

FORESTS IN POST-CONFLICT DEMOCRATIC REPUBLIC OF CONGO

ANALYSIS OF A PRIORITY AGENDA



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Analysis of a Priority Agenda

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ACRONYMS AND ABBREVIATIONS

| | |
|-----------|---|
| ADMADE | Administration Management Design |
| AFLEG | Africa Forest Law Enforcement and Governance Initiative |
| AWF | African Wildlife Foundation |
| CAMPFIRE | Communal Areas Management Programme for Indigenous Resources (Zimbabwe) |
| CARPE | Central Africa Regional Program for Environment |
| CBFP | Congo Basin Forest Partnership |
| CDM | Clean Development Mechanism |
| CEFHAC | Central African Conference on Humid Tropical Ecosystems |
| CI | Conservation International |
| CIFOR | Center for International Forestry Research |
| CIRAD | <i>Centre de Coopération Internationale en Recherche Agronomique pour le Développement</i> |
| CITES | Convention on International Trade in Endangered Species |
| CNEM | <i>Centre National d'Education Mésologique</i> |
| CNONGD | <i>Conseil National des ONG de Développement du Congo</i> (The National Council of Development NGOs) |
| COCOCongo | <i>Coalition pour la Conservation au Congo</i> (Congoese Coalition for Conservation) |
| COCOSI | <i>Comité de Coordination de Suivi du Site</i> (Site Coordination Committee) |
| COMIFAC | <i>Commission des Forêts d'Afrique Centrale</i> (Central African Forests Commission) |
| COP | Conference of the Parties |
| CSO | civil society organisation |
| DGRAD | <i>Direction Générale des Recettes Administratives et Domaniales</i> (General Directorate of Administrative and State Revenues) |
| DME | <i>Diamètre minimum d'exploitation</i> (Minimum Cutting Diameter) |
| ECOFAC | <i>Ecosystèmes Forestiers d'Afrique Centrale</i> (Central African Republic) |
| EITI | Extractive Industries Transparency Initiative |
| FAO | Food and Agriculture Organization of the United Nations |
| FCFA | Currency of the African Monetary Community |
| FEC | <i>Fédération des Entreprises du Congo</i> (Federation of Congoese Enterprises) |

| | |
|----------|--|
| FIB | <i>Fédération des Industriels du Bois</i> (Federation of Timber Industries) |
| f.o.b. | free on board |
| FSC | Forest Stewardship Council |
| GDP | Gross Domestic Product |
| GTF | <i>Groupe de Travail Forêts</i> (Forest Working Group) |
| ICCN | <i>Institut Congolais pour la Conservation de la Nature</i> (Congolese Institute for Nature Conservation) |
| ICRAF | World Agroforestry Centre |
| IFC | International Finance Corporation |
| IMF | International Monetary Fund |
| IUCN | World Conservation Union |
| LINAPYCO | <i>Ligue Nationale des Pygmées du Congo</i> (National League of Pygmies of the Congo) |
| MIKE | Monitoring of Illegal Killing of Elephants |
| MECNEF | <i>Ministère de l'Environnement, Conservation de la Nature, Eaux et Forêts</i> (Ministry of Environment, Nature Conservation, Water and Forests) |
| NGO | nongovernmental organisation |
| ONATRA | <i>Office National des Transports</i> (National Transportation Office) |
| PFNB | <i>Plateforme Nationale des Batwa</i> (National Platform of the Batwa) |
| PRSP | Poverty Reduction Strategy Paper |
| PSFE | <i>Programme Sectoriel Forêts et Environnement</i> (Forests and Environment Sector Programme) |
| RAPY | <i>Réseau des Associations Pygmées</i> (Network of Pygmy Associations) |
| REPEC | <i>Réseau des Partenaires pour l'Environnement au Congo</i> (Network of Environment Partners of Congo) |
| RGT | Tanya Gorilla Reserve |
| RRN | <i>Réseau Ressources Naturelles</i> (Natural Resources Network) |
| SNV | Netherlands Development Organisation |
| SOCEBO | <i>Société Congolaise d'Exploitation du Bois</i> (Congolese Timber Exploitation Company) |
| SPIAF | <i>Service Permanent d'Inventaire et Aménagement Forestier</i> (Service for Forest Inventories and Management) |
| TSERO | Transitional Support Economic Recovery Operation |
| UAPM | <i>Union des Associations Pygmées de Mbandaka</i> (Union of Pygmy Associations of Mbandaka) |
| UGADEC | <i>Union des Associations de Conservation des Gorilles pour le Développement Communautaire à l'Est de la République Démocratique du Congo</i> |
| UNESCO | United Nations Educational, Scientific, and Cultural Organization |
| UNFCCC | United Nations Framework Convention on Climate Change |
| WB | The World Bank |
| WCS | Wildlife Conservation Society |
| WHRC | Woods Hole Research Center |
| WRI | World Resources Institute |
| WWF | World Wide Fund for Nature |

FOREWORD

This report reviews the forest sector of the Democratic Republic of Congo in early 2006. It analyses reforms undertaken since 2002 and it recommends priorities for the upcoming four to five years.

It highlights the nature of the Congolese forest as a public good, with critical values for the global environment and for millions of forest-dependent people, who are among the poorest in the world. It also looks at the legacy of mismanagement that plagued these forests in 2002, and at the tensions induced by the post-conflict recovery. It highlights the risk that forests will continue to be misappropriated to serve rent-seeking interests, and that forest dwellers, the national community and the environment will continue to lose out as the country enters into peace. Against this backdrop, the report focuses on issues that may cause irreversible damage to the public and to the environment, or erode future benefits. It also shows the risk of inaction.

Based on current policy analysis and knowledge, this report recommends a set of urgent measures that seem feasible in the current DRC context. These measures, grouped as a Priority Agenda, focus on transparency and public participation, enforcement of laws and contracts, sustainable management, and equitable sharing of benefits. This report recommends that simple corrective and preventive actions undertaken since 2002 should be carried through; that local livelihoods, traditional rights and local consultation processes become centre stage in decision making; and

that a high-level initiative be launched to promote non-extractive forest uses. Markets for environmental services seem to offer new prospects for blending social and economic development with nature conservation. New contractual and financing instruments should be developed and tested by the DRC and its international partners.

All numbers and statistics in this report must be viewed as estimates of orders of magnitude, as most forest-related information in the DRC is still piecemeal, imprecise or unreliable. These figures do not imply any judgement by the authors, but simply reflect the current state of knowledge.

This study does not aim to be exhaustive—it focuses on the rainforest areas of the DRC. It will need to be followed up by in-depth analytical work on issues that could not be covered in detail at this stage, such as fuelwood and non-timber forest products, community-based management, and the management of savannah–woodland and highland ecosystems, among others.

The authors thank the institutions and experts who expanded on this analysis with their knowledge and advice: development agencies, national and international NGOs, traditional authorities and representatives of forest people, the *Fédération des Industriels du Bois*; and the Government of the Democratic Republic of Congo through the Ministries of Environment, Finance, and Planning, provincial authorities, and the *Institut Congolais pour la Conservation de la Nature*.



MAIN FINDINGS AND RECOMMENDATIONS

A – CONTEXT AND OBJECTIVES

Context. This study comes within the scope of United Nations Security Council Resolution 1457 (United Nations Security Council 2003), which calls on ‘*international financial institutions ... to assist in efforts to create appropriate national structures and institutions to control resources exploitation*’. It also fits with the World Bank’s 2002 forest strategy (World Bank 2002) aimed at reducing poverty, integrating forests in sustainable development, and protecting the environment.

The context for the study is the aftermath of the war, and the re-engagement of most donors and other development partners. By placing forests among the central themes in their dialogue at this early post-conflict stage, these partners have signalled the importance that the international community attaches to natural resources in the fight against poverty and corruption, and for conservation of the environment. Congolese forests were soon identified as critical for the livelihoods of an estimated 40 million rural people and for the global environment, yet industrial forest uses have yielded few collective benefits.

The DRC Government started a priority reform agenda in 2002, at a time when forest institutions had broken up. The majority of the country’s forests were locked up under large-scale logging concessions, with no local consultation, no fair return for the local people or the country, and no consideration for alternative forest uses. These concessions served mostly speculative interests. They overlapped with villages, farmlands and biodiversity hotspots, and no provisions were in place for meaningful public participation. In the absence of radically innovative policy actions, this situation was clearly conducive to further social, economic and environmental losses.

Objectives. The objectives of the study included: (i) taking stock of the knowledge of social, economic and biological aspects of the Congolese forest, and making that information available to all interested parties as a common basis for discussion; (ii) outlining general policy directions for future sector development; (iii) helping the government make strategic choices to deal with the risks associated with post-conflict situations, including the presence of vested interests, attempts at misappropriation, weak governance, and corruption; and

Box 1. Process followed

This study is the result of collaboration among teams of the World Bank, Center for International Forestry Research (CIFOR), *Centre International de Recherche Agronomique pour le Développement* (CIRAD), African Wildlife Foundation (AWF), *Conseil National des ONG de Développement du Congo* (CNONGD), Conservation International (CI), *Groupe de Travail Forêts* (GTF), *Ligue Nationale des Pygmées du Congo* (LINAPYCO), Netherlands Development Organisation (SNV), *Réseau des Partenaires pour l'Environnement au Congo* (REPEC), Wildlife Conservation Society (WCS), Woods Hole Research Center (WHRC), World Agroforestry Centre (ICRAF) and World Wide Fund for Nature (WWF).

The research process included desk review of literature, collection of original data through thematic studies, and a consultative process to sharpen the analysis and test consensus on initial conclusions. The supporting thematic studies cover the following areas:

- Overview of the DRC's forests and forest management system (Chezeaux 2003)
- Economics of the timber sector (Roda and Erdlenbruch 2003)
- Taxation and economic incentives (Karsenty *et al.* 2003)
- Interactions between rural populations and concessions (Yambayamba 2003)
- Small-scale artisanal forest operations (Djiré 2003)
- Indigenous forest people (Schmidt-Soltau 2004)
- Assessment of selected national parks (d'Huart 2004; Mwinyihali 2004)
- Economic valuation of forest goods and services (Bravi 2005).

The process also included consultations with government, national and international NGOs, industry, forest people, and donors. Most consultations took place during 2004. Consultations were held with the Ministries of Environment, Finance, and Planning, and with the *Institut Congolais pour la Conservation de la Nature*. Discussions also took place with members of parliament and provincial governors. Consultations were held with donors within the framework of the Forest Thematic Group, and with the private sector within the framework of the *Fédération des Industriels du Bois*. Consultations were held with domestic NGO networks involved in environmental and natural-resource issues, which acted as a relay for their members and partners. Field visits and meetings with local groups took place in September 2003 in Equateur province, in February 2004 in Eastern province and in December 2005 in North Kivu. Exchanges with other donors and international NGOs also took place in Europe and the USA. Consultations with government, civil society and private sector continued in an iterative manner in 2005 and 2006. This study also benefits from a number of thematic workshops and from two International Forest Forums held in Kinshasa in November 2004 and February 2006 (MECNEF 2006). A draft of this report was handed out during the first of these forums.

To the extent possible this study captured the key issues and the views of the largest number of actors involved in the management of the Congolese forests. It was developed in parallel with the actual implementation of the government's reform agenda since 2002. Thus, it does not represent the end of a process. Further consultations and studies will have to continue in parallel with this agenda, to forge the consensus, to take into account new developments, and to improve knowledge in areas that could not be fully addressed here.

(iv) assessing the adequacy of the priority reform agenda, and providing the government with clear and constructive feedback.

B – LONG-TERM VISION AND SHORT-TERM PRIORITY AGENDA

The main challenge for this study was to help the government and its partners make difficult decisions in an information-poor environment and under pressure. With the advance of peace and the rehabilitation of infrastructure, the Congolese forest appears

to be under mounting pressure by vested interests and market forces, and there is little institutional capacity to protect collective or long-term interests. In this context, inaction would help consolidate vested interests to the detriment of the Congolese people and the global environment. Faced with this challenge, the study considered the government's general vision for future development of the sector, and it concentrated most of its attention on immediate measures to tackle post-conflict risks while creating the space for achieving the broader, long-term vision.

The long-term vision for the Congolese forest is still in the making. Options are open and new ideas are needed. As far as the government is concerned, it would certainly embody the following elements: the DRC would position itself as a provider of environmental services to the global community and would expect to receive some recognition in return; multiple forest products would be harvested for domestic and international markets in a sustainable manner; local people would continue using forests for their subsistence and their social and cultural wellbeing, and their traditional rights to do so would be legally secured; and the forest would contribute meaningfully to creating employment and to rebuilding the country.

From the international community's viewpoint, the return of peace in the DRC can be perceived as a unique opportunity to take a fresh look at the second-largest block of rainforest in the world, to avoid the replication of unsuccessful models, and to develop new models that give more emphasis to the environment and to forest dwellers. From the government's viewpoint, forests present an opportunity to restore the country's international image by protecting the global environment, and to improve local livelihoods and consolidate peace. These two viewpoints seem to be compatible and to a large extent converging. However, acting on them will require breaking new ground in policy making and financial systems, and will involve a large set of political and economic actors. The challenge will be to turn converging interests and potential markets into deals and payments. The question is how to secure one of the world's most valuable ecosystems while at the same time improving the livelihoods of one of the world's poorest populations. This will mean improving the currently inadequate management and financing models, faster than the ecosystem is depleted. A high-level international debate is needed to bring this vision into reality. Available options need to be put squarely on the table, and new ones developed.

There is currently no single model that the DRC can emulate for managing forests. The size and variety of the DRC's ecosystems and the diversity of social and economic expectations from various players will accommodate a mosaic of forest uses ranging from conservation and sustainable production, to conversion to agriculture or other uses. It is hard to advocate or anticipate a desirable mix at this time. In some cases, preferred scenarios will not be possible or compatible, and trade-offs will need to be found.

Conservation options are desirable for many reasons, including the fact that they leave other options open for the future. Nature conservation seems to benefit from great interest by Congolese leaders, including President Kabila. However, adequate instruments and finance for large-scale conservation do not seem to be available at present. Under current circumstances, the brunt of the cost of conservation would have to be borne by the Congolese people in the form of direct surveillance and foregone income. In addition, millions of poor people depend on bushmeat and other forest products for their living, and will continue to do so at least until alternatives become available.

Industrial timber production has a poor track record in Africa. Over the past sixty years, there is little evidence that it has lifted rural populations out of poverty or contributed in other meaningful and sustainable ways to local and national development. Any policy option that would deal with the timber industry should openly discourage 'business as usual', be selective, ensure that companies adopt more socially and environmentally responsible practices, and that forest rent is shared equitably.

Small-scale gathering and small-scale businesses are currently producing more benefits for the Congolese people than any other forest use. They are unregulated and serve primarily local markets. While they are desirable in many respects, there is no evidence that they

do not exhaust the resource base and are sustainable in the long term. They are also the result of a poor economy constrained by war and lack of infrastructure. Were these constraints lifted, some of these activities would likely grow into industrial operations. Lack of regulations and incentives would then create risks of damage for the forests and of missed opportunities for local livelihoods and the national economy.

The priority agenda (*see* Table 1). Starting from the analysis above, the study helped assess the immediate steps that are needed before any progress can be made towards a new, more ambitious vision. Two prerequisites are to dispose of the legacy of mismanagement and to regulate the timber industry as it restarts. In that spirit, since 2002, the government has initiated a set of simple corrective, preventive and framework-setting measures. Launched in the wake of the war, in a country with no roads and almost no functional institutions, this agenda is both selective and pragmatic. It targets issues that, if not resolved very soon, would irreversibly harm the environment and local communities, and deprive the DRC of the benefits of its forests. The agenda emphasises enforcement of laws and contracts, as well as transparency to reduce corruption and foster public debate and accountability. These measures require political will more than financial means or technical capacities. They prevent poorly informed decisions from being made today that would preclude the realisation of a broader vision in the future. When, and if, these measures are completed, then achieving the long-term vision will become possible.

C – MAIN FINDINGS

A public good with multiple values in a context of paradox. The DRC harbours the largest forest area in Africa, and the second-largest block of tropical forest in the world. At the same time, its population of 60 million is among the poorest in the world. The abundance of natural resources in the DRC

has not, throughout its history, benefited the Congolese people. Mismanagement has led to the paradox of an economically poor people in a naturally rich country. Today, the Congolese forest should be seen as a public good with multiple values that needs to be managed in the interests of the Congolese people and the global community. Among the wide range of forest products and services, fuelwood, bushmeat and other non-timber products seem to have the highest annual economic value. Securing local forest values in the DRC is the top priority. Environmental services, although creating little tangible benefit today, have a high potential for development.

Forests are essential for Congolese people. The vast majority of rural people in the DRC rely on the forest for their livelihoods. From it they derive most of their protein, medicine, energy, materials, and cash income. This also applies to the urban population to some extent. Some groups, especially the Pygmies, rely on forests almost entirely. Wood and charcoal provide 80 per cent of all domestic energy consumed in the DRC. Small-scale informal loggers produce most of the timber used locally. Bushmeat is a vital source of food. Annual consumption is estimated at over one million tonnes. The Congolese people also use hundreds of forest plants for food and condiments, and even more for medicines. Slash-and-burn agriculture depends on forest to reconstitute soil fertility. The social and cultural significance of forests for forest people is almost immeasurable.

Forests are also essential for the global environment. The Congolese forests store carbon and slow down global climate change. They also help regulate one of the world's largest river basins. The DRC is also a unique reservoir of biodiversity: it ranks fifth in the world for plant and animal diversity. Its natural habitats range from mangroves to glaciers and volcanoes. It contains more Natural World Heritage Sites than the rest of Africa combined. This natural treasure must be preserved. If lost, it cannot be replaced. The impact of war, anarchy, displacements

and institutional collapse was devastating. Today, most (if not all) of the parks and reserves are reduced to ‘paper parks’ under threat from poaching, mining, logging and encroachment. Outside of the parks, most surveys have shown that the current level of poaching is not sustainable. Many forests, although remote, have already become ‘empty forests’, mostly devoid of large animals.

The legacy of the past. The findings of this study are closely akin to those of Baker *et al.* (2003): ‘*The challenge ... is to rebuild and replace the warped, inequitable systems that have emerged over the past decade and create others*’. In 2002, most of the Congolese forests were earmarked for industrial logging: 43.5 million hectares were locked up under 25-year contracts awarded before and during the war. These contracts were mostly speculative and had been concluded without consultation with local people, consideration for other possible forest uses, or equitable return for the country. Often overlapping with villages, farmland and biodiversity hotspots, these concessions carried the seeds of new conflicts, deprived communities of the right to manage their own forests, and made it difficult to extend protected areas and to develop non-extractive forest uses. Forests were seized by logging interests and there was little space left for other forest uses.

Post-conflict risks. After decades of mismanagement and war, the economy is recovering and the State is gradually rebuilding. But peace remains fragile, institutions are in a shambles, and monitoring systems do not exist. Emergencies are affecting all sectors. The DRC’s natural resource base has suffered much from the war, and it could suffer further from peace and recovery. Risks stem from the restarting of logging, as well as from the rehabilitation of infrastructures, mining, demographic growth, and the growing demand from urban markets. In post-conflict DRC, the paradox of an economically poor people in a naturally rich country may intensify, if the systems that rule access to resources

and rent-sharing are not reformed. The restarting of many sectors of the economy, demographic growth, and the absence of a structured process for land-use planning all create the risk that incompatible uses will overlap and conflict with each other, and jeopardise traditional user rights and the environment.

The need to prioritise. For a long time, the majority of the territory has been inaccessible because of insecurity and lack of infrastructure. Today, the ability to take action physically and institutionally is still inadequate in view of the complexity and size of the challenges. In this context, it is necessary to focus the available resources on the most urgent issues—that is, those most likely to cause irreversible damage to society or the environment.

The restarting of logging. The recovery of the timber sector is probably the most significant change that affects Congolese forests in the post-war period compared to previous decades. The economic value of industrial timber seems to be far below that of other forest products, but it is where the risk of misappropriation and plundering of public resources is the highest. To some extent, this restarting is inescapable. It does not depend on sector reforms. It is driven by security, infrastructures and markets. This industry has the potential to bring benefits to local people and to the country, but these benefits will not come automatically. They will materialise only if adequate policies are properly enforced. Otherwise, there is reason to fear that this industry will mostly serve personal interests. Today, the collapsed state of the infrastructure is the main bottleneck to logging expansion, but this situation will not last forever. The urgency is to make planning and enforcement tools operational before physical barriers dissolve, otherwise illegal or destructive logging is likely to gain ground.

A few key steps completed since 2002. Some key steps have been completed since 2002, such as the cancellation of

25.5 million hectares of noncompliant logging concessions, the establishment of a moratorium on new concession allocations, the gradual increase of the annual forest rental fee, the removal of unjustified charges prone to fraud, the approval of a new Forest Code, and the launch of a legal review of all remaining concessions with the assistance of an independent observer. These decisions were backed by top-level political commitment. Support within the line ministry has fluctuated over the course of the political transition from 2002 to 2006. Some measures were seriously challenged: in spite of the moratorium, a gross 15 million hectares was reportedly exchanged or relocated, leading to a net increase of 2.4 million hectares of area under concessions. These transactions reflect the weight of the interests involved. In spite of this wavering commitment, the fact that this agenda was endorsed by the entire government and the growing support by civil society for these reforms (Joint Statements 2005, 2006a, b) seem to have contained backslidings and to have made some progress possible. Overall, since 2002, the total area under concessions has decreased from 43.5 million hectares to 20.4 million hectares.

The 2002 Forest Code. The Forest Code sets the framework for more equitable and balanced forest management. Innovations include: maintaining all traditional user rights, including those of indigenous people; implementation of forest management plans in all production forests including the protection of wildlife; the right for local communities to manage forests they own under customary rights; return of 40 per cent of the area fee to provinces and territories; mandatory implementation of social responsibility contracts; consultation with local people prior to assigning a forest to conservation or production; allocation of production forests through transparent methods; a target of 15 per cent of the area of the country under protection status; and promotion of non-extractive forest uses such as environmental services. The challenge will be to bring these innovations into practice.

Benefits may remain marginal if past distortions fail to be cleared first.

The gap between policy and practice.

At present, practices in the field are disconnected from the policies designed in Kinshasa. Forest and local institutions have deteriorated. They must be reinforced urgently, otherwise the gap between policy and practice will only become wider, and the likelihood of improving things in villages and in the forest may become insignificant.

Non-extractive forest uses. As mentioned above, there is an opportunity for developing new forest uses and financing systems beyond the usual models of timber production, parks, agriculture and small-scale harvesting by communities and local enterprises. About one-quarter of the rainforest area is currently under timber concession. This ratio is likely to decrease after the legal review, and the moratorium on new concessions was confirmed by presidential decree in October 2005. Supply (on the Congolese side) and demand (on the international side) for non-extractive forest services seem to exist, but the connection between the two does not seem to work yet. The challenge is to establish that connection, through public or private financing systems that can turn this potential market into tangible benefits for the DRC.

D – MAIN RECOMMENDATIONS

This report encourages the government to continue the priority agenda undertaken since 2002, to finish cleaning up old concessions, and to start implementing the new Forest Code (*see* Table 1). These steps, and the forthcoming ones, are consistent with the World Bank Forest Strategy (World Bank 2002). These are only first steps that need to be consolidated, followed up, and implemented in the field. In the DRC's weak sociopolitical and economic environment, the future of forests cannot be left to market forces and individual initiatives. Top-level actions and commitment by a critical

number of players are necessary to manage these forests in the interests of the public, and to address the strategic questions concerning the balance between various forest uses.

The main actions, or priority agenda, recommended by this study are as follows. They are a mix of urgency, importance and practical feasibility in the DRC post-conflict context.

1. Stay the course of corrective and preventive measures to remove the legacy of past mismanagement

- *Maintain the moratorium.* The moratorium on assigning new concessions should stay in effect until the legal review of old concessions is completed, a transparent auction system is in place, and a medium-term planning of future allocations is adopted. The medium-term planning should indicate the number, size and location of proposed new concessions. The idea is to avoid falling back into the old system of speculative grabbing after the moratorium is lifted. This plan should examine the soundness of opening new concessions given the existing transportation bottlenecks. The moratorium should stay in place until satisfactory management and governance standards have been achieved in the existing concessions. In the absence of a clear rationale for new concessions, the moratorium should be extended.
- *Complete the legal review of old logging titles and rescind invalid ones.* This operation is to check compliance with the clauses of contracts and with the moratorium. Pursuant with the presidential decree of October 2005, all invalid contracts should be rescinded or, when applicable, restored to their pre-moratorium state. All valid contracts should be converted into sustainable management concessions consistent with the boundaries of villages and farmland and including social responsibility clauses (*cahiers des charges*).

- *Enforce the fiscal reform package and secure tax collection.* The interministerial decree of March 2004 reduces the fees of the *Office National des Transports* and gradually increases the forest area fee between 2004 and 2007. The package lowers the fiscal burden. It aims to deter speculation on forests, to simplify and secure tax collection, to increase revenues for provinces and territories, and to level the playing field among companies.

2. Regulate the timber sector as it restarts

- *Monitor logging in the field and enforce penalties.* An increase of illegal logging can be expected if more stringent regulations are introduced without at the same time enhancing oversight and enforcement. Third-party observers should assist the forest department to ensure objective controls and public information on infractions and penalties. Any misdemeanour must lead to deterrent penalties. Remote sensing and log-tracking technologies should be developed.
- *Return 40 per cent of the area fee to provinces and territories.* All steps of this system must become transparent. The transfer of resources, as well as the planning, expenditure and accounting at provincial and territorial levels, and external audits, must all be made public. Such transparency is vital to prevent misuse. Local administrators must be accountable to the local people.
- *Implement the social responsibility contracts (cahiers des charges).* The challenge is to ensure that these agreements result from fair negotiations between companies and villages, and that they are actually implemented. A national compendium of *cahiers des charges* should be set up with participation of civil society and serve as a reference for public monitoring.
- *Move to forest management plans.* Such plans should be based on simple

regulations. From a social viewpoint they should include the agreements contained in the *cahiers des charges*. From an environmental viewpoint, they should include commitments based on outcomes rather than inputs, especially for wildlife protection. Basic measures for sustainable management should be enforced upon the start of any concession without waiting for the approval of a detailed forest management plan.

- *Set up a transparent allocation system.* If the rationale for opening new concessions is established, old discretionary methods should be abandoned. Developing an auction process suited to the DRC will require careful thinking, as well as prior consultations and pilot tests.

3. Implementing the broader vision of multipurpose forest use

- *Conduct participatory, multipurpose forest land-use planning.* Forest land-use planning should be done in a participatory manner with local consultations, and be based on the principle of prior, free and informed consent. This process should take account of all possible forest uses, and help prevent social conflicts. As a bottom line, local communities' uses should be mapped and their rights secured, with special attention to the indigenous peoples. New parks, community forests, concessions, and other uses would be identified in non-disputed zones. The process would come up with indicative maps that have no immediate legal relevance. Actual decisions would be made later on a case-by-case basis following gazetting procedures that also include local consultations.
- *Develop non-extractive forest uses.* Mechanisms aimed at rewarding environmental services should be encouraged. Such mechanisms may include conservation concessions, carbon sequestration, and bioprospecting rights,
- *Develop community forests.* There is little experience of legally recognised community forests in the DRC. The challenge will be to develop simple systems, accessible to village communities, including indigenous groups, but not easily diverted by unscrupulous brokers, especially in forest areas where timber attracts major financial interests. New approaches whereby management contracts between the government and local communities make the latter responsible for managing their own forest, as currently being developed in the Eastern DRC, should be pursued. The DRC will also have to learn from experiences in other countries.
- *Support small-scale family enterprises.* Millions of people derive their meagre income from small timber or non-timber forest-based businesses. These are mostly informal, family or community enterprises. The challenge is to help these small businesses establish their sustainability without depleting the natural resource base they rely on. In this area too, the DRC has little experience to date, will have to learn from experiences in other countries, and develop its own solutions.
- *Rehabilitate protected areas and preserve biodiversity in productive landscapes.* The first priority is to rehabilitate national parks and World Heritage Sites. Other efforts must be pursued simultaneously: protecting wildlife in production forests, promoting community-managed conservation areas, updating

among others. There is still no tried-and-tested model in Central Africa, and showing the DRC concrete alternatives to the usual models of forest management is a challenge to all parties. A high-level international debate is needed to overcome the limitations of the existing instruments and to make large-scale conservation and environmental services attractive options for the DRC in the short term.

the law on nature conservation, and expanding protected areas to the extent still possible.

- *Design priority programmes for highlands, savannah–woodlands and aquatic ecosystems.* This study focuses mostly on rainforests. However, mountains, savannah–woodlands and aquatic ecosystems are just as important in the Congolese context. These ecosystems are often more fragile and more exposed to deforestation and soil erosion. These issues deserve decision makers' utmost attention. More analytical work is needed to help improve policies and identify priority programmes.

4. Rebuild institutions and strengthen national leadership

- *Rebuild public institutions and strengthen civil society organisations.* This will include training and equipment programmes, as well as improving the incentive framework for the forest and nature departments, for local administrations, and for civil society organisations. The strategy will need to combine long-term capacity building efforts with short-term targeted interventions to deal with emergencies.
- *Disseminate the Forest Code and prepare the decrees.* Local NGOs should be actively engaged in disseminating the Code, which sets out general principles and needs to be complemented by the implementation decrees. Preparing the decrees should combine a participatory process with the pressing need to regulate activities in the field. New systems must be simple and transparent.
- *Develop a national, sectorwide programme.* The DRC and its partners should ensure that the multiple projects in the sector fit within a national programme open to all stakeholders. This programme would serve as a single framework for piloting and monitoring the sector.

E – THE MAIN PLAYERS

As the country returns to peace, the Congolese forests are being subjected to a wide range of expectations that do not automatically fit together. In addition, improving forest management goes beyond the scope of a single line ministry and many actors come into play.

The Government. One key to success is to maintain the sector on the radar screen of key decision makers, keep it on the government's core post-conflict reform agenda, and avoid sector isolation. The forest department plays a critical role, but it cannot reform the sector on its own, especially in the face of high post-conflict pressures and vested interests. Difficult decisions, such as the legal review of logging titles, involve several ministries. The government is not a monolith, and the level of commitment depends upon people, alliances and opportunities. The DRC experience since 2002 shows that sector reforms require continued vigilance and commitment by multiple authorities, including non-sector ministries, the presidency and parliament.

Civil society. It is important that forest management becomes more transparent, participatory and democratic, and that the most vulnerable social groups enjoy equal rights and opportunities. NGOs, the media, professional federations, churches, women's and youth associations, and other grassroots organisations will be key players in this process. This is the direction taken by new policies, although implementing truly participatory approaches is not an easy undertaking for a country with little experience with democratic mechanisms at either national or local level, and which is just emerging from a decade of civil conflict. NGOs and other civil society groups should be involved in processes such as the drafting of the implementation decrees, legal review, and land-use planning. They should also be involved in pilot testing the Forest Code's innovations in the field and in monitoring their implementation, for

example the transfer of forest revenues, social responsibility contracts, and community forests. They should be involved in forest controls, in disseminating the Forest Code, and in awareness-raising campaigns. Local communities must be given opportunities to participate directly in decision-making and management processes. This is especially true for minority or vulnerable groups, such as the Pygmies, who could be marginalised in consultations and sidelined from economic opportunities. These groups must receive specific attention when it comes to maintaining traditional rights, and they must enjoy equal access to community forests, to the transfer of tax revenue, to the *cabiers des charges*, and to other innovations of the Forest Code.

The private sector. Private sector buy-in is important for the success of reforms. Recent forest policy directions remove hurdles from the business climate, such as discretionary practices, unjustified parafiscal charges, and lack of transparency, and place upon companies new environmental, social and fiscal responsibilities. In internalising changes of this magnitude, companies already established in the DRC face challenges equal to or greater than those faced by newcomers. At the time of this review, the private sector seems uncertain of the benefits of the current reforms and, in the absence of strong assurance from the government that these reforms will indeed be enforced uniformly, it is advocating the status quo. To achieve mutual trust, responsible operators need reassurances that new rules are there to stay, and that complying companies will not be penalised by unfair competition from noncompliant ones.

Local entities. The new central government will have to secure cooperation from local and regional authorities. In some cases this

can be done by providing legitimate sources of income in compensation for the informal and arbitrary systems that are meant to disappear. The government will need to set up frequent consultations with people, as well as create structures aimed at preventing and resolving any authority or legitimacy disputes.

International cooperation. In addition to providing financial support and advice, donors and NGOs can certainly help sustain political commitment for reforms, especially in the hectic momentum of reunification. Constantly referring to the same priority agenda makes it possible, to some extent, to stay the course and prevent reversal, despite frequent changes in executive positions, alliances and other priorities that decision makers face in this unstable post-conflict environment.

International advocacy. Voices in the international arena influence the future of Congolese forests. Reforms that have been undertaken in the DRC since 2002 favour long-term public interest; however, the benefits they provide to the national community are not immediately visible, whereas the trouble they cause to old privileges are obvious and immediate. Paradoxically, these reforms are sometimes challenged rather than supported in the country. The international community can help strengthen reformers within the government. This is especially important in an unstable post-conflict context where initial achievements risk being quickly reversed. In this context, a mix of positive reinforcement and criticism can go a long way. On the contrary, negative criticism alone without recognition of positive steps risks undermining reformers. It may eventually end up in an unintended coalition with vested interests that seek to maintain the status quo.

