ASSESSING LOGGING DEVELOPMENT IN CAMEROON

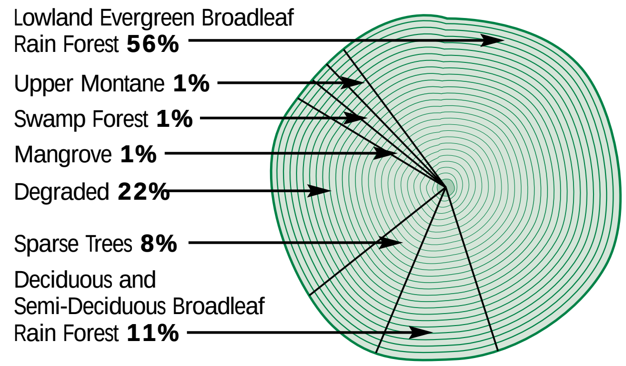
Logging is key to Cameroon's local and national economic development and has important ecological impacts. In order to assure forests are managed in the public interest, both the government and the people of Cameroon require accurate information on the logging sector and the costs and benefits of logging development. These data are essential for informed decisionmaking. To this end, Global Forest Watch Cameroon attempts to document, through a series of maps and indicators, the current and historic extent of logging, along with the key actors, companies and individuals, engaged in this activity. We also provide data on the benefits and costs of logging, both in terms of economic returns and environmental trade-offs. As noted previously, Cameroon recently adopted new forestry legislation that, if enforced, would go a long way toward mitigating the environmental and social costs of development while also generating greater tax revenues. We have examined the progress in implementing this legislation, first by looking at the legal status of existing logging concessions countrywide, and second by tracking enforcement efforts within two key forested provinces—the Central and East provinces.

Specifically, we have looked at the following questions:

- How much forest remains in Cameroon?
- What are the economic and noneconomic values of Cameroon's forests, and who benefits from them?
- How much forest has been logged in Cameroon and at what rate?
- To what extent do logging companies comply with forestry regulations, and how does the government enforce these laws?

Our results are based on existing published data, along with some field-collected information and input from experts. It should be noted that forestry data collected by government agencies are often difficult to access. It is our objective, through this report, to make as much of this information publicly available as possible and in a format (through maps and indicators) useful to a wide range of audiences in government, industry, and elsewhere. Because these data are of highly variable quality, we have attempted to highlight discrepancies, which further monitoring by the government, GFW Cameroon, or others might address.

Figure 2: Cameroon's Forest Types



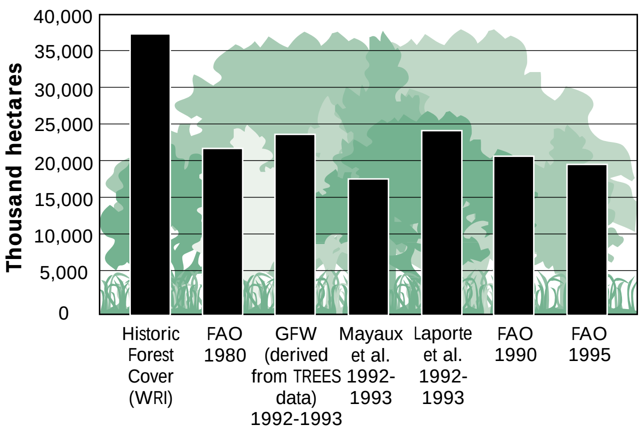
Source: World Conservation Monitoring Centre, *http://www.wcmc.org.uk/forest/data*

HOW MUCH FOREST REMAINS?

According to the FAO, Cameroon's forests covered approximately 19.6 million hectares in the mid-1990s. Given the data uncertainties described below, this figure is approximate. Lowland rain forest, including semideciduous and evergreen forest, dominate closed forest cover. Roughly 1 percent of forest cover is montane forest located around Mount Cameroon and the southwestern part of the country. Mangroves make up less than 1 percent of forest cover, primarily around the Rio del Ray and Cross River estuaries.[17]

Data presented in this report on forest cover and deforestation come from a variety of sources. Forest cover maps are provided by the TREES project, which used Advanced Very High Resolution Radiometer (AVHRR) satellite imagery from the early 1990s, with a spatial resolution of approximately 1 kilometer. According to GFW calculations based on the TREES data, some 17.9 million hectares of closed forest remained at that time.[18] Because of the age of the satellite data and the inability to distinguish plantations from other forests, these results probably overestimate current natural forest cover.

Figure 3: Cameroon's Remaining Forest Cover from Various Sources



Notes: FAO 1980 and 1995, as well as historic forest cover refer to undetermined forest classes. GFW and Laporte forest cover refer to closed and degraded forests.
Mayaux forest cover refers to closed forests.
FAO 1990 forest cover refers to montane, submontane, closed and very dry forests.
Source: *For full source and data information, see Appendixes 1 and 2.*

Cameroon has lost over half of its historic closed forest cover.

Historic forest cover is defined as forest cover prior to large-scale human disturbance. Over 18 million hectares of Cameroon's historic forests have been cleared to make way for agriculture and settlements. Most of this clearing has occurred in the central portion of Cameroon within semideciduous forests and savanna woodlands.[19]

Nearly 2 million hectares of forest were lost between 1980 and 1995.

Cameroon has the second highest annual deforestation rate in the Congo Basin, after the Democratic Republic of Congo. According to FAO estimates, deforestation rates averaged 0.6 percent per year between 1980 and 1995—representing a loss of almost a tenth of the forest cover present in 1980.[20] Agricultural encroachment, spurred in part by the expansion of cocoa and coffee export markets, along with production of food crops, has been the primary driver behind outright forest conversion.[21, 22]

Table 1. Percent of TREES Land Cover Types in Protected Areas

TREES Categories	Land Cover (Thousand hectares)	Protected (Thousand hectares)	Protected (%)
Dense Moist Forest	17,915	1,318	7
Secondary Forest and Rural Complexes[a]	4,879	44	1
Forest and Savanna Mosaic	2,159	0	0
Woodland	1,8	0	0
Woodland and Tree Savanna	16,687	9	0
Grassland	257	3	1
Mangroves	234	8	3
Swamp Grassland	85	0	0
Shrubs and Steppe	3,309	0	0
Water	67	1	2

Source: Calculated by WRI based on TREES data from *http://fellini.mtv.sai.jrc.it/TREES* and WCMC data from the CARPE CD-ROM.

Note: a. These are referred to as "secondary and degraded forests" in this report.

In 1992-93, at least 20 percent of remaining closed forest cover consisted of degraded and secondary forest.

Forest degradation, as opposed to deforestation, presents a significant, though unquantified, threat to Cameroon's forests. Data derived from satellite imagery in the early 1990s suggests that between 4.8[23] and 6.4[24] million hectares of forest were degraded or secondary forest. Given limitations of remote sensing technologies used, this figure only captures some types of forest degradation where the canopy is significantly affected. Selective logging, fire (particularly in montane and semideciduous forests), and overhunting are all major causes of degradation that may not be easily detected by satellite imagery. Overhunting depletes forests of key seed dispersers, such as elephants and duikers, which may ultimately result in shifts in tree species composition.[25] Logging is currently opening up the last tracts of large, intact primary forests in the country (frontier forests), which make up less than 10 percent of current forest cover.[26] According to FAO estimates for the 1980s, close to 90 percent of logging occurring in Cameroon's closed forests took place in primary forests.[27] Although logging per se results in low rates of tree removal per hectare, logging roads open previously inaccessible areas to human settlements, agricultural encroachment, and hunting pressure.

Four out of 19 West and Central African deforestation hotspots identified by TREES are located within Cameroon.

In 1997, a global expert's assessment identified hotspot areas where tropical deforestation and forest degradation posed or will pose a major threat by 2002. Four of these areas were in Cameroon. Forests within the Cross River-Korup area on the Nigerian border and a region bounded by Yaoundé, Mbalmayo, Ebolowa, and Kribi are in the process of being cleared for agriculture. New roads in the Bertoua-Abong Mbang and Djoum regions may help development, but the increased access could also result in the clearing of forests for cropland. These four hotspots cover a major portion of remaining forest area within Cameroon.[28] A separate study conducted by scientists at the University of Maryland ranked Cameroon's forests as the second most vulnerable to further degradation in Central Africa based on existing degraded forest and population densities within forested areas.[29]

HOW ARE THE FORESTS VALUED?

Forests provide a range of goods and services that benefit local economies and people. Timber products are currently the most important source of revenue derived from Cameroon's forests. Other goods and services, such as biodiversity and carbon stored in forests, are difficult to quantify economically, but represent resources of global value.

Wood Products

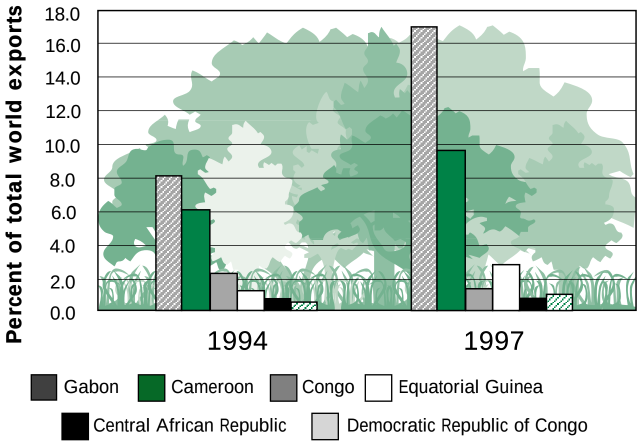
The logging industry is a mainstay of the national economy, generating about 28 percent of all nonpetroleum export revenues in 1998.[30] In 1996, logging enterprises directly employed more than 34,000 people.[31] According to one government estimate, 55,000 people currently work in the logging sector, when indirect employment is factored in.[32] Close to half of the industrial roundwood harvest is sold abroad, up from 30 percent in 1993. Cameroon's forests are a major source of the world's tropical timber, with 1.7 million cubic meters of wood exported in 1997, according to FAO figures. (FAO data may at times differ from International Tropical Timber Organization–ITTO data. *See Appendix 2: Technical Notes for details*). As oil reserves dry up, timber exports are projected to constitute an increasing share of foreign exchange revenue in coming years.[33]

As documented below, Cameroon's timber industry depends on the sale of logs, which accounted for more than 70 percent of the total timber export volume (but only 46 percent of total export revenues) in 1997.[34] This wood is harvested from a handful of the 80 species of commercial value. As a result, most logging is selective, with yields averaging only 5 cubic meters per hectare.[35] However, with Asia rapidly surpassing Europe as the primary market for Cameroonian wood, the trend may be toward more intensive harvesting, because Asian buyers are interested in a wider range of species than their European counterparts. Exports to Asia fell during the recent economic crisis, but the long-term trend is toward increasing export volumes.[36]

Cameroon ranks among the world's top five tropical log exporters.

Cameroon is the second largest exporter of tropical logs within the Congo Basin.

Figure 4: Central African Countries' Log Exports as a Percentage of World Tropical Exports

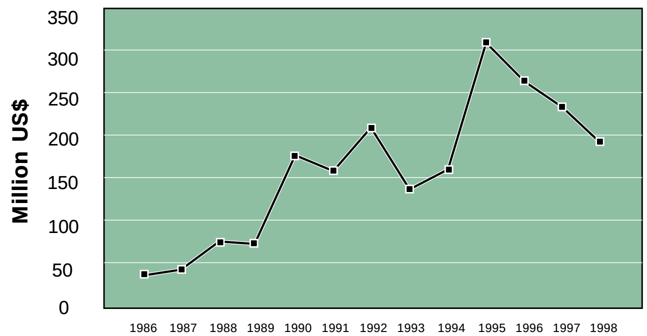


Sources: *Annual Review and Assessment of the World Timber Situation, 1998* (ITTO, 1999); Equatorial Guinea data from the Food and Agriculture Organization at http://apps.fao.org.

In 1997, Cameroon exported 1.7 million cubic meters of tropical logs, roughly 10 percent of the global total. Log exports from Cameroon have doubled since 1992. Only Gabon, Malaysia, and Papua New Guinea now outpace Cameroon in the volume of tropical logs shipped to world markets.[37] Cameroon's increased share in the global market is partly because of a greater emphasis by most tropical timber producers on exporting value-added products to bolster local processing industries.

Despite the recent Asian economic crisis, industrial roundwood exports generated on average US$230 million a year between 1996 and 1998, an increase of almost US$180 million over the 1986-88 value[38]

Figure 5: Cameroon's Industrial Roundwood Exports Value



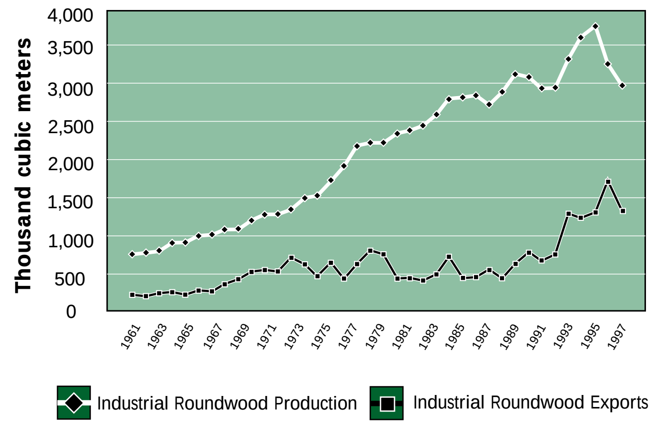
Source: Food and Agriculture Organization Statistical Databases http://apps.fao.org.

Export value data presented in Figure 5 are based on FAO numbers. In 1995, industrial roundwood exports generated a record high of US$304 million. In the late 1990s, this trend has been decreasing. In 1998, industrial roundwood exports generated US$190 million, a 20 percent decrease from 1997. This change can be explained in part by the Asian economic crisis and falling timber prices on the international markets in 1998.[39]

Total industrial roundwood production increased by 36 percent between 1980 and 1998.

The percentage of industrial roundwood production exported rose from 34 percent to 42 percent between 1980 and 1998.

Figure 6: Cameroon's Industrial Roundwood Production and Export, by Volume, 1961-98



Source: Food and Agriculture Organization Statistical Databases. http://apps.fao.org.

Total industrial roundwood production peaked in 1996 at 3.7 million cubic meters, an increase of half a million cubic meters over 1990 levels. The 1994 devaluation of the CFA led to a steep climb in production, partly because of resulting reductions in transport costs. This price reduction attracted new investment and made it more profitable to log remote areas and harvest lower-value species for the export market.[40]

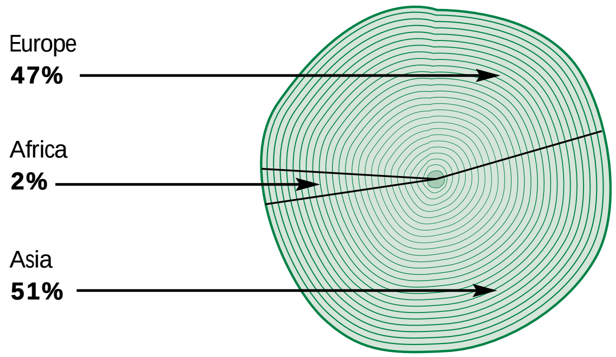
In 1998, however, industrial roundwood production was down to slightly less than 3 million cubic meters as a result of the Asian economic crisis. Increasingly, much of Cameroon's wood is shipped overseas, generating foreign revenue. The total volume consumed domestically actually declined during the 1990s, perhaps as a result of the 1994 CFA devaluation, which rendered products more expensive on local markets and led to economic stagnation.

Wood exports declined 25 percent in 1998 as a result of the Asian economic crisis.

ITTO figures indicate that total exports from Cameroon dropped by almost half a million cubic meters between 1997 and 1998. Over that period, prices for many tropical wood products on international markets declined as a result of lower Asian demand. However, the impact on Cameroon's logging sector was not nearly as severe as the impact on Gabon's logging sector. Gabon, the largest log exporter in the region, experienced a 50 percent drop in log exports over the same period.[41]

Asia has now surpassed Europe as the primary market for Cameroonian wood products.

Figure 7: Major Regional Importers of Cameroonian Logs, 1996-97

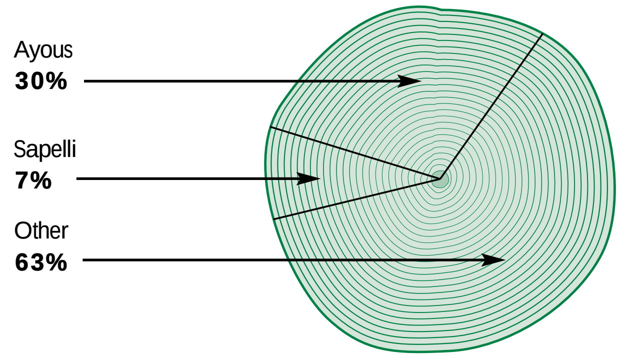


Source: Etat des Lieux du Secteur Forestier au Cameroun – Données Statistiques based on data from Societé Générale de Surveillance, 1998.

European countries once purchased 85 percent of Cameroonian exports,[42] but they now make up just under half of total demand. Although in 1994, less than 15 percent of Cameroon's logs were exported to Asia,[43] that figure rose to 51 percent in 1996-97. Ranked according to demand, Italy, China, France, the Philippines, and Japan constituted the five top importers of Cameroonian logs in 1997.[44] China is a major player in the Asian market. The total volume of Cameroonian logs exported to China has grown rapidly in recent years as a result of economic growth and corresponding demand for wood products within that country.[45]

Logging is largely focused on a small number of species.

Figure 8: Most Common Timber Species Exported in 1997, by Log Volume



Source: International Tropical Timber Organization (ITTO), *Annual Review and Assessment of the World Timber Situation* 1998 (Yokohama: ITTO, 1998).

Of the 300 tree species found in Cameroon, approximately 80 are logged commercially.[46] In 1997, of these 80 species, 5 accounted for more than half of all wood exports, and two species—Ayous and Sapelli—accounted for over a third of exports. Together these two species accounted for almost half a million cubic meters of exported logs.[47] Ayous and Sapelli are commonly used in furniture production and housing construction.[48]

Biodiversity

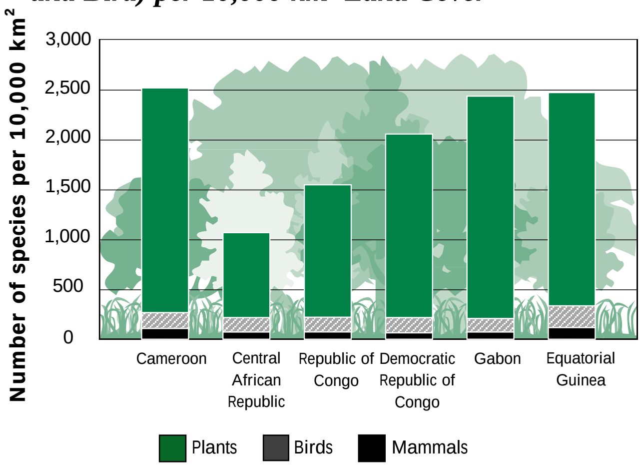
Cameroon's forests and other habitats are renowned for their rich diversity of flora and fauna. At least 8,000 species of higher plants are found in Cameroon, while over half of Africa's bird and mammal species are reportedly within the country.[49] Cameroon contains a variety of forest habitats ranging from montane forests, which are noted for their globally unique endemic species, to Atlantic coastal forests, which are rich in plants, to inland Cameroon-Congolese forests, which are renowned for their mammalian diversity.[50] Habitat loss and poaching present a major threat to the country's biodiversity. (*See Box 1 on bushmeat trade.*) Roughly 6 percent of the forest area is, at least on paper, protected within four parks and reserves covering over one million hectares of land; however, agricultural encroachment, poaching, and logging threaten all these areas.[51]

Cameroon's forests are among the most species rich in the Congo Basin.

Although species number data are known to be incomplete, Cameroon ranks among the top six countries in Africa in terms of total numbers of mammals, birds, and higher plants. Figure 9 presents an indicator of the relative species richness, showing the total number of species per 10,000 square kilometers of land.[52] By this measure, Cameroon has the highest number of plants per unit area in the region, with mammal and bird species counts surpassed only by Equatorial Guinea. Much of this diversity is found within lowland forests, which are renowned for their floristic diversity, and in the Atlantic coastal forests where high numbers of primate species, including lowland gorillas, chimpanzees, drills, and colobus monkeys are found.[53]

Cameroon's forests are home to five globally important centers of plant and bird diversity.

Figure 9: Number of Species (Plant, Mammal, and Bird) per 10,000 km² Land Cover



Source: World Resources Institute (WRI), *World Resources 1998-99* (Oxford University Press, NY, 1998).

Five forest areas in Cameroon stand out globally for their plant species richness and presence of endemic and restricted-range bird species. An assessment of global centers of plant diversity by the World Conservation Union (IUCN), and World Wide Fund for Nature (WWF) identified the forests of Korup National Park, Mount Cameroon (including nonforest areas), and the River Dja region as floristically rich areas. Korup, for example, has approximately 400 tree species, while Dja is noted for its 2,000 vascular plant species.[54] According to Birdlife International, Cameroon is home to two "Endemic Bird Areas," including the Cameroon Mountains, which contain 29 restricted-range species (12 of which are threatened), and the Cameroon and Gabon lowlands, a lowland forest area stretching from southwestern Nigeria to Gabon. The latter contains six restricted range species, two of which are threatened.[55]

Ecosystem Services

The country's forests provide a range of other benefits, from ecosystem services, such as water flow and quality maintenance and carbon storage, to nontimber products sold on local markets and used in the home.

