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INTERPOL

A RAPID RESPONSE ASSESSMENT

THE LAST STAND OF THE GORILLA

ENVIRONMENTAL CRIME AND CONFLICT IN THE CONGO BASIN

Funded by GRASP, the UNEP/UNESCO Great Apes Survival Partnership (www.unep.org/grasp) and the Government of France as a contribution to the UN International Year of the Gorilla. For further details of this initiative by the Convention of Migratory Species, including additional interviews from the field, go to www.YoG2009.org

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THE LAST STAND OF THE GORILLA

ENVIRONMENTAL CRIME AND CONFLICT IN THE CONGO BASIN

A RAPID RESPONSE ASSESSMENT

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PREFACE

With the rate of poaching and habitat loss, gorillas in the region may disappear from most of their present range in less than 10–15 years from now.

The fate of the great apes is closely tied to ours as they inhabit some of the last remaining tropical rainforests – ecosystems that not only assist in supplying water, food and medicine but also play a global role in carbon sequestration and thus combating climate change.

This report, based on evidence submitted to the UN Security Council, field investigations, interviews and scientific data indicates that the gorillas in the Greater Congo Basin are at even greater risk than expected less than a decade ago.

Illegal mining, logging, charcoal and a rise in the bushmeat trade are intensifying pressure on great apes including gorillas. In 2002, UNEP assessed that 10% of gorilla habitat would remain by 2032, but this now appears to be too optimistic given the current trends.

With the rate of poaching and habitat loss, gorillas in the region may disappear from most of their present range in less than 10–15 years from now.

The scale of the extraction of minerals from gorilla habitat in the Democratic Republic of Congo (DRC), largely orchestrated by militias, and the smuggling of natural resources from the wider Congo Basin to Asia and Europe may represent several hundred million dollars annually in terms of illegal income.

Tragically 190 park rangers have been killed in one park alone while defending gorillas and their habitat.

Not all the news is bad: New protected areas have been created, international cross boundary collaboration on environmental crime and improved management of some protected areas in the region are scoring some successes: The critically endangered mountain gorillas in the Virungas are on the rise again.

In order to widen these successes, improve human security and secure the future of the gorilla there is an urgent need to further strengthen this collaboration, including with and between countries and companies who are recipients of these natural resources.

UNEP therefore welcomes the evolving, cross-boundary collaboration between INTERPOL and the UN including the UNEP-linked Convention on the International Trade in Endangered Species: Welcomes too the strengthened relationship between UNEP and UN peacekeeping operations in the region.

Securing the necessary funds to support law enforcement and trans-boundary collaboration on environmental crime is a responsibility for all countries in the Greater Congo basin and beyond including in Asia, Europe and North America.

The opportunities are many: Tackling poverty by minimizing the theft of natural resources and maintaining the multi-billion ecosystem services of the tropical forests while reversing loss of economically and culturally-important wildlife in this, the UN International Year of Biodiversity.

Achim Steiner
UN Under-Secretary General and UNEP Executive Director

EXECUTIVE SUMMARY

Gorillas, the largest of the great apes, are under renewed threat across the Congo Basin from Nigeria to the Albertine Rift: poaching for bushmeat, loss of habitat due to agricultural expansion, degradation of habitat from logging, mining and charcoal production, and climate change are amongst these threats, in addition to natural epidemics such as ebola and the new risk of diseases passed from humans to gorillas.

Alarmingly, parts of the region are experiencing intensified exploitation and logging of its forest, in some cases even within protected areas. In the DRC, many of these activities are controlled by militias illegally extracting natural resources such as gold, tin and coltan as well as producing charcoal for local communities, urban areas, camps for people displaced by fighting and sometimes even to communities across the border. These militias are located, motivated, armed and financed directly by this illegal extraction of minerals, timber and charcoal. A network of intermediaries including multinational companies or their subsidiaries, neighboring countries and corrupt officials, are involved in the transportation and procurement of resources which stem from areas controlled by militia, or for which no legal exploitation permission exists.

As part of the extraction process, militias in North and South Kivu of the DRC are estimated to make approximately 4 million USD annually from taxes on charcoal. Combined with road taxes on minerals, timber and other goods in addition to controlling border control posts, the militias are making 14–50 million USD annually on road taxes alone. Companies working with or buying indirectly from fronts for the militias are buying minerals, charcoal and timber amounting to 2–10 times the official exports. These are valued at several hundred million USD from the direct sale to companies operating through Burundi, Rwanda and Uganda, among others, and imported to the EU, the Middle East, China and other countries in Asia, with financiers also in the United States. Several peace agreements have included the removal of vehicle check points previously enforced by park rangers to reduce this trade; this has facilitated the transport, illegal taxing and smuggling of resources across the borders. And this, in turn, has ensured continued financing of militias to obtain arms and encouraged them in securing resource hotspots and driving populations into IDP (internally displaced people) camps. Many people are forced by militias to work in the mines and charcoal kilns.

As many of these camps and militia groups rely heavily on bushmeat, many of the national parks in the region have lost up to 80% of their larger mammals. The illegal provisioning of these miners, rebels and forced workers with bushmeat includes meat from gorillas, chimpanzees, elephants and other endangered species. Surveys across the region indicate that great apes, including eastern and western lowland gorillas, chimpanzees and bonobos comprise 0.5 to 2 per cent of the cadavers found in bushmeat markets. This has a disproportionately large impact on ape populations because of their slow rate of reproduction. Gorillas have also been shot in Virunga in retaliation for attempts by park rangers to stop the charcoal trade and its resulting habitat destruction.

Previous projections in 2002 by UNEP suggested that gorilla habitat free of human impact would be reduced to only 10% of their original range by 2032 as a result of continued infrastructure development, associated agricultural expansion and logging. However, these estimates did not factor in the current extent of illegal logging, production of charcoal in protected areas, the extent of the bushmeat trade, the rapidly rising human population density, and the spread of the deadly contagious dis-

eases such as Ebola. These previous estimates were therefore too optimistic. Despite some success stories in certain sites, the combination of threats indicates that most of the remaining gorilla populations could become locally extinct by as early as 2020–2025 – in little over a decade, unless more substantial action is taken now.

Many of the region's national parks are situated in areas of insecurity restricting the access of park rangers. Militias are exploiting the natural resources ranging from gold, minerals, firewood to poaching of hippos and elephants. Park rangers are prepared to stop illegal hunting and other forms of illegal use, but they are not present in sufficient numbers and do not have the training or equipment to actually expel armed groups from protected areas. In the Virunga National Park alone, 190 park rangers have been killed over the past 15 years.

In comparison, the near 20,000 strong UN force, MONUC, has lost 150 staff across a much larger region. MONUC has played and continues to play an important role in bringing stability to the region. The success of this UN peacekeeping operation could however be strengthened further if it could be linked to halting the underlying illegal extraction of resources that finance the rebel militias. This might be achieved by expanding its mandate to take full control of border crossings in close trans-boundary collaboration with neighboring countries and appropriate international law enforcement and investigative bodies.

Sustained trans-boundary collaboration in law enforcement has proven effective in reversing the decline of the critically endangered mountain gorillas and other species in the parks, in spite of the major challenges involved. Particularly around the Virunga National Park, trans-boundary law enforcement collaboration has proven effective in limiting illegal extraction of resources and reducing the transportation across borders of resources crucial for the continued financing of the militias. The loss of both rainforest and gorillas has been reversed in these areas and populations of the critically endangered mountain gorilla are on the rise as a direct result. Substantially upgrading and expanding such support, training and trans-boundary coordination, drawing on the local knowledge of the park rangers within the off road networks and where required, involving UN forces in controlling trans-boundary movement of resources outside the protected areas, provides a real option for success for the entire region. Control of the road system and particularly all border crossings is vital, however, for reducing the pressure on the parks – as well reducing the extraction and export of resources through the multinational companies present in the region, directly financing the militias and the continued warfare.

In order to halt this destructive cycle, it is essential that resources and training for law enforcement personnel and rangers are substantially increased. This includes direct support to international bodies with mandates for international law enforcement such as INTERPOL and the Lusaka Agreement Task Force (LATF) and expanding the mandate of MONUC to tackle illegal trans-boundary transport of resources across the borders. Only by halting the profits – the primary motivation of the militias and companies involved – is there any hope that the conflict, destruction of rainforests and loss of the last eastern lowland gorillas come to an end.

Western lowland and Cross River Gorillas also face a similar fate – though without the involvement of militias in most cases – unless wildlife law enforcement can be increased. Bushmeat hunters, traders and consumers must be encouraged to operate within the law and overall consumption must be brought down to a sustainable level. But ape meat is only a tiny proportion of the million tonnes of Bushmeat consumed each year in the Congo Basin, and so removing it from the diet of consumers would not greatly affect their protein intake – but it would halt the current decline in gorilla populations being subjected to hunting. It is clear from the fragile recovery of mountain gorilla populations that success is possible, but equally clear that the resources being directed at other gorilla populations are not equal to the task.

It is clear from the fragile recovery of mountain gorilla populations that success is possible, but equally clear that the resources being directed at other gorilla populations are not equal to the task.

RECOMMENDATIONS

1 **Strengthen** MONUC by expanding its mandate to secure full control of border crossings, by any means necessary, with regard to the export of illegally exploited natural resources, that are financing the conflict, in full collaboration with and assisting the national customs authority to intervene and halt trans-national environmental crime, in close coordination with appropriate national and international bodies.

2 **Enhance** support for close coordination and trans-boundary collaboration among parks in DRC, Burundi, Rwanda, Tanzania, Uganda and Kenya, including coordination with MONUC, the Lusaka Agreement Task Force and relevant law enforcement agencies.

3 **Mobilize** resources for trans-boundary collaboration and coordination, including all aspects of transnational environmental crime and investigation from source to end-user outside the region – including investigations of complicit companies in recipient countries, especially but not limited to the EU, USA, People's Republlic of China and the rest of Asia – in order to monitor the origin and halt the purchase of illegally exploited and smuggled minerals and timber from the Congo Basin.

4 **Mobilize** funding for judicial training and cross-boundary training of judicial staff in national and transnational environmental crime in gorilla range states to assist in bringing successful prosecutions.

5 **Strengthen** long term training programmes in law enforcement for park rangers and wildlife managers across the region including those working outside of parks, for example in community reserves, with particular reference to anti-poaching, monitoring, scene of crime investigation and intelligence gathering.

6 **Promote** the essential role that local, national and international law enforcement and anti-corruption plays in ensuring the success of rainforest protection and climate mitigation efforts under REDD+ and source specific finance for these measures through UNEP, UNODC, LATF and INTERPOL.

7 **Establish** a fund for supporting trans-boundary investigation and collaboration on trans-national environmental crime.

8 **Strengthen** the collaboration of UNEP, UN office for Drugs and Crime (UNODC), UN Department of Peace Keeping Operations (DPKO), CITES, World Customs Organization (WCO) and INTERPOL on trans-national environmental crime – including illegal trade in valuable natural resources such as minerals, wood products and wildlife – by, for example, secondment of experienced officers to help investigate cases and bring about prosecutions.

9 **Strengthen** funding for gorilla research and survey data. The report, compiling some of the most recent data and information from a variety of sources, clearly highlights the lack of accurate survey data in parts of the regions within the 10 gorilla range states.

CONTENTS

INTRODUCTION

Most people think of gorillas as an animal found deep in the tropical rainforests of Africa, as yet untouched by the modern world; yet the forests are no longer deep, nor are they uninhabited. Indeed, as conflicts continue in many African gorilla states (UNSC, 2008), the forests are being cut and burnt to charcoal, timber extracted, roads built, mining operations accelerated and gorillas, along with chimpanzees, bonobos and many other species of wildlife, are being hunted down, killed and sold as bushmeat to feed logging and mining camps and the rapidly rising population relying on bushmeat (Brashares *et al.*, 2004; Poulsen *et al.*, 2009). A rise is also being observed along with this poaching and lack of law enforcement in illegal trade and poaching for other species, including trade of juvenile apes, rhino horn or ivory (Nellemann, pers. obs.).

Gorilla populations are increasingly found in isolated ecological islands, frequently in the remaining rugged terrain or in swamps, facing the continued loss of habitat, lost access to valuable foraging sites or even capture or death from bushmeat hunters (UNEP, 2002). Gorillas are also threatened by disease outbreaks, such as Ebola, and other diseases, some of which can be transmitted unwittingly by infected tourists and park staff approaching too close to habituated apes.

In spite of attempts to monitor logging concessions and introduce certification schemes for timber or minerals, there are currently no proven schemes in place to secure the continued survival of gorillas, with the exception of the success of the mountain gorillas that have been protected by an effective ranger force, supportive governments and community involvement. Continued road development to extract resources also facilitates exploitation of wildlife for bushmeat (Wilkie *et al.*, 2000; Brashares *et al.*, 2004; Blake *et al.*, 2008; Brugiere and Magassouba, 2009; Poulsen *et al.*, 2009).

Protected areas currently offer the main formal tool to theoretically protect the gorillas and many other endangered species. However, this formal protection depends entirely on the ability, training and support of the law enforcement agents present in the parks, generally in the form of park rangers, sometimes supported by regular police or army units. The price paid by these courageous defenders of wildlife is high. Confronted with militia making incomes from charcoal and mining (UNSC, 2001; 2008), widespread corruption and also companies supported by large multinational networks, more than 200 rangers have been killed in the last decade in the relatively small area of the Albertine Rift. Poaching to supply bushmeat for mining, logging and militia camps, as well as towns, is rising alongside continued habitat destruction and rising human populations (Wilkie and Carpenter, 1999; Fa *et al.*, 2000; Brashares *et al.*, 2004; Ryan and Bell, 2005; Poulsen *et al.*, 2009).

The ability of the rangers to enforce laws also depends on other factors: support from administrative officials, judicial awareness and willingness to prosecute, and not the least, training and coordination of customs officers and patrolling rangers (Hilborn *et al.*, 2006).

The Congo basin also holds some the worlds largest remaining rainforests that provide eco-system services on a global scale and could play a crucial role in climate mitigation strategies under the REDD+ programmes. These are being designed to protect existing carbon stocks and further carbon sequestration through preservation of rainforests. Establishing appropriate law enforcement and community engagement is essential for success and a prerequisite for any REDD+ investment.

This report stresses the urgency of the situation in the Congo Basin and aims to raise awareness of the success that trans-boundary law enforcement collaboration can bring even in a conflict region.

GORILLA STATUS AND DISTRIBUTION

Gorillas are found naturally in ten African countries and are protected by law in all of them. Both species are also listed on Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), which bans all international trade (live or dead, including products and derivatives) for primarily commercial purposes. Unfortunately, this legal protection does not yet ensure that gorillas are safe throughout their range. Three of the four sub-species are listed as 'Critically Endangered' on the IUCN Red List, and the fourth – the Eastern Lowland Gorilla – as 'Endangered', though many field-workers consider that it too should be in the Critically Endangered category but owing to insecurity in its habitat, lack the data to prove it.

First described by science in 1847, the gorilla has captured the public imagination throughout the developed world ever since. For people living in or around its habitat, the fascination goes back much further and gorillas loom large in the folklore and mythology of Central African cultures. For the most part, though, human-gorilla relations have been characterized by mutual animosity, fear and misunderstanding. Only since field studies revealed the largely gentle nature of gorilla family life has this begun to change. Where gorilla tourism has developed, gorillas are now considered an economic asset of national importance, but elsewhere old attitudes prevail. The question is – will this new appreciation of gorillas spread to all those who threaten the apes or their habitat in time to save them?

TAXONOMY

For most of the 20th century, scientists considered there to be one species of gorilla with two or three sub-species. By the turn of the 21st century, genetic studies lent weight to the morphological evidence that the original 1903 description of the Mountain Gorilla as a separate species was correct.

Most scientists now accept that there are two species of gorilla, the Eastern (*Gorilla beringei*) and the Western gorilla (*Gorilla gorilla*). These distinct species are thought to have separated on their different evolutionary pathways at least two million years ago; moreover, each species has two distinct sub-species (Groves, 2002) and further variation between populations that is still subject to taxonomic debate.

Western gorilla *(Gorilla gorilla)*
Savage, 1847

Western Lowland Gorilla *(Gorilla gorilla gorilla)*
(Savage, 1847)

Red List: Critically Endangered
Distribution: Angola (Cabinda only), Cameroon, Central African Republic, Congo, DRC (far western border near Cabinda only), Equatorial Guinea, Gabon.
CITES: Appendix I since 1975
CMS: Annex 1 since 2005
Population: Fewer than 200,000. In 2008 the discovery of previously uncounted gorilla populations with higher than expected densities in northern Congo led to a reappraisal of the number of Western Lowland Gorillas. The widely reported figure of 125,000 'lost' gorillas was erroneous because at least 46,000 of this number had previously been counted (Stokes, *et al.*, 2008). Nonetheless, the dense populations reported from *Raphia* swamps boosted population estimates to twice the previous estimate. This should not detract from the seriousness of the declines reported by Walsh, *et al.*, 2003 (a 50 per cent decline in Gabon due to a combination of ebola and bushmeat hunting). The fact that ebola outbreaks pose a more serious threat to dense populations and the continuing threat of commercial bushmeat hunters led the IUCN Red List Assessment to retain the Critically Endangered status despite the revised population estimate.

Cross River Gorilla *(Gorilla gorilla diehli)*
(Matschie, 1904; Sarmiento and Oates, 2000)

Red List: Critically Endangered
Distribution: Nigeria (Cross River State only) and Cameroon (SW Province only).
CITES: Appendix I since 1975
CMS: Annex 1 since 2005
Population: Fewer than 300, in 11 sub-populations this is the most endangered kind of gorilla. In the 1970s it was thought to be extinct in Nigeria and heading that way in Cameroon, but recent surveys conclude there are 75–110 individuals in Nigeria and 125–185 in Cameroon (Oates *et al.*, 2007). The Cross River Gorilla featured in the IUCN list of the World's 25 Most Endangered Primates 2008–2010.

Eastern gorilla *(Gorilla beringei)*
Matchie, 1903

Mountain Gorilla *(Gorilla beringei beringei)*
(Matschie, 1903)

Red List: Critically Endangered
Distribution: Two distinct populations, one in the Virunga Volcanoes Conservation Area shared by DRC, Rwanda and Uganda, and one mostly in Bwindi Impenetrable National Park, Uganda but ranging into the contiguous Sarambwe Gorilla Special Reserve in the DRC.
CITES: Appendix I since 1975
CMS: Annex 1 since 2005
Population: The Virunga population was estimated to be 400–500 in the 1950s, fell to 250 by 1981, but successful conservation measures led to its recovery. Despite the turbulent history of the region over the past 20 years, in late 2003 the first census since 1989 revealed that the population in the Virunga mountains had grown by 17 percent to 380. The population in Virunga National Park, DRC, was reported to have increased by 12.5 percent from 72 to 81 gorillas between August 2007 and January 2009 (ICCN, 2009). The population in 2009 was thought to be about 420; a full census is being organized in 2010. The Bwindi population was not accurately surveyed until the early 1990s when it was found to number between 290 and 310 (Butynski, 2001). In 2002 a census suggested a 7 per cent increase to 320 (McNeilage *et al.*, 2007) but new methods of genetic analysis of samples collected during the 2006 census indicate a population of 300 (Robbins and Williamson, 2008).