Table 1. The Priority Agenda analysed and supported by the study. This table shows the current status of recommended actions, the next steps, and the main players involved. This Priority Agenda is a mix of urgency, importance and practical feasibility in post-conflict DRC. While all items listed in this agenda are high priorities, bold font signifies the areas that seem to be the most critical at this point in time, and which therefore require immediate attention by the government and NGO and donor partners. It is believed that inaction in these areas could cause irreversible damage, and that concrete actions can realistically be taken in the short term in spite of acute institutional and logistical constraints, provided there is strong political backing. This table also indicates chapters of the study where each item is discussed.

| PRIORITY ACTION | STATUS (S) AND NEXT STEPS (NS) | MAIN PLAYERS INVOLVED |
|---|---|--|
| Complete corrective and preventive measures to dispose of the legacy of mismanagement | | |
| Maintain the moratorium, with the three conditions set forth in the 2005 presidential decree. Chapter 3. | <p><u>S</u>: Moratorium established by Min. Environment in 2002. Reportedly bypassed since 2003. Confirmed and extended in 2005.</p> <p><u>NS</u>: Not to allocate any new logging concession until: the legal review is completed; a 3-year allocation plan is adopted; an auction system is in place. The allocation plan should establish whether new concessions are needed or not.</p> | Min. Environment to enforce the moratorium and report to the Presidency, Government, NGOs, private sector (FIB) and local representatives to establish the allocation plan and the rationale for granting new concessions (or not granting them). <i>Indicator of progress for WB TSERO budget support.</i> |
| Complete the legal review/ conversion of old logging titles, and rescind invalid ones. Chapter 3. | <p><u>S</u>: Rules of the review set by presidential decree in 2005. Technical group at work with international observer.</p> <p><u>NS</u>: Nominate interministerial committee. Identify representatives of local communities including indigenous people.</p> | Min. Environment and Min. Finance for technical verifications. Presidency, private sector (FIB), NGOs and communities as members of the interministerial committee. WRI as observer. <i>Indicator of progress for WB TSERO budget support.</i> |
| Enforce the 2004 fiscal reform package, and secure tax collection. Chapter 3. | <p><u>S</u>: Reform enacted by interministerial decree in 2004. Area fee and ONATRA charge adjusted in 2004–06. Other provisions delayed.</p> <p><u>NS</u>: Cancel noncompliant contracts. Ensure full implementation of the package. Create a tax collection/economic monitoring programme.</p> | Ministries of Finance, Environment, Transport/ONATRA for enforcement, tax collection, and issuing public reports. <i>Indicator of progress for WB/IMF budget support.</i> |
| Regulate the timber sector as it restarts | | |
| Deter illegal logging: monitor in the field and enforce penalties. Chapter 3. | <p><u>S</u>: Growing risk of large-scale illegal logging. Min. Environment unable to curb the trend alone. Third-party observer being recruited.</p> <p><u>NS</u>: Undertake field missions to key sites. Enforce penalties. Publish reports. Combine field and satellite monitoring.</p> | Min. Environment and local authorities for enforcement. Min. Finance for collecting fines. Judiciary for lawsuits. Civil society to report cases, and foster accountability. <i>Indicator of progress for WB budget support.</i> |

| PRIORITY ACTION | STATUS (S) AND NEXT STEPS (NS) | MAIN PLAYERS INVOLVED |
|--|--|--|
| Transfer 40% of the area fee to provinces and territories. <i>Chapter 3.</i> | <p><u>S</u>: Not transferred in 2003–2006. No investment programmes or accounting systems at provincial and territory levels.</p> <p><u>NS</u>: Transfer revenues from central to local level. Assist pilot provinces in financial management. Support monitoring by NGOs. Publish reports and audits.</p> | <p>Min. Finance and Budget to transfer revenues. Regional forest councils and civil society to establish budgets, monitor execution, and foster accountability.</p> |
| Implement the <i>cahiers des charges</i> . <i>Chapter 3.</i> | <p><u>S</u>: <i>Cahiers des charges</i> often poorly negotiated, implemented and monitored in the field. An assessment is being prepared by NGOs.</p> <p><u>NS</u>: Include new <i>cahiers des charges</i> in contracts validated by the review. Support NGO monitoring. Publish reports.</p> | <p>Local communities and concessionaires to negotiate the <i>cahiers des charges</i>. Concessionaires to deliver. Civil society, regional forest councils and Min. Environment to monitor.</p> |
| Prepare and implement sustainable forest management plans. <i>Chapter 3.</i> | <p><u>S</u>: Regulations for management plans ready for review. Several management plans in preparation.</p> <p><u>NS</u>: Build up capacity to review and enforce management plans incl. biodiversity and social measures. Define DRC certification criteria.</p> | <p>Concessionaires to draw up and implement management plans. Min. Environment to review and enforce. Multistakeholder group to define certification standards.</p> |
| Set up a new, transparent allocation system. <i>Chapter 3.</i> | <p><u>S</u>: Presidential decree ready for review. Sole-sourcing ruled out.</p> <p><u>NS</u>: Depends on how long the moratorium will stay in effect.</p> | <p>Min. Environment, multistakeholder steering group, and Presidency.</p> |
| Develop and implement a broader vision of multipurpose forest uses | | |
| Conduct multipurpose land-use planning. Conduct local consultations before any forest use decision. <i>Chapter 2.</i> | <p><u>S</u>: No existing land-use plan in DRC. Post-conflict recovery is left to individual initiatives. Risk of poorly informed, irreversible decisions.</p> <p><u>NS</u>: Support land-use planning initiatives based on local/indigenous people's prior, free and informed consent. Integrate forests into national and extrasector land-use plans (mines, infrastructure). Conduct local consultations before any park or concession is created. Enforce new Code on traditional rights in all production forests.</p> | <p>Min. Environment, donors, NGOs to support land-use planning. Local communities and regional forest councils to discuss land-use scenarios. Government to ensure consistency with other sectors. Min. Environment/ICCN to ensure local consultations take place before any park or concession is created. Civil society to monitor and provide facilitation and expertise, and stimulate accountability.</p> |
| Promote non-extractive forest uses and innovative financing mechanisms. <i>Chapter 4.</i> | <p><u>S</u>: Consensus that non-timber forest uses should be promoted. However, no successful model so far in Central Africa.</p> <p><u>NS</u>: Conduct analytical work and high-level meetings to assess feasibility, raise commitments, and launch pilot projects, such as conservation concessions, avoided deforestation/carbon, debt-relief.</p> | <p>All parties interested. NGOs and donors for analytical work, roundtable discussions, awareness raising, and dialogue with government and potential public or private financiers. International community to develop new schemes. Government to formally commit if/when new schemes are/become available.</p> |
| Design simple frameworks for community-based management, and support pilot projects. <i>Chapter 4.</i> | <p><u>S</u>: New Code calls for community-based forest management. Little experience in Central Africa, including in the DRC.</p> <p><u>NS</u>: Draw lessons from other countries. Conduct studies and consultations. Assess customary rights and land tenure systems. Make rules as simple as possible. Prevent risks of misappropriation. Support information campaigns and pilot projects.</p> | <p>Min. Environment: set up a multistakeholder group to conduct studies, consultations, and propose simple and incentive frameworks. Involve regional forest councils. Local communities to launch pilot projects, with support from NGOs and other civil society organisations. Donors and NGOs to support studies, consultations and pilot projects.</p> |

| PRIORITY ACTION | STATUS (S) AND NEXT STEPS (NS) | MAIN PLAYERS INVOLVED |
|--|---|--|
| Support small-scale family enterprises. <i>Chapter 4.</i> | <p><u>S</u>: Informal sector represents the majority of forest-based jobs, some based on unsustainable practices. Lack of knowledge/understanding.</p> <p><u>NS</u>: Conduct studies and consultations. Identify programmes that can increase small businesses' income, and provide incentives for more sustainable practices. Support information campaigns and pilot projects.</p> | Government, donors, NGOs to conduct analytical work. Informal sector, civil society and local authorities to help define policies and field programmes. |
| <p>Rehabilitate key protected areas, and preserve biodiversity in production areas. <i>Chapter 4.</i></p> <p>Design priority programmes for highlands, savannah-woodlands and aquatic ecosystems. <i>Chapter 4.</i></p> | <p><u>S</u>: Unique ecosystems and biodiversity threatened with extinction. Parks rehabilitation strategy supported by government, NGOs, donors.</p> <p><u>NS</u>: Support emergency operations in key parks: Enforce wildlife clauses of the logging contracts. Reassess existing protected areas and identify new ones. Update law on nature conservation.</p> <p><u>S</u>: Ecosystems highly vulnerable. Growing population density depending on fragile resources. Lack of knowledge/understanding.</p> <p><u>NS</u>: Undertake analytical work, mapping and consultations to help identify priority interventions. Draw on other countries' experiences.</p> | <p>ICCN, the National Coalition for Conservation (ICCN), donors and NGOs) to rehabilitate parks. Local civil society should be more actively involved in participatory management. Concessionaires to curb poaching and bushmeat trade in concessions.</p> <p>Government, donors, NGOs to conduct analytical work. Local civil society and local authorities to help define policies and field programmes.</p> |
| Rebuild public institutions and support civil society organisations (CSOs). <i>Chapter 4.</i> | <p><u>S</u>: Min. Environment and ICCN in shambles. Budgets nonexistent. Active advocacy and development of NGO networks.</p> <p><u>NS</u>: Conduct an institutional review and design an institutional rehabilitation plan. Support CSOs' initiatives to monitor reforms, foster accountability, and pilot new management models.</p> | <p>Rebuild institutions and strengthen national leadership</p> <p>Government and donors to address the incentive framework: salaries, training, budgets. External partners to mainstream local CSOs into dialogue with government and decision making. NGOs and donors to support local communities.</p> |
| Disseminate the Forest Code and prepare the implementation decrees. <i>Chapter 2.</i> | <p><u>S</u>: Only four decrees enacted. A number of draft decrees ready for review. Forest Code insufficiently disseminated.</p> <p><u>NS</u>: Reactivate the multistakeholder group in charge of drafting the decrees and reactivate local consultations. Support Forest Code dissemination campaigns by Min. Environment and NGOs.</p> | <p>Min. Environment and multistakeholder steering group for drafting decrees. FAO support.</p> <p><i>Indicator of progress for WB TSERO budget support.</i></p> |
| Put in place a national sectorwide multidonor programme. <i>Chapter 4.</i> | <p><u>S</u>: Forest and biodiversity programme document drafted in 2004. National forest forums held in 2004 and 2006. Forest mainstreamed in PRSP and economic agenda. Donors' coordination group operational. A multidonor financing instrument being set up.</p> <p><u>NS</u>: Relaunch Min. Environment's coordination unit. Conduct local consultations. Prepare national/regional action plans.</p> | <p>Min. Environment, regional forest councils, multistakeholder groups to draw up national/regional action plans. Donors for coordinating policy advice, funding instruments and projects.</p> |



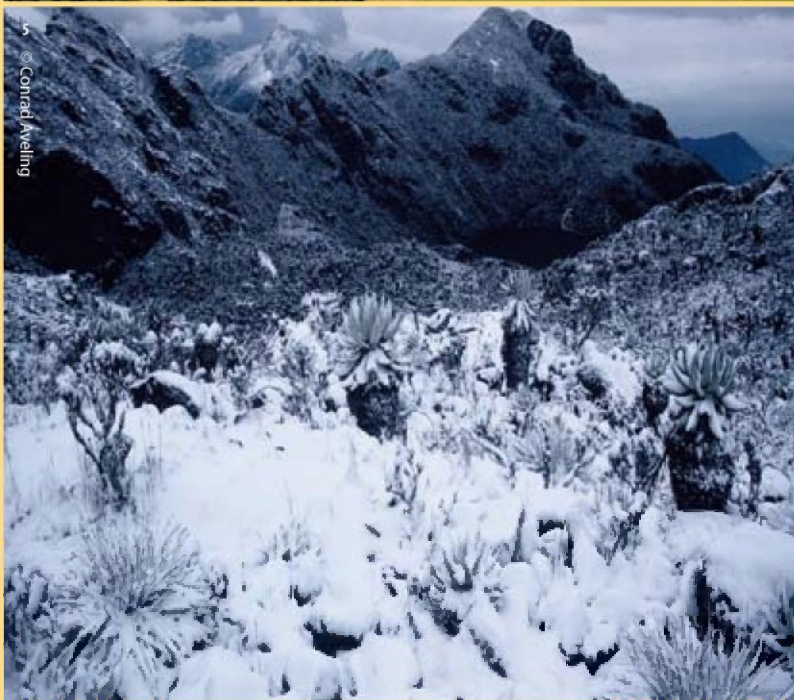
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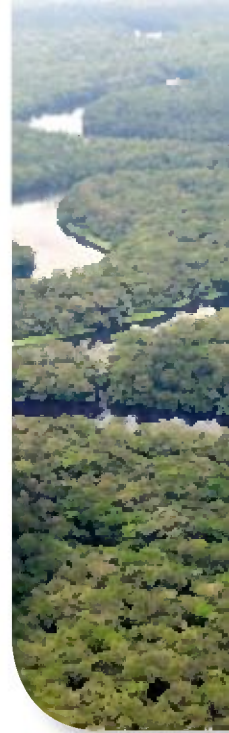


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- 2. Lowland rainforests, the green heart of Africa.
- 3. Gallery forests, transition to the southern savanna woodland mosaic.
- 4. Savannas on the northern fringe, along the border with Sudan.
- 5/6. The snow-capped Rwenzori, in the Albertine rift, eastern Congo.
- 7. Boundary between park and fields in highly diversified-highly populated eastern Congo.



CHAPTER 1

THE CONGOLESE FOREST IN 2006

1.A. NATURAL LANDSCAPES – SOCIOECONOMIC BACKGROUND

Three main landscapes. Forests in the DRC cover approximately 145 million hectares—62 per cent of the national territory. This is the second largest block of tropical forest in the world. The DRC is located at the heart of Africa’s forest massif (Map 1) and harbours approximately half of the continent’s rainforests. Rainforests cover approximately 37 per cent of the territory, dry forests 19 per cent, swamp forests 4 per cent, and mountain forests 2 per cent. The DRC is a complex patchwork of ecosystems.

Three main natural regions can be highlighted (Map 2):

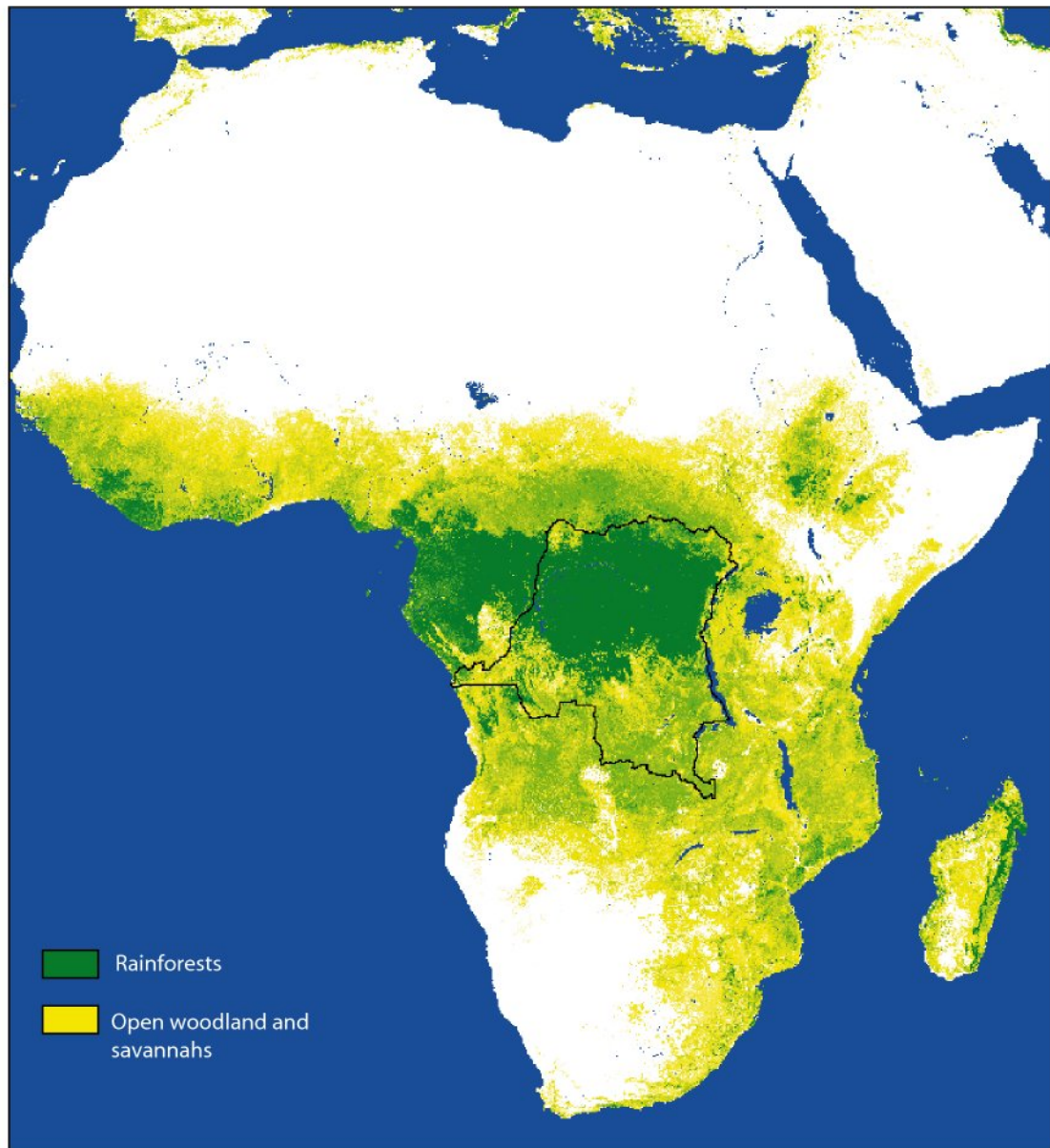
- *The lowland rainforests.* These cover approximately 86 million hectares, with a large majority in the Central Basin, and a small portion in Bas-Congo. Swamp forests in the Central Basin and mangroves on the Atlantic seaboard are included in the figure. Forest galleries run from the central massif to the south through the provinces of Kasais and Maniema.

- *The highlands.* These extend along the Albertine Rift in the east of the country. They cover a substantial portion of North and South Kivu provinces, as well as parts of Orientale, Maniema and Katanga provinces. This natural region stretches through an entire ecological gradient from lowland rainforests to glaciers and volcanoes.

- *The dry forests and savannah–woodland mosaic.* These ecosystems extend on both sides of the lowland rainforest: on the northern edge in Equateur and Orientale provinces, and on the southern edge in Kasai and Katanga provinces, where the dry forest is also known as ‘*miombo*’. Savannahs are also found in Bandundu and Bas-Congo.

The main forest provinces are Equateur, Orientale and Bandundu, with forest cover estimated at 40, 37 and 12 million hectares, respectively.

Economic and social developments. The DRC is emerging from a decade of instability and armed conflicts. After the upheavals in the wake of independence and 30 years of mismanagement, the country entered the

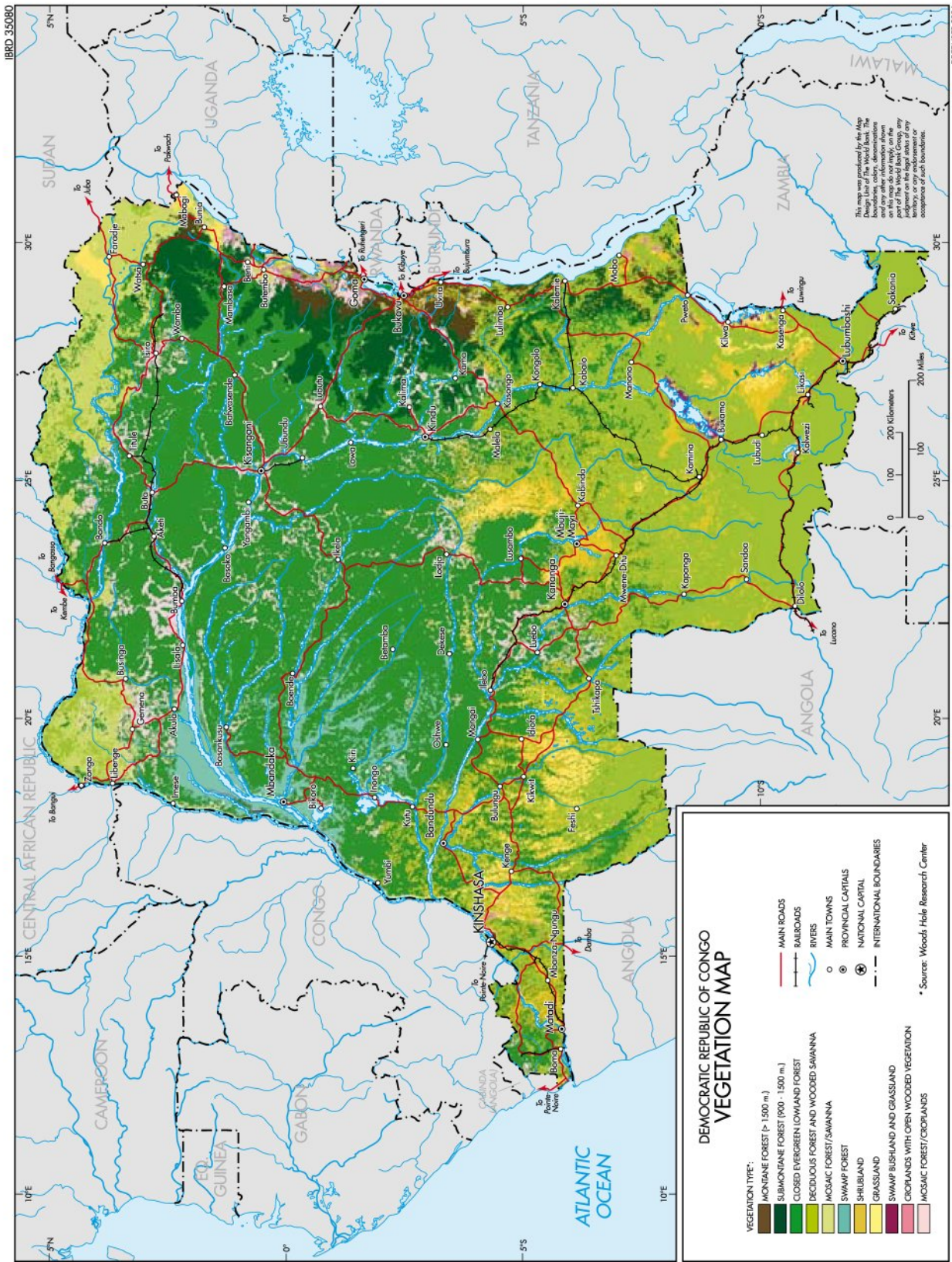


Map 1. Forest distribution in Africa. *The DRC is located at the heart of Africa's forest massif and is home to half of the continent's rainforests.* Source: Adapted from Hansen et al. (2003).

1990s in a state of almost total collapse. The decade was marked by the 1991 and 1993 plunderings, followed by two armed conflicts, one in 1997 and the other from 1998 to 2002. In July 2003, the Inter-Congolese Dialogue led to the establishment of a transitional government, with a sharing of positions between factions. The DRC, long divided by fighting lines, is gradually reunifying. A new constitution was adopted in 2005. Such progress is encouraging, but the situation is still fragile. The challenges are tremendous, such as disarmament, the reintegration of

war veterans, and preparations for the first elections in the country's history.

War and mismanagement have taken a heavy toll on the DRC as it experienced 'development in reverse'. The GDP per capita dropped from 380 dollars in 1960 to 96 dollars in 2002, or 29 cents a day.¹ Infrastructures have collapsed and institutions are in a shambles. A large number of communities were forced into a subsistence existence due to insecurity and lack of transportation. Informal activities



Map 2. DRC vegetation map. The three main natural regions are: rainforest in the Central Basin and the west; dry forests and savannahs in the south and the northern fringe; and highland ecosystems along the eastern border. Source: Adapted from Mayaux et al. (2004).

currently account for about 80 per cent of the economy. Agriculture focuses on subsistence, and households rely heavily on forest-based products for energy, food, and cash income. Economic growth recovered in 2002 after decades of recession. Assuming annual growth reaches 5.3 per cent, it would take until 2060 for the GDP per capita to return to its level of 1960. If annual growth is only 4 per cent, the process would take 200 years. The DRC ranks last in the world in terms of the quality of its business environment (IFC 2006). Widespread corruption and misuse of public resources, both natural and financial, are widely recognised as major obstacles to the country's development.²

Demographics. The Congolese population is about 60 million, of which an estimated 90 per cent is poor and 70 per cent lives in rural areas. This is the third most populated country in Sub-Saharan Africa. The average population density is 24 inhabitants per square kilometre, but this figure varies considerably throughout the country (Map 3). The DRC has the highest rural population ratio among the forest-rich Central African countries. Nevertheless, the city of Kinshasa has an estimated 6 million inhabitants and is the main city in the subregion. Cities represent a rapid growth market for agricultural and forest products. Conflicts have caused large-scale population displacements: in the 1990s, an estimated one million Rwandan refugees flooded across the border. Today, about 3.5 million people are reported as internally displaced.

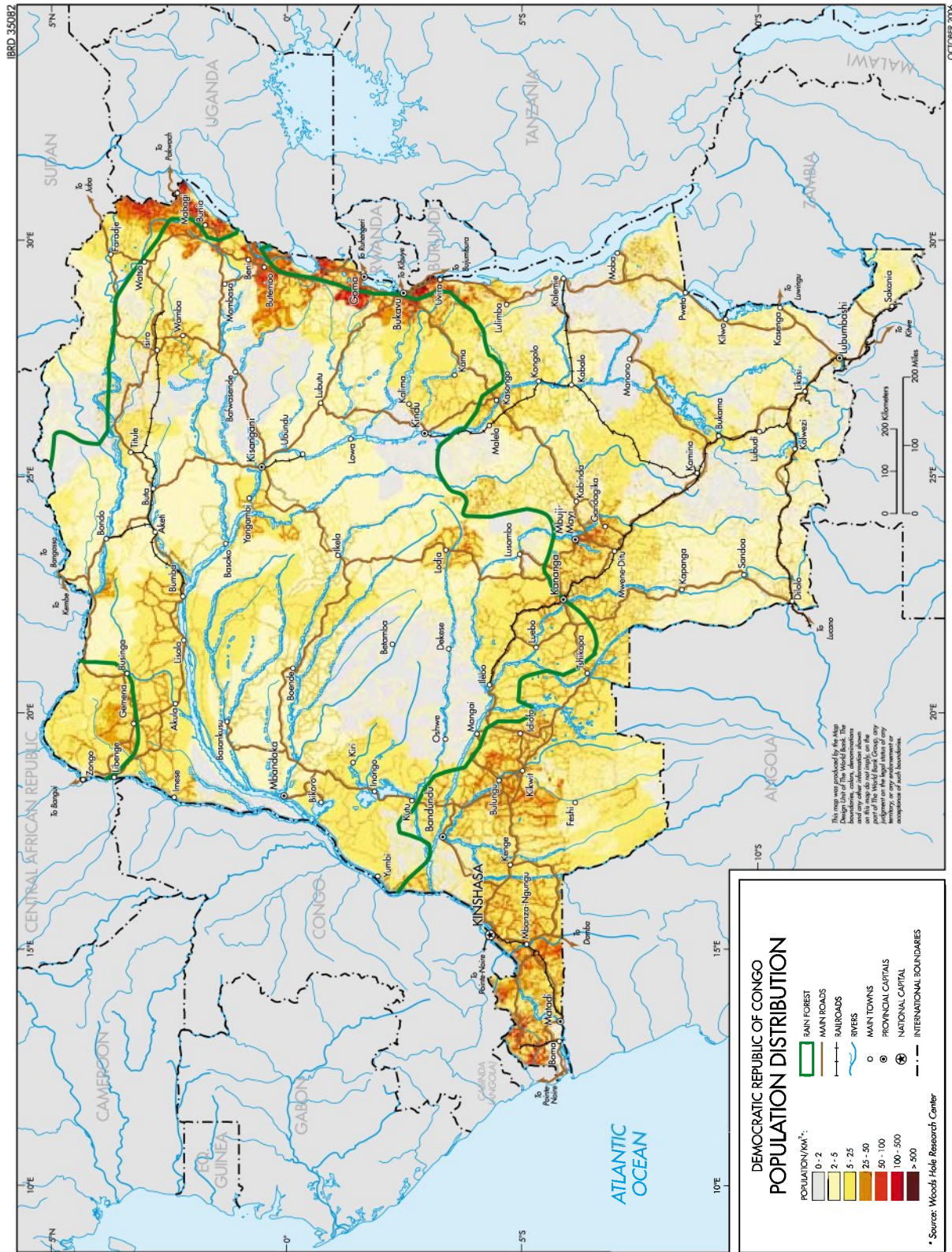
Forests and conflicts. The desire to have access to natural resources is widely acknowledged to have been an important factor in recent military conflicts. These conflicts mostly involved minerals, although access to land and timber was also involved. In the DRC, which has low per-capita income and is rich in natural resources, allocating access to those resources and to the benefits they generate is a centrepiece of good governance. In many areas, violence, extortion and weak infrastructures annihilated the rents that could be obtained from forests. People rarely

fight over things they do not perceive to be worth much.³ Nonetheless there were large-scale speculative attempts to claim forests during the war with the hope that they would be worth more after the conflict ended (*see* Chapters 2 and 3).

At the local level, there have been frequent conflicts between logging companies and communities over the failure to pay village authorities for logging their forest, to compensate families for damage to their crops, and companies' unwillingness to provide employment, social services, roads or transportation. These conflicts have often led communities to block logging companies' roads. For their part, the companies complain of the uncertainty caused by unclear rules and constantly changing demands from populations (Yambayamba 2003).

If peace and infrastructure increase the value of forests, greater conflict could ensue, unless the rights to use and benefit from forests are better defined and gain legitimacy, and effective mechanisms are developed to resolve disputes. Giving out large forest concessions to companies that are not currently in a position to fully use those concessions is dangerous in that regard. Under such circumstances, both companies and local communities are likely to feel that they have legitimate rights over the forests, and if those forests become more valuable, they will be more likely to fight for their rights.

Deforestation and forest degradation. Laporte and Justice (2001) estimated that the annual deforestation rate between 1984 and 1998 was about 0.4 per cent, which seems modest compared to other tropical countries. However, no reliable estimates exist for national deforestation rates. This national average masks stark differences among regions. Most of the forests around Kinshasa disappeared long ago. Forest loss has been concentrated in the densely populated regions of Bas-Congo and eastern DRC. It has been heavier close to roads, rivers, railways and markets (Massart *et al.* n.d.; Mamingi *et al.* 1996; Laporte and Justice



Map 3. Population distribution in the DRC. Population is unevenly spread across the country, mainly along the line from Bas-Congo to Kasai; along the eastern border in the two Kivu provinces and Ituri; and in the northern part of Equateur province. These three regions border the central forest massif. Source: Based on Oak Ridge National Laboratory (2004).

2001; Wilkie and Laporte 2001). Slash-and-burn agriculture is the main direct cause of deforestation, although fuelwood collection plays a major role in peri-urban areas and in densely populated rural areas. Deforestation is likely to increase in most regions as the population grows, or moves.

The main factors that seem to have curbed forest loss and forest fragmentation have been the country's weak infrastructure and political instability. These factors have made it less inviting to clear forests for large-scale agriculture or to exploit them for timber. Some groups did take advantage of the war to engage in illegal logging and hunting activities, especially along the eastern border, and the influx of refugees led to major environmental problems, including in national parks. Overall, however, insecurity and the military conflicts probably maintained forest disturbance by farming, and certainly by logging, below the level that would have been the case without war.

Public institutions. Forest suffers from the same institutional shortcomings as other sectors. Public administration in the DRC has historically suffered from corruption and abuse of authority, and large numbers of public servants were equipped with limited means and training. The war made this situation worse. The central government lost much of its territorial presence, including in most of the forested regions of the north and east. The previously meagre government allocations for environment and forests ceased altogether. The average civil servant wage is about 37 dollars per month at director level. The Ministry of Environment is subdivided into 19 departments, services and institutes, with minimal resources and sometimes overlapping mandates. There are reportedly around 1500 staff at headquarters and 2000–4000 in the provinces, but these numbers are not known exactly. Field services comprise 11 provincial departments, 40 districts and 144 territories. These teams are left largely on their own, without equipment, and having little contact with Kinshasa.

At present, the forestry department is unable to enforce the policies of the new Forest Code in the field. The danger is that state employees, private operators and local authorities could act with little or no reference to national policy or to the concerns of local communities.

The DRC has produced no professional foresters in the last 10 years. The country does still have a small group of well-trained forest professionals, but many of them are nearing retirement.

Civil society. Civil society associations are active in the DRC. Besides development NGOs, there are also many churches, professional associations, women's organisations and youth associations.

The *Conseil National des ONG de Développement du Congo* (CNONGD) was created in 1990. It covers all development sectors. Coordination and action platforms focusing on forests have also been established. Despite difficulties, these civil society organisations engage actively in lobbying, awareness raising and education at local and national levels, and in forest management, monitoring and conservation projects in the field. These groups include the *Réseau des Partenaires pour l'Environnement au Congo* (REPEC), the *Groupe de Travail Forêts* (GTF), and the *Réseau Ressources Naturelles* (RRN). Many other organisations also operate in the provinces. A number of organisations represent the indigenous people: the *Ligue Nationale des Pygmées du Congo* (LINAPYCO), the *Réseau des Associations Pygmées* (RAPY) in North and South Kivu, the *Union des Associations Pygmées de Mbandaka* (UAPM), and the *Plateforme Nationale des Batwa* (PFNB).

1.B. THE INFORMAL SECTOR AND RURAL LIVELIHOODS

Forest products feature prominently in the lives of Congolese people. Forests are the primary source of energy, medicine and building materials, and are also a major

source of food and income. Without these products many Congolese families would not be able to survive.

The demand for forest products is set to grow considerably as purchasing power increases, the population grows, and transportation becomes easier. Lower transportation costs and increasing demand make trade more profitable, encouraging more people to engage in it.

Informal, small-scale wood-based companies. Small-scale loggers known as *scieurs de long* supply the domestic market (Lumbwe 2001). They produce beams and planks for construction or furniture. They also export wood and wood-based products to neighbouring countries, particularly Angola, Burundi, Rwanda and Zambia (Lumbwe 2001; Baker *et al.* 2003; Djiré 2003). No one knows for sure how many small-scale loggers there are or how much wood they harvest. Many of these loggers belong to associations (Lumbwe 2001; Djiré 2003). The Congolese Association of Small-Scale Loggers estimates that there are around 8000 small-scale loggers. According to Djiré (2003), informal timber production is around 1.5 to 2.4 million cubic metres per year. If that is so, the informal sector produces more timber than the formal sector.

The category of small-scale loggers includes everything from a few individuals who join together to harvest timber two or three months a year to permanent enterprises with a dozen or more regular employees. Most small-scale loggers can be classified as belonging to the informal sector because they lack licences from central government. Nonetheless, most pay significant sums in taxes to local authorities, as well as royalties to local chiefs.

The impact that small-scale loggers have on forests is different from that of large-scale loggers. They tend to operate in forest margins and forest fragments, have no heavy equipment, build no roads, and often prefer

to log smaller trees. They tend to extract larger volumes from smaller areas, and use a broader range of species. Small producers use larger proportions of each tree, but waste more wood from the portions they use when sawing (Wolfire *et al.* 1998; Lumbwe 2001; Djiré 2003). Finally, besides small-scale logging operations there are also many small sawmills, lumber markets, carpentry and furniture-making enterprises, and woodcarvers. There are reportedly 103 lumber markets in Kinshasa, Matadi and Boma (Djiré 2003).

Small-scale logging is particularly active around Kinshasa and in Bas-Congo. High levels of informal logging can also be found in Bandundu, Equateur and the two Kivus (Lumbwe 2001; Djiré 2003; Aveling *et al.* 2005)⁴ and most likely around each major town throughout the country.

The informal logging sector has grown rapidly over the last decade⁵—the armed conflict made it harder for large companies to supply the domestic market with timber, government capacity to regulate informal harvesting declined, and many people who lost official salaries sought employment in informal activities. With the return of peace, this trend is unlikely to reverse. The depletion of forests around Kinshasa and in the east, and the reopening of the main forest areas in the Central Basin, may increase informal logging in these areas.

Bushmeat. Even more so than timber, wildlife is an important livelihood resource for the rural poor. Wildlife provides a relatively cheap, high-quality food resource. Hunting requires little capital investment and brings in a quick return. In some areas, bushmeat is one of only a few goods that can provide income that outweighs transportation costs.

Extrapolations from local surveys suggest that the Congolese population consumes between 1.1 and 1.7 million tonnes of bushmeat each year (Wilkie and Carpenter 1999; Fa *et al.* 2003).⁶ Numbers published by Wilkie and Carpenter (1999) seem to



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9 © Kim S. Gjerstad



10 © Conrad Aveling



11 © Filip Verbeelen



12 © Conrad Aveling

- 8. Life in the forest: Mbuti woman painting herself with white clay.
- 9. Artisanal logging near Mambasa.
- 10. Itinerant traders on the Kinsangani-Bunia highway.
- 11. Edible caterpillars, an important source of proteins, and also of cash income.
- 12. Local livelihoods on the banks of the Congo river.

indicate that annual bushmeat consumption per square kilometre is about three times higher in the DRC than in neighbouring forested countries.⁷ Duikers, monkeys and rodents account for most of this consumption, although people also eat wild pigs, buffaloes, reptiles and birds, as well as large numbers of caterpillars, grasshoppers, crickets, termites and palm grubs. A survey conducted on five Kinshasa markets found there were more than 22 species of bushmeat (Ndona 2004). Most Congolese families get the great majority of their protein from bushmeat, insects⁸ and fish. Other sources of protein tend to be more expensive or difficult to obtain (Wilkie and Carpenter 1999; Fa *et al.* 2003). Given a choice, many families also prefer bushmeat over other protein sources (Ndona 2004). Animal husbandry in the forest areas is limited by trypanosomiasis and other diseases.

About two-thirds of the bushmeat sold in Kinshasa comes from Equateur, Bandundu and Orientale provinces (Ndona 2004). Most of this meat is smoked in distant locations and then shipped to Kinshasa by barge (Trefon 1994; Ndona 2004). This exposes traders to multiple requests for bribes and other informal payments along the way. During the war, Kinshasa lost access to many of the traditional sources of bushmeat, but this traffic is rapidly coming back. The remaining third of the bushmeat supply sold in Kinshasa comes by road or boat from neighbouring areas of Bas-Congo and around Kinshasa, and is often sold fresh. Prices vary according to the species, the market and the season.

In rural areas, selling bushmeat is a major source of cash income. One study in northeast DRC in the mid-1990s found that two-thirds of the households' total cash income came from bushmeat, fish and plants (de Merode *et al.* 2004). Another study from the 1990s showed that collecting caterpillars and beekeeping sometimes provided a much higher annual income per hectare than growing crops (Munthali and Mughogho 1992). Bushmeat trade provides income for

many urban families as well. Consumers in Kinshasa purchase bushmeat for two to five times the amount that the hunters receive, with the difference going to the people who transport and market the meat. Ndona (2004) estimated that traders' average gross revenue was 205 dollars per month—far more than the average civil servant salary. Women accounted for the majority of the traders surveyed.

Besides the biodiversity concern, the depletion of wildlife is also a major social problem. In regions where bushmeat has been depleted, local people are deprived of an important protein source. In many cases, local people have few alternative sources of protein (Wilkie and Carpenter 1999; Fa *et al.* 2003).

Medicinal plants and forest fruits and vegetables. Medicinal plants are a key product for the Congolese population, but there is little overall information on the subject. Almost all Congolese populations, both urban and rural, depend on medicinal plants for their health care. This involves hundreds of species, which vary greatly by region (Nyakabwa and Gapusi 1990; Chifundera 2001; Terashima 2001; Yamagiwa 2003). Scientists have found them to have therapeutic value for fighting major health problems (Otshudi *et al.* 2000; Cimanga *et al.* 2002). An estimated 85 per cent of households in the provinces of Bandundu and Equateur depend on medicinal plants to cure common ailments (Ndoye and Awono 2005). Households that have access to formal health care still rely on medicinal plants as well. There is a belief that forest dwellers, especially the Pygmies, are particularly effective healers.

The Congolese people also use forest plants for food and condiments. These products are essential, but as with medicinal plants, there is little overall information on the subject. As many as 284 food plants are used in the *miombo* ecosystems of southern DRC (Malaisse 1997). The most commonly used plants include the vegetables *Gnetum*

africanum and *Thaumatococcus daniellii*, the fruits *Aframomum* spp., *Cola acuminata* and *Garcinia kola*, and the condiments *Piper guineensis* and *Scorodophloeus zenkeri*. There are also large numbers of mushrooms, as well as palm wine made from *Elaeis guineensis* and several species of raphia. In Kinshasa, over a thousand women earn their living selling *Gnetum africanum*, receiving an average monthly income of 139 dollars, far more than the average civil servant salary (Toirambe 2002).

Fuelwood. Most rural and urban households use fuelwood or charcoal to cook. In fact, wood energy accounts for 80 per cent of all domestic energy consumed in the DRC (Wolfire *et al.* 1998). The Congolese people use about one cubic metre of fuelwood per capita annually (Lumbwe 2001), which as an order of magnitude seems to corroborate the FAO (2003) nationwide estimate of about 72 million cubic metres. This means that the overwhelming majority of all the wood harvested in Congo is used locally for heating and cooking.

Although selling fuelwood and charcoal provides a major source of cash income in urban areas, there are few studies on the issue at national scale. According to Ndoye and Awono (2005), traders of charcoal receive on average a monthly income of 216 dollars. To give a sense of how important fuelwood and charcoal might be in terms of employment, one should note that in Nairobi approximately 40,000 households sell charcoal (Kinyanjui 1987) and that in Zambia charcoal making provided up to 41,000 jobs (Hibajene and Ellegard 1994).

Forest and agriculture. Congolese farmers practise shifting slash-and-burn agriculture. Current patterns of shifting agriculture in the DRC are not well known—the few existing studies are rather unrepresentative of the country as a whole. It is estimated that only about 4–6 per cent of the land in the country's rainforest areas is devoted to agriculture (Laporte *et al.* 1998; Chezeaux 2003). Most households grow less than one

hectare annually, and farmers would often rather clear secondary forest than primary forest. Most of them lack funds, labour and incentives to develop vast plantations.

There is insufficient data on key questions such as: how many households practise shifting cultivation, the agricultural calendar, the relative importance of clearing primary or young secondary forests for different production systems, and regional variations. It is likely that in this system, where forest vegetation reconstitutes soil fertility, declines in forest area may lead to shorter fallows and consequently lower crop yields (Larson *et al.* 1996).

Indigenous forest peoples. The indigenous forest peoples of the DRC constitute a complex mosaic of interrelated ethnic groups. Definitions and figures are neither precise nor consistent. No record was found of an exhaustive census or mapping of indigenous people in the DRC, and most sociological and anthropological studies concerning the indigenous hunter–gatherers have focused on the Ituri forests.

According to Bailey (1985), Dyson (1992) and Bahuchet (1999), an estimated 70,000–100,000 people identify themselves as being indigenous hunter–gatherers or their descendants. However, other estimates give a much higher number. Reports by Lewis (2000), Jackson (2004) and Lattimer (2004) place the number of indigenous people in the DRC at about 250,000. The *Ligue Nationale des Pygmées du Congo* (LINAPYCO) suggests that indigenous people number around 450,000–600,000 and that they are present in 47 of the DRC's 144 territories (preliminary findings of an ongoing nationwide census).

Hunter–gatherers, also known as Pygmies, are generally thought to be the aboriginal inhabitants of the Congolese forests. According to early views (Schebesta 1938–1958; Turnbull 1961, 1965, 1983), they led a self-sustained life based on gathering before farming societies immigrated to the

forests during the first millennium AD. Other studies, however, suggest that the first contact between the indigenous peoples and the immigrant farmers took place much earlier, around 2000–3000 years ago (Bahuchet and Guillaume 1982; Bailey 1985; Hart and Hart 1986; Vansina 1990).

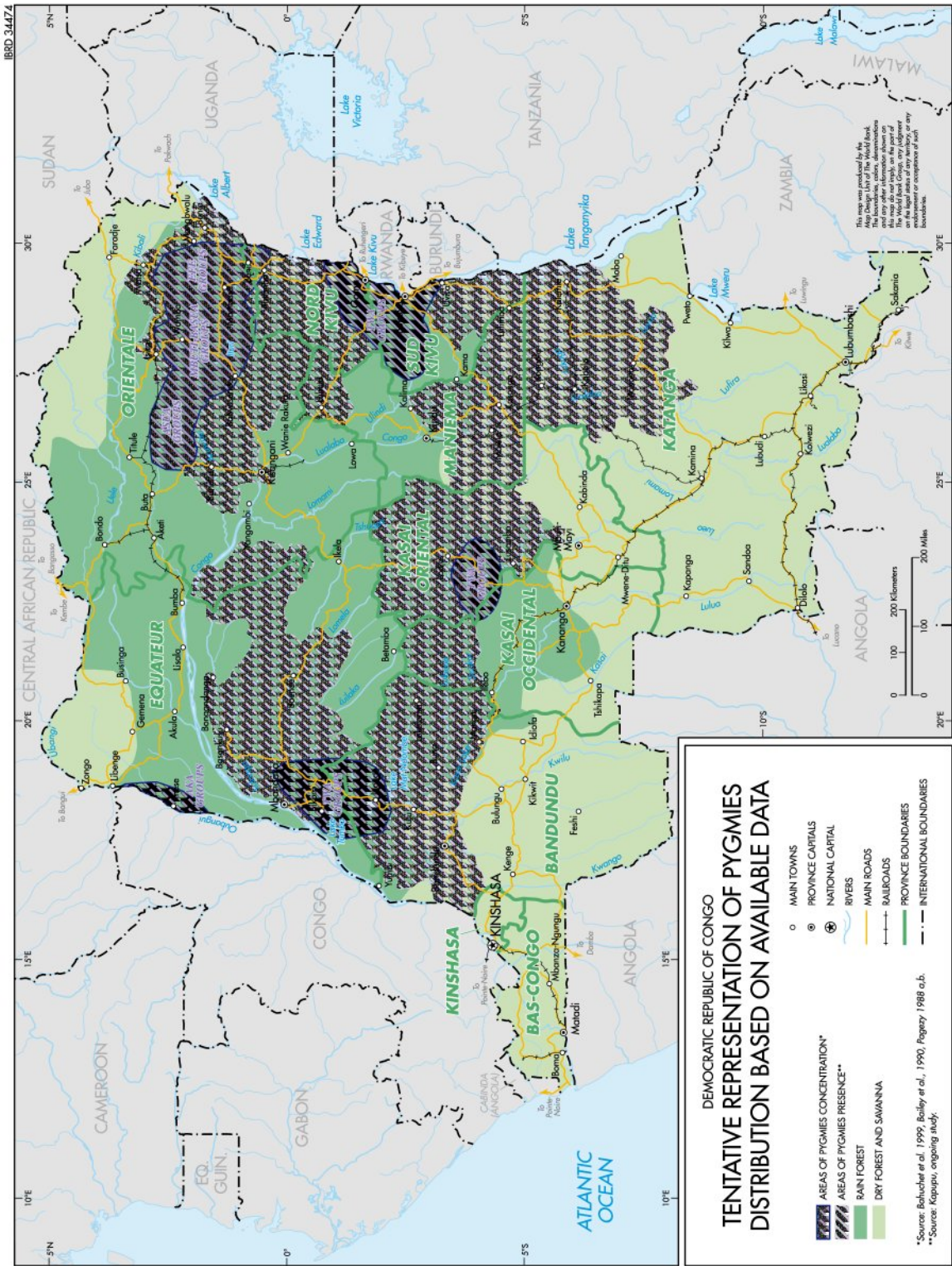
Groups usually identified as Pygmies in the DRC are: the Mbuti groups (including Basua, Efe and Asua) located in the eastern DRC especially in the Ituri;⁹ the Twa people located in Kivu along the border with Rwanda and in the Lake Tumba area in Equateur; and the Cwa people in the forest–savannah mosaic in the Kasai Lakes area. Other groups are reportedly scattered throughout the forest lands of the DRC, including the Aka people on the northwestern border with the Republic of Congo (Map 4). LINAPYCO indicates that indigenous peoples in the DRC fall into three main groups: the ‘forest groups’ living in the forest regions especially in Ituri; the ‘riparian groups’ living around lakes and rivers especially in Equateur and Kasai; and the ‘pottery groups’ living in the east of the country in North and South Kivu.

Indigenous peoples identify themselves closely with the forests (Cavalli-Sforza 1986). They live mostly, but not exclusively, on wild products of the rainforest ecosystem (Ichikawa 1991) and make the forest the centre of their intellectual and spiritual life (Harako 1988). They perceive their neighbours, and likewise are perceived by them, as socially, economically, ideologically and politically different (Bahuchet 1993). Most indigenous peoples in the DRC live on a combination of forest products, agriculture, bartering and sometimes wage labour (Ichikawa 1991; Grinker 1994). They have a high level of mobility and their movements around large forest areas are guided by the seasonal availability of forest products, as well as by the proximity of agriculturalists or commercial traders that allow them access to agricultural foods. Indigenous forest populations in the DRC relate in complex ways to village people for whom they work

or exchange goods and services (Turnbull 1965, 1983; Hewlett 1996), and whose Bantu and Sudanic languages most of them use for communication (Grinker 1994). The nature of these interactions between neighbours ranges from relative autonomy with occasional contacts to hereditary servitude.

The socioeconomic environment of the indigenous forest peoples in the DRC and hence their lifestyle have been changing over the last decades, in part as a result of growing demographic pressure, immigration of agricultural peoples, expansion of commercial activities, and fragmentation of forest massifs. A general tendency is toward greater intensity of outside contacts, more dependence on agriculture, integration into modern life and sedentarisation. There is, however, a large diversity of situations. Many groups, especially among the Mbuti in Ituri and the Twa, Aka and Cwa in Equateur, are still basically involved in a forest-dependent economy, whereas many of the Cwa groups in Kasai and Twa groups in Kivu seem to have adopted agriculture to supplement their diet, though hunting and gathering remain essential activities.

Data from the 1970s and 1980s suggest that, at that time, the harvest of game and non-timber forest products, used to support local subsistence of low-density populations, was not eroding the resource base. Ichikawa (1986, 1996) estimated that a group of 67 people harvested around 7 tonnes of bushmeat over a year from an area of 150 square kilometres.¹⁰ Over the last two decades, Hart (2000) found that the Mbuti’s use of their environment became less sustainable, and that immigration of agricultural peoples provided ever greater non-traditional opportunities for trade and put traditional systems in jeopardy, at the same time as they converted forests into agricultural fields and settlement. In many cases, the indigenous groups’ socioeconomic and ecological environment is transforming rapidly, and the sustainability of the resource base on which they rely may be at risk.



Map 4. Geographic distribution of Pygmy groups in the DRC (based on available data). The Mbuti (including Basua, Efe and Asua) groups located in the eastern DRC especially in the Ituri; the Twa people located in Kivu along the border with Rwanda and in the Lake Tumba area in Equateur; and the Cwa people in the forest-savannah mosaic in the Kasai Lakes area. Other groups are reportedly scattered throughout the forest lands of the DRC, including the Aka people on the northwestern border with the Republic of Congo. Source: Adapted from Bahuchet (1993) and LINAPYCO (ongoing census).

From a legal point of view the indigenous peoples are citizens equal to other Congolese. In most cases, however, they have neither the same access to land and resources as other groups, nor the same recognition of rights, nor the same influence, and organisational, technical or economic capacities. Few Mbuti, Aka, Twa and Cwa are working as civil servants, and their traditional leaders are often not recognised by the government. They are often marginalised in local councils and other decision-making processes. Rough estimates (Schmidt-Soltau personal communication) indicate that indigenous people's households earn less than the average rural households and have lower living standards. It appears that modernisation as it occurs in the DRC context risks marginalising indigenous forest peoples more than other groups.

1.C. NATURE CONSERVATION

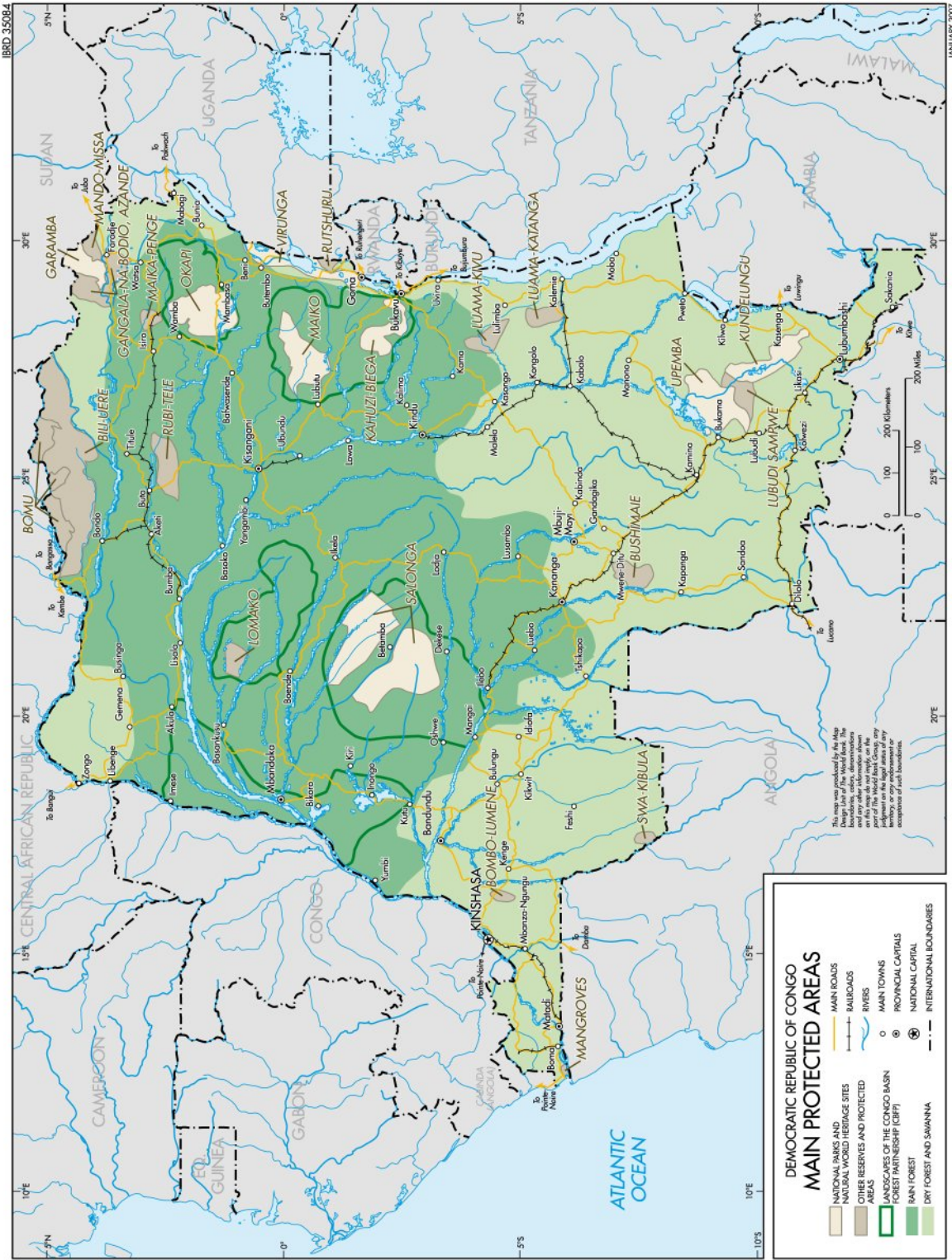
The DRC ranks fifth in the world for animal and plant diversity. In Africa, it ranks first for mammal and bird diversity and third for floral diversity after Madagascar and South Africa. It has 409 species of mammal, 1117 species of bird, 400 of fish, and over 10,000 of plants (Sayer *et al.* 1992; Balmford *et al.* 2001; Demey and Louette 2001). The DRC contains five Natural World Heritage Sites, more than the rest of Africa combined. They contain rare and spectacular species such as northern white rhino, mountain gorilla, the endemic okapi, as well as endemic great apes—eastern lowland gorilla and bonobo.¹¹ Endemicity is high among plants and smaller mammals as well: 6 per cent of its mammals and 10 per cent of its plants have been found only in the DRC (Bibby *et al.* 1992; Davis *et al.* 1994; Stattersfield *et al.* 1998). The DRC contains 12 of Africa's 30 'Centres of Plant Endemism' as identified by IUCN and WWF. It also contains two of the 'Endemic Bird Areas' identified by BirdLife International (Mittermeier *et al.* 1997; Demey and Louette 2001). Whether measuring with the WRI's 'Frontier Forests',

the WWF's 'Priority Sites', the WCS's 'Wild Places' or CI's 'Hotspots' and 'Wilderness Areas' the natural ecosystems of the DRC appear at the top of the list in Africa.¹²

The DRC's biodiversity is among the least known of all African countries. Large forest areas remain unexplored and large taxonomic groups barely investigated. Yet this biodiversity is already endangered. This is obvious for some of the larger mammals, but there are also lesser-known species or those of limited habitat range that are threatened by commercial hunting and habitat degradation. The IUCN's (1996) *Red List of Threatened Animals* contains a total of 325 species found in the DRC.

The DRC's protected area network. Officially, 60 protected areas, including seven national parks, cover approximately 18.5 million hectares, i.e. about 8 per cent of the country. Map 5 shows DRC's main protected areas, as well as the five landscapes of the Congo Basin Forest Partnership included in this country. Many of the protected areas were created along the Albertine Rift in the east—biologically the most diverse part of the country, but also the most populated, and the area most exposed to the recent wars.

Most conservation efforts in the DRC have gone into protecting high-profile, charismatic species such as elephant, bonobo, gorilla, okapi and rhinoceros. These 'flagship species' gave international importance to vast natural habitats and justified their protection, and in so doing maintained the wealth of less visible but equally unique species. During the colonial era, national parks were set aside first and foremost for research and nature conservation. Hunting reserves were set aside to assure well-stocked, attractive environments for a small hunting elite. After independence, emphasis was put on developing ways in which the parks could generate revenue through tourism, for example in the Kahuzi-Biega and Virunga parks via gorilla tourism. Tourism came to a halt in the early 1990s.

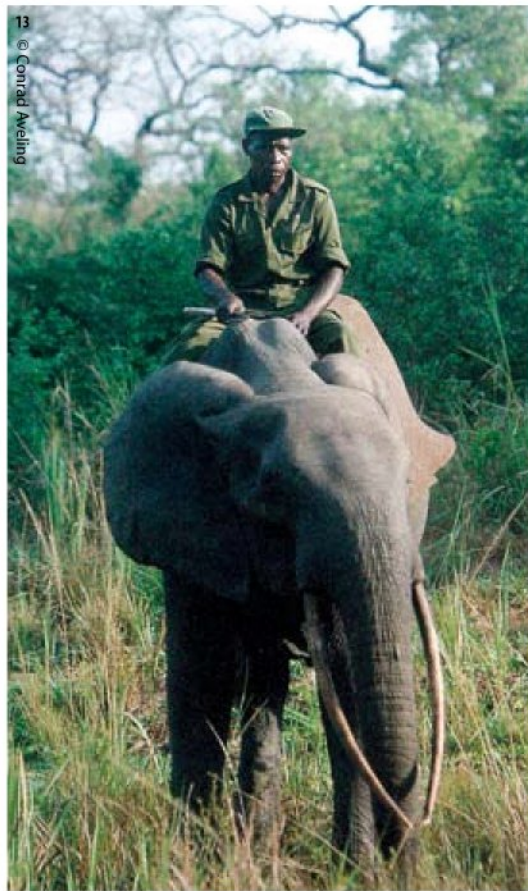


Map 5. Main protected areas in the DRC and the Congo Basin Forest Partnership landscapes. The full network includes 60 protected areas covering approximately 8 per cent of the territory. The national parks of Salonga, Kahuzi-Biega, Virunga and Garamba, as well as the Okapi Faunal Reserve are World Heritage Sites. Source: Based on data from the Institut Congolais pour la Conservation de la Nature and the Wildlife Conservation Society.

The *Institut Congolais pour la Conservation de la Nature* (ICCN) has the responsibility for managing protected areas of the DRC. It has about 1800 staff, the majority of whom are located in about a dozen key parks and reserves. At site level, the ICCN spearheads multistakeholder local management committees called *Comités de Coordination des Sites*. At the national level, it steers a multistakeholder consultation group called *Coalition pour la Conservation au Congo*. Despite its dedicated staff, the ICCN is affected by the DRC's overall institutional collapse, including insufficient salaries, lack of training, and the fact that more experienced staff are nearing retirement.

Impact of war. The earliest devastation from the conflict was felt in the Virunga and Kahuzi-Biega parks as a result of the massive influx of Rwandan refugees in 1994. Close to one million people poured over the border into camps in and around Virunga. The Mugunga camp lodged an estimated 50,000 soldiers with arms and ammunition (Biswas and Tortajada 1996). With the beginning of the DRC's own civil wars in 1996 and 1998, intensive poaching by a multiplicity of armed factions continued. These sites were sometimes fought over for access to wildlife, timber, minerals and land. Prior to the war, the northern part of Kahuzi-Biega was home to an estimated 250 gorillas and 700 elephants. Only half of the gorillas and fewer than twenty of the elephants reportedly remain (WCS, pre-conflict and post-conflict censuses, unpublished).

Most if not all of the DRC's protected areas are endangered. A large number have become 'paper parks'. In some areas, poaching has increased since the war ended. Salonga, one of the largest parks in Central Africa, reportedly has no more than 1000–2000 elephants left (Blake 2004). Maiko's elephant population also appears to have drastically declined during the civil wars (Nixon *et al.* 2005). In Garamba, poaching for ivory and rhino horns by the Sudanese militia reached an unprecedented scale—



Domesticated elephant mounted by a guard of the Congolese Institute for Nature Conservation in the Garamba national park.

northern white rhinos are on the brink of extinction and two-thirds of the parks are devoid of wildlife (Hillman and Smith 2004).

Another problem is small-scale artisanal mining. Gold, coltan (columbite–tantalite) and diamonds are extracted from the Okapi reserve, and from the Maiko and Kahuzi-Biega national parks. Gold sites attract hundreds of settlers, some of whom are fighters yet to be demobilised. These gold mining camps, which rely on bushmeat, slowly evolve into permanent settlements and restoring the protected area's integrity becomes more difficult. The same problems apply to fuelwood harvesting and charcoal production. Thousands of people are involved in these activities inside the Virunga national park, and supply densely populated neighbouring cities and rural areas.

Wildlife outside parks. Excessive hunting threatens wildlife in the DRC. Hunting and bushmeat trade are widespread throughout the country. Some species, such as rodents and small duikers, can withstand some hunting pressure and are often a hunter's main quarry. But even in such cases, other species such as bonobo become victims of opportunistic by-catch. Furthermore, some species such as elephant are the victims of intense trophy hunting. Their populations, with low numbers and low resilience, are endangered.

The current situation in the DRC is worrying. The populations of several large mammals seem to be dwindling in remote forest areas where there are no logging roads (Tshikaya and Mapilanga 1999; Hart and Mwinyihali 2001). Demographic growth and urban centres have created larger markets than in other less populated areas of Central Africa. The recent war made it easier to access weapons, and caused human population shifts. Although the road network has collapsed, rivers are used to transport bushmeat.

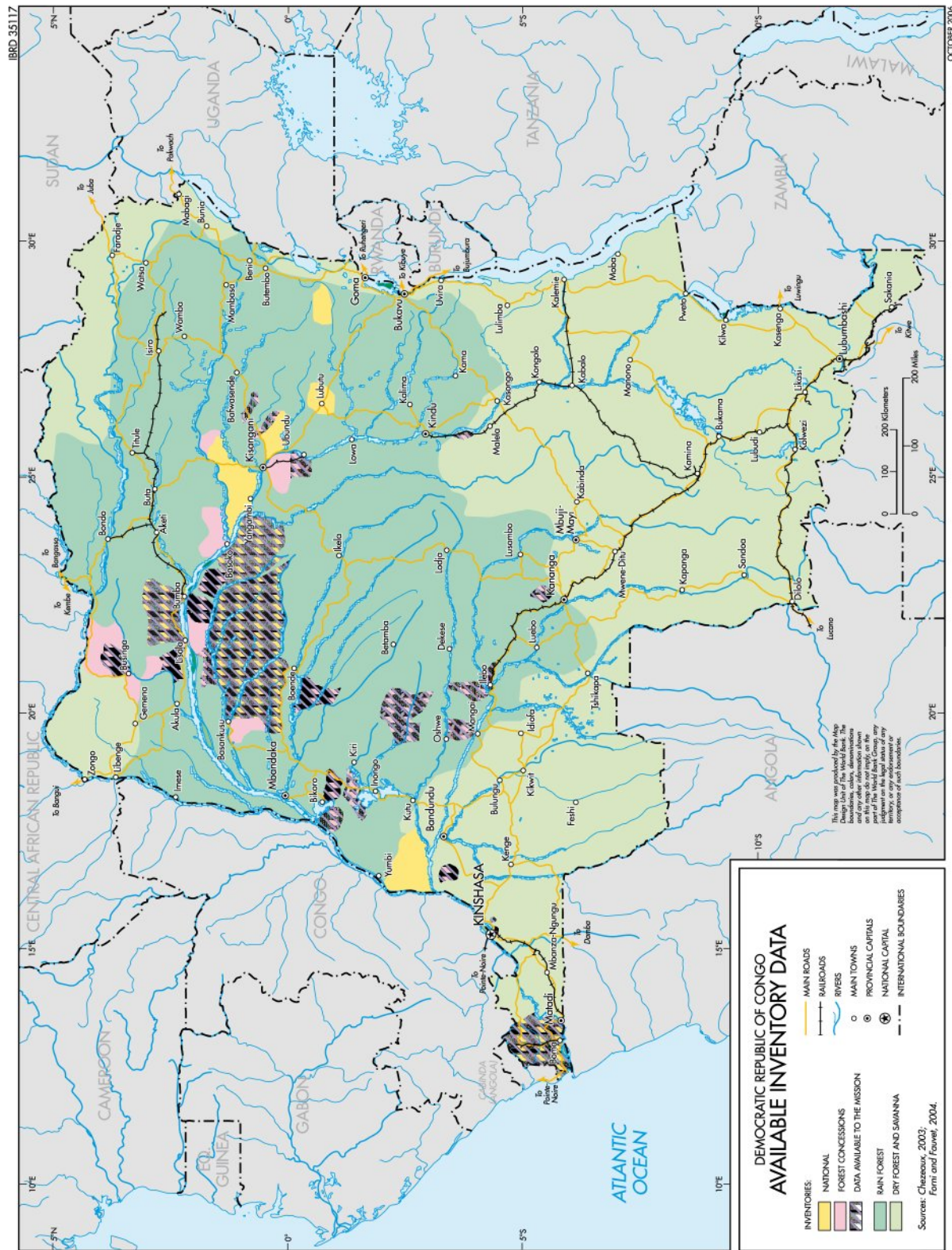
With the end of conflict, several factors are likely to contribute to intensified hunting. The recovery of the timber industry is one of them. The correlation between logging and poaching is well known in Central Africa, and can be explained by the opening of roads in remote massifs, the influx of workers, and a lack of alternative sources of protein. Three more factors are: easier access to urban markets, the increase of purchasing power, and in some areas the demographic pressure. The danger is that such changes could take place much quicker than the implementation of monitoring systems and the emergence of food and cash alternatives.

1.D. THE TIMBER INDUSTRY

The DRC's timber assets are not well known. Available data are far from comprehensive and only very rough estimates are possible.

The DRC has approximately 86 million hectares of rainforest, of which an estimated 60 million hectares would theoretically be suitable for timber production (MECNEF 1977; FAO 2001). This is an area roughly equal to that of all the other Central African countries combined. Overall, the DRC's timber assets remain relatively intact compared to those of other tropical countries. While forests in Bas-Congo have been heavily harvested, relatively little logging has taken place in the much larger Central Basin. These forests are rich in *wenge* and *afromosia*, two high-value species that tend to grow in clusters. Map 6 shows the areas that have been inventoried so far. Forni and Fauvet (2004) compiled existing inventory data for the three main forest provinces. Many inventories focus on a small number of high-value species, although these forests include many more lesser-known species with good wood properties and potential markets.¹³ It should be stressed that only a fraction of the timber is physically accessible today, and that decisions on how to use the forest should be made through a participatory process that secures traditional rights and considers all possible options (*see* Chapter 2).

Historical overview. Logging started in the 1900s when the Kinshasa–Matadi railway was established. In 1960, the DRC was harvesting approximately 575,000 cubic metres of timber per year (Lumbwe 2001) and it was the main timber producer in Central Africa. Most companies were located in Mayumbe (Bas-Congo) as they were attracted by the abundance of *limba* and proximity to the ocean. Because of the gradual depletion of Mayumbe's *limba* stands, a number of companies moved to the Central Basin. Between 1973 and 1982, the '*zairianisation*'¹⁴ policy led to a decline in production, which then gradually picked up again to reach approximately 500,000 cubic metres in 1990. At that time, there were some fifty logging companies in the country, of which the eleven largest accounted for nearly 90 per cent of production. Most of these companies were foreign-owned.



Map 6. Map of available inventory data in the DR Congo. A small portion of the forest was inventoried in the 1970s and 1980s. Source: Adapted from Chezeaux (2003); Forni and Fauvet (2004).

Sylvicultural techniques to regenerate *limba* stands were developed in Bas-Congo, but were not implemented on a large scale. Plantations of *limba* stands that have now reached maturity are no longer managed and simply left open to informal logging.

The effect of the war: was Congo's timber pillaged? Press articles and experts' reports portrayed Congo's forests as having been heavily exploited during the war by groups associated with neighbouring countries. These reports cite specific cases where timber was shipped from the DRC to Uganda, Rwanda and Burundi (Baker *et al.* 2003). Many of the reported incidents obviously took place. Nevertheless, the evidence suggests that the volume of timber harvested was relatively modest, compared to the level of harvesting that would probably have taken place if the country had remained at peace, or to the level of harvesting that is developing today in the DRC, or that which took place in other Central Africa countries at the same time. It is likely that timber was less important for financing military operations than were other natural resources, such as minerals. The great weight of timber and the poor state of the roads most likely limited the extent of illegal extraction and

exportation to neighbouring countries. The overall trend during the war was towards less logging rather than massive plundering. By 2002, there were only about a dozen active companies and reported timber production had fallen to less than 100,000 cubic metres. While some logging most certainly went unreported, particularly in rebel-held areas, it is likely that timber production declined in those areas as well. A number of companies had their equipment stolen or destroyed, and the war made it impossible for Kinshasa-based companies to access forests in most of the Central Basin.

In fact, one less apparent type of 'forest plundering', but just as damaging from a public good perspective, took place during the war in the form of speculation. It consisted of the acquisition of timber concessions, often larger than 200,000 hectares and for 25 years, through discretionary procedures, at low price, and without prior local consultation. Most forests were physically inaccessible when these contracts were allocated, but the companies and individuals receiving them could speculate that these forests would gain value in the future. In 2002, while production itself was at a standstill, 43.5 million hectares were under such concessions,



The timber industry remained modest compared to other tropical countries. Security and infrastructure are now driving a gradual restarting of this industry.

and requests for new ones continued to pour into the Ministry of Environment. One particular case that received a great deal of attention in the media was that of an offer to compensate Zimbabwe for its military assistance by providing it with concessions allegedly covering 34 million hectares in the provinces of Katanga, the two Kasais, Bandundu and Bas-Congo. A joint venture called the *Société Congolaise d'Exploitation du Bois* (SOCEBO) was supposed to manage those concessions (Anonymous 2001; Global Witness 2002; Baker *et al.* 2003). It remains unclear whether any such contract was actually ever signed. If it was, however, it did not become fully operational, and no mention of this company can be found in the official lists of concessions published in 2003 and 2005.

The sector today. On paper there are some sixty logging companies in the DRC. However, the *Fédération des Industriels du Bois* believes that there are only about a dozen companies in operation. These groups hold approximately half of the existing concessions—that is, approximately 10 million hectares—and they produce the quasi totality of the reported timber.

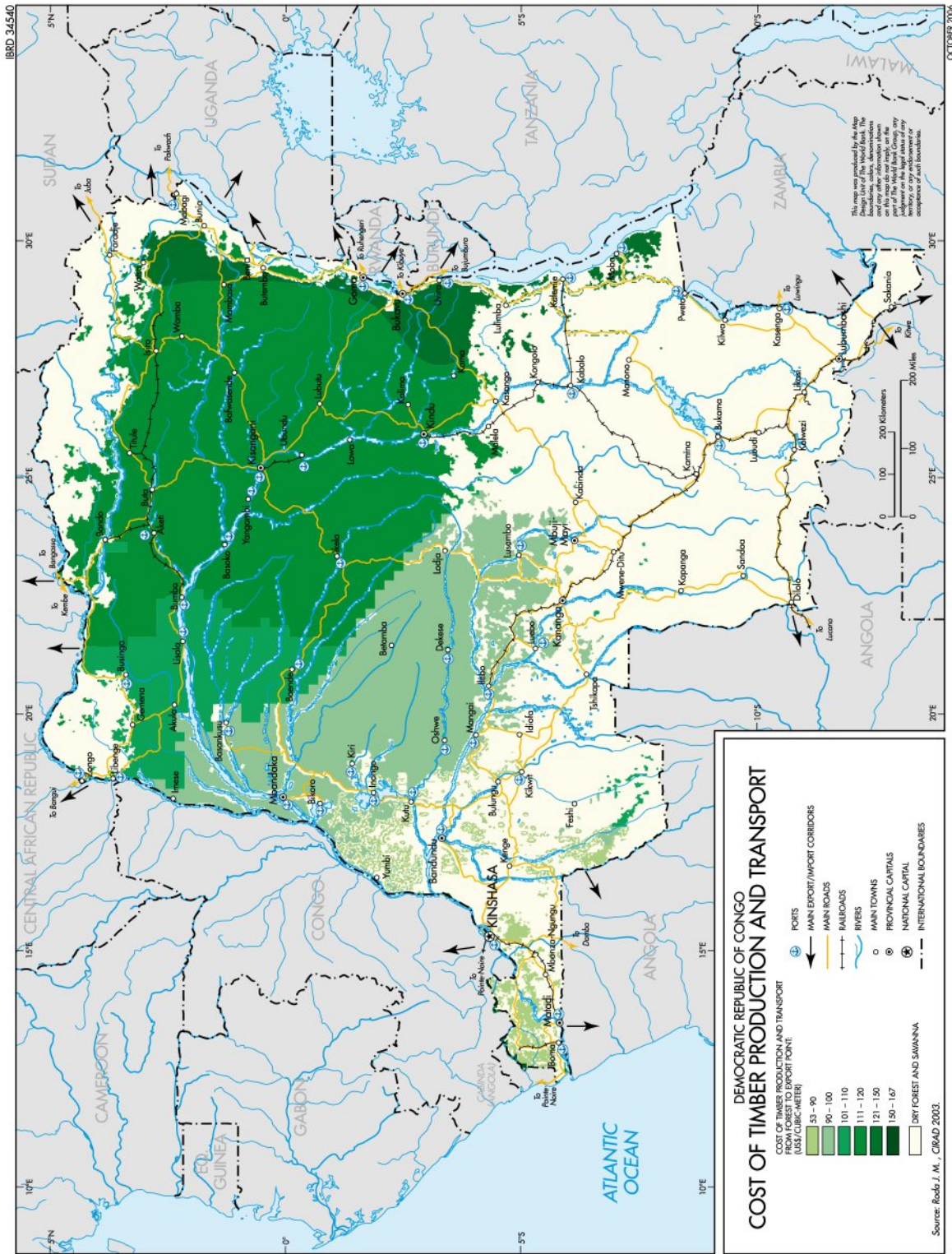
The reported production was approximately 300,000 cubic metres in 2005. Logging is selective and focuses on a dozen high-value species¹⁵ making up approximately 90 per cent of the production. The two main species are *wenge* and *tola*. It is difficult to determine precisely how much on average is harvested per hectare.¹⁶ Companies claim the volume harvested is around 3 cubic metres, but the forest administration believes that figure is closer to 9–10 cubic metres. Whatever the case, the management model is extensive, consisting of ‘creaming off’ the best species in the best patches.¹⁷ As infrastructure and security improve, one can predict that it will become more profitable to exploit less valuable species and to go further away from the rivers. But in the medium term, the majority of logging in the DRC is likely to remain selective, with average harvests of around 5 cubic metres per hectare.

At one time, the DRC was the main wood processor in Central Africa with a capacity of approximately 500,000 cubic metres per year. Most processing plants are now closed or barely operational. Most of the equipment dates back to the 1970s and is obsolete. However, some plants are being rehabilitated. Unlike other countries in Central Africa, the DRC has a significant local market that currently absorbs around 70 per cent of its sawn products.

Transportation. The DRC’s geography and the poor state of its infrastructure are significant barriers to the export of timber, even though the wide waterway system somewhat alleviates this problem. Moving one cubic metre of timber from Kisangani to Matadi costs 120–150 dollars and takes four weeks with a high risk that some of the timber be lost on the way. Map 7 shows a model of transportation costs in relation to the distance to the port.

The first challenge is moving timber from the forest to the river bank. In most cases, companies have to restore or open up new roads. This restricts access to forests away from the riverside. The second challenge is the river transport to Kinshasa. It is approximately 2000 kilometres from Kisangani to Kinshasa, and the price of fuel has tripled over the past four years. The availability of barges is inadequate and, once on the river, the convoys are often extorted by armed groups. The timber must then be unloaded in Kinshasa because of the cataracts that make it impossible to reach the ocean. This entails handling charges at change-over points between barges, trucks and rail freight cars. The 350 kilometres that separate Kinshasa from Matadi can be completed by train or road, but railway traffic is limited and most companies use the road.

The main obstacle is at the end of the journey—the port of Matadi. The port suffers from inadequate handling capacity, lack of maintenance, and recurring silting problems. It cannot handle more than



Map 7. Estimated production and transportation cost of timber in the DRC. Moving one cubic metre of timber from Kisangani to Matadi costs 120–150 dollars and takes four weeks, with the risk that some of the timber might be lost in the process. This map also shows that in the future other exit routes might open up towards the north, east and south. Source: Roda and Erdlenbruch (2003).

500,000 tonnes of timber per year.¹⁸ It acts as a physical bottleneck on how much timber can be exported from the DRC.¹⁹

The situation is somewhat different for Bas-Congo, Bandundu and in the east, where operators can use roads from the forest all the way to the port or to urban markets. Moving timber by road to Cameroon or Uganda, or by train to South Africa, will likely become more frequent in the future.²⁰

The international market. The global market is pushing the DRC's timber industry to start up again.²¹ China's growing demand is one element: China's deficit in commercial timber is estimated at 40 million cubic metres per year, and since 2002 it has been buying sawn timber of species such as *sapelli*, which is abundant in the DRC. This trend is likely to continue and to extend to lesser-known species. In addition, India has shown signs of becoming a major timber buyer over the past four years. Lastly, some Asian countries that used to export timber are now becoming net importers, such as The Philippines and Thailand. Malaysia and Indonesia might eventually follow in their footsteps. Part of the demand for tropical timber can be covered by Brazil, but it is unlikely that Brazil can meet Asia's increasing demand as its own domestic market absorbs about 80 per cent of its production. Furthermore, for several years now countries in the Maghreb and the Middle East have been emergent buyers of African timber. Finally, the DRC's own domestic market is likely to grow, especially for lower-value timber.

The future. The timber industry is restarting gradually.²² The present level of harvesting seems modest compared to other tropical countries with similar resources. International and domestic markets draw logging upwards, whereas infrastructure barriers keep it down. However, these obstacles will reduce gradually, and local processing makes it possible for companies to increase their production without increasing transport costs. If security keeps improving, the upward trend seems irreversible. Nevertheless, given

the gradual nature of these changes, it seems unlikely that the formal timber production will exceed 1–2 million cubic metres in the next five to ten years, although this will depend on a series of parameters that are difficult to predict especially in the current DRC context. Taking account of local processing and domestic consumption, this would correspond to 1–1.5 million cubic metres of exports (logs and sawn products), with the same caveat. But the sector's regulating mechanisms (land-use planning, management plans, controls and penalties) are not yet operational. Today, no matter how many concessions are legally open, the forest department is unable to control the actual level of harvesting and to prevent any rise of (illegal) logging should other factors make it attractive.

1.E. TENTATIVE ECONOMIC ASSESSMENT

This section attempts to assess orders of magnitude of the economic value of forest goods and services in the DRC. It estimates current annual total (gross) flows.²³ It looks only at present flows, and does not include any projection into the future. It is not a total economic valuation *sensu stricto*.²⁴

Disclaimer and method. All figures mentioned in this section are to be taken as tentative approximations of orders of magnitude. In this war-torn country, databases are piecemeal and uncertain. There are few quantitative studies on the economic value of forests. They rarely cover representative samples at the national level, and extrapolations therefore cannot be robust.²⁵ Uncertainty ranges are obviously high, yet difficult to assess in statistical terms.²⁶ Methodologies used in various studies may not be comparable. Some estimates are based on assumptions and simplifications that are open to debate and could be inaccurate. All figures mentioned in this section must therefore be treated with the greatest care.²⁷ This initial effort will need to be further improved and

updated as better data become available. Additional studies are needed to that end. ***Any reference to this section will need to carry this disclaimer.***

From the economic analysis perspective, forest products (timber and non-timber) and services are measured in terms of flow and expressed as net profit, added value, or market value.²⁸ Measurement techniques consist of estimating costs and prices from surveys and statistical reports, estimating replacement or avoidance costs, or calculating the cost of a productivity shift resulting from the reduction of a given good or service (Pearce 2001). In the context of this study, given the paucity of data, the most suitable indicators seem to be: the gross added value for formal and informal timber, the market value for other traded forest products, and an approximation of the replacement value or the willingness to pay for non-traded goods and services.²⁹

Forest goods and services fall into two major groups. First, use values include timber and non-timber products whether they are traded or not. They also include environmental services such as soil protection and carbon sequestration, as well as recreational functions. The second group includes option, existence and bequest values. These refer to people's willingness to preserve a forest although they don't derive any immediate or personal material benefit from it. In such cases, the benefit corresponds to keeping options open for subsequent uses, for use by future generations, or simply for cultural and spiritual wellbeing.

Tentative assessment of the economic value of annual flows at national level (*see Table 2*):

- **Formal timber.** In 2005, the formal sector reportedly produced about 300,000 cubic metres of timber, of which about one-third was processed in local plants with a ratio of nearly 30 per cent. Karsenty *et al.* (2003) cross-referenced available data on timber prices and production costs.³⁰ On that basis, the value of industrial timber produced in the DRC today is tentatively estimated at an order of magnitude of about 40 million dollars per year in terms of gross added value, and about 60 million dollars in terms of market value.
- **Informal timber.** Djiré (2003) estimates that small-scale loggers harvest about 1.5–2.4 million cubic metres a year. Once processed, this represents some 500,000 cubic metres of sawn wood. Available data on production costs and local market prices were cross-referenced.³¹ On that basis, the value of informal timber used in the DRC today is tentatively estimated at an order of magnitude of about 50 million dollars in terms of gross added value, and about 100 million dollars in terms of market value.³²
- **Fuelwood.** The annual fuelwood consumption is estimated at about 72 million cubic metres (Lumbwe 2001; FAO 2003). The average market price is estimated about 30 dollars per cubic metre, in faggots or equivalent charcoal.³³ Under that assumption, the market value of fuelwood production in the DRC today is tentatively estimated at an order of magnitude of over 1 billion dollars a year.³⁴
- **Bushmeat.** Bushmeat consumption in the DRC is estimated at between 1.1 and 1.7 million tonnes per year (Wilkie and Carpenter 1999; Fa *et al.* 2003). The average market price is estimated about 2.5 dollars per kilogram.³⁵ Under that assumption, the economic value of bushmeat extracted from the DRC today is tentatively estimated at an order of magnitude of over 1 billion dollars a year.
- **Other forest foods.** A wide variety of non-meat forest foods is used in the DRC, but it has only rarely been subject to quantitative study. FAO (2004) estimates the annual consumption of caterpillars

Table 2. Estimated orders of magnitude of the economic value of annual flows of forest goods and services. *The economic value is approximated by the market value for traded goods and services, by the replacement cost for other goods and services, and by the willingness to pay for existence values. Source: Adapted from Bravi (2005). Due to the piecemeal nature of databases for the DRC, these orders of magnitude are highly approximate. Any reference to this table will need to carry the methodological disclaimer given in the text.*

| Good/Service | Estimated order of magnitude of the economic value of current annual flows for selected forest products and services, in US dollars (market value, replacement value, or willingness to pay) |
|--------------------------------|--|
| Formal timber | Approximately 60 million |
| Informal timber | Approximately 100 million |
| Fuelwood | Tentatively estimated over 1 billion |
| Bushmeat | Tentatively estimated over 1 billion |
| Other foods | No figures available |
| Medicines | No figures available |
| Materials, implements | No figures available |
| Watershed protection | Tentatively estimated 0.1–1 billion |
| Ecotourism | Marginal |
| Carbon | Zero |
| Option, existence values | Approximately 18 million |
| Cultural, political dimensions | No figures available |

at about 13,440 tonnes per year, which represents a market value of about 8 million dollars.³⁶ However, similar studies and nationwide extrapolations could not be found for other foods, and it was not possible within the context of this study to estimate their value.

- *Medicines.* Reliable national-scale quantitative data are lacking. It was not possible within the context of this study to estimate a value of forest medicines used annually in the DRC today. Neither, at present, can the value of genetic diversity for developing pharmaceutical or cosmetic products be quantified.³⁷
- *Materials and implements.* Materials and implements include sticks, poles and raphia used for house building, as well as a host of implements and ornaments (including trophies). Basic data to assess the value of these products are lacking.
- *Watershed protection.* Watershed protection includes benefits related to the preservation of soils, water regime and water quality. These benefits are not traded today in the DRC. Theoretically, one can try to estimate an avoidance

or a replacement cost.³⁸ In the absence of country-specific data, international standard values are referred to (Ruitenbeek 1989; Lampietti and Dixon 1995).³⁹ On that basis, the economic value of watershed protection in the DRC today is tentatively estimated at an order of magnitude of about 0.1–1 billion dollars per year.

- *Ecotourism.* The ecotourism sector used to be buoyant, especially with gorilla tourism in the eastern highlands, but it was wiped out by the war. Its economic significance in the DRC is now close to zero; however, it seems to be picking up slowly. Looking forward, the DRC's cultural and natural diversity appears to be a major asset despite weak transportation and accommodation systems.⁴⁰

- *Carbon.* To date, natural forests are not taken into account by market mechanisms that reward carbon sequestration to mitigate global climate change, and the DRC has no forest plantation recognised as a carbon sink.⁴¹ Thus, the carbon sequestration service does not bring any economic return to the DRC. Looking forward, the Clean Development

Mechanism seems to be moving towards integrating the concept of ‘avoided deforestation’ in the carbon market, which would eventually make natural forests eligible for carbon credits.⁴²

- *Option, existence and bequest values.* Option, existence and bequest values are measured by people’s willingness to pay for protecting forests from which they do not derive an immediate or personal use. In the absence of specific data, the existence value can be tentatively estimated by the flow of international aid for nature conservation which, at present, is approximately 18 million dollars per year.⁴³
- *Cultural and political dimensions.* Culture and politics are major components of the value of forests. However, given the absence of quantitative studies on this matter in the DRC, it was not possible to take them into account for this exercise.

Conclusions. Despite the inaccuracy of the available data, some basic findings do seem to emerge. At present and under the assumptions discussed, fuelwood, bushmeat, other forest foods, and medicines seem to rank top in terms of annual economic value. Timber follows far behind. Even if timber production were to increase in the future, it is likely to remain modest compared to other forest goods and services.⁴⁴

This tentative economic assessment leads to additional considerations in terms of equity, sustainability, environmental services and the coexistence of multiple uses.

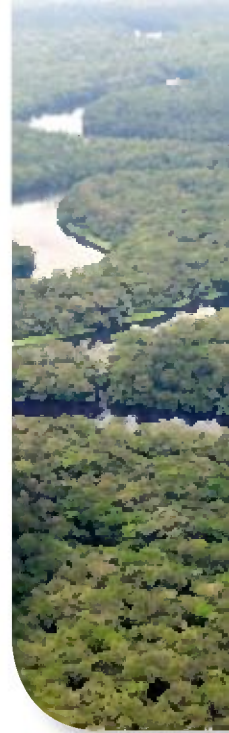
Equity. The value of forest goods and services needs to be considered in terms of their significance for forest-dependent people. Fuelwood, bushmeat and other non-timber products often represent a significant and irreplaceable share of poor households’

livelihoods and income. Goods and services that benefit the most destitute people must be addressed as a matter of priority; so must goods and services that cater to collective rather than individual interests.⁴⁵ It is vital to maintain these social and collective forest values or to ensure that substitutes or alternatives, if any, be made available.

Sustainability. The current level of harvesting for several forest products is probably not sustainable. Wildlife surveys seem to confirm that the current scale and intensity of hunting outpace renewal for many species, at least in some areas. This is probably also true for fuelwood in many areas. In the future, it will be important to quantify and mitigate such imbalances—they carry the seeds of environmental as well as socioeconomic problems.

Environmental services. There seems to be a gap between the stated importance of environmental services on the international stage and the resulting financial flows to the DRC—the DRC does not seem to be fully rewarded for these services. If this is so, the incentive for protecting them versus competing forest uses is limited. The same applies to existence values.

Coexistence of multiple uses. Given the importance of non-timber products and environmental services for the poor and for the international community, it is crucial that any additional forest use, such as logging, does not jeopardise the sustainability of these pre-existing values. In practice, participatory land-use mapping should help to organise the geographical mosaic of multiple forest uses, to consider how some can coexist or overlap, and to mitigate the risks of incompatibility⁴⁶ (see Chapter 2). The timber industry must be regulated so that it doesn’t alter other forest functions and so that timber-based benefits are shared equitably (see Chapter 3).



CHAPTER 2

THE GOVERNMENT'S OVERALL VISION

2.A. THE FOREST CODE

Until 2002, forest management was governed by a colonial decree of April 1949. As this decree became obsolete it was replaced in practice by a technical paper called 'The Logger's Guide'. This guide had no clear legal status. It focused on the timber industry and failed to provide an overall view of the development and preservation of forests.

Law 11/2002 of 29 August 2002, also known as the Forest Code, embodies a new forest policy developed in the 1990s.⁴⁷ The Forest Code embodies the DRC's first effort to develop its own vision for managing forests while taking into account current trends in Central Africa and at the international level. It aims to '*foster rational and sustainable management of forest resources to increase their contribution to the economic, social and cultural development of today's generations, while preserving forest ecosystems and forest biodiversity for future generations*' (Article 2). The Forest Code was published in the DRC's Official Journal in November 2003. The government is also reviewing the Law on Nature Conservation, which dates back to 1969.

Innovations. The Forest Code brings the following innovations.

- *Apportionment of forests according to their priority uses.* Articles 10–23 establish three broad categories of forest lands corresponding to three broad categories of forest uses: 'gazetted forests', which are primarily devoted to nature conservation; 'permanent production forests'; and 'protected forests', which are primarily devoted to local development, conversion and other uses. These are priority uses, not exclusive ones.
- *Public consultations prior to land-use decisions.* Article 15 provides for prior consultations with local people before any forest is designated for conservation or for production: '*Gazetting takes place by Ministerial Order after due notification from the provincial forest advisory council based on prior consultations with local populations*'. Article 84 states: '*Forest concession contracts shall be preceded by a public inquiry ... The inquiry aims to establish any rights that third parties might have on the forest to be granted for the purposes of compensation, if any*'.

Table 3. Categories of forests according to the 2002 Forest Code. *The Forest Code provides for three main categories of forests corresponding to three broad categories of forest uses: local development, nature conservation, and sustainable production of timber and/or other goods and services. These are priority uses, but not exclusive ones.*

| Legal terminology | Forests categories | | |
|-------------------------------|--|--|---|
| | Gazetted forests | Protected forests | Permanent production |
| Priority use | Biodiversity conservation | Social and economic development | Sustainable production of timber or other forest goods/services |
| Portion of national territory | Objective: 15% | Unspecified (category by default) | Unspecified |
| Management method | Research, tourism, conservation activities | Traditional (under forest users' rights) | Forest concession contract for timber or other goods/services |
| Main management tool | Forest management plan | Unspecified | Forest management plan |
| Management responsibility | State | Unspecified | Private operator holder of a concession contract |
| Customary user rights | Limited | Unlimited | Maintained (except agriculture) |
| Long-term prospects | Sustainability of natural forest | Conversion to non-forest land uses is possible | Sustainability of natural forest |

- *Maintaining traditional user rights.* The Forest Code maintains traditional user rights of local communities, including indigenous people, inside all production forests. Article 44 states: ‘Populations neighbouring a forest concession shall continue to exercise their traditional user rights on said concession to the extent of what is compatible with timber harvesting, with the exclusion of agriculture. The concession holder shall not claim any sort of compensation following the exercise of such rights’.
- *Sustainable management and conservation of ecosystems.* The Code calls for the implementation of forest management plans in all production forests, including the protection of biodiversity (Articles 71, 99 and 100). Article 100 stipulates that ‘loggers must comply with the legal provisions pertaining to nature protection, hunting and fishing’. Article 14 sets a target for area under protected status: ‘Gazetted forests must account for at least 15 per cent of the national territory’s total area’.
- *Community-based management.* The Code sets the rights of local communities⁴⁸ to manage forests they own according to custom in the form of community concessions, or community forests: ‘Upon request, a local community may obtain as a concession part or all of the protected forests among the forests properly owned according to custom’ (Article 22).
- *Transparency in allocation of logging rights.* The Code shifts from an arbitrary allocation system to a fairer and more transparent one based on auction (Articles 83, 85 and 86).
- *Sharing timber-based benefits.* The Forest Code aims for forest rent to be shared more equitably among companies, the State and local communities. Article 122 provides for the transfer of 40 per cent of the annual area fee to provinces and territories, and it stipulates that these funds must be used exclusively for basic community infrastructure. Article 89 makes social responsibility contracts (*cahiers des charges*) mandatory.

- *The involvement of all stakeholders in management decisions.* This is due to occur through the national and provincial forest advisory councils (Articles 29, 30 and 31), and through consultation with all stakeholders (Articles 5, 6, 24 and 74). Article 24 states that the Ministry of Environment shall involve the private sector and NGOs.
- *Alternative forest uses.* The Forest Code calls for developing non-extractive forest uses and for rewarding environmental services. Articles 87, 96 and 119 refer to conservation concessions, biological prospecting, tourism and environmental services.
- *Interpretations to be clarified.* Several provisions in the Forest Code should be clarified—failing to do so would be leaving the door open to abusive enforcements. Included here are the Articles pertaining to temporary crops in gazetted forests (Article 16), the annual publication of the list of NGOs (Article 32), and the reforestation tax (Article 121).
- *Ambiguous terminology.* Some terms in the Code are open to misinterpretation and will need to be clarified. The term 'protected forest' refers to forests primarily devoted to local development and to forests pending classification. It does not refer to areas usually known as protected areas.

Shortcomings. Despite its innovative nature, the Forest Code has shortcomings that will require great caution when preparing regulations and when implementing it in the field.

- *Remnants of the former system.* Some provisions of the Code go against its overall thrust and can be seen as remnants of the old management system. The trickiest point probably involves the persistence, under exceptional conditions, of sole sourcing as a method for allocating a concession (Articles 83 and 86). If this arrangement fails to remain truly *exceptional*, it will quickly turn into privileges, distort the sector's playing field, and harm the interests of rural communities. In fact, discretionary allocation of forest should simply be abandoned.⁴⁹
- *Key issues left open.* The Code does not create a specific operational framework for artisanal loggers and small-scale companies. Some of the open questions are whether these small-scale loggers can obtain permits in the rural domain, whether they have to fit into the mould of management plans that applies to permanent production forests, or whether they can make do with community concessions.

Implementation decrees. The Forest Code, adopted by the parliament, sets general principles. It refers to about thirty *arrêtés* and *décrets* (two types of decree), which are to be adopted by the government. This system allows for flexible adjustments to social and economic developments, so that the forest policy is not cast in stone. However, without the decrees, the Code cannot be truly implemented as it is too general. The decrees should establish simple, clear and realistic regulations, taking into account the weakness of the institutions involved. Regulations that are too complex or that cannot be enforced uniformly open the door to fraud, corruption and arbitrary behaviour. New systems must be simple and transparent. The decrees should also supplement or rectify the aforementioned shortcomings of the Code. How quickly the decrees can be prepared is a trade-off between quality and urgency. Above all, they must be based on consultations and appropriate studies, and this takes time. Pragmatically, it seems reasonable to focus first on the most urgent decrees, those needed to avoid irreversible damage, and then to continue by order of priority while ensuring quality preparatory works.

The Ministry of Environment is preparing the decrees with inputs from a multistakeholder

consultative group. This work focuses on a first batch of a dozen texts dealing with: the national and provincial consultative forest councils; the procedures for gazetting and for prior consultations; the standard concession contract and *cahier des charges*; the procedures for auctioning concessions; and the guidelines for sustainable management plans. Some of these decrees were adopted before 2003 and need to be reviewed; others are needed urgently to carry through the ongoing process of cleaning up old concessions. Two decrees—on fiscal reforms and on the legal review of old concessions—were enacted to that end in 2004 and 2005. Several important decrees, including the one on community forests, cannot easily be prepared in the short term as they require innovation, studies and other preparatory work.

Forest regime and land tenure. During the colonial era, the government acknowledged the rights of local populations on the lands they ‘*occupied, cultivated and exploited one way or another according to local custom*’. But in 1967, the so-called Bakajika law gave the government ‘*full ownership over its domain and full sovereignty to grant rights on land, forests and mines throughout the entire territory*’. This law cancelled individual and community land property. The land law of 1973 then somewhat relaxed the rule by establishing several categories of land concessions as alternatives to private property.⁵⁰ This law stipulates that customary rights shall govern the use of ‘*unallocated land in rural areas*’ (Kwokwo 2000; Vundu and Kalambay personal communication). Nevertheless, key implementation decrees were not adopted and, as of today, the legal land tenure regime remains incomplete. It is characterised by the coexistence of written and customary laws. Possible inconsistencies between the two have not been formally reconciled.

Customary law differs across regions. Customary chiefs are generally compelled to follow these unwritten rules. The land collectively belongs to the deceased, the

living, and future generations, and cannot usually be sold to foreigners. In some cases, rights can be granted against payment of a tribute. The former legal framework left little recourse to local populations when the administration decided to allocate lands as timber or mining concessions or to classify them as protected areas. The 1949 forest regime included no provisions for consultation prior to the allocation of a logging right. The 2002 Forest Code represents a breakthrough in that it stipulates that, before allocating new rights on forest land, the government must first examine any pre-existing rights. Where legitimate claims exist, the government must modify the outline of the future concession and compensate those who would lose access to a resource. The new Code establishes consultation mechanisms before any forest is classified. It stipulates that local communities can manage the forest they own under customary rights and that traditional user rights are maintained in any case. One shortcoming of the Code is the lack of specific reference to the user rights of indigenous people. Although these groups enjoy the same consultation and participation mechanisms as all Congolese citizens, implementation decrees should nevertheless include specific provisions to take account of their cultural and socioeconomic specificities.

The 2002 Forest Code does not modify the land tenure regime of 1973. It deals with forest products and services, but it does not transfer any rights concerning the land itself.⁵¹ Forest concessions and land concessions are distinct from one another. A forest concession deals exclusively with the forest, not the land. It is a rental contract with no transfer of ownership.

2.B. RISKS AND OPPORTUNITIES IN THE POST-CONFLICT CONTEXT

The restarting of the timber sector is driven by economic recovery and the return to peace. As these factors do not depend on

sector policy, this restarting seems to be largely inevitable. Collective benefits from this industry will not come automatically: the challenge is to ensure they are not captured by individual interests.

Many forest activities other than logging contribute to the wellbeing of the Congolese people, and have a greater social and economic impact than timber. The value of these activities must be acknowledged by decision makers. However, these forest uses have always existed and the post-conflict dynamics are not likely to change them dramatically. The main change that affects the forest in the short term is the restarting of the timber industry, including small and medium-sized companies. This is a relatively rapid change but benefits for the community will not come automatically. The DRC may suffer foregone earnings, or

even a net impoverishment, if the natural resource base is altered without equivalent social and economic compensation, or if timber is harvested faster than the forest regenerates. By the same token, the global community would lose out if logging in the DRC led to the destruction of natural habitats and environmental services. Hence, the restarting of the timber sector must be regulated immediately.

A unique juncture. The DRC's situation is unique on several counts. First is the discrepancy between people's poverty and the abundance of natural resources. The DRC is one of the countries in the world where this paradox is the most obvious. In the past, natural resources industries (including timber) yielded only marginal benefits to the public. Today, the potential for progress is high, and the risks are commensurate.



Twa people staring at a logging truck in Equateur. Local livelihoods do not improve much, and the resource-base gets depleted. Will forest and forest people remain on the losing side of peace and roads?

The poor quality of governance in the country creates the immediate risk that forest benefits could be captured by vested interests, and that reforms remain on paper. One of the main challenges is to ensure that post-conflict recovery genuinely contributes to the population. This will require careful policies and enforcement.

Second is the speed of post-conflict developments. The DRC is currently experiencing economic, social and political changes that are rapid compared to the torpor of the previous decades. The bottlenecks that kept the forest isolated from most industrial activities are diminishing. The present opportunity is to regulate and harness the sector early on in order to secure benefits for the people and prevent risks, instead of repairing damage later as is often the case with natural resources.

The government's challenge is to consolidate peace, and to promote economic growth and social wellbeing, without depleting natural resources. With regard to timber, the goal is neither to speed up the restarting of this industry nor to achieve any production or revenue target. The timber industry is restarting anyway. The goal is to ensure that this industry is governed by the sector policies and not solely by the markets, and that it creates collective benefits commensurate with the value of the natural resources being used. For example, the priority agenda led by the government since 2002 has actually slowed down the restarting of the timber sector rather than sped it up, while at the same time encouraging more environmentally, fiscally and socially responsible behaviour. There is no point in increasing production if it fails to directly benefit the country. Conversely, modest levels of production may provide significant benefits if adequate policies are enforced.

The sector's regulatory mechanisms need to be made operational quickly. Otherwise, as transportation and security bottlenecks gradually dissolve, logging in the DRC will

be determined by markets and individual decisions, instead of by public policies. Such a scenario would lead to environmental and socioeconomic losses.

Potential benefits from the timber sector.⁵²

The benefits from the timber sector recovery should be both sustainable (they should not deplete the natural resource base they rely on) and complementary (they should add to, and not supersede, the functions already fulfilled by the forests for the local people and the global environment). Some potential benefits are listed below.

Employment. The timber industry, including small and medium-sized companies, could become a significant job provider. In the 1990s, the formal timber industry reportedly employed some 20,000 people in the DRC (Kankolongo 1996). In 2002, the figure was estimated at about 6000 people, with total wages of about 6.5 million dollars (Karsenty *et al.* 2003). Within the next five to ten years, and as long as local processing increases, it seems the formal industry could account for about 10,000–15,000 direct and indirect jobs.⁵³

As for the informal sector, estimates suggest it provides between 9000 and 15,000 permanent jobs.⁵⁴ Thousands of people work in small and medium-sized carpentry companies. This number is likely to increase due to the opening-up of new areas and to improving living standards. It is possible that the number of jobs in these small and medium-sized companies will continue to exceed that of the formal industry.

Spill-over effect on the economy. The timber industry could become a significant element of the nation's industrial fabric, and an important user of services and transport. The timber sector is a geographically scattered activity, and it has the potential to impact several provinces throughout the northern half of the country.

Revenues to the State and to local entities. Forest revenues reached 1.8 million dollars in 2002.

Assuming that security keeps improving and fiscal reforms are properly implemented, revenues could reach an estimated 10 million dollars in 2007 (Karsenty *et al.* 2003). Within five to ten years, assuming an annual production of 1–2 million cubic metres and an overall taxation level of about 20 dollars per cubic metre, forest revenues would range between 20 and 40 million dollars per year. This is only an estimated order of magnitude to be considered with the greatest of care. However, it shows that forests can generate revenue on a sustainable basis that can then be used by the country to rehabilitate social services. It also highlights the risk of foregone revenues for the country and for local entities if this sector is not well regulated.

If the revenue-sharing system established by Article 122 of the Forest Code works properly, then the forest could eventually become a significant source of revenue for provinces such as Bandundu, Equateur and Orientale, and their territories. Each of these provinces could receive approximately half a million dollars per year, to be shared with the territories.⁵⁵

Direct support for rural development. Logging companies are in a position to contribute to rural development in remote and destitute areas, secluded from public investments.⁵⁶ This includes opening up or maintaining roads that allow farmers to reach markets. If the social responsibility system (*cahiers des charges*) set up by the Forest Code works properly, then in-kind contributions would also include social infrastructure, like classrooms, healthcare centres and transportation services.

Scenarios to avoid. At least four scenarios should be avoided.

Environmental degradation. Given the relative scarcity of commercial species in the Congo Basin forests, it is unlikely that logging would directly cause massive deforestation. On the other hand, the destruction of wildlife is a real threat. Experience elsewhere

in Central Africa shows that the opening up of logging roads systematically exacerbates poaching and increases the bushmeat trade. Fragmentation of forests is also likely to speed up migratory flows, the expansion of slash-and-burn farming, and deforestation.

Missing the collective benefits. If left to existing forces, the restarting of the timber industry is likely to generate minimal or unsustainable benefits for the country, and there is the risk that most of the benefits may be lost or misappropriated away from the people. Without an appropriate and well-implemented sector policy, benefits risk ending up in the hands of only a few people. Some ingredients of such economic failure were in place in the DRC in 2002—there was widespread arbitrary allocation of logging rights at no cost and with no transparency, and the burdensome tax system was conducive to fraud.

Depletion of the natural resource base. Another danger is the depletion of precious and easily marketable species following intensive harvesting of these particular species. In fact, this ‘creaming-off’ model, also known as ‘high-grading’, is the one that prevails in the DRC at present. The DRC’s forest asset would be relentlessly depleted if excessively large areas were left open to such rapid creaming off. Yet this scenario is not inevitable. To some extent, valuable species may regenerate, provided the total off-take is spread among a larger number of species and if forest management plans and regulations are enforced.

Forests as a source of social tension and conflict. Another negative scenario would be that forests become the subject of major conflicts. Forests probably contributed little to the conflicts of the 1990s, but in the future they could become more valuable and fuel local conflicts. Instruments such as participatory land-use planning, the sharing of revenues, disclosure of information, and community forestry may to some extent reduce the risk of conflicts around forests and strengthen social peace.

Box 2. Comparison with other countries

Each country is unique and caution is advised when trying to replicate approaches from one country to another. The DRC's situation is exceptional and it will have to find its own models. Nevertheless, there are experiences and trends that the DRC can draw upon.

Other post-conflict countries. Post-conflict situations are almost always disastrous for forests. In most cases—including Cambodia, Myanmar, Lao PDR, Mozambique, Nicaragua and Guatemala—forest destruction has increased during the post-conflict period. First, such countries run a high risk of falling back into war: half of the countries that have just emerged from a civil war end up at war again within five years (Collier *et al.* 2003). Very often the factors that contributed to war in the first place still exist. Some have been aggravated by the wars themselves, which annihilate growth and generate new cohorts of unemployed youth. Belligerents find it difficult to reintegrate into civilian life. They may be attracted by new opportunities to take up arms and regain their former status. Second, in post-conflict situations, governments and international agencies have such pressing concerns including humanitarian crises that they find it difficult to focus on long-term issues such as forest management or nature conservation. Governments seek to reactivate the economy to keep their countries from falling back into war. In forest-rich countries, logging often appears as one way to revitalise the economy. Logging can be a source of growth, but it also entails social, environmental and economic risks, and expected benefits will not materialise automatically. Third, logging often expands much more rapidly than the public sector's enforcement capacity. This was the case in Cambodia, and is likely to be the case in Liberia and the DRC unless their governments ensure basic enforcement in the field. Fourth, forests are vast and sparsely populated areas. They are sometimes perceived as possible relocation areas for demobilised soldiers and displaced people. That was the case in Colombia, Guatemala and Nicaragua (FAO 2004), and could also be the case in the DRC, especially in the east.

Other forest-rich tropical countries. Other forest-rich tropical countries include Brazil, Indonesia, Malaysia and Papua New Guinea. They differ from the DRC in various ways. Compared to those countries, the average deforestation rate in the DRC appears relatively low. Political instability and weak infrastructures have driven away investors that might have developed operations that degrade forests. There is little tradition and incentive in the DRC for growing large pastures as in Latin America, or large-scale agribusiness as in Southeast Asia, and Congolese forests have a lower density of commercial timber than those in Southeast Asia. However, rapid demographic growth may soon change the pattern of deforestation in the DRC. Forest-rich tropical countries also share common issues. First, it seems they do not manage to reap the full benefits of their forest resources. Loopholes in price-setting, collection and redistribution of revenues cause substantial losses for the state and local communities. Ensuring equitable sharing of the forest rent among companies, the State and local people will undoubtedly prove a major challenge in the DRC. Second, illegal logging pervades in most tropical countries. Government-imposed regulations are often complex and companies find it easier to bypass them and pay bribes than to comply. Regulations implemented in the DRC need to reflect the limited institutional capacity and the risks of corruption. Finally, many tropical countries started to decentralise the management of forests. Countries with a federal structure such as Malaysia, Nigeria, India, Brazil and Mexico are moving in that direction. The DRC can learn from these experiences. However, as it is emerging from civil war, it will have to deal with decentralisation in a cautious manner.

Central Africa. The DRC can benefit from the experiences of other Central African countries, but it differs from them in several respects. First, the size of its territory, forests and population largely exceeds that of its neighbours and thus makes the country both more complex and more diverse. Second, although it is the least urbanised country in the region, the city of Kinshasa alone has more inhabitants than the Republic of Congo, Central African Republic, Gabon and Equatorial Guinea combined. The DRC has a larger domestic market that is likely to grow as peace sets in and revenues increase. Third, even though it is basically the central government that is empowered to manage forests, in practice local authorities have greater autonomy in the DRC. This stems from the vastness of the country, the collapse of communications, decades of weakening public administration, and the period of war during which entire regions lived outside of central government control. The DRC will need to pay particular attention to the role of local authorities, both administrative and traditional, in managing forests.

2.C. FOREST LAND-USE PLANNING

As noted previously, the DRC has about 145 million hectares of forest, of which about 86 million hectares are rainforest. Forests cover about 62 per cent of the national territory (Table 4). Including savannahs and aquatic environments, natural landscapes account for about 91 per cent of the territory. Farmlands, cities and other non-forest uses account for only about 9 per cent of the territory. The question now for the DRC is how to make the best possible use of its vast natural areas. The return of peace is probably the first opportunity for the DRC to look at its own resources in a holistic and structured manner, and for the international community to participate in the land-use planning of the second-largest block of tropical forest in the world. Since independence, the DRC has not gone through any structured and open land-use planning process. An interministerial committee set up for that purpose in the 1970s was not followed through. As far as the forest department is concerned, efforts were limited to inventories of standing timber in the 1970s. The Congolese forest mosaic of today stems from a series of individual decisions and events rather than from a collective and organised effort.

Participatory, multipurpose forest land-use planning. The goal of participatory, multipurpose forest land-use planning is to agree on priorities assigned to forest areas, and to map them out. It is based on the multifunctional nature of forests. While some forest uses are compatible with each other and can overlap in space, other uses are more exclusive and overlaps may lead to conflicts. For each patch of forest, the goal is to agree on a mix of priorities and to avoid the overlapping of incompatible uses. The mix of priorities will vary from one area to another, and this will define the geographic mosaic on a regional scale. In the DRC, this process is expected to lead to the creation of community forests and new protected areas, and to help develop non-extractive forest uses.

As a bottom line, local communities' uses should be mapped and their rights secured. Areas for new parks, logging or other uses would be identified in non-disputed zones. In the same spirit, the Forest Code provides that customary rights, including those of the indigenous peoples, are maintained in all production forests (Article 44).

A land-use planning effort entails extensive local consultations, participatory mapping, socioeconomic and environmental studies, as well as demographic projections, remote sensing and modelling. It further requires in-depth understanding of the social, environmental and economic forces that shape the forest pattern in each region, including customary laws and land tenure systems. It also involves the comparison of various land-use scenarios. A key aspect is to set up a consultation platform that allows all stakeholders to voice their needs and expectations, to agree on how best to use each patch of forest, and to delineate such agreements on a map. Emphasis should be placed on consultations and negotiations, so that maps reflect all the social, environmental and economic values of the forest at local, national and international levels. This approach must be based on the principle of local people's prior, free and informed consent. It should make use of participatory mapping techniques. Consultation techniques should be adjusted to vulnerable groups, minorities and forest-dependent people such as the Pygmies to avoid them being marginalised and to ensure they speak up for themselves.

In the DRC, this kind of approach should help consolidate peace and stability. It should facilitate dialogue and bring parties to agree on development priorities translated into mapping scenarios. It would prevent conflicts that might arise if the various stakeholders had no way of negotiating their rights to access arable land and forest products, and of sharing their views on how the country's public endowment should be used. Discussing maps and scenarios may help find trade-offs between various options, where

these are necessary. Participatory mapping further contributes to the harmonisation of customary and modern laws, the coexistence of which could become a source of tension if not well managed.

Participatory land-use planning is a long-term task. It will require many years of work given the size, complexity and state of institutional collapse in the DRC.⁵⁷ It should start in pilot regions. These pilot areas would help develop replicable methodologies, implement the Forest Code's innovative consultation mechanisms, and prevent conflicts in areas most exposed to the post-conflict pressures.

The outcome of a planning effort in a given region should be an indicative map showing the proposed mosaic of forest uses for that region. These maps would have no immediate legal relevance, but would provide a shared base of information for further decision making. Starting from there, the actual process of creating protected areas, community forests or concessions, should follow specific gazetting procedures that should also include extensive and in-depth local consultations following the principle of free, prior and informed consent. This gazetting process should be conducted on a case-by-case basis for each area being proposed for conservation, production, community management or other uses, and each area should be referenced by specific clauses and individual maps.⁵⁸ How such local consultations will take place remains to be determined. Provisions should take account of the remoteness of villages as well as logistical constraints to ensure people are truly informed that a public inquiry is taking place. Provisions should also include the filing of minutes, and means of redress.

Logically, land-use planning should take place before any other activity starts in the field. But this is a theoretical view. In post-conflict DRC, people already live in, and use the forests. They are unlikely to just freeze ongoing activities and wait until a land-use plan is completed.

Reading the current landscape and ongoing trends. Practically speaking, the first step is to understand and describe the landscape as it exists today and how it is evolving. At the local level, this requires consultations in villages, socioeconomic surveys, and an in-depth understanding of the agricultural, land tenure, and forest use patterns, which differ from one region to another. At the national level, the challenge is to integrate regional diversities and ensure overall consistency. Remote sensing can provide all stakeholders with an overview of how the national territory is currently being used, help identify residual areas for which decisions are yet to be made, and enhance consistency with development programmes in infrastructures and other sectors. Table 4 and Maps 2, 3 and 8 provide an initial outline.

Land-use planning is central to the country's overall recovery dynamics. Forest decisions must be placed in the context of the broader development agenda, and will need to be aligned with priorities of other sectors. Infrastructure and industrial projects are likely to start before a participatory forest land-use plan is available for the entire country. Areas that are still relatively free today may soon be occupied, with or without a forest land-use plan, and latitude for a participatory planning process focused on forest uses is likely to dwindle rapidly. It will therefore be necessary to seek a trade-off between quality and duration of planning efforts.

The Congolese population density is, on average, 26 inhabitants per square kilometre. Comparing Maps 2 and 3 shows that the most populated areas follow the edges of the Central Basin rainforest: in the south along a line from Bas-Congo to Kasai; along the eastern border in the two Kivus and Ituri; and in the northern part of Equateur province. There are reportedly more than 200 inhabitants per square kilometre in some areas of Kivu. In the Central Basin, the demographic density varies between 2 and 20 inhabitants per square kilometre. Although some of these areas are virtually

Table 4. Estimated areas of forests and other land uses in the DRC. *Forests cover about 62 per cent of the country area. Natural ecosystems including aquatic ecosystems cover about 91 per cent.* Adapted from: Chezeaux (2003), based on Landsat images 1980–1985.

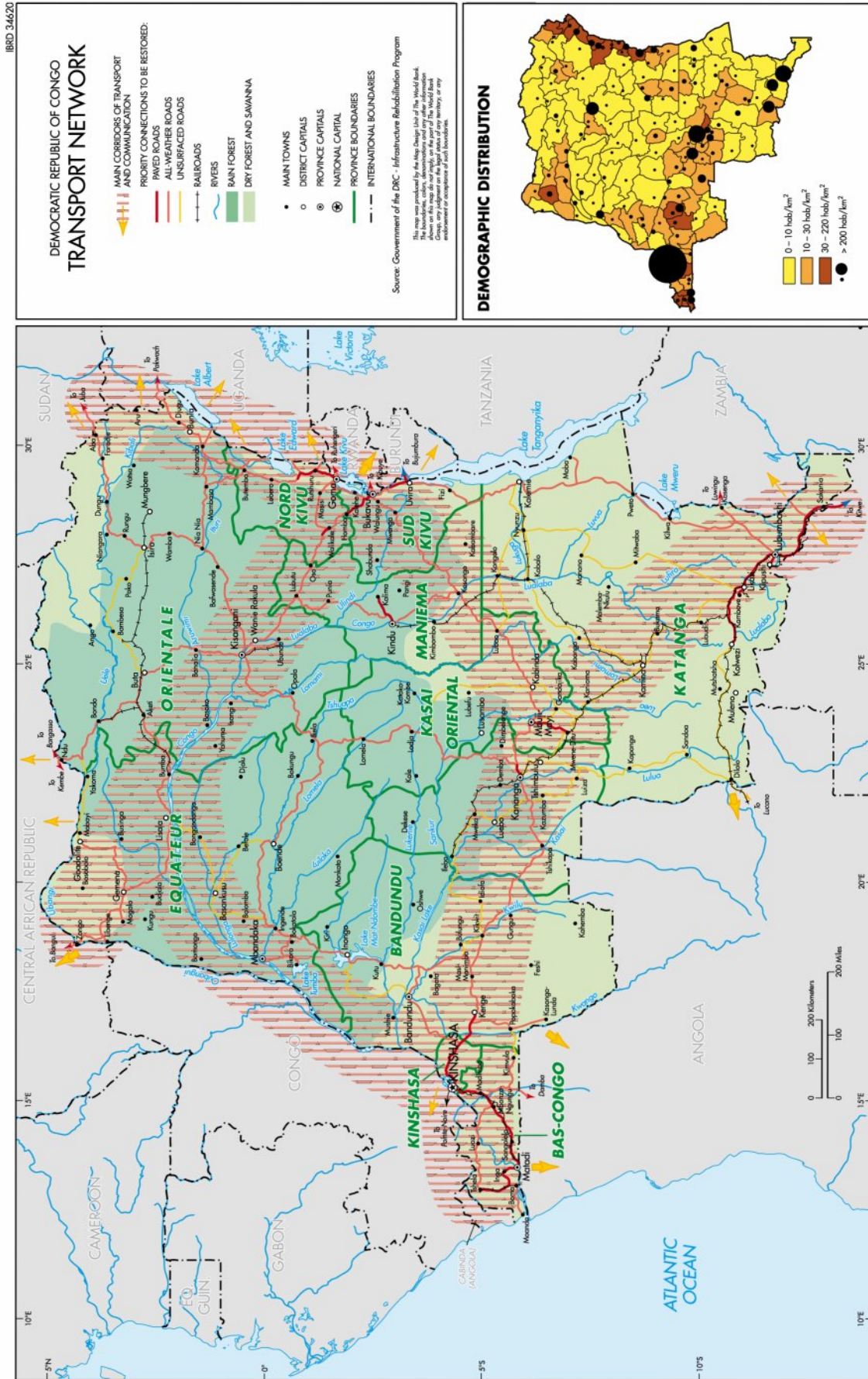
| Forest/habitat type | Area (hectares) | Percentage of territory |
|---|--------------------|-------------------------|
| Lowland rainforests (evergreen and semideciduous) | 86,292,794 | 36.8 |
| Mountain forests | 5,300,823 | 2.3 |
| <i>Miombo</i> —dryland forests | 45,178,396 | 19.3 |
| Swamp forests and mangroves | 8,591,895 | 3.7 |
| Total forest | 145,356,186 | 62.1 |
| Wooded savannahs | 27,352,289 | 11.7 |
| Mosaic of forests and savannahs | 33,079,010 | 15.8 |
| Agricultural and other rural areas | 13,973,189 | 6.0 |
| Cities | 144,352 | 0.1 |
| Other non-forest areas, unspecified | 6,688,239 | 2.9 |
| Water | 3,549,445 | 1.5 |
| TOTAL | 234,203,206 | 100.0 |

uninhabited, the DRC forest is, on average, more populated than that of Gabon and northern Republic of Congo.⁵⁹ According to Wilkie and Carpenter (1999) approximately 22 million people live inside and around the rainforest zone. The Congolese population grows by an estimated 2.4 per cent per year (Fa *et al.* 2003). It is projected to increase from about 60 million in 2006, to 90 million by 2020, and to 177 million by 2050.⁶⁰ Such rapid growth will impact the country’s ecosystems and natural resources. It may lead to internal migrations from highly populated areas to less populated ones such as the central rainforest, and hence lead to fragmentation of natural habitats, increased hunting pressure, conversion of forests to agriculture, and potential conflicts over forest resources.⁶¹

The infrastructure network (roads, railways, ports and rivers), once operational throughout the entire country, is in a poor state, but some of it is in the process of being restored. Map 8 shows the transportation network as it stands today as well as ongoing renovation efforts with the help of international aid. This is a multimodal network based on the complementarity between roads, railways and rivers, with the principal artery being the

Congo River. If the transport infrastructure were fully operational, the central rainforest would no longer be secluded from the urban and trade centres. Several roads of national significance are being rehabilitated, and there are plans for dredging of and buoy placement on the river, as well as renovation of the port of Matadi. The port’s handling capacity could increase from 0.5 million to about 1 million tonnes per year. These infrastructure restoration and development works are a priority for the DRC. Their nature, scope and timeframe will be guided by the country’s overall development priorities. They will increase the volume of timber that can be exported through Matadi, or by road and rail to Cameroon, Uganda and South Africa. They will also impact the trade of forest products other than timber.

Agriculture reportedly accounts for about 6 per cent of the national territory. In rainforest areas, that figure is estimated at between 4 and 6 per cent (Laporte *et al.* 1998; Chezeaux 2003). This is mostly subsistence, shifting slash-and-burn agriculture. These areas are likely to increase in proportion with population, unless farming modes intensify. There is little information on how much space is being used for fuelwood and



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small-scale logging in the DRC. However, these are key activities for the Congolese people. They alter natural forests, especially in drylands, mountain areas and near urban centres.⁶² Fuelwood and charcoal consumption will increase as the population grows, unless alternative sources of energy become available. Similarly, informal small-scale logging is likely to increase as the economy recovers and transportation improves. The Congolese forest is also subject to and coveted for mining activities, especially in the east of the country. On the other hand, animal husbandry, agribusiness and tree planting do not seem, in the short term, to be among the major factors creating pressure on natural forests in the DRC. Large rubber and palm oil plantations have existed for many decades, notably in Equateur—priority is likely to be given to rehabilitating these old plantations rather than converting new forest lands.

The protected areas network covers about 8 per cent of the country area, i.e. about 18.5 million hectares. According to the Congolese Institute for Nature Conservation, a significant but unspecified portion of these protected areas is degraded. The Forest Code sets a target of 15 per cent of the national territory, i.e. 35 million hectares, under protected status. This calls for about 16.5 million hectares to be added to the current network. That goal may seem difficult to achieve today, but it will become even more difficult as time goes by.

The industrial timber sector has remained rather small in the DRC compared to the size of the country and compared to the level of production in other forest-rich tropical countries—the forest has remained sheltered through insecurity and difficult access. Logging is selective and, according to the forest department's internal compendium, the area opened in 2002 covered approximately 24,000 hectares. Three years later that area has probably tripled, in line with production. Areas opened annually for logging are likely to keep increasing as transportation infrastructure is rehabilitated.

Was the Congolese forest earmarked for industrial logging? Yes, to a large extent. In 2002, some 43.5 million hectares were locked up under logging concessions, and new requests for more concessions were being processed. Even though these forests were not yet physically open to logging, they certainly were open to logging from a legal point of view. Such concessions overlapped villages, farmlands and biodiversity hotspots, and there had been no public debate about other possible uses, such as community forests or protected areas. These concessions cordoned off areas that were closest to the river, that is, the most accessible and the most exposed to the many changes brought about by the post-conflict recovery, and where land-use planning is therefore the most urgent. But since these logging contracts were already signed, the future of these forests was sealed. Participatory land-use planning was no longer an option there. In fact, it even became a marginal operation at national level.

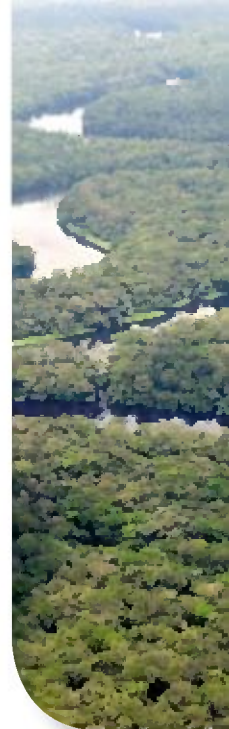
With the return of 25.5 million hectares to the public domain in 2002, the establishment of a moratorium on new concessions, and the prospect of harmonising existing ones with village and farmlands as part of the legal review, things look quite different now. Once again, there is a certain degree of freedom to examine how best to use each piece of forest as a public good and on the basis of public consultations. With the measures now in place, and as long as these measures are continuously enforced, it is likely that industrial logging will not become the prevailing forest use in the DRC.

The above analysis suggests that forest land-use planning in the DRC will need to proceed gradually, in a pragmatic way, and to combine parallel processes. First, remaining illegal large-scale concessions must be cancelled for land-use planning to become fully relevant at national level. There is also a need to conduct a broad mapping of current land uses and future directions. This will help mainstream forest priorities

into the country's development agenda, and prevent inconsistencies with other sectors. A second line of action is to prepare systematic and detailed forest land-use proposals at regional level, using the participatory method described above, knowing that this approach will start with a few pilot regions and will not cover the whole country for a long time. The third line of action is to ensure that effective consultations take place at the village level before any new protected area or logging concession is proposed anywhere in the country, regardless of whether it is in a pilot region or not.⁶³ In this regard, enforcing

Articles 15 and 84 of the Code (which pertain to local consultations) is crucial. Procedures for such consultations prior to gazetting should be established, and their implementation actively supported and monitored. Similar local consultations should also take place to refine the boundaries of existing valid concessions. Finally, detailed local consultations should also precede any rehabilitation of infrastructure, mining operation, or any other intervention having potential impact on forests and forest people, as part of regular socioenvironmental impact assessment following international standards.





CHAPTER 3

AN URGENT CHALLENGE – REGULATING THE TIMBER SECTOR AS IT RESTARTS

3.A. THE LEGACY OF THE PAST

In 2002, major distortions plagued the forest sector. They perpetuated a system in which the exploitation of natural resources failed to improve the people's wellbeing, they put at risk non-timber forest values, and they made it difficult to implement the new Forest Code. Correcting these distortions and regulating the timber sector as it restarts are top priorities.

No local consultations, no management plans, no alternatives. Most forests were locked up for logging: 43.5 million hectares were split up into 285 long-term contracts⁶⁴ allocated on a discretionary basis with no local consultations, no consideration for other forest uses, and no fair financial return to the country. This system made participatory land-use planning irrelevant, and precluded the emergence of community forests, new protected areas and alternative management models (*see* Chapter 2). But there were other problems as well.

In this old system, companies had the initiative to request a one-year Authorisation to Prospect for which they mapped the

boundaries themselves. Most of the time this authorisation would be converted into a 3-year Letter of Intent, and then into a 25-year Guarantee of Supply, with no prospecting actually taking place and no consultations being held with local communities. Securing logging titles depended mostly on personal relations and cronyism.

Often, it was only when activities started that local communities found out about the existence of a logging permit which encroached upon their land and challenged their traditional rights. This lack of prior consultation and geographical inconsistencies paved the way for disputes between farmers and loggers. The former claimed the forest for agriculture and traditional uses (according to custom) and the latter claimed it for timber (according to the contract). This placed all parties in a situation of insecurity, spawned a feeling of despoilment, and created the potential for conflict.

This old system included no provisions for sustainable management and led to the depletion of the natural resource base. Each company decided the number and location of plots (1000 hectares each) it wanted to

harvest inside its concession on a yearly basis. Companies were tempted to open annual permits in the richest and most accessible pockets, leaving behind forests stripped of their most valuable species, with a sprawling road network that opened the forest to poaching. Protection of wildlife was left at the logger's discretion. Companies provided some benefits to local villages either in kind or as a cash payment according to personal arrangements, but there was no formal framework and no monitoring system.

These hastily mapped-out concessions sometimes led to discrepancies between the contracts and the maps attached to those contracts, resulting in confusion and abuse.⁶⁵ This allocation system also prompted the inclusion of unproductive savannahs and swamps in concessions even though companies were supposed to prospect the forest before obtaining the Guarantee of Supply.⁶⁶

Lastly, these discretionary allocations often resulted in subcontracting agreements between concessionaires and loggers, where responsibilities were watered down, thus making monitoring and control even more difficult.

A system conducive to speculation.

These 43.5 million hectares locked up under concessions were disproportionate compared to the actual supply needs of the sector. Even before the war, the yearly production of 500,000 cubic metres only required an area of approximately 6 million hectares.⁶⁷ An estimated 35 million hectares under contract in 2002 were not being used. The 1990s witnessed a massive increase in concessions even though the number of companies and their production were dwindling. Despite logistical hurdles and conflicts, companies and individuals sought to secure geographical sites in anticipation of more peaceful days. At that time, keeping a concession of a standard size of 200,000 hectares only cost 286 dollars per year,⁶⁸ as the area fee was at a symbolic 0.00143 dollar per hectare.

Signing a contract in Kinshasa is unlikely to have any impact in the field as long as insecurity stalls logging and transport activities. However, when security and transport improve, concession holders sub-letting their forest to companies who need it to launch their activities may develop into quite a profitable business. For the buyer, such transactions may be more lucrative than being awarded a direct contract with the government through auction.⁶⁹ These transactions can take the form of tenant farming, rent, subcontracting, joint venture or transfer of capital. As a result, forests can be traded between private operators without control from the government⁷⁰ and without involvement of local communities. This unofficial market is harmful for the State and local entities⁷¹ as they are being denied their share of the forest rent.⁷²

The 35 million hectares or so available in 2002 on this unofficial market exceeded the area that may have actually been needed by potential new investors. Indeed, it will take some time before security and infrastructures are strengthened, and it is unlikely that the *real* need for new concessions⁷³ will exceed five million hectares in the next five to ten years.⁷⁴ In other terms, even if the unofficial market dropped from about 35 million hectares to (say) 5 million hectares, it would probably still be large enough to absorb all the demands for new concessions. And if that were the case, participatory land-use planning and transparent allocation methods would simply remain on paper for a long time to come.

A tax system that is harassing, flawed and conducive to fraud.

The *Comité Professionnel du Bois* lists 155 taxes and charges that put a strain on forest-based activities. Tazartes (2003) indicates that '*Para-taxation is the most typical aspect of the DRC's tax system. More than 900 taxes are included in the list of revenue-generating activities in the administrative, judicial, property income and interest-taking areas*'. During the conflict, many administrations

in Kinshasa and the provinces established new fees unilaterally. Some charges were based on decisions with an unclear legal status and they were likely to overlap with each other. For example, in Kinshasa, at least nine administrations collect forest taxes,⁷⁵ not counting the entities that collect payments from the informal sector. The plethora of tax collection windows and the complexity of procedures are conducive to fraud. In 2002, the average tax burden on export timber exceeded 20 per cent of the timber market value.⁷⁶ This figure might appear similar to that of other Central African countries, but in the post-conflict context and considering the extra costs of operating in the DRC, it might deter responsible behaviour and foster fraud.

Some parafiscal charges accrue to public enterprises that provide marginal services. In 2002, the trickiest case involved the National Transportation Office (ONATRA) which collects a ‘half-transit’ fee on all goods entering the port of Matadi from the road.⁷⁷ This fee is particularly penalising for timber as it is based on weight. In 2001, ONATRA unilaterally increased this fee to 16 dollars per tonne, which accounts for nearly 10 per cent of the timber market value and 35 per cent of the overall tax burden on timber. The actual cost of ONATRA’s handling of timber in the port of Matadi is estimated at about 2 dollars per tonne, rather than 16 dollars.

Paradoxically, although logging companies are compelled to pay multiple fees and charges, State revenues remain miserly. In 2002, the State collected about 1.6 million dollars from forest taxation, while public companies like ONATRA reaped 1.8 million dollars. Thus, forests may appear to be a liability for the government and this may become a disincentive to good management. In 2002, the area tax collected for 43.5 million hectares under contracts was a mere 28,000 dollars. The official revenue to provinces and territories was virtually nil.⁷⁸

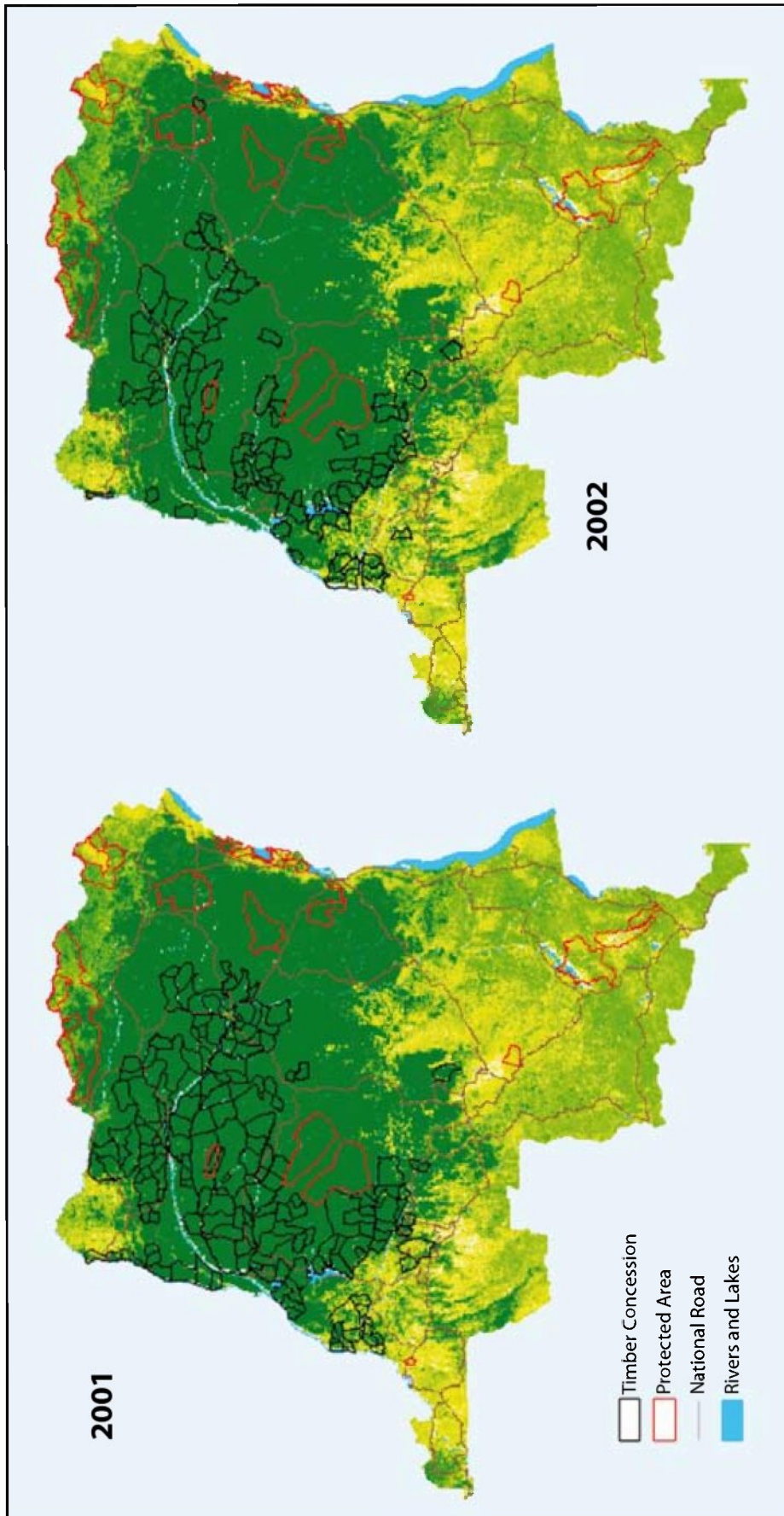
3.B. ACHIEVEMENTS SINCE 2002

The following steps have been taken since 2002 to clean up the legacy of mismanagement.

First review of the old contracts—2002. In April 1999, an Interministerial Committee on Timber suggested ‘*rescinding all agreements and contracts for non-inventoried, abandoned and/or undeveloped forests*’. The government implemented this recommendation in April 2002. It reviewed 285 existing contracts with a focus on a few simple criteria: the contract’s expiry date, the existence of a processing plant whenever provided for by the contract, and the payment of the area fee.⁷⁹ Article 10 of the contracts stipulates that ‘*Loggers’ failure to comply with one of the clauses of the agreement will result in the immediate and automatic rescinding of the agreement*’. This effort led to the rescinding of 163 noncompliant contracts totalling 25.5 million hectares (*see* Map 9), the list of which was published in the *Agence Congolaise de Presse*.⁸⁰

Moratorium on new allocations—2002. In addition to rescinding noncompliant contracts, the government suspended the allocation of new contracts. The ministerial decree dated 14 May 2002 stipulates that ‘*The awarding of new Guarantees of Supply and Letters of Intent, as well as renewing or extending of such Guarantees and Letters, shall be suspended. This suspension shall remain in effect until the publication of new auction regulations. This measure does not pertain to ongoing Authorisations to Prospect*⁸¹ for which inventory fees have already been paid’.⁸² This is a conservative measure as there would be no point in returning noncompliant concessions to the public domain if the option remained to reallocate them through the old discretionary methods.

However, it seems that this moratorium was bypassed in several ways. In June 2002, the Ministry of Environment’s compendiums listed 122 contracts totalling 18 million hectares. Yet the official list of existing



Map 9. Shift in concession cover in the DRC: comparison before and after the cancellation of noncompliant concessions in 2002. In early 2002, some 43.5 million hectares were divided up into 285 logging contracts. These contracts had been allocated on a discretionary basis, without local consultations, without equitable return for the country and without considering other possible forest uses. During that year, the government rescinded 163 noncompliant contracts totalling 25.5 million hectares. This paved the way for developing other forest uses based on more equitable and transparent mechanisms. Source: Woods Hole Research Center based on data from SPIAF (Service Permanent d'Inventaire et Aménagement Forestier).

contracts was published in May 2003 and reported 132 contracts totalling 19.4 million hectares. A new list of existing contracts was published in November 2005. It reported 141 contracts totalling 20.4 million hectares, including 100 contracts dated after May 2002 covering 15 million hectares.⁸³

In terms of area, the gross volume of transactions between 2002 and 2005 appears to be 15 million hectares, and the net difference between the total area under contract in 2002 and 2005 appears to be 2.4 million hectares. The total number of contracts appears to have increased by 19.

Various scenarios can be identified. First, several companies reportedly relinquished forests they found unproductive or they had already logged over, but in some cases these low-value forests were exchanged for new ones. Thirty-two contracts covering 4.6 million hectares⁸⁴ were reportedly awarded in 2003 under the guise of such ‘remapping’ or ‘exchange’ of old titles. Similar transactions seem to have continued in 2004 and 2005 under the guise of ‘readjustments’ and ‘relocations’, although some of these transactions might indeed be straight relinquishments without acquisition of new forests. Second, it seems that new contracts were also allocated in 2004 and 2005. The official list published in November 2005 reports 14 contracts covering 2.3 million hectares that did not show up at all in the Ministry’s internal compendium in 2002. Third, it seems that at least 7 contracts that were cancelled in 2002 were rehabilitated in 2004 (covering approximately 2.4 million hectares).⁸⁵

These acquisitions of new areas since 2002 obviously seem to contradict the moratorium.⁸⁶ They also seem to contradict the regulations in effect before the new Forest Code, as they were not preceded by an Authorisation to Prospect. Furthermore, they seem to contradict the new Forest Code itself on five counts: first, Article 83 stipulates that sole sourcing is exceptional,

yet in this case it was used as the single method for dozens of contracts; second, Article 92 provides that no single person shall be granted forests in excess of 500,000 hectares,⁸⁷ yet in this case some companies obtained more than one million hectares; third, no prior consultation is reported to have taken place with local populations, contrary to the provisions of Article 84; fourth, the Code stipulates that the price for sole sourcing allocations shall be at least equal to the floor price used in auctions, yet this floor price has not been set yet; and fifth, these allocations are called ‘Letters of Intent’ and ‘Guarantees of Supply’—these terms do not exist in the Code and could therefore not be used after 2002.