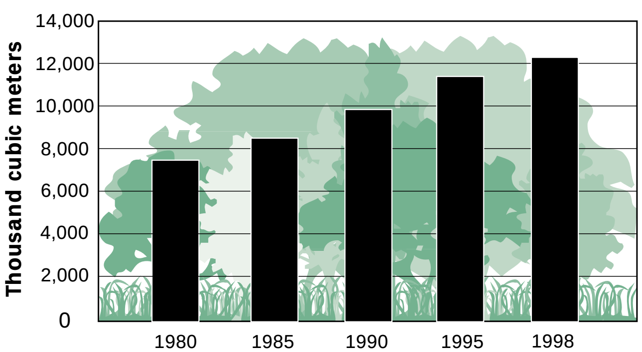
Carbon storage

As a conservative estimate, Cameroon's forests store at least 1.3 and possibly as much as 6.6 gigatonnes of carbon, *(see Map 1)*, most of which is locked up in their vegetation.[56] These figures are not direct measurements, but rather calculated estimates. Degradation and clearing of forests worldwide over the past 150 years has contributed 30 percent of the carbon dioxide that has built up in the atmosphere.[57] As Map 1 shows, areas storing the greatest carbon are those currently being opened for logging. By encouraging reduced-impact logging methods, forest managers could help diminish release of carbon, which leads to climate change. Through reforestation programs (to sequester carbon) and careful management and protection of remaining primary forests (to retain carbon), Cameroon could continue to provide a global environmental service. This opportunity was highlighted in a recent report, which ranked Cameroon among the top 15 most significant tropical countries in the world for potential carbon retention and sequestration.[58]

Fuelwood

Most of the wood harvested within Cameroon's forests and woodlands is used to meet local energy needs. In 1998, four times more wood was harvested for fuel than was sold as industrial roundwood. Traditional fuels, including firewood and charcoal, accounted for roughly 80 percent of all energy consumption in the country in 1995.[59]

Figure 10: Fuelwood Production, 1980-98



Source: Food and Agriculture Organization Statistical Databases. *http://apps.fao.org.*

Other nontimber products[60]

Nontimber forest products (NTFPs)—including bark, tubers, leaves, flowers, seeds, fruits, resins, honey, fungi, and animal products—play an important role in the households of the urban poor and forest-dwelling communities.[61] They are used as medicines, tools and building materials and for food, primarily within local villages and households.

It is difficult to quantify the economic importance of NTFPs, because data are lacking and most products are not marketed. However, research by the Center for International Forestry Research (CIFOR) indicates that NTFPs are an important source of cash revenue for Cameroon's forest-dependent peoples. According to their findings, nine NTFPs (including bush mango, the bark and fruits of *Garcinia cola*, palm nuts, cola nuts [*Cola acuminata*], and the African pear) generated US$1.9 million in revenues during the first half of 1996 alone. The NTFP of greatest economic value is bushmeat, which is an important source of food (annual bushmeat consumption is at least 2.5 kilos per person in Cameroon).[62] Unsustainable hunting levels, however, threaten to undermine the availability of this resource. *(See Box 1).*

The NTFP trade is an important source of income for women. They constitute the majority of poor forest dwellers in rural Cameroon but are often denied land ownership and are not guaranteed access to forest resources. With the economic crisis and the devaluation of the CFA, pharmaceutical products became more expensive. This increased the dependency of poor urban households and rural dwellers on medicinal plants.

Although NTFPs are frequently located in primary or secondary forests, many are also found in cultivated areas, such as fallowed fields and cultivated plantations. Research efforts are underway to cultivate NTFP species; however, many of these species occur only in the wild and are under stress as logging activities and forest conversion threaten their habitat, and trees that are also valued as nontimber forest products are logged. Over half of the log exports in 1998 came from five tree species that also generate NTFPs.[63] For example, nuts from Moabi (*Baillonella toxisperma*), a species found at very low densities (less than one tree per hectare), provide cooking oil and beauty products. In parts of Cameroon, this oil has become so scarce that it is no longer sold, but kept in villages for local consumption.[64] Some NTFP species respond well to disturbances caused by logging. Rattan species, bush pepper (*Piper guineensis*), alligator and sweet pepper (*Aframomum spp*), and njansang (*Ricinodendron heudelottii*) all prefer disturbed forest areas, and are often found along roads and openings.

BOX 1: Logging and Bushmeat Hunting

Logging is closely linked to bushmeat hunting and commercialization, and the subsequent decimation of wildlife. Logging roads facilitate access to previously remote forest areas, leading to intensified hunting. Once driven by local demand, hunting is increasingly a commercial activity to feed urban markets; bushmeat is considered a delicacy in Central Africa. These trends are borne out by results from a study in southeastern Cameroon that linked increased hunting with growth of the logging sector.[1]

In theory, hunting requires a permit granted by the wildlife administration, with the exception of traditional hunting and hunting outside state forests. The law also prohibits the use of certain methods, along with hunting of protected species. Because the Ministry of Environment and Forests lacks monitoring and enforcement capacity, these regulations are regularly flouted, particularly in remote forest areas, where most hunting occurs and the government has little oversight.

In addition to facilitating access to game, logging companies provide the transport needed to link hunting grounds and markets. Even when prohibited by company policy, logging truck drivers routinely carry loads of up to 200 kilograms of bushmeat, including gorillas and chimpanzees, in return for cash payments.[2]

Chimpanzee meat brings US$20-25 per piece, which explains why this species is particularly prized by hunters. Near Korup, in southwestern Cameroon, bushmeat hunting is estimated to contribute a third of all household revenue.[3] In the Dja Reserve, families consider the sale of game their second biggest source of income after cacao farming.[4]

With the expansion of logging activities throughout Cameroon's forests, bushmeat poses an increasing threat to biodiversity and ecosystem function. Although largely qualitative, reports indicate that the impacts of commercial bushmeat hunting extend beyond affecting those species targeted. For example, the slaughter of elephants has consequences on such plant species as the Moabi (*Baillonella toxisperma*), which are of economic importance and valued for traditional uses. Only elephants swallow and disperse moabi seeds.[5] While the full consequences of bushmeat hunting cannot be predicted, the impacts will be felt far beyond the immediate effects on wildlife populations.

Notes

1. K. Stromayer and A. Eboko.A *Biological Survey of Southeastern Cameroon.* European Union, Wildlife Conservation Society. New York. 1991.
2. K. Amman and J. Pierce. *Slaughter of the Apes: How the Tropical Timber Industry is Devouring Africa's Great Apes.* World Society for Protection of Animals. London. 1995.
3. M. Infield. *Hunting, Trapping, Fishing in Villages within and on the Periphery of the Korup National Park.* WWF report. Washington, DC. 1988.
4. P.K. Muchaal and G. Ngandjui. *Sectuer Ouest ce la Réserve de Faune du Dja: Evaluation de l'Impact de la Chasse Villageoise sur les Populations Animales et Propositions d'Aménagement en vue d'une Exploitation Rationelle.* ECOFAC/MEF. Youandé. 1995.
5. L. White and K. Abernathy. *A Guide to the Vegetation of the Lopé Reserve.* (Libreville: ECOFAC). 1997.

Cultural values

Cameroon is home to one of the most ethnically diverse populations in the world. Ethnologists and anthropologists estimate that it is home to more than 250 different ethnic groups. Among the oldest groups in Cameroon are forest hunter-gatherers, pejoratively known as "pygmies," who immigrated to the region several thousand years ago. These groups rely primarily on the tropical forests of Cameroon for their livelihood, medicine, and shelter. Their cultural identity is rooted not only in language, kinship, oral history, traditional practices (e.g., rites of passage including marriage and initiation ceremonies) but also in their identification with a particular area of the forest.[65]

HOW IS FOREST DEVELOPMENT EVOLVING?

Analysis of available data on recorded concession area and production levels indicates that most of Cameroon's forests have either been logged or are under active logging development. The logging frontier is now pushing into the remaining significant tracts of primary forest within central and eastern Cameroon.

Table 2. Concession Area 1959–99

Year	Concession Area (Thousand hectares)[a]	Concession Area as a Percentage of 1992-93 Total Forest Cover[b]
1959 (Abandoned and Active Concessions)	1,886	8%
1971 (Abandoned and Active Concessions)	8,995	39%
1995 (Abandoned and Active Concessions)	14,124	62%
1999 (Abandoned, Active, and Concessions Slated for Allocation)	17,329[c]	76%

Source: Concession data from WCMC and CETELCAF. Forest cover calculated by WRI based on data from *http://fellini.mtv.sai.jrc.it/TREES*

Notes: a. Cumulative area in concessions including documented concessions in 1959, 1971, 1995 and 1999.

b. 22.8 million hectares. Includes dense moist forest and secondary and degraded forests. Calculated by WRI based on data from *http://fellini.mtv.sai.jrc.it/TREES*

c. Includes 1,134,073 hectares of concessions not represented on the maps.

Historic and planned logging development covers at least three fourths of Cameroon's forests.

Based on concession maps from 1959, 1971, 1995 and 1999, at least three fourths of Cameroon's forest cover has been logged or has been slated for logging. (*See Table 2.*) Forests classified as dense, moist forest or secondary and degraded forest by TREES (1992-93) were used to approximate the extent of forest in Cameroon prior to large scale commercial logging. This calculation likely underestimates the portion of Cameroon's forests impacted by logging because concession maps are known to be incomplete (for example, they do not include areas under *vente de coupe* and historical maps were only available for 1959 and 1971).

As Map 2 and Table 2 show, logging development has proceeded rapidly since 1959. Logging was concentrated mostly along the coast and around major urban centers in the late 1950s. Since the 1970s, logging has extended into the last remote tracts of intact forest in the east and south of the country. (*See Map 2.*) Map 2 shows areas that have been designated as concessions, but no information was available on the intensity or extent of logging within these areas.

Map 3 shows the current status of logging activity in Cameroon. Of the 17 million hectares that have been abandoned or are under current, and future concessions, roughly 4 million hectares are currently allocated for logging. We were able to map only 2.9 million hectares given incomplete geographical information for the remaining 1.1 million hectares. Map 3 and Table 3 also show that at least an additional 3.6 million hectares[66] have already been designated as logging concessions but have yet to be allocated.[67] (*See Map 3.*)

Less than a fifth of unprotected forest remains outside the logging frontier.

• With roughly 1.4 million hectares (6 percent) of its forests protected (*see Map 4*) and a further 17 million hectares (76 percent) of abandoned, current, or future logging concessions, less than 20 percent of Cameroon's unprotected forest remains free from past or planned logging development.

• Logging concessions now encircle protected areas such as the Dja Reserve, a World Heritage site. (*See Box 2.*) Some concessions are even found within the geographic boundaries of two other protected areas: the Lac Lobéké Reserve in the southeast and the Campo Reserve (as well as in a proposed protected area just east of it) in the southwest.

• Development activities other than logging may adversely affect forest ecosystems. These activities include energy and mineral extraction, as well as agriculture. They represent trade-offs between environmental services and economic benefits, which can be mitigated through careful planning. The Chad-Cameroon pipeline is one such example. (*See Box 3.*) Although the focus of this first GFW Cameroon report has been on logging, we plan on expanding our scope of work in the future.

Table 3. Concession Area in 1999

Concession Status in 1998-99	**Concession Area (Thousand hectares)**	**Concession Area as a of 1993 Total Forest Cover[a]**
Active Concessions[b]	2,573	11%
Allocated Concessions[c]	1,503	7%
Designated Concessions	3,653	16%
Abandoned Concessions	9,600	42%
Total	17,329	76%

Sources: Concession data from CETELCAF. Forest cover calculated by WRI based on data from *http://fellini.mtv.sai.jrc.it/TREES*

Notes: a. 22.8 million hectares. Includes dense moist forest and secondary and degraded forests. Calculated by WRI based on data from *http://fellini.mtv.sai.jrc.it/TREES*

b. Includes 761,576 hectares of unmapped concessions.

c. Includes 371,497 hectares of unmapped concessions.

The forests of eastern and southern Cameroon are more intensively logged than others.

Map 5 shows the percentage of forest logged in 1998-99.

When logging rights are granted for a particular area, the whole concession is not logged at once. Specific zones (*assiettes de coupe*) or predetermined amounts of standing volume are set to be cut each year. Some areas allocated for logging may never be exploited owing to poor access or excessive costs.

In 1998-99, approximately 350,000 hectares were awarded as either an *assiette de coupe* or *vente de coupe* mostly in the southeastern portion of the country, although portions of the Littoral province remain quite active. Overall, more than 3.5 percent of the forests of Sanaga-Maritime, Nkam, Ntem and Villa, and Boumba and Ngoko departments were actively logged that year. Relatively small concession areas are found around urban centers, such as Yaoundé, or in the northern parts of the forest domain, where mostly secondary and degraded forest remains. (*See Map 5.*)[68]

BOX 2: Logging and the Dja Reserve

Logging development threatens the integrity of Cameroon's protected areas in a variety of ways. As noted in this report, active concessions fall within the boundaries of several forest reserves. Although no legal concessions are found within Dja, Cameroon's largest protected forest, this reserve is now encircled by active licenses, apparently in violation of existing legislation. This development will hamper efforts to protect adjacent forestlands. In addition, logging roads associated with concessions may facilitate access by poachers and others encroaching on the reserve.

Dja, one of Cameroon's oldest protected areas, is renowned for its biodiversity. Covering 526,000 hectares, the reserve is home to 14 primate species (including western lowland gorillas, chimpanzees, and mandrills), elephants, leopards, buffaloes, and pangolins along with a wide range of plants, birds, and reptiles. Created as a Forest and Hunting Reserve in 1950, it was subsequently afforded status as a Biosphere Reserve in 1981 and a World Heritage Site in 1987 in recognition of its global conservation importance.[1]

In the early 1970s, the first logging licenses were granted in the proximity of the Reserve. Logging accelerated during the 1980s with an increase in exploitation licenses, which pushed this activity eastward (CFB, license 1740; Pallisco, 1758; SOCIB, 1791; LOREMA, 1811; Pallisco, 1818; SEPFECO, 1838).[2] During the 1990s, forest exploitation intensified, marked by the multiplication of *ventes de coupe* north, west, and east of the Reserve.

The legal status of these concessions appears to be questionable. Article 7 of the *document des normes* calls for a buffer zone that is "a protected area around the boundaries of each National Park, natural reserve, or wildlife reserve." Article 11 of that document notes that

> "the holder of a title of forest exploitation cannot conduct forest development activities on the following types of land:
> 1. areas protected for wildlife,
> 2. forest reserves,
> 3. buffer zones."

In the absence of a final management plan, forest exploitation around Dja continues unfettered on the lands that by law belong in a buffer zone.[3] This development hampers opportunities to protect surrounding forests that would help ensure the integrity of one of Cameroon's most important conservation areas.

Notes

1. World Conservation Monitoring Centre http://www.wcmc.org.uk/protected_areas/data/wh/index.ht
2. Rapport intermcdiaire 1 projet conjoint Cameroon Environmental Watch, CARPE et ECOFAC Cameroun, Février 1999 (CEW, 1999).
3. Ngoufo, "Exploitation forestière, une menace croisante," *Moabi* newsletter no. 078 Juin 1999.

On average, 5 cubic meters of logs per hectare per year are produced in Cameroon.

Unlike other parts of the world, logging companies in the Congo Basin rarely practice clearcutting. High transportation costs and a demand for specific woods from European markets have resulted in logging companies only harvesting the best quality trees of a limited number of species. This selective logging implies a low extraction rate per unit area. In reality, this practice causes overexploitation of specific species, and has been characterized as timber mining. Proper regeneration of logged areas is often prevented by logging companies returning for second cuts too soon[69] and increased agricultural and hunting pressures associated with logging road access.[70]

Box 3: The Chad-Cameroon Pipeline

Cameroon's forests are subject to a range of development pressures, including those associated with energy production. One controversial project, which has generated international attention, is the proposed Chad-Cameroon Petroleum Development and Pipeline Project (PDP). Three of the world's largest oil companies, Exxon, Shell, and the French company Elf Aquitaine, were the original promoters of this project, along with the World Bank. At an estimated cost of US$3.5 billion, the project would link 300 new oil wells in southern Chad with a marine terminal in Kribi by an 880 kilometer pipeline running through Cameroon.[1] The World Bank calculates that even after considering environmental costs and benefits, the project is a net gain to Cameroon. They estimate that Cameroon will earn US$448-494 million over the lifetime of the pipeline.[2] The project is also expected to generate nearly US$2.5 billion over 25 years for Chad.[3] World Bank financing, projected at US$370 million, is considered critical to the success of the project.[4] With World Bank approval, the companies expect not only to attract other investors, but also to mitigate disruption from corruption and political instability.[5]

In recent months, the project has hit several snags. In mid-November, Royal Dutch Shell and Elf Aquitaine unexpectedly began to reconsider their involvement in the project. Although the companies had not made an official decision as of early January 2000, speculation by the Chadian government and reports from environmental organizations suggest that withdrawal is imminent. The rationale for their decision is unclear, but political uncertainty and questions over whether the World Bank would agree to finance the project seem to have played a crucial role. Exxon has remained committed to the project and is trying to find investors to make up for the nearly 60 percent investment Elf and Shell had made in the PDP.[6]

In addition to financial problems, the PDP has also been hampered by charges that it poses a significant environmental risk to natural habitats. The pipeline would cross seven major rivers in Cameroon and would travel through forests, savannas, and settlements of the Bakola pygmies. The Kribi region, the proposed site for the terminal, includes relatively undisturbed natural areas and supports a thriving local artisan and fishing community. The offshore loading facility at Kribi, where millions of barrels of oil would be transferred to tankers, would be a single-hulled vessel, potentially vulnerable to spills. The Environmental Defense Fund has lobbied hard against this development, claiming it poses serious risks to Cameroon's forests, littoral habitats, wildlife, and indigenous peoples.[7]

In their environmental assessment of the Cameroon portion of the project, the World Bank concedes that impacts on Cameroon's ecology would include removal of vegetation and trees, potential unplanned settlements, soil erosion, possible spread of invasive species, and facilitation of illegal hunting and logging activities.[8] The World Bank addressed some of these environmental issues in a summer 1999 report on the status of the PDP:

> The pipeline will be routed to minimize adverse environmental impact on the natural habitat and people . . . . The pipeline [will largely follow a course where there are existing roads or railways] and avoid undisturbed forest areas . . . as well as Bakola pygmies villages, dwellings, and cultural property . . . .
>
> The private sponsors plan to finance the conservation of two new national parks in Cameroon (Campo-Ma'an and Mbam-Djerem), which will exceed an area of about half a million hectares. . .[9]

Nevertheless, even with the changes made as a result of the environmental assessment, several NGOs and prominent African figures, including Archbishop Desmond Tutu, have called for a two-year moratorium on construction.[10] They are concerned that corruption will prevent potential oil revenues from benefitting the general population of Cameroon. In addition they feel that the technical and environmental guarantees are insufficient.[11]

Notes:

1. Environmental Defense Fund. "The Chad Cameroon Oil and Pipeline Project: Putting People at Risk." Online at : http://www.edf.org (January 26, 2000).
2. Esso Exploration and Production Chad Inc., Dames and Moore, COTCO/ Esso Pipeline Company, and Societé Nationale des Hydrocarbures. [*Chad, Cameroon-Petroleum Development and Pipeline Project: environmental assessment. (Vol. 7.)*] (Washington, DC: The World Bank Group, 1998). Online at: http://www_wds.worldbank.org (February 20, 2000).
3. Africa News Online. 1999. "IRIN Focus on the Chad-Cameroon oil project." Online at: http://www.africanews.org (February 20, 2000).
4. Mbendi. "Oil Industry Profile–Upstream Cameroon." Online at: http://www.mbendi.co.za/indy/oilg/oilgcaus.htm (February 20, 2000).
5. Rainforest Action Network. *World Rainforest Report.* (San Fransisco: Rainforest Action Network, 1999). Online at: (http://www.ran.org/ran (February 20, 2000).
6. Africa News Online. 1999. "IRIN Focus on the Chad-Cameroon oil project." Online at: http://www.africanews.org (February 20, 2000).
7. Environmental Defense Fund. "Open letter to Mr. James D. Wolfensohn." Online at: http://www.edf.org (January 26, 2000).
8. Esso Exploration and Production Chad Inc., Darnes and Moore, COTCO/ Esso Pipeline Company, and Societé Nationale des Hydrocarbures. [*Chad, Cameroon-Petroleum Development and Pipeline Project: environmental assessment. (Vol. 7.)*] (Washington, DC: The World Bank Group, 1998). Online at: http://www_wds.worldbank.org (February 20, 2000).
9. World Bank Group. Online at: http://www.worldbank.org/afr/ccproj/project.htm (January 26, 2000).
10. Environmental Defense Fund. " The Chad Cameroon Oil and Pipeline Project: Putting People at Risk." Online at : http://www.edf.org (January 26, 2000).
11. Samuel Nguifo, *Centre pour l'Environnement et le Développement.* Personal communication, January 2000.