Note: The Bwindi population was proposed as a distinct sub-species (Sarmiento *et al.*, 1996) but this has been contested (Stanford, 2001) and is not supported by genetic studies (Garner and Ryder, 1996).

Eastern Lowland Gorilla *(Gorilla beringei graueri)*
(Matschie, 1914; Groves, 1970)

Red List: Endangered
Distribution: Endemic to eastern DRC.
CITES: Appendix I since 1975
CMS: Annex 1 since 2005
Population: In the mid-1990s, the population of Eastern Lowland Gorillas was estimated to be about 17,000 (plus or minus 8,000) with 86 per cent living in Kahuzi-Biega National Park (KBNP) and the adjacent Kasese Forest (Hall *et al.*, 1998). Since then, a decade of civil war, refugee crises and Bushmeat hunting – especially to provision unregulated coltan and cassiterite mines (Redmond, 2001) – is thought to have caused a significant decline. Insecurity in the region has prevented accurate surveys, but the surviving population is thought likely to be below 5,000. Despite the insecurity, surveys by Congolese conservationists and WCS on the Itombwe massif revealed two hitherto undocumented sub-populations of gorillas but also a dramatic decrease in populations compared to 1996 surveys (Plumptre *et al.*, 2009). Recent surveys of the Walikale Community Gorilla Reserve indicate at least 750 gorillas in 80 groups in the forests between KBNP and Maiko National Park/Tayna Gorilla Reserve (see box p.79). This is an example of the DRC's National Strategy for Community Conservation, published by ICCN, the DRC conservation authority, in 2008.

THREATS

Over the past hundred years, gorillas have been confronted with a broad range of new threats, ranging from diseases brought in by humans, to destruction and fragmentation of their habitats through logging, mining and burning, to direct hunting for bushmeat or being killed at random in the ongoing conflicts. Civil wars not only have major impacts on the lives and survival of people, but can lead to deliberate killing of gorillas as well as accidental deaths from mines or booby traps.

As large, group-living primates, gorillas have few natural predators. There are some records of leopards killing adult gorillas (e.g. Baumgartel, 1976) and young gorillas could potentially be taken by pythons or eagles, but infants are normally protected by the adults. Humans must also be considered a natural predator, but historically the silverback's size, strength and dramatic threat displays were enough to deter all but the bravest of traditional hunters. The 19th century introduction of fire-arms into Central Africa changed that, and as guns became more widespread during the 20th century, gorilla populations subjected to increased hunting pressure began to decline.

There is, however, no coordinated effort to wipe out gorillas. Even those who profit from gorilla poaching presumably do not want the source of their profits to be wiped out. The decline in gorilla numbers is down to collective negligence – not enough care is taken in land-use planning, not enough is spent on wildlife law enforcement, and not enough alternative opportunities are being created to give poachers a better way out of poverty.

As a result, the sad fact is that year on year, more gorillas die than are born, and a large proportion of those deaths are at the hands of men. For the person doing the killing, the act is usually the result of a conscious, logical decision. Ergo, to change the behaviour of those who kill gorillas, one must understand their situation and what leads them to kill.

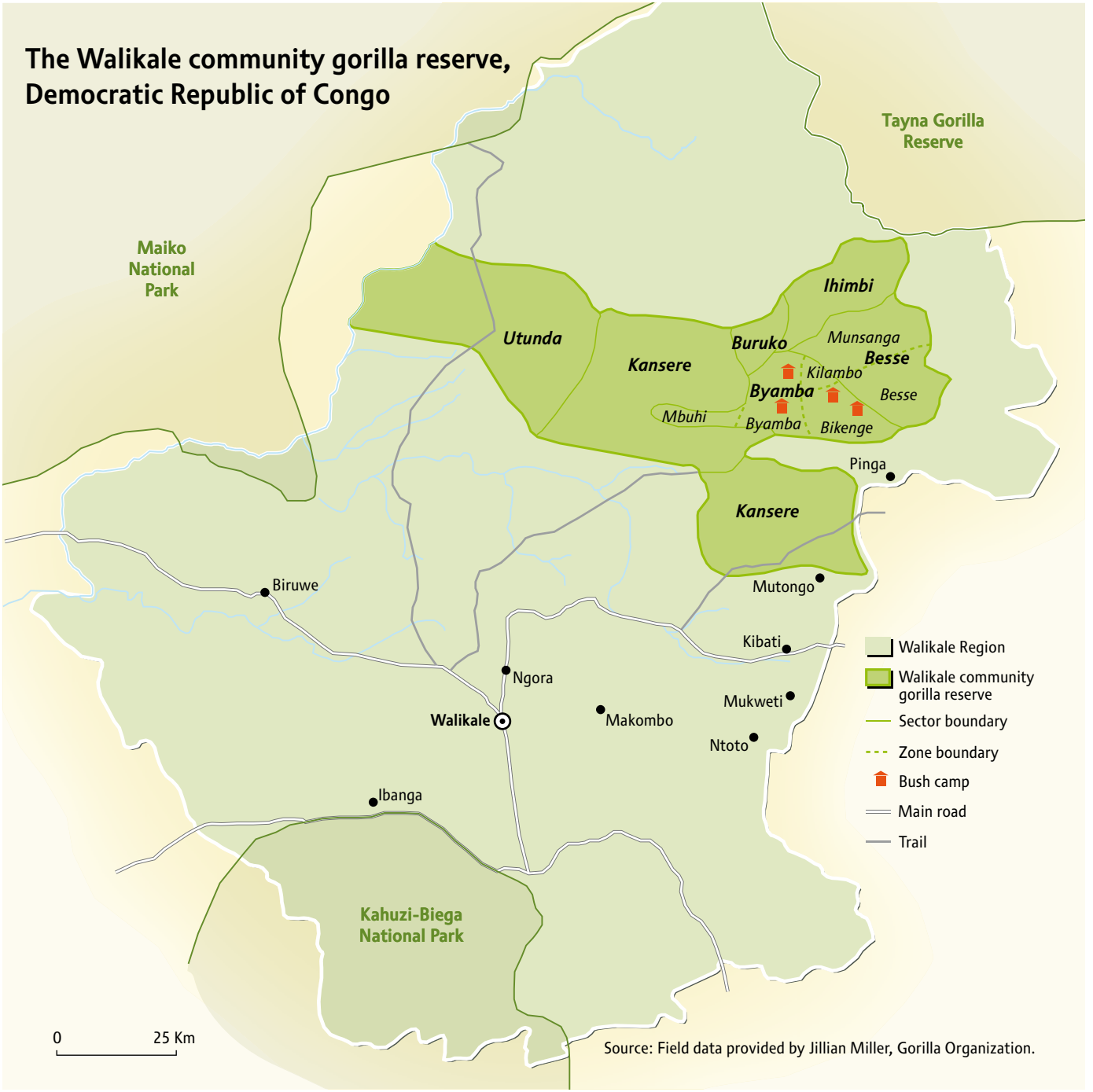
RELATIVE RISK TO THE SPECIES OR SUB-SPECIES

Some of the threats outlined below may cause the deaths of a small number of gorillas, which may seem insignificant in terms of populations numbering in the thousands. For the least numerous sub-species, however, with populations in the low hundreds, each individual's genetic contribution to population recovery is important. And it is in these tiny, fragmented populations that human-wildlife conflict is most pronounced.

KILLING GORILLAS IN WHAT IS PERCEIVED AS SELF DEFENSE

In areas where gorillas are hunted, their first reaction to the sight, smell or sound of humans is often silent flight or a startlingly loud alarm bark followed by silent flight. If the humans have blundered into a family of gorillas by accident (for example when walking in heavy rain), this sudden explosive WRAAGH is taken by most people to be a pre-cursor to a physical attack. If someone deliberately persists in following gorillas, the silverback may hang back from the group and hide until the person is close, then leap out roaring loudly in a dramatic display. Few men carrying a gun can resist the impulse to shoot in either of these circumstances, and so it was many years (and many dead silverbacks) before it was realized that this was a bluff charge unless the gorillas were actually attacked. The risk of such fatal encounters increases during wars and civil unrest, when the number of armed men walking through gorilla habitat (with a finger on the trigger, fearing attack from enemy forces) is likely to increase. One way of countering this threat is to include information on how to react to gorillas when training troops being deployed in gorilla habitat. In Rwanda, for example, soldiers on patrol to ensure tourist safety in the Volcanoes National Park are fully briefed and have often been seen observing the gorillas with fascination.

➔ **Figure 1:** The Walikale community gorilla reserve.


The Walikale community gorilla reserve, Democratic Republic of Congo
Tayna Gorilla Reserve
Maiko National Park
Ihimbi
Utunda
Kansere
Buruko
Munsanga
Besse
Kilambo
Byamba
Besse
Mbuhi
Byamba
Bikenge
Kansere
Pinga
Biruwe
Mutongo
Kibati
Ngora
Mukweti
Walikale
Makombo
Ntoto
Ibanga
Kahuzi-Biega National Park
Walikale Region
Walikale community gorilla reserve
Sector boundary
Zone boundary
Bush camp
Main road
Trail
0
25 Km
Source: Field data provided by Jillian Miller, Gorilla Organization.

THREATS TO GORILLAS FROM HUMAN CONFLICT

Conflicts have major impacts on the lives and survival of the gorillas, though less so as a result of direct contacts, mines or booby traps, although this also results in killings or deaths from infections from wounds. However, more importantly, conflicts are frequently either resource-driven or at least resource exploitation related or supported. The conflict in North and South Kivu in the DRC is strongly related to exploitation of minerals and timber, as well as charcoal production.

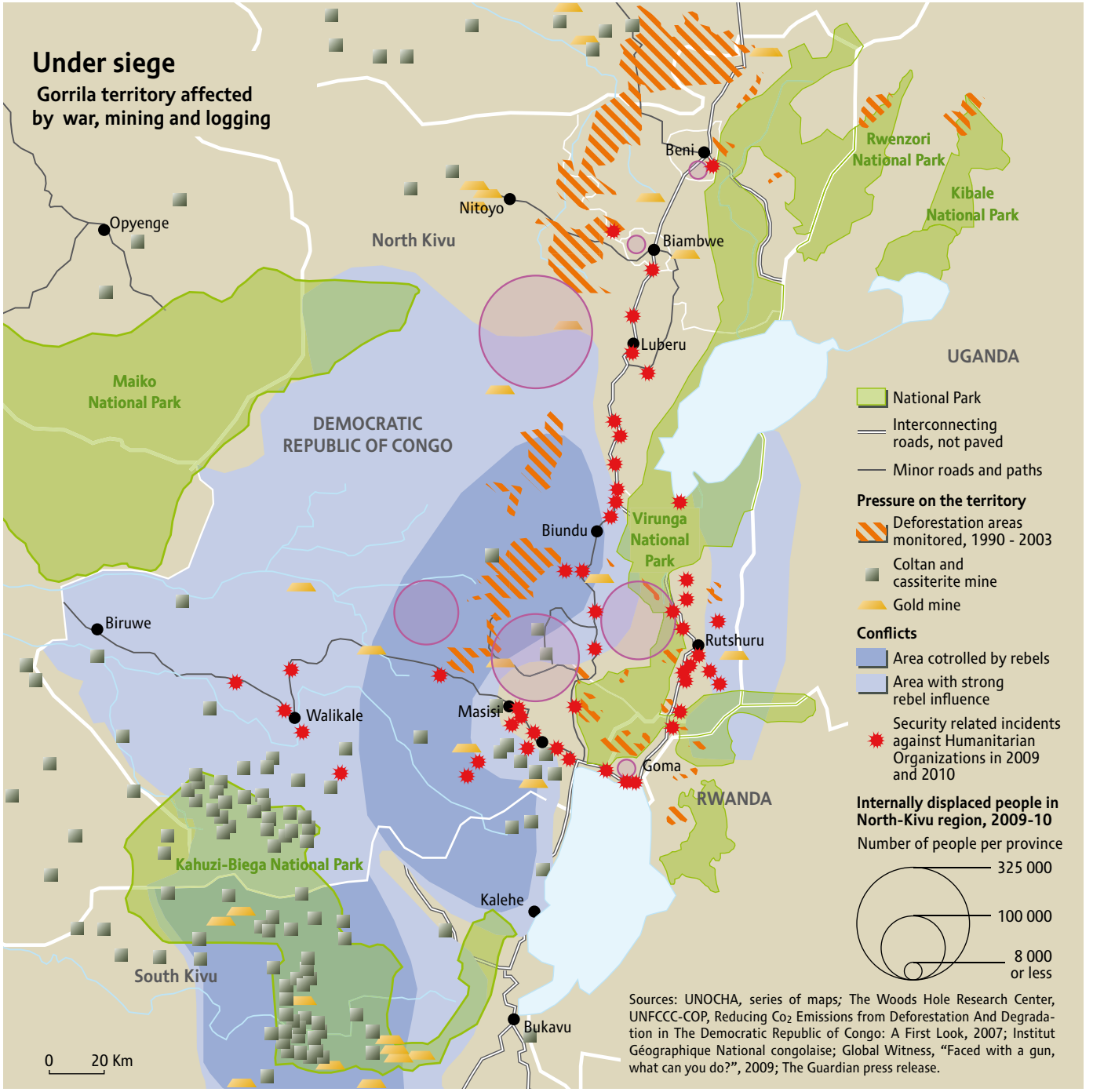
Abundant massacres and abuse of villagers by both government troops and militias alike have resulted in huge refugee camps in desperate need of fuel for daily chores. Here, the militia and also corrupt army officials sell charcoal, frequently produced by the destruction of gorilla habitats even from within national parks. Troops from the neighboring countries have also on several instances been directly involved in this exploitation (UNSC, 2001).

Companies involved, also multinationals, have shown little or no concern regarding the origins of the resources obtained, and there are many instances where subsidiaries have been responsible for bribing, threatening and supporting the influx of arms to militias in the region. Peace and protection of the resources and the gorilla habitats cannot be obtained without a substantial involvement of the countries involved in receiving and buying the minerals and timber obtained through illegal exploitation of gorilla habitats and forests in the DRC (or indeed elsewhere). While many of the countries in the region, including the government of DRC, have been very active in 2009 in attempts to reduce the conflict, the conflict and the militias continue to be supported by funds from countries outside the region.

The conflict centered around the resources of the DRC has cost over five and a half million lives and a much higher number of atrocities including systematic rape and abuse, dismembering, and capture of women, men and children as slaves for further abuse or work in mining operations or charcoal production.

Fighting escalated in North Kivu following a skirmish in Ntamugenga (Rutshuru territory) on 28 August 2008, between FARDC (DRC Armed Forces) and CNDP (Congrès National pour la Défense du Peuple) forces. Large-scale hostilities commenced on several fronts in Masisi and Rutshuru territories with FARDC, FDLR, the Coalition of Congolese Patriotic Resistance (PARECO) and various Mai-Mai groups against CNDP, displacing another 250,000 people.

Around 8 October 2008, CNDP temporarily took control of the Rumangabo military camp (Rutshuru territory) and captured weapons and ammunition from FARDC. On 26 October, CNDP took control of Rumangabo again and advanced to within a few kilometres of Goma. CNDP, like FDLR and the Mai-Mai, made major incomes from the charcoal business, among others, and CNDP took control of large parts of the park in 2006. They also



Sources: UNOCHA, series of maps; The Woods Hole Research Center, UNFCCC-COP, Reducing Co_2 Emissions from Deforestation And Degradation in The Democratic Republic of Congo: A First Look, 2007; Institut Géographique National congolaise; Global Witness, "Faced with a gun, what can you do?", 2009; The Guardian press release.

MONUC

MONUC's mandate and authorization is extended to 31st May 2010, with a budget of USD 1,350 million from July 1st until June 30th 2010.

The UN Security Council has authorized MONUC to use all necessary means, within its capacity and in the areas where its armed units are deployed, to carry out its mandate, including, but not limited to, to contribute to the improvement of the security conditions and assist in the voluntary return of refugees and internally displaced persons, support operations to disarm foreign combatants led by the Armed Forces of the Democratic Republic of the Congo, facilitate the demobilization and voluntary repatriation of the disarmed foreign combatants and their dependants, contribute to the successful completion of the electoral for free, transparent and peaceful elections to take place, ensure Protection of civilians, humanitarian personnel and United Nations personnel and facilities and support disarmament, demobilization, and monitoring of resources of foreign and Congolese armed groups.

MONUC is the UN peacekeeping force in the DRC, mainly based in North and South Kivu, consisting of approximately 18,600 troops with main contributors from India (4400), Pakistan (3600, Bangladesh (1300), Uruguay (1300), South Africa (1100), Nepal (1000) and the remaining from among other Benin, Bolivia, China, Ghana, Guatemala, Indonesia, Jordan, Malawi, Morocco, Tunisia and Senegal. It has as of December 31st 2009 a total of 20,509 total uniformed personnel, distributed on 18,646 troops, 705 military observers, 1158 police, 1,005 international civilian personnel, 2,613 local civilian staff and 648 United Nations Volunteers. Military personnel comes from Bangladesh, Belgium, Benin, Bolivia, Bosnia and Herzegovina, Burkina Faso, Cameroon, Canada, China, Czech Republic, Denmark, Egypt, France, Ghana, Guatemala, India, Indonesia, Ireland, Jordan, Kenya, Malawi, Malaysia, Mali, Mongolia, Morocco, Mozambique, Nepal, Niger, Nigeria, Norway, Pakistan, Paraguay, Peru, Poland, Romania, Russian Federation, Senegal, Serbia, South Africa, Spain, Sri Lanka, Sweden, Switzerland, Tunisia, Ukraine, United Kingdom, Uruguay, Yemen and Zambia, and police from Bangladesh, Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Côte d'Ivoire, Egypt, France, Guinea, India, Jordan, Madagascar, Mali, Niger, Romania, Russian Federation, Senegal, Sweden, Togo, Turkey, Ukraine and Yemen.

MONUC concentrates its operations and security to major towns and the road network, but have not had a strong mandate to control borders, so essential in reducing or stopping the financing of the militias. MONUC plays a crucial role in bringing stability to the region. The success of MONUC could however be strengthened further if given the mandate to control the border crossings controlled by militias, ensuring the constant financing of the warfare and continued looting and human rights abuses by these groups.

tax locals for sorghum, beans or corn, and claim taxes for houses with mud or straw roofs (5–10USD per year), and 20–50 USD for houses with corrugated roofs or small businesses.