Update of the annual area fee—2003. In order to continue the cleaning-up process started in 2002, the government decided to gradually raise the annual area fee (or rental fee) to encourage the relinquishing of unused areas. Up to 2002, the area fee was 0.143 cents per hectare per year, or 286 dollars for a standard 200,000 hectare concession. The government’s intention was to raise this fee to 50 cents per hectare per year. This was ratified by an interministerial decree dated 20 April 2002. However, it was decided that this measure would be implemented gradually, starting with a rate of 6.25 cents in 2003.⁸⁸ It was further decided that this increase of the area fee would be balanced by a reduction of the overall tax burden. This increased area fee is meant to act as a filter, leaving it up to operators to keep or return parts of the concessions they own. Companies can return areas already exploited or of no value and keep the truly productive ones. In 2004, one to two million hectares were reportedly returned to the public domain. The objective is also to deter new speculative acquisitions.

The 2003 economic review and the 2004 reforms. An economic review of the timber sector was conducted in 2003. It analysed four scenarios, developed mostly on the basis of information supplied by the companies and structured around the following

guidelines. First, taxation should not curb economic recovery in the post-conflict era. Consequently, the tax ratio should not increase but rather decrease; and the increase in revenue should stem from extending the tax base to all operators rather than from imposing higher taxes on a few companies. Second, the tax system must remain simple in order to reduce the risk of fraud and corruption, and secure tax collection and controls. Third, the system needs to ensure fair competition between companies, and facilitate discrimination between those who play by the rules and those who don't. Fourth, service fees, such as those levied by ONATRA, need to correspond to the actual delivery of services. Fifth, taxation should act as an incentive to deter speculation, and to encourage sustainable management, as well as local processing of timber versus export of logs.

The first scenario was a status quo of the current situation. The three other scenarios had several features in common: reducing the total tax burden to less than 20 per cent of the timber market value, reducing unjustified service fees, and a rebalancing in favour of taxes that deter speculation, and that accrue to the State's budget as opposed to those of parastatal companies. These three scenarios differed from each other by the degree of tax rebalancing and the timeframe.

The government opted for a variation of scenario 4—a gradual rebalancing between parafiscal charges and the annual area fee, within a four-year timeframe.⁸⁹ This decision was enacted by the interministerial decree of March 2004.⁹⁰ This decree reduces the total fiscal envelope to about 17 per cent of the timber market value, instead of 20 per cent in the previous system.⁹¹ The ONATRA fee is cut down to 8 dollars per cubic metre for 2004 and to 5 dollars in 2005, instead of 16 dollars in 2003. The annual area fee is increased from 6.25 cents in 2003 to 10 cents for 2004, to 20 cents for 2005, to 30 cents in 2006, and 50 cents in 2007. This decree must be seen as a package deal: the reduction of unjustified service fees and

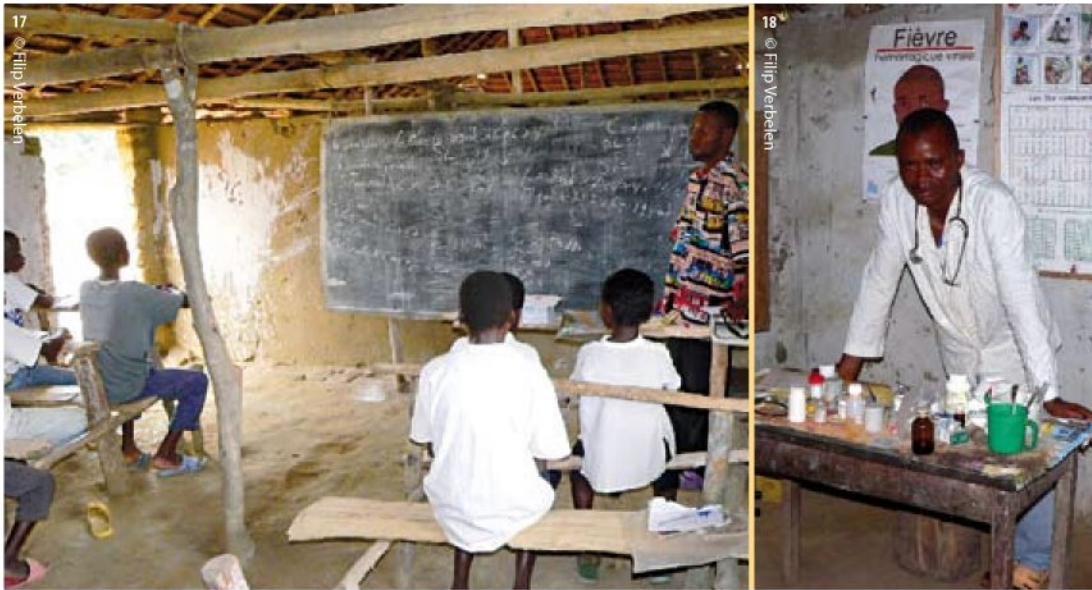
the gradual rise of the area fee need to go together. The expected benefits include easier discrimination between compliant and noncompliant companies, the return of speculatively held forests to the public domain, and higher revenues for the State, of which 40 per cent is to go to provinces and territories.

The *Comité Professionnel du Bois* expressed a preference for maintaining the status quo. To some extent, this could reflect fears that the announced reductions will not be applied. For some companies, this could also reflect fears of being forced to return concessions that although not used today, could turn out to be useful in the future, and that once returned, probably wouldn't be available for acquisition under the same attractive conditions as in the past. The increased area fee breaks from the old system of quasi-unlimited and free-of-charge access to forests. It challenges operators who wish to control areas beyond their real supply needs. On the other hand, for concessions used under management regimes, an annual area fee of 50 cents per hectare accounts for less than 2 per cent of the timber market value.⁹² It does not, however, seem to hinder the sector recovery, especially when it comes with a reduction of the total tax envelope to less than 20 per cent of the market value.

3.C. ONGOING EFFORTS

The path towards more sustainable forest management and more equitable sharing of benefits goes through the following steps. These come in parallel with participatory land-use planning efforts discussed in Chapter 2.

Legal review and conversion of old logging contracts. Article 155 of the Forest Code stipulates that old logging contracts (called Letters of Intent and Guarantees of Supply) must be converted into Forest Concessions '*as long as they meet the terms provided by this law*', which implies that these old contracts need to undergo a legal review before they



Health center and school in a village next to an active logging concession, Bandundu. Fair negotiation and implementation of the *cahier des charges* needs to be monitored, as well as the use of revenues for local development purposes.

can be converted. The criteria and procedures for this legal review are set by the presidential decree of 24 October 2005, published in the Official Journal of 1 November 2005. The decree was adopted after much wavering, with the signing of four consecutive ministerial decrees in July and November 2004, and June and September 2005.

According to the decree of October 2005, this legal review will be conducted by an interministerial committee with participation of representatives of the private sector, NGOs and local communities. An independent expert will take part to ensure objectivity and transparency, and its reports will be made public. The decree indicates that the process will take place in two stages. The first stage will check the validity of the existing logging contracts. It is based on a limited number of simple, redhibitory criteria set forth under Article 5 of the decree.⁹³ According to Article 11, contracts that do not comply with these criteria shall be rescinded. This is in line with the clauses of said contracts and with the provisions of the Forest Code.⁹⁴ Contracts exchanged after the establishment of the moratorium in 2002 should be restored to their pre-moratorium status. The second stage of the process is limited to compliant contracts only. It will consist of defining the

terms and conditions of the new contract called Forest Concession. This will be based on the *plan de relance* proposed by the company. It will harmonise the geographical boundaries of the concession with villages and farmlands, and determine the social and environmental terms of the *cahier des charges*. The decree stipulates that pending issues regarding the boundaries can be carried over as clauses of the new contract for further local consultations and final settlement as part of the preparation of the forest management plan.⁹⁵ The decree forbids any acquisition of new forest area in the process.

This work is linked to the Sun City agreements that call for the reviewing of all forest and mining contracts allocated during the conflicts. It follows upon the recommendations of the Panel of Experts of the United Nations, October 2002: '*Reforms of the mining and the forestry sectors should include the review of all concessions and contracts signed during both wars... The international community including the World Bank ... could collaborate closely with this Commission and provide the support necessary for it to carry out its work in a thorough and objective manner*' (United Nations Security Council 2002). The legal review is indeed being supported by the World Bank.



Golden-bellied Mangabey, endemic to the DRC, is a frequent victim of poaching associated with logging. The basic principle which companies should commit to is that logging does not lead to increased poaching as compared to the no-logging scenario.

Moving to sustainable management plans. Once the legal review is completed, concessionaires will have a transitional period of four years to prepare forest management plans.⁹⁶ These will be the first management plans in the DRC. They should follow simple and realistic standards, considering the limited monitoring capacity and the higher risks of abuse when rules are too complex.

Basic measures that prefigure the long-term management plan should already be implemented during the transitional period, such as the use of an annual harvest area no larger than one-thirtieth of the concession, the implementation of social responsibility contracts (*cabiers des charges*), and the

protection of wildlife. Concessionaires should not wait four years until a full-fledged management plan is approved before implementing simple and well-known measures that are essential to improve forest management. The transitional period should also be used to deepen consultations with local populations, to finetune the geographical boundaries of concessions in relation to farmlands, and to agree upon the definitive clauses of the social responsibility contracts.

From a silvicultural viewpoint, one of the main changes is that the size and location of the annual harvest area will no longer be selected at the logger's option. It will be

prescribed by the management plan in such a way that the entire concession is covered in a rotation period.⁹⁷ If the rotation is 30 years, then the annual harvest area will represent approximately one-thirtieth of the concession.⁹⁸ Inside this annual area, companies harvest the volumes and species they intend to market, in keeping with the minimum diameters.⁹⁹ The minimum diameter applied in a given concession should never be below the threshold defined by the forest department at national level. The forest management plan should also define an upper limit on the number of individual trees that can be harvested per unit area. This would eschew the risk of irreversible degradation of the vegetation cover.¹⁰⁰ Companies shall physically delineate the boundaries of the concession as well as the annual harvest areas so as to make monitoring easier. At the end of the year, the area is closed for the rest of the rotation.¹⁰¹

From a social viewpoint, the Forest Code includes several mechanisms that must be implemented if local populations, including indigenous groups, are to benefit from the presence of the company in addition to the

creation of jobs and maintaining a road for several years. Implementing the social responsibility contracts (*cahiers des charges*) is an integral part of the forest management plan, and that implementation must be monitored as any other provision of the plan. Furthermore, Article 44 stipulates that user rights, such as harvesting of non-timber products or subsistence hunting, shall be maintained within the concession.

Protecting biodiversity is also an integral part of the management plan. The management plan should not just indicate the inputs that companies will use, but more importantly it should indicate the outcomes they commit to achieving. Inputs include measures such as closing roads, raising awareness, and making alternative sources of protein available to workers' families. In terms of outcomes, the company should ensure that its presence will not lead to more poaching and bushmeat trade compared to the scenario without logging—in other words, that no additional poaching can be attributable to the company, its workers and their families. Such outcome-based clauses should be included in the concession

Box 3. Protecting wildlife—the Minkébé experience in northern Gabon

In 1999, approximately 200 tonnes of meat per year was being extracted from the Bordamur concession, a subsidiary of the Malaysian group Rimbunan Hijau, to fuel the bushmeat trade in northern Gabon. This alarming level of poaching was tackled jointly by the Ministry of Forests, the company and WWF, with a focus on involving local authorities, villagers and workers. Two complementary processes were developed in parallel, combining enforcement and consensus. First, a mobile brigade composed of sworn agents was set up to carry out frequent checks on logging roads and at barriers. Second, a memorandum of understanding outlining clear and simple rules was brokered and subsequently signed with local villages, the company, provincial authorities and the Ministry, with the following provisions: no transportation of weapons, hunters or meat using the company's vehicles; access to the road network forbidden to all unauthorised vehicles; barriers set up at strategic locations; a food store with alternatives to bushmeat set up within the company's camp; hunting by workers forbidden, with the exception of hunting on foot in the vicinity of the camp; hunting by villagers limited to hunting on foot and to a maximum of 20 kilometres around the village. The combination of the two processes led to a significant decrease in hunting in and around the concession. Unauthorised entry of vehicles decreased dramatically. The performance of this system has been related to a high level of guard presence in the concession, strict enforcement of barriers and application of penalties on vehicle-using poachers and on the company, and the willingness of the company to enforce a new hunting policy. The costs of these operations were estimated at about half a million dollars over five years, i.e. about 0.5 dollar per hectare per year. The Ministry of Forests and WWF are currently working on a financial scheme that should gradually shift the cost of this strategy to the logging companies. Although much work remains to be done and poaching has not been eradicated from these forests, this experience does show that progress is possible.

Source: Pauwel Dewachter, WWF.

contract for the first four years, and then carried over into the forest management plan. In some cases, the management plan will also delineate conservation areas inside the concession. Concessions adjacent to a protected area should be preceded by a specific environmental impact assessment.

Concession contracts span 25 years. They should include a clause of automatic renewal as long as the contractual obligations and the management plan are being complied with. Conversely, they should also include a clause for automatic cancellation in case of noncompliance with basic rules such as the limits of the annual harvest area, the social responsibility contracts, and the protection of wildlife.¹⁰²

Certification. Certification is an important tool in the drive towards better forest management in the DRC.¹⁰³ Companies can secure or gain ground in environmentally sensitive markets by having the quality of their forest management certified by an independent body against internationally recognised criteria. The certification system should be independent from the State and voluntary. A basic criterion for certification is compliance with laws, although certification schemes also require social and environmental performance that goes beyond legal requirements. Certification, as it can be seen as a voluntary, market-driven self-improvement system, is of particular interest in the DRC context, where the government is not yet in a position to fully enforce its laws. Certification also implies significant adjustments in companies' usual business model. In that regard, the recovery phase in the DRC could be a fitting time for companies to start on the right foot and include certification in all decisions and investments from the outset, instead of making costly adjustments later on. The government should actively encourage certification. For example, if new logging or export rights are auctioned, bidders could be given higher technical score if their previous concessions are independently certified. The concept of 'productive area' as included in the

2004 fiscal regime reduces the annual area fee once the management plan is approved, which in turn provides an incentive for certification.

Monitoring, control and penalties. Forest laws and contracts need to set standards that are easy to check and that include deterrent penalties. Without field monitoring and deterrent penalties, forest policies would be pointless. If penalties are inadequate—that is, if the penalty is smaller than the benefit generated by the offence—then it will be more productive for noncompliant operators to continue to break the law. Impunity encourages crime, and it harms law-abiding companies. Concessions should be cancelled in case of major or repeated offences and offenders should be banned from future auctions. Transparency and public information are also key. When an infraction is identified, the administration should announce the name of the perpetrator, which penalties were applied, and when the fine was paid.

The forest department is virtually non-existent in the field today. Strengthening institutional, human and material capacity is a priority. Forest officers must be adequately trained, paid and equipped to carry out

Box 4. About illegal logging

The existence or absence of illegal logging should not be perceived as a definitive criterion for failure or success in regulating the timber sector. Environmental damage or rent grabbing might not be labelled 'illegal' simply because the rules are inadequate or flawed with exemptions, or because offences are not detected. Conversely, illegal logging may be part of a transition process from an unregulated sector (where 'illegality' therefore does not exist) towards a more structured one (where regulations are adequate and monitored). During this transition, the better legality is defined, the more violations become visible. Also, illegal logging most often results in financial loss for the country, but it does not necessarily imply greater environmental damage compared to 'legal' operations. Illegal logging is an economic and social issue as much as an environmental one.

their duties. Considering the time required to build institutional capacity, it will be necessary to use external services at least in the short term. One promising system is to involve a third-party observer to accompany forest officials in the field. This mechanism does not supersede the government's oversight responsibility; rather it helps the administration to fulfil its core function. The observer's mandate is to ensure fairness and transparency of controls and penalties, to facilitate public information and the involvement of civil society, and to improve case-tracking. Field controls should be used in combination with satellite-based monitoring. Current technologies make it possible to detect the opening of roads into unallocated forests, which may be an indication that illegal logging is going on, and can help direct field missions. Log tracking should also be developed so that the true origin of logs can be ascertained at any time until they are exported or processed. A forest law enforcement strategy in the DRC will also need to address the weakness of the judicial system. High-level political commitment will be necessary for making any significant progress in this area. To some extent, the weakness of the judicial system may also be offset through systematic disclosure of information and media coverage. Finally, transboundary customs collaboration will need to be strengthened, especially since roads and railways to neighbouring countries may become avenues for illegal exports.

Social responsibility contracts (*cabiers des charges*). The practice known as *cahier des charges* is common throughout Central Africa. It existed in the DRC and was formalised in the Forest Code (Article 89).¹⁰⁴ This mechanism supplements the transferring of area fees to provinces and territories inasmuch as social responsibility contracts directly affect local villages. Social responsibility contracts take the form of an agreement between the concession holder and local villages. They focus on building social facilities such as classrooms and health centres, and on the provision of services, such as transportation.

The implementation of this system faces a number of risks: unbalanced negotiations between companies and villages; failure to implement the agreed measures; marginalisation of minority or indigenous groups; and lack of conflict resolution mechanisms.

To mitigate these risks, the administration should design a template for social responsibility contracts. This template should indicate the range of possible contributions from which both parties would select the ones most suitable for them. It should also provide the timeframe as well as standard specifications for works and services. One section would provide a method to estimate the costs, with upper and lower limits within which the agreement should be set. Provincial advisory councils could be mandated to mediate any disputes that might arise in the course of implementation. All social responsibility contracts should be made public, for example in a compendium available in Kinshasa and the provinces, in order to facilitate monitoring by all stakeholders.

Securing revenue collection—enforcing laws and agreements. The fiscal package deal of March 2004 must be enforced methodically. By doing this, the government will increase its revenues while reducing the fiscal burden and levelling the playing field in favour of more responsible companies. Noncompliant contracts should be cancelled in line with the clauses of those contracts and with the Forest Code¹⁰⁵—if the companies that have failed to pay their taxes since 2003 are not penalised, why should other companies continue to pay? The implications are wide-ranging: if the law is not enforced in a relatively easy-to-check tax collection matter, there is little reason to believe that it will be enforced when it comes to environmental and social issues which are more difficult to monitor. In that case, the forest sector would continue to attract companies able to find their way through a system dominated by fraud and impunity. Penalties are the starting point for improving the rule of law in this sector.¹⁰⁶

Box 5. Independent observer in Cameroon—what's next?

Independent monitoring, also known as third-party observation, has been used in Cameroon since 2001 to help the government there detect and prosecute illegal logging, and gradually improve the systems of law enforcement. The mandate of the observer is to accompany forest officials on joint control missions in the field and detect discrepancies between the mission's activities and official procedures, and to bringing potentially illegal forest sector activity to the attention of the government. To fulfil its mandate the observer has access to all relevant official documents as set out in a Terms of Reference agreed with the government. In addition, the observer also undertakes independent missions as a baseline from which joint missions can be assessed. The Independent Monitor's reports are made public after validation by a Reading Committee (*Comité de Lecture*). They inform the government, donors and civil society, and give them the tools they require to take action. The observer also provides assistance to encourage more effective use of GPS and GIS tools in the field, and to better manage the systematic tracking of legal cases that are registered. The observer does not take on the government's responsibility for law enforcement and prosecution of offenders.

Experience from Cameroon shows that independent monitoring can provide the following benefits:

- It can protect law enforcement officers against intimidation and corruption attempts by companies and other officials, and it can protect companies against racketeering;
- It increases transparency to provide a more 'level playing field' to the advantage of responsible companies—some international buyers are now starting to refuse to purchase from companies of poor reputation;
- It supports reform-minded people within the government and helps them identify dysfunctionality in law enforcement procedures; the observer's impartiality supports the internal change process;
- It fosters accountability by providing first-hand field evidence, which allows civil society to question officials on good public management;
- From the timber exporting country's perspective, independent monitoring can help restore the timber industry's credibility and thus secure international markets;
- It capitalises on the wealth of information passed on by local communities, NGOs, private sector operators and forest officials by providing a confidential avenue for this information to be made public.

Experience in Cameroon also reveals a number of obstacles:

- Very few cases, though well documented, have gone all the way through the legal process to the point where deterring fines were imposed or concessions withdrawn;
- Programming joint investigative field missions depends on an overly bureaucratic process, this hinders rapid response and gives time for evidence of illegal logging operations to be concealed;
- The Reading Committee (*Comité de Lecture*) is dominated by the Ministry of Forests with insufficient input from the Ministry of Finance, Ministry of Justice and civil society; the Ministry of Forests' inertia may create a situation where it can assert that it has an independent observer, without the observer being truly operational; the *Comité de Lecture* needs to take full responsibility for reports it validates;
- Sustained political will/determination by the donor community is essential—the ability of the donor community to provide collective support for reform and improved governance has fluctuated, resulting in a cycle of intense activity and progress followed by periods of dormancy.

Cameroon's experience shows that Independent Monitoring can only be effective if there is: (1) strong political will to levy meaningful penalties and overcome inertia within the Forest Ministry and in the judicial system; and (2) an adequate legal framework with simple procedures and clear sharing of responsibilities among the various institutions involved.

Source: Text based on experience as the Independent Monitor in Cameroon, by Global Witness (2001–2005) and REM (since 2005).

Transparency is critical in this area too. The area tax collection reports for 2003 and 2004 were published by the Ministry of Finance in July 2005.¹⁰⁷ Such public disclosure should continue on a regular basis, and include other taxes. This is now expected to happen in the broader framework of the Extractive Industries Transparency Initiative (EITI).

The tax report published in July 2005 shows that the payment order for 2003 amounted to 747,000 dollars, of which 503,000 dollars were collected—a 67 per cent collection rate. The payment order for 2004 amounted to 2.27 million dollars, of which 1.25 million dollars were collected—a 55 per cent collection rate.¹⁰⁸ This means that about 45

per cent of existing concessions are being held by operators who fail to comply with the terms of their contracts, are unidentified, or have left the business.¹⁰⁹ According to the Ministry of Environment, only 18 contracts covering 2.1 million hectares were actually cancelled in 2005.¹¹⁰

Transferring revenues. The share of the revenues to be transferred to provinces and territories¹¹¹ amounted to 201,000 dollars for 2003 and 501,000 dollars for 2004. This should continue to increase in line with the increase of the area fee between 2003 and 2007. In 2007, assuming about 10 million hectares remain under concession, that share would be approximately 2 million dollars per year.

The implementation of this system faces a series of risks. To mitigate the risk of abuse, amounts transferred on a yearly basis to provinces and territories should be publicly disclosed. Budget forecasts should be established locally in cooperation with the provincial forest advisory councils, and account ledgers should be audited and made public at the end of the year. A nationwide compendium showing the amounts transferred to each province, the works budgeted, and the works completed

should be disclosed in Kinshasa and the provinces, and updated annually to facilitate monitoring by all stakeholders. It is also necessary to enhance the capacity of provincial and territorial administrations in planning, accounting and monitoring.¹¹² Investment priorities need to be defined in consultation with local people, including minority and indigenous groups.

Maintaining the moratorium—and preventing a reversal to the old arbitrary system. With the return to peace and the rehabilitation of infrastructures, an increasing number of companies and individuals are requesting new concessions. The DRC should exercise great caution before moving ahead in that direction. The presidential decree of October 2005 confirms the moratorium set up in May 2002, and extends it until the legal review is completed, auction procedures are adopted, and a mid-term allocation plan is developed through a consultative process. The first two conditions are common sense. The third condition calls on the government to identify the number, location and size of concessions it intends to allocate over the next three years, and to justify those choices on technical grounds. This allocation plan would take the form of a map and a table. It should be prepared

Box 6. The seamy side of transferring forest revenues in Cameroon

With the Forest Law of 1994, Cameroon decided to transfer 50 per cent of the area fee to local entities: 40 per cent to rural counties ('communes') and 10 per cent to villages. As a result, from mid-2000 till end of 2004, the central government transferred about FCFA 28.4 billion to counties and villages, or about 10 million dollars per year. This is the primary source of revenue for many counties in the forest region of Cameroon. Amounts transferred to the communes are published in the national press on a quarterly basis in order to foster local accountability. Although the 'transfer' side of the system seems to be working relatively well, the same cannot be said for the 'expenditure' side. How these funds are actually used by local elites remains obscure. An audit carried out in 2004 indicates that the investments funded by these resources are quite far from the local communities' perceptions of poverty and priorities. The audit showed that less than 20 per cent of the funds were spent on schools, health centres and development projects, while most were used for administration expenditures such as buildings and official meetings; and that mismanagement of these funds is still widespread (Oyono 2005). In practice, this system still contributes little to the intended local development, and the discrepancy between the amount transferred and the outcome in the field is worrying. The largest forest commune, Yokadouma, receives about FCFA 1 billion annually, but its level of development has not improved much since 2000. The Cameroon experience is the only one of its kind in Central Africa at present. It must encourage the DRC to strengthen public information on both sides of the system (transfers and expenditures), make it possible for any citizen to hold civil servants and locally elected bodies accountable for public resources management, and to foster independent monitoring by civil society. Furthermore, it is necessary to enhance the communities' capacity to plan budgets and work programmes, to procure public works, and to monitor achievement in the field.

jointly with the private sector, civil society, and on the basis of local consultations in concerned areas.

The purpose of the mid-term allocation plan is to prevent a return to the old discretionary system after the moratorium is lifted. It should take account of the following elements. First, infrastructure bottlenecks, and not the lack of concessions, are the principal limit to increasing timber production today. Areas under concessions today seem large enough to produce more timber than the rail, roads and ports of the DRC can handle, even if one considers the likely improvements in infrastructure over the next five to ten years.¹¹³ Real investors seem little inclined to engage in a sector where the handling capacity is jammed. New requests may be motivated by the desire to secure access to vast areas before competition becomes stronger. In that case new allocations would increase the trend towards speculation or towards forests being concentrated in the hands of a few

operators. Second, it would be unwise to allocate new concessions before the residual ‘unofficial market’ (estimated at about 10 million hectares) is completely cleared. Future auctions would prove unsuccessful if bidders were in a position to obtain concessions for a cheap price by dealing with individuals who keep concessions for sub-letting or reselling. Consequently, the mid-term planning should favour a very cautious scenario in line with investors’ *real* needs. The number and size of forests to be allocated should be carefully planned to avoid collusion and speculation. In the absence of a clearly established rationale, the moratorium should simply be extended. The moratorium should stay in place until satisfactory management and governance standards have been achieved in the existing concessions. Allocating a certain number of concessions is not an objective in itself. The objective is that areas allocated result from logical planning and from local consultations that take account of all forest values, as opposed to the previous system where

Box 7. Local communities’ access to forests

It is vital that local communities, including the Pygmies, continue to have access to the forests and the benefits that they provide. How are the recent policy changes and proposed steps forward likely to improve their access and benefits? First, the government’s review of forest contracts which began in 2002 eliminated 25.5 million hectares of largely speculative concessions, many of which overlapped with forests and agricultural lands that local people used. That made it much less likely that logging companies would come and disturb the activities of local people in these areas without their consent. Second, the 20.4 million hectares of existing concessions will be reviewed to ensure that they comply with the law. It is likely that the review will result in some of them being rescinded. Third, the contracts that are found to be legal will be converted into the new legal category. In this process, concession boundaries will be modified so as not to overlap with villages and farmland. As this will reduce the area-based taxes, companies should be motivated to review their boundaries and avoid overlaps with villages. Fourth, before the government allocates new forest concessions, the law requires it to consult with the local population to identify what claims and rights they have over the forest. How that is supposed to happen will be the subject of a specific implementation decree. The DRC Government should make sure that this process takes place in a serious manner. Given the large areas already under concessions, the government does not need to rush to create new concessions. Fifth, a participatory multipurpose zoning process should help identify which areas should have priority for rural development, sustainable timber production, biodiversity conservation, and other forest uses. This will be a gradual process that will give priority to regions with the greatest potential for conflicts between various groups of stakeholders, and where new concessions, community forests, and protected areas might be planned in the near future. Sixth, even in forest concessions, the Forest Code clearly gives local people the right to carry out their traditional forestry activities, although not to practise agriculture, and it requires concession holders to negotiate a social responsibility agreement (*cahier des charges*) with local communities to provide them with infrastructure and social services. Taken as a whole, and if properly enforced, these efforts should greatly reduce the likelihood of logging companies exploiting forests traditionally used by local people without their consent and compensation. They represent an improvement over the policies of the previous system. The government currently has limited capacity to implement such approaches by itself, and the support of the international community and the involvement of the Congolese civil society will be needed.

allocations stemmed from discretionary decisions. The mid-term allocation plan should be based on prior consultations in line with Article 84 of the Code.

Transparent allocation methods. When, and if, the time comes to allocate new concessions, the challenge will be to use a system that is transparent, makes corruption more difficult, and gives preference to companies most qualified from the environmental, social and economic viewpoint. The sole sourcing method does not meet these objectives, and the Forest Code appropriately stipulates the use of an auction system.

There is a whole host of auction systems, but one that suits the specific features of the DRC has yet to be worked out. Finding the right system will require careful preparation, pilot tests and iterative finetuning. The existence of a mid-term allocation plan will allow interested companies to prepare themselves, for example by carrying out their own forest surveys. Any available data on the quality of forests put up for auction should be made public. The analysis of proposals submitted by companies should be carried out by an interministerial committee open to representatives of the private sector, civil society and local communities, and it should employ an independent observer.¹¹⁴ The committee should consider a combination of technical and financial criteria. A first screening should be based on technical criteria that reflect the priorities of the national policy in terms of local processing, forest management, rural development, and fiscal discipline. Sufficiently qualified applicants would be shortlisted, and the winner would then be decided by comparing financial offers, an aspect that is less open to personal judgment. The financial offer could be used to determine the annual area tax, or rental fee, on top of the floor rate set by the administration. This annual fee would hence vary from one concession to another. It would reflect the value each concessionaire ascribes to his or her concession. It would include parameters that are difficult to

calculate from an administrative viewpoint, such as transportation costs, timber density, and market opportunities. This system, in which prices are self-determined, should help resolve the controversy between government and private sector around the optimal level of taxation. Provided that competition and transparency are secured, such a system would create a more equitable sharing of the forest rent between companies and the public. Again, provided that competition is secured, this system would encourage companies to create greater economic value with less forest area, for example by reducing waste, diversifying the range of species used, and increasing the amount of processing. It would deter operators from opening up large concessions and creaming off the best species, and from keeping excessively large areas for speculative purposes.

However, the auction process alone will not bring about all the solutions. It is only one piece of a more complex system, and it does entail some risks. If competition and transparency are not secured it may lead to collusion. If competition and transparency are secured only at the time of allocation, the higher price of concessions could prompt unscrupulous operators to take commitments and then not deliver, to illegally harvest beyond the boundaries that were awarded, or to engage in logging without any permit at all. That is why an auction system must be complemented with downstream monitoring and enforcement to ensure that taxes are actually paid, social responsibility agreements are delivered upon, and harvesting areas are complied with.

To begin with, one option would be to test the system on smaller logging permits with a shorter time span in order to mitigate risks and allow gradual finetuning.¹¹⁵ It will also be important that the level of the area tax (proposed by the company at the time of the auction) be adjustable in order to reflect changes in transportation costs and timber price over time (the concession is for 25 years).¹¹⁶ One option would be to

link the annual area fee to national indices of transportation costs and timber market prices, and to annually adjust the area fee.

The ‘exceptional cases’ for which sole sourcing is allowed under Article 83 of the Code should be strictly limited to community forests and conservation concessions. Furthermore, any new concession, regardless of its area, should be validated by the government, not just the line ministry, to ensure checks and balances in the long-term allocation of public resources.

Further economic reforms. The March 2004 decree framed fiscal reforms until 2007. After that initial phase the sector will have to continue adjusting. The first change to be taken into account is the shift to the auction system. For new concessions, the rate of the annual area fee will be determined by the winner’s financial bid on top of a floor price that remains to be set. Furthermore, as mentioned above, this fee could be indexed to a reference price for tropical timber and to a transport cost index in order to tie taxation to the fluctuations of the international market and to improvements of the domestic environment.

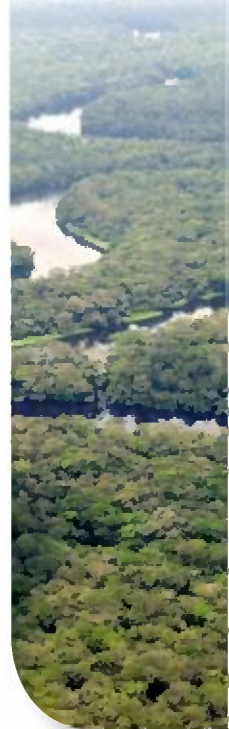
The second reform pertains to the shift to forest management plans. The existing *taxe sur le permis de coupe* will become irrelevant as annual harvest areas will automatically be programmed by the forest management plan. This tax should be phased out and merged into the concession area fee. Furthermore, the concession area fee will be limited to productive areas as delineated by the management plan. These two points should prompt operators to speed up the

preparation of their management plans and move towards certification.

The third reform pertains to local processing. Article 109 of the Forest Code, stipulating that 70 per cent of the timber should be processed locally, could be enforced in the form of a nationwide log export quota divided up into smaller subsets to be allocated through a competitive and transparent process. This approach would give more leeway to companies’ market strategies, while complying with the government’s objective to create more jobs with the same level of harvest.

The fourth reform pertains to the Forest Fund, which covers most operating costs of the forestry department. In 2004, in line with the single national budget policy, the Forest Fund and other *budgets pour ordre* were converted into *budgets annexes*. The plan is to later integrate them fully into the national budget. However, dissolving the Forest Fund would risk further dismantling the weak forestry department. From a practical standpoint, this reform should take place only once adequate budget funding is secured for the forest department.

Finally, the 2003 economic review suggested implementing a forest revenue enhancement programme. This would be a joint collaboration programme between the Ministry of Finance and the Ministry of Environment to collect forest taxes. It would have three missions: to serve as a one-stop shop for forest taxes; to serve as a consultation platform between the administration and the private sector; and to ensure the economic monitoring of the sector.



CHAPTER 4

THE BROADER AGENDA

This chapter outlines priorities for the next four to five years, in addition to the land-use planning approach and other reforms described in Chapters 2 and 3. In the still shaky reunification context this broader agenda remains pragmatic. It combines urgency, priority and capacity.