Map 6 shows an estimation of the volume of timber produced per unit area of forest actively logged in 1997-98 (either under a *vente de coupe* or an *assiette de coupe*). For more information on how these rates were calculated, see Appendix 2: Technical Notes. (*See Map 6.*)

- Studies have shown that logging in Africa leads on average to the destruction of 17 percent of the forest cover. Extracting 3.5 to 5.5 cubic meters per hectare in tropical forests results in the ancillary loss of an additional 2 to 3.8 cubic meters per hectare.[71]
- Production levels for Cameroon's southeastern forests (in the Boumba and Ngoko department) confirm that a high proportion of forest is actively being logged in these regions. These forests, at the heart of Cameroon's remaining primary forest, are being logged at a rate of more than eight cubic meters per hectare per year.
- The Central department in the northern portion of Cameroon's forests, which has a long history of logging, is still under intense logging pressure. More than 10 cubic meters per hectare per year are produced in the Mbam and Kim and the Haute–Sanaga departments. These reported extraction rates may be artificially high because of illegal logging. It is possible that the volumes declared are actually obtained from a larger area than reported.[72]
- The Ntem and Villa department in the south produces less than five cubic meters of logs per hectare but has one of the highest proportions of forest actively logged in the country.

Table 4. Forest Cover, Protected Area, and Concession Area

1993 Forest Cover[a]	22.8 million hectares
Protected Area[b]	1.4 million hectares
Unprotected Forest Cover	21.4 million hectares
1999 Concession Area[c]	7.7 million hectares
Protected Area as a Percentage of 1993 Forest Cover	6.1%
1999 Concession Area[c] as a Percentage of Unprotected Forest Cover	36%
1959–1999 Cumulative Concession Area[d] as a Percentage of Unprotected Forest Cover	81%

Sources: Concession data from WCMC and CETELCAF. Forest cover calculated by WRI based on data from *http://fellini.mtv.sai.jrc.it/TREES*. Protected area calculated by WRI from WCMC data.

Notes:

a. Includes dense moist forest and secondary and degraded forest. Calculated by WRI based on data from *http://fellini.mtv.sai.jrc.it/TREES*

b. Calculated from WCMC spatial data.

c. Includes active, allocated and designated concessions. Also includes 1.1 million ha of concessions not represented on the maps.

d. Includes abandoned, active, allocated and designated concessions. Also includes 1.1 million ha of concessions not represented on the maps.

Ventes de Coupes *made up 55 percent of all concession area logged in 1998-99.*

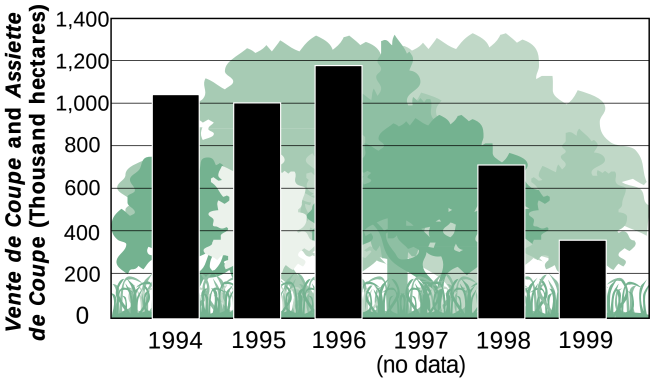
- Little georeferenced information exists for *ventes de coupe*, which are rarely depicted on official government maps. GFW was only able to determine in which departments they are located. Despite accounting for less than 5 percent of allocated concession land, their impact on forest resources should not be minimized, as *ventes de coupe* represent the majority of the area logged in a particular year (almost 200,000 hectares in 1998-99).

Records indicate that the annual area logged decreased by 66 percent between 1994 and 1999.

Given that production levels between 1994 and 1999 have decreased by only 10 percent, it is interesting to note that the area logged per year seems to have decreased at a significantly greater rate, according to official records. This may be explained by one or more of the following reasons.

1. Areas logged may not be fully reported as a result of unauthorized logging or incomplete official records.
2. Logging companies are extracting more timber volume per hectare in response to market demand for a broader array of species.

Figure 11: Area Harvested in 1994-99



Sources: Richard Eba'a Atyi, *Cameroon's Logging Industry: Structure, Economic Importance and Effects of Devaluation.* CIFOR, paper 14, (August 1998); GFW Cameroon based on information provided by SIGIF.

The government has expressed intentions of reducing the annual logging area to approximately 230,000 hectares by the time the Permanent Forest Domain has been fully allocated.[73] If such is the case, and current extraction rates are maintained, annual production should level out at approximately 1.1 million cubic meters per year,[74] a 63 percent decrease compared to 1998 production volume.

WHO IS LOGGING CAMEROON'S FORESTS?

By 1998, 479 logging companies were registered in Cameroon, up from 177 in 1990 and 106 in 1980.[75] This reflects a trend toward increasing investment in the logging industry, reportedly in part driven by recent declining revenues from cocoa and other agricultural products.[76] However, only a portion of these registered logging companies hold current concessions.

In 1999, 84 individuals and companies had valid documented logging rights (licenses, concessions, or *ventes de coupe*) within Cameroon's forests. As is the pattern in many countries, a small number of operators control much of the area being logged. On paper, it is difficult to get a clear picture of who the key actors are in the Cameroon logging sector because of the widespread practice of subcontracting (*affermage*) to multiple subsidiary companies and the lack of information about the companies and individuals registered as concession owners. However, it is commonly accepted that a few large, mostly European, companies tend to dominate the industry. For example, GFW has documented that almost two thirds of the concession area is partially or wholly controlled by non-Cameroonian companies, although the affiliation of 19 percent of concession owners recorded is unknown. In part because they are better capitalized, foreign companies play a disproportionately important economic role in the logging sector. According to a recent CIFOR study, in 1996 foreign companies and joint ventures exported over 70 percent of Cameroon's timber, while non-Cameroonians owned more than half of sawmills and other primary processing facilities, including those with the greatest processing capacity.[77]

One third of Cameroon's concession owners hold three quarters of the concession area.

Out of 84 registered concession holders in 1998-99, 25 held 75 percent of the concession area. Cameroon's forests are controlled by a small group of operators who, through their management strategies and logging practices, could significantly affect the future of this natural resource. The number of influential operators may actually be lower given the extent of subcontracting and subsidiaries. For example, the Hazim group may not log large areas, but through subcontracting to numerous smaller logging companies, it was one of the largest log exporters in 1998-99.[78] Many of the 84 registered concession holders are subsidiaries of larger parent groups. Table 5 shows the affiliations of several concession holders. As Table 5 illustrates, three French companies (Thanry, Bolloré, and Coron) hold almost one third of Cameroon's logging concession area. In addition, many concession holders are nothing more than a registered name on the logging title, while the real beneficiaries are subcontracted logging companies.[79]

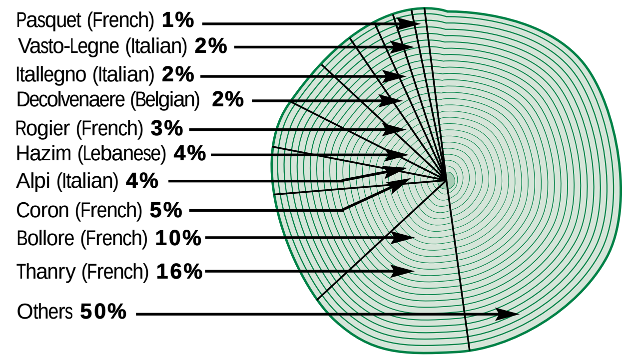
Ten parent groups, including five partially or wholly financed by French assets, hold half of Cameroon's logging concessions.

Map 7 shows the top six parent groups, each of which held more than 100,000 hectares (combining the holdings of their subsidiaries). (*See Map 7 and Figure 12.*)

Foreign companies leased more than half of the concession area in 1998-99.

When joint ventures between Cameroonian and foreign companies are included, foreign operators wholly or partially held close to two thirds of the concession area. Major foreign operators during this period included French companies, which leased over one third of the concession area, as well as Italian, Lebanese, and Belgian interests. They are ranked according to total holdings in Table 6.

Figure 12: Largest Concession Holders, by Surface Area in 1998-99



Sources: GFW Cameroon based on data provided by SIGIF; Greenpeace International, *Buying Destruction,* (Amsterdam 1999); JC Carret (Personal communication, December 1999), Alain Karsenty (Personal communication, December 1999), Dominiek Plouvier (Personal communication, December 1999).

Table 5. Logging Companies and Subsidiaries

Company[a] (Subsidiaries)	Concession Area 1998-99 (Thousand hectares)	Percentage of Total Concession Area 1998-99
Thanry (CIBC, SAB, SEBC, CFC, Prenant)	650	16%
Bollore (La Forestière de Campo, SIBAF)	412	10%
Coron	212	5%
Alpi (Alpicam, Grumcam)	204	5%
Hazim (SFH)	157	4%
Rougier (SFID)	132	3%
Decolvenaere (SOTREF, SFIL)	75	2%
Itallegno (ECAM)	69	2%
Vasto-Legneault (SEFAC)	63	2%
Pasquet (Pallisco)	61	1%
Others	2,019	50%
Total	**4,054**	**100%**

Sources: Concession area calculated by GFW Cameroon based on data provided by SIGIF; Information on companies and subsidiaries derived from Greenpeace International, *Buying Destruction,* (Amsterdam 1999); JC Carret, CERNA (Personal communication, December 1999), Alain Karsenty, CIRAD (Personal communication, December 1999), Dominiek Plouvier, WWF Belgium (Personal communication, December 1999).

Note: a. These companies are called parent-groups in this report.

Table 6. Nationality of Concession Holders

Nationality	Concession Area Allocated in 1998-99 (Thousand hectares)	Percentage of Total Concession Area 1998-99
French	1,466	36%
Lebanese	423	10%
Italian	353	9%
Belgian	75	2%
Other Foreign	13	0%
Mixed	226	6%
Foreign and Cameroonian	715	18%
Undetermined	782	19%
Subtotal Foreign	*2,330*	*57%*
Total	**4,054**[a]	**100%**

Sources: Concession area calculated by GFW Cameroon based on data provided by SIGIF; Information on nationalities derived from Greenpeace International, *Buying Destruction*, (Amsterdam 1999); JC Carret, CERNA (Personal communication, December 1999), Alain Karsenty, CIRAD (Personal communication, December 1999), Dominiek Plouvier, WWF Belgium (Personal communication, December 1999).

Note:
a. Due to rounding, numbers do not add up.

HOW IS FOREST DEVELOPMENT LEGISLATED AND REGULATED?

Prior to 1994, Cameroon's forest resources were regulated by the Forest Law of 1981 and the Implementation Decree of 1983, but this legislation failed to provide a legal framework for land-use planning and the integration of forest production and conservation. The World Bank sought to improve forest management in the region by using Cameroon as a model country for developing a forestry policy reform process, which was used as a condition for granting structural adjustment loans. This reform sought to address conflicting economic, social, and environmental goals. The lessons learned during that process are of national and regional importance, because Cameroon's innovative reforms could inspire policy reforms elsewhere in the Congo Basin to improve forest management.[80]

On January 20, 1994, parliament passed law 94-1, which regulates Cameroon's forestry activities. This law was followed by decree 95/531/PM, which detailed the implementation of forestry regulations. This law introduced four major changes:[81]

- Allocation of concessions through an auction system;
- New pricing and taxing mechanisms;
- Requirements for management plans; and
- Provisions for community forestry.

The Main Provisions of the Current Forestry Code

Forest Estate

Forests in Cameroon are divided between the Permanent Forest Domain and the Nonpermanent Forest Domain.

By law, the Permanent Forest Domain must cover at least 30 percent of the national territory and is further divided into council forests (*Forêts Communales*) and state forests (*Forêts Domaniales*), which include protected areas and logging concessions.[82]

The Nonpermanent Forest Domain includes the remaining forests, which may be converted to non-forest land. The law provides for community forests, which are designed to promote village-based forest resource management. To this end, the government is supposed to provide communities with free technical assistance.

Logging

Any logging activity is subject to approval by the authority in charge of forests and can only be granted to residents of Cameroon or companies registered in Cameroon.[83]

Table 7. Types of Logging Titles

Types of Logging Title	***Ventes de Coupe***	**Exploitation Permits**	***Autorisation de Récupération***	***Convention d'Exploitation* (UFAs)**
Ownership	Some are reserved for nationals.	Reserved for nationals.	Reserved for nationals.	Some are reserved for nationals.
Allocation Process	Allocated by the minister in charge of forests, after a competitive call for tenders.	Allocated by the minister in charge of forests.	Allocated by the provincial representative of the ministry in charge of forests.	Allocated through a competitive bidding process, after preselection by a government commission.
Location	In the Nonpermanent Forest Domain and the Permanent Forest Domain.[a]	In the Nonpermanent Forest Domain.	In the Nonpermanent Forest Domain.	In the Nonpermanent Forest Domain.
Time Period	Allocated for one year with two renewals possible.	Allocated for one year maximum.	Allocated for three months maximum.	Allocated for 15 years renewable, reassessed every three years.
Maximum Volume or Area	2,500 hectares in size.	May not exceed 500 cubic meters in volume.	May not exceed 30 cubic meters in volume.	May not exceed 200,000 hectares.
Management Requirements				Require management plans, construction of a processing industry, involvement of local populations, etc. In the first three years of a concession allocation, the owner is allowed to log one *assiette de coupe* per year.[b]

Source: Law 94/01 of January, 20th 1994. Section 45, 46, 48, 49; Decree 95/531/PM of August 23rd, 1995. Articles 67, 81, 82, 86, 91; Ministère de l'Environnement et des Forêts. 1999. *Planification de l'Attribution des Titres d'Exploitation Forestière.* Yaoundé, Cameroon.

Notes:

a. There is some confusion regarding elements of the law as it applies to restrictions on logging titles. For example, government reviewers indicated that *ventes de coupe* were illegal in the Permanent Forest Domain, and that both national and foreign logging companies could operate in the Permanent Forest Domain, which is contrary to information provided to us by the World Bank.

b. Decree 95/531/PM of August 23rd, 1995. Article 67.

• Logging in the Permanent Forest Domain is carried out in the state forest through *vente de coupe* or a *convention d'exploitation*. The latter is commonly called a concession and may be composed of one or more *Unités Forestières d'Aménagement* (UFA).[84]

• Logging in the Nonpermanent Forest Domain is carried out through vente de coupe, a permit, or an autorisation de récupération.

Management Plans

Logging companies holding UFAs are responsible for developing management plans and submitting them to the Ministry of Environment and Forests (MINEF) within three years of the concession allocation. These plans must address the ecological, economic, and social aspects of maintaining a sustainable logging operation, as defined by administrative texts (Decisions 0107/D/MINEF/CAB and 0108/D/MINEF/CAB of February 9th, 1998.) Each concession is supposed to be divided into sections to be logged during a five-year time frame, with an overall rotation period of 25 years. These sections are further subdivided into five assiettes de coupe. To date, 10 companies have completed vegetation inventories, and 3 have submitted full management plans. Once these plans are accepted, the logging rights are finalized and the 15-year validity period officially begins.[85]

Forest Taxation

The information presented in Tables 8 and 9 is for direct forestry taxes only. Other nonforestry taxes are applied to logging activities, just as they are to any other economic activity in Cameroon. Forestry taxes are established annually by a fiscal law.[86]

Table 8. Basic Forestry Taxes

Stumpage Tax	Allocation Tax[a]	Export Tax	Transfer Tax
2.5% of FOB[b] price.	Applied per year per hectare. 1,500 CFA Francs (US$ 2.40) for UFA concessions and licenses. 2,500 CFA Francs (US$ 3.90) for Vente de Coupe	Applied to volume of raw logs exceeding the allowed quota. Varies from 8,000 CFA Francs (US$ 12.60) to 15,000 CFA Francs (US$ 23.60) per cubic meter.	100 CFA Francs (US$ 0.16) per hectare.

Source: *Contribution du Secteur Forestier à l'Economie Nationale*. Ministère de l'Economie et des Finances. Yaoundé, Cameroon, 1998.

Notes:
a. These are only base rates, to be paid by hectare and by year. The full price incorporates the level of the bid over that base rate.
b. FOB = Free On Board.

Table 9. Comparison of Cameroon and Gabon's Forestry Taxes

Amount Actually Recovered, 1997	Cameroon (Million CFA)	Cameroon (Million US Dollars)[a]	Gabon (Million CFA)	Gabon (Million US Dollars))
Area Tax	1,145	1.8	66	0.1
Export Tax	29,200	46	16,672	26.3
Other[b]	6,408	10.1	2,140	3.4
Total	**36,753**	**57.9**	**18,878**	**29.8**

Sources: *Analyse du système actuel de fiscalité forestière au Gabon.* Ernst and Young, 1998. *Contribution du Secteur Forestier à l'Economie Nationale.* Ministère de l'Economie et des Finances. Yaoundé, Cameroon 1998.

Notes:
a. As of January 8th, 2000, 100 CFA Francs = 0.1576 US Dollars.
b. Other taxes in Gabon include allocation and transformation taxes. In Cameroon, they include stumpage, auction revenues, transfer taxes, etc.

Cameroon's forestry fiscal revenues are twice as high as those of Gabon.

This difference in revenue is shown in Table 9.

The new taxation system increased fiscal revenues, boosting the share value of the wood from 6,000 CFA (US$9.40) to 10,000 CFA (US$15.80) per cubic meter;[87] however, tax recovery is still a major problem. This responsibility has shifted from the MINEF to the Ministry of Economy and Finance, which has contracted an independent Swiss company (SGS) to control log exports going through Douala.[88]

HOW DOES COMPLIANCE ALIGN WITH EXISTING LEGISLATION?

GFW Cameroon assessed compliance with existing forest regulations through a two-tiered process. We conducted an overall coarse-scale assessment for the country using readily available information and focusing primarily on the legal status of concessions. We followed this up with a fine-scale assessment, examining the types and numbers of citations issued for noncompliance with regulations. For the fine-scale assessment, we focused on two major forest provinces in Cameroon, the East and the Central. This work is based on provincial records and field-derived information.

Our results indicate significant and widespread irregularities, both in the status of existing concessions and in the enforcement of existing regulations. These are documented below. When available, we have provided possible explanations for these irregularities. In general, low levels of compliance appear to be caused by legal loopholes, a lack of enforcement owing, at least partially, to a lack of administrative capacity (*see Box 4*), and corruption.[89]

Results of the Coarse-scale Assessment

We conducted the coarse-scale assessment through literature searches highlighting examples of infraction and by collecting national government data on logging rights allocation and activity. This analysis is not complete. For example, it has been reported that individuals with "suspicious documentation"[90] have been authorized to carry out logging activity. We did not attempt to examine the paper trail behind the granting of concessions that appeared to be in compliance with existing regulations.

Fifty-six percent of licenses were operating irregularly in 1997-98.

The MINEF used to allocate licenses, a formally used type of logging title, with a duration of up to five years. Licenses were replaced in the 1994 law by logging concessions (convention d'exploitation) composed of one or more UFAs, but as the new legislation was not immediately applied, a few licenses were allocated up until 1995. Special arrangements allow license holders to extend their logging rights for up to three years after their licenses have expired. During this period, only one assiette de coupe (2,500 hectares maximum) was awarded per year per license.[91]

- A license is operating irregularly if:

1. it has expired, but has nonetheless been awarded an *assiette de coupe*.
2. it is operating in a protected area;
3. it has been allocated after 1994.

- According to government records[92], during the period 1997-98, 29 of 52 active[93] licenses (56 percent) continued to operate even though the duration of their logging rights had expired. (*See Map 8.*)

- One of those, License 1702, belonging to La Forestière de Campo, is located within the boundaries of the Campo Reserve, Cameroon's second largest protected area.

One fourth of the UFA concession allocations appear to comply fully with the guidelines set by the new legislation.[94]

At least 21 of the 31 allocated UFAs did not go to the highest bidder.

Thirty-three UFAs were scheduled to be allocated by 1999. Of these 33 UFAs, 7 were allocated through a discretionary process (*de gré à gré*) in 1996, violating the new legislation that called for a competitive allocation process. The remaining 26 UFAs underwent a public and competitive bidding process in 1997. To ensure that only qualified operators were considered in this bidding process, an interministerial committee preselected and ranked bidders according to financial, technical, and past performance criteria. The highest bidder from that list was then to be awarded the concession.[95]

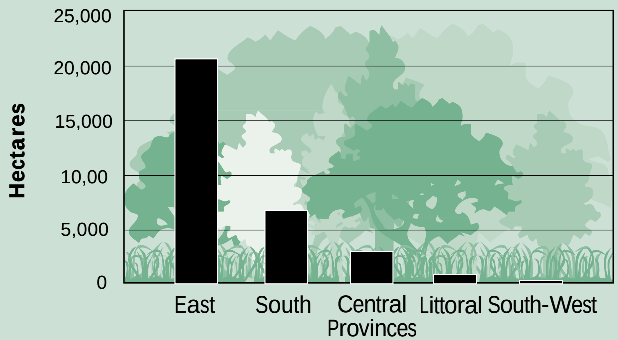
BOX 4: Logistical Capacity of the Ministry of Environment and Forests

The Ministry of Environment and Forests (MINEF) employed 2,340 people in 1999. Approximately 13 percent of the employees were assigned to the central administration, while the remaining were delegated to various external services (provincial offices, l'Office National de Développement des Forêts (ONADEF), and bilateral forestry projects, among others). As of December 1999, many MINEF employees were still waiting for an assignment within a specific service, which may explain the reportedly decreasing efficiency of the Ministry.

Staff Shortages Undermine MINEF's Work. MINEF stopped hiring new staff in 1992, and has been losing 10 to 15 employees per year through retirement. Table A presents data on the logistical capacity for five provinces where most of Cameroon's logging operations were found in 1998-99. The East province, home to the majority of the concession area, had far fewer MINEF agents overall and fewer agents per area under concession than most other forested provinces. In the five major forested provinces combined, there was on average one MINEF field agent responsible for the inspection of 5,000 hectares of concession. In the East province alone, in 1998-99, one MINEF field agent was responsible for an average of almost 21,000 hectares of concession. It appears likely that there is inadequate MINEF oversight in the East province given the level of logging activity occurring there.

Field staff from MINEF suffers from limited transportation means and office space. Because of inadequate transportation, most MINEF agents are unable to reach logging concessions to be inspected by their own means. In the late 1980s, MINEF was forced to sell most of its vehicles as a result of the economic crisis. In 1998, each provincial office then acquired one four-wheel-drive vehicle. The departmental offices remained without transportation, except for vehicles made available by some bi- and multilateral projects. However, maintenance of these vehicles remains a constant issue. Many provincial and departmental offices also suffer from nonexistent or inappropriate buildings.

Figure A: Concession Area per Agent, 1998-99



Sources: Théophile Ndjodo, *Présentation Succinte des Conditions de Travail et des Capacités Logistiques du Ministère de l'Environnement et des Forêts du Cameroun*, (Unpublished).

Table A. Summary of MINEF's Logistical Capacity

Provinces	East	South	Central	Littoral	South-West
Number of Agents	116	115	232	167	163
Number of 4WD Vehicles	1	1	1	1	1
Number of Motorbikes	4	4	10	4	6
Concession Area (hectare) per Agent	2,0859	6,608	2,762	306	31

Source: Théophile Ndjodo, *Présentation Succinte des Conditions de Travail et des Capacités Logistiques du Ministère de l'Environnement et des Forêts du Cameroun*, (Unpublished).

Technical Notes:

A few administrative reports document MINEF's logistical capacity, but an accurate and up-to-date evaluation would require field trips to the various provincial offices. We were unable to conduct such a study at this time. The information presented here on the logistical situation provides a cursory overview documented by existing official reports.

The number of agents presented in Table A refers to agents assigned to forestry monitoring and regulation enforcement within five provincial or departmental offices. It does not reflect agents assigned to multilateral projects, ONADEF, or wildlife services.

Concession areas presented in this box were provided by the MINEF author and differ by approximately 5 percent from those presented in the rest of the report. The ratios of concession area per agent were calculated with the concession area numbers shown in Table B.

Table B. Concession Area Used for Ratios Presented in Box 4

Province	Concession Area 1998-99 (hectares)
East	2,419,601
South	759,949
Central	640,803
Littoral	51,160
South-West	5,000

Source: Théophile Ndjodo, *Présentation Succinte des Conditions de Travail et des Capacités Logistiques du Ministère de l'Environnement et des Forêts du Cameroun*, (Unpublished).

Source:

This box is based on an unpublished assessment of MINEF's logistical capacity by Théophile Ndjodo, MINEF's focal point for Global Forest Watch Cameroon.

A total of 24 out of 26 UFAs were allocated at this auction.[96] Thus, over the period 1996-97, 31 UFAs were allocated, including the 7 UFAs allocated *de gré à gré* in 1996. We were able to obtain documentation for the allocation of only 23 of these UFAs.[97]

What happened to these 23 UFAs? *(See Map 9.)*

a. Five UFA concessions were granted to bidders not recommended by the interministerial commission and who had not offered the highest bid. According to the law, this is irregular.

b. Nine UFA concessions were allocated to bidders recommended by the interministerial commission, but who had not offered the highest bid. Under the law, it is difficult to determine whether these were regular or irregular allocations. Some of these allocations seem to have been discretionary. For example, UFA 10-057 was given to M. Mbeng, who received the highest technical ranking, but had only made the seventh highest financial offer. The commission justified this allocation on the grounds that M. Mbeng is the ex-director of the forest department and had South African partners. The highest competing bidder offered 10 times more than M. Mbeng and had received the second highest technical ranking.[98] One of these UFAs (UFA 09-013 allocated to the MAF company) was ultimately cancelled for nonpayment of the bid.[99]

c. Three UFA concessions were allotted to bidders not recommended by the commission, who nevertheless had offered the highest bid. Under existing legislation, it is unclear if these were regular allocations or not. It is also unclear why the commission did not recommend these bidders, as they had received qualifying technical grades.

d. Finally, 6 of the 23 UFA concessions were allocated to bidders recommended by the commission and who had offered the highest bid. According to the law, these allocations seem to be completely regular.

Table 10. Revenue Foregone During the Allocation of UFAs in 1997

UFA	Size (ha)	Allocated Bid Price (CFA/ha)	Total Bid for UFA (1,000 CFA)	Highest Proposed Bid (CFA/ha)	Total Highest Proposed Bid (1,000 CFA)	Revenue Foregone (1,000 CFA)
08-003	53,160	1,000	53,160	2,520	133,963	80,803
09-025	96,334	800	77,067	2,300	221,568	144,501
09-013	52,011	1,550	80,617	1,700	88,419	7,802
09-021	41,965	400	16,787	1,300	54,554	37,769
09-023	56,192	450	25,286	2,025	113,789	88,502
10-009	88,796	1,050	93,236	3,700	328,545	235,309
10-012	62,597	750	46,948	1,000	62,597	15,649
10-015	155,421	1,000	155,421	2,725	423,522	268,101
10-018	65,832	900	59,249	3,700	243,578	184,330
10-021	71,533	2,500	178,833	4,500	321,899	143,066
10-023	62,389	1,600	99,822	4,100	255,795	155,972
10-029	46,922	400	18,769	1,300	60,999	42,230
10-041	64,961	1,400	90,945	2,350	152,658	61,713
10-057	32,293	465	15,016	5,000	161,465	146,449
Total	**950,406**		**1,011,155**		**2,623,352**	**1,612,196**[a]
Total (in US Dollars)[b]			**1,593,580**		**4,134,403**	**2,540,820**[c]

Source: Résultat des déliberations de la commission interministerielle d'attribution des concessions forestières. Session de Mai 1997.

Notes:

a. Calculated by summing up the revenue foregone for each concession in this table.

b. As of January 8th, 2000, 100 CFA Francs = 0.1576 US Dollars.

c. Calculated by converting the revenue foregone in CFA.

The government has foregone more than US$2.5 million by not allocating 14 UFAs to the highest bidder.

The government lost 1.6 billion CFA (roughly US$2.5 million) by not allocating concessions to the highest bidder in 1997.[100] Given the 7 UFAs allocated *de gré à gré* in 1996 (circumventing the bidding process), this figure is an underestimation. This 1.6 billion CFA is approximately 4 percent of the forestry tax revenues in 1997–98.

In an attempt to increase transparency in future concession allocations, an independent monitor will be involved as of 1999.

The confusion and irregularities that have plagued the new bidding process have been a source of frustration for the World Bank, the logging companies, the government, and concerned citizens' groups. The government of Cameroon and the World Bank have agreed to improve the bidding process and appoint an independent observer to ensure that future allocations are made in accordance with the agreed procedures. To date, some of the concessions seemingly irregularly allocated in 1997 have not been paid for and management plans for these areas have yet to be initiated as required by law. As a result, the MINEF has formally communicated to these companies that failure to comply with payment and management plan requirements will result in the concessions being returned to the administration at the end of the three-year provisionary contract. The World Bank has advocated earlier cancellation. However, given the nature of the 1997 provisionary contracts and the reported protection that some of the concessionaires seem to enjoy from high ranking authorities, the MINEF seems to lack the capacity to address this issue fully and promptly.[101]

Concession allocation temporarily stopped after 1997 in order for all parties to clarify the procedures. However, the logging sector was prosperous at that time, and people were eager to have logging titles. Unable to acquire UFAs, logging companies obtained an increasing number of *ventes de coupe* and *autorisations de récupération* and at times even engaged in logging without any authorization.[102] An additional 26 UFAs are set to be allocated in January 2000.

The transition to a logging landscape dominated by UFA concessions has slowed, and companies are increasingly shifting to more easily obtainable and flexible *ventes de coupe*. The government supposedly allocates these *ventes de coupe* according to the same competitive bidding process, and 54 *ventes de coupe* were placed on the auction block in August 1999. These allocations were the first to be reviewed by an independent observer, who wrote a critical report of the process.[103] However, GFW was unable to access this report prior to publication of our results.

Three companies hold more than 200,000 hectares of concessions, in violation of the law.

As noted earlier, many companies are subsidiaries of larger groups. However, each subsidiary company is recognized as its own legal entity, and according to section 49 of law 94-1,[104] each company is entitled to a maximum of 200,000 hectares of concession area. Three subsidiary companies, all French-owned, operate in violation of this law: SIBAF (1 license, 1 UFA), CFC (4 UFAs), and Coron (2 UFAs). Their combined concession area represents 16 percent of the total concession area allocated in 1998-99. Through their subsidiary companies, some parent groups hold more than 500,000 hectares.[105]

Local communities do not always receive the financial compensation they are entitled to from logging companies.

Theoretically, within the Permanent Forest Domain, 10 percent of the tax levied on concessions (UFAs) is to be paid to neighboring local communities.[106] Within the Nonpermanent Forest Domain, a percentage of the felling tax levied on *ventes de coupe* is to be paid to neighboring local communities.[107] An administrative order set that *vente de coupe* holders should pay 1,000 CFA per cubic meter to communities, but it was ultimately cancelled.

In practice, there are a wide variety of arrangements made between local communities and logging companies. Although it sometimes took protests, roadblocks, and other civil disobedience actions,[108] some communities have been able to attain their due compensation from logging companies as dictated under national laws.[109] There are, however, accounts of logging companies not respecting the guidelines for distributing revenues to local communities.[110]

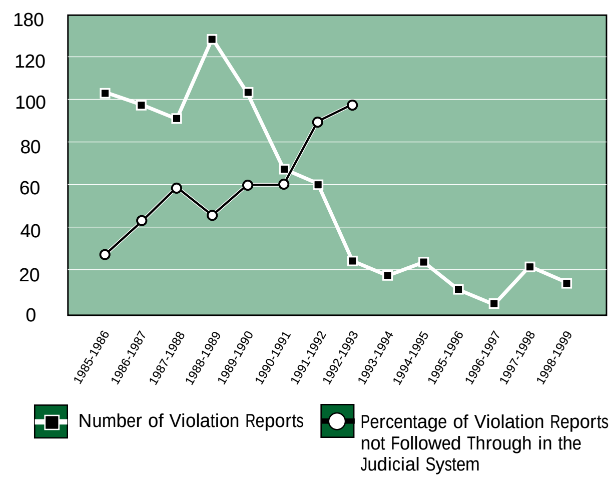
The log export ban has not been implemented.

