of productive forest area and concomitant increase of conservation area for the three levels of IFL protection is shown in *Table 6* and *Table 7* at the certificate holder level and in Annex A at the FMU level. It appears that:

- When applying the Motion 65 default indicator of fully protecting at least 80% of the IFL, the overall loss of productive forest area among FSC certificate holders in the Congo Basin will amount to 798,626 ha or 18% of the current productive forest area. The reduction ranges from 2% to 31% depending on the extent of IFL within the certificate holders' FMUs and particularly the overlap of IFL with the productive forest area in those FMUs, implying that some certificate holders are severely affected while others only marginally. At the FMU level, the loss of productive forest area ranges between 0% and 41%, implying that certain FMUs are affected heavily and other not at all. The total conservation area on the other hand will increase strongly by 166% on average.
- Application of the 50% minimum threshold as recently stipulated by the FSC Board and supported by the FSC Policy and Standards Committee will result in a loss of productive forest area of 435,010 ha or 10% of the current productive forest area; ranging from 1% to 15% among the certificate holders. At the FMU level, the 50% threshold will lead to a loss of productive forest area of between 0% and 24%. The proportionate increase in conservation area on the other hand will nearly double; an increase by 90% on average.
- Using the regional IFL indicators as proposed by the Congo Basin HCV-SRWG, including a threshold of 20% full protection of IFL, the overall loss of productive forest area will amount to 92,254 ha or 2% of the current productive forest area; ranging from 0% to 4%. At the FMU level, the 20% threshold will lead to a loss of productive forest area of between 0% and 8%. The threshold proposed by the RWG hence has a marginal impact on the productive area for the certificate holders, some of which are not at all affected. The total conservation area on the other hand will still increase by 19%.

FSC's Policy of Association implies that it is not an option for certificate holders to surrender FSC certificate(s) for FMU(s) with significant areas of IFL and retain FSC certification for FMUs with no or little IFL. Failure to protect IFL in any of the FMU, FSC certified or not, will lead to suspension of all FMUs of that certificate holder.

Table 3 Subdivision in management series of FSC certified area in the Congo Basin in hectares and as percentages and for the six FSC certificate holders individually (%)

Management series	Total FSC certified area in the Congo Basin[1]		Identifier					
			A	B	C	D	E	F
a. Productive forest area	4,418,036	81%	69%	76%	85%	93%	91%	92%
b. Total non-productive area (no commercial harvesting)	1,021,638	19%	31%	24%	15%	7%	9%	8%
– *Areas managed for conservation purposes*	*481,474*	*9%*	*27%*	*3%*	*2%*	*4%*	*6%*	*6%*
– *Areas managed for environmental services or NTFPs*	*456,467*	*8%*	-	*21%*	*13%*	*3%*	*1%*	-
– *Remaining non-productive area*	*83,697*	*2%*	*4%*	-	-	-	*2%*	*2%*
Total certified area	***5,439,674***	***100%***	***100%***	***100%***	***100%***	***100%***	***100%***	***100%***

Table 4 The proportion of Intact Forest landscape in each management series in hectares and as percentage of the total FSC certified area in the Congo Basin, and as percentage of each management series of the six FSC certificate holders individually. Percentages relate to the total area of each management series of a given certificate holder (for confidentiality reasons the exact areas cannot be shared)

Management series	Total IFL in FSC certified area in the Congo Basin		Identifier					
			A	B	C	D	E	F
a. Productive forest area	1,002,307	23%	44%	27%	2%	20%	13%	9%
b. Total non-productive area (no commercial harvesting)	336,765	33%	50%	28%	3%	35%	6%	30%
– *Areas managed for conservation purposes*	*247,948*	*51%*	*58%*	*72%*	*13%*	*63%*	*5%*	*42%*
– *Areas managed for environmental services or NTFPs*	*88,814*	*19%*	-	*22%*	*1%*	-	*28%*	-
– *Remaining non-productive area*	*3*	*0%*	-	-	-	-	*0%*	-
Total certified area	***1,339,069***	***25%***	***46%***	***28%***	***3%***	***21%***	***12%***	***11%***

[1] FSC certified area includes one FMU containing IFL that is not (yet) certified – partial certification conditions require that HCVs be protected in non-certified FMUs and therefore will have an impact on the productive forest area within the noncertified FMU

Table 5 Share of Intact Forest landscape in individual FMUs for five certificate holders that hold more than one FMU; FMUs ranked from low to high IFL cover

Identifier	Total	FMU 1	FMU 2	FMU 3	FMU 4
B	28%	0%	12%	35%	49%
C	3%	0%	0%	0%	21%
D	21%	4%	13%	41%	
E	12%	0%	4%	6%	44%
F	11%	0%	6%	27%	

Table 6 Subdivision in management series in FSC certified area in the Congo Basin in hectares and as percentages, subdivision of IFL within FSC certified area in hectares and as percentages and effect on subdivision of FSC certified area in the Congo Basin in hectares and as percentages after protecting 80%, 50% and 20% of IFL respectively

Management series	Total certified forest area		Composition of IFL		Composition of the Total Certified Forest Area with:					
					80% protection of IFL		50% protection of IFL		20% protection of IFL	
a. Productive forest area	4,418,036	81%	1,002,307	75%	3,619,410	67%	3,983,026	73%	4,325,782	80%
b. Total non-productive area (no commercial harvesting)	1,021,638	19%	336,765	25%	1,820,264	33%	1,456,648	27%	1,113,892	20%
– *Areas managed for conservation purposes*	*481,474*	*9%*	*247,948*	*19%*	*1,280,100*	*23%*	*916,484*	*17%*	*573,728*	*10%*
– *Areas managed for environmental services or NTFPs*	*456,467*	*8%*	*88,814*	*7%*	*456,467*	*8%*	*456,467*	*8%*	*456,467*	*8%*
– *Remaining non-productive area*	*83,697*	*2%*	*3*	*0%*	*83,697*	*2%*	*83,697*	*2%*	*83,697*	*2%*
Total area	***5,439,674***	***100%***	***1,339,072***	***100%***	***5,439,674***	***100%***	***5,439,674***	***100%***	***5,439,674***	***100%***

Table 7 Current productive forest area, IFL in productive forest and reduction of productive forest area as a result of protecting 80%, 50% and 20% IFL in FSC certified area in the Congo Basin in hectares and as percentages and individual certificate holders as percentages

Productive forest area	Total certified forest area		Identifier					
	ha	%	A	B	C	D	E	F
Current Productive forest area (No IFL protection)	4,418,036	100%	100%	100%	100%	100%	100%	100%
IFL in productive forest area	1,002,307	22.7%	43.7%	27.5%	2.4%	19.9%	13.1%	9.0%
Reduction with protection of 80% of IFL	-798,626	-18.1%	-31.5%	-24.2%	-2.0%	-15.5%	-10.4%	-6.7%
Reduction with protection of 50% of IFL	-435,010	-9.8%	-14.7%	-14.3%	-1.2%	-8.7%	-6.3%	-3.2%
Reduction with protection of 20% of IFL	-92,254	-2.1%	0.0%	-4.4%	-0.5%	-1.8%	-2.2%	-0.4%

9.2. The implications of a reduction in productive forest area for forest management planning

What are the implications of reducing the productive forest area? What is the effect of such reduction on the annually harvestable volume and how can this be determined? In order to understand the implications we first need to examine the principles under which the FSC certified forests in the Cong Basin are being managed at present. All six FSC certified FMOs develop their forest management plans, 5-yr plans and annual operating plans in basically the same manner. Based on a management level forest inventory, the overall exploitable volume, the duration of the cutting cycle and the minimum cutting diameters by species or group of species (in French: «Diamètre Minimum d'Aménagement» - DMA) are determined so as to ensure the reconstitution of the harvestable volume of each species or group of species and to maintain the population structure of that species or group of species after one cutting cycle. The reconstitution is based on the diameter increment of the trees below the DMA, existing advance regeneration, natural regeneration and mortality rates, and estimated logging damage. Normally, this leads to the DMA exceeding the legal minimum cutting diameter (in French: «Diamètre Minimum d'Exploitabilité» – DME) as set by the forest authorities. The exploitable volume is thus based on the volume estimated by the management inventory and on net growth estimates. FMUs (UFA) are divided into five-year blocks or Forest Production Units [Unités Forestières de Production (UFP) or Unités Forestières de Gestion (UFG)], each Forest Production Unit corresponding to approximately 5 years of production. Each 5-year block (UFP or UFG) requires a five-year management plan specifying the forest exploitation method, silvicultural system, and social and environmental protection measures, etc. The Forest Production Units are further divided into Annual Cutting Areas (synonymous to Felling Area, Cutting Area or Annual Coupe - in French «Assiette Annuelle de Coupe»)) and annual planning is done on the basis of the results of an operational inventory (100% enumeration, measurement and mapping of trees eligible to be harvested; i.e. above the DMA, free of defect, accessible, etc.). Each ACA is subject to an Annual Plan of Operations (PAO) which must be previously validated by the forest authority. Usually, given the heterogeneity of the forest, the size of the five-year blocks typically varies somewhat from one block to the next. In practice, a Forest Production Unit is therefore divided into 4 to 6 Annual Cutting Areas (ACAs) based on area in Gabon and Cameroon. In the Republic of Congo, or ACAs are delimited on the basis of available volume determined by the operational inventory.

In theory, there are a number of options to set aside a portion of the productive forest area to protect IFL. Theoretically, one can opt to cease operations for a period equalling the number of ACAs that must be set aside to protect IFL. This option is not practicable because it would imply closing the base camp, processing facilities linked to that FMU, terminating employment of workers, etc. This option in practice means relinquishing the FMU and returning the FMU to the government. In principle, three hypothetical options remain:

- Reduce the duration of the cutting cycle; i.e. returning to the first ACA of the cutting cycle before its time - as many years earlier as the number of ACAs to be set aside (this need not be a round figure),
- Reduce the size of the annual cutting area to the extent that the same number of ACAs can be harvested during the cutting cycle which then remains unaltered

- A combination of reducing the duration of the cutting cycle and reducing the size of the ACA.

Neither reducing the size of the Annual Cutting Area nor reducing the duration of the cutting cycle is legally allowed under forest management planning regulations in force without approval by the forest authorities. Minimum cutting cycles lengths are defined by the governments of the Congo Basin countries; the minimum cutting cycle in Gabon is 20 years and in Cameroon 30 years, while the cutting cycle in the Republic of Congo must be calculated based on the minimum reconstitution rates of the harvested species. Any change in either the cutting cycle - permanently or temporarily - or the annual cutting area requires adaptation of at least the forest management plan and the five-year plan; all amendments to any of those plans require approval of by the respective Ministries responsible for forestry. It is of the essence to mention at this point that both the government of Gabon and the government of the Republic of Congo have expressed their concern about the implementation of Motion 65 and outright reject the IFL protection measures because of the perceived significant negative impact on the timber sector in the two countries and the threat to the implementation of the forest policies that aim to reconcile protection and production in the forest estate. With this in mind it is unlikely that the respective forest authorities will automatically and unreservedly accept adjustment of the FMPs.

It also means that all three plans must be adapted; the overall forest management plan (one entire cutting cycle), the five-year plan and the annual operating plan. The development of forest management plans is normally outsourced to specialized consultancy firms and reported to cost between 1 and 2 billion FCFA or 1.5-2.9 million Euro according to public summaries of the FMPs (equivalent to 1500-2100 FCFA/ha or 2-3 Euro/ha). This includes the cost of the forest inventory which does not need to be repeated, but the cost of redoing the FMP, 5-yr plan and APO will probably be substantial.

9.3. The implications of a reduction in productive forest area for annually exploitable volume

9.3.1. How to estimate the impact on the annually harvestable volume and financial turnover

To what extent does a reduction of the productive forest area influence the volume that can be harvested annually and how will this impact the turnover and profit margins of the certificate holders? There is no simple answer to this question because the size of the Forest Production Units and Annual Cutting Areas are determined by the available volume as estimated by the management level forest inventory. Moreover, the species composition varies by FPU and by ACA resulting in variable monetary values of the harvestable volume in each of those. Therefore, this question cannot be definitively answered until the necessary adjustments to the FMPs are made, which, as noted above, would require approval from the relevant forestry authorities which may not be forthcoming.

Nonetheless, we should make an attempt to estimate such impacts. In order to obtain an indication of the impact of the three levels of IFL protection on annual volume production, we simulated the effect of a reduction of the productive forest area on the harvestable volume by reducing the length

of the cutting cycle and by reducing the size of the annual cutting area. Our simulations necessarily make use of the following simplifications and assumptions:

- Shortening the length of the cutting cycle will lead to partial reconstitution of the harvested volume; whereby we assume that the rate of reconstitution or accrual is constant and invariable, implying that x percent reduction in cutting cycle length results in x percent less volume being reconstituted;
- Shortening the length of cutting cycle will not affect population structure of any species or group of species, regeneration and mortality rates or logging damage;
- Reduction of the size of the ACAs requires a temporary, gradually decreasing reduction of the cutting cycle;
- The change requires a transition phase which lasts for one whole cutting cycle; and, most importantly;
- Forest authorities will allow permanent or temporary reduction of the cutting cycle and an associated reduction in volume being reconstituted, hence a reduction of annually harvestable volume.

The methodology that was used to simulate the impact of the implied reduction in productive forest area on the exploitable volume is explained further in Annex E

9.3.2. Reduction of the length of the cutting cycle

Reducing the duration of the cutting cycle implies that trees below the DMA will accrue less volume during one cutting cycle. Applying a constant rate of annual volume accrual results in a reduction in annually harvestable volume as indicated in *Table 8*. This reduction of the annually harvestable volume is directly proportionate to the reduction in area given the assumptions in place. Application of a threshold of IFL protection of 80% will therefore lead to a reduction of annually harvestable volume by approximately 310,000 m^3 per annum across the FSC certified forest area, a reduction by 15%. In case of a 50% threshold the annually harvestable volume will decrease by approximately 170,000 m^3, a reduction by 8%, and with a threshold of 20% by approximately 38,000 m^3, a reduction by 2%. These impacts inevitably vary by FMO; see *Table 8* for reductions in cutting cycle length and harvestable volumes (proportionate) by certificate holder.