A UNSC Group of experts estimated that the CNDP had made incomes of at least 430,000 USD in 2008 alone from tax on charcoal from just one area near Virunga National Park, most of it procured from inside the park. It has been estimated that the CNDP in one year from Sept 2007–2008 made at leat 700,000 USD from controlling the Bunagana border control point, most likely much more. The DRC withdrew its official customs agents from this crossing on August 28th 2008, and the CNDP started issuing their own customs papers – accepted by the Ugandan authorities (UNSC, 2008)

CNDP, as well as one of their chief opponents FDLR, were closely involved in the fighting also against park rangers protecting gorillas in Virunga, where 190 rangers have been killed in the last decade, including attacks on the Virunga ranger HQ in October 2008 by CNDP. An additional 2 rangers have been killed in Kahuza-Biega, four wounded and seven kidnapped by the FDLR since 2000.

← **Figure 2:** The pressure on protected areas by militias and refugees in Eastern DRC.

Mai-Mai militia

The Mai-Mai militia is an active community based militia group operating particularly in North and South Kivu provinces of the DRC, fighting many of the other militias and particular the Rwanda based FDLR. They include tribal leaders, warlords and village leaders and thus cover a range of smaller guerilla and militia groups in the region, some formed to fight off invading militia groups, others active also in the looting and in charcoal production. Their numbers have been estimated at around 20,000–30,000 militia troops. They have generally been most active in the region north of Goma in North Kivu, but also around Walungu, Bunyakiri, Uvira, Mwenaga, Fizi and Shabunda, but their actvities, like that of most militias guerillas, varies across the regions. The Mai-Mai have generally fought all other militias and military present, including MONUC. Some Mai-Mai groups have, like all the other militias, been involved in both charcoal production, poaching and killing of park rangers and gorillas, including in Virunga in the early 2000's.

FDLR

The FDLR or Forces démocratiques de libération du Rwanda is represented mainly by Hutus after the Rwanda genocide, and have been operating in both North and South Kivu. They have, like the other militias, also been actively involved in atrocities and looting, including minerals, poaching and charcoal. Both the FADRC and the Rwandan military have fought against the FDLR. Their number shave been estimated at 6,000–15,000 militias.

The rangers confiscated truckloads of charcoal, some of it directly originating from park forests. The smugglers, from both FDLR and CNDP at various times, responded by issuing a warning that they would target gorillas if the rangers interfered with the charcoal business, Around July 22, 2007, militia hunted down the twelve-member Rugendo gorilla family and killed three female gorillas – Mburanumwe, Neza, and Safari, with Safari's infant hiding nearby. Also Senkwekwe, a 250 kg silverback, was shot. One of the females had been shot in the back of the head; and the infant was found still clinging to the dead mother. A total of ten habituated gorillas were shot in direct repercussion for the work of the rangers in hindering illegal logging and smuggling in the park in 2007. Images of the dead gorillas were shown in news media worldwide and caused an outcry – not least because of the betrayal of trust involved in slaying gorillas who had come to regard human visitors as benign.

The DRC government has made genuine efforts and had some progress in 2009 in terms of organisation of summits of the Economic Community of Central African States (CEEAC) and the Southern African Development Coordination Conference (SADCC), and the normalized relations with Belgium and Rwanda. Of major importance in early 2009 was the arrest of Laurent Nkunda and the attempts to destabilize the Hutu

CNDP

The National Congress for the Defence of the People (Congrès national pour la défense du peuple, CNDP) is a Tutsi dominated militia established by Laurent Nkunda in the Kivu region of the Democratic Republic of the Congo in December 2006, numbering an estimated 8000 troops, bringing together several militia groups and many Tutsi fighters. In early January 2009, Bosco Ntaganda, formerly from the Union of Congolese Patriots and now a CNDP officer, declared that he was taking leadership from Nkunda. Nkunda was arrested on 22 January after he had crossed in Rwanda. Ntaganda was awarded a senior position by attempting to integrate CNDP forces into the Congolese army, with limited success. Some 6,000 CNDP militia were in theory adopted into the FARDC, but in spite of several peace agreements intended to convert the CNDP into a political party, they are still heavily involved in the fighting and looting in the region.

FADRC

The Congolese army (Forces Armées de la République Démocratique du Congo (FARDC)) number around 130,000 troops, but has suffered substantially from lack of payment and support. Several other countries have attempted to support the FADRC, including countries with mineral interests in the DRC, in an attempt to bring stability. Also the UN has attempted to work with FADRC including joint operations and supply of funds to pay the soldiers, with variable success, and the FADRC has, like the militias, been involved in atrocities and looting.

dominated Rwandan Democratic Liberation Forces (FDLR), many involved in the 1994 Rwanda genocide, as well as the Lord's Resistance Army (LRA) from Uganda. However, much of the militia have continued their business, still fuelled by an influx of arms in exchange for minerals and timber through neighboring countries, including the continued involvement of corrupt officials and subsidiaries of many multinational companies. This continues to impact the gorillas and their habitats.

Gorillas are also impacted as a direct result of contact with armed militia, or where they have been wounded as a result of mines or booby traps. Gorillas frequently spend most of the day feeding, otherwise rest, most of the time on the ground. They vary the time spent in a site according to season and digestibility and availability of food, often moving out for months returning in a partial circle after some months when sites are in recovery from former use, using an area from 5 and up to 40 km^2, dependent upon terrain, season and food availability. Booby traps, typically consisting of a fragmentation grenade fastened with two forked twigs and a trip wire, or anti-personnel mines, are rarely placed randomly throughout the forests, but mainly on trails, in natural travelling routes such as on ridges between different terrain, or in downhill slopes towards drainages and near water crossings. However, in spite of the

UNEP's 2009 report From Conflict to Peacebuilding: The role of natural resources and the environment identified a major gap in UN peacekeeping operational planning with regard to environment-conflict linkages. Since 1990, at least 18 violent conflicts have been fuelled by the exploitation of natural resources. In situations where environmental issues have the potential to re-ignite conflict or finance rebel groups, DPKO operations should begin to consider how natural resource extraction and management can be monitored to support peace and stabilization.

UNEP's recent report Protecting the Environment during Armed Conflict: An Inventory and Analysis of International Law recommended that the United Nations define "conflict resources"*, articulate triggers for sanctions and monitor their enforcement. It subsequently advised that the mandate of peacekeeping operations for monitoring the illegal exploitation and trade of natural resources fuelling conflict as well as for protecting sensitive areas covered by international environmental conventions, should be reviewed and expanded as necessary (on the model of MONUC mandates from UN Security Council Resolutions 1856 and 1906).

In Resolutions 1856 of December 2008 and 1906 of December 2009, the UN Security Council mandated the United Nations Mission in DRC (MONUC) to "use its monitoring and inspection capacities to curtail the provision of support to illegal armed groups derived from illicit trade in natural resources."

In 2009, UNEP entered into a technical cooperation with DPKO/DFS. One of the objectives of this collaboration is to examine DPKO's options for improving its operational planning to address natural resource risks using its existing resources, in particular within the Integrated Mission Planning Process (IMPP). UNEP together with UNDP will also assess how the use of natural resources could support Disarmament, Demobilization and Reintegration processes and create jobs and livelihood opportunities.

* UNEP recommends that the United Nations adopt the definition of "conflict resources" suggested by Global Witness: "Natural resources whose systematic exploitation and trade in a context of conflict contribute to, benefit from or result in the commission of serious violations of human rights, violations of international humanitarian law, or violations amounting to crimes under international law."

high number of booby traps and mines in the DRC, only a very small portion of these may affect gorillas, but those placed on ridges typically can do so, or those near outskirts of fields if raiding gorillas are common. Snares are also sometimes set deliberately for gorillas, or more often gorillas are caught in snares set for other wildlife.

The primary impact of the conflict on gorillas and other wildlife, however, is not from direct contacts with them, or from repurcussions as described in the box, but through the exploitation of natural resources and disruption of law enforcement in the region, as well as the creation of huge refugee camps in need of fuel. Armed militias, and even regular soldiers, are used deliberately as escort for trucks transporting minerals, timber or charcoal across the land Some of these are originating from protected areas, and transported across borders with armed escort. Even in instances where border guards are not bribed, their security is seriously jeopardized if they attempt to stop the transport.

The killing of gorillas for bushmeat, instances of killing gorillas as revenge for confiscation of illegal charcoal or law enforcement, or the destruction of gorilla habitat as a result of logging, charcoal, agricultural expansion or mining are among the primary causes of habitat loss, and eventually, the decline in eastern gorilla populations.

War and instability also affects conservation resources deriving from tourism. When the Rwanda Patriotic Front (RPF) moved into Akagera National Park in October 1990, it resulted in an immediate drop in tourism and revenues, particularly in the Virungas, which they partially occupied in 1991. The rugged forested borders of Rwanda, Uganda and the Democratic Republic of the Congo (DRC) were used as a hide-out and for smuggling up until after the Rwandan genocide in 1994 (Kalpers 2001; Rubasha 2008). Then, some two million people – many linked directly or indirectly to the genocide – fled to Tanzania and especially to the DRC, mainly settling around the Virunga National Park, but some in South Kivu. By early 1995, around at least 720, 000 refugees were living in five camps (Katale, Kahindo, Kibumba, Mugunga and Lac Vert) in the DRC bordering the park. At least 80,000 refugees moved into the park daily to collect firewood, and resulted in a deforestation rate of 0.1 km^2 per day, along with that of an emerging charcoal business, which the CNDP took over when they took control of the park

INTERVIEW

"I killed a gorilla and sold the meat to the Congolese army"

Samuel

Rwandan ex-militiaman recently returned from DRC

The time I went to do some hunting in Congo, I killed a gorilla, and also I killed some baboon, then after killing them I sold the meat to the Congolese army.

When you go to do hunting, you have to use a gun, you have to kill it by gun, you cannot kill it by machete, and then that time I used one Congolese civilian and then after killing it, you sell meat. That gorilla was male, a silverback. It was up in the trees and when the gorilla came down, I shot at it. I had never seen a gorilla before the war. I used to hear that people come, they pay $500, but I am only hearing – I have never seen those people pay.

The reason why I used to do that hunting, one of the reasons, was some Congolese army used to come and ask me to go and hunt gorillas or other animals and they used to tell me once you get meat we are going to share, you take one part, they take another part, or they just give you ammunitions, that's it.

At the time I left Rwanda I didn't used to eat wild animals but in Congo, I found the Congolese, they eat all kind of animals, then, me too, I eat. Now I'm in Rwanda, I would not eat wild animals again.

a decade later. When the first Congo civil war began in 1996, some 500,000 remained in the area, and poaching for bushmeat as well as logging for charcoal still continues, although it has been managed by different militia groups over time.

The Akagera National Park was reduced to support returnees and survivors, and only 90 000 ha remains of the 245 000 ha originally gazetted; the forests of Gishwati and Mukura were also continuously reduced after 1995. When the war in DRC erupted, refugees also settled on the Rwanda side, and some 55,000 refugees live in permanent camps in Kiziba, Gihembi, Kigeme, Nkamira and Nyagatere.

Attacks in both January and February 2010 on NGO's and refugee camps in DRC have included Rwandan exile FDLR militia. Many militias have forced the refugees to work as slaves including on burning charcoal in the national parks. There are about 900,000 IDPs in North Kivu alone, most of whom live with host families; about 117,000 are in some 47 camps. There are about 2.1 million IDPs in the DRC. The Nyange camp attack was reportedly carried out by the FDLR militia. In Muhanga, FARDC soldiers took possession of items belonging to an NGO, disrupting aid distribution.

MONUC has played a crucial role in bringing more stability to the region. This success could be strengthened further by strengthening cross-boundary and international law enforcement and investigation to reduce and ultimately halt the financing of the militias, hence stopping the continuous influx of arms and looting of resources in the region, so crucial in the conflict. Safeguarding the parks and supplying the refugee camps with basics of fuel and food will be essential, as most of the transport takes place through or next to border posts near parks or involves direct smuggling or exploitation inside the parks.

NATURAL RESOURCE EXPLOITATION FOR FINANCING WARFARE, DESTRUCTION OF GREAT APE HABITAT AND POACHING

The FDLR get their main revenues by controlling the majority of of the artisanal mines in South Kivu (casseterite, gold and coltan) (UNSC, 2008), and some in North Kivu.

CDNP is financed by a pool system of Congolese and Rwandans. A number of mineral-exporting companies are acting as fronts for also CDNP (UNSC, 2008). In addition, most of the militias also take road tolls, charcoal taxes, and bribe or threaten border check points or local officials. CDNP, for example, had in 2008 control of the Bunagana border post at the DRC/Uganda border.

CDNP makes at least 430,000 USD a year from taxes alone on charcoal originating inside and around Virunga, not to mention the actual sales (UNSC, 2008). FDLR has been estimated to make around 2 million USD from charcoal taxes on around half of the charcoal production, suggesting that at least 4 million USD a year are made in taxes alone on charcoal – in addition to the actual sales (UNSC, 2008). FDLR has been estimated to make around 28 million USD from annual sales of charcoal, in collaboration with the FADRC, including from Virunga. It is also clear that FDLR have collaborated with FADRC, in spite of being at war, including in operation against the CDNP (UNSC, 2008). Officers from the FADRC 83rd and 9th brigades were solicit in safeguarding FDLR trucks with charcoal on the Rutshuru road in 2008 (UNSC, 2008).

Also livestock and ranching is heavily involved in taxes and in gaining land through the different militia groups, severely threatening the wildlife through destruction of forest and heavy grazing. It also drives away much of the wild ungulates, thus indirectly resulting in heavier poaching on the primates, including gorillas.

There are also many financiers, including through companies, that simply pay taxes or are solicit in exploiting resources, often changing between the militia groups, dependent upon who is in power, including opposing forces. Also governments are involved in supporting several of the rebel groups, typically through training or by facilitating licenses to extractive industry, turning a "blind eye" or even supplying material UNSC, 2008). This includes support from Rwandan government officials to CDNP (UNSC, 2008).

Rwandan, Ugandan and Congolese officials have been involved in stopping and removing the vehicle check points set up by the ICCN park guards, that had reduced the illegal charcoal transport substantially – and the subsequent revenues to FDLR by at least 40% (UNSC, 2008). Again, the rangers and park guards could and have played an important role in reducing and stopping the illegal exploitation of resources impacting not only wildlife, but also financing the war atrocities by the militias. In spite of this, they receive minimal support and incur high losses in rangers.

Other groups, such as the Coalition of Congolese patriotic resistance (PARECO), which erupted in 2007 have fought against CDNP, and seems to have links to FADRC (UNSC, 2008). Another is FPJC, formerly from FPRI, and the LRA (Lord resistance Army) from Uganda. These "new" militia groups, like the companies, appear to evolve when there is opportunity for resource exploitation or other militia groups are pushed. Again, as a new group evolves, they are active in and simply take over much of the resource exploitation routines of the former militias occupying any given area or national park.

It is also clear that FADRC has been involved in the exploitation directly by taking control of mines, or aiding in supplying arms to several militias (UNSC, 2008). Many of the arms in recent years being smuggled into the DRC originate from China. However, there are also arms originating from eastern Europe, and many other countries. A number of aircrafts and trucks are routinely flown into the DRC or transported through Uganda or Rwanda to support the militias.

Up to now, most of the efforts to control environmental crime have been done by rangers in areas inside or near protected areas. As rangers were forbidden to conduct road blocks and even had to remove VCP's following some of the attempted peace agreements brokered with the militias, these militia groups could return to or even expand their exploitation of resources unhindered, and thus continue financing their warfare, with devastating results for the wildlife. A very similar effect was observed in Bardia National Park in Nepal, where the Nepalese army was not allowed to patrol the park as part of a peace-agreement with the Maoists, and many rhinos were lost. The park overall lost over 90% of their rhinos across a decade (Nellemann, pers. Obs., REF).

Without halting the resource exploitation, stopping smuggling across the borders and thus restraining the financing of the militias, the conflict and subsequent loss of human life and the loss of wildlife including gorillas will not stop. Negotiating peace seems to have had little effect as long as there is ample opportunity of profit for the militias, and the militias erupt and are largely created with this purpose in mind, including support from corrupt officials in neighboring countries.

ROLE OF MULTINATIONAL COMPANIES AND NETWORKS

FDLR, CDNP and even FADRC have been involved in transport of timber, minerals and charcoal from illegal exploitation (UNSC, 2008). FDLR controls many mines in North and South Kivu and are involved in trafficking minerals by roads and trucks from Walikale and controls the vast majority of territory in the mineral-rich Kahuzi Biega National Park.

There are several comptoirs involved in selling the minerals on to companies such as Groupe Olive, Etablissement Muyeye, MDM, World Mining Company (WMC) and Panju, that are the main recipients of and top exporters of cassiterite, coltan and wolframite – with government export licences (UNSC, 2008). Etablissement Namukaya is also involved in pre-financing gold purchases from FDLR territory (UNSC, 2008). CNDP for example, also make revenues from taxing of the minerals, such as 0.20 USD per kilogram of minerals at checkpoints set up near or around mines (UNSC, 2008). As the mineral production in the region is at least 15,000 tons a year, the incomes to the militias from these "road" taxes are thus also here millions of dollars annually.

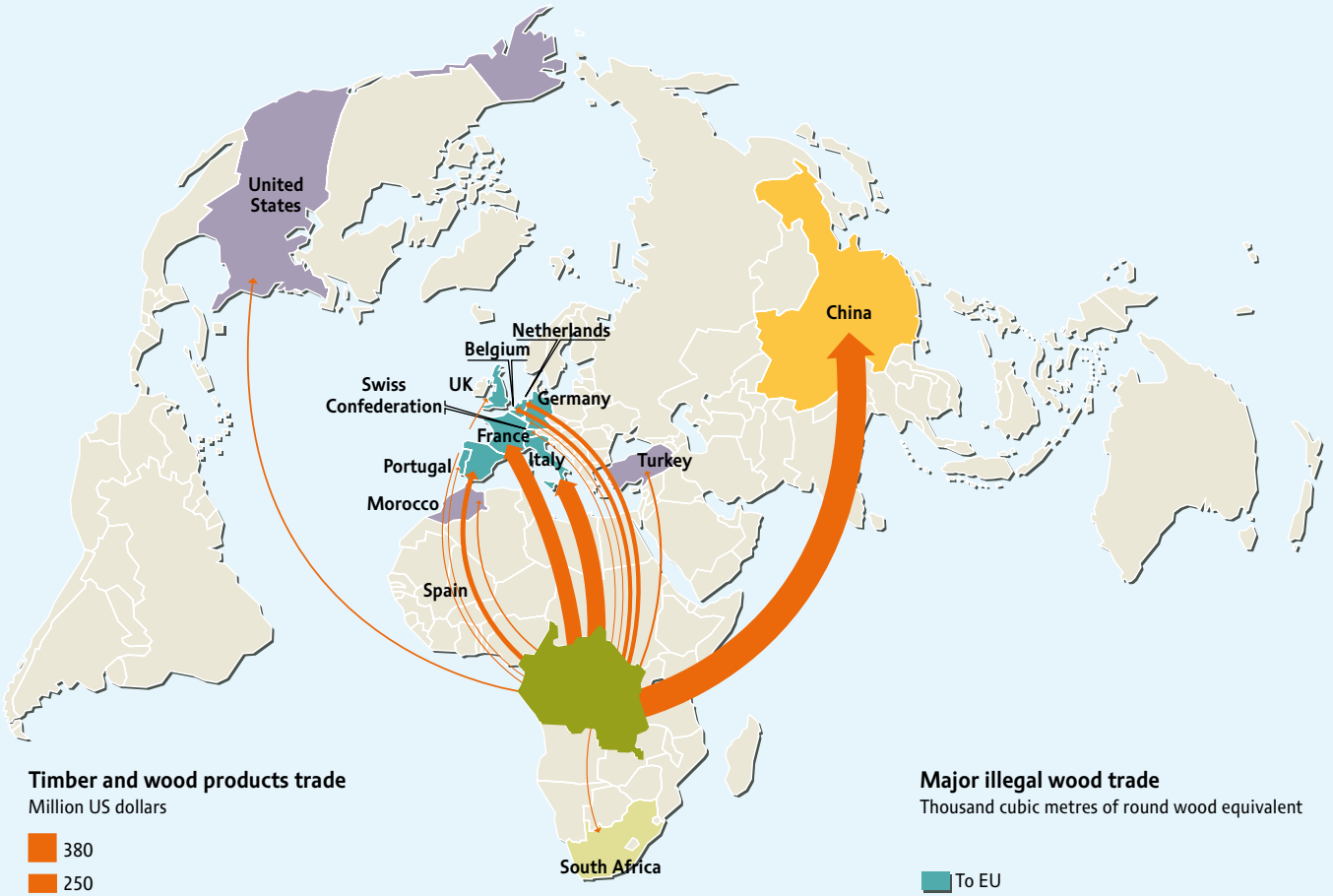
It is also likely that the actual exports are much higher even than this. As many of the companies or their subsidiaries – unlike the multinational buyers – are also fronts for some of the militias, it is clear that the incomes from the exploitation of resources in the region and the taxes are central in the continuation of the conflict. It also appears that that much of the low-profile "taxing" in villages etc is done to finance some of the troops on a daily basis, whereas as the really large sums never reach the low-level troops, who are frequently left to obtain their needs through direct plundering.

The official exports in 2007 from DRC were 14,694 tons of cassiterite valued at 45 million USD, 1,193 tons of wolframite valued at 4.27 million USD, and 393 tons of coltan valued at 5.42 million USD (UNSC, 2008). These numbers are around 61–70% of what the official production estimates are listed as (UNSC, 2008). Furthermore, one – out of many – company, Traxys, alone officially exported 226 tons of coltan in 2007 – or near 57% of the entire official coltan export from the DRC according to the Groups of experts (UNSC, 2008). Receipts and records of the five major comptoirs buying minerals, including coltan and cassiterite, traded minerals for an average of 9.77 USD/kg per day in May 2008 (UNSC, 2008). Summarizing the purchases across a total accumulated period of 66 days, the companies M.G.M, ETS Panju, MDM, Muyeye and Amur purchased an average of 29.45 tons per day of an average cost of 65,127 USD (records archived at UN, New York; UNSC, 2008).

It is impossible to verify the extent of the illegal exploitation in exact numbers. However, the taxing alone of 0.2 USD per kg around the road systems of minerals estimated to be at least 2–10 times higher than official exports which for coltan, cassiterite and wolframite combined then becomes around 32,000–150,000 tons of minerals annually, suggesting an income of near 6–30 million USD alone on road taxes on minerals to the militias, around 4 million USD on charcoal, and most likely similar for other goods combined. In addition gold and diamonds are also involved. With taxes also on trucks, other goods like cement, timber and charcoal, charcoal reported to be at least 0.7 million USD alone at some border crossings in addition, not including the transport inside the DRC, suggest that the militias are making an income of anywhere between 14–50 million USD annually on taxes alone, most likely much more. In addition, the militias are heavily involved also in the fronts and in many of the actual local companies or fronts based in among other Kampala and Nairobi (UNSC, 2008). It is therefore clear that the militias and subsidiary companies involved

➔ **Figure 3:** Companies originating in the EU, and companies based in Austria, Belgium, Canada, China, Hong Kong (China), India, Malaysia, Thailand, Rwanda, South Africa, Switzerland, The Netherlands, The Russian Federation, The United Arab Emirates, and the UK and Northern Ireland are involved in exporting minerals and timber from conflict regions in the DRC (UNSC, 2008). Principle export points are Mombasa and Dar Es Salaam.

Wood exports from Congo Basin



Timber and wood products trade

Million US dollars

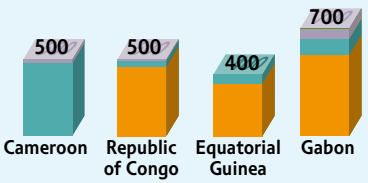
- 380
- 250
- 65
- 10

Congo Basin countries

Major illegal wood trade

Thousand cubic metres of round wood equivalent

- To EU
- To China
- To other markets



Sources: International Trade Centre database, accessed 02.03.2010; Estimates of the percentage of "Illegal Timber" in the imports of wood-based *products from selected countries,* Global Timber, 2007; Ruiz Pe´rez, M., Logging in the Congo Basin: A multi-country characterization of timber companies, Forest Ecology and Management, 2005.

Illegal exploitation of natural resources and other forms of wealth in the Democratic Republic of the Congo (UNSC, 2001)

In this April 2001 report to the Security Council, a case study is presented to illustrate how a subsidiary company used illicit business practices and complicity with occupying forces and the Government, as well as its international connections, to exploit the natural resources of the Democratic Republic of Congo, thereby sustaining not only corruption, but also funds for further warfare. This was partly made possible through funds available for investments and customers based in the USA, Europe and the industrialized centres of Asia. Similar examples are known in relation to mining, logging and petroleum operations in Central Africa, Central Asia/Caspian Basin, Latin America and South-east Asia. The report read in part:

"**47.** DARA-Forest case study. A Ugandan-Thai forest company called DARA-Forest moved to the Ituri area late in 1998. In March 1998, DARA-Forest applied for a licence to carry out logging activities in the Democratic Republic of the Congo, but was denied a forest concession by the Kinshasa authorities. In 1999, the company began to buy production by hiring individuals to harvest timber and then sell it to the company. Initially, these individuals were Congolese operating in partnership with Ugandans. The same year, DARA engaged in industrial production with the construction of a sawmill in Mangina. By 2000, it had obtained its own concession from RCD-ML. Analysis of satellite images over a period of time reveals the extent to which deforestation occurred in Orientale Province between 1998 and 2000. The most harvested forests in the areas were around Djugu, Mambassa, Beni, Komanda, Luna, Mont Moyo and Aboro. This logging activity was carried out without consideration of any of the minimum acceptable rules of timber harvesting for sustainable forest management or even sustainable logging.

48. Timber harvested in this region, which is occupied by the Ugandan army and RCD-ML, has exclusively transited or remained in Uganda. Our own investigation in Kampala has shown that mahogany originating in the Democratic Republic of the Congo is largely available in Kampala, at a lower price than Ugandan mahogany. This difference in price is simply due to the lower cost of acquisition of timber. Timber harvested in the Democratic Republic of the Congo by Uganda pays very little tax or none at all. In addition, customs fees are generally not paid when soldiers escort those trucks or when orders are received from some local commanders or General Kazini. Timber from the Democratic Republic of the Congo is then exported to Kenya and Uganda, and to other continents. The Panel gathered from the Kenyan port authorities that vast quantities of timber are exported to Asia, Europe and North America.

50. Timber extraction in the Democratic Republic of the Congo and its export have been characterized by unlawfulness and illegal-

obtain resources valued in the range of several hundred million USD annually by continuing the conflict.

It is generally common knowledge in the mining sector where the minerals originate and from which militia.

Resources from major companies and pension funds in the industrialized world are sometimes directed through subsidiary companies to help finance corruption and arms sales, processes that may involve 'conflict' natural resources.

Companies help sustain corruption, often with rewards being paid in the form of new concessions or low-interest loans, where the recipient simply gains incomes from the differences in interest rates when funds are placed in banks, invested or given as loans to third parties. Most countries that have been through a timber boom have experienced the corrupting effect of cronyism, as concessions are swapped for privilege, political advantage or commercial opportunities among the top elite of the nation.

In conflict situations, private companies may fuel conflict further by trading arms for natural resources or facilitating access to funds for weapons purchases, often through subsidiary companies (UNSC, 2001; 2008; UNEP, 2007). The use of subsidiary security firms or companies involving former intelligence officers or special forces operators are abundant in the region. According to UNSC (2001) and interviews, many of these companies use recruits who are veterans of the British SAS, South Africa's 32 Battalion and Civil Cooperation Bureau, among others, and their customers include many of the world's largest mining and oil companies or their subsidiaries in the regions where they operate including the DRC and neighboring gorilla states. In March 2004, 64 alleged mercenaries were arrested in Zimbabwe, supposedly on their way to support a coup d'état in Equatorial Guinea.

ity. Besides extracting timber without authorization in a sovereign country and in violation of the local legislation, DARA-Forest consistently exported its timber without any certification procedure. It tried to approach some certification bodies licensed by the Forest Stewardship Council. These bodies requested documentation and elements that the company failed to provide. Yet DARA-Forest exported timber in violation of a normal procedure generally required and accepted by the international forest community and gradually considered to be international "soft law". Companies importing this uncertified timber from DARA-Forest were essentially in major industrialized countries, including Belgium, China, Denmark, Japan, Kenya, Switzerland and the United States of America

51. The Panel also realized that DARA Great Lakes Industries (DGLI), of which DARA-Forest is a subsidiary, along with a sister company in Uganda, Nyota Wood Industries, is in collusion with the Ministry of Water, Land and Forests of Uganda in establishing a scheme to facilitate the certification of timber coming from the Democratic Republic of the Congo. In May 2000, DGLI signed a contract for forest stewardship certification with SmartWood and the Rogue Institute for Ecology and Economy in Oregon, United States of America.

52. .....DGLI partners in this new scheme include DARA Europe GmbH Germany, Shanton President Wood Supply Co. Ltd China, President Wood Supply Co. Ltd Thailand, DARA Tropical Hardwood, Portland, Oregon, United States of America. The distribution of sales of the company is thought to remain the same, about 30 per cent to the Far East, China, Japan and Singapore, 40 per cent to Europe and 25 per cent to North America. DARA Great Lakes Industries shareholding and management is between Thai and Ugandan nationals, among them John Supit Kotiran and Pranee Chanyuttasart of Thailand and Prossy Balaba of Uganda. Some unconfirmed information indicates that members of President Museveni's family are shareholders of DGLI, although more investigation is needed....

54. The logging rate was alarming around Butembo, Beni, Boga and Mambassa. The RCD-ML administration acknowledged its lack of control over the rate of extraction, the collection of taxes on logging activities and the customs fees at the exit points. On the basis of eyewitness accounts, satellite images, key actors' acknowledgements and the Panel's own investigation, there is sufficient evidence to prove that timber extraction is directly related to the Ugandan presence in Orientale Province. This has reached alarming proportions and Ugandans (civilians, soldiers and companies) are extensively involved in these activities. In May 2000, RCD-ML attributed a concession of 100,000 hectares to DARA-Forest. Since September 1998, overall DARA-Forest has been exporting approximately 48,000 m3 of timber per year"

Other examples on international and militia involvement in mineral extraction areas also given in the report to the UN Security Council, December 2008:

74. Mining regulations of the Democrat the Congo make a distinction between local traders, or negociants, who are licensed to buy in the field and to sell to any domestic ex comptoirs, which are only licensed to export. The comptoirs often use the excuse that, because they are not theoretically involved in buyin they are unaware of the origin of the minerals they buy. But many negociants have told the Group that comptoirs need to know where their as the ore content varies from one area to the next. In addition, these buying houses are aware of the presence of armed groups, as their t prices higher. In practice, many comptoirs work with preferred negociants who they know and trust, pre-financing their activities. These neg developed close relationships with FDLR at mining sites.

75. The Group has analysed hundreds of official mineral transportation documen Government authorities present at transit centres where minerals arrive before being loaded onto trucks for Goma, Uvira, Butembo and Bu documents confirm that certain negociants have purchased consistently from areas controlled by FDLR and have sent the product consiste comptoirs.

76. The Group has also reviewed official export and mining ministry documentation that indicates that certain comptoirs buying areas sell their product to a narrow range of foreign companies. The Group has learned from many negociants and the director of a foreign company that some of the foreign companies prefinance their "own" comptoirs, in other words, acknowledging a chain of financing that flo companies down to the FDLR-controlled mining pit.

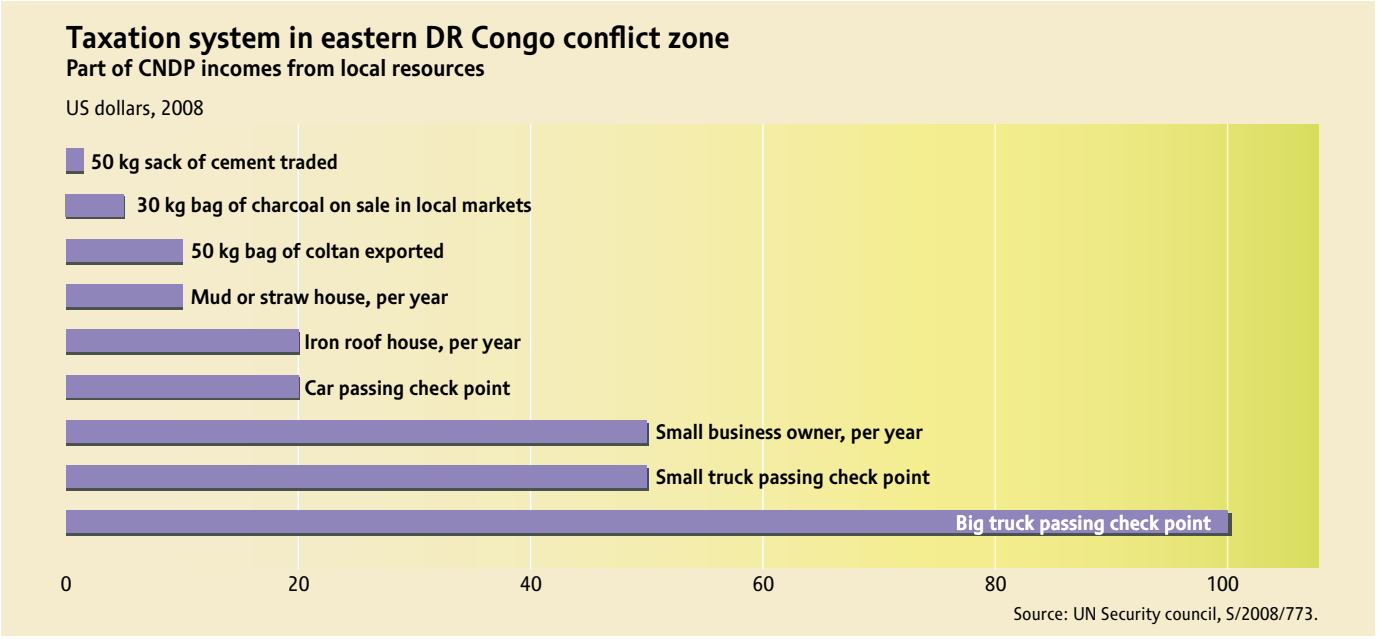


Figure 4: Militias and collaborating subsidiary companies or dealers are involved in everything from road "taxes" and "taxes" on local impoverished populations to massive scale exploitation of minerals, timber and charcoal.

In February 2000, De Beers, the international diamond marketing corporation and the world's largest diamond mining operation, announced that it would stop purchasing diamonds from conflict zones in Africa – an important step toward limiting the market for illicit diamonds in Europe, Japan and the United States. Lack of sufficient systems to monitor the import and origin of petroleum, minerals and fibre-products (pulp and timber) complicate efforts of this sort. Multinational corporate networks have on several occasions supplied loans or funds for arms or even directly supplied arms or training in return for concessions, but most often this is done through consultance firms or subsidiaries with no liability towards the parent companies.

Funds are therefore often used to finance arms with which to secure resource-rich locations for multinationals, leading to the further aggravation of conflicts (Auvinen *et al.*, 1999; Blanton, 1999; Craft and Smaldone, 2002; Addison *et al.*, 2002; Nafziger and Auvinen, 2002).

"What we want to see is action"

Ofir Drori

Founder/Director of the Last Great Ape Organisation, Cameroon

Our point of focus is mainly enforcement, enforcing the laws. Basically for us, the lack of application of the law – often because of corruption in governments – is the main problem that is causing the extinction of gorillas and other species. Therefore for us, what we would like to see is a big push on enforcement. It's looking at the hard issues, not the soft issues, like education, and like many other long term solutions, what we want to see is action. The traders, who are trading gorillas, big, high officials, are through corruption leading gorillas to extinction – and that's not an easy issue. That is an issue that needs a lot of political power, political push, but this is the situation as we see it.

What we have here is a crisis. The situation for gorillas didn't get better. We have tried a lot of different methods over the years. I think that trying to sensitise communities, education, trying to do many conferences with government, training, didn't get us very far. We have many striking examples of this huge gap between the conferences hall and field realities. I think that we need to wake up if we are to save the Great Apes.

Indeed the situation is deteriorating, in Cameroon at least. We have lost our rhino, we are probably going to lose our lions in a year or two and Great Apes will come next. This is the situation for Cameroon and I think that in other countries it may be even worse for Great Apes.

If we are to save the Great Apes, we need to do something totally different. I would say, cut the conferences off, cut the speeches, cut all the huge, long political processes, and let's get down to work – action. Let's get down and see what happens next month. Do we have those big-time dealers? Not small poachers in the villages, because our problem is not in the villages, our problem is with government officials, our problem is with military officials, our problem is with huge, big, wealthy businessmen who are trading in apes. We want those people behind bars and that's where we will start getting a message that things need to change. Conference halls don't get us very far.

STRUCTURE OF CORPORATE NETWORKS

Examples given throughout this report provide a basis for a more general description of the structure of some of these corporate networks that have a direct responsibility for the atrocities conducted in the DRC and the exploitation of wildlife habitats. There is no standard organisational structure, but certain trends in their manner of organisation and in their operational practices can be described (UNSC, 2001; UNEP, 2007). Uncritical markets ensure that there are buyers for goods at the right price, regardless of how they are obtained, processed or transported. It is relatively easy and standard practice for companies to build up their political networks through the judicious selection of non-executive directors or by maintaining mutually profitable relations with former board members or CEOs who later become top government officials. These arrangements can lapse into less innocent ones when a company and an official, regardless of their current relationship, share a secret from the past, such as having benefitted from military actions in resource-rich locations. This may or may not have involved an evil or even an illegal activity, yet investigative journalists exist who can spin the story to make even the uncritical global public take notice, and exposure of an 'arms-for-oil' trade is seldom welcome in the corporate world. Shared secrets, therefore, are important binding agents that hold companies and their political networks together.

Illegal logging may be conducted by companies with no right to be in the area, but also by legal concession holders, operating in several ways. Concession holders may over-harvest from the lands granted to them, or they may exploit areas outside these lands. It is well documented from Indonesia that concessions illegally expanded their operations into protected areas or outside of their areas, as is observed also in DRC (Curran *et al*. 2004). The timber or processed wood products may be smuggled secretly from the country, or even transported openly across border stations with military or militia guards (UNSC, 2001; 2008), or sold and transported as if produced from a legal concession. To avoid international tracking of the timber or wood products, the products often change ownership multiple times in transit. Hence, when the wood products arrive in port in another country, it is no longer recorded as timber originating from the country in which it was produced.

The extent to which smuggling poses a problem can be seen in official trade data on minerals and timber that are far below actual exports (UNSC, 2008), possibly from 50–80% lower than actual exports from the entire Congo Basin. A very similar structure has been observed with illegal logging for example in Indonesia (UNEP, 2007. Here, import figures from many countries including China, Taiwan and Malaysia, to mention a few, are generally far above that of officially reported exports from Indonesia (Schroeder-Wildberg and Carius, 2005; UNEP, 2007).

Once again, the looting and destruction of gorilla habitat is an international concern, with multinational networks operating openly, while the protection of the parks is a primary law enforcement issue. Once again, this law enforcement needs training, financing and particularly trans-boundary coordination with the judicial system, customs and international collaboration to become effective in uncovering environmental crime involvement from end-to user.

Companies knowingly buying resources illegally exploited are, per se, becoming complicit in criminal actions.

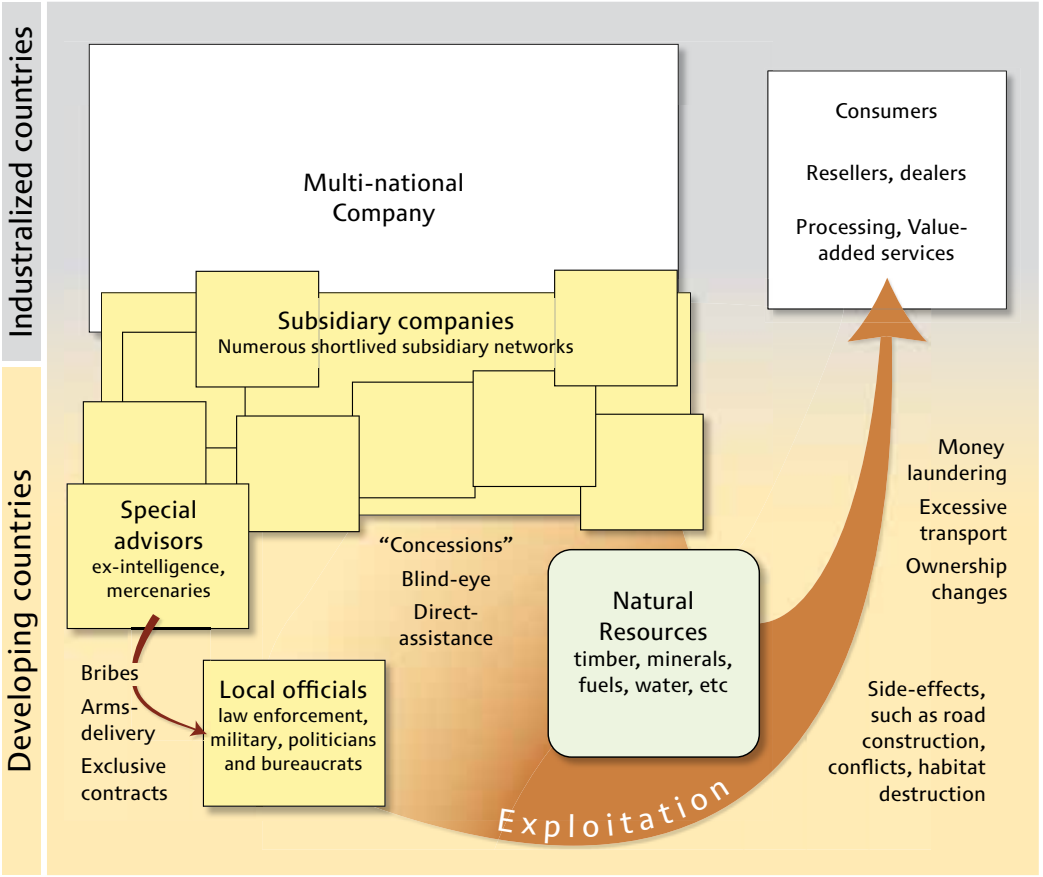
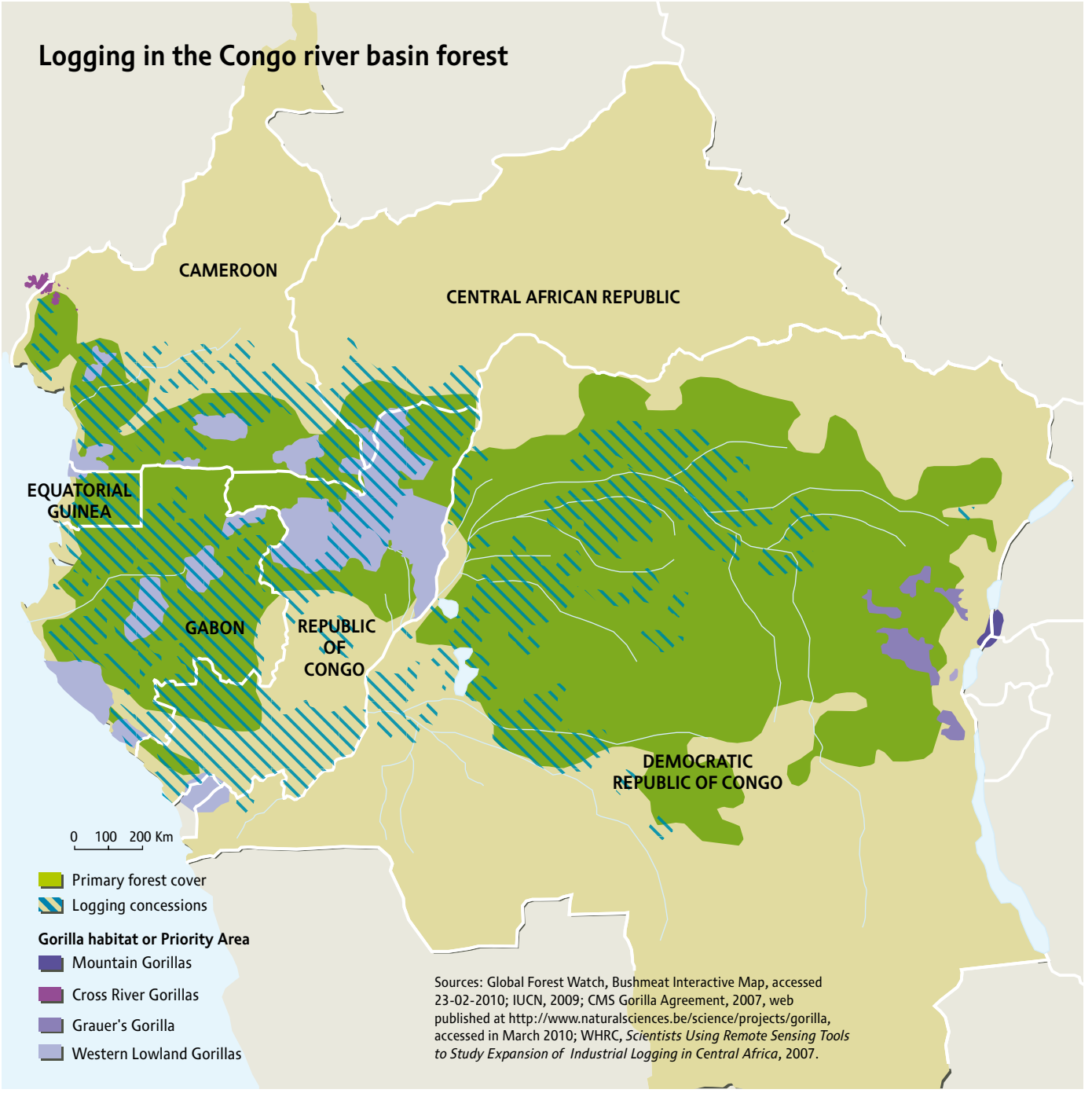


Figure 5: Multinational companies in the EU and in Asia, among other, operate through subsidiary companies in the DRC region and contribute directly or most often indirectly with funds for financing the illegal exploitation of resources in the DRC – without criminal investigations.


Logging in the Congo river basin forest
CAMEROON
CENTRAL AFRICAN REPUBLIC
EQUATORIAL GUINEA
GABON
REPUBLIC OF CONGO
DEMOCRATIC REPUBLIC OF CONGO
0 100 200 Km
Primary forest cover
Logging concessions
Gorilla habitat or Priority Area
Mountain Gorillas
Cross River Gorillas
Grauer's Gorilla
Western Lowland Gorillas
Sources: Global Forest Watch, Bushmeat Interactive Map, accessed 23-02-2010; IUCN, 2009; CMS Gorilla Agreement, 2007, web published at http://www.naturalsciences.be/science/projects/gorilla, accessed in March 2010; WHRC, Scientists Using Remote Sensing Tools to Study Expansion of Industrial Logging in Central Africa, 2007.

HABITAT LOSS/DEGRADATION DUE TO LOGGING, AGRICULTURE AND CHARCOAL

Most of the logging companies operating in the Congo Basin since 1990 were EU-based (Forest Monitor 2001). They included the Denmark-based DLH Group (www.dlh-nordisk.com, www.dlh-group.com), the France-based groups Rougier (www.rougier.fr, Groupe Rougier 1999), Thanry (French Embassy in Cameroon 2002) and Inter-wood (www.interwood-france.com), Italy-based Alpi, and Germany-based Danzer (www.veneer-mill.com/intro), Feldmeyer (IUCN 1997) and Wonnemann (Marchés Tropicaux 2000). Each owns a variety of local and subsidiary companies operating in the Congo Basin countries (Forest Monitor 2001; UNSC, 2001). In addition to these wood and pulp producers are companies like the France-based Bolloré, specializing in transportation of timber from tropical regions (Bolloré 1998, www.saga.fr). In 1998, 61% of Cameroonian logs were exported to the EU (Tropical Timbers, 1999).

Fighting illegal exploitation in the Virunga National park

Virunga National Park, Africa's oldest nature reserve and a UNESCO World heritage site, covers over 7,800sq km, including both forest, hills and lowland slopes of forest, in eastern Democratic Republic of Congo. It is home to a larger number of endangered species, and near 200 or one-third of the Worlds remaining mountain gorillas.

The gorillas are threatened by poachers and habitat loss, mainly by the burning of charcoal or makala. Both the Mai-Mai used the park in the early 2000's, then the FDLR that still remain, and also the CDNP in late 2007, who also attacked the park headquarters and several posts. The militias have been heavily involved in the cutting and burning of charcoal, using also prisoners or near slaves for the work.

In August and September 2009, rangers attacked and destroyed some 1000 kilns for the burning of charcoal, but militias have been estimated to make over 28 million USD a year by illegal selling of charcoal.

In the past decade more than 200 rangers have been killed in the five parks on the DRC border, out of a ranger force of ca. 2000 men. This means that while the rangers have less than 10% of the numbers of MONUC, and the parks receive only a fraction of the funds available to MONUC. The rangers have, however, by interfering with the financing of the militias, incurred greater losses of uniformed staff than the MONUC.

This is mainly due to the fact that the rangers conduct long-range patrolling on the ground in the jungle and slopes, directly interfering, disrupting and challenging the militias in their illegal exploitation of resources.

← **Figure 6:** China is the largest consumer of logs from the DRC, buying near 38% of the roundwood produced in official statistics in 2008 (Ministère des Eaux, Forêts, Chasses et Pêches du DRC, 2009). However, the official numbers only reflect approximately half of what is being cut, the remaining illegally, often transported across borders to neighboring countries..

➔ **Figure 7:** As valuable timber becomes rare outside of parks, militias enter parks and illegally cut and produce charcoal inside parks – even the best protected park of the Virungas housing large shares of the Worlds remaining mountain gorilla population. Rangers here destroyed over a thousand kilns for charcoal inside the park in 2009.

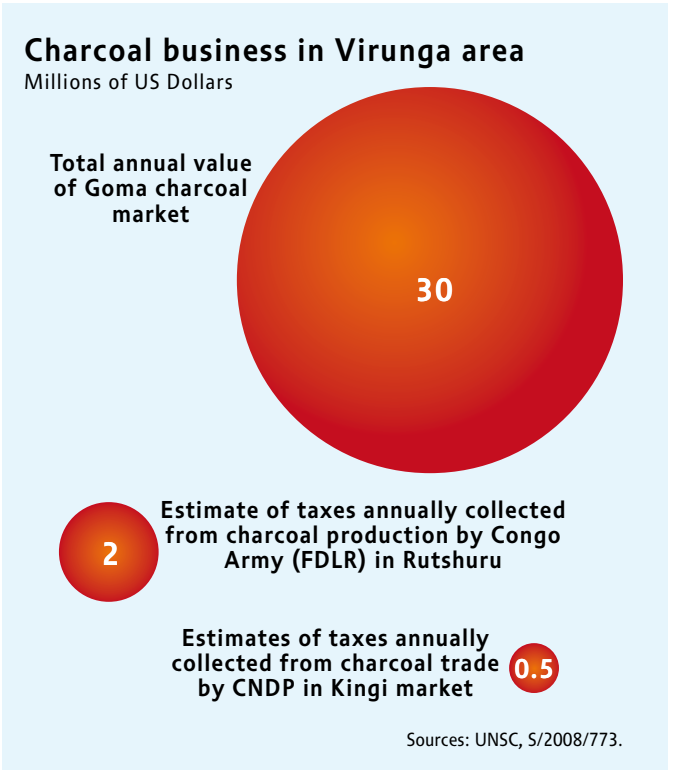
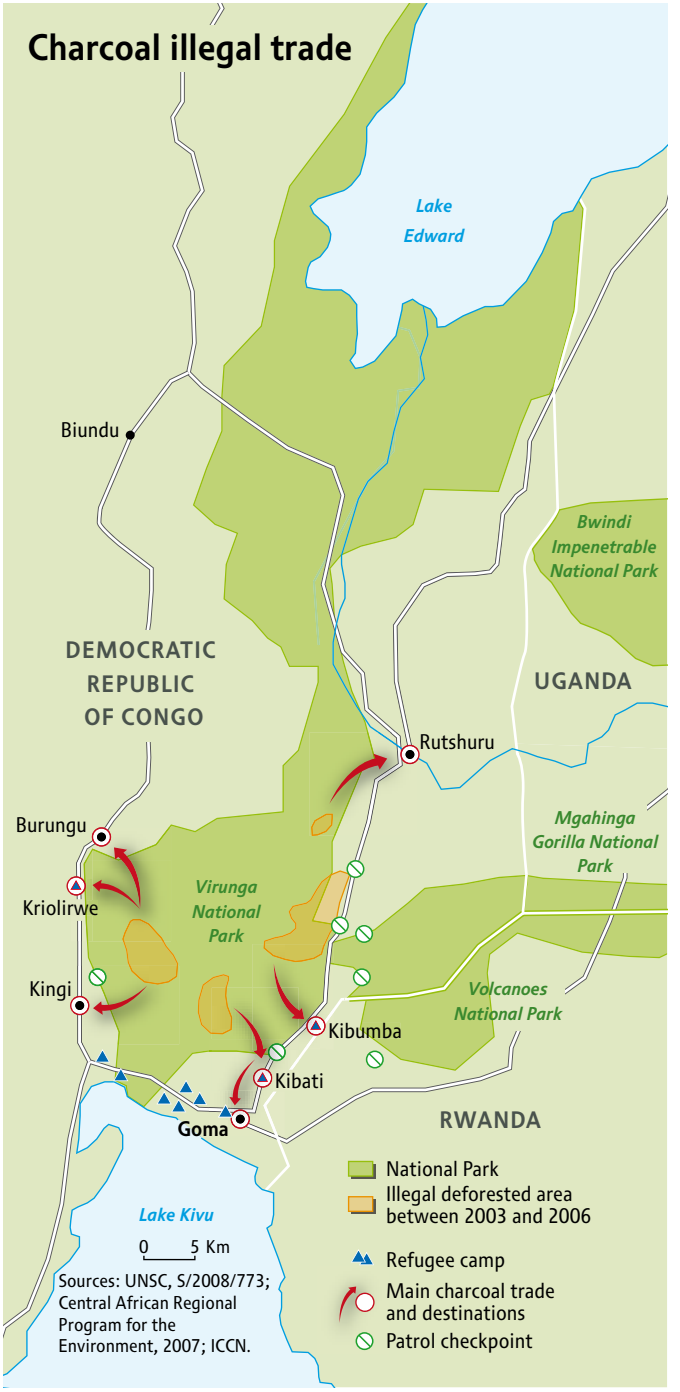
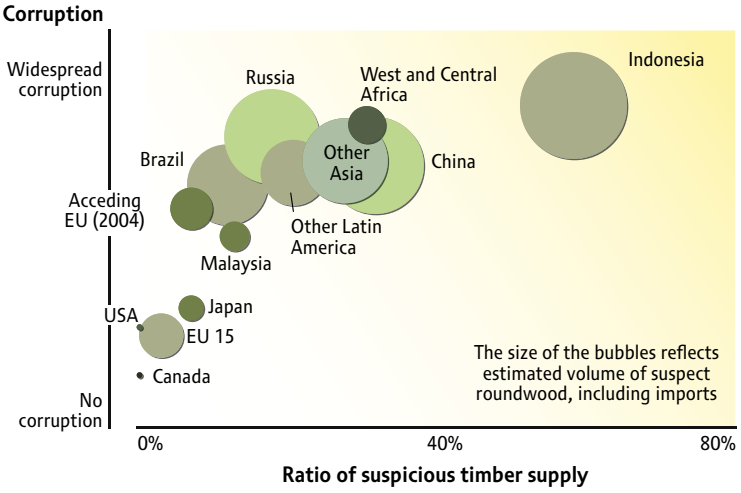


Figure 8: Charcoal business in the Virunga area.





Source: Seneca Cree Associates 2004

Figure 9: Even though the logging concessions fall outside of the protected areas, it is not uncommon – due to lack of resources for enforcement – that companies log inside protected areas, where often more valuable timber is present, and export this as part of their legal concessions – many however with at least 50% underreporting.

INTERVIEW

"We make it a priority that the gorillas are preserved"

Hon. Serapio Rukundo MP

Uganda's Minister of State for Tourism, Wildlife and Antiquities

I am a Member of Parliament, representing Kabale municipality. I am also the Minister of State in charge of tourism, wildlife and antiquities. The United Nations declared 2009 the year of the gorilla, and, as a minister, in charge of tourism for the Republic of Uganda, I acknowledge the central role that the gorillas in Uganda play in our tourism. As you may know, Uganda hosts more than 50% of the remaining mountain gorillas in the world, so we make it a priority to ensure that the gorillas are preserved. The gorillas and chimpanzees are the closest cousins of man. So if you have not visited the gorillas, if you want to know a bit about yourself, which you might not know, go to see the gorillas. See how they behave, see how the mothers look after their kids, see how the father, the silverback, the head of the family behaves, how he protects the whole family; then you get to know a bit about yourself.

So we in Uganda want people to know what the gorilla is, want to encourage people to visit the gorillas and in collaboration with our partners, want the people of the world to know that there is a gorilla, a close cousin of man, and come to Uganda, come to Rwanda, come to DRC for the mountain gorillas, and go to West Africa for the lowland gorillas. It is important for the whole world to know about the gorilla and for people, near or far, to contribute to the conservation programmes across this country and across Africa, to make sure that this closest cousin of man survives. Thank you.

"Our action is focused on the issue of climate change"

José Endundo Bononge
Minister of Environment, Nature Conservation and Tourism, DRC

The Democratic Republic of the Congo is a country that is very concerned with environmental and conservation issues. God has blessed us with a huge biodiversity; we are the first African country in terms of biodiversity, we are one of the five large countries in terms of biodiversity. We have mountain gorillas as well as lowland gorillas – in the East and the West of the country – which is extraordinary for such a large country. The DRC is proud to have three out of the four species of great ape and together, we want to be able to preserve this wealth, to save this blessing which makes this country so diverse, so rich in ecosystems of all kinds; mountains, lowlands, water sources. The Congo represents half of Africa's water sources. It is the World's second lung and everything that places value in this richness is of greatest interest to us.

Five weeks ago, I took five ambassadors from Europe to visit the gorillas in Kahusi-Biega. It was marvellous to see this rare species, these animals so close to us. They have a colossal strength and presence but at the same time demonstrate this need to share this richness, this forest with us. It was fascinating. Every time I see gorillas I see the power concentrated within them but also their fragility in relation to the environment. In the East of the country we have a few problems because we are still in the process of pacification. We still have pockets of insecurity and we are therefore confronted with the issue of having to save both peace and the gorillas, having to save our natural wealth which is our most prized possession. This heavy responsibility is mine, but also that of the highest level of the state – the head of state is very concerned by these problems, as well as my entire team – the ICCN, the entire administration who want this patrimony, which is nowadays not just a Congolese patrimony but a global one, to be preserved, to be saved, to be enriched. This is our challenge; this is the challenge of the DRC and of those responsible for it today and in the future. How do we ensure that mankind's progress goes hand-in-hand with the conservation of nature, with the preservation of what is so intimately linked to the processes of life? That is the challenge we face.

I can tell you that today our action is focused on the extremely important issue of climate change. Forests are linked to climate change and without gorillas and the other species, there are no forests. These species cannot survive without forests and so everything is interlinked and links back to the future of humans as well. There is no future for humans without forests, without water, without these great apes, without all the things that make up the grandeur and uniqueness of our lives. Human life is also linked to the lives of great apes and the lives of the other species we have in this country. Therefore, the questions of climate change, forests, water – without water there are no forests, especially tropical ones like ours – all become one and we have the historical obligation today to defend them for humankind.

Reducing emissions from deforestation and forest degradation (REDD+) in the Democratic Republic of Congo (DRC)

Avoiding dangerous climate change requires a multifaceted approach. Terrestrial ecosystems (agriculture, forestry and land use) are a major source of carbon emissions and are a critical element within the portfolio of mitigation options. Currently a proposed global framework for reducing emissions from deforestation and forest degradation which includes conservation, sustainable management of forests and enhancement of carbon stocks, (REDD+) presents a cost effective method and reliable way of limiting emissions. REDD+ promises to reduce annual carbon dioxide emissions by seven gigatonnes, for an estimated US$15–25 billion between 2010 and 2015.

The Democractic Republic of Congo has a forest surface of about 1.45 million km^2, including 850,000 km^2 of dense humid forests (which represents about half of African dense humid forests). Carbon stocks in forest biomass are the second largest in the tropical world, making the DRC a perfect candidate for REDD+ and, depending on estimates, range from 20 to 37 billion tonnes of carbon.

There is therefore great potential for REDD+ to generate a significant stream of income for the forest and land use sector in country. The forests are a source of livelihoods for millions of forest and rural dwellers and REDD+, if designed and implemented effectively, efficiently and equitably could bring about related social, economic and environmentally desirable outcomes and benefits.

Despite the huge challenges some of which are highlighted in this rapid assessment report, there has been concerted national activity and effort focused on the development of a REDD readiness roadmap and plan since early 2009. This has included more than 15 months of consultation and analysis to grasp the weaknesses and challenges and position them within the international context of risks and opportunities for REDD+. The DRC is committed at the national level to capatalize on this asset and plan, implement and benefit from REDD in partnership with civil society and relevant stakeholders. REDD success relies on the credibility of political commitment and the implementation strategy. The key issues relate to governance, civil society engagement, benefits distribution, ongoing reforms of the forest and economic sectors, and a monitoring, reporting and verification system that will not only deliver carbon credits but also the co-benefits that REDD+ can generate – such as the conservation of great apes habitats.

DRC has just developed a substantive and detailed REDD+ readiness plan which includes building capacity, institutions and awareness about REDD+. The components include understanding the drivers of deforestation and addressing these, placing the national REDD+ national strategy into the decentralization logic and monitoring efforts at the local level, addressing tradeoffs and alternatives for forest products and mobilizing international funding sources to support an ambitious program by securing credibility, effectiveness and good governance conditions. The aspirations lie to moving the country along a path toward deep transformation where the full potential of the forest sector is realized for livelihoods and the economy, ecosystem services, biodiversity and climate change mitigation.

(Source: UN-REDD Programme)

INTERVIEW

"If we can protect the gorilla, we can protect the forest"

Dr. Melanie Stiassny

Curator of Fishes at the American Museum of Natural History in New York

I study fish, and the Congo River is the richest place for fishes in all of Africa; and I study a particular part – the lower Congo from Pool Malebo down to the Atlantic Ocean where rapids have generated the most extraordinary species diversity. Down here, in this part of Congo, there have never been gorillas, and certainly never will be gorillas, but the fish, in a very strange way, totally depend on the gorillas, because the fish depend on the forest ... Whatever happens on land ultimately ends up in the river, and then it ends up going out to sea. So there is this great chain of connection between the great forests of central Africa, where the gorillas live, and the rivers of Africa, and ultimately the coasts and the inshore marine life of Africa where the inshore marine fishery is so important for feeding the people. You are going to lose that too. So for me, the gorilla, apart from being just the most gorgeous, wonderful animal and our very close relative, is, if you like, protecting the forest. If we can protect the gorilla, we can protect the forest. If we protect the forest, we can protect the rivers. If we protect the rivers, we can protect the fish. And if we protect all of that, we protect the people. So it's all kind of wound in together and as an ichthyologist, I totally support saving the gorillas, for the fish, for the people, for everything.

MINING IN GORILLA FORESTS – COLTAN, CASSITERITE, DIAMONDS, GOLD, COBALT AND URANIUM

Mining camps impact gorillas mainly through logging activities and through bushmeat hunting to supply workers, sometimes even slaves, with food. An NGO, Global Witness, has accused several companies, such as THAISARCO, the world's fifth-largest tin-producing company, owned by British metals giant, AMC, of buying minerals from the conflict zone. THAISARCO's main supplier, Congo-based Panju, sells cassiterite and coltan from mines controlled by the FDLR, according to Global Witness. Another company is the UK-based Afrimex, already found by the British government in 2008 to be in breach of the OECD Guidelines for Multinational Enterprises for buying from suppliers who made payments to a rebel group.

Mining the forest

- Forest
- Agricultural or non-forest land
- Known gold deposit
- Virunga National Park
- Deforestation monitored with satellites between 2000 to 2007

Source: IES, Mining, forest change and conflict in the Kivus, eastern Democratic Republic of Congo, 2008.

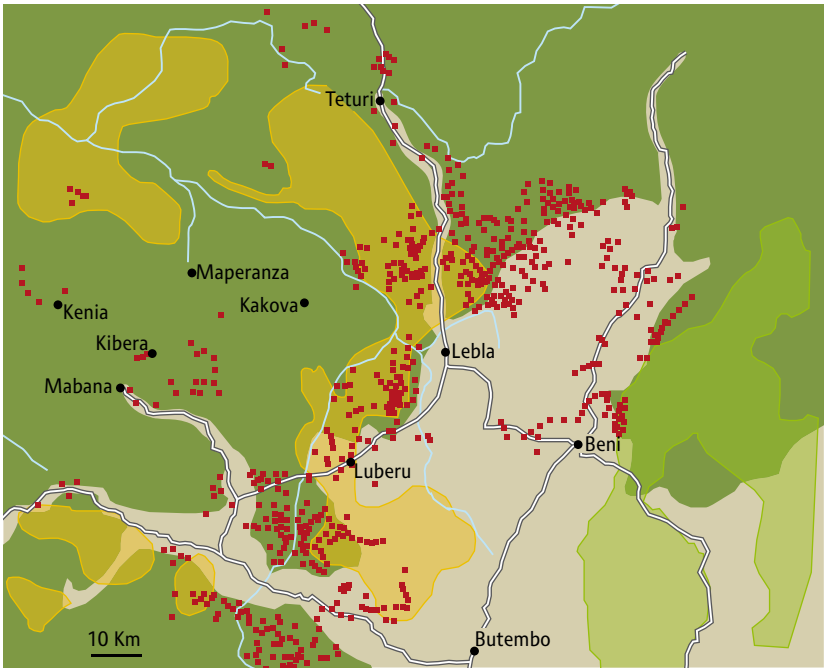
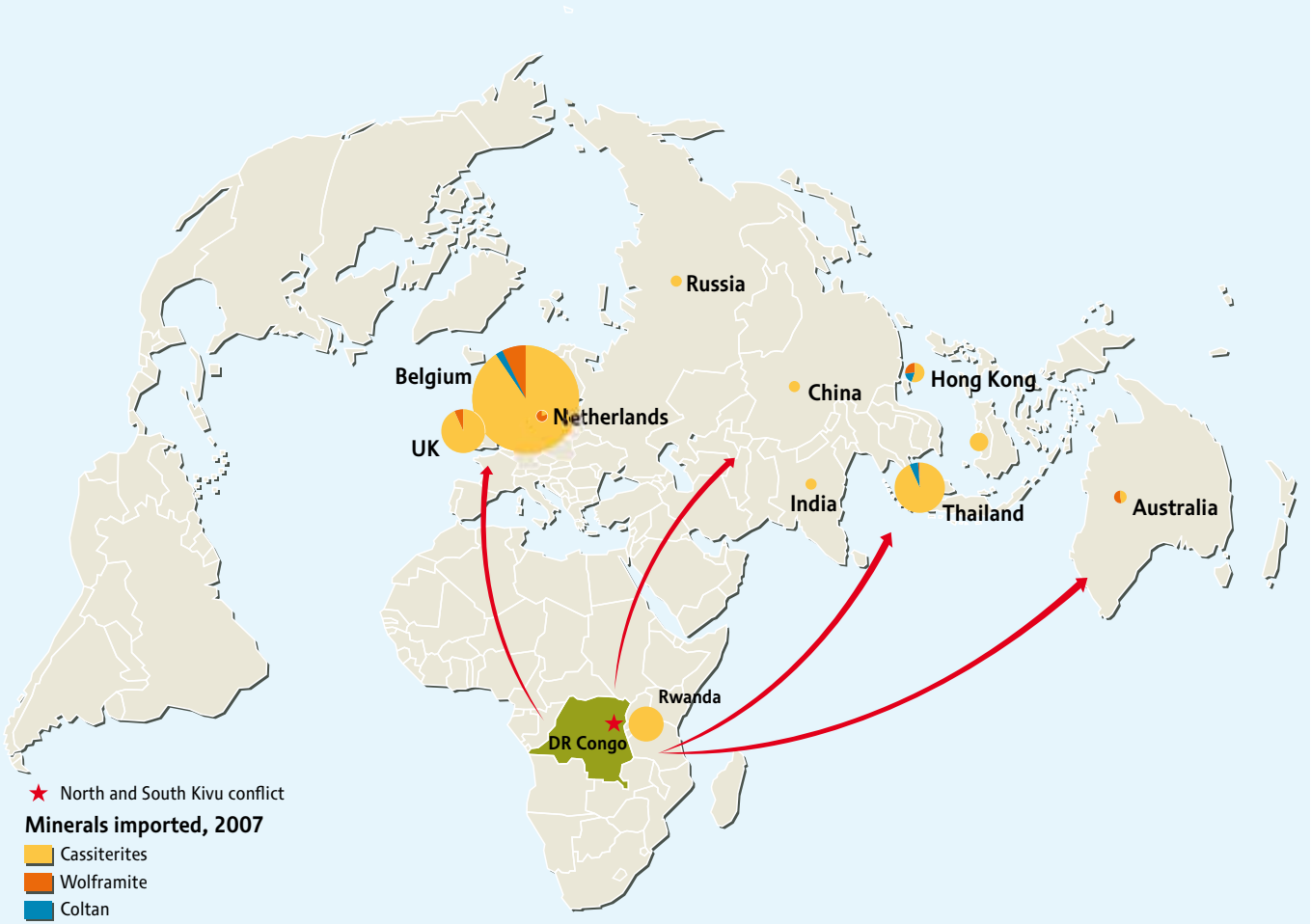


Figure 10: Mining and deforestation.

Mining the conflict

Importing from Kivu war zone



Sources: Faced with a gun, what can you do? War and the Militarisation of Mining in Eastern Congo, 2009.

← **Figure 11:** Accessibility to minerals and illegal exploitation has been central in the conflict and in financing continued warfare in the DRC.

Figure 12: Mineral deposits in eastern Congo are at the heart of conflict and the continued unhindered transport across borders and the funds from companies based in the EU and Asia are key to the continuation of environmental crime, destruction of gorilla habitat and atrocities.

BUSHMEAT TRADE AND POACHING

HUNTING GORILLAS FOR BUSHMEAT

Gorilla deaths as a result of the bushmeat trade are one of the major causes of population decline. Gorillas are sometimes the preferred target of Bushmeat hunters, sometimes just a convenient large animal and sometimes the unintended victim of snares set for other animals such as antelope or buffalo.

In the 1980s in Congo, the problem was said to be largely caused by hunting for food to feed the workers at logging camps. The forestry department was reported to have 500 hunters, each of whom had to feed ten people; thus 5,000 workers were supported by the hunting of wildlife in logging areas. In some areas of the Congo, people were said to prefer gorilla meat above all else and given a chance, would eat "nothing but gorillas, killing up to 10 gorillas in one attack." (reported by Redmond, 1989).

Gorilla meat has always been part of the diet of many of the tribes that share the forest with the apes. The Fang of Equatorial Guinea eat many higher primates (Sabater Pi and Groves, 1972), and the same appears to apply to most of the forest people who depend on subsistence hunting. Conservation problems do not normally arise from traditional uses by humans living at low densities. Primate numbers decline when their populations are fragmented by forest clearance and development, and when hunting becomes a commercial business venture with the products (usually meat) being shipped to centres of human habitation, thereby supplying a near limitless market. In Gabon, where gorillas are also eaten, workers at a small iron mine at Belinga were reported to consume 24 tons of meat from the forest in one year (Harcourt and Stewart, 1980). This seemed a lot at the time but since those early studies, the quantity of Bushmeat recorded in city markets across the Congo Basin has reached astonishing levels; some researchers estimate that up to five million metric tons of bushmeat is traded annually (Wilkie and Carpenter, 1999; Fa *et al.*, 2002). Many factors, including topography, available infrastructures, market access, taboos, religions, weapon availability and hunting seasons, are important in affecting trade (Bowen-Jones & Pendry, 1999).

It is important that people who grew up thinking it normal to eat gorilla, chimpanzee or bonobo body-parts, are not demonised by those who baulk at the thought. But equally, people who do eat apes must realise that they will stop doing so soon. At current inferred rates of decline – there will simply be none left within our lifetime. Surely it is better to stop now, by choice, than later by extinction?

Ape Alliance, 2006.

Peter and the gorilla

Peter Kabi is a former hunter and self-confessed killer of a Cross River Gorilla:

It was 8:30 in the morning two years ago and I was passing our family banana plot on my way to hunt in the forest. I saw a silverback eating our banana plants and fired. The gorilla screamed and ran; I was trembling for half an hour, but when I caught up with the gorilla it was dead. My family was very pleased. Not only was the gorilla no longer eating our crops, we had meat for ourselves and to sell to passing motorists down on the main road to Calabar.

Now I have agreed not to hunt any more, and the Wildlife Conservation Society is helping me build this snail farm as an alternative way of making a living.

Adapted from http://gorilla.wildlifedirect.org/2009/09/22/ian-redmond-peter-and-the-gorilla/

Because the trade in gorilla meat is illegal, however, accurate figures on the number of gorillas killed each year are difficult to compile. When Bushmeat markets with a catchment that includes ape habitat are studied, the proportion of ape carcasses is normally small – 0.5 to 2 per cent of the trade (Stein *et al.*, 2002), the rest being mostly forest ungulates, large-bodied rodents, monkeys and large reptiles – but the impact on the apes is disproportionately large. Gorillas have a low reproductive rate (almost 9 month gestation, usually one infant, about 4 years between births and maturity at about 10 years in females, up to 15 in males), so even low mortality rates can send a population into decline. Moreover, the social disruption following the death of a dominant silverback may result in infanticide of dependent infants when females join a new group.

Kano and Asato (1994) studied ape-hunting in the Motaba River region of north-eastern Congo and concluded that 62 – about 5 per cent of the local gorilla population – were being killed each year – an unsustainable rate. Regional estimates of annual gorilla kills range from 400 – 600 in northern Congo (Redmond, 1989,) and 800 in Cameroon (Pearce & Ammann, 1995) and one estimate for the Congo Basin as a whole gave an annual harvest of 4,500 (Marshall *et al.*, 2000).

A 2009 investigation in Congo by Endangered Species International revealed that in the Kouilou area, up to two gorillas a week are killed for the bushmeat markets of Point Noire (about 100km away). Over the course of a year, investigators visited the markets twice a month, recording the amount of bushmeat for sale. Mr Pierre Fidenci, president of Endangered Species International (ESI), told the BBC "Gorilla meat is sold pre-cut and smoked for about $6 per 'hand-sized' piece. Actual gorilla hands are also available... According to interviews and field surveys, we think we may have about 200 gorillas left in the area. But we estimate that 4% of the population is being killed each month, or 50% in a year. It is a lot." Across the whole of Congo, ESI estimates that perhaps 300 gorillas are killed each year to supply the bushmeat markets (http://www.endangeredspeciesinternational.org/bushmeat2_gallery.html and article at http://news.bbc.co.uk/earth/hi/earth_news/newsid_8256000/8256464.stm).

The danger with commercial hunting for markets is that when the large mammals (including gorillas) are gone from one area, the commercial hunters simply move on to the next. In the end, only the most remote and difficult to access populations of large mammals will survive unless improved law enforcement, better education and alternative livelihoods are provided.

HUNTING FOR TRADITIONAL AFRICAN MEDICINE (TAM)

Being such a powerful animal, there are many superstitious beliefs surrounding the gorilla. Various bits of gorilla anatomy, such as fingers, fur and testicles are used to cure ailments, give strength to a sickly child or increase the power of a chief or leader. There is an overlap in purpose here with those who use gorilla-based TAM and those who are culturally obliged to give their son gorilla meat so he grows strong, or serve gorilla meat to visiting VIP guests, because the meat itself is believed to have properties beyond its food value. In areas where gorillas are hunted for Bushmeat, it seems likely that body-parts for non-food TAM are a by-product. But if no such parts are available, such as in Rwanda where gorilla meat is not consumed, there have been cases where gorillas have been killed and only a few small body parts have been removed from the body (Fossey, 1984).

PROBLEM ANIMAL CONTROL

In a few areas gorillas number among the species considered as crop pests. Banana plantations are particularly vulnerable – though gorillas seldom eat the banana fruits. Instead, they tear apart the whole plant and eat the nutritious pith. Unsurprisingly, this does not endear them to farmers, and if a farmer has ac-

cess to a gun, he may shoot crop-raiders. In areas where gorilla-meat is eaten, this has the double benefit of not only protecting the family's supply of bananas (or revenue from sales of same) but also providing up to 200 kg of meat that can be eaten fresh or smoked and shared or sold (see box). The protein gained is often seen as a form of natural compensation for loss of crops.

Problem animal control as a cause of death is likely to increase in areas where gorilla habitat is being converted to agriculture, but has been happening for a long time. Swidden agriculture (also known as shifting cultivation or slash and burn, where a patch is cleared, farmed for a few years and then left to revert to forest) has been practiced for millennia in central Africa. At low human population densities, and with a long enough rotation cycle, the resulting mosaic of primary forest, farmed clearings, fallow land with dense herbaceous growth, and recolonised patches of secondary forest, together make for a bio-diverse landscape that can support a healthy population of gorillas. In the past, the losses inflicted when gorillas came across such crops and helped themselves may have been balanced by the resulting high-quality foraging opportunities. Now that more people are competing for land, permanent settlements are increasingly common and gorillas are more likely to be extirpated by farmers defending their crops. This is particularly a threat to Cross River Gorillas during the dry season (November to March in Okwango, Cross River National Park, Nigeria) when they emerge from the forest to feed on banana and plantain (Norberg, 2009), and to western lowland gorillas in Bas Congo, DRC, also during the dry season (May to October here), when they forage in fields along the forest edge (Redmond, 2006).

Bonobos and Chimpanzees

The poaching of apes to supply meat to town markets is becoming more common throughout the African great ape range. Although there has been no systematic research to measure this increase for multiple species or even to evaluate the quantity of ape bushmeat throughout the range of a single species; nevertheless, a collection of anecdotes and case-studies below from D.R. Congo give a sense of the pervasiveness and seriousness of this trend.

A couple of weeks ago we heard from Ashley Vosper who is carrying out large mammal inventories in the Maringa Lopori landscape (Equateur Province). He was struck that the forest was eerily empty of large fauna, but still had a good bonobo (Pan paniscus) population. His question, "Is this because of hunting taboos? If so, how much longer will they last?" An unfortunate example was a bit further east.

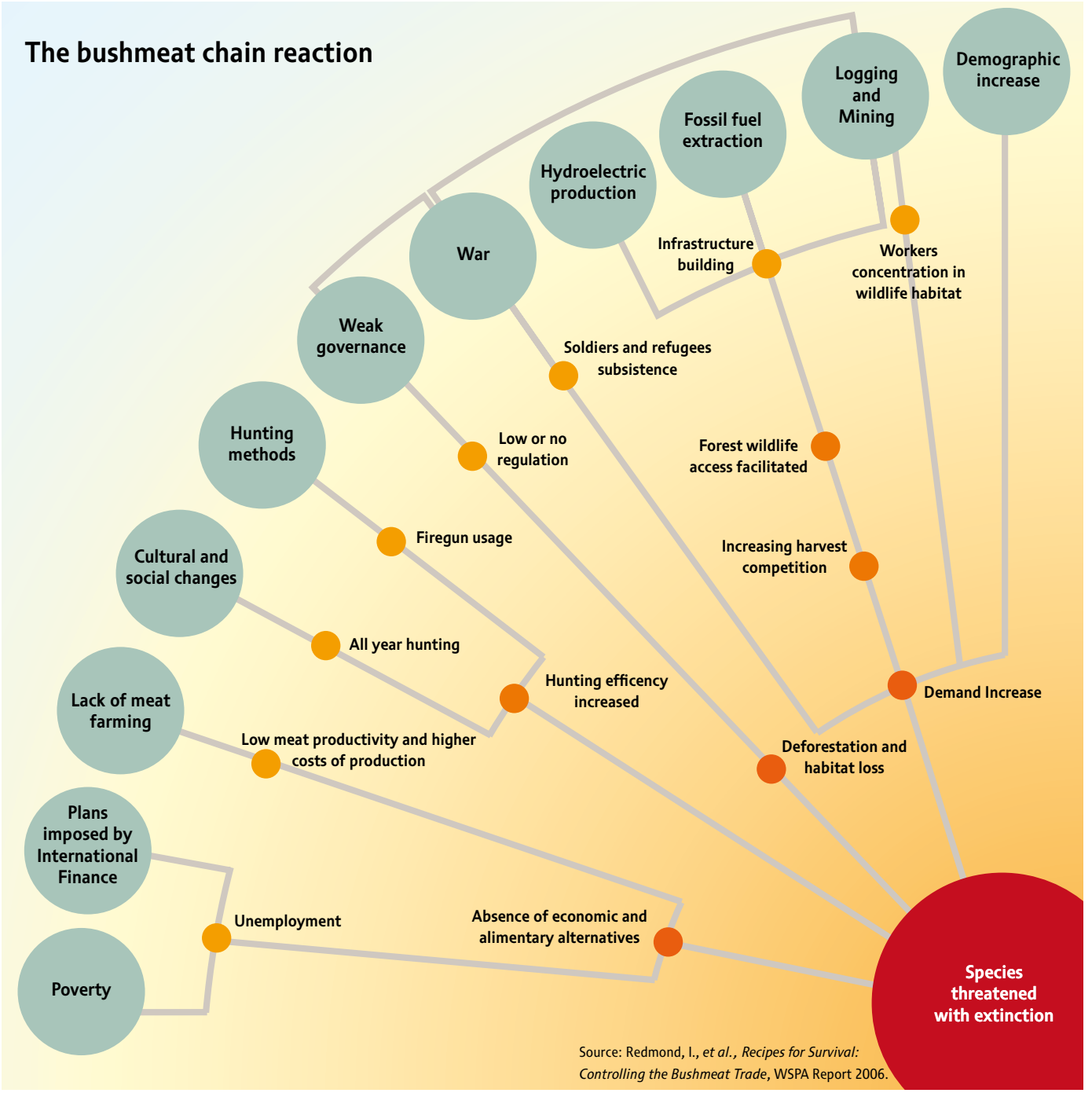
Lingomo Bongoli from the village of Iyondje had worked with the Japanese researcher, Daji Kimura studying bonobo before the war. On his own, during the decade of war he gathered information about a taboo that his people, the Bongando, had on eating bonobo. This tabu was lost through the influence of successive bands of army and militia who killed and ate bonobo.

Further east still, in the TL2 landscape, there is a flourishing bushmeat trade along the only routes leading east to the town of Kindu (Maniema Province) on the banks of the Congo River (www.bonoboincongo.com). Extrapolating from three months of checkpoint observations of bushmeat 76,000 animals per year were being brought to Kindu, most dried and smoked and packed in on bicycles at over 50 kg per bike. This was extracted from about 6000 km^2 of forest and would add over 225 bonobo carcasses per year to the Kindu meat market. This is not sustainable for bonobos or any of the other large forest mammals being hunted.

Across the Congo River bonobo range is replaced by chimpanzee range. A multi-year study in the northern DR Congo by Thurston Hicks *et al.* (submitted to African Primates 2010) documents the breakdown of taboos on eating chimpanzee meat. With expansion of the informal mining sector (mainly gold and diamonds) bushmeat hunting and the killing of chimpanzees to sell as market meat in mining villages has pushed chimpanzee orphans onto the market. Over 18 months, Hicks and his colleagues recorded 42 orphans being held as pets or up for sale.

After a loss of taboo, the main cause of decrease in ape bushmeat is a decrease in ape population until it is too low to hunt profitably and probably too small to be viable. This is the case over large areas of bonobo range forest south of Kisangani and in northern Kasai Orientale and southern Equateur Provinces. The most likely ways to have an impact is large scale education of the protected status of great apes, thus trying to replace taboo with law. Some form of enforcement is needed to give this any lasting impact. Also a strengthening of protected area borders is essential. This also requires enforcement.

The bushmeat chain reaction



Source: Redmond, I., *et al.*, *Recipes for Survival: Controlling the Bushmeat Trade*, WSPA Report 2006.

SPORT HUNTING

The first scientific description of the gorilla in 1847 prompted much public interest, which was boosted by the dramatic accounts of gorilla hunting by Paul du Chaillu (1861). This and a popular children's book 'The Gorilla Hunters' (Ballantyne, 1861) led to the gorilla becoming one of the most desirable trophies amongst wealthy 'sport hunters' and naturalists in Europe and North America. Over the following century, hundreds of specimens were collected by adventurers, scientists and aristocrats, whether for scientific purposes or for seeking to prove their courage by facing a charging silverback. In 1921, for example, Prince William of Sweden led an expedition to the Virunga Volcanoes which killed 14 mountain gorillas; and Fred Merfield, an Englishman living in Cameroon in the 1930s, killed 115 western lowland gorillas in five years.

Most people would think this to be of historical interest only, but there are apparently still some trophy hunters who seek the thrill of a gorilla kill. As recently as 1996 Roger Cook, a British investigative journalist, exposed how professional hunters based in Spain's Costa del Sol were offering to arrange illegal gorilla hunts in Cameroon: "The unacceptable face of big game hunting... unscrupulous middle men... like José Iglesias and Luis Gomez, on the face of it legitimate sportsmen, but for the right money, they'll arrange for you to shoot anything you like, any way you like, anywhere in the world – however endangered. Within minutes of meeting Mr Gomez, The Cook Report undercover team was offered the illegal shooting of gorillas, tiger and jaguar." (de Bergh, 2000). The price included smuggling the trophy into Nigeria, from where it would be sent to the hunter's home.

According to well placed sources, such enquiries are still made today. Kai-Uwe Wollscheid, Director General of CIC, the International Council for Game and Wildlife Conservation, reports "the main market for the high-price segment hunts in Central Africa, namely Bongo and Sitatunga, Forest Buffalo and Elephant, is the US, with a growing interest emerging among Russian hunters. Among the many US hunters that are subscribing to the principles of sustainability in hunting, there seem to be a few, however, whose core interest is the mere number of collected (and iconic) species, rather then the hunting experience as such. An interest in gorilla hunting is for sure not an issue among the true hunter conservationist – it was however raised among US hunters travelling to Cameroun." Disturbing though this continued interest might be, no cases of gorillas being killed by trophy hunters have come to light in recent years.

Thirty-four million people living in the forests of Central Africa are consuming approximately 1.1 million metric ton of bushmeat annually – the domestic equivalent of 4 million cattle – matching consumption rates of meat in Europe and North America (BCTF, 2000c). In West Africa, human population densities are even higher, and hunting here has been so extensive that dietary dependence on rodents, the only group remaining in abundance, has emerged (BCTF, 2004). The current rate of population growth in West Africa is 2.6% per annum, but as the number of people grows and the area of forest shrinks, pressure and demand will exceed this rate (Barnes, 2002).

Ape Alliance/WSPA, 2006.

POACHING IN PARKS

In Rwanda, Nyungwe, Akagera and Volcanoes National Parks all suffer from poaching, collection of bamboo and charcoal production. In the DRC, as wildlife may become more scarce with the excessive hunting, poachers and bushmeat hunters may shift towards large rodents and primates, firstly monkeys but also gorillas, bonobos and chimpanzees. Most bushmeat has traditionally been from ungulates. Surveys of African markets have shown that ape-meat, if present, comprises only one or two per cent of the trade (Stein, 2002b). But ape populations decline under almost any level of hunting, because they reproduce so slowly and death of key individuals disrupts their complex social organisation.

An aerial survey of the Akagera park showed that between 1994 and 2002, wildlife declined by 50–80% due to human

← **Figure 13:** As many of the parks and surrounding forests have lost 50–80% of their wildlife species, typically antelopes, buffaloes and other ungulates, the poachers are increasingly targeting primates including gorillas, bonobos and chimpanzees. A significant demand comes from bushmeat hunters to supply militias, refugee camps and mining and logging camps, where much of the workforce is forced. Thirty-four million people living in the forests of Central Africa are annually consuming approximately 1.1 million ton of bushmeat – the domestic equivalent of 4 million cattle –matching consumption rates of meat in Europe and North America.

activities, including cultivation, pastoralism and hunting (Lamprey, 2002). A major threat is also the establishment of an estimated 270,000 cattle in the region surrounding the park, including heavy grazing pressure, charcoal production and poaching (Chemonics International Inc, 2003). Without sufficient resources, training and numbers, the rangers have limited chance of protecting the parks, in spite of many impressive efforts.

Poaching in this region often occurs across international borders. Poachers, typically former militias operating from or near refugee camps in Burundi are also operating and involved in killing of elephants and smuggling of ivory. Tracking of several poachers following killings of elephants in Tanzania, has revealed remnants of yellow maize flour around campfires used by poachers on the move. This maize flour is mainly used and distributed in Burundian refugee camps, not locally in northwestern Tanzania (Nellemann and Malata, pers. obs). The use of trackers, and training of rangers in tactical tracking operations, is a central tool in wildlife crime investigations off the road system in the entire region, where traditional military and police tactics are at best complimentary.

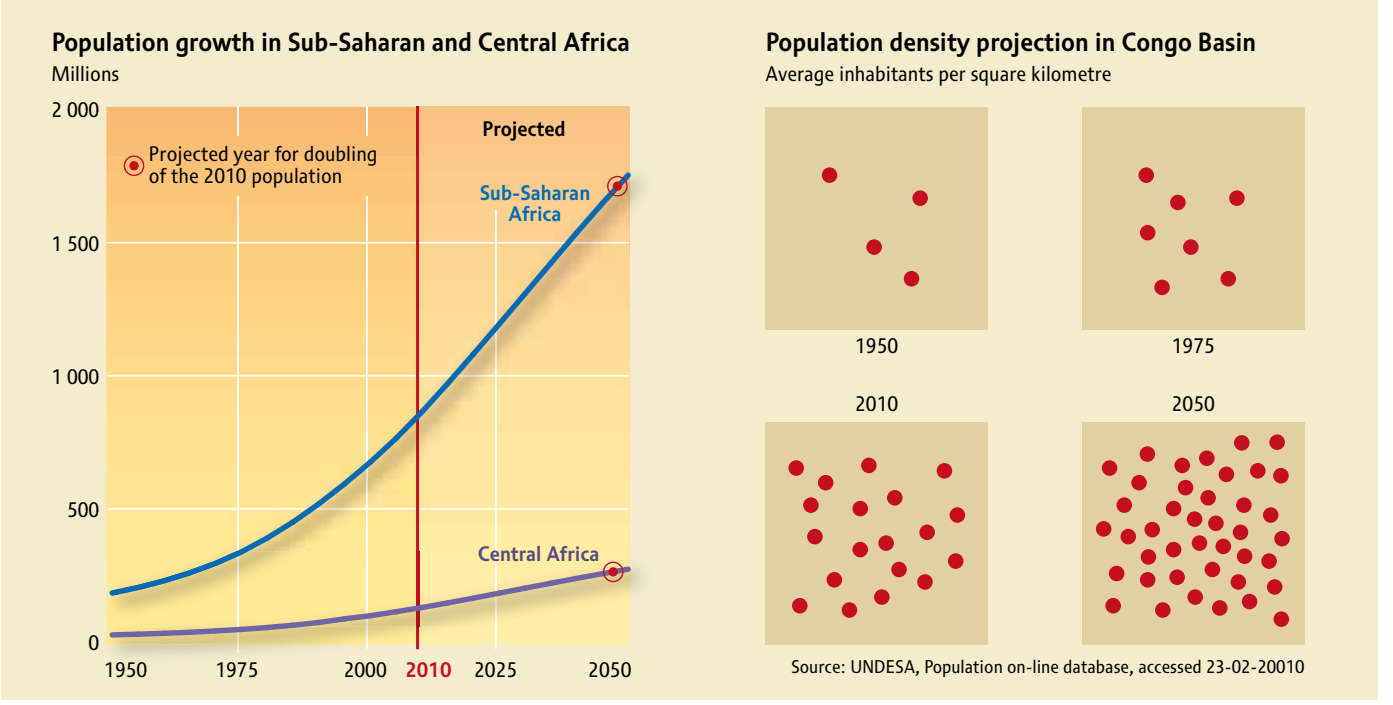
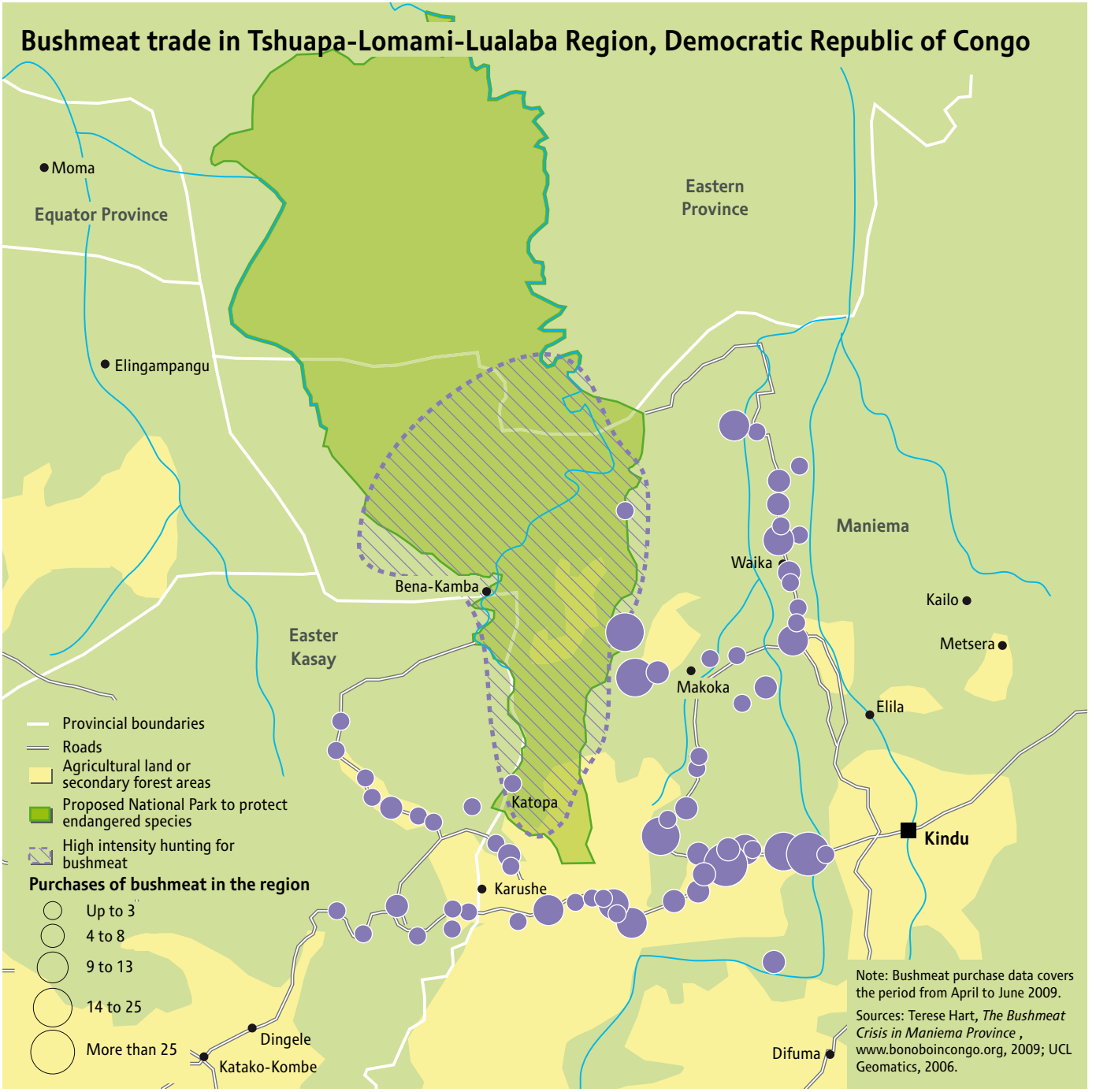


Figure 14: As populations are rapidly rising in the Congo Basin, so is the pressure on great ape habitat, and even more, the numbers killed relative to the gorilla populations to supply bushmeat.

➔ **Figure 15:** Hunting inside protected areas to supply bushmeat is extensive in many regions, and much is transported by bicycle to i.e. larger towns like Kindu. The great apes, sometimes smoked, constitute up to several percent of the total bushmeat, but with devastating impacts on the great ape populations with their slow reproductive rates and complex social structure.


Bushmeat trade in Tshuapa-Lomami-Lualaba Region, Democratic Republic of Congo
Moma
Equator Province
Eastern Province
Elingampangu
Maniema
Waika
Bena-Kamba
Kailo
Easter Kasay
Metsera
Makoka
Elila
Provincial boundaries
Roads
Agricultural land or secondary forest areas
Proposed National Park to protect endangered species
High intensity hunting for bushmeat
Katopa
Kindu
Purchases of bushmeat in the region
Up to 3
4 to 8
9 to 13
14 to 25
More than 25
Karushe
Dingele
Katako-Kombe
Difuma
Note: Bushmeat purchase data covers the period from April to June 2009.
Sources: Terese Hart, The Bushmeat Crisis in Maniema Province , www.bonoboincongo.org, 2009; UCL Geomatics, 2006.

ORGANIZED ILLEGAL TRADE IN LIVE GORILLAS

Gorillas are listed in Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). As such, international trade for commercial purposes is prohibited. CITES is a trade-related convention, and subsequently, does not address many of the threats faced by this species, such as habitat loss, disease, conflict with humans or domestic consumption of gorilla meat. Consequently, the primary role for CITES in supporting the conservation of gorillas is in combating illegal cross-border movement of either live animals or their parts or derivatives. Whilst some international trade is suspected to take place in gorilla meat or body parts, this appears to be very limited and seems to take place between neighbouring gorilla range states, as opposed to the often intercontinental trade that affects many CITES-listed species.

At the international level, trade in gorillas has primarily been driven by zoos, or facilities describing themselves as zoos, and persons who own private collections of rare species. Destinations for such trade have included South East Asia and the Middle East. Since the smuggling of gorillas is, understandably, difficult, because of their size, weight and tendency for violence towards humans, it usually involves juvenile specimens. Removing juvenile gorillas from the wild invariably necessitates the killing of their mothers, and perhaps other members of the family group, and is, thus, particularly destructive to the species as a whole. Several juvenile lowland gorillas not native to the Virungas, for example, have been confiscated from the local population and kept at an emergency sanctuary constructed at VNP headquarters, suggesting that this trade is absolutely real. Regrettably, some of the cases of gorilla smuggling that have attracted widespread notice, have also involved the deliberate circumvention of CITES controls by zoological institutes and the corruption of national CITES officials; the very places and persons who should be working to protect such animals.

In late 2006, the CITES Great Ape Enforcement Task Force was established. It brought together representatives of great ape range states in Africa and Asia, together with the GRASP and CITES Secretariats, INTERPOL, the Lusaka Agreement Task Force, and the World Customs Organization (WCO). The Task Force exchanged information about illegal trade and undertook to obtain more.

Following the collation of intelligence relating to illegal trade in great apes, the CITES Secretariat issued one of its Alerts on this subject. CITES Alerts are distributed to the law enforcement community and provide intelligence to help target smugglers and supply information relating to concealment techniques, smuggling routes, illicit dealers, etc. The Task Force recognized that since ownership of primates as pets is not uncommon in many parts of the world, apes may be moved across borders, within sight of border control officers and Customs officers, who fail to realize that anything illegal is taking place. Assisted by NGOs who work in the area of primate conservation, the Task Force distributed posters, for display at borders and in

A great number of primates captured for trade die, even if they are rescued. Estimates suggest that for every chimpanzee, gorilla or bonobo entering the pet trade, 10–50 more will have died in hunting camps or en route to cities (IFAW & BCTF, 2003).

Redmond (2002a) used a multiplier of 15 gorillas removed from the population for each infant that reaches competent care, based on the 80 per cent mortality of infants arriving at the Brazzaville gorilla orphanage prior to 1989, when improved veterinary care lowered this rate, and at least two adults being killed for each infant – thus: (1infant+2adults)x5=15 gorillas, one alive and 14 dead. This means that the six gorillas reported to have been held by Ibadan Zoo prior to shipment of the Taiping Four probably represented 84 dead gorillas, and 90 lost to the wild population. (Ape Alliance, WSPA, 2006)

Customs and Police offices, which drew attention to the smuggling of apes and, importantly, had photographs of juveniles of these species. The posters were in Arabic, Bahasa Indonesia, English and French. Pocket-sized cards, with similar information for law enforcement officials, were also produced in English and French.

The 15th meeting of the Conference of the Parties to CITES took place in Qatar from 13 to 25 March 2010. Delegates approved a recommendation by the CITES and GRASP Secretariats that such missions should also be conducted in relation to gorillas and that representatives from INTERPOL and WCO should participate.

INTERVIEW

"We have to do something for protecting gorillas"

Radar Nishuli

Chief Warden, Kahuzi-Biega National Park, DRC

I am the chief warden of Kahuzi Biega National Park and it is twenty five years ago since I have been working in the park. For me the UN Year of the Gorilla was very, very good because you know, around the world, each day is dedicated for one person or one group of persons, but for gorillas the United Nations decided to dedicate one year, a full year, for gorillas. For me, it was a thing I can't know how to express. It was a big joy in my heart, to hear that gorillas can have one year for him. So I think it's like a lesson, that the United Nations want to show to people that we have to learn something from gorillas. If you see how gorillas live in the forest, people must learn from that kind of living and try to make many efforts to protect them.

Most people have somebody who can protect them but gorillas don't have anybody. So we decided to be the protectors of gorillas. It's why we are there. Despite the war, or other problems, we have to do something for protecting gorillas.

My hope is to be here every morning, to send the guards in the forest to monitor, and to see them safe every day. And another thing – I ask for all the world to support this together. Even the means, like financial means to see if we can, together, protect the gorillas.

PATHOGENIC THREATS TO GORILLA CONSERVATION

Like every organism, gorillas are threatened by pathogens and parasites, some of them species specific, some shared by other species. Paradoxically, populations that are hunted for Bushmeat seem less prone to Ebola outbreaks, whereas ape populations at the highest densities (and therefore the target of conservation attention) are at greatest risk of an epidemic. Dramatic declines in several ape populations are attributed to outbreaks of ebola haemorrhagic fever, and efforts are under way to develop a method of vaccinating ape populations at risk.

The close phylogenetic relationship between humans and great apes creates exceptionally high potential for pathogen exchange. This has resulted in disease emergence in humans as an unintentional affect of the hunting and butchering of the African great apes, responsible for human outbreaks of Ebola and the global AIDS pandemic (Hahn *et al.,* 2000; Leroy *et al.,* 2004; Plantier *et al.*, 2009), as well as high rates of mortality in wild chimpanzee (Pan troglodytes) populations associated with anthropozoonotic transmission of human respiratory viruses (Köndgen *et al.,* 2008; Kaur *et al.,* 2008). In addition to such cases where pathogenic agents responsible for epidemics could be confirmed, epidemics of a polio-like etiology in chimpanzees (Goodall 1986) and measles-like etiology in mountain gorillas (Ferber 2000) are also suspected to have been of human origin.

Less visible than epidemics of acute disease, but equally important as risk factors for ape conservation are chronic pathogens, which can compromise host immune function and reduce reproductive capacity. Proximity between wild apes and people has been demonstrated to promote transmission of the common gastrointestinal bacterium Escherichia coli. Moreover, gorillas and chimpanzees living in proximity to humans have been shown to harbor E. coli resistant to multiple antibiotics used by people in the region, indicating that microbes or their genes can ''diffuse'' from humans to great apes even in the best of conservation circumstances (Goldberg *et al.,* 2007; Rwego *et al.,* 2008). These studies stress that direct contact between species is not necessary for interspecific disease transmission. Indeed, most transmission of gastrointestinal pathogens between people, livestock, and wild apes is probably indirect and environmental. Pathogens such as Cryptosporidium, Giardia, and enteric bacteria (i.e., Shigella, Salmonella, E. coli, etc.) readily contaminate water and soil and may persist in wet areas (Gillespie *et al.,* 2008).

These demonstrations of various human pathogens negatively impacting wild apes has sparked considerable debate concerning the costs and benefits to surviving ape populations of scientific research, ecotourism, and current conservation and management paradigms (summarized in a special issue of the American Journal of Primatology, Garber 2008). Despite the disease-related risks, the consensus is that both research and tourism have contributed in overwhelmingly positive ways to the conservation of gorillas and other apes, enhancing their long-term survival by increasing their scientific and economic value, respectively. Nevertheless, such activities as well as overlap in great ape and human habitat may have unintended consequences on the health and survival of wild ape populations.

In August 2009, more than 80 experts from 17 countries representing field and laboratory researchers, wildlife veterinarians, virologists, and conservation biologists came together in Entebbe, Uganda for a Great Ape Health Workshop to develop best practice guidelines for great ape health. Consensus was that "minimum preventative standards" should be required for all people entering great ape habitat, for tourism, research, or any other reason. Since the majority of observed diseases in great apes of possible or proven human origin are respiratory diseases, the primary measures proposed were wearing masks in proximity to apes, maintaining a minimum of 7 meters distance, a zero tolerance policy on visibly ill people visiting apes, disinfection of hands and boots before visiting apes, and proof of vaccination for all visitors. Further measures may be site specific and more complex. Another important point discussed was the importance of community health programs to lower infection risks from outside protected areas and to provide benefits for people living in proximity to great ape habitat. Guidelines evolved from this consensus process will be published by IUCN within the best practices for ape conservation series (Leendertz 2010).

INTERVIEW

"We are at a new horizon for ape conservation"

Dr. Peter Walsh

VACCINAPE

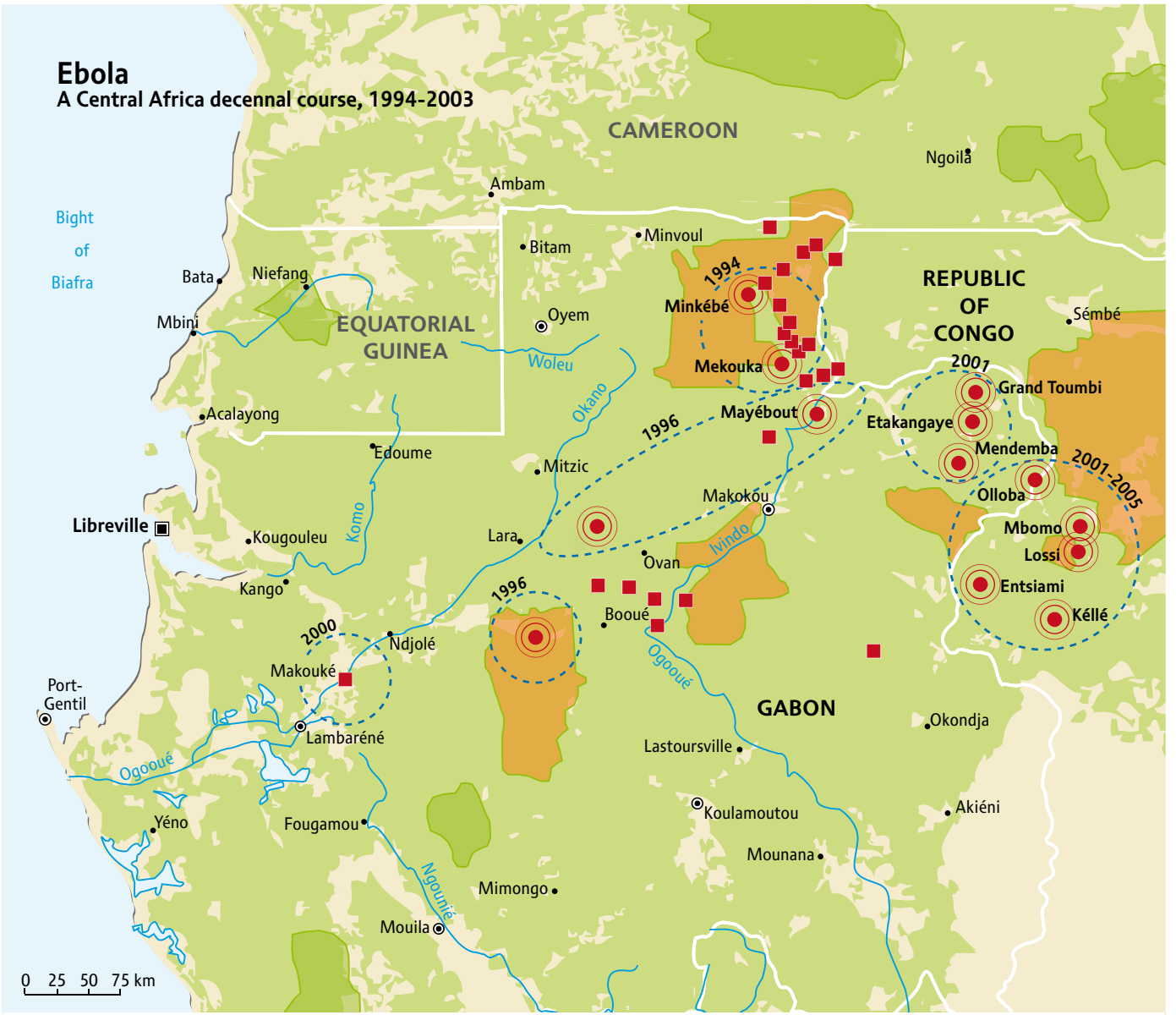
We've known for a long time that poaching and habitat loss were causing great declines in ape numbers, but what we've found out recently is that infectious disease is also causing steep declines in many ape populations.

There are really two kinds of disease that are causing these declines. There are what you might call natural diseases, like the Ebola virus, which has killed about a third of the gorillas in the world in about the last fifteen years and there are also diseases that are being introduced to gorillas and chimpanzees from humans. For instance, we have had a series of respiratory disease outbreaks at tourist and research sites over recent years that have killed a lot of gorillas and chimpanzees. That, in particular the fact that these diseases are coming from humans, gives us a particular impetus to do something about this. Because if we don't, gorillas aren't going to go extinct tomorrow, and neither will chimpanzees, but in the next twenty, thirty, forty years, we are going to lose most of the populations, or we will be left with a very small handful.

What I, and a group of other people have been doing, is looking at options to prevent those disease deaths. In particular, we are looking at vaccination; what we are trying to do, is to take human vaccines and adapt them for use on wild apes. Now this has only been done once or twice before, and so we are at a sort of new horizon for ape conservation. What we are trying to do is take a very scientific look at the process and be very safe, and make sure that the benefits of vaccination outweigh the costs. We are doing a series of tests and trials involving a lot of experts from different fields, virologists, primatologists, veterinarians, and we are trying to come up with a plan that will allow us to take the many human vaccines that are now available, and in development, and use them on apes in the wild. Right now, we have two pilot projects, we are adapting an Ebola vaccine and a measles vaccine. The measles vaccine is very safe and it has been used on hundreds of millions of children and we are using that as a sort of proof of principle, and then we are also trying to move in with the use of an Ebola vaccine, and that will happen over about the next two years. If you'd like to hear more about these efforts, you can go to www.vaccinape.org.

It is also important to recognize the potential threat to African ape conservation posed by naturally occurring pathogens. Recent studies suggest that Ebola may be contributing substantially to great ape declines in central Africa (see chapter Ebola; Leroy *et al.*, 2004). Also troubling are findings of higher mortality and lower reproductive success in wild chimpanzees infected with SIV, long thought to be non-pathogenic in apes, compared to uninfected individuals (Keele *et al.*, 2009). Lastly, anthrax infections with no known link to humans or livestock have killed wild gorillas and chimpanzees at multiple sites (Leendertz *et al.*, 2006).

Our capacity to understand the role of anthropogenic and natural selective pressures on wild primate populations is challenged by the need to effectively form multidisciplinary teams bridging conservationists and researchers that can respond adaptively to the development of integrated theory and next-generation methods and technologies while maintaining standardization to allow for meaningful meta-analyses and model formulation embracing animal health, human health and environmental health issues (Leendertz *et al.*, 2006; Gillespie *et al.*, 2008).



Sources: Lahm, S., A., *Morbidity and Mortality of Wild Animals in Relation to Outbreaks of Ebola Haemorrