

# DEMOCRATIC REPUBLIC OF CONGO



\* For legend see page 58

## Forest resources

The Democratic Republic of Congo (DRC) has a land area of 234 million hectares and a population of 57 million people. It lies entirely within the Congo Basin, with only 42 km of coastline on the Atlantic Ocean. The north comprises plateaux of 600–800 m in height and, in the south, of 1,000–2,000 m in height. The highest peaks reach 4,500 m in the Virunga volcanic massif on the border with Rwanda and exceed 5,000 m in the Ruwenzori Mountains on the border with Uganda. Some 77% of the country is at an altitude of over 1,000 m. Estimates of total forest cover range from 128 million hectares<sup>a</sup> to 135 million hectares (FAO 2005).

**Forest types.** Moist evergreen and semi-deciduous forests occupy much of the central and western regions, with moist evergreen forests accounting for about a third of the country's forests (35–40 million hectares). Submontane and montane closed forests include montane rainforests with conifers, montane sclerophyllous forests between 1,500 and 3,200 m, and submontane sclerophyllous forests of *Grewia* spp, *Carissa edulis* and *Euphorbia* spp. Swamp forests are extensive in DRC, covering about 20 million hectares, primarily in the central basin.

**Dynamics of forest resource change.** Forests were lost at an estimated annual rate of 532,000 hectares (0.4%) in the period 1990–2000 (FAO 2005). Uncontrolled forest fires occur regularly at the end of the drier seasons and cause local damage to forest stands that have already been opened up, especially in the less-forested areas.

**Permanent forest estate.** There is so far no formal land-use planning in DRC, but pilot zoning is being applied in the *Province de l'Equateur* over an area of 1.8 million hectares<sup>a</sup>. The state forest area (*domaine forestier de l'Etat*) comprises three forest-use types: classified forests, protected forests and permanent production forests. The government plans to establish a forest survey that would formally recognize the PFE<sup>a</sup>. The closed forest area suitable for industrial harvesting has been variously estimated at about 81 million hectares<sup>a</sup> and 60 million hectares (Sebastien & N'Yanga-Nzo 2001). Table 1 shows a possible eventual PFE based on an ITTO estimate.

Table 1 PFE

Estimated total forest area, range (million hectares)	Total closed natural forest ('000 hectares) Source: FAO 2001	PFE ('000 hectares) <sup>d, *</sup>			
		Production		Protection	Total
		Natural	Planted		
128–135	126,236	20,500	55	27,000	47,555

\* The country is in a transitional period in respect to land-use planning. The figures given here are indicative only

**Planted forests.** Planted forests have been established to produce both timber and fuelwood and to protect land from erosion, but the total area is unknown. FAO (2001) estimated the total plantation estate at 96,700 hectares, but this most likely included agro-industrial plantations, particularly of oil palm and rubber; the government of DRC estimated an area of 55,500 hectares<sup>a</sup>.

## **Institutional arrangements**

**Forest tenure.** According to Law 73/021 of 1973, the state is the sole owner of the land and this is confirmed by the new forest code of 2002 (see below). According to this, the local population must be consulted before any area is classified in the planned PFE. Communities or municipalities have customary rights over the forests within their jurisdiction and are able to become long-term concession-holders of such forests. The state can also allocate forests to local communities as community forests.

**SFM policy framework.** DRC has adopted the ATO/ITTO PCI for natural tropical forests in Africa as an instrument for monitoring progress towards SFM.

**Forest policy and legislation.** Forest management was formerly implemented under the colonial Forest Law of 1949 and applied through the *Guide to Forest Exploitation*, which came into force in 1975. A new and comprehensive forest code (Law 11/2002) promulgated in 2002 describes the institutions and responsibilities in regard to forest management and lays down prescriptions for national forest planning and forest management; for example, it devotes an entire chapter to forest management (Title V, Chapter II, articles 71–76) and another to local community rights (Title VIII, Chapter III, articles 111–113). A number of ministerial decrees to implement the code were promulgated in March 2003; these deal with methods for the preparation of forest management plans (*Arrêté ministériel* (AM) 46/03), law enforcement (AM 45/03), reforestation (AM 49/03), forest survey (AM 43/03) and protected forest species (AM 42/03). A number of other decrees dealing with, for example, concession management, community forests, the creation of the PFE and the establishment of a

national forest inventory, still need to be finalized and approved by government. Other relevant new laws are Law 007/03 on mining and Law 015/2002 on labour relations.

**Institutions involved in forests.** DRC has been devastated by about ten years of civil war, which ended officially in late 2002. This left the country with severely damaged infrastructure, an impoverished population and weak or non-existing institutions. The ministry in charge of forests is the Ministry of the Environment, Nature Conservation, Water Resources and Forests (*Ministère de l'Environnement, Conservation de la Nature, Eaux et Forêts*). Within this, the Directorate of Forest Management (*Direction de la Gestion Forestière – DGF*) is responsible for monitoring forest management and harvesting, the Directorate for Water Resources (*Direction des Ressources en Eau – DRE*) for the management of water-related ecosystems, and the Directorate of Fauna and Hunting (*Direction de la Faune et Chasse – DFC*) for game and hunting. A number of governmental services are in place, including: the Permanent Service for Inventories and Forest Management Planning (*Service Permanent d'Inventaire et d'Aménagement Forestiers – SPIAF*); the Congolese Institute for the Conservation of Nature (*Institut Congolais pour la Conservation de la Nature – ICCN*), responsible for the management of protected areas; and the National Reforestation Service (*Service National de Reboisement – SNR*). The lack of trained and motivated staff to manage and control the forests is a crucial bottleneck in building up an effective institutional framework for SFM<sup>a</sup>.

In the present reorganization of state institutions it is intended that the different provinces and districts will be given greater political and economic autonomy. The new forest code includes the concept of community forests, but as yet there are no procedures to put this into effect.

In the 1980s, there were fewer than 100 registered NGOs dealing with natural resource management. Today, more than 1,000 NGOs and associations are involved in forest-related activities. Some multi-national NGOs, including Conservation International, WCS and WWF, have recently engaged in forest conservation in DRC.

## Status of forest management

### Forest for production

The forests near the coast, being relatively accessible, have been logged heavily since colonial times; more recent harvesting has moved into the central basin, where subsistence agriculture is now also affecting some of the swamp forests. Farther inland, outside concession areas, forest harvesting mainly consists of the removal of trees of the most profitable species. The existing legal framework on forest management laid out in Law 11/2002 has not been implemented effectively so far<sup>a</sup>.

Inventories have been carried out over about 21 million hectares, and 16.5 million hectares were mapped before 1992 (ITTO 2003). About 20 million hectares had been allocated to commercial forest operations by mid 2003, but according to DRC forestry officials (pers. comm., June 2005) this area may soon be extended to 50 million hectares. No large-scale concessionaire has been in operation since the end of the war, most of the logging being done on a small scale by forest users who have felling permits but no management obligations (eg for inventory or silviculture). Several interested parties – including mining operators and the military – have been logging without official harvesting contracts. Some large logging companies – mostly foreign-owned – that were active in the past still have legally valid forest concession rights; some of these are interested in re-engaging in the country in the near future should the political situation prove stable. In addition, new foreign-based companies are also prospecting for large-scale forest concessions. According to Law 11/2002, concessions can be allocated for 25 years and are renewable. The maximum area of a forest concession is 500,000 hectares. There are several steps to obtaining forest harvesting rights:

- an authorization for 'forest prospecting' (*autorisation de prospection forestière*) must be obtained to conduct a forest inventory in a given area. This is valid for one year and no harvesting is permitted;
- a letter of intention (*lettre d'intention*) must be secured. This is valid for three years, during which time the concessionaire must invest a minimum of 50% of his planned investment,

particularly in setting up a wood-processing unit. In this period, a concessionaire can, under certain circumstances, begin to harvest timber;

- a supply guarantee (*garantie d'approvisionnement*) must be obtained. This is valid for 25 years and is renewable. It establishes the forest concession and authorizes timber harvesting; and
- cutting permits (*permis de coupe*) are required. These determine the yearly cutting area, limited to 1,000 hectares; a concessionaire may have several cutting permits, depending on the size of the concession. The cutting permit includes a detailed harvesting map and contains information on the timber stand, any protection measures that apply and the social conditions in the area.

In practice, none of these steps are administered in a transparent way. Moreover, the forest service is unable to effectively control illegal logging and other irregular forestry activities (DRC forestry officials, pers. comm., June 2005). Only one zone (Bolobo-Mushie) has a regional forest management plan; this dates from 1986 and covers 1 million hectares (Sebastien & N'Yanga-Nzo 2001).

As of August 2003, two authorizations (347,000 hectares), 27 letters of intent over an area of more than 4.7 million hectares and 112 supply guarantees (granted concessions) over an area of more than 15.5 million hectares were approved, but a further 45 supply guarantees over 9.1 million hectares had not become operative. Even though the number of licences is high, forest harvesting activities are very much less than what would be possible under SFM (see below). Nearly all of the exported timber comes from only six companies, out of which one is producing half. None of the concessions has a management plan (DRC forestry officials, pers. comm., June 2005).

**Silviculture and species selection.** The only silvicultural prescriptions contained in Law 11/2002 are the determination of a minimum harvesting diameter by species and some specific requirements for certain timber species.

The country has an enormous diversity of tree species. The total number of commercial tree species is more than 200, of which about 25 are sold internationally. Some important commercial timbers are shown in Table 2; others include *Gambeya africana* (longhi), *Guarea cedrata* (bossé), *Guibourtia*

**Table 2 Some commonly harvested species for industrial roundwood<sup>a</sup>**

Timber species	Remarks
<i>Gossweilerodendron balsamiferum</i> (tola)	16% of the export value in 2002
<i>Millettia laurentii</i> (wengé)	45% of the export value, mainly from Bandundu region
<i>Chlorophora excelsa</i> (kambala/iroko)	11% of the export value
<i>Entandrophragma cylindricum</i> (sapelli)	6% of the export value
<i>Terminalia superba</i> (limba)	3% of the export value

spp (benge), *Lovoa trichilioides* (dibetou), *Entandrophragma angolense* (tiama), *Entandrophragma utile* (sipo or lifaki), *Entandrophragma candollei* (kosipo), *Pericopsis elata* (afromosia) and *Nauclea diderrichii* (bilinga).

**Planted forest and trees outside the forest.**

*Terminalia superba* (limba) is the main species used in plantations, the first of which were established in 1905. Agroforestry plantations (*taungya*) were introduced in the 1940s and are still widespread. Other species planted for industrial production before the 1960s included *Ceiba pentandra*, *Bombax flammeum*, *Entandrophragma* spp, *Lovoa trichilioides*, *Eucalyptus* spp, *Grevillea robusta*, *Casuarina equisetifolia* and *Cupressus* spp. Species of *Eucalyptus*, *Acacia*, *Pinus* and *Gmelina arborea* have been used for fuelwood and soil protection.

**Forest certification.** So far no forests have been certified in DRC, but some foreign companies are undertaking some baseline studies for certification. DRC participates in the ATO working group on an African certification scheme.

**Estimate of the area of forest sustainably managed for production.** In 2003, no area of production PFE was known to be managed sustainably. However, three forest sites dedicated to forest research and education totalling 284,000 hectares are thought to be so managed (Table 3).

**Timber production and trade.** It is estimated that the closed forest area could sustainably produce about 35 million m<sup>3</sup> per year of industrial wood (Sebastien & N'Yanga-Nzo 2001), but the actual production is far from reaching this figure. Total official production of all roundwood was an estimated 77.2 million m<sup>3</sup> in 2003, but industrial roundwood was only 90,000 m<sup>3</sup> in 2003, down from 170,000 m<sup>3</sup>

in 1999 (ITTO 2004, 2005); however, illegal timber production is likely to have been much higher than that. The country exported an estimated 58,000 m<sup>3</sup> of logs in 2003 (ITTO 2005). Timber-processing capacity has been greatly reduced and needs to be rebuilt.