Reducing the duration of the cutting cycle is not desirable from a silvicultural or environmental point of view because it will lead to a greater cumulative logging damage to trees below the minimum cutting diameter and incipient new regeneration and result in less time to recover from other impacts of logging such as secondary roads, soil compaction caused by skidding, etc. Moreover, to achieve the necessary reductions for both the 50% and the 80% protection scenario, cutting cycles would end up below the legal minimum duration in Cameroon in the case of one out of four FMUs and in the case of two out of ten FMUs in Gabon. Cutting cycles will not comply with the management planning regulations in the Republic of Congo, requiring a minimum reconstitution rate for harvested species based on minimum harvest diameter and rotation length, in the case of four out of five FMUs. Even with the 20% protection scenario, the time of passage since the previous harvest will be less than the legal minimum duration in case of four FMUs pertaining to three certificate holders (see *Table 8*)

Table 8 Hypothetical impact of IFL protection on the cutting cycle – if reduced to provide for loss of productive forest area – and annually harvestable volume. Base data on harvestable volumes and cutting cycles were derived from public summaries of FMPs or FSC audit reports of the respective companies

Item	Identifier (certificate holder – FMU)										
	A	B					C				
	A1	B1	B2	B3	B4	Total	C1	C2	C3	C4	Total
Present cutting cycle in FMP (years)	30	30	30	35	30		30	30	30	30	
Reduced cutting cycle (years)											
- with 80% protection IFL	20.6	28.4	30.0	24.1	17.7		30.0	30.0	30.0	25.5	
- with 50% protection IFL	25.6	29.2	30.0	28.6	22.7		30.0	30.0	30.0	27.2	
- with 20% protection IFL	30.0	30.0	30.0	33.0	27.6		30.0	30.0	30.0	28.9	
Loss of annually harvestable volume (m^3)											
- with 80% protection IFL	-31%	-5%	0%	-31%	-41%	-22%	0%	0%	0%	-15%	-3%
- with 50% protection IFL	-15%	-3%	0%	-18%	-24%	-13%	0%	0%	0%	-9%	-2%
- with 20% protection IFL	0%	0%	0%	-6%	-8%	-4%	0%	0%	0%	-4%	-1%

Item	Identifier (certificate holder – FMU)													TOTAL FSC Congo Basin	
	D				E					F					
	D1	D2	D3	Total	E1	E2	E3	E4	Total	F1	F2	F3	Total	m^3	%
Cutting cycle in FMP (years)	25	25	25		25	25	20	25		25	25	25			
Reduced cutting cycle (years)															
- with 80% protection IFL	15.2	25.0	25.0		23.6	25.0	13.1	24.2		23.8	21.0	25.0			
- with 50% protection IFL	19.5	25.0	25.0		24.1	25.0	15.9	24.5		24.2	23.3	25.0			
- with 20% protection IFL	23.8	25.0	25.0		24.7	25.0	18.6	24.8		24.7	25.0	25.0			
Loss of annually harvestable volume (m^3)															
- with 80% protection IFL	-39%	0%	0%	-11%	-6%	0%	-34%	-3%	-13%	-5%	-16%	0%	-9%	-313,420	-15%
- with 50% protection IFL	-22%	0%	0%	-6%	-4%	0%	-21%	-2%	-8%	-3%	-7%	0%	-4%	-171,298	-8%
- with 20% protection IFL	-5%	0%	0%	-1%	-1%	0%	-7%	-1%	-3%	-1%	0%	0%	0%	-37,843	-2%

9.3.3. Reduction of the size of the annual cutting area.

As mentioned in the previous section, reducing the cutting cycle permanently is probably not allowed according to the forest management regulations in force and not desirable from a silvicultural or environmental point of view. This leaves the option of reducing the size of the annual cutting area. However, this still entails that the cutting cycle needs to be reduced but, in this case, only temporarily. The reason for this is that the ACAs that fall within the IFL protection area will need to be skipped and the forest operator will end up returning to the first ACA of the current cutting cycle earlier than indicated in the FMP and 5-year plan. Hence, the time of passage since the previous time the first ACA was harvested will be less than a full cutting cycle; i.e. the cutting cycle minus the number of ACAs that are skipped because they fall within the protected IFL area. From then on the cutting cycle will gradually extend little by little each year until the ACA that was first reduced in size is reached.

Application of a threshold of IFL protection of 80% will lead to a reduction of the average annual cutting area by approximately 28,000 ha across the FSC certified forest area, a reduction by 18%. If we suppose that all companies reach their protected IFL the same year, the annual harvestable volume will reduce by approximately 521,000 m³ (25% of the current volume) during the first year of the transition. Sixty-nine percent of this loss (360,000 m³) is due to the reduction in the size of the ACA while 31% (161,000 m³) is as a result of the shorter time of passage. The annual loss in production will gradually diminish until it reaches 360,000 m³ per annum at the end of the cutting cycle. It is evident that this supposition is incorrect because the cutting cycles did not commence in the same year for all certificate holders and all FMUs per certificate holder. In fact, the reduction in harvestable volume in the first year of the transition varies among the certificate holders between 6% and 52% of the current annual harvestable volume based on our assumptions. The losses for the individual FMUs that are impacted most severely are higher with an average loss of 49% of the volume per annum, ranging from 27% to 64%.

In case of a 50% threshold the average annual cutting area will decrease by approximately 15,000 ha across the FSC certified forest area, a reduction by 10%. The first year of the transition the annual harvestable volume will reduce by approximately 308,000 m³ (15% of the current volume) if all companies would have reached the protected IFL the same year. Sixty-four percent of this loss (197,000 m³) would be due to the reduction in the size of the ACA while 36% (111,000 m³) due to the shorter time of passage. In fact, the reduction in harvestable volume the first year of the transition period varies among the certificate holders between 4% and 27% of the current annual harvestable volume based on our assumptions. The losses for the individual FMUs that are impacted most severely attain an average loss of 29% of the volume per annum, ranging from 13% to 42%.

With a threshold of 20% the average annual cutting area will decrease by approximately 3,250 ha across the FSC certified forest area, a reduction by 2%. The first year of the transition the annual harvestable volume will reduce by approximately 72,000 m³ (4% of the current volume) if all companies would have reached the protected IFL the same year. Fifty-eight percent of this loss (42,000 m³) would be due to the reduction in the size of the ACA while 42% (30,000 m³) due to the shorter time of passage. As a matter of fact, the reduction in harvestable volume the first year of the

transition period varies among the certificate holders between 0% and 7% of the current annual harvestable volume based on our assumptions. The losses for the individual FMUs that are impacted most severely attain an average loss of 7% of the volume per annum, ranging from 0% to 15%.

Just as with the option to reduce the cutting cycle while maintaining the size of the annual cutting area, the cutting cycle will be reduced below the legal minimum cutting cycle during the transition phase. Again, the solution is undesirable from a silvicultural and environmental point of view because it will lead to a greater cumulative logging damage to advanced regeneration and natural regeneration and result in less time to recover from other impacts of logging such as secondary roads, soil compaction caused by skidding, etc.

From the point of view of the FSC certificate holders the first option to reduce the cutting cycle permanently is a simpler solution, but this probably goes against forest management regulations. The second option of reducing the annual cutting area will result in a reduction of harvestable volume on account of both the reduction in size of the annual cutting area and the temporary reduction of the length of the cutting cycle, resulting in a stronger reduction of the harvestable volume than in case of option 1.

The companies will be faced with a loss of harvestable volume which for some FMUs is so high that the operation may no longer be profitable. On top of this the companies face added cost because FMPs and 5-year plans have to be amended, operations need to be relocated early and additional fees will need to be paid to forest authorities to conduct checks and approve the amended plans.

Moreover, with either option, the duration of the cutting cycle will have to be reduced below the legal limit so neither option is acceptable from a legal point of view. The only acceptable option would be to cease operations for a period equalling the number of AACs that must be set aside to protect IFL. However, ceasing operations can be regarded as an illegal action by the governments since concession agreements stipulate that areas must be harvested in accordance with the approved forest management plan and the concession may be revoked. It is clear that the decision on the approach to follow to reduce the productive forest area to protect IFL needs to be a concerted effort involving the governments of the Congo Basin countries.

Table 9 Effect of IFL protection on the annual cutting area, and cutting cycle and annually harvestable volume at first year of transition.

Item	Identifier										
	A	B					C				
	A1	B1	B2	B3	B4	Total	C1	C2	C3	C4	Total
Original Average Annual Cutting Area (%)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Average Annual Cutting Area (ha)											
- with 80% protection IFL	69%	95%	100%	69%	59%	76%	100%	100%	100%	85%	98%
- with 50% protection IFL	85%	97%	100%	82%	76%	86%	100%	100%	100%	91%	99%
- with 20% protection IFL	100%	100%	100%	94%	92%	96%	100%	100%	100%	96%	100%
Cutting cycle in FMP (years)	30	30	30	35	30		30	30	30	30	
Start cutting cycle (PA)	2007	2005	2007	2010	2018		2005	2004	2008	2016	
Cutting cycle during first year of transition (years)											
- with 80% protection IFL	20.9	28.4	30.0	24.4	18.1		30.0	30.0	30.0	25.6	
- with 50% protection IFL	25.7	29.2	30.0	28.8	22.9		30.0	30.0	30.0	27.3	
- with 20% protection IFL	30.0	30.0	30.0	33.1	27.7		30.0	30.0	30.0	28.9	
Loss of annually harvestable volume during first year of transition (m^3)											
- with 80% protection IFL	52%	10%	0%	52%	64%	35%	0%	0%	0%	27%	6%
- with 50% protection IFL	27%	5%	0%	33%	42%	23%	0%	0%	0%	18%	4%
- with 20% protection IFL	0%	0%	0%	11%	15%	7%	0%	0%	0%	7%	2%
Logging front reaches protected IFL (year)											
- with 80% protection IFL	2020	no data	n.a.	no data	no data		n.a.	n.a.	n.a.	2020	
- with 50% protection IFL	2025	no data	n.a.	no data	no data		n.a.	n.a.	n.a.	2020	
- with 20% protection IFL	n.a.	n.a.	n.a.	no data	no data		n.a.	n.a.	n.a.	2020	

Item	Identifier													FSC Congo Basin (ha/%)
	D				E					F				
	D1	D2	D3	Total	E1	E2	E3	E4	Total	F1	F2	F3	Total	
Original Average Annual Cutting Area (%)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	159,565
Average Annual Cutting Area (ha)														
- with 80% protection IFL	61%	100%	100%	84%	94%	100%	66%	97%	88%	95%	84%	100%	93%	131,626
- with 50% protection IFL	78%	100%	100%	91%	96%	100%	79%	98%	93%	97%	93%	100%	97%	144,317
- with 20% protection IFL	95%	100%	100%	98%	99%	100%	93%	99%	98%	99%	100%	100%	100%	156,285
Cutting cycle in FMP (years)	25	25	25		25	25	20	25		25	25	25		
Start cutting cycle (PA)	2009	2004	2006		no data	no data	no data	no data		2000	2000	2000		
Cutting cycle during first year of transition (years)														
- with 80% protection IFL	15.6	25.0	25.0		23.6	25.0	13.5	24.3		23.8	21.2	25.0		
- with 50% protection IFL	19.7	25.0	25.0		24.2	25.0	16.1	24.6		24.3	23.4	25.0		
- with 20% protection IFL	23.9	25.0	25.0		24.7	25.0	18.7	24.8		24.7	25.0	25.0		
Loss of annually harvestable volume during first year of transition (m^3)														
- with 80% protection IFL	62%	0%	0%	17%	11%	0%	56%	6%	21%	9%	29%	0%	16%	25%
- with 50% protection IFL	38%	0%	0%	11%	7%	0%	36%	4%	13%	6%	13%	0%	8%	15%
- with 20% protection IFL	9%	0%	0%	2%	3%	0%	13%	1%	5%	2%	0%	0%	1%	4%
Logging front reaches protected IFL (year)														
- with 80% protection IFL	2022	n.a.	n.a.		no data	n.a.	no data	no data		no data	no data	n.a.		
- with 50% protection IFL	2027	n.a.	n.a.		no data	n.a.	no data	no data		no data	no data	n.a.		
- with 20% protection IFL	2031	n.a.	n.a.		no data	n.a.	no data	no data		no data	n.a.	n.a.		

9.4. Financial implications of a reduction in productive forest area to the concessionaires

The timeframe and budget available for this study did not allow an in-depth financial assessment of each FSC certified logging operation in the Congo Basin, and companies were reluctant to share actual financial data because of their sensitive nature. Nonetheless, we can make some reasonable estimates. Putting aside for a moment the anticipated legal hurdles to changing an FMP, the protection of a core area of IFL has implications for the annually harvestable volume as shown in the previous section. Assuming a fixed average sales price per cubic metre the reduction in the harvestable volume can be converted in a directly proportionate reduction in annual income (See *Table 10*).

Table 10 *Expected decrease in income in case of 80%, 50% and 20% full protection of IFL for Option 1: reducing the duration of the cutting cycle and Option 2: reducing the size of the annual cutting area - for the first year of the transition only. At the completion of the transition – one full cutting cycle – the reduction in income would be equal to Option 1.*

IFL Protection	**Option 1 reducing the duration of the cutting cycle**		**Option 2 reducing the size of the annual cutting area (first year of the transition)**	
	Average	Range	Average	Range
80% protection IFL	18%	2% -31%	25%	6% -52%
50% protection IFL	10%	1%-15%	15%	4%-27%
20% protection IFL	2%	0%-4%	4%	0%-7%

In terms of cost of production one can discern fixed and variable costs. Variable cost can be expressed per m³ harvested while fixed cost are independent of the volume that is harvested. Variable or running costs include e.g. cost of fuel, lubricants, tyres, spare parts, maintenance and repair, and royalties (“taxe d’abattage”/”taxe de martelage”). Labour costs are a special case. They often consist of a mix of fixed and variable costs.