Article 71 of law 94-1 set a local wood-processing objective of 70 percent to be achieved by 1999, at which time a log export ban was scheduled to take effect. As of 1998, according to ITTO figures, logs still made up more than 70 percent of exports. A June 1999 administrative order essentially loosened these restrictions. Under this revision, a log export ban was applied to 20 timber species; however, exceptions were made for two species, Ayous and Sapelli. This exception allowed for much of Cameroon's current logging trade to continue because these two species represented more than a third of all logs exported in 1997.[111] However, in August 1999, the government issued another set of guidelines that banned Sapelli exports while allowing for continued exports of Ayous and opening possibilities for the promotion of other currently underutilized species.[112]

Results of the Fine-scale Assessment

We conducted the fine-scale assessment in both the Central and the East provinces by collecting provincial government data, as well as field data on specific logging violations and the ensuing judicial process. A violation report is an official documentation established by a MINEF agent, when he or she witnesses an offense of the forestry law. These reports are a good starting point for monitoring the type of infractions committed and the ability, or willingness, of the government to enforce its policy.

Figure 13: Survey of Violation Reports, East and Central Provinces, 1985-99



Source: Field survey 1998-1999. Cameroon Environmental Watch.

The number of violation reports registered dropped considerably (85 percent) between 1985 and 1999.

There are at least four possible reasons for the dramatic decline in the number of violation reports.

1. Companies and individuals engaged in logging may have made a greater effort to comply with management laws and regulations.
2. The administration's lack of capacity to enforce the law may have resulted in fewer violations being reported. Progressive economic crises beginning in the 1980s have taken their toll on the technical and logistical resources available for monitoring and controlling logging activities.
3. Government agent uncertainty over regulatory changes associated with the new forest policy reform may have resulted in less monitoring and enforcement.
4. Corruption within the administration may have also encouraged less vigilant reporting of violations and law enforcement. This phenomenon could also explain the restricted access to relevant documents, which made judicial follow-through difficult.

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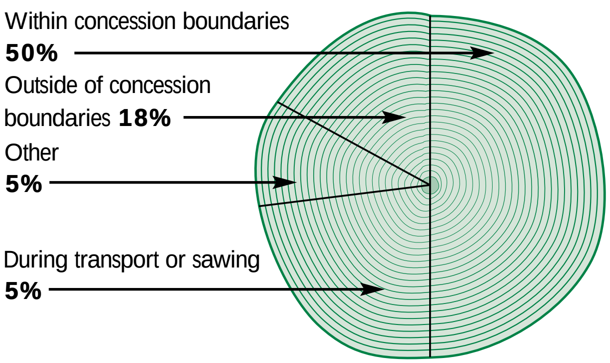
Ninety-six percent of violations reported in 1992-93 were followed by incomplete judicial procedures.

As Figure 13 shows, even when violation reports have been prepared, they increasingly tend to languish in administrative files, rather than be acted upon through the judicial process. Therefore, not only are fewer violations documented, but the vast majority of documented violations do not result in any imposed penalties. We were only able to obtain information on judicial follow-through up to 1993.

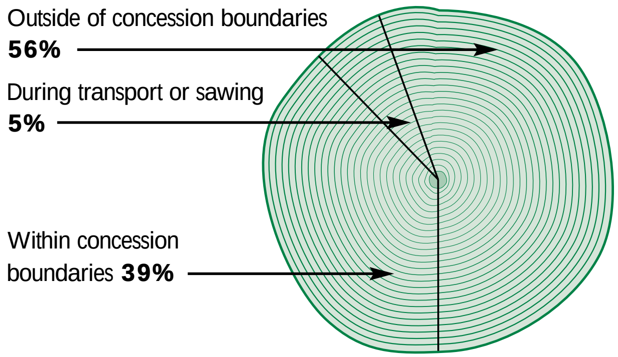
Forty-four percent of logging violations are committed within logging concessions.[113]

Figure 14: Types of Violations in the East Province, 1995-98



Source: Field survey and analysis of data from the Délegation Provinciale de l'Environnement de l'Est, by Cameroon Environmental Watch, 1999.

Figure 15: Types of Violations in the Central Province, 1995-98



Source: Field survey and analysis of data from the Délegation Provinciale de l'Environnement du Centre, by Cameroon Environmental Watch, 1999.

• Violations committed within logging concessions include the felling of the wrong timber species, logging protected timber species, mislabeling logs, and cutting undersized trees. (*See Appendix 2: Technical Notes, for details.*) These types of violations are more common in the East province, where logging concessions are large and remote, and thereby removed from administration oversight. The MINEF agents often depend on logging companies for transportation to and from the concessions to be inspected, which prevents surprise inspections.

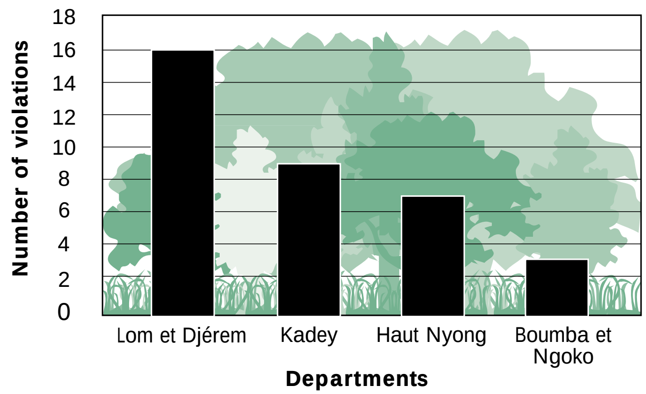
• Violations committed outside of logging concessions include logging without authorization, logging outside of the concession boundaries, and logging within a protected area.[114] These violations are more common in the Central province, where there is less unallocated primary forest compared to the East province.

• Violations committed during transport include hauling logs without authorization, transporting illegally felled logs, and transporting more logs than allowed by law.

Fewer violations are reported in the East province than in the Central province.

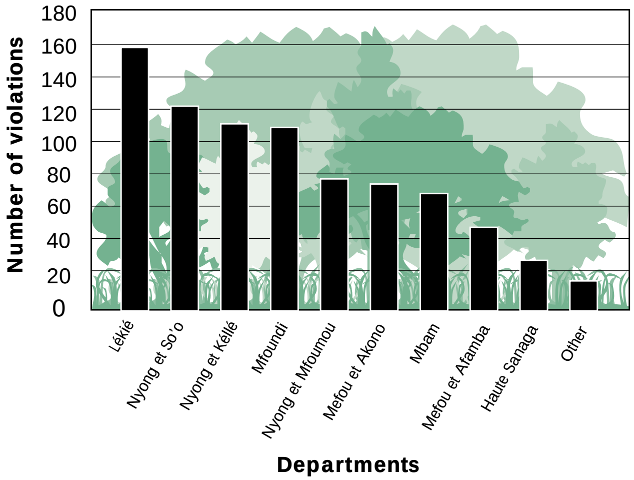
• Despite the fact that more logging is underway in the East province, there were 23 times as many violations reported in the Central province.[115] Although it is possible that individuals and logging companies are increasing efforts to follow regulations, as noted above, the East province is more remote, and, therefore, less frequently and accurately monitored by the administration.

Figure 16: Number of Violations in the East Province, by Department, 1995-98



Source: Field survey and analysis of data from the Délegation Provinciale de l'Environnement de l'Est, by Cameroon Environmental Watch, 1999.

Figure 17: Number of Violations in the Central Province, by Department, 1995-98

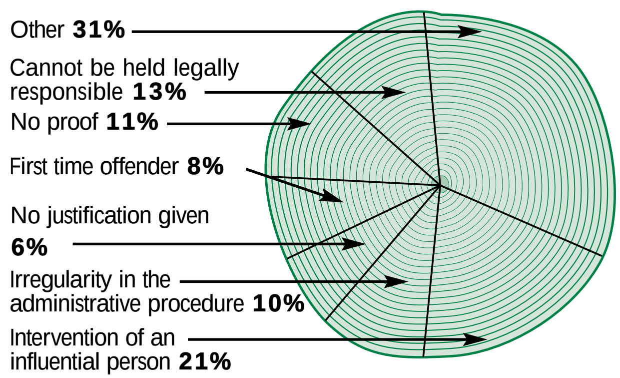


Source: Field survey and analysis of data from the Délegation Provinciale de l'Environnement du Centre, by Cameroon Environmental Watch, 1999.

These results show important subregional differences in reporting. The number of violation reports registered varies tremendously from one department to the next, perhaps reflecting differences in capacity and commitment for enforcing the law, data quality, and local logging practices.

One fifth of all violation reports registered are not fully followed through in the judicial process because of the "intervention of an influential person."

Figure 18: Justification for Incomplete Judicial Follow-through of Violation Reports, 1995-98

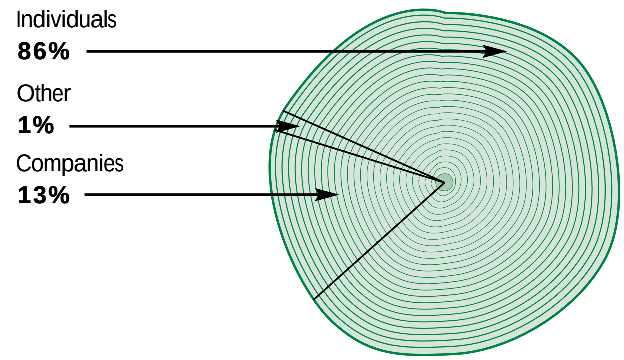


Source: Cameroon Environmental Watch, 1999.

Thirteen out of 63 violation reports that were not subjected to judicial follow-through had been marked with the notation, "stopped at the intervention of an influential person."[116]

Most violation reports are issued against individuals rather than against companies. However, companies own more than five times more logging rights than do individuals.

Figure 19: Categories of Offenders, 1995-98



Source: Cameroon Environmental Watch, 1999.

There are at least three possible reasons explaining this trend.

- Individuals generally have fewer financial means and thus tend to emphasize short-term gain over long-term investment. To this end, they are less committed to following regulations.
- Logging companies, especially the larger ones, have more technical and financial resources for implementing management regulations and tend to be more aware of regulatory details.
- Logging companies often have access to significant amounts of financial resources and, in some cases, have developed important influential connections, which may allow them to avoid administrative scrutiny.