Who is logging the Congo?

A new ITTO report has made a preliminary analysis of the forest industry in the Congo Basin

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Payload: log truck in the Republic of Congo. *Photo: CIB*

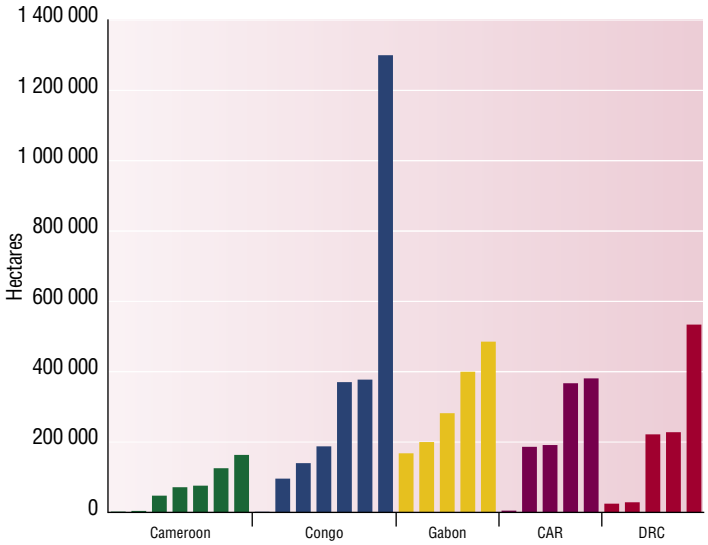
INDUSTRIAL logging has several decades of tradition in the Congo Basin. During this period the industry has evolved and diversified, spreading to all the countries of the region and adapting to local and international conditions—yet it tends to be perceived as static and internally homogeneous (Greenpeace Switzerland no date). We believe that understanding the industry's diversity and characterising the main factors that influence change is an important element of improving national and regional policies aimed at the sustainable management of the Congo Basin forests.

In 2003–04 a multidisciplinary team comprising national and international experts undertook a pilot study funded by ITTO to characterise the Congo Basin logging industry. It was intended as a pioneer analysis, exploratory in its purpose and design but solid enough to offer interesting new results and perspectives that could be applied both at field and policy levels. It builds on previous analyses of the forest sector in the region conducted by national and international institutions such as Tropenbos, the French Agricultural Research Centre for International Development (CIRAD), the FORAFRI project, and the Forestry Outlook Study for Africa conducted in 2003 by the Food and Agriculture Organization of the United Nations.

The focus of the present study is on forest concessions in five countries of the Congo Basin—Cameroon, Central African Republic, Democratic Republic of Congo, Gabon and Republic of Congo. It is based on a questionnaire administered to a non-random stratified sample of 30 concessions across the five countries; an additional concession for which partial information was obtained was added later. The sampling was designed to cover the key types of concessions according to their legal status and capital ownership.

Sample size

Figure 1: Concession size by country



Size and age

The 31 surveyed concessions covered a total area of 7.3 million hectares; individual concessions ranged in size between 1800 and 1.3 million hectares *(Figure 1)*.

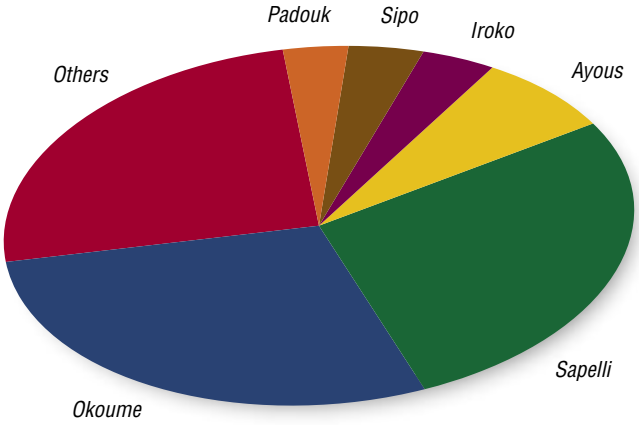
An examination of the age of the surveyed concessions shows two clearly differentiated groups: one in which the concessions were granted in the 1950s to the 1970s, at a time when legal requirements, land pressure and market standards were less challenging, and a second in which the concessions have been established in the last 15 years, with more emphasis on national tenureship. The age of the concession also partly determines the forest regulations that are applicable, with recently awarded concessions required to have a higher percentage of local processing and to accommodate new legal entities—such as community concessions in Cameroon.