There are numerous fixed costs: forest area taxes ; environmental permits and taxes on equipment; technical and environmental verification missions; taxes on workers’ renumeration; and machine and sawmill ownership costs. Furthermore there are fixed costs for community development and social benefits for the employees, cost of electricity and drinking water supplied to the population in nearby villages; the cost of running the base camps and sawmills; environmental and social infrastructures in the base camp and sawmill; wildlife management (eco-guards); medical facilities; and cost of FSC audits. With less volume being produced the fixed costs would need to be distributed over fewer cubic metres, implying that the cost of production per cubic metre will rise. This effect can be seen in *Table 11* which shows an example of the effect of reduced exploitable volume on the relative cost of area fees per cubic metre harvested. In the Republic of Congo, the area fee is based on the productive forest only. It is assumed that the area fee will be charged over the original productive area regardless of the actual reduction of the productive area as a result of protection of IFL because it is not likely that the government of Congo will accept to remove the protected IFL core area from the taxable area. The area fee converted to a value per cubic metre harvested increased 18% on average with 80% IFL protection, 9% with 20% protection and 2% with 20% protection. Similar increases can be expected for other fixed charges and costs. (The various government imposed charges related to logging are further specified in Annex D.)

Table 11 Area fee converted to a value per cubic metre under four scenarios: business as usual, 80% IFL protection, 50% IFL protection, and 20% IFL protection for six FSC certificate holders in the Congo Basin

Area fee per m³ harvested (EUR)	Identifier						Total
	A	B	C	D	E	F	
No protection IFL	1.65	1.75	1.95	1.39	1.45	1.15	1.58
80% protection IFL	2.40	2.24	2.02	1.56	1.65	1.26	1.86
50% protection IFL	1.93	2.01	1.99	1.48	1.56	1.20	1.72
20% protection IFL	1.65	1.82	1.97	1.41	1.48	1.15	1.61

9.5. Net economic impact of a reduction in productive forest area

Taking all of the above into account, insufficient data are available to calculate the actual magnitude of the loss in FMO's income with any great certainty. Three companies provided the impact of IFL protection on certain economic indicators; average figures are presented in *Table 12*.

It is shown that there will be a substantial reduction in the work force, wages, and direct taxes being paid. In case of a **50%** protection of IFL, it is estimated that:

- Revenue from corporate taxes will reduce by 18%
- Revenue from VAT will reduce by 21%
- Revenue from payroll taxes will reduce by 15%
- Revenues from direct forestry related taxes will reduce by 13%

Table 12 Impact of protection of IFL on several economic indicators – average for three FSC certificate holders in the Congo Basin

Economic indicator	unit	Actual	with protection 20% of IFL	with protection 50% of IFL	with protection 80% of IFL
Volume harvested	m³	256,667	240,000	215,178	185,022
Net sales	EUR	49,750,000	46,354,167	41,014,583	34,941,667
Number of employees	each	1,394	1,328	1,182	1,015
Wages and benefits	EUR	11,966,667	11,300,000	10,146,167	8,792,333
Social projects	EUR	2,266,667	2,266,667	2,022,667	1,778,667
Spending on local suppliers and services	EUR	24,000,000	22,500,000	18,865,000	15,230,000
Regional development fund[2]	EUR	204,000	201,000	180,900	151,200
Environmental projects (anti-poaching)	EUR	142,500	142,500	122,500	102,500
Forest taxes and royalties (excl. development fund)	EUR	2,033,333	1,933,333	1,763,000	1,592,667
Export taxes	EUR	1,500,000	1,437,500	1,248,750	1,060,000
Import taxes	EUR	550,000	525,000	463,750	402,500
Other taxes and charges	EUR	1,330,000	1,263,333	1,204,633	1,145,933

This shows that respective governments will be deprived of considerable revenue, which is related to volume based charges and taxes, not only where it concerns direct taxes but also where it concerns taxes on companies adding value further along the value chain. In addition, there will be a reduction in the work force which entails a reduction in revenue from wages and salaries related taxes (income tax), corporate taxes and value added taxes.

[2] Regional development fund charges in Gabon and Congo are based on volume and area; in Cameroon, the regional development fund is 50% of the area fee

As for the certificate holders, the general conclusion - according to one CH representative – is that a 10% drop in volume production will increase raw material cost by around 5-8%. This impact multiplies further down the supply chain as raw material is transformed to sawn timber. The eventual increase in cost of processed material lies between 18-25% for a 10% drop in volume. Lower volumes will further increase the proportional service cost of transporters, ports, handling fee etc.

Table 12 shows that certificate holders foresee a fall in net sales by 7% in case of 20% IFL protection, 18% in case of 50% IFL protection and 30% in case of 80% IFL protection. Those figures are higher than the ones resulting from the simulation of the loss in harvestable volume in *Table 10*. This can be explained by the considerable fixed costs and investments that have been made which both have to be distributed over a lower harvestable volume. Interviewed representatives of certificate holders indicated that such a fall in net sales would render their operation unprofitable and that they would be forced to surrender their FSC certification. This applies for both the 50% and 80% IFL protection scenarios with great certainty to four out of the six certificate holders. The two other certificate holders indicated that they would be in the position to manage the reduction in exploitable area but would foresee insurmountable obstacles for expanding their operation, hence increase FSC certified area in their country, because the majority of the remaining forest estate with prime stands of timber contains large shares of IFL.

9.6. Socio-economic impact of a reduction in productive forest area to forest dependent communities

Insufficient data are available to calculate the actual magnitude of the socio-economic impact on local, forest dependent communities. However, *Table 12* indicates that the main impact will be a reduction of employment; as much as 15% in case of application of the 50% IFL protection threshold. Indirectly there will be an impact on social projects such as workers' accommodation, supply of drinking water and electricity, food security, health care, education facilities, funds for community development and the local development fund in Gabon and the Republic of Congo. In Gabon, the village charges amount to 800 FCFA/ha/m^3 harvested (1.22 EUR/ha/m^3) and the loss in revenue to the communities will be substantial. Expenditure on social projects is expected to diminish by 11%.

10. Social Impacts

10.1. Support activities for the population developed by forest enterprises

In the countries of the Congo Basin various legal measures exist to ensure that the fringing communities participate in the benefits from forest exploitation. All companies are required to contribute to local development by paying fees based on the surface area of the concessions (Cameroon) or based on the volume produced (Gabon and Congo).

According to Article 251 of Law 16/01 of 31 December 2001 from the Forestry Code of the Republic of Gabon, logging companies are required to contribute to certain initiatives and development actions of collective interest initiated by local and indigenous populations (Rougier, 2018). The amount of the contributions is 800 FCFA per m3 harvested.

The provisions of decree No. 076/MINATD/MINFI/MINFOF of 26 June 2012 prescribe the distribution key for the area tax in Cameroon as follows: 50 per cent allocated to the State; 20 per cent allocated to the council where logging activities are carried out; 20 per cent allocated to the Special Fund for Equipment and Intercommunal Intervention (FEICOM), for the benefit of all the other councils throughout the national territory; and 10 per cent allocated to local village communities (Eteme, 2015). The amount of the annual royalties (RFA) depends on what the company has offered in its tender for the FMUs.

For Congo, Cerutti et al (2014) describe three main benefit-sharing mechanisms aimed at improving the living conditions of the populations living in or around the concessions, two public (the forest royalty and the local development fund) and one private (stipulated in the cahier de charges). Forestry companies participate by paying a fee of about 200 FCFA per cubic metre of marketable wood harvested annually by the forestry company.
The annual forest royalty is to be equitably distributed between a centralized forest fund and the regions.

Depending on the case, these payments to the populations will be or will not be impacted by Motion 65 and the protection of 80% of the IFLs. Area-based payments will remain the same, although payments based on volume harvested will decrease pro rata.

In addition to mandatory payments, logging companies participate in local development by supporting concrete projects such as the construction or maintenance of classrooms or meeting rooms, electrification, support for children's schooling, medical support, infrastructure maintenance, information and consultation of the population and many other social interventions. For FSC certified companies, these additional projects are part of benefit sharing agreements. The companies present these activities on their websites and in their annual activity reports.

The companies indicate that a reduction in the exploitable surface area can count on an equivalent reduction in social investments. If the FSC certificate is lost, it is likely that the company will be obliged to reduce these social interventions to the minimum legally required. As the activities will no longer be covered by extra income obtained from sale of certified timber. From the economic part of this study it became clear that communities can expect significant reduction in payments based on the quantity (in cubic metres) of wood harvested.

An in-depth study on the benefits of FSC certification by Cerutti et al (2014) shows that certification in the Congo Basin has been able to push companies towards significant social progress. In terms of work, certified companies invest heavily in training, safety at work and, good housing, health care and food for their workers. A reduction in the area available for harvesting puts pressure on the number of jobs and machines needed for logging and will certainly have an impact on the company's investment in these employees.

10.2. Activities of the people linked to the forest

Much of the population of the Congo Basin depends on the forest at least partially for its well-being and nourishment. During the interviews with representatives of the FSC social chamber a percentage of 80% was often mentioned. In a study done on non-timber forest products for the FAO, Tieguhong et al (2007) actually confirm that globally 80% of the poorest people depend on NTFPs for their livelihoods. The current level of dependence on NTFP's in logging concessions is not well known. But that the population is highly dependent on the forest is clear. Next to NTFPs the land itself that is covered by the forests is an important resource. Clearing forest to open up land for crops is an integral part of the lives of most of the farmers in the Congo Basin. During the elaboration of the management plans, a forest strip along the roads and around the villages is normally reserved for the population for agriculture and agro-forestry and excluded from the forest production area (Congo Basin Program, 2015). The hunting and gathering practised by the populations is usually preserved in the whole FMU area, including in the forest production area, except for certain conservation areas or wildlife protection areas. Access by indigenous communities is subject to national regulations and specific agreements in place for the forest in question. The impact of the implementation of the motion on these activities of the populations will probably be limited, except in cases where individuals are active in large-scale poaching. Less control by companies due to a reduction in the exploitable surface area, and resulting ability of FMO's to provide funds for surveillance and control, may stimulate poaching.

During interviews with stakeholders of the social chamber for this study all stakeholders indicated that FSC certified logging is beneficial to people. Access to the forest for NTFPs is not restricted, although sometimes it is perceived as such (Cerutti et al., 2014). Hunting is

regulated but still possible with appropriate permits. Space for cultivation is respected. For the populations, the protection of a larger part of the forest has little or no effect on their access to the resource. If the IFLs are to be fully protected and access prohibited, the impact becomes significant.

10.3. Impact on the governments

The role of governments in the debate on IFL is an interesting one in the sense that the governments are the forest owners. As owners of the forest they have leased out harvesting rights and the obligation to negotiate with the local population and to elaborate a plan for the sustainable management of the forest to private companies. Questions as to how much of an FMU is to be protected is based on the forest management studies (inventory, biodiversity, and wildlife studies) made by the company, SFM consultancy offices and government representatives. The management plans are evaluated and subject to formal approval by the government and local communities before they can be deployed. The interest of the governments are on one side the entries into treasury and employment creation and on the other side the various responsibilities that logging companies assume partially over from the state (maintenance of roads, hospitals, schools, development assistance in forest communities and sometimes even the upholding of the law). Governments have an interest in stability and maximum returns from leasing out the forest. Motion 65 has elicited negative reactions from the Governments. The Republic of Congo has issued statements showing they will not accept the reduction in harvestable areas (breach of agreed management plan) and the subsequent reduction in tax income from royalties. In the section on economic impacts it was illustrated that the protection of 80% of the IFL in concessions can reduce government income from forestry taxes to the extent of 22%, in case of protection of 50% of the IFL 13% and in case of protection of 20% of the IFL 5%.

The government in Gabon has indicated that it sees FSC as a good way of ensuring sustainable management of the forest, and announced that it expects all concessionaires to become FSC certified by end 2022. Gabon has indicated that a strict interpretation of the motion 65 will undermine and delay the process. The COMIFAC association has also expressed its concern in a letter to FSC.

10.4. Conclusions on the social impacts

People and FSC-certified forest companies have found a way to live together. A share of the benefits of forest exploitation are invested in local development and in maintaining services to the population. Logging does not have a negative impact on the availability of NTFPs or land for cultivation. As the amount of forest to be protected increases, the benefits to people will decrease. This is mostly proportional. (see economic section). Significantly reduced benefits both for communities and for the national governments will ensue from

increased protection. Especially in these countries where funds are scarce, it is impossible to indicate a level at which the impact is tolerable, but clearly, 20% protection will be preferred over 80% protection of IFL in the concessions.

11. Ecological impacts

The level of forest fragmentation in the IFL areas where certificate holders operate and the effect of this fragmentation on animal and plant species are listed as the main potential problems related to environmental impacts. On the basis of the available literature an analysis is presented on the effects of exploitation on the forest.

11.1. Introduction

The ecological impact of logging has been subject of many studies. Especially now that forests exist under FSC certification, cooperation has been established between forest operators and non-governmental organisations such as WWF and WCS. These international NGOs guarantee good quality studies on flora and fauna. All forest management organisations are obliged to make wildlife inventories for the elaboration of management plans for their concessions. These inventories are a baseline and serve as the beginning of long-term monitoring. However, despite the number of inventories made in recent years, it remains difficult to find information that clearly shows the impacts.

One of the arguments for increasing the protection series with a majority of the forests classified as IFL is that many species depend on untouched forests for their survival. Through a review of the literature we present the impacts of integral protection on the one hand and responsible logging on the other hand in order to be able to judge the impact of the protection of IFLs in FSC-certified forests. In order to guide the impact analysis, it is important to make a clear distinction between FSC-certified and non-certified harvesting.

In the public debate this distinction is quickly lost from view, and the efforts made by certified forest managers and their partners are ignored. Yet there are important differences between non certified forests and forests certified in accordance with FSC principles and criteria.

11.2. Impacts of logging on fauna

The significant impact that traditional logging has had on wildlife has been demonstrated in many scientific publications. Open roads create access. Laurance et al (2006) showed that in Gabon the opening of roads caused a decrease in animal density, especially duikers (Cephalophus sp.) and buffaloes (Cyncerus caffer nanus), and that this effect is intricately linked to hunting. The recent enormous increase in poaching for ivory (Poulsen et al., 2017) is also facilitated by major infrastructure works. Near habitation, forest vegetation is often still intact, while large and medium-sized fauna is often absent or greatly reduced (Wilkie et al., 1999). These examples show that the main impact on fauna is from poaching. Hunting changes the spectrum of animals involved in seed dispersal and may have a direct influence on the regeneration of plants that depend on seed dispersal by frugivorous animals (Effiom et al., 2013).