**Non-wood forest products.** The NWFPs derived from the closed forests are very important all over DRC but particularly in those regions where the prevailing economic hardship is exacerbated by armed conflict. For many people, forests are likely to be the main source of food, medicine and stimulants like cola and palm wine. Wild meat has become scarce in regions where there is armed conflict, thus contributing to malnutrition and famine. No information on the trade of NWFPs was available for this report.

**Forest for protection**

**Soil and water.** No specific measures to promote soil and water conservation in areas of closed forest are in place, although Law 11/2002 cites the need to protect, among others, springs and streams and to conserve soils. Soil and water conservation is regulated by a 1958 decree. Some small plantations have been established for erosion control in the last 30 years.

**Biological diversity.** Of the 11,000 known species of plant in DRC, about 3,200 are considered endemic. Forest inventories suggest that tree species number more than 700, and there are an estimated 415 mammal species and 1,086 bird species. Thirty-two mammals, 30 birds, three reptiles, 13 amphibians and 66 plants are listed as critically endangered, endangered or vulnerable on the IUCN red list of threatened species; of these, 23 mammals, 21

**Table 3 Management of the production PFE ('000 hectares)**

Total	Natural			Planted		
	Allocated to concessions/ under licence	With management plans	Sustainably managed	Total	With management plans	Certified
20,500	15,500*	1,080 <sup>c, **</sup>	0	55	40 <sup>d</sup>	0

\* Includes concessions with valid permits (*garanties d'approvisionnement*); not all of them were operational at the time of writing

\*\* Regional forest management plan, Bologo-Mushie

birds, 13 amphibians and 15 plants are found in forests (IUCN 2004). Although the country is large, there is enormous pressure on wildlife through poaching. Wild meat is in demand in rural and urban markets. The elephant population in the forest zone (about 300,000 before 1980) had been reduced to less than 50,000 in 2000 (Sebastien & N'Yanga-Nzo 2001). DRC has listed eight plant species in CITES Appendix I and 53 in Appendix II (CITES 2005).

#### Protective measures in production forests.

Article 48 of Law 11/2002 prohibits logging along streams and within 50 m of riverbanks and 100 m of springs. Poaching is thought to be widespread (DRC forestry officials, pers. comm., June 2005).

**Extent of protected areas.** In general, the major ecosystems remain relatively intact. In 1999, the government approved a strategy and a plan of action for the sustainable use of biodiversity. The country has ten national parks, four of which are listed as UNESCO World Heritage sites, totalling about 9.3 million hectares of forest. In addition, there are three biosphere reserves totalling 300,000 hectares and 21 maintained hunting reserves covering more than 10 million hectares. According to UNEP-WCMC (2004), 9.32 million hectares of forest are in protected areas conforming to IUCN protected-area categories I-IV, including 5.84 million hectares of lowland evergreen broad-leaved rainforest and 861,000 hectares of upper montane forest.

**Estimate of the area of forest sustainably managed for protection.** Protected areas are generally without effective control. Encroachment is widespread and trophy hunting, wild-meat hunting and timber theft are widespread (Sebastien & N'Yanga-Nzo 2001). However, large areas of

DRC's forests are currently under no threat from deforestation or other significant human-induced disturbance due to their remoteness from major human settlements.

#### Socioeconomic aspects

**Economic aspects.** There is no recent information about the contribution of the forest sector to GDP or employment. The forest sector could become a pillar of economic development in DRC in a stable political and macroeconomic environment. There is an important informal sector dealing with wood extraction and wood-processing that generally meets local needs for timber, fuelwood and charcoal.

**Livelihood values.** Natural forests play an important role in the livelihoods of many people, in particular as an important source of food. An estimated 12 million people gain much of their living from forest resources<sup>a</sup>.

**Social relations.** Law 11/2002 (Title VII, Chapter III, articles 111–113) requires that the local population be consulted before any area is awarded to a concession or given protected status. However, it does not address local rights governing the use of forest resources, although it does allow communities to manage a forest concession within their traditionally recognized ancestral lands. There is widespread frustration among rural communities because forest concessions generally only benefit local leaders, who often do not share the benefits with the wider population (Sebastien & N'Yanga-Nzo 2001). In remote areas in particular, forest concessions are sometimes the only providers of primary education and health care, and forest roads have improved access to many remote villages.

**Table 4 Management of the protection PFE ('000 hectares)**

Total	Attributed to IUCN categories I-IV	Allocated for soil and water	With management plans	Sustainably managed
27,000	9,320	n.d.	n.d.	0

## Summary

The civil war took a heavy toll on DRC's infrastructure and development. Despite vast forest resources, the forestry sector failed to attract international investors or donors and remains undeveloped. There has been some improvement since 2002 (when the war ended) and the government has developed a policy aimed at encouraging the sustainable use of forest resources. The arrangements for forest and concession management and the enforcement of rules are currently in a state of flux; capacity for SFM remains minimal and its widespread adoption seems a long way off. Nevertheless, the forest sector has the potential (with appropriate planning and regulation) to play a crucial role in the country's recovery and subsequent development.

## Key points

- DRC has vast closed tropical forests and a relatively low level of conversion to other uses, but the forest sector is in disarray as the country emerges from a long civil war.
- DRC has an estimated 47.6 million hectares of PFE, comprising 20.5 million hectares of production forest, 27.0 million hectares of protection forest and 55,000 hectares of industrial timber plantations.
- At least 284,000 hectares of the natural-forest production PFE are being managed sustainably, comprising three research and education forests. No areas of protection PFE are deemed to be so managed.
- Although not under formal management, large areas of DRC's forests are currently under no threat from deforestation or other significant human-induced disturbance due to their remoteness.
- Only one area of production forest, of about 1.1 million hectares, is covered by a management plan.

- Under the 2002 forest law, concessions of up to 500,000 hectares can be allocated for 25-year periods (renewable).
- Forestry administration is the responsibility of three directorates within the Ministry of Environment, Nature Conservation, Water Resources and Forests. A severe lack of capacity hinders efforts to supervise the forestry sector.
- The volume of timber harvested in DRC is only a tiny fraction of the potential sustainable yield, even accounting for likely significant levels of illegal logging.
- Four of the country's ten national parks are listed as UNESCO World Heritage sites; an estimated 9.32 million hectares of forest are contained in protected areas conforming to IUCN categories I-IV.

## References and other sources

- <sup>a</sup> Ministère de l'Environnement, Conservation de la Nature, Eaux et Forêts 2003. Rapport National sur l'Avancée vers l'Objectif 2000 de l'Organisation Internationale des Bois Tropicaux. Submitted to ITTO, November 2003. Ministère de l'Environnement, Conservation de la Nature, Eaux et Forêts, Kinshasa, DRC. Unpublished.
- <sup>d</sup> ITTO estimate
- CITES 2005. CITES-listed Species Database. Available from: <http://www.cites.org/eng/resources/species.html> (accessed September 2005).
- FAO 2001. *Global Forest Resources Assessment 2000*. FAO Forestry Paper 140. FAO, Rome, Italy.
- FAO 2005. *State of the World's Forests 2005*. FAO, Rome, Italy.

- ITTO 2003. Bilan et analyse des expériences de partenariats en gestion forestière dans le Bassin du Congo. Rapport National de la République Démocratique du Congo. Prepared by Batunyi, F. & Malele Mabala, S. ITTO, CEFDHAC and IUCN.
- ITTO 2004. *Annual Review and Assessment of the World Timber Situation 2003*. ITTO, Yokohama, Japan.
- ITTO 2005. *Annual Review and Assessment of the World Timber Situation 2004*. ITTO, Yokohama, Japan.
- IUCN 2004. 2004 IUCN Red List of Threatened Species. Available from: <http://www.redlist.org> (accessed September 2005).
- Sebastien, L. & N'Yanga-Nzo, J. 2001. Integration of biodiversity into the forestry sector in the Democratic Republic of Congo. Case study prepared for the International Workshop of Biodiversity in National Forestry Planning Programme, CIFOR, Bogor, Indonesia, 13–16 August 2001.
- UNEP-WCMC 2004. Spatial analysis of forests within protected areas in ITTO countries. UNEP-WCMC, Cambridge, UK. Data prepared for ITTO, 2004 (see Annex 1).