Species harvested

The logging industry in the region is organised around two dominant species, okoume and sapelli, but we found that 35 species are logged in significant amounts *(Figure 2)*; these are species that are both

Okoume, sapelli, and the rest

Figure 2: Percentage of total regional production of the 35 main harvested species in the surveyed concessions



saleable and widely distributed in the forest. We found a negative correlation between number of species and distance to port, with distant concessions tending to harvest fewer species. We also identified two logging strategies that represent a potentially important avenue of research: the total production of industrial, large-scale concessions tends to be dominated by one or two species, while small-scale concessions tend to distribute their production more evenly among a larger number of species.

Legal provisions

Although the legal provisions for logging permits vary from country to country, it is possible to group them into categories. The four categories at the top of *Table 1* represent the most common type (21 cases) of logging permit in our sample and share a number of commonalities, notably their focus on medium- to large-scale industrial concessions and the requirement for a management plan.

Another group of permits tends to relate to small-scale and/or temporary concessions: allotments, family allowances and community forests. These kinds of permits are all granted for small areas (less than 5000 hectares in the sample) and do not normally require a management plan, except for community forests in Cameroon, where a management plan has to be submitted before harvesting approval is granted.

As mentioned, forest laws in the region require that concessions, especially those granted for forest management or forest logging units, have a government-approved management plan to guide the sustainable use of the forest within each concession. However, the degree of enforcement of this regulation is variable and generally rather low. The complete lack of a management plan tends to be associated with recently established, short-term permits and small-scale (with the notable exception of community concessions in Cameroon) and nationally owned concessions. The existence of a management plan at different stages of development is associated with older, large-scale, foreign-owned concessions granted for long periods (Pearce et al. 2003).

Harvesting intensity in m^3 per hectare was estimated based on total production and logged area data provided by the concessions for 2002 *(Figure 3)*. The average of the sample was 6.1 m^3/hectare, which falls within usual productivity estimates for the region. A consistently higher intensity was observed in Gabon, where logging concentrates on okoume and few other species are logged to any great extent. However, Central African Republic, where production focuses on sapelli, showed the lowest intensity per hectare.

European markets are the main destination (60%) of the total production volume of our sample, followed by national (20%) and Asian (16%) markets. Exports to other African countries are almost non-existent, the exception being a small amount from the Central African Republic. Foreign-owned concessions export the vast majority of their production, whereas nationally owned concessions tend to share it between national and export markets. Concessions focused on the export market have a higher productivity per hectare than those producing for the local market, indicating a more intense exploitation of the resource.

Table 2 summarises the key characteristics of concessions according to their market orientation. This somewhat simplified, dichotomous classification has a number of nuances. For example, community concessions, focused mainly on the local market and owned by national (community) capital must have an officially approved management plan. However, the *table* helps to portray a

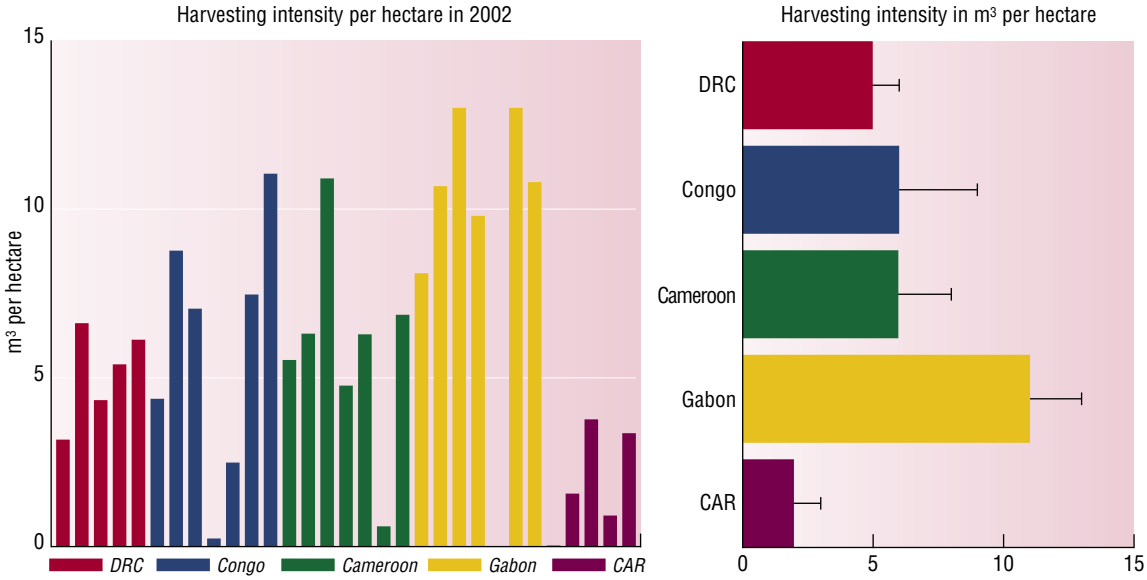
Licence to cut

Table 1: Types of logging permits reported

PERMIT NAME	COUNTRY	COMMENTS	CASES
Supply guarantee (Garantie d'approvisionnement)	Democratic Republic of Congo	Maximum surface granted of 500 000 hectares; requires management plan	5
Logging forestry unit (Unité forestière d'exploitation)	Republic of Congo		4
Forest management unit (Unité forestière d'aménagement)	Republic of Congo/ Cameroon/ Gabon	Most common logging permit, which conditions logging to management	8
Management and logging permit (Permit d'exploitation et d'aménagement)	Central African Republic	Equivalent to the logging permit of a forest management unit	4
Allotment (Lot)	Republic of Congo	Granted for one year; the whole allotted surface can be logged	1
Community forest (Forêt communautaire)	Cameroon	Specifically attributed to community forests	2
Temporary logging permit (Permis temporaire d'exploitation)	Gabon		1
Family tree logging allowance (Coupe familiale)	Gabon	Permit for 300 trees to be cut in a radius of 5 km around the village	2
Special logging permit (Permis spécial de coupe)	Central African Republic	Allows the harvesting of a limited number of trees, specified by the ministry	1

Productivity

Figure 3: Concession and country variations in harvesting intensity in 2002. Error bars indicate standard deviation of mean country harvesting intensity



general view of interactions between markets and features of concessions that warrants further research.

Environmental problems

The questionnaire included a set of questions related to the perception of environmental and socioeconomic problems in the concession, and 'drivers of change'—factors to which concessionaires claimed to respond by changing their practices.

We identified two main types of environmental problem—those produced directly by concession operations (termed 'endogenous'), and those induced but not directly produced by them. Endogenous problems amounted to 37% of the total score of environmental problems identified by the concessionaires, with logging roads and erosion the main issues. Induced problems (63% of total score) were focused on hunting, followed at a large distance by encroachment and illegal logging *(Figure 4)*.

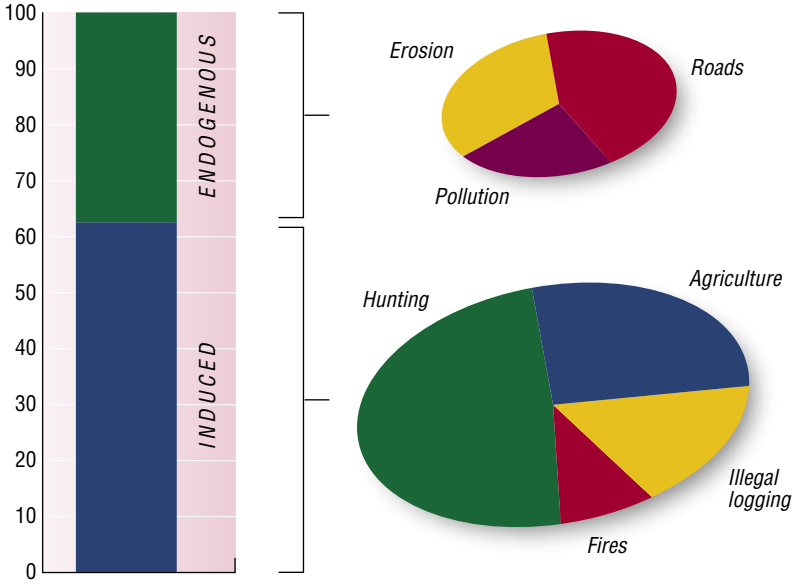
There are differences between countries in the extent of the various types of problems. For example, the incipient logging industry of the Democratic Republic of Congo tended to identify induced problems as the major issues, whereas mature logging concessions such as those in Cameroon and Gabon stressed endogenous problems. Likewise, foreign-owned concessions highlighted the endogenous problems they caused while nationally owned concessions tended to score induced problems more highly.

Concessionaires identified financial constraints as the main socioeconomic problem *(Figure 5)*. This was followed at some distance by insufficient technical and human capacities and the irregular implementation of official regulations and rules. Again, country differences were marked by the statistically significant higher scoring of problems in the Democratic Republic of Congo, consistent with the precarious political situation in that country. In general, very large concessions tended to score lower in their rating of socioeconomic problems than did small concessions.

Logging concessions are dynamic enterprises that have to adapt to, anticipate and promote changes in the whole sector and in a broad domain of activities. An understanding of what makes concession practices change is essential for any attempt to improve logging policies and practices and for the transfer of policies developed in broad international settings to very local conditions. Cluster analysis grouped

Problem areas I

Figure 4: Perception of environmental problems by concessionaires



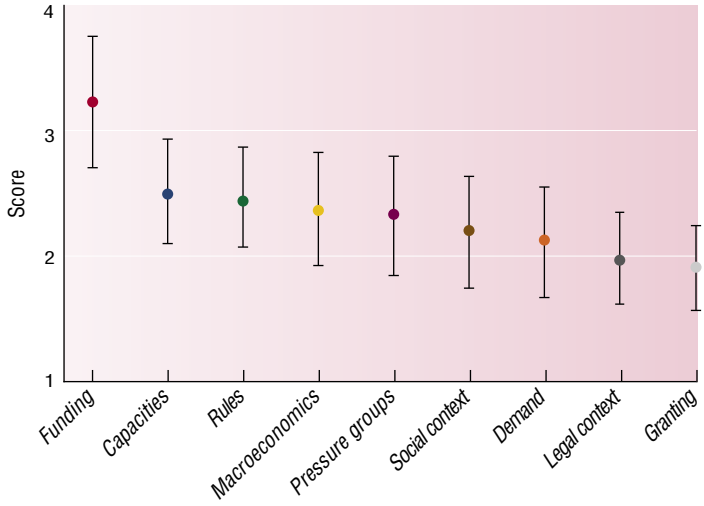
the drivers of change into five main categories: policies, technology, certification pressure groups, markets and institutions *(Figure 6)*. Policy, infrastructure, markets and technology were the key drivers of change identified in our sample; regional and international forest-related institutions like COMIFAC (Conference of Ministers for the Forests of Central Africa), CEFDHAC (Central African Dense and Humid Forest Ecosystems Conference), ITTO and ATO (African Timber Organization) had relatively little direct impact on concession practice, although they may have a strong influence on national policy settings.

Medium-to-large concessions tended to be most influenced by the key drivers of change, whereas small and especially very large concessions tended to be more resistant to them. Concessions owned by foreign capital and those focused on the European market also tended to score a higher influence of these drivers; however, the difference was not usually statistically significant. ITTO as a vector of change scored significantly higher for European-oriented concessions, possibly because it is perceived more as a guarantor of international market stability in Europe than in Asian markets.

This preliminary study offers a snapshot picture of the logging industry in the Congo Basin corresponding to the interactions of four key factors: size, origin of capital, market orientation and the country in which it operates. The study has also unveiled important questions and avenues to be pursued in future work.

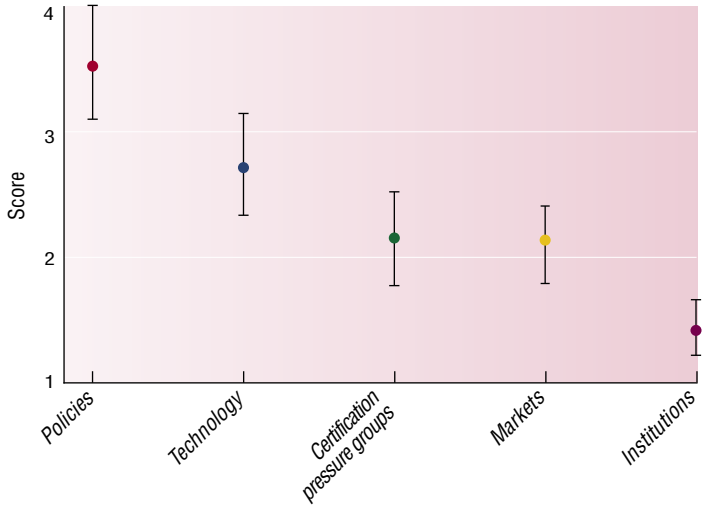
Problem areas II

Figure 5: Average score for each type of socioeconomic problem



Drivers

Figure 6: Average scores for drivers of change



Local vs export

Table 2: Key characteristics of concessions according to their market orientation

	LOCAL MARKET	EXPORT MARKET
Origin of capital	national	foreign
Size of concession	small to medium	large to very large
Management plan	none	in progress/ready
Percent of concession logged per year	high	low
Extent of processing by concessionaire	high	low
Productivity *(volume per hectare)*	low	high
Productivity *(volume per worker)*	low	high

References

FAO 2003. *African forests, a view to 2020*. Forestry Outlook Study for Africa. FAO, Rome, Italy.

Greenpeace Switzerland no date. Greenpeace Switzerland blockades import of African timber. http://archive.greenpeace.org/forests/africa/resources.htm

Pearce, D., Putz, F. & Vanclay, J. 2003. Sustainable forestry in the tropics: panacea or folly? *Forest Ecology and Management* 172: 229–247.

The full report of this study can be downloaded at www.itto.or.jp/live/PageDisplayHandler?pageId=161&id=804