Figure 12: Bushmeat being cured with smoke in a forestry concession in Cameroon.

Typically, studies on great apes show that chimpanzees (but less so gorillas) are temporarily displaced during timber harvesting activities, but return when the harvest compartments are closed (Morgan et al., 2018, Arnhem et al., 2008, Hicks et al., 2009). Chimpanzee densities appear to be decreasing slightly while Gorilla densities appear to be stable. A recent study by Morgan et al. (2019) shows that, based on the information available today, it is clear that the roads created during logging lead to an increase in poaching and consequently impacts wildlife.

A study (Maisels et al. 2014) conducted by WCS in the Ngombé Ntokou-Pikounda Forest Landscape shows that since an earlier wildlife inventory (Malonga, 2008) no statistically significant difference in density could be observed. What could be observed is that the incidence of hunting indicators had generally increased, but it was also in areas that were not yet harvested (south of the concession, in and near the Ntokou-Pikounda National Park). If the companies manage to control hunting better in the FMUs, it is possible that the logging may not have a long-term negative effect on wildlife. Haurez et al (2014) studied gorilla densities in a forest that has been managed and selectively harvested for 25 years. They found that gorilla densities are comparable with those in protected areas (1.5 gorilla/ha).

Hunting control is indicated as a limiting factor in this study. If hunting remains at a low level, gorilla populations can remain at normal levels. Clark et al, (2008) showed that most species in the forests of northern Congo are found in similar densities in harvested and non-harvested forests. As several concessions are under sustainable management now, the

amount of information on the impacts of harvesting obtained through monitoring will increase considerably. A study is currently underway across several FSC and non-FSC forests to establish wildlife densities (Jouri Schwertz, University of Utrecht).

Roads may prove insurmountable barriers to smaller fauna. In most of the FSC concessions canopy bridges are left in place along the main roads to allow the passing of canopy fauna. The role of streambanks under bridges as wildlife highways should also receive more attention. There is however little literature showing the disturbing effects of roads in tropical forests in this respect.

What can be concluded is that logging facilitates hunting in managed forests and can thus have a considerable impact. If hunting is well controlled and monitored, the impact of logging on wildlife may be limited. The presumed effects of fragmentation are not proven.

11.3. Impacts on the vegetation

Logging can have significant direct effects on vegetation. Roads, skid trails, lumber yards and felling gaps are events in the existence of a forest that remain visible for months to years. Kleinschroth et al. 2016 show that the impact of roads on forests is everywhere, which means that at any given location a road can be found at a maximum distance of 13 kilometres but that this distance is longer in protected areas. According to Kleinschroth et al (2015) the impact of secondary roads which are abandoned after use and left to regenerate to forest depends strongly on the type of soil on which the road was built. Poor substrates take longer to regenerate. A paper by Zhuravleva et al (2013) in which an analysis of primary forest change in DRC is presented, indicates that about 3% of intact forests were modified in the last 10 years. The reduction in forest cover is less in FSC-certified concessions (Tritsch et al., 2019). The use of satellite images is practical but must be accompanied by field verification (Potapov et al., 2008). The use of satellite images is less practical 5 years after logging, as the majority of roads are no longer visible (Kleinschroth et al., 2015). Modification means road opening and removal of vegetation including timber trees of economic value and trees of value for the construction of infrastructure works. However, detailed studies show that the total impact is relatively small (Medjibe et al., 2011; Putz et al., 2019) and that a good part (57% with a range from 22% to 93%) of the forest is not directly affected. The same publication shows that a real difference between FSC and non-certified forests in terms of opening up and vegetation removal is not clear. An effect on the level of plant species diversity and richness is not likely with such low levels of intervention. A study carried out in DRC by Makana and Thomas (2006) shows that a forest where selective harvesting took place largely maintains plant biodiversity.

Information on the dynamics of human impact on forest development is available in the publications of Bourland et al (2015), Biwole et al (2015), Morin-Rivat et al (2017). Many of the commonly harvested tree species began their lives in abandoned agricultural fields. In fact the high densities of long lived pioneer trees in the African forest can only be explained by extensive clearings in the past. These species depend on the opening of the canopy, typically in agricultural fields or due to fire, to a size of 0.5 to 1 hectare to regenerate (Morin-Rivat, 2017; Van Gemerden, 2003).

For harvested species it is possible that their presence may decrease over several cycles of harvesting (Karsenty & Gourlet-Fleury, 2006). The listing of almost all harvested species on the IUCN Red List as 'vulnerable' shows that logging is perceived as a risk. Above all, this risk must be understood as a risk that population dynamics are impacted by the removal of mature trees. Studies on species dynamics, on the other hand, show that it is also the current lack of canopy opening that endangers the regeneration of these species. The point to be taken from these various sources of information is that maintaining biodiversity and forest characteristics is not a quite simple matter and that the impacts of various actors such as logging and slash-and-burn agriculture are both negative and positive.

The effect of canopy opening due to harvesting or other activities, on vegetation, cannot solely be indicated as negative. The opening up of the forest assists the regeneration of light-demanding species, while the localised use of the forest ensures the continued presence of old-growth forest species.

The stability that an FSC certified logging concession presents in terms of fixed harvesting cycles and protection of old harvest areas to ensure restoration is an important factor in the protection against hunting and forest destruction. It is clear that a managed forest is not the same as a conservation area. But it is also clear that the differences may not be big and that historically, almost all African forests have been impacted by human and natural disturbances.

11.4. Are protected areas a guarantee for good protection?

Maintaining populations of emblematic animals is difficult even within protected areas is shown by Poulsen et al. in 2017. In Minkébé Park the elephant population has decreased from 32,000 elephants in 2004 to 7,000 in 2014. Maisels et al (2013) indicate that forest elephant numbers have declined throughout the Congo Basin and that the population is now mainly concentrated in the forest landscape that unites southeast Cameroon, Gabon, and northern Congo. Blake et al (2007) studied 5 protected areas and in this study only 1 of the 5 did not experience elephant killing (Boumba-Bek). The Dja Faunal Reserve was well studied. Poachers penetrate deep into the forest (Bruce et al., 2017) to set up hunting camps and the dried / smoked monkey and antilope meat leaves the reserve on the backs of the poachers. Signs of elephant hunting decreases with distance to the nearest road. The study by Abernethy et al (2012) shows that hunting signs are still found 40 kilometres away from the nearest village and that hunting signs can be found in almost all parks. The studies show that the protection of this species is not possible without great efforts and that the creation of a protected area is not in itself a sufficient measure. While studies show that elephants can be found in the same densities in FSC-logged forests as in protected areas, cooperation between logging and protection may be key to protecting the large forest fauna.

Available studies show that road opening is a key factor explaining the impact of logging on wildlife (see section 10.2). Studies also show that logging has only a temporary direct impact on wildlife and that the closure of logging compartments is also the beginning of rehabilitation to a situation similar to that before harvesting. If poaching can be controlled, wildlife populations can reach a level similar to or even higher than before the opening. FSC

certification plays a significant role in this protection. Where there is no presence of an economic operator, protection experiences difficulties.

11.5. Is minimum thresholds for protection of hectares the right option?

The discussions on percentages create the idea that there is an economic threshold that justifies the default protection of part of the forest concessions and that protection is automatically a good thing. This is not necessarily true. There is not much information available that clearly shows that protection is currently better than responsible management in the African context. In interviews with stakeholders, several of them (including environmental NGOs) indicated that the focus of protection should be on places where protection is urgent. Combining the results from research to identify key areas to protect will ensure protection of the most important areas. Thus forests with special ecology, relatively untouched, containing populations of rare fauna and flora etc. can be identified as protection areas. A WWF-funded exercise to develop a GIS tool to assist in such an exercise is the "HCV mapping for Congo Basin forests" developed for FSC by WWF-Germany.

It is impossible to objectively weigh the benefits of protecting large areas merely for their size or choosing to protect smaller key areas with high biodiversity. There is a logic in both. When limited funds are available it will make more sense to protect limited areas with high biodiversity. And when turning the question around, we really would not like to lose unique high biodiversity areas.

Criterion 6.5 of the generic standard required the forest manager to set aside representative samples of the forest for conservation. Local standards determine which fixed % of forests should be protected. How to select the appropriate locations is not yet well defined, and local environmentalists believe it would be better to base that on a multifactorial analysis to select the sites with the highest or most unique biodiversity. In this way it can be better ensured that relevant forests are protected and that this protection is better integrated into the FSC standard. For forest managers it is then clear beforehand that when drawing up the management plans, a fixed portion is reserved for protection. The remaining areas can still be HCV2 (IFL) but this does necessarily have to exclude logging. The question of IFLs could thus be satisfactorily addressed.

12. Impact analysis

12.1. Impact of conserving 80% of IFL

It is clear that under effective protection, especially against poaching, IFL areas within the concessions are important for conservation. Unfortunately, as described in 9.1 above, the reduction of harvestable area due to the protection 80% of the IFLs will lead to a loss of FSC certificates by some of the companies (totalling 1.7 million hectares by 2023). This because these companies have all future harvesting areas inside the IFL area inside their concession.

The loss of FSC certificates will certainly have very negative impacts on the IFLs. For the companies in question the loss of certification has a negative economic impact as they will lose the FSC premium on strictly FSC products and markets; that may in turn lead to some companies abandoning their concessions altogether, with management shifting to new companies who, it can be presumed, will pay even less attention to conservation issues. Either way, this economic effect will have a social impact. Jobs will be lost in the management unit and contributions to the local population will be reduced.

For companies that are able to keep their FSC certificate, the reduction in the effective harvesting area will reduce the annually harvestable volume. Since costs such as the royalties, called RFA in Cameroon (Annual Forest Royalty), and its equivalents elsewhere are paid on the total surface area of the concession and other fixed costs remain the same, it is certain that the increase in fixed costs of the available volume must be compensated by a reduction in variable costs (part of the staff, donations to the populations) or accepting reduced profitability. The impact of increasing the protected areas inside the concessions is considerable. From the simulations it becomes apparent that, assuming all companies would reduce the size of the annual harvesting areas to accommodate the motion but retain their certificates, the reduction in harvestable volume is as much as 23% and the cost per cubic metre of timber produced goes up even more; up to 46% in some cases.

How these costs will be compensated is not easy to predict. The difference in price between FSC and legal wood on the market will increase, but currently the premium and demand for FSC timber is already low according to FSC certified companies and the market will most probably not accept a higher price. Negative social and economic impacts are therefore to be expected.

A positive environmental impact is possible only on condition that effective protection measures are taken. Larger areas will be protected within the forests that remain FSC certified. But as the FSC area is reduced in total with 25%, a net ecological loss is to be expected, and for those companies retaining their certificates the loss of revenue will result in less resources for protection of biodiversity within the concessions, likely leading to increased poaching. Lower tax revenues for governments may also impact budgets for National Parks, conceivably impacting protection for IFLs outside the concessions. In the end, the expected ecological impact is also negative due to the loss of FSC certificates.

In conclusion, the application of the default protection threshold of 80% as specified in Motion 65 only has negative ecological, social, and economic impacts.

12.2. Impact of conserving 50% of IFL

While this report was being prepared FSC emitted an official communiqué to the standard developing groups clarifying that under the terms of Motion 65, national standards could not specify a minimum threshold for protection of IFLs within certified forests that is lower than 50%. For most of the companies, that were on the verge of losing their certificate due to harvesting in IFL beyond the 20% allowed, this provides a temporary solution.

Having a smaller area to protect reduces the reduction in volume and also the increase of costs is reduced. As a threshold of 50% is still not a long term solution because FSC certificates will still be lost, but some years later. So with a little delay, the impacts remain largely the same as for 80% protection.

12.3. Impact of conserving 20% of the IFL

The consequences of protection 20% of IFL inside concessions are not the same for all companies. Those who have the largest area of IFL inside their concessions, to some extent also have large protected areas adjacent to their concession into which the IFL extends and is usually the greater part of that IFL. This may differ per concession and IFL area. The net increase in the areas of each FMU that are would have to be additionally protected to get to the 20% varies from 0% to 5%. Because of this, the companies have already indicated this level of protection is acceptable to them.

The cost effect of this protection measure is also limited. With 20% protection there will not be an immediate decrease in the number of FSC certificates in the Congo Basin. Also, a decrease on the longer term is not foreseen, although it may be that any subsequent increase in the area of FSC certified forests in the region is slowed down compared to the situation without explicit minimum protection for IFLs.

The image of the companies, as they are protecting a good part of the world heritage, will probably be positively affected.

On the social level it is not likely that the protection of 20% of the IFLs will have a positive effect. A negative economic impact directly translates into a negative social impact, as the links between companies and the population are mainly economic. However, that negative impact will be absent or relatively small, as the companies will maintain their FSC certificates, and thus their commitment to community development.

The adoption of the protection of 20% of the forest accompanied by additional measures (such as additional Reduced Impact Logging concepts) will have a positive impact on the ecology. Companies remain certified and the protected land within FSC forests increases. In the current case this means a total of 223,000 IFL hectares would be protected. As a proportion of the total IFL area, this is almost insignificant, but with this protection rate other concessions can still be certified, it is therefore possible (especially with the new government policy in Gabon) that under this scenario the area of protected IFLs within FSC forests will increase, extending protection to more areas of IFL than at present.

12.4. Impacts Discussion

It was not possible for the consultants to make an exact calculation of the acceptable percentage for all stakeholders concerned of IFL protection inside FSC concessions. For this to be done, much larger data sets are needed. However, it is nonetheless possible to draw some conclusions.

The impacts of protection seem positive in themselves, from a pure environmental viewpoint. However, it is necessary to make clear what this should mean. As presented in the literature review, the mere establishment of an area as a protected zone is not sufficient to maintain the values of the forest in question, especially as regards wildlife. The emphasis must be on accompanying measures. A strong anti-poaching organisation is the most critical instrument to ensure a positive impact of protection. Without such active protection against poaching, reserving IFLs is not effective.

In an area where the funds to properly manage and monitor protected areas are lacking, such as in the Congo Basin in Africa, it is probably more effective to intensify public-private cooperation on anti-poaching than to focus purely on the number of hectares protected. It is also naïve to think that economic operators are so invested in FSC that they will maintain their certificates at all costs. Demanding too great a reduction in the area of productive forest will certainly result in a reduction in certified and effective protection of IFLs. Neither does it seem likely that if FSC certificate holders in the region were to abandon their concessions that governments would replace them with National Parks or other forms of protection. The governments have already zoned these forests for production which they will most likely continue to be, and if governments should choose to rezone the areas for conservation, then it will not be in reaction to restrictions imposed on logging under FSC certification standards.

This conclusion fits with Kleinschroth et al (2019) who suggest that it may be desirable to allow exploitation in order to maintain the economic base of companies in exchange for stronger support in protection, and Haurez et al. (2017) who make it clear that the current form of Motion 65 is likely to result in a counterproductive outcome in the sense that fewer IFLs will be protected in the long term.

13. Conclusion

The various FSC forest concessions have an area of 1,100,000 hectares of presumed IFL forest. If a significant proportion of this area can be effectively protected, it is conceivable that the impact on the ecology is rather positive, especially when combined with the much larger tracts of IFLs in government protected areas. However, this must be understood in the context that only 1.4% of IFLs in the Congo Basin fall inside FSC-certified concessions.

For those who see FSC certification as a potentially effective tool in helping the protection of IFLs (in combination with government protected areas and other strategies) the priority should be in expanding FSC certification to the much greater proportion of the 75% of IFLs that currently lie outside protected areas, and that in turn depends upon FSC certification being an economically attractive proposition. Conversely, for those for whom fragment-

ation of IFLs is a primary conservation concern, regardless of the quality of the forest management, there is the realisation that the fate of IFLs in the Congo Basin will be largely determined by what happens to the 98.6% of IFLs in the region that are found outside FSC-certified forests. Even if the area of IFLs under FSC certification were to grow spectacularly, this conclusion would still hold. Hence finding incentives for the protection of this majority of IFLs, whether through carbon offsets or other means, is a far more pressing challenge than worrying about the fate of the 1.4%.

The impact that Motion 65 in its original form has on forestry companies is a danger to the effective protection of intact forests at the landscape level in the Congo Basin. Currently certified companies with a large share of IFL in their management area, will see their productive area reduced and will opt out of FSC to continue their production. A loss of FSC certificates in the sub-region can only have a negative impact on the protection of IFLs and wildlife and on the image of FSC.

Achieving the goal of securing a greater proportion of the IFLs as protected area inside FSC concessions will require an increase in the FSC-certified area where responsible logging is disallowed. The area to be protected as per the original motion is too large would discourage uptake of FSC certification in other concessions containing much IFL. Combined with the risk that companies let go of their certificates, a net reduction in FSC area seems likely, leading to reduced rather than increased protection of IFL. For these reasons, the original motion is counter-productive.

Economic impact is felt through either the reduction of the productive area or the loss of FSC certificates in case that reduction is not possible. Economic impacts trickle down and indirectly becomes social and ecological impacts as well. The reduction of the productive size may also have legal implications. Elaborating management plans with shorter rotations may not be acceptable according to the rules for elaborating management plans and the government can object.

Especially in recent years when it has become noticeably clear that the protection of elephants, for example, requires intensive work by governments, NGOs and companies together. Although it is true that the lack of roads (as in IFL) makes poaching more difficult, distance alone is not enough for the protection of large wildlife which has been shown by different studies in national parks and forest management units.

From this study it is clear that demanding the protection of large parts of the productive concessions has considerable negative effects on the companies, on the local population, and, as result, would not bring the expected benefits for the forest itself. The protection of intact forest landscapes is important to us all but given that a good portion is already protected inside national protected areas, we recommend that the 20% as proposed by the working group in the Congo Basin is accepted as a sufficient level for protection. This especially because we see that maintaining forests as FSC certified is the best option for protection. Well managed forests can fulfil all functions that an IFL can fulfil, while still providing economic returns as well.

To maintain concessions as FSC certified a lower threshold for IFL protection must be chosen, or an alternative approach taken. A few options to take the protection of intact forests further are:

- Accept the proposal of 20% protection with accompanying measures from the sub-regional HCV Working Group.

- Insert multi-factorial criteria for the selection of sites to be protected under Criterion 6.5, with IFLs as one criterion, and limit the obligation to protect to relevant areas identified.

- Abandon the idea of default protection of IFLs in exchange for closer cooperation between operators and neighbouring protected areas to achieve better protected IFLs.

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Annex A: Subdivision in management series of FMUs of FSC certificate holders, composition of IFL per FMU and reduction of productive forest area as a result of protecting 80%, 50% and 20% IFL

FMO B

Table 13 Subdivision in management series in FMUs of FSC certificate holder B (%)

Management series	FMU				Total
	B1	B2	B3	B4	
a. Productive forest area	74%	66%	83%	79%	76%
b. Total non-productive area (no commercial harvesting)	26%	34%	17%	21%	24%
– *Areas protected from any commercial harvesting and managed for conservation purposes*	*5%*	*1%*	*2%*	*3%*	*3%*
– *Areas protected from any commercial harvesting and managed for environmental services or NTFPs*	*21%*	*33%*	*15%*	*18%*	*21%*
– *Remaining non-productive area*	-	-	-	-	-
Total certified area	***100%***	***100%***	***100%***	***100%***	***100%***

Table 14 Portion of Intact Forest landscape in each management series in FMUs for certificate holder B

Management series	FMU				Total
	B1	B2	B3	B4	
a. Productive forest area	7%	-	30%	51%	27%
b. Total non-productive area (no commercial harvesting)	25%	-	59%	39%	28%
– *Areas protected from any commercial harvesting and managed for conservation purposes*	*85%*	-	*88%*	*68%*	*72%*
– *Areas protected from any commercial harvesting and managed for environmental services or NTFPs*	-	-	*54%*	*35%*	*22%*
– *Remaining non-productive area*	-	-	-	-	-
Total certified area	***12%***	-	***35%***	***49%***	***28%***

Table 15 IFL in productive forest and reduction of productive forest area as a result of protecting 80%, 50% and 20% IFL series in FMUs for certificate holder B

Productive forest area	**FMU**				**Total**
	B 1	**B 2**	**B 3**	**B 4**	
IFL in productive forest area	6.9%	-	30.2%	51.3%	27.5%
Reduction with protection of 80% of IFL	-5.3%	-	-31.1%	-41.0%	-24.2%
Reduction with protection of 50% of IFL	-2.7%	-	-18.3%	-24.4%	-14.3%
Reduction with protection of 20% of IFL	-	-	-5.6%	-7.9%	-4.4%

FMO Company C

Table 16 Subdivision in management series in FMUs of FSC certificate holder C (%)

	C1	**C2**	**C3**	**C4**	
a. Productive forest area	84%	94%	83%	90%	85%
b. Total non-productive area (no commercial harvesting)	16%	6%	17%	10%	15%
– *Areas protected from any commercial harvesting and managed for conservation purposes*	*2%*	*2%*	*2%*	*3%*	*2%*
– *Areas protected from any commercial harvesting and managed for environmental services or NTFPs*	*14%*	*4%*	*15%*	*7%*	*13%*
– *Remaining non-productive area*	*1%*	-	-	-	*0%*
Total certified area	***100%***	***100%***	***100%***	***100%***	***100%***

Table 17 Portion of Intact Forest landscape in each management series as percentage for certificate holder C

Management series	**FMU**				**Total**
	C1	**C2**	**C3**	**C4**	
a. Productive forest area	-	-	-	19%	2%
b. Total non-productive area (no commercial harvesting)	-	-	-	38%	3%
– *Areas protected from any commercial harvesting and managed for conservation purposes*	-	-	-	*83%*	*13%*
– *Areas protected from any commercial harvesting and managed for environmental services or NTFPs*	-	-	-	*21%*	*1%*
– *Remaining non-productive area*	-	-	-	-	-
Total certified area	-	-	-	***21%***	***3%***

Table 18 IFL in productive forest and reduction of productive forest area as a result of protecting 80%, 50% and 20% IFL series in FMUs for certificate holder C

Productive forest area	FMU				Total
	C1	C2	C3	C4	
IFL in productive forest area	-	-	-	18.9%	2.4%
Reduction with protection of 80% of IFL	-	-	-	-15.1%	-2.0%
Reduction with protection of 50% of IFL	-	-	-	-9.4%	-1.2%
Reduction with protection of 20% of IFL	-	-	-	-3.8%	-0.5%

FMO D

Table 19 Subdivision in management series of FSC certificate holder D (%)

Management series	FMU			Total
	D1	D2	D3	
a. Productive forest area	96%	93%	89%	93%
b. Total non-productive area (no commercial harvesting)	4%	7%	11%	7%
– *Areas protected from any commercial harvesting and managed for conservation purposes*	*3%*	*4%*	*5%*	*4%*
– *Areas protected from any commercial harvesting and managed for environmental services or NTFPs*	*-*	*3%*	*6%*	*3%*
– *Remaining non-productive area*	*1%*	*-*	*-*	*0%*
Total certified area	***100%***	***100%***	***100%***	***100%***

Table 20 Portion of Intact Forest landscape in each management series as percentage for certificate holder D

Management series	FMU			Total
	D1	D2	D3	
a. Productive forest area	42%	9%	0%	20%
b. Total non-productive area (no commercial harvesting)	8%	58%	30%	35%
– *Areas protected from any commercial harvesting and managed for conservation purposes*	*11%*	*99%*	*65%*	*63%*
– *Areas protected from any commercial harvesting and managed for environmental services or NTFPs*	-	-	-	-
– *Remaining non-productive area*	-	-	-	-
Total certified area	***41%***	***13%***	***4%***	***21%***

Table 21 IFL in productive forest and reduction of productive forest area as a result of protecting 80%, 50% and 20% IFL series in FMUs for certificate holder D

Productive forest area	FMU			Total
	D1	D2	D3	
IFL in productive forest area	42.4%	9.5%	0.3%	19.9%
Reduction with protection of 80% of IFL	-39.3%	-	-	-15.5%
Reduction with protection of 50% of IFL	-22.0%	-	-	-8.7%
Reduction with protection of 20% of IFL	-4.7%	-	-	-1.8%

FMO E

Table 22 Subdivision in management series of FSC certificate holder E (%)

Management series	FMU				Total
	E1	E2	E3	E4	
a. Productive forest area	90%	85%	95%	93%	91%
b. Total non-productive area (no commercial harvesting)	10%	15%	5%	7%	9%
– *Areas protected from any commercial harvesting and managed for conservation purposes*	*10%*	*3%*	*2%*	*7%*	*6%*
– *Areas protected from any commercial harvesting and managed for environmental services or NTFPs*	*0%*	*2%*	*2%*	-	*1%*
– *Remaining non-productive area*	-	*10%*	*1%*	--	*2%*
Total certified area	***100%***	***100%***	***100%***	***100%***	***100%***

Table 23 Portion of Intact Forest landscape in each management series as percentage for certificate holder E

Management series	FMU				Total
	E1	E2	E3	E4	
a. Productive forest area	7%	-	44%	4%	13%
b. Total non-productive area (no commercial harvesting)	0%	-	43%	2%	6%
– *Areas managed for conservation purposes*	-	-	*77%*	*2%*	*5%*
– *Areas managed for environmental services or NTFPs*	*100%*	-	*46%*	-	*28%*
– *Remaining non-productive area*	-	-	*0%*	-	*0%*
Total certified area	***6%***	**-**	***44%***	***4%***	***12%***

Table 24 IFL in productive forest and reduction of productive forest area as a result of protecting 80%, 50% and 20% IFL series in FMUs for certificate holder E

Productive forest area	FMU				Total
	E1	E2	E3	E4	
IFL in productive forest area	7.1%	-	43.6%	3.9%	13.1%
Reduction with protection of 80% of IFL	-5.7%	-	-34.4%	-3.1%	-10.4%
Reduction with protection of 50% of IFL	-3.5%	-	-20.7%	-1.9%	-6.3%
Reduction with protection of 20% of IFL	-1.4%	-	-6.9%	-0.6%	-2.2%

FMO F

Table 25 Subdivision in management series of FSC certificate holder F (%)

Management series	FMU			Total
	F1	F2	F3	
a. Productive forest area	93%	88%	95%	92%
b. Total non-productive area (no commercial harvesting)	7%	12%	5%	8%
– *Areas protected from any commercial harvesting and managed for conservation purposes*	*3%*	*10%*	*4%*	*6%*
– *Areas protected from any commercial harvesting and managed for environmental services or NTFPs*	-	-	-	-
– *Remaining non-productive area*	*4%*	*2%*	*2%*	*2%*
Total certified area	***100%***	***100%***	***100%***	***100%***

Table 26 Portion of Intact Forest landscape in each management series as percentage for certificate holder F

Management series	FMU			Total
	F1	F2	F3	
a. Productive forest area	6%	22%	-	9%
b. Total non-productive area (no commercial harvesting)	-	61%	-	30%
– *Areas managed for conservation purposes*	-	*72%*	-	*42%*
– *Areas managed for environmental services or NTFPs*	-	-	-	-
– *Remaining non-productive area*	-	-	-	-
Total certified area	***6%***	***27%***	***-***	***11%***

Table 27 IFL in productive forest and reduction of productive forest area as a result of protecting 80%, 50% and 20% IFL series in FMUs for certificate holder F

Productive forest area	FMU			Total
	F1	F2	F3	
IFL in productive forest area	6.1%	21.9%	-	9.0%
Reduction with protection of 80% of IFL	-4.8%	-15.9%	-	-6.7%
Reduction with protection of 50% of IFL	-3.0%	-6.8%	-	-3.2%
Reduction with protection of 20% of IFL	-1.2%	-	-	-0.4%

Annex B: Notes on the meetings with key persons

07-01-2020 Ulrich Grauert / Tom van Loon, INTERHOLCO, Suisse

IFO will reach 20% of the surface area of the IFLs operated in 2020, if the Advice Note of Motion 65 is applicable. As it is not possible to meet this condition, a major non-compliance may be issued during the next FSC audit in July 2020. There is a risk that IFO loses its certificate and decides not to continue its FSC certification (change to PEFC) . All ACA for the next 9 years are in IFL. This corresponds with 9/30th of the total volume of the FMU at the time of the development of this report. Only the acceptance of the standard approved by the Regional Group and the National Standards Development Group for the Congo Basin and the Republic of Congo, with the definitions of an essential area of 20% protection, and with the application of specific measures in the other IFL areas (EFIR+) can avoid this scenario. With this solution, IFO can continue its operations with FSC certification, protect 20% of the IFL and apply specific measures in the other IFL areas.