4.A. INTEGRATING FORESTS INTO THE MAIN DEVELOPMENT FRAMEWORKS

Poverty Reduction Strategy. The Congolese Poverty Reduction Strategy Paper (RDC 2006) highlights forests as a key sector for reducing poverty, and it integrates forest priorities into the country's overall agenda. The Poverty Reduction Strategy Paper (PRSP) is based on three pillars: good governance, shared growth, and community development. The forest agenda is linked to each of them: it aims to foster transparency and law enforcement as key elements of good governance, to ensure equitable access to forest resources and equitable sharing of benefits, and to promote local development through community forests and other mechanisms.

The PRSP recognises that most rural people in the DRC rely on forests for heating and

cooking, as well as for food, medicines and income. Accordingly, securing forest peoples' rights, while at the same time preventing the depletion of the natural resource base, is a prerequisite to reducing poverty. Making the harvesting of fuelwood, bushmeat, and other non-timber products more sustainable and economically fair, must be at the heart of the DRC's poverty reduction strategy. The PRSP also recognises that potential benefits from the timber industry will not come automatically. If the environmental, social and economic mechanisms fail to work properly, natural resources are likely to be depleted without proportional improvement of the livelihoods of the poor. There is a risk that forest-based benefits will remain marginal for forest-dependent people, who are often among the poorest and have few alternatives for development. This is why regulating the forest sector must also be at the heart of the DRC's poverty reduction strategy.

Regional integration and international agendas. Regional integration and international agendas are two relevant ways forward for a country that was isolated from international dynamics for more than a decade, although the size of its forests makes it a natural leader in Africa in this area. Given the fragility of the post-conflict transition,

the collapse of institutions and the weight of vested interests, the DRC may not be able to implement its new policies on its own. Success will also depend on the quality of partnerships with other governments and with other public and private stakeholders. Taking part in international initiatives will be a decisive step for the DRC's return to the international arena and to show its commitment towards objectives shared with other countries.¹¹⁷

The DRC has much to gain from closer cooperation with its Central African neighbours. Two Central African Heads of States Summits on Forest, in 1999 and 2005, led to the adoption of the Declaration of Yaoundé, the creation of the *Commission des Forêts d'Afrique Centrale* (COMIFAC), and the signing of a Regional Forest Treaty in 2005. COMIFAC reports directly to the Heads of States. Impetus for cooperation is emerging at regional level, and the DRC can benefit from this. The DRC is also involved in the Congo Basin Forest Partnership (CBFP). These forums make it possible to share experiences with neighbouring countries and to better coordinate international assistance.¹¹⁸

A national, multidonor programme for forests and nature conservation. With the return of peace, international cooperation is picking up. The poverty of the Congolese population and the uniqueness of the Congo Basin for the global environment call for strong engagement. Because of the scope and complexity of the challenge, the DRC and its partners should ensure that all projects in this sector fit together within the framework of a coherent sectorwide programme.

Such a programme should cover the entire forest and biodiversity sector throughout the country. It should aim to strengthen both government and civil society institutions, including local communities and minority or vulnerable groups such as the Pygmies. It should also aim at bridging the gap between sound policies and lack of implementation on the ground. This programme would

accompany the development of the sector for the next ten to fifteen years, and would be subdivided into annual action plans. As much as possible, the programme should be executed through perennial structures in order to improve their planning, administrative and financial management capacities. It should use and improve country systems, rather than replace them. It should be prepared and implemented in a flexible and participatory manner. Civil society and local communities should be directly involved in planning, implementing and monitoring. The programme would serve as a common strategic framework for all stakeholders. It would help avoid duplications and develop synergies between projects while preserving each partner's autonomy. Provincial forest plans should be developed by the provincial advisory councils in order to adjust the national policy to the specificities of each province.

Such a programme should include a combination of policy and capacity building efforts. It should further tighten the links between forests and crosscutting governance and development programmes. Forest reforms will have a greater chance of success and a greater impact if linked to broader institutional and economic programmes in the country. Ideally, such a sector programme would use multidonor financing instruments. Some of the financial support should be disbursed on the basis of achievements rather than inputs.

4.B. REBUILDING INSTITUTIONS

Even assuming that the priority reform agenda is fully carried out, the chances of its success in the field are rather low due to the current deficiencies of the forest department. This is a recurrent problem in Africa. But in the DRC, wars and institutional collapse have aggravated this problem more than anywhere else.

Creating or rebuilding national structures to monitor forests is a major challenge. There is

a considerable gap between the institutional capacity needed to fully implement the Forest Code and what can reasonably be expected in terms of institutional capacity and human resources within the next five to ten years. The danger on the ground is that the Forest Code's most positive aspects might not be enforced, while other less desirable aspects could be applied regardless of the laws and decrees. The entire approach, including participatory land-use planning, management plans, community forests and law enforcement, obviously requires better trained and better equipped personnel than is the case today, as well as a cooperation framework that brings together NGOs and central, provincial and local authorities. This won't happen in a day. The country and its development partners must invest in these areas immediately if they hope to see progress over the next decade.

In the long term. A comprehensive institutional review is needed to help design an overall strategy to reinforce the agencies

in charge of forests and nature conservation. The review should assess existing institutions, suggest adjustments to the institutional set up and to the incentive framework, and outline a specific programme for training, equipment and technical assistance. It will be important to focus these institutions in line with their core regulatory functions, and to restore their ability to fulfil such duties, while fostering the full involvement of NGOs, universities, other civil society organisations, and local and provincial authorities. This institutional rehabilitation strategy should be defined in connection with the country's overall public sector reform.

Some pillars of the institutional rehabilitation strategy can be outlined. First, the issue of civil servants' incentive framework will need to be addressed if these people are to do their jobs properly. Current wages in the public service are unrewarding, and they will need to be readjusted. Initially, this can be done through performance bonuses for teams in charge of sensitive missions. Performance



The regional forest office of Mbandaka, Equateur. Law enforcement is almost nonexistent. Institutional strengthening and third-party monitoring are top priorities.

evaluation and promotion systems also need improvement. Second, there is the issue of academic training and retraining. The current generation of forest staff is nearing retirement and replacements are not ready. Human resources development should include the support of universities such as those in Kinshasa and Kisangani. It is also critical to interlink provincial and central forest services, which have remained apart for a decade, and to provide field staff with on-the-job training. Third, the strategy should give priority to key functions such as enforcing laws and activating participatory processes. Fourth, it will be necessary to provide equipment and rehabilitate infrastructures. However, equipment and infrastructure should come in support of specific missions and not as an end in themselves. Furthermore, considering the state of collapse inside the country, these programmes will have to follow the pace of rehabilitation in other sectors. Fifth, it is important to rebuild the public institutions' capacity to manage financial resources properly, prepare annual work plans, and to ensure monitoring and evaluation.

In the short term. Rebuilding public institutions in the DRC is a long-term task, yet immediate challenges need to be addressed. It will take a creative and pragmatic approach to simultaneously deal with the emergencies and the long term. For example, independent forest monitoring will be crucial to tackle illegal logging in the short term. This should help forest officials fulfil their core duties, by providing transparency, training and advice on methodologies. By doing so, it would also contribute to long-term institutional strengthening. Another challenge under the difficult budget constraint is to secure adequate and regular budgetary allocation for the Ministry of Environment and the Institute for Nature Conservation. Failing to do so would make it difficult for them to regain stewardship of a public heritage they are supposed to take care of and that could degrade rapidly.

4.C. FOSTERING SMALL-SCALE DEVELOPMENT INITIATIVES

Assisting small-scale forest-based enterprises. Millions of poor people earn a major portion of their cash income from harvesting, transporting, processing and trading bushmeat, timber and other forest products. Many of these activities provide good prospects for improving their livelihoods, as demand from urban markets increases. The most important actions that the government, NGOs and the international community can take to reduce poverty are to support these small-scale commercial activities and help them become more sustainable.

Most of the constraints that small-scale forest-based enterprises face are similar to those faced by other small enterprises in the DRC: difficulties in accessing capital and markets; lack of information, training and infrastructure; lack of strong associations; and bureaucratic hassles. Furthermore, forest enterprises are burdened by high transportation costs. The same sort of programmes used for small-scale enterprises in other sectors should be transposable to the forest sector and go a long way towards removing some of these constraints and increasing the most destitute households' incomes.

However, many small-scale forest-based activities also raise issues related to the sustainability of the natural resource base upon which they rely. Many of these activities are also illegal or of ambiguous legality concerning the environment, land tenure and taxation. Experience shows that it is practically impossible (and often undesirable) to try to regulate small-scale forest-based activities in contexts where governments have weak institutional capacity. The outcome is almost always increased corruption and lower incomes for households, with hardly any improvement in management of the natural resource base. It is generally a much better approach to recognise, organise and educate the people involved and to



Small-scale forest-based business. Millions of poor people earn a major portion of their cash income from harvesting, transporting, processing and trading bushmeat, timber and other forest products.

provide advantages, such as access to credit, infrastructure and information, to those that comply with minimal environmental norms. If progress is to be made, it is important that regulations and programmes in the field adopt this philosophy. Whatever regulatory framework exists, it will need to be simple enough so that it can be applied by poorly trained and poorly equipped government officials and by often poor and illiterate households. One key question will be how to encourage partnerships between small family or community enterprises and larger, more structured companies, without allowing the

latter to evade their fiscal and environmental responsibilities. This problem has no simple solution. It is important, however, that such partnerships be facilitated and monitored.

Any successful programme with small-scale forest-based enterprises will require a much greater understanding of the sector than is currently the case. More analytical work, local consultations and pilot projects are needed in this area. It will also require an adaptive approach that continuously integrates new experiences, as well as distinct solutions relevant to the specific ecological, social

and economic contexts across the country. The DRC is too large and too diverse to implement the same approach successfully throughout its entire territory.

Promoting community forests. The Forest Code represents a significant step forward in recognising local communities' rights to manage the forests that they have traditionally used and lived in, in the form of community forests or 'local community concessions'. However, the practical effects of this measure will depend on the exact regulations and implementation in the field. The key to success will be to identify mechanisms that are simple enough for communities (including Pygmies), local authorities and government field personnel to implement. Otherwise community forests are likely to be limited to a small number of isolated cases supported by donors, and will be too costly for large-scale replication or are likely to be misappropriated by local elites.

The DRC can learn a great deal about such mechanisms from a number of East African and Sahelian countries, such as Tanzania, Mozambique, Mali and Sudan. Cameroon's experience with community forests is also important for the DRC, as the existence of high-value timber in Central Africa leads to more tensions and complexity than it does in dry or mountain areas. Some questions that will need to be resolved are: whether community forests should be subject to the same sustainable management requirements as industrial concessions; whether community forests should be part of the permanent or of the non-permanent forest estate; compatibility of community forests with the Pygmies' non-sedentary life; whether to authorise industrial exploitation if the communities so desire; and what taxation system should apply. The DRC should consider a system that allows local communities a right of refusal before any logging permit is allocated in their neighbourhood. While in some cases it might be desirable to promote partnerships between companies and local communities,

it will be necessary to keep companies from using community forests as a strategy to avoid compliance with environmental, fiscal and administrative requirements that apply to non-community forests.

The mechanisms put in place must also specify who has the right to establish community concessions and through what means, who represents the community, and the community's rights to exclude or transfer rights to other players. The incentive framework must take account of the common-resource dimension. Community forests may not automatically be managed in the community's interest—there might be an incentive for influential members of the community to pursue personal interests rather than collective ones, especially in rainforest areas where commercial timber has high financial value. Mechanisms should also include provisions for resolving any conflicts that arise with other users or with local governing bodies. They should take into account the regional variations within the country. A variety of models will apply to the diversity of rainforests, mountain and dryland regions.

Special attention should be paid to the indigenous forest peoples. As discussed above, modernisation as it occurs in the DRC context risks making them more marginalised and poorer as compared to other groups. Development priorities for the indigenous peoples seem to include: the continuation of traditional hunting and gathering, secured access to agricultural land, preservation of their cultural heritage, equal access to education, health and other services, and equal representation in decision-making bodies at local and national level. New forest policies should actively help achieve some of these priorities, especially with regard to the formal recognition of traditional rights, the participation in decision-making bodies and in land-use planning processes, and equal opportunities to manage community forests and to access economic benefits resulting from other forest uses.

The international community can play a key role in helping the DRC to fully capitalise on experiences in Africa and worldwide, and in developing its own models. It can help assess the existing customary rights and land tenure systems in different regions across the country, and it should also aid the government and NGOs to pilot legally recognised community-based management models in the field, using replicable models. More analytical work, local consultations, policy dialogue, and pilot projects are needed to that end.

4.D. PRESERVING BIODIVERSITY

Rehabilitating protected areas. The first priority of the National Conservation Strategy is to rehabilitate the existing national parks and World Heritage Sites. In doing so, it will be possible to capitalise on the efforts made by ICCN and its NGO partners during the war. All parks were badly damaged, but in many cases immediate efforts could potentially curb the loss of biodiversity. Efforts should focus on sites that show the highest probability of success. Priority actions include: restoring basic staffing, facilities and presence in the

parks; halting intense poaching by armed bands; re-examining the boundaries of parks in a participatory manner; restoring positive relations with local communities by supporting job-generating activities and community management; and resettling militias and gold miners recently settled in the parks and providing them with better living conditions and alternative sources of income outside the parks. Partnerships with NGOs and private companies may prove a wise approach especially in situations where ICCN is unable to cope with the speed and intensity of threats such as large-scale poaching.¹¹⁹

Extending the network of protected areas.

Another pillar of the ICCN strategy is to reassess the entire network of protected areas with a view to establishing new ones or downgrading those that have suffered irreversible damage. This effort would help make progress towards the target of 15 per cent of the country under protection, as set by the Forest Code. The network should be representative of the country's range of natural habitats and species, and take account of the rarity of those habitats and species at the global level. This will require

Box 8. The Virunga National Park and its buffer zone—calling for synergies

Established in 1925, Virunga is the oldest park in Africa. It is a major biodiversity hotspot and centre of endemism in Africa. It includes a unique range of landscapes: volcanoes, savannahs, lakes, forests and glaciers. Its surroundings are also one of the most densely populated areas of the DRC. Adjacent to Rwanda and Uganda, this region is among those that have suffered the most from the conflicts. Its population paid a heavy toll and accommodated more than one million Rwandan refugees. The guards were disarmed and left on their own, while the park was occupied by various militias and armed groups. Today, the park suffers from encroachment by agriculture, livestock and fuelwood harvesting by a population devastated by the war and with no alternatives, and from heavy poaching by uncontrolled armed groups. Although the impact of the war on wildlife was disastrous, significant numbers of the charismatic mountain gorillas survived and the potential for ecotourism remains high. In fact, this park and its buffer zone illustrate many of the challenges facing the post-conflict DRC. It could also be a ground for transborder cooperation between the DRC, Rwanda and Uganda on a relatively consensual topic. Basic transboundary collaboration efforts were undertaken during the war, and the 'peace park' concept may prove relevant here. All stakeholders agree that the park's rehabilitation and rural development in its buffer zone are top priorities. If well managed, the park could contribute to the recovery of the local economy and the wellbeing of communities through activities such as fishing in Lake Edward, gorilla tourism, and development programmes connected to conservation projects. This complex endeavour requires close cooperation among the ICCN, other public institutions, local authorities, civil society groups, traditional leaders, and development partners. One key measure will be to support and expand the multistakeholder Site Coordination Committee. Success can only come from strong endorsement by local populations as well as from an integrated approach among development partners.

Source: Jean-Pierre d'Huart.

a gap analysis of the existing network, in which some of the country's ecosystems may be under-represented. It will also require remote sensing and socioeconomic surveys to identify potential sites, as well as in-depth local consultations and participatory mapping to ensure that any new protected area reflects local peoples' perceptions, respects users' rights, and is based on prior, free and informed consent. Various types of protected area should be considered, including innovative ones such as community-managed nature reserves.

Preserving biodiversity outside protected areas. The protection of biodiversity should not be limited to formally protected areas. These areas are likely to remain quite limited in scope compared to other land uses, and they will struggle to survive in isolation from other landscapes. For some time now, the government and its partners have been attempting to develop partnerships with villages, local administrations, and economic operators and civil society.¹²⁰ Two promising approaches relate to community-

managed reserves and private partnerships. Such approaches would strengthen the sustainability of biodiversity protection efforts, and increase the area over which biodiversity is protected.

First, in some cases, nature reserves are set up by communities (*see* Box 9).¹²¹ Building upon customary rights, and with assistance of local or international NGOs, local communities develop rules on forest uses and boundaries; have them recognised by the State; and take responsibility for enforcement. A basic principle is that industrial uses and commercial hunting are precluded. Key steps in the process include the participatory mapping of user rights, negotiation and demarcation of areas, and signing of agreements with local or national governing bodies. More efforts are needed along these lines. Community nature reserves have the potential to attract eco- and hunting tourism as a source of local revenue.¹²² In the DRC, this approach can be developed around the concepts of community forests or private reserves

Box 9. The Tayna community-based nature reserve—a novel approach in progress

Two ethnic groups in North Kivu, the Batangi and Bamates, through customary governance, made a decision in 1998 to create a community-based conservation programme to preserve their biological heritage and to foster social development. With support of the Dian Fossey Gorilla Fund International, beginning in 2001 they created a local NGO, the Tayna Gorilla Reserve Project (RGT), while they conducted participatory mapping and created a zoning plan that included an integral protection zone of 900 km², a 5 km buffer zone, and a development zone for the remainder of their two combined *collectivités*. After a five-year period of education and awareness-raising with the local population, and the development of a scientific programme for monitoring and protection, they entered into discussions with the Ministry of Environment and the ICCN in late 2005. These discussions, together with ongoing vetting with local stakeholders, resulted in a novel approach to community-based conservation that seems to respond to both local and national needs. In April 2006, the 'Tayna Nature Reserve' was created by a decree of the Ministry of Environment, and the integral zone was officially integrated into the national network of protected areas. Importantly, however, the management of the reserve remained with the local communities through a long-term contract in which the government (through the Congolese Institute for Nature Conservation) subcontracts management of the reserve to the RGT. As this programme evolved from 2001 to 2005, another five neighbouring *collectivités* formed their own NGOs to create additional nature reserves; these NGOs are linked together in an umbrella federation called UGADEC (*Union des Associations de Conservation des Gorilles pour le Développement Communautaire à l'Est de la RDC*). A second ministerial decree created the Kisimba-Ikobo Nature Reserve with management subcontracted to ReCoPriBa, a local NGO member of UGADEC. Monitoring data since 2002 indicate that encounter rates for gorilla, chimpanzee and elephant increased during this period, while anthropogenic disturbance declined. These data suggest that when community conservation is linked with formal recognition of traditional rights, enforcement by local stakeholders and local development initiatives, this may be a formula for conservation success.

Source: Patrick Mehlman, CI.



Silverback mountain gorilla, Gorilla gorilla berengei, Virunga mountains.

introduced by the new Forest Code, and some may go on to become officially protected areas. This concept could apply to both forest and savannah areas.

Second, with regard to production forests, the concession contracts and management plans should stipulate the outcomes that companies commit to achieve in terms of wildlife protection. The basic commitment is that the company's operations do not lead to increased poaching as compared to a no-logging scenario. Public-private partnerships should also be developed with hunting operators in game reserves and with tour operators in parks, reserves and other suitable places, in both forest and savannah areas.

Sustainability is also an issue for medicinal plants, forest fruits, other harvestable foods, as well as building materials and fuelwood. Any harvesting that involves destruction of the plant (removing whole root systems or completely stripping the bark from saplings) is likely to be unsustainable as markets increase. Little is known about these topics, and new initiatives need to address them.

4.E. REWARDING ENVIRONMENTAL SERVICES

As discussed in earlier chapters, logging is not likely to become the prevailing forest use in the DRC in terms of area or economic value. Thanks to the cancellation of 25.5 million hectares of noncompliant concessions in 2002, the area officially open to logging dropped from about one-half to about one-quarter of the country's rainforest area. This ratio is likely to decrease if the ongoing legal review of old logging titles is carried through properly, and if the moratorium is respected. This moratorium was extended by President Kabila in October 2005. If and when the moratorium is lifted, the DRC will be encouraged to exercise extreme caution before allocating new concessions.

Hence, there is space left in the DRC to develop new forest uses, beyond the usual models of industrial logging, small-scale informal gathering and trade, and protected areas. Community management should be developed, as discussed above. Other options based on environmental services and existence values could also prove successful on socioeconomic and

environmental grounds. Developing such models and the financing mechanisms that will need to accompany them is a challenge to the creativity of both the government and its partners. Supply (on the Congolese side) and demand (on the international community side) for environmental services seem to exist, but the connections between the two do not seem to work effectively. Systems that can translate potential markets into economic benefits for the Congolese people remain to be identified and developed. Both public and private financing mechanisms need to be considered for that purpose. Several options deserve to be examined, such as: carbon sequestration,¹²³ biological prospecting for pharmaceutical or cosmetic purposes, and conservation concessions.¹²⁴ Combinations of these options should be considered too, as well as combination with community-based management.

The DRC Forest Code is quite progressive. With explicit provisions for biological prospecting, conservation concessions, and environmental services (Articles 87, 96 and 119), it removes any ambiguity as to the feasibility of such mechanisms on legal grounds.

The fact that there have not been many successful experiences in these areas so far in Central Africa should not discourage the DRC. The country has unique assets. Thanks to the size of its forests, various models are not in fierce competition with each other—rather they can complement each other. As forests have been relatively sheltered so far, owing to the lack of security and transport, a whole range of options can still be considered. As long as the moratorium and other key measures of the priority agenda are complied with, opportunities that exist today will probably remain open in the medium term.¹²⁵ In the meantime, financial mechanisms to reward non-extractive forest uses are likely to become more accessible.

In the short term, the DRC and its partners should be proactive in analysing

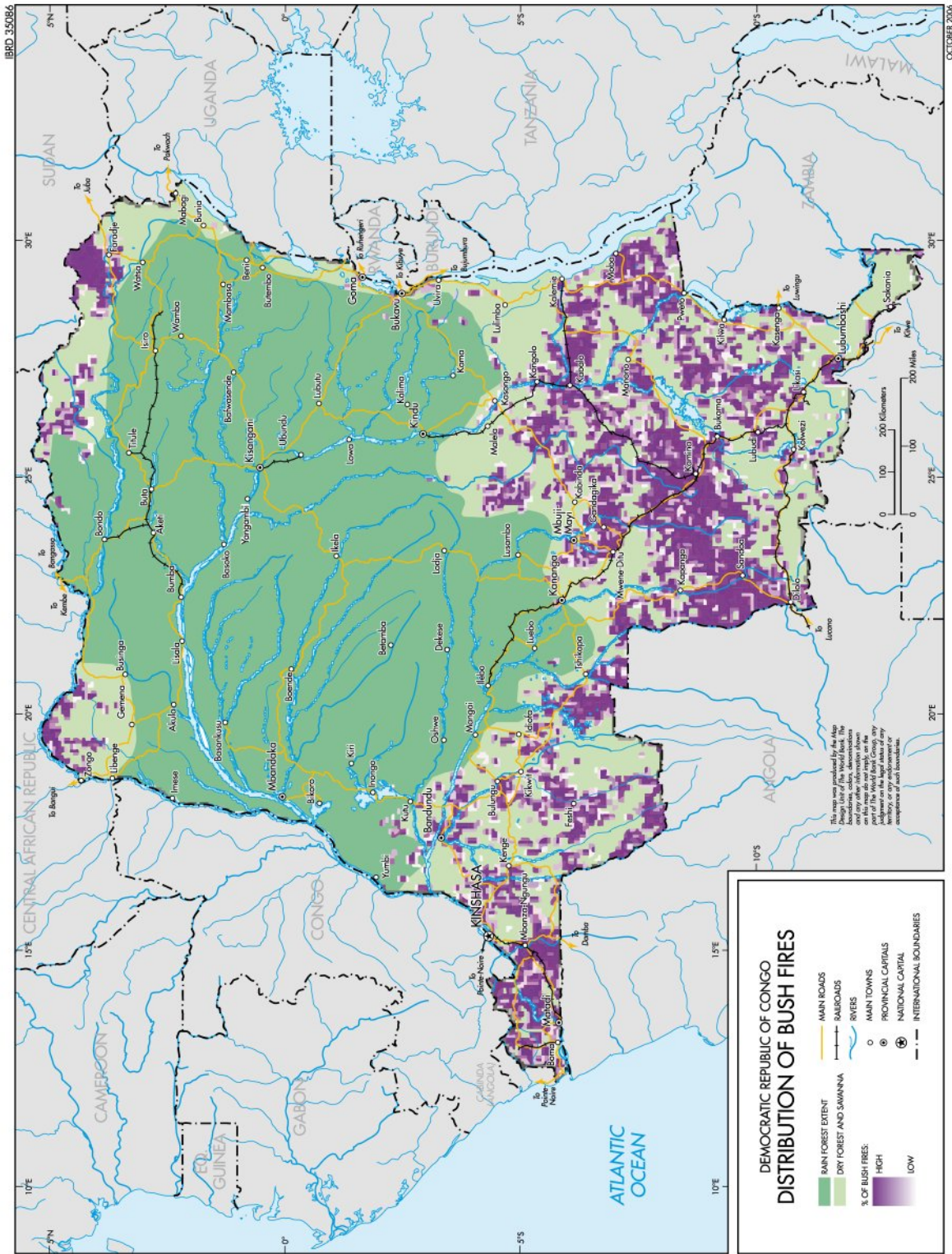
and testing how such new mechanisms can apply in practice to the DRC. A series of international roundtable discussions involving academia, the public sector, and the private sector should be organised to discuss the instruments that are currently available to make non-extractive forest uses an attractive proposition for the DRC, and to draw on other countries' experiences. Such international debate should also aim to raise new ideas and to start pilot initiatives between the DRC and interested public or private partners. It is also important that any land-use planning effort proceeds carefully and does not preclude the implementation of new systems that might become available in the future.

The DRC's renewable natural resource base goes beyond rainforests. The DRC has the largest freshwater resources in Africa and its hydroelectric potential ranks fourth in the world. These are precious resources that could be developed on a long-term basis. Water resources—the sustainability of which also depends on forests—should be given careful consideration.

4.F. DRYLAND FORESTS AND HIGHLAND ECOSYSTEMS

There are acute environmental and social challenges in the dryland forests (*miombo*) of the southern DRC, and even more in highland ecosystems in the East. Demographic pressure is often higher in these areas than in the Central Basin forests (Map 3), and these ecosystems are more exposed to deforestation and soil erosion due to their climate and topography. In fact, most of these forests have already been altered by fire, agriculture and fuelwood harvesting (Map 10). In many areas, these forests have been replaced by human-affected vegetation types.

Dry forests, savannahs and mountain areas will be agroforestry's primary area. Systematic use of trees in agricultural systems would make it possible to maintain soil fertility



Map 10. Distribution of bush fires in the DRC. Bush fires affect most of the southern DRC as well as the northern fringe of the country on a yearly basis. Source: Laporte et al. (1995) based on AVHRR images of 1989.



Village of Magunda in the Itombwe highlands.

while at the same time creating new sources of income for villagers. In such areas, the government should also foster community-based fuelwood management systems that can simultaneously help protect forests, improve local livelihoods, and supply market demands.

Tree plantations should be encouraged in the dryland and mountain ecosystems. Any plantation policy should include securing property rights over trees, and the possibility of transferring private forests. Plantations should be established by private and community operators who would own them, while the government would play an advisory and support role. Tree planting could most certainly benefit from the emerging carbon market. For example, savannah areas in the vicinity of Kinshasa have a potential for developing fuelwood and timber plantations that would help

meet urban demand, reduce pressure on natural forests, and be eligible for payments against carbon credits.

Overall, the knowledge base on dryland and mountain forests in the DRC remains limited. More data gathering, analytical work, consultations and mapping will be necessary to help design policies and programmes that can address the critical issues at hand.

Although the priority agenda analysed in previous chapters focuses mostly on rainforests, this last section shows that the scope of challenges for protecting forests and improving forest peoples' livelihoods in the DRC goes far beyond rainforests. Savannah, woodland, aquatic and highland ecosystems will require much greater levels of attention from Congolese decision makers and development partners than has been the case so far.

Box 10. Fuelwood management—the Domestic Energy Strategy in Niger

Wood is the main source of domestic energy in Niger, as in the DRC. It is a staple commodity for rapidly growing urban populations, with an annual turnover of approximately 20 million dollars. Until recently this sector was being neglected. Destructive harvesting practices were damaging forests. Traders and transporters captured most of the profits, and rural populations saw little incentive to manage woodlands sustainably. The Domestic Energy Strategy adopted in 1992 aimed at supplying urban markets, improving management of woodlands, and dividing the benefits more equitably. Methods included rationalising urban demand, developing simple management tools, and transferring forest management to rural communities. The strategy acted on both supply and demand (energy savings, diversification of energy sources, upgrading heating and cooking methods) and at various spatial levels (from one village to one city's supply area). Village forests are based on management contracts between the government and local communities, which give local communities exclusive rights over their resources. Each forest is delimited and permanent, and is the subject of land titling. Forest management is based on land-use plans and annual logging quotas. The strategy is also based on economic incentives rather than on prohibitions and regulations. For each rural market, a local structure is in charge of marketing the wood harvested by villagers. Tax collection by the local structure (in rural market areas) proves more efficient than collection by the forest department (elsewhere). Revenues from rural markets are divided up among the community, the district, the forest fund, and the State. To be viable, this system must be as simple as possible and based on rules that are understandable and applicable by all. The cost of managing village forests in Niger is less than 5 dollars per hectare and it can be covered by the sector's tax revenues.

Source: Pierre Montagne and Alain Bertrand, CIRAD.



Charcoal making in the miombo forest of southern DRC and Zambia. Dry forests and mountain ecosystems are highly vulnerable to fuelwood harvesting and soil degradation.

ENDNOTES

- ¹ The GDP was estimated 762 million dollars in 2005.
- ² The World Bank Institute's 'rule of law' index (which ranges from -2 to +2) is estimated at -1.76 for the DRC (Kaufmann *et al.* 2006). The Transparency International's 'corruption perception' index (which ranges from 1.0 to 10.0) is estimated at 2.0 for the DRC. The DRC ranks 156th out of 163 countries scored against that index. (www.transparency.org/policy_research/surveys_indices/cpi/2006).
- ³ This does not apply to the fertile and densely populated lands of the Kivu provinces, which have, on the contrary, been subjected to conflicts.
- ⁴ No information was found on the intensity of informal logging in the *miombo* forests of Katanga.
- ⁵ Lumbwe (2001) reports that the number of small-scale loggers based in Kinshasa rose from 450 in 1996 to 800 in 2000. Djiré's (2003) estimates for small-scale production are about three times higher, around 2400.
- ⁶ Household surveys have found that rural people consume an average of between 40 and 130 grams of bushmeat per day, while urban people consume 10 grams per day (Chardonnet *et al.* 1995; Wilkie and Carpenter 1999; Fa *et al.* 2003; de Merode *et al.* 2004). In comparison, DRC's population consumes an estimated 700,000 tonnes of fish yearly (Aveling *et al.* 2005), that is, half the consumption of meat.
- ⁷ Wilkie and Carpenter (1999) show 897 kg per square kilometre for the DRC against an average 290 kg for Cameroon, Central African Republic, Equatorial Guinea, Gabon and the Republic of Congo combined.
- ⁸ Latham (2002) claims that 40 per cent of the country's animal protein comes from caterpillars. Malaisse (1997) documents numerous species of insects as an important source of food in the DRC.
- ⁹ Hart and Hart (1986) estimated the Mbuti and Efe groups of the eastern DRC at around 35,000.
- ¹⁰ A similar analysis in the dry forests of Katanga found that traditional forest uses exercised by a low human density were compatible with environmental sustainability (Malaisse 2001).
- ¹¹ Northern white rhino (*Ceratotherium simum cottoni*); mountain gorilla (*Gorilla gorilla beringei*); okapi (*Okapia johnstoni*); eastern lowland gorilla (*Gorilla gorilla graueri*); bonobo (*Pan paniscus*); African forest elephant (*Loxodonta africana cyclotis*).
- ¹² References for these indexes: 'Frontier Forests' (Bryant *et al.* 1997); 'Priority Sites' (www.worldwildlife.org/wildplaces/about.cfm); 'Wild Places' (www.savingwildplaces.com); 'Hotspots' and 'Wilderness Areas' (www.biodiversityhotspots.org/xp/Hotspots/hotspotsScience/).
- ¹³ Valuable species often taken into account in forest inventories are: doussie (*Azelia* spp.), iroko (*Milicia excelsa*), ebene (*Diospyros* spp.), tiama (*Entandrophragma angolense*), kossipo (*Entandrophragma candollei*), sipo (*Entandrophragma utile*), acajou (*Khaya anthotheca*), wenge (*Millettia laurentii*), afromosia (*Pericopsis elata*) and limba (*Terminalia superba*) (often grouped as Class 1); and aniegre (*Aningeria* spp.), mukulungu (*Austranella congolensis*), bombax (*Bombax* spp.), longhi (*Gambeya* spp.), tola (*Gossweilerodendron balsamiferum*), bosse (*Guarea* spp.), bubinga (*Guibourtia demeusei*), dibetou (*Lovoa trichilioides*), bilinga (*Nauclaea* spp.), angueuk (*Ongokea gore*), tchitola (*Oxystigma oxyphyllum*), padouk (*Pterocarpus soyauxii*), ilomba (*Pycnanthus angolensis*) and nioue (*Staudtia kamerunensis*) (often grouped as Class 2).