If this National Standard is not accepted with the definitions for the indicated HCVs, and IFO should protect more than 20% of the IFLs, IFO should revise the management plan to reduce the managed area and redo the harvest blocks. As a default, the government will not accept a revised plan for an even larger protected area. Increasing protection areas will greatly reduce the revenues of the state, which has already created many national parks in the area and wants other forests to contribute to national budgets.

It should be noted that the government of Rep. Congo is currently putting great pressure on all logging companies in the country to harvest the maximum of the resource (following existing management plans and respecting the rules of sustainability) in order to ensure the payments of forest taxes necessary for the development of the country. The state is explicitly calling for increased employment and increased processing in the country. Ongoing discussions for the new forestry code are also in this direction.

The impact on IFO is important. By losing FSC, IFO will lose buyers who favour certified wood and also a possible premium on this wood. But IFO cannot stop working for several years in order to continue its FSC certification.

If sub-regional definitions are accepted, there will be additional costs for road fencing and more intensive monitoring against poaching, but at least the company can keep its certificate.

An increase of 5-10% in costs is thus likely.

There is not enough financial support for wildlife management, except for smaller support for training or other activities, for example through PPEFC or others. IFO is seeking a partnership with a conservation NGO.

The adoption of Motion 65 in neither version (original, 80% protection and WG, 20% protection) brings nothing additional to the company, except EFIR+, specific measures proposed in the new standard approved by the Working Groups (WG), which can help to better manage IFLs and protect HCVs.

It should be pointed out that the harvest is very extensive (0.5 to 1 trees per ha) and the impact of the harvest on the forest ecosystem is minimal, so all the HCVs can be maintained after harvest. With the measures proposed in the new FSC standard of Congo, improvements in EFIR can be made, the application of EFIR+ in IFLs implies a specific monitoring of the impacts of logging on the HCVs and on the characteristics of IFLs after logging. These additional measures will further mitigate the impacts of harvest and create positive impacts for the HCVs.

For the local population and indigenous peoples, increasing protection zones is a poor choice because this option causes a reduction in employment opportunities, a reduction in the benefits of harvest (development funds etc.).

By leaving the FSC, IFO continue to make every effort for sustainable management, IFLs will be subjected to reduced impact logging, without this logging having negative impacts on high conservation values. The company wishes to continue at the current level.

IFO believes that the landscape aspect at the broader level needs to be looked at. Northern Congo, a large part of Gabon and south-eastern Cameroon are a particular forest area where a considerable part of the forest has been classified as a national park or nature reserve. A large portion of IFL is protected in conservation areas, as well as in conservation areas in forest concessions. It is therefore possible to reduce the portion to be protected in concessions, since the additional area is not significant.

The Republic of Congo protects its territory in reserves in a much higher percentage than elsewhere in the world, notably 41% of the natural surface.[3] These statistics include all categories of protection, namely national parks, nature and wildlife reserves and Ramsar sites, as defined by IUCN, and as used by the United Nations Environment Programme (UNEP) - World Conservation Monitoring Centre (WCMC). [4]

An analysis of the natural areas allocated to Northern Congo (apart from unallocated areas such as urban, agricultural etc.), shows that half of the natural areas are under protection: 47% of the surface area is in Protected Areas and Ramsar zones, 53% of the surface area is in forest concessions, but in forest concessions, between 10% and 30% of the surface area is protected, without harvest .[5]

13-01-2020 Martial Djinang / Marc Ona Essangui – Brain Forest Gabon

Brain Forest is the independent observer in Gabon. They monitor law enforcement. Their main mission is to act against illegal logging. Sometimes they also make observations on the application of the FSC standard. So far, they have not acted on their observations.

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[3] Protected Planet – database on protected areas; established by the IUCN and the UNEP-WCMC: https://www.protectedplanet.net/region/EU

[4] International Union for Conservation of Nature (IUCN), Gland, Switzerland: https://www.iucn.org/theme/protected-areas/about/protected-area-categories
United Nations Environment Programme (UNEP) – World Conservation Monitoring Centre (WCMC), Cambridge, United Kingdom: https://www.unep-wcmc.org

[5] Calcul à partir des données de Global Forest Watch, avec correction pour les zones superposées: http://data.globalforestwatch.org/datasets/managed-forest-concessions ; http://data.globalforestwatch.org/datasets/mefdd::aires-protégées- ; http://data.globalforestwatch.org/datasets/mefdd::sites-ramsar-

Brainforst says that a strong definition of what is 'forest' is important to guide the discussions. It is necessary to know what the discussion is about. Now the local application of Motion 65 is not clear to all stakeholders.

One of the possible consequences for communities bordering protected concessions is that less money is going into local development funds. Also Brainforest finds that the forest legislation in Gabon is good. Adding further burdens for FSC certified companies does not seem justified in their opinion. Moreover, in the certified forests there are already series of protection.

71% of the forest permits are held by Asian companies that are not interested in having forests certified according to FSC principles and criteria. This presents "challenges" to the application of the FSC certification requirement throughout the territory. The potential negative consequences must be carefully considered.

The protection simply to protect is not a good idea according to Brainforest. The possibilities for the state to earn money are diminishing. However, the state needs to diversify these sources of income now that oil will decrease in importance.

The national application of FSC standards will present challenges to FSC as well. Illegality in concessions certified according to a national program poses a great risk to the standard.

14-01-2020 Gaspard Abitsi – WCS Gabon

Mr. Abitsi feels that flexibility for local adaptation of a motion such as Motion 65 is necessary. Adapted definitions are needed to make the consequences of the motion clear. Already the full application of the Gabonese forest law creates a situation of sustainable management that is almost identical to what is required by the FSC standard.

A local adaptation of Motion 65 must make clear what this motion means for the local population. This means applying the motion to forests in exploitation. Only when the scope and scale are clear do the people on the ground understand the consequences and would have a well-founded opinion. Now it is mostly a theoretical concept.

The areas of influence of villages that will overlap with indicated IFLs are an interesting case to study.

If the forest law is well enforced, the indication of IFL protection zones will not be necessary. FSC-certified forests are so well managed that wildlife benefits as well. Unfortunately, many forests are not yet FSC certified. But for certified forests, it seems that the application of motion 65 penalizes them and that the forests are well managed. This is unfair.

WCS fully supports a national requirement to become FSC certified. This will put all companies on the same level and create a level playing field.

On the issue of the allocation of mining permits and the possible overlap with forest permits and thus potentially also with IFLs, Mr. Abitsi indicated that interdisciplinary commissions will be created which must actually ensure that this does not happen. HCVs should be spared from mining. But this also requires that the contribution of logging should remain fairly significant. The director of the interdisciplinary commission is also Minister Lee White.

Certification process: We support the approach of making adherence to the certification process mandatory to strengthen law enforcement and best practice. Whereas FSC certification could be one of the options along with other types of certification with standards required by Gabon and market requirements.

For FSC concessions, when well-managed, wildlife benefits.

Finally, the Plan National d'Affectation des Terres (PNAT) is a planning process by which the Gabonese government establishes and conveys its orientations for the rational management of land and natural resources in the state domain. The role of the PNAT is to address an orientation to each area of the territory corresponding to one or several activities in order to develop the country's natural resources.

The PNAT will therefore make it possible to :

- Develop the country's resources;

- Minimize the risk of conflicts between incompatible uses;

- Optimize opportunities in terms of multiple and compatible uses.

Thus, the PNAT will make it possible to allocate the territory to the different uses in an optimal manner, excluding as much as possible primary forests with high carbon stocks (HSC) and high conservation value (HCV).

A National Land Use Commission (CNAT) has been set up with the main task of developing Gabon's PNAT and providing technical advice, particularly on applications for the allocation of different types of permits (forestry, mining and agricultural). The Minister of Water, Forests, Sea, Environment, in charge of the climate plan and land use plan, Prof. Lee White is the President of the CNAT.

07-01-2020 Markus Pfannkuch – CEB / Precious Woods Suisse

Mr. Pfannkuch indicated that the adaptation of the FSC regional guidelines for high conservation values is very important for the implementation of Motion 65. The sub-regional adaptations are a response of the forest-environment sector to Motion 65 and have been developed by a well-represented working group of the three FSC chambers. The core of the sub-regional interpretation is a 20% conservation percentage of IFLs.

A modest part of the CEB FACs is concerned by Motion 65. Most of the forests have undergone a logging cycle. 64,000 hectares of forest are indicated as IFLs. Of these forests 14500 hectares are already conserved. An increase in the land to be protected to 20% of the managed area does not create major problems, as a large part would be included in the conservation series area and only 2200ha of production series would be affected . If 80% of the developed surface is to be conserved, this corresponds to a loss of 36000 hectares for the farm. This can be absorbed by CEB-Precious Woods, if really necessary, but will require a reduction in staff and an increase in costs. CEB has 596,000 hectares of forest under management. Of this forest 10% is already protected or conserved.

A bigger problem is the possibility of possibly expanding the area under CEB-Precious Woods management. In this case, IFL forests would be out of the question in combination with FSC certification if Motion 65 is to be respected in its original form.

Precious Woods also manages forests in Brazil which would be heavily affected by an 80% application.

14-01-2020 Saint-Clair Ebaye Mpiga – The Nature Conservancy Gabon

According to Saint Clair the IFLs are often the most interesting forests for animals. For the communities the protection of the IFLs decreases the availability of money from the exploitation. On the other hand, protected areas may attract game and protect aquatic life and NTFPs from which people can benefit.

TNC does not have a formal position on Motion 65. But according to St. Clair, Motion 65 is not universally applicable.

For the good of the country, a good balance between forestry and the rural economy must be sought.

TNC has a program to implement RIL-C or RIL+. The consultants indicated that TNC will do well to contact them as both have been involved in implementing EFI training centres for TFF (British Guyana and Gabon) in the past and are specialised in low impact logging.

14-01-2020 Jean-Paul Obame Engone – WWF Gabon

Mr. Obame tells us that, in his opinion, the percentage to be protected is not really relevant. It is important to look at the content of a forest instead of putting too much emphasis on its size. According to him, it is mainly the intensity of harvesting that determines whether a forest remains an interesting habitat for wildlife. He also said that a large forest should first be studied to see if it is equally interesting for wildlife. The protection of large tracts of forest with little conservation interest makes little sense and weighs heavily on societies and the state without any ecological gain. It is therefore important to use habitat quality indices before talking about IFLs.

13-01-2020 Lee White – Ministère des Eaux, des Forets, de la Mer, de l'Environnement, Chargé du Plan Climat, des Objectifs du Développement Durable et du Plan d'Affectations des Terres. Gabon

The Minister opened the discussion by explaining the history of Minkébé National Park. Minkébé was at the beginning of the 30th century an area inhabited by people engaged in subsistence agriculture in the forest. The French colonial administration found it good to force people to leave their villages in the forest to settle along roads and rivers. As the cultivated areas were now abandoned, the forest regenerated, and large mammals were attracted to these regenerating areas. These mammals then acquired high densities, eventually causing the area to be declared a national park. Gorilla densities rose to as high as 5 individuals per hectare, facilitating Ebola infection among the major signs. Just in areas where hunting had kept densities lower, the gorillas did not suffer from Ebola.

Now if we talk about an intact forest landscape one of the first questions asked is what intact actually means. Secondary forests like Minkébé are widespread in Gabon. Okoumé is a forest species that has been heavily disturbed in the past and therefore a sign of secondary forests. The definition of IFLs therefore needs to be well defined to avoid being too inclusive in order to amass large areas.

The Minister wonders why Gabon was not consulted during the implementation of Motion 65. As a forest owner, Gabon aspires to become a member of the FSC to be able to influence this kind of process. Therefore the Minister would like to see a map showing where the IFLs are located in relation to FSC forest permits. The consultants have indicated that they would like to send such a map (it is part of their ToR to make such a map).

13-01-2020 Emmanuel Bayani Ngoyi – Ancien Directeur Général de l'Environnement et de a protection de la Nature / Président du groupe de travail sur le standard sous-régional du FSC Gabon

Mr. Bayani chairs the working group that developed the new FSC standard (based on version 5). He informed us that he still has to insert the last remarks and that the standard will then be sent to William Lawyer (FSC Africa Policy and Standards Manager) for translation into English.

Concerning the IFLs, Mr Bayani indicated that one of the first problems with the IFLs is to know their localization. There is no such thing as a good definitive map. The extent as presented by Global Forest Watch would certainly have important impacts on companies and local people. Mr. Bayani cites the example of Rougier, some of whose permits include a good portion covered by IFLs. If these forests were to be closed to human intrusion, local people would no longer be able to harvest NTFPs (Non-Ligneous Forest Products), even though they depend heavily on the forest for their livelihood. 90% of the population depends on the forest.

Mr. Bayani also indicated that Gabon intends to protect about 4,000,000 hectares of its land area (marine protected areas about 5,998400 ha) and that the rest of the country is covered almost entirely by forest concessions. The implementation of Motion 65 on logging companies will be mainly that logging according to FSC standards must stop. If a company has to put part of its concession under Motion 65 protection, people should have the right to continue their customary use.

One of the problems with Motion 65 is that management plans should be revised to accommodate the decrease in the exploitable area. It is not clear that the government can approve management plans that significantly reduce harvesting revenues. For this reason, it is advocated to exploit in the so-called IFL areas but with special measures that can ensure the sustainability of areas considered sensitive. It is in this context that, in the Gabon standard, it advocates an approach that would allow companies to exploit rather 80% of the IFLs (instead of 20% as defined during the implementation of Motion 65). A letter from the Chairman of the FSC stresses the need to increase this percentage to 50% pending the impact study on the application of Motion 65, which is currently being prepared.

Community-based wildlife management is one of the topics that also deserves more attention, especially if more areas are to be protected. People are used to eating game and do not want to change their habits. Normally the Gabonese forest should be able to feed the population, but if the protected areas increase, rational wildlife management must be done.

Before the next FSC General Meeting, Gabon wishes to organize a national workshop during which discussions should lead to a national interpretation of the concept of IFL (what types of forest, acceptable surface area).

10-01-2020 Jacqueline van de Pol – ATIBT / Françoise van de Ven – UFIGA

UFIGA indicated that the application of Motion 65 risks once again distancing companies operating in the DRC from the possibility of obtaining FSC. GFW's work indicates that these forests are IFL, but on the ground it is clear that they are not. Of the forest land in DRC 8% is indicated as IFL, half of which is under forest concession. 5800000 hectares.

UFIGA also indicates that the obligation to certify FSC at the country level is a bad idea. Auditors will get the responsibility to decide on the legality of a company as a delegate of the state and will be able to close companies.

PPECF now has a project to assist companies that want to move towards legality certification.

ATIBT has commissioned a study on carbon and the possibilities of using the benefits for the protection of IFLs. Carbon offsets are not capable of offsetting a volume reduction for forestry companies. (REQUEST DOCUMENT)

ATIBT indicated that a risk for FSC is that the implementation of the original Motion 65 will reduce the number of FSC certificates and also reduce the number of new companies seeking FSC certification.

The definition of an intact landscape-scale forest also needs more work. In Gabon there are forests that started growing on abandoned crops less than 100 years ago. Should this be called intact?

Also the question why there was no consultation at the local level before accepting Motion 65 and making it mandatory for FSC companies. The results of the regional working group on the definition show that local stakeholders do not agree with the motion.

Dual certification can help to maintain the level of companies in case they have to give up their FSC certification because of Motion 65. PAFC certification can then ensure a fairly high level of forest management.

It seems certain that the IFLs are getting the job done. FSC can through the standard have an influence on how but cannot avoid it.

Oréade Brèche study on the costs of certification

Study nature plus

14-01-2020 Edwige Eyang Effa (membre groupe de travail FSC Gabon / membre FSC), Ines Mvoukani Gady et Barros Lilian (Groupe de travail FSC Congo)

The working group has to integrate the results of the sub-regional analysis and interpretations of HCV into the national standard. The sub-regional interpretation of HCV takes into account Motion 65. The sub-regional adaptation has reduced the areas to be fully protected from 80% to 20% of the IFLs found in a concession (excluding a possible core area of 50,000 hectares). Congo and Cameroon had finished the national standard before Gabon and also before the sub-regional interpretation of the HCVs was ready. The national standards of these two countries were accepted on the condition that they included a sub-regional interpretation of the HCVs acceptable to FSC, as Gabon had already included the

sub-regional interpretation. This sub-regional interpretation has yet to be evaluated by FSC (in progress).

The implementation of Motion 65 presents problems for forest countries that still have virgin forests. Projected revenues for the coming years will decrease considerably. It is possible that instead of accepting this, forests will be allocated to companies that do not apply FSC.

The sub-regional working group on HCV was composed of 4 members from each chamber (social, economic, ecological). So 12 people and supported by another 12 specialists. In total 24 people worked on the sub-regional interpretation.

15-01-2020 Cédric Sépulchre / Sam Nziengui Kasia WWF-Congo

WWF Congo is mainly active in the field of wildlife and in this context sometimes supports logging companies. It is difficult to measure the effect of logging on wildlife. On the social level the difference between FSC and non-FSC is noticeably big. Fewer roads will also reduce poaching. Forest protection is limiting for the populations. There is always a need for participatory mapping so as not to limit the population's possibilities too much.

The local development fund is not yet perfected and its effectiveness is limited. Currently it is mainly used to pay the per diems of specialists and little of this money reaches the riparian communities.

15-01-2020 Isaac Moussa, USFS, Congo

Historically the percentage of area to be retained for HCV was 10%. However, the areas allocated to these HCVs were not. The operator was looking for swampy and/or non-useful areas for HCVs. Setting aside 20% (of the IFL forests) will be a considerable burden for the logging companies. This commitment to the FSC could, as always, lead them to seek out areas that are not exploitable in order to reach part of this percentage. Mr. Moussa believes that the application of Motion 65 will push companies to move, for some, towards simple certification of legality.

Yes, protected areas can attract and accommodate more wildlife. This is good for the sustainable management of biodiversity.

The people living in the vicinity of forest concessions, in most cases, are 80% dependent on them for their livelihoods.

IFLs need to be looked at the (broader) landscape level. In Northern Congo there are large national parks. Corridors between them are important because they link them and allow migration and are therefore necessary for wildlife. This can be an important role for forest concessions. It will be as well to see the possibilities for certification of national parks.

There are studies (WCS) that have shown that logging is not always negative for wildlife or does not impact directly on wildlife.

The 20% protection percentage of IFLs should be a compromise between several stakeholders. All FSC chambers were represented. All parties agreed on what has been achieved.

16-1-2020 Boudzanga Georges Claver, Coordonnateur REDD+ au Ministère de l'Economie Forestière de la République du Congo

The Republic of Congo is one of the rare tropical forest countries that had a forest zoning system based on Forest Management Units (FMUs) implemented in the 1970s. Since 2000, the Republic of Congo has initiated management plans with an exceptionally good level of implementation to date (more than 63% of production forests). The international community is well aware of these advances which are perfectly capitalized within the framework of the FLEGT-VPA. Forest management plans in the Republic of Congo take into account the 3 components of sustainable development: economic, ecological and social.

There is a well-manifest tendency among certain partners and NGOs that veiledly push the tropical forest countries of the Congo Basin to close down production forests and eradicate all use rights of the populations in the conservation forests. This cannot be acceptable for a country like the Republic of Congo, which links words given to concrete actions on the ground. A country like the Republic of Congo which has circumscribed its forest policy around conservation and sustainable forest management. It is on the strength of this principle of conservation and sustainable management of its forest ecosystems that the country has committed itself to initiatives such as :

- REDD+ in 2008, with the finalization in 2018 of the strategic and technical tools of the readiness phase (phase 1) and the start in 2019 of phase 2 called investment phase and phase 3 called payment phase;

- The FLEGT-VPA in 2009, with the signing of the Agreement and the start in 2020 of the process of operationalizing the traceability system and monitoring forest legality;

This is also what justifies: (i) the country's low deforestation rate (0.052% per year, i.e. about 12,000 ha/year), (ii) the generalization of forest concession management plans, (iii) the conservation of 13% of the national territory under the status of protected areas, to which are added the series of protection and conservation deductions from managed forest concessions.

Based on these arguments, Motion 65 is not justified in the specific case of the Republic of Congo.

Supporting the implementation of this motion would mean that in the Republic of Congo more than half of the production series would be cloned, in addition to the areas already conceded to protection (protection series) and conservation (conservation series). This would jeopardize the forest economy of the Republic of Congo, which is currently based on the valorization of responsibly extracted timber (application of EFIR rules). This is a way of starting the closure of logging sites with serious consequences such as :

- the termination of local development programmes under specific specifications (construction of school, health, road and other infrastructures in support of the public authorities);

- unemployment of thousands of workers (the forestry sector is the second largest provider of employment after the civil service);

- budget deficit with the extinction of the forest manna linked to taxes, levies and others.

The protection and conservation of the forest respond to specific circumstances. These circumstances are those that the Republic of Congo has been able to frame in order to continue to manage to date an almost intact part of the 2nd largest tropical forest basin in the world.

Changing the current paradigm of valuing wood from production series to protection and conservation of production series would mean assessing the loss of income and country the real value of avoiding deforestation and forest degradation. This is not possible in view of the conclusions of UNFCCC COP 25 on Article 6 of the Paris Agreement. This is not possible in view of the extremely low interest of the international community in financing our country's national REDD+ strategy.

Money is needed to invest in sustainable development programs. This is what the Republic of Congo lacks, which remains to date one of the leaders in the fields of conservation and sustainable management of forests.

There can be no sustainable development without international financial support. There is no REDD+ without international financial support.

Motion 65 is a utopia that is not based on any reality on the ground (the real ground we see and touch every day in its components: economic, ecological and social.

The implementation of Motion 65 could, for example, guarantee local and indigenous communities the opening and maintenance of roads, most of which are linked to the contractual clauses contained in the specific specifications of the agreements signed with forestry companies?

The local and indigenous populations of the Republic of Congo have been quick to differentiate sustainable development approaches in the context of protected areas and forest concessions. They benefit more from the management of forest concessions.

To protect even more, cannot be supported by countries.

There is no study elaborated according to the rules of the art, by specialists in the field (Team of: forester, economist, sociologist, etc.). that demonstrates the advantages of Motion 65. We must therefore not venture into a maze where we will find it difficult to find the right way out.

16-1-2020 Ashish Malik CIB-OLAM Congo

CIB-OLAM has done its own analysis of surfaces under IFL. They verified the work of the GFW and saw that with more detailed information the IFL area for IBC-OLAM concessions is less than indicated on the GFW website. In fact there are still about 24,000 hectares to be protected. Many of the forests in CIB-OLAM are in fact being logged for the second time. The land that is in the first cycle has an area of about 450,000 hectares. Minus the protection areas already indicated and a threshold of 20% to be protected according to the sub-regional proposal for IFLs, an additional area of about 24,000 hectares is identified.

Using the original Motion 65 the area to be conserved will be much larger (even 10 larger). For CIB the application of the original Motion 65 will create a situation where the exploitation of forests is no longer an attractive economic proposition. For CIB, only 62-65% of the area under concession is of interest for logging. The other part of the land is unusable for various reasons. The company still has to pay taxes on the total area.

If CIB-OLAM has to protect more, this will also reduce contributions to the local development fund. This directly affects the population. Also the management of the company has to be adapted (reduction of staff).

Non FSC-certified companies can harvest up to 2.5 trees per hectare, from VLO-certified forests up to 2.1 trees/ha but in FSC forests the harvest is 0.6 - 0.9 trees per hectare.

The FSC market is good for the company, but the cost is high.

CIB-OLAM does not want FSC to reduce the level to be achieved, but Motion 65 will considerably increase the costs of certification. PEFC is increasingly becoming a valid alternative.

Companies in North Congo have disadvantages compared to companies located closer to the coast. Transport over more than a thousand kilometres is a considerable part of the export price. Because of this many species cannot be harvested and sold. Therefore CIB-OLAM has to add a lot of value before starting up in order to make its exploitation profitable.

The fiscal pressure is important. 32 types of taxes are applicable for a company like CIB-OLAM. As for Rougier in Cameroon, the increase in VAT paid is complicated.

The increase in areas to be protected and the reduction in taxes paid to the state can create tensions with the administration. The administration is happy with FSC certification, but not at all costs. Forest concessions also have a duty to contribute to the development of the country.

A contribution from an external fund for the implementation of Motion 65 cannot really help the exploitation side of the company. The areas and volumes to be compensated will not be constant and, moreover, a receipt of funds will always cause unemployment, just as it is not possible to continue paying employees to do nothing.

CIB-OLAM invests heavily in services among the population and workers (employment, schools, dispensaries, etc.). A reduction in volume reduces the margin on the sale of wood and greatly reduces the company's investments in this area.

16-1-2020 Parfait Diakamba et Euloge Nzobo Roch

One of the first topics to be discussed is why the identification of IFLs was done using satellite imagery. Why did no one come on site to talk with stakeholders to identify the forests in question? What is the role of FPIC in the development of Motion 65? Stakeholders on the ground were not heard.

Most of the activities of people in the villages have little impact on the forest (hunting etc.).

If companies apply EFIR methods forest exploitation, even IFL, should not present a problem.

The people living in the villages want the forest to be exploited to benefit from employment, roads, social infrastructure and the companies' contribution to the local development fund. Sometimes communities even confuse the state and the company because the company has to undertake many of the state's activities.

The government wants to increase revenues through taxes and will not be convinced of the value of protecting IFLs. The government wants the forests to contribute to the development of the country.

16-01-2020 Emilie, Tim Rayden, Dave Morgan, Richard Malongo, WCS Congo

WCS feels that local adaptation is imperative in order to implement Motion 65.

It is clear that for the local adaptation of Motion 65, all stakeholders were gathered and agreed. WCS is pleased with the outcome. Logging in accordance with the FSC principles and criteria has few negative effects. Most wildlife will continue to persist at densities comparable to pre-harvest densities. Hunting is a real problem and that is why WCS wanted the loggers to destroy the roads after logging. The 20% protection is quite acceptable to WCS. WCS also requested that the maximum logging diameters be reduced.

The value of the forest in terms of carbon and wildlife remains more or less the same in logged forests.

Large fauna often move during logging and return when the pan is closed. Ivory poachers come to protected forests using roads in the concessions. For this reason the roads must be destroyed.

After two cycles of harvesting the forest is still interesting for the animals.

Animals that live in an IFL can be hunted more easily due to their naivety (not used to humans / hunters).

21-01-2020 skype CBG Julien Philippart / Pierre-François Merlin

CBG is an integrated company, which means that an impact on the forest has an impact on the whole chain and on the people who are employed in that chain.

CBG has 568,000 hectares of forest. Part of it is mostly forest with Okoumé as the majority species, the other forests mainly provide "miscellaneous woods". 100% of the production is FSC certified. For the next 10 years CBG is working in forests considered as IFL according to their approved and FSC certified management plan. With the possibility of exploiting 20% of an IFL area, this means that CBG risks losing its certificate during the audit that takes place when the exploitation goes beyond this 20%.

A slightly prickly matter in this is that the IFLs are also an oil exploration area and the planned oil exploitation will impact the IFL by road construction and installation of pumping zones.

CBG currently has 12% of its forest under protection. Forests under protection can be considered part of IFL.

SO CBG has to raise this amount to 20% which means that part of the IFL will be added. A situation that CBG can accept. The cost increase will be that the company pays once the additional area tax over 12 years of operation. In the case where the 20% is not accepted by FSC and CBG is no longer certified, the impact is mainly felt in terms of FSC premiums and market access. CBG now receives a premium of 5 to 20% for FSC Azobe wood, mainly in the Dutch market.

The social impact is limited as Gabonese legislation remains in force on non-certified forests as well. If the company loses its FSC certificate, the decrease in inputs can have these effects on the things the company does in excess of its legal duties. Also the image of the company will be negatively impacted.

CBG indicates that only 1.5% of the IFL areas are within certified concessions. The risk of losing FSC areas is high and the impact on the IFLs is minimal. Nevertheless, it is possible to consider protecting larger areas if the company is compensated by receiving larger areas to exploit.