- ¹⁴ The process of nationalising expatriates' assets.
- ¹⁵ Afromosia, wenge, limba, padouk, tola, iroko, sipo, sapelli, tiama, bosse, acajou and dibetou.
- ¹⁶ Contracts require that companies harvest at least 10 cubic metres per hectare, which companies themselves claim they do not comply with.
- ¹⁷ This model is also known as 'high-grading'.
- ¹⁸ The port of Matadi, just like the port of Boma, is built in the estuary of the Congo River. It looks undersized considering the needs of the DRC, and it cannot be extended significantly as it is surrounded by the city. The lack of dredging prevents large ships from dropping anchor, which deprives the DRC of new markets and locks it in with its traditional clients. All goods considered, the port of Matadi is among the most expensive in the world, and ship owners usually prefer to go to Pointe-Noire, Libreville or Douala. Given these constraints, some companies have already developed their own timber handling facilities in Matadi. Moving logs via Brazzaville and Pointe-Noire is another alternative, but it suffers from the same railway problems as on the DRC side.
- ¹⁹ This bottleneck could have two effects. First, the few companies on site that are currently starting up again might rapidly end up saturating the harbour. This could deter new operators from coming into the DRC, or it could step up the opening of new export routes, for example by road to the north. In the first scenario, it would therefore be unjustified to open new concessions in addition to the existing ones: this would turn out to be a *de facto* moratorium and it would protect the few companies already established in the DRC against competition from newcomers. Second, the Matadi bottleneck prompts loggers to process timber locally before exporting it in order to cut down on volumes and somewhat reduce harbour congestion. But this entails the risk of industrialisation focused on volumes and not on local added value, which is not optimal.
- ²⁰ These routes are still very expensive today: transportation from Beni to Mombassa costs 120–150 dollars per cubic metre.
- ²¹ The emergence of the DRC as a timber exporter does not seem to affect the global timber market. Assuming that the DRC exports 1–1.5 million cubic metres of logs and processed wood in the next 5–10 years, this would account for less than 2 per cent of the global trade. Furthermore, this gradual timeframe dismisses the possibility of a sudden market imbalance. Nevertheless, an increase in the DRC's offer could lead to a drop in the price of some species. This would be the case for *tola*, with a market that is currently limited to a few European countries, making DRC producers captive for these countries.
- ²² Reported production was approximately 90,000 cubic metres in 2002; about 150,000 cubic metres in 2003; about 200,000 cubic metres in 2004; and about 300,000 cubic metres in 2005.
- ²³ With the following implications: (a) the fact that estimates are *gross* means that they overestimate actual benefits; (b) the fact that the estimates are of *current* flows means that, to the extent that there are unexploited potential benefits, they underestimate future flows, but to the extent that current use patterns are probably not sustainable (extracting too much, or extracting in damaging ways), they overestimate future flows; (c) the fact that the estimates are of the *total* flow of benefits obscures important distributional issues: some benefits are received by very specific groups and some groups may receive few or no benefits (indeed they may have costs imposed on them); and (d) the estimates do not tell what the impact of deforestation would be—a reduction in forest cover would not reduce total benefits by an equivalent proportion.
- ²⁴ See Pagiola *et al.* (2004) for an in-depth discussion of the different approaches to valuing ecosystems, and the way results can, or cannot, be used.
- ²⁵ Some studies estimate the value of flows per hectare, but that approach makes it difficult to extrapolate values to the national level, since the value of forest flows in a specific place does not apply consistently to the entire country area. Moreover, the price of many forest products varies depending on quality, point of sale, time of the year, and other factors. It is difficult to statistically quantify such variations using the data currently available in the DRC.
- ²⁶ The only estimates that can be viewed as more or less accurate are those pertaining to formal timber. This is the only forest product that is subject to a relatively structured market and for which some basic statistical tools exist.
- ²⁷ Such methodological and data cautions are not uncommon in these types of assessments. Merlo and Croitoru (2005) make similar caveats for an economic valuation of Mediterranean forests.
- ²⁸ Net profit and added value are the indicators most often used to assess the flows of forest goods and services.
- ²⁹ The gross added value is defined as the market value minus the value of intermediate consumptions. The market value is defined as the value of the production, i.e. the sale price multiplied by quantities sold. The replacement value is defined as the price of the alternative good that would need to be acquired to replace the main one if it ceased to exist. Calculating net profit and net added value requires data that are not currently available in the DRC and assumptions that cannot be substantiated. Calculating net profit implies that the marginal cost structure is well known, which is not the case. Furthermore, working with net added value requires knowing the obsolescence rate of

the productive capital, while the gross added value (for timber) can be estimated from better known data: free on board (f.o.b.) prices, as well as production, transportation and processing costs.

³⁰ The average selling price is estimated 220 dollars per cubic metre for logs, and 510 dollars for sawn timber (f.o.b. prices for a DRC-representative basket of species). To estimate the gross added value, one needs to calculate the cost of intermediate consumptions such as fuel, spare parts and other consumables. By cross-referencing available information with similar data in neighbouring countries, the following figures were obtained: 60 dollars per cubic metre for logs, 200 dollars for exported processed wood, and 140 dollars for locally-processed wood.

³¹ Average market prices vary between 150 and 300 dollars per cubic metre. An average price of 200 dollars was used in this calculation. This calculation also uses an estimated 100 dollars of intermediate consumptions per cubic metre.

³² This does not take account of cabinet-making activities taking place further down the line, which considerably increase the end-product value.

³³ It is also assumed that this price applies to the whole production including the share used by farmers and charcoal makers for their subsistence. In fact, this estimate is a mix of market value (for the share of fuelwood that is traded) and replacement cost (for the share that is consumed locally). This estimate is a theoretical one since, in many cases, no alternative source of energy is available, and fuelwood cannot be replaced.

³⁴ A similar order of magnitude of the market value comes out when calculating the price of the oil needed to produce energy equivalent to 72 million cubic metres of wood (using an average retail price of 0.5 dollar per litre, and the following coefficients: 10,300 kilocalories per kilogram with 20 per cent efficiency for oil and 3500 kilocalories per kilogram with 5 per cent efficiency for wood). Information to calculate the added value of fuelwood is lacking.

³⁵ As for fuelwood, it is assumed that this price applies to the whole production including the share that is used by hunters and their families for their subsistence. In fact, as for fuelwood, this estimate is a mix of market value (for the share of bushmeat that is traded) and replacement cost (for the share that is consumed locally). This estimate is a theoretical one since, in many cases, no alternative protein is available, and bushmeat cannot be replaced. The same applies to other non-timber forest products.

³⁶ Assuming an average market price of 0.6 dollar per kilogram.

³⁷ A compilation of studies by Simpson *et al.* (1994, 1996), Simpson and Craft (1996), and Rausser and Small (1998) suggests that such values vary from less than

1 dollar to several thousand dollars per hectare for some specific sites. However, more recent estimates place that value at about 1 dollar per hectare or less. Pearce and Puroshothaman (1995) calculated that the market value of the worldwide consumption of medicinal products of plant origin was an estimated 84 billion dollars per year in 1985.

³⁸ The cost of preventive or curative measures that would need to be implemented if the forest ceased to protect watersheds. This approach is theoretical. It implies a scenario of massive and rapid deforestation which seems unlikely. This estimate only makes sense for marginal variations of goods and services (Pearce 2001).

³⁹ Lampiotti and Dixon (1995) estimated these services to be worth approximately 10 dollars per hectare per year under average climatic, orographic and demographic conditions. But according to Ruitenbeek (1989) this figure is closer to 3 dollars per hectare per year in rainforests in Cameroon. Here, we assume that a value close to 3 dollars per hectare per year applies on average to the 145 million hectares of the DRC forest area, which makes up about half a billion dollars, and will be cited here as an order of magnitude in the range 0.1 to 1 billion dollars.

⁴⁰ In 1990, mountain gorilla tourism attracted approximately 10,000 visitors to the national parks of Virunga and Kahuzi-Biega. The Congolese Institute for Nature Conservation collected about 1 million dollars in entrance fees. If each visitor spent, say (on average), an extra 1000 dollars on transportation, accommodation and miscellaneous costs, this represented a yearly turnover of approximately 10 million dollars. In Rwanda, a country where mountain gorillas also dwell, this form of tourism allegedly represented the main source of foreign income, more so than export crops such as coffee.

⁴¹ At the time this review was being finalised, the DRC was preparing a carbon sink project for submission to the World Bank's Bio-Carbon Fund. It is a 7000 hectare fuelwood and timber plantation on the Bateke savannah. The plantation would store an estimated 2.4 million tonnes of carbon, of which about 1 million tonnes could be purchased at a price of about 3–4 dollars per tonne.

⁴² In theory, the potential remuneration from 'avoided deforestation' could be estimated by multiplying areas by carbon content and by unit price. According to Brown and Pearce (1994), one hectare of natural tropical forest contains an average of 283 tonnes of carbon, and its destruction leads to a reduced storage capacity of approximately 220 tonnes. The annual deforestation rate in the DRC is estimated at 0.4 per cent (Laporte and Justice 2001) or 580,000 hectares per year. The compilation of carbon transactions over the last 10 years (<http://ecosystemmarketplace.net>) seems to indicate that the carbon price is about 2.65 dollars per tonne. For the purpose of this exercise it is assumed that special measures make it possible to prevent 20 per cent of the deforestation in the DRC (or approximately 115,000 hectares per year) through such efforts as

stabilising agriculture, preventing fires, and reducing fuelwood harvests. Under such assumptions, an order of magnitude of the potential remuneration from 'avoided deforestation' could be roughly estimated at about 70 million dollars per year, although this approach remains highly theoretical in present conditions. Also this estimate does not take into account the cost of avoidance measures needed to reach that scenario, or other resulting benefits such as protecting biodiversity and watersheds, and producing timber and non-timber products. Another theoretical approach would consist of assigning a value to the carbon stored in the Congolese forests by calculating the cost of marginal damages (that is, the cost of repairs or prevention) that would be triggered by the massive release of all this carbon into the atmosphere. However, such a calculation implies a scenario of massive and rapid deforestation that seems unlikely today in the DRC. Furthermore, this approach only makes sense for marginal variations of goods and services (Pearce 2001).

⁴³ We are considering the sum of ongoing projects and those planned over the next five years—that is, approximately 88 million dollars. Pearce (2001) reviewed several studies in this area and concluded that such values can reach significant levels for unique ecosystems (up to 4400 dollars per hectare for the habitat of the Mexican spotted owl, according to Loomis and Ekstrand 1998), but become relatively modest once they are aggregated at worldwide level and expressed per hectare. Kramer and Mercer (1997) estimated that each US household would be willing to pay 21 to 31 dollars to protect 5 per cent of the world's tropical rainforests. They consider the total area of tropical rainforests in the world to be 720 million hectares. Their assumption is to collect a total of 2.6 to 2.9 billion dollars, and then to invest that money into a fund offering 5 per cent interest, thus yielding 130 to 140 million dollars annually. This would translate into a constant annual flow of approximately 4 dollars per hectare to be protected. For the DRC this would represent an annual flow of approximately 16 million dollars, which comes close to the sum for conservation projects (18 million dollars per year), but Kramer and Mercer (1997) were only considering the US population, whereas conservation projects in the DRC reflect the willingness to pay from the international community in its entirety.

⁴⁴ This is consistent with other findings that the contribution of non-timber forest products to the regional income of the provinces of North-West and South-West Cameroon is 7.5 times more important than that of timber (CERUT and AIDEnvironment 1999). The estimates made in this section do not directly take account of the number of jobs related to each of these forest goods and services and, therefore, the total payroll and the impact on local households' income.

⁴⁵ Another aspect of equity is the breakdown of profits between the various stakeholders upstream and downstream in each sector, for example between hunters and sellers of bushmeat, or between small-scale loggers and dealers at the warehouse. In the case of timber, the

issue of sharing the forest rent between communities, government and companies is examined in Chapter 3.

⁴⁶ For example, several timber species have important non-timber values such as producing edible caterpillars, and a balanced approach is needed to reconcile timber and non-timber uses.

⁴⁷ The draft Forest Code and the underlying sector policy were discussed during the Forums on Forest Policy and on Environmental Legislation held in Kinshasa in May and July 2000 (MECNEF 2000a, b).

⁴⁸ The Forest Code defines 'local communities' as '*people organised in a traditional manner according to custom and united by bonds of tribal or parental solidarity that establish its internal consistency. A local community is further characterised by its attachment to a specific territory*'. The Forest Code seems to make no distinction between 'local communities', 'villages', 'local populations' and 'populations living on forest land'.

⁴⁹ Such remnants of the old system also appear in Articles 115 and 116, which require the concessionaire to start exploitation within 18 months after the award of the concession. This provision probably aims to prevent speculation. However, in practice it runs the risk of speeding up logging, and there are other possibilities for preventing speculation.

⁵⁰ The Bakajika law was apparently meant to avoid land speculation by foreign interests. The permanent concessions created in 1973 are accessible to Congolese citizens only (Vundu and Kalambay personal communication).

⁵¹ Articles 9, 20 and 80 of the Code pave the way for the establishment of private forests, individually or collectively owned. First, trees planted by individual people, local communities or decentralised entities belong to those who planted them; and second, forest located on a land concession belongs to the concession holder. However, measures should be taken to ensure that large land concessions do not become a way of circumventing environmental, social and fiscal regulations that apply to forest concessions, which are probably more binding.

⁵² Figures included in this paragraph only show estimated orders of magnitude, to be considered with the greatest of care. However, they do give some indication of the losses that the State and population could suffer if they fail to capture a fair share of the forest rent or other likely benefits.

⁵³ In Gabon, Cameroon and the Republic of Congo, the timber sector is one of the largest job providers after the public service. The formal sector provides approximately 12,000 direct jobs in Cameroon, with a production of approximately 2.5 million cubic metres, of which 90 per cent is processed locally. In Gabon, the timber sector provides approximately 7000 direct jobs, with a

similar production level but with a lower level of local processing. Direct jobs concern logging and processing. In these three countries, the timber sector also generates an unspecified but substantial number of indirect jobs in the areas of transportation, trade and services.

⁵⁴ Not counting the jobs created by the harvesting, transportation and trading of fuelwood and charcoal.

⁵⁵ This is based on the assumption of 2–3 million hectares under concessions in each province, and of an area fee of 50 cents per hectare in 2007. These amounts are to be shared between provinces (25%) and territories (15%).

⁵⁶ The number of people benefiting from these services may be relatively modest compared to the DRC's total population, but for these people such services are of critical importance as they live in remote areas, where there are often no other alternatives for a getting job, a road or a classroom.

⁵⁷ Gabon and Cameroon initiated similar forest land-use planning efforts in the early 1990s that are still in progress. This undertaking requires intensive fieldwork and long consultation, review and approval processes. It is often dependent on the project cycles of international aid. Realistically speaking, we are looking at a minimum 10- to 15-year time span for the DRC. An analysis of Cameroon's experience shows that the initial land-use planning exercise was based mainly on remote sensing analysis, and demographic projections, but with insufficient in-the-field analysis of traditional systems of land tenure and access to resources. Another problem was that central and local authorities tended too often to refer to the land-use plan as a cast-in-stone framework with a legal value, while it only has an indicative status and still needs to be negotiated at local level on a case-by-case basis for each piece of forest in the context of the gazetting process. The gazetting process that followed a few years later highlighted these weaknesses through local communities' claims. In many cases, boundaries were adjusted to give more room for community forests and the State's forest estate was reduced compared to the initial plan. In 2006, following local discussions as part of the gazetting process, the total area for the 45 concessions was reduced from the initial plan by about 180,000 hectares, i.e. about 6 per cent of the total. Individual changes ranged from –59% to +19%. The same applies to two recently-gazetted national parks (Campo-Ma'an, Lobeke) where the initial area was reduced following the gazetting process.

⁵⁸ Although Article 13e of the Forest Code contains some ambiguity as to which categories of forests are formally subject to gazetting, the process of local consultation, iterative refining of the limits, and formal enactment should systematically apply to all categories of forests, in line with Articles 15, 16, 84 of the Code.

⁵⁹ Numbers published by Wilkie and Carpenter (1999) show that the DRC has 64 per cent of the Congo Basin

forests, whereas its forest population makes up 91 per cent of the total forest population in the Congo Basin. These numbers seem to confirm that the DRC's forests are on average more densely populated than those of other Congo Basin countries.

⁶⁰ Congolese Institute of National Statistics; and UN common database (globalis.gvu.unu.edu).

⁶¹ For example, this is the case in the region of Béni, where people tend to move from the densely populated Kivu to the still sparsely populated forest areas in Orientale province.

⁶² Malaisse and Binzangi (1985) report that the deforested area surrounding urban centres in southeastern DRC increases in radius by an average of 1 kilometre per year. For detailed analysis of fuelwood collection around Kinshasa, see Tshibangu (2001).

⁶³ Proposals for new protected areas will probably come up as part of the proposed enlargement of the protected areas network, and proposals for new concessions as part of the mid-term allocation plan. These proposals will most likely not be limited to pilot regions.

⁶⁴ The generic terms 'contract' and 'concession' refer to *Authorisations to Prospect, Letters of Intent and Guarantees of Supply* in effect under the old forest regime, and to *Forest Concessions* in effect under the new Forest Code.

⁶⁵ A discrepancy of about 1.4 million hectares was detected during the 2003 economic review.

⁶⁶ Old concessions include on average 30 per cent of swamps, savannahs and village land (Chezeaux 2003).

⁶⁷ At an average production rate of 5 cubic metres per hectare with a 30-year rotation, taking into account 30 per cent of non-productive areas. Under the same scenario, 43.5 million hectares would produce between 2.5 and 5 million cubic metres, while production in 2002 was only 0.1 million cubic metres, i.e. one twenty-fifth to one-fiftieth of potential.

⁶⁸ A 200,000-hectare concession can produce an estimated 30,000 cubic metres per year with a market value of approximately 6 million dollars (assuming 30-year rotation, harvest of 5 cubic metres per hectare, f.o.b. price of 200 dollars per cubic metre).

⁶⁹ In such transactions the buyback price is probably set between the annual area fee to be paid to the government in order to keep the concession (0.00143 dollar per hectare) and the price the new buyer is actually willing to pay for that forest. Clearly, there is a large negotiation margin and there is room for substantial profit for the initial owner and the new buyer. In practice all sorts of arrangements are possible. One example worth mentioning is that of a 200,000-hectare concession that was proposed as payment for a building in Abidjan.

- ⁷⁰ Article 95 of the Forest Code states: 'Concession holders may not rent out, sell, exchange or give up forest concessions without the prior approval of the Minister or the President of the Republic, depending on the case'. However, this regulation is easily circumvented, for example through the sharing of a company's capital stock or through supply contracts.
- ⁷¹ Provinces and territories, set to receive 40 per cent of the area fee, therefore lose 40 per cent of the foregone revenue.
- ⁷² The secrecy of the unofficial market makes it hard to assess the order of magnitude of foregone revenues. However, they can be approximated by multiplying the area in question by the difference between the official area fee and the fee a company would be willing to offer for that same forest should it be put in auction. If that difference amounted to, say, 1 dollar per hectare per year, and if the area concerned covered 10 million hectares, then this would mean an annual foregone revenue of 10 million dollars for the State, provinces and territories.
- ⁷³ On top of the 5–10 million hectares held by the dozen or so companies which are operating now or are about to restart.
- ⁷⁴ A forest area of about 10 million hectares is probably enough to produce the volume of timber that the DRC transport network can supposedly handle in the next five to ten years.
- ⁷⁵ DGRAD (General Directorate of Administrative and State Revenues), DGI (General Tax Directorate), DGF (Directorate of Forest Management, OCC (Congolese Control Office), OFIDA, (Customs and Excise Office), ONATRA (National Transportation Office), OGEFREM (Maritime Freight Bureau), RVF (National River Authority) and the Marine Department.
- ⁷⁶ Including forest taxes and parafiscal charges levied by publicly owned companies. This percentage is a proxy, since some companies concluded individual agreements with ONATRA which may reduce the fees they actually pay to ONATRA. The f.o.b. is used as a reference for the formal timber market value.
- ⁷⁷ In the past, this fee was used as an incentive for using the railway from Kinshasa to Matadi rather than the road, but it no longer fits the reality in the DRC. The railway is dysfunctional, and most companies are compelled to use the road.
- ⁷⁸ Although many makeshift taxes at local level fail to appear in official balance sheets.
- ⁷⁹ Article 8 of contracts (Guarantees of Supply) stipulates that '*logging companies shall be unconditionally subjected to the following obligations: 1. Maintaining the processing plant in operation at the level stipulated in the contract; ... 4. Paying all forest taxes and fees as provided by current legislation*'.
- ⁸⁰ Exactly 25,516,455 hectares (*Agence Congolaise de Presse*, Bulletin 188 dated 17 October 2002).
- ⁸¹ According to the former regulation, Authorisations to Prospect were valid for a maximum of one year.
- ⁸² This decree was published in the Official Journal on 15 July 2004.
- ⁸³ The exact numbers are: 17,966,374 hectares (Ministry of Environment's internal compendium); 19,403,498 hectares (*Le Potentiel*, 24 May 2003); 20,354,861 hectares (*La Reference Plus*, 3519, 1 November 2005); and 14,971,910 hectares (*La Reference Plus*, 3519, 1 November 2005).
- ⁸⁴ Exactly 4,604,550 hectares (see *Agence Congolaise de Presse*, Bulletin 188 of 17 October 2002, and *Le Potentiel* of 24 May 2003). These figures do not take account of the discrepancies between the areas described in contracts and the boundaries drawn on the maps attached to those contracts. Over 32 contracts such discrepancies appear to amount to more than 1 million hectares.
- ⁸⁵ Ministerial decrees 68 and 69 of 11 October 2004; and 90, 92 and 93 of 13 December 2004.
- ⁸⁶ Even though the various types of 'exchanges' do not increase the total area under concessions, they actually end up opening new forests to logging, without transparency and without consideration for other forest uses. Article 23 of the decree of October 2005 stipulates that: '*This moratorium covers all acquisition of logging rights, including through exchange, relocation, or rehabilitation of former titles*'.
- ⁸⁷ Article 92: '*Except for pre-existing rights, no single person shall be granted forests exceeding 500,000 hectares either in one or in several plots*'.
- ⁸⁸ In 2003, the rate of 6.25 cents per hectare means that concession holders must pay 12,500 dollars annually for a standard 200,000 hectare concession. In 2004, the 10-cent rate translated into an annual payment of 20,000 dollars, and in 2007 the rate of 50 cents will represent a payment of 100,000 dollars annually. For 2003, the government decided that only those concessions located in regions under 'governmental' control would be compelled to pay this area fee to take account of the fact that other concessions had remained inaccessible for most of the year.
- ⁸⁹ The government did not select scenario 1 (status quo) as it believed it would have perpetuated the old burdensome system in favour of a handful of individual interests. It also shunned scenario 2 as it did not address all the critical problems, and scenario 3 as it implied changes that were too rapid and radical.
- ⁹⁰ Interministerial decree of 17 March 2004 (Ministry of Finance, Ministry of Transportation, Ministry of Environment, Ministry of Industry and Ministry of Foreign Trade), published in the Official Journal on 15 April 2004.

The decree also includes the following measures. First, it reduces the other parafiscal charges: the river police charge drops from 2 dollars to 0.1 dollar per tonne, and the OGEFREM charge drops from 0.5 per cent to 0.1 per cent of the f.o.b. value. Second, it includes provisions for shifting to a stumpage tax based on market value rather than one based on volume. Third, it also includes provisions to replace the f.o.b. reference with the EXW (Ex Works) reference for the stumpage and reforestation taxes in order to deduct transportation costs. EXW is a reference market value calculated on the basis of the f.o.b. value by subtracting transportation costs, which is justified when transportation costs are high and vary from one production site to another. Fourth, this decree lowers taxes on *tola* and on secondary species, and withdraws export duties on processed products. Fifth, once the management plan is approved, the area tax will be limited to the productive part of the concession, as delineated by the said management plan. Lastly, it should be noted that the reforestation tax is levied in two instalments: one for the export of logs and the other on the size of annual cutting areas.

⁹¹ Disregarding individual arrangements that some companies concluded with ONATRA.

⁹² For a 30-year rotation with 5 cubic metres extracted per hectare and an f.o.b. value of 200 dollars per cubic metre on average. With an annual area fee of 50 cents, holding a 200,000 hectare concession costs 100,000 dollars per year. Under a forest management regime, this area can produce about 30,000 cubic metres, corresponding to an estimated market value of 6 million dollars, i.e. 60 times the area fee.

⁹³ Article 5 of the presidential decree: *'Checking the legal validity of contracts shall be carried out according to the legal and regulatory provisions in effect when such contracts were signed... Any application pertaining to a contract in conflict with the legal and regulatory provisions in effect when the contract was signed shall be automatically denied'*. Article 5 also states: *'The applicant's compliance with obligations stemming from his or her contracts shall in particular be checked against the following elements: (a) full payment of all forest area fees since 2003; (b) complying with concession boundaries as defined by the contract and the topographical map attached to said contract; and (c) the existence of a processing unit and maintaining it in operation if provided for in the contract, except in cases of absolute necessity. Failing to comply with one of these three contractual obligations shall result in denying the application and rescinding the contract'*.

⁹⁴ Article 10 of the Letters of Intent and Guarantees of Supply includes the following provisions: *'Failure to comply with one of the clauses of this agreement shall result in the immediate and automatic cancellation of said agreement'*. Article 118 of the Code stipulates that *'any suspension of payment (of taxes) shall constitute a cause of forfeiture and result in the cancellation of the forest concession contract'*.

⁹⁵ See Article 19 of the decree. This issue is to be considered in light of Article 44 of the Forest Code, which stipulates that traditional user rights are maintained in all production forests, except for farming. Hence, it is likely that pending issues will primarily concern overlaps between concessions and farmlands, as other user rights are maintained anyway.

⁹⁶ Preparing forest management plans entails considerable inventory and mapping efforts, the cost of which is estimated at 3 to 5 dollars per hectare according to emerging standard practices in Central Africa. However, one can expect to see economies of scale in the DRC due to the large size of concessions compared to neighbouring countries.

⁹⁷ The rotation is calculated as the time needed to regenerate the initial timber stock; or a ratio of it if one assumes that markets will evolve over time and will make it possible to harvest new species during the second harvest cycle.

⁹⁸ Companies usually prefer short rotations as this means larger annual harvest areas and therefore larger annual timber supply for concessions of equivalent size. The forest department should determine an authorised range of rotations, most likely 30–60 years in the DRC. Within that range, a specific rotation could be calculated at concession level based on inventories and other ecological or economic parameters. The actual size of annual harvest areas may vary depending on the actual distribution of timber throughout the concession.

⁹⁹ The minimum cutting diameters aim to maintain enough seed trees of the valuable species so as to reconstitute (part of) the initial timber stock for the second harvest cycle, and allow for natural regeneration of these species. The forest department should determine the minimum thresholds to be complied with throughout the country. Larger diameters could be calculated at concession level, based on growth, mortality and population structure for each species, when such data exist.

¹⁰⁰ However, the extensive model that prevails in the DRC is not reported to directly and irreversibly degrade the natural forest cover, as corroborated by research in other African countries with similar harvesting levels of two or fewer stems per hectare (Bedel *et al.* 1998; Debroux 1998; Durrieu *et al.* 1998). On the contrary, a moderate increase in harvesting intensity per hectare, associated with the use of lesser-known species, could reduce the size of annual harvesting areas, the opening up of new roads, and the associated poaching (Fredericksen and Putz 2003; Sist *et al.* 2003). It would also foster the regeneration of valuable species which are often light-demanding such as the Meliaceae (Hall *et al.* 2003a, b).

¹⁰¹ An alternative is to leave harvesting areas open for two or three years. In such a 'sliding' system, two or three areas are operational simultaneously. Every year one area would close down, while another would open up.

¹⁰² Such a cancellation clause was included in the old logging contracts. It should be carried over into all new ones.

¹⁰³ At the time this review was being finalised, about 1.2 million hectares of natural forests were certified in Cameroon, Gabon and the Republic of Congo under the Keurhout and/or Forest Stewardship Council (FSC) systems. Another 1.5 million hectares were in the process of being certified in these countries.

¹⁰⁴ In well-functioning States, the State or its designate provides social services throughout the country. In the DRC context, the *cahier des charges* makes up for the State's inability to provide such services in remote areas. For the company, it should remain a predictable cost and be part of the package agreed upon at the time of awarding the concession contract.

¹⁰⁵ Article 10 of the Letters of Intent and Guarantees of Supply includes the following provisions: '*Failure to comply with one of the clauses of the agreement shall result in the immediate and automatic cancellation of said agreement*'. Article 118 of the Forest Code stipulates that '*any suspension of payment (of taxes) shall, as a matter of right, constitute a cause of forfeiture and result in the cancellation of the forest concession contract*'.

¹⁰⁶ Although the Extractive Industries Transparency Initiative (EITI) is usually limited to minerals and oil, the presidential decree of November 2005 provides that the timber sector is also part of the Initiative, as implemented by the DRC.

¹⁰⁷ *L'Observateur*, 2199, 29 July 2005.

¹⁰⁸ For 2003 the area was 11,083,752 hectares (areas outside government control were exempted) and the rate was 6.25 cents per hectare. For 2004, the area was 22,710,426 hectares and the rate was 10 cents per hectare.

¹⁰⁹ According to DGRAD, in 2003, seven companies could not be contacted because no telephone numbers or addresses were available.

¹¹⁰ Exactly 2,082,866 hectares, Ministry of Environment, August 2005.

¹¹¹ In the DRC, the territory is the lowest level of public administration, that is, the smallest decentralised entity with financial autonomy. There are 145 such territories in the DRC. A territory's population often reaches several hundred thousand. The territory administrations are therefore distant from villages, especially considering the poor state of communications.

¹¹² The transferring of forest revenue will have to be carefully coordinated with the new law on decentralisation, which stipulates that 30 per cent of all revenues collected by the central tax department (DGRAD) shall be relinquished to

provinces. With a rate of 40 per cent, the forest sector is in a special situation compared to other sectors.

¹¹³ Production was about 300,000 cubic metres in 2005, and has never exceeded 500,000 cubic metres in the past. Yet, under a forest management scheme, a total area of 20 million hectares would produce approximately 1.1–2.2 million cubic metres annually (30 to 60-year rotation, harvesting of 5 cubic metres per hectare taking into account 30 per cent of non-productive areas). Even if the area under concessions dropped to about 10 million hectares, potential production would still range between 0.8 and 1.6 million cubic metres (taking into account that the 30 per cent of non-productive areas would then be excluded), still enough to saturate the transport capacity.

¹¹⁴ Such an observer has been used in Cameroon. It turned out to be essential for improving transparency and securing fairer competition between companies. It also made it possible to iteratively refine the auction procedures.

¹¹⁵ These small logging permits should be geographically confined, unlike 'standing timber permits' or 'volume-based permits' that are difficult to monitor, as shown by the abuse of the systems known as *autorisation de récupération* in Cameroon or *coupes familiales* in Gabon. Small logging permits might even become the operational framework of small and medium-sized companies. In that case, specific forest management guidelines will need to be identified and lessons drawn from the system of *ventes de coupe* in Cameroon and *petits permis* in Gabon. Some arguments suggest that new concessions in the DRC should be small and short, as technical and financial proposals in a post-conflict environment are likely to be low, reflecting operators' caution in dealing with post-conflict risks and poor infrastructures. According to this analysis, larger and longer concessions should only be allocated once political security and infrastructures have improved. On the other hand, long-term investors need long-term guarantee of supply, and forest management plans typically require sufficiently large areas and sufficiently long rotations, which seems to favour larger and longer concessions from the start. Such elements will need to be taken into account in the medium-term planning.

¹¹⁶ In a post-conflict time when infrastructures are weak, the value of forest is low. It will increase gradually as infrastructure and security improve. Auctioning long-term contracts in this context would probably result in relatively low offers reflecting the high level of risk and cost of transport, and which underestimate the value of forests under future conditions. If this annual fee remains fixed for the next 25 years, the gap between the area fee and the real value of forest is likely to increase and to result in foregone revenues for the State and local entities. A calculation of such loss was not approximated in this study; however, it leads to the same recommendation of being extremely careful before

allocating new concessions in the present context in the DRC.

¹¹⁷ The DRC is a member of the International Tropical Timber Organization, founded in 1993, and a signatory to the 1992 Convention on Biological Diversity, the 1992 United Nations Framework Convention on Climate Change, the 1994 Desertification Convention, and the 1968 African Convention on the Protection of Nature. As part of its COMIFAC membership, the DRC would be expected to ratify the 1971 International Convention on the Protection of Wetlands (Ramsar) and the 1973 Convention on International Trade in Endangered Species (CITES).

¹¹⁸ For example, in March 2006, COMIFAC's Climate Change Focal Points prepared a joint statement on *avoided deforestation* for the attention of the 11th Conference of Parties of the UNFCCC. With this initiative, Central African countries stepped more forcefully into the global debate on carbon sequestration and natural forests. It also introduces the concept of *avoided degradation* for consideration in future negotiations.

¹¹⁹ In 2005, the ICCN engaged in an innovative public-private partnership by contracting out the management of the Garamba national park to the African Parks Foundation. The park was subject to extreme poaching pressure from Sudanese militias, driving the northern white rhino to the brink of extinction. A proposal to translocate the few remaining rhinos to a safer place outside the country had been rejected. At the time that this review was being finalised, poaching had been reduced in key sections of the park, although it remains unclear whether the rhinos can be saved.

¹²⁰ For example, in several 'landscapes' defined as part of the Congo Basin Forest Partnership (see Map 5).

¹²¹ For example, the community reserves of Tayna (in eastern DRC) and Lossi (Congo-Brazzaville).

¹²² As in the CAMPFIRE programme in Zimbabwe, ADMAD in Zambia, and ECOFAC in Central African Republic.

¹²³ Natural forests are currently not eligible to carbon markets. However, positive developments are underway.

The 11th Conference of Parties (COP) of the Kyoto Protocol (Montréal, November 2005) invited Parties and Observers to submit their views on emission reductions resulting from *avoided deforestation*. By March 2006, some 34 submissions had been received. The Scientific Advisory Council was asked to analyse these submissions and to report to the 13th COP in 2007. In the future, the DRC would probably benefit from bringing the debate one step further towards the concept of *avoided degradation*. This would imply ethical, social or biodiversity considerations in addition to mechanical carbon calculations.

¹²⁴ Although many of the details for implementing this approach have yet to be worked out, the general idea of a conservation concession as provided for in the Forest Code is clear: by providing compensation, a conservation concession agreement would make the absence of logging economically attractive to the government and to the local communities. It would offer reliable and steady compensation calibrated to offset the economic impact of foregone timber industry, in exchange for the right to manage the area as a protected site. This would be a legally binding agreement. The specific commitments of the parties would be negotiated between the biodiversity investors, local communities and the government. In essence, such an agreement would stipulate that the government will not open the forest for logging as long as payments, support to local development, and conservation activities are delivered, and vice versa, based on agreed-upon indicators and performance standards. Conservation concessions would come in addition to the country's commitment to establish formal protected areas such as parks and reserves. They would be established in areas that could otherwise be allocated for logging. At the time this study was being finalised, conservation groups had expressed an interest in establishing such a conservation concession in the DRC. This would be a pilot project for the Congo Basin. It should be noted however that, since 2000, the Government of Cameroon has set aside about 800,000 hectares of production forests with a view to establishing such conservation concessions, but has not received any concrete proposals so far.

¹²⁵ Although programmes in infrastructure, mining or other sectors might gradually reduce the room for new decisions on forest uses, as noted in Chapter 2.

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FORESTS IN POST-CONFLICT DEMOCRATIC REPUBLIC OF CONGO

ANALYSIS OF A PRIORITY AGENDA

Forests are ubiquitous in the Democratic Republic of Congo; they touch the cultural and economic life of most of the population and have enormous global environmental significance. After years of conflicts and mismanagement, reconstruction is key to improving living conditions and consolidating peace. At the same time, better roads and trade bring risks—threatening forests and biodiversity by facilitating logging, land conversion, and the seizure of forest rights by vested interests. Anticipating these threats, in 2002, the transitional government started a Priority Reform Agenda. This report analyses the soundness of this Agenda, the progress achieved to date, and the priorities for the future. It emphasises the nature of forests as a public good; and the importance of the rule of law, transparency and public participation in managing natural resources. It highlights the multiplicity of claims on forests; calls for multipurpose participatory land-use planning; and emphasises the need to secure traditional user rights. Beyond the risks, the return of peace to the DRC also offers a unique opportunity to take a fresh look at the second-largest rainforest in the world, and to implement innovative strategies that give priority to the environment and to local people.