CBG does not have available wildlife studies. Currently Jouri Schwertz is conducting a large scale wildlife survey using camera traps.

Rougier Gabon Eric Chezeaux

Rougier currently has 4 CFADs in Gabon. 1 of these CFADs contains IFL. This forest is 188,000 hectares. If Motion 65 remains in force in its original state, within 3 to 4 years, this concession will lose its FSC certificate. It is a concession that provides a factory to the Nkok industrial zone with 100,000 m3 of FSC-certified Okoumé.
It seems that in Russia the FSC interpretation has accepted that national parks containing IFLs are counted in the % to be protected.
Rougier also has problems with mining concessions (gold) that overlap with the concessions at Moyabi.
Increasing the percentage to be protected in production forests will upset the balance between production and protection. Alternative revenues such as carbon revenues are not reliable alternatives. Therefore, the Gabonese government has reserved carbon revenues for itself.
Rougier is highly dependent on these FSC certificates. This is why the company had shown such an expansion during the years 2012-2015. If FSC is no longer possible on a CFAD, it is possible to have PAFC.
Rougier's operation in Gabon has a cost system, which is not dependent on certification. Without FSC the expenses will be more or less the same. But the loss of certification will reduce revenues. This will have consequences on jobs.

Annex C: Data on IFL in protected areas

	Surface brut FM	surface brut IFL 2016	% du FMU
Parcs Cameroon			
Korup	126800	111500	88%
Bayang-Mbo	66690	62610	94%
Rumpi Hills	45410	41340	91%
Ebo	142300	82450	58%
Douala-Edéa	263700	57960	22%
Campo-Ma'an	262200	170400	65%
Kom	68060	59560	88%
Dja	583400	546000	94%
Ngoyla-Mintom	157400	150400	96%
Nki	314600	311200	99%
Boumba-Bek	237400	228800	96%
Lobéké	217854	93530	43%
total	2485814	1915750	77%
Parcs Gabon			
Monts de Cristal	119700	97300	81%
Wonga Wongé	428200	40840	10%
Bas Ogué	1370000	104200	8%
Petit Loango	149000	91210	61%
Iguela	79820	11830	15%
Ngove-Ndogo	278200	134800	48%
Moukalaba Doudou	447800	190200	42%
Setta Cama	240100	32390	13%
Biringou	68710	68710	100%
Waka	106700	87960	82%
Lopé	495600	268100	54%
Ivindo	298300	246300	83%
Mwagne	117200	117200	100%
Minkebe	757300	754000	100%
Plateaux Batéké	205000	7828	4%
Total	5161630	2252868	44%

Congo			
Conkouati Douli	515700	100600	20%
Réserve de biosphère de la Dimonika	113900	61360	54%
Tchikapika Owando	974500	125000	13%
Lossi	28420	28420	100%
Ntouka Pikounda	427300	390100	91%
Odzala	1366000	1114000	82%
Lac Télé	454700	367000	81%
Nouabalé-Ndoki	3921610	408500	10%
Total	7802130	2594980	33%
DRC			
Touma Ledima	6127000	1678000	27%
Salonga	3352000	3336000	100%
Lokamo Yokokawa	364400	323500	89%
Lyondji Bonobo	103500	31100	30%
Sankuru	2781000	1756000	63%
Lomami	891500	836200	94%
Luama Kivu	392500	40900	10%
Itobwe	606800	335200	55%
Kabuzi Biega	659700	488500	74%
Virunga	786200	102300	13%
Maiko	1102000	1068000	97%
Kisimba Ikobo	97480	46290	47%
Tayna	90370	33800	37%
Okapi Wildlife reserve	1400000	1313000	94%
Yangambi	251800	188300	75%
Rubi Tele	625500	592100	95%
Bili Uere	3294000	130800	4%
Abumonbazi	557100	509300	91%
total	23482850	12809290	

Greenpeace, University of Maryland, World Resources Institute and Transparent World. "Intact Forest Landscapes. 2000/2013/2016" Accessed through Global Forest Watch on 06/02/2020. www.globalforestwatch.org

Annex D: Forest charges in Cameroon, the Republic of Congo and Gabon

In Gabon, the following logging related charges apply:

- Area fee (« taxe de superficie »): 400 FCFA/ha/year (0.61 EUR/ha/year) for the entire concession area
- Taxe Ageos: 300 FCFA/ha/year (0.46 EUR/ha/year) for the active annual cutting areas. Tax to the Agence Gabonaise d'Etude et d'Observation spatiales, Gabon Space Program.
- Village charges (« Redevance villageoise ») at 800 FCFA/ha/m³ harvested (1.22 EUR/ha/m³); not a tax to the government but to the local development fund
- The « taxe de martelage » or « taxe d'abatage » does no longer exist since the log export ban became effective.

In Congo, the following logging related charges apply:

- Area fee (« taxe de superficie »): 250 – 500 FCFA/ha/year (0.38-0.76 EUR/ha/year) depending on the region. Certificate holders in the study pay 350 FCFA/ha/year (0.53 EUR/ha/year). The fee is charged over the productive forest area
- Royalty (« taxe d'abatage »), contingent on species type depending on the FOT (Free-On-Truck) value (6%); average around 5,000 FCFA per m³ (7.60 EUR/m³)
- Local development fund: 200 FCFA per m³ - charged using a local measurement system (local measurement is 20% more volume)
- Forest clearing tax (« Taxe de déboisement »); 1.4 EUR/ha par AAC
- Fee for the Ministerial department for the control of forest products to be exported (« Service de Contrôle des Produits Forestiers à l'Exportation (SCPFE) »)
- Export tax (0.5, 1.5 to 8% of FOB value);
- Other taxes : tax fluvial, phytosanitary, port charges – all based on FOB value

In Cameroon, the following logging related charges apply:

- Area fee (« Redevance Forestière Annuelle ») : minimum 1000 FCFA/ha/year (1.52 EUR/ha/year + what the company proposed during the public auction)
- Royalty (« taxe d'abatage »), depending on the species' FOB value (2.5%); roughly around 4,000 FCFA per m³ (6.10 EUR/ m³)
- Export tax (« Surtaxe à l'Exportation ») : 3000-4000 FCFA/ m³ (4.60-6.10 EUR/ m³)

In Congo and Cameroon, 50% of the area fee goes to the local rural development funds.

Annex E: Simulation of the effect of the implied reduction of the productive forest area on the harvestable volume

Reduction of the length of the cutting cycle

The reduction of the length of the cutting cycle will vary depending on the productive forest area that is set aside to protect IFL. The currently applied cutting cycles are derived from public summaries of the FMPs available from the websites of the certificate holders and FSC certification reports available on the FSC website. This also applies to the annually harvestable volume (m^3). The total volume that is annually harvestable from FSC certified forest in the Congo Basin amounts to approximately 2 million m^3.

Reduction of the size of the annual cutting area

There are two options: postpone the transition until the current cutting cycle is completed or return to the first ACA of the current cutting cycle as soon as the logging front meets the IFL area to be protected. Information is available for some operators from the public summaries of their FMPs on the point in time when the logging front will reach the IFL area. If the threshold is set at 80% protection, the protected IFL area will be reached in the thirteenth year of the cutting cycle in two of those cases and in the fourth year of the cycle in one other case. With 50% protection the IFL area will be in the eighteenth year and fourth year still respectively. A similar situation probably applies to other operations.

If the forest operator decides to postpone the transition to a smaller ACA, the FMP will need to be amended by adjusting the sequence of FPUs. If the forest operator decides instead to commence the transition as soon as the protected IFL area is reached, the FMP will need to be amended by adjusting the size of the ACAs that remain. The latter option will involve more profound modifications to the FMP and, moreover, will allow less time for revising the FMP and obtaining approval. Modification of the FMP involves a substantial cost in both cases. It will not only require amending the FMP, but it will also require early relocation of the operation and be subject to checks and approval by the forest authorities. Regardless whether the transition is postponed or commences when the protect IFL area is reached, the transition will take the same amount of time with equal gradual reduction of the cutting cycle. The transition phase takes one entire cutting cycle as shown in the example of a hypothetical forest concession in Table 28.

A reduction of the size of the annual cutting area implies that the harvestable volume is affected twice. First, the volume will be lower due to the size reduction of the annual cutting area. Secondly, the temporary reduction of the cutting cycle will result in a reduction of the volume that will have accrued during the shorter cutting cycle, just as shown in section 8.3.2. Both effects will need to be multiplied with each other to arrive at the actual reduction as is shown in Table 9. During the transition phase the time of passage will increase gradually until one cutting cycle will have passed and the volume accrual per

hectare will eventually equal the volume on which the cutting cycle and DMA in the FMP are based.

Table 28 Transition to smaller annual cutting area and impact on average annually harvestable volume in a fictive FMU.

current productive forest area	*600,000 ha*	*cutting cycle*	*30 years*	*starting year of current cutting cycle*	*2000*
years completed in current cutting cycle	*20*	*IFL being protected (50%)*	*90,000 ha*	*productive forest area after protection of 50% of IFL*	*510,000 ha*
Protected IFL:	*ACAs 26 (part), 27-30*	*current average annual cutting area*	*20,000 ha*	*average annual cutting area after protection of 50% of IFL*	*17,000 ha*

year	Current ACA				Reduced ACA (from 2021)								Harvestable volume %		
	Cycle	ACA #	Area (ha)	Σ ACA (ha)	Cycle	ACA #	Part 1 (ha)	ACA#	Part 2 (ha)	Area (ha)	Σ ACA (ha)	Cycle	Smaller ACA	Shorter cycle	Total
2000	1st	ACA1	20,000	20,000	1st	ACA1	20,000			20,000	20,000	30	100%	100%	100%
…	1st	…	…	…	1st	…	…	…	…	…	…	…	…	…	…
2020	1st	ACA21	20,000	420,000	1st	ACA21	20,000			20,000	420,000	30	100%	100%	100%
2021	1st	ACA22	20,000	440,000	1st	ACA22	20,000			20,000	440,000	30	100%	100%	100%
2022	1st	ACA23	20,000	460,000	1st	ACA23	20,000			20,000	460,000	30	100%	100%	100%
2023	1st	ACA24	20,000	480,000	1st	ACA24	20,000			20,000	480,000	30	100%	100%	100%
2024	1st	ACA25	20,000	500,000	1st	ACA25	20,000			20,000	500,000	30	100%	100%	100%
2025	1st	ACA26	20,000	520,000	1st / 2nd	ACA26	11,900	ACA1	7,000	17,000	510,000	30/25	85%	93%	79%
2026	1st	ACA27	20,000	540,000	2nd	ACA1	13,000	ACA2	4,000	17,000	24,000	25.8	85%	86%	73%
2027	1st	ACA28	20,000	560,000	2nd	ACA2	16,000	ACA3	1,000	17,000	41,000	25.9	85%	86%	74%
2028	1st	ACA29	20,000	580,000	2nd	ACA3	17,000			17,000	58,000	26.0	85%	87%	74%
2029	1st	ACA30	20,000	600,000	2nd	ACA3	2,000	ACA4	15,000	17,000	75,000	26.1	85%	87%	74%
2030					2nd	ACA4	5,000	ACA5	12,000	17,000	92,000	26.3	85%	88%	75%
2031					2nd	ACA5	8,000	ACA6	9,000	17,000	109,000	26.5	85%	88%	75%
2032					2nd	ACA6	11,000	ACA7	6,000	17,000	126,000	26.6	85%	89%	76%
2033					2nd	ACA7	14,000	ACA8	3,000	17,000	143,000	26.8	85%	89%	76%
2034					2nd	ACA8	17,000			17,000	160,000	27.0	85%	90%	77%
2035					2nd	ACA9	17,000			17,000	177,000	27.0	85%	90%	77%
2036					2nd	ACA9	3,000	ACA10	14,000	17,000	194,000	27.2	85%	91%	77%
2037					2nd	ACA10	6,000	ACA11	11,000	17,000	211,000	27.4	85%	91%	78%
2038					2nd	ACA11	9,000	ACA12	8,000	17,000	228,000	27.5	85%	92%	78%
2039					2nd	ACA12	12,000	ACA13	5,000	17,000	245,000	27.7	85%	92%	79%
2040					2nd	ACA13	15,000	ACA14	2,000	17,000	262,000	27.9	85%	93%	79%
2041					2nd	ACA14	17,000			17,000	279,000	28.0	85%	93%	79%
2042					2nd	ACA14	1,000	ACA15	16,000	17,000	296,000	28.1	85%	94%	80%
2043					2nd	ACA15	4,000	ACA16	13,000	17,000	313,000	28.2	85%	94%	80%
2044					2nd	ACA16	7,000	ACA17	10,000	17,000	330,000	28.4	85%	95%	81%
2045					2nd	ACA17	10,000	ACA18	7,000	17,000	347,000	28.6	85%	95%	81%
2046					2nd	ACA18	13,000	ACA19	4,000	17,000	364,000	28.8	85%	96%	82%
2047					2nd	ACA19	16,000	ACA20	1,000	17,000	381,000	28.9	85%	96%	82%
2048					2nd	ACA20	17,000			17,000	398,000	29.0	85%	97%	82%
2049					2nd	ACA20	2,000	ACA21	15,000	17,000	415,000	29.1	85%	97%	83%
2050					2nd	ACA21	5,000	ACA22	12,000	17,000	432,000	29.3	85%	98%	83%
2051					2nd	ACA22	8,000	ACA23	9,000	17,000	449,000	29.5	85%	98%	84%
2052					2nd	ACA23	11,000	ACA24	6,000	17,000	466,000	29.6	85%	99%	84%
2053					2nd	ACA24	14,000	ACA25	3,000	17,000	483,000	29.8	85%	99%	85%
2054					2nd	ACA25	17,000			17,000	500,000	30.0	85%	100%	85%
2055					2nd / 3rd	ACA26	10,000	ACAnew1	7,000	17,000	510,000	30.0	85%	100%	85%
2056					3rd	ACAnew1	10,000	ACAnew2	7,000	17,000	24,000	30.0	85%	100%	85%
2057					3rd	ACAnew2	10,000	ACAnew3	7,000	17,000	41,000	30.0	85%	100%	85%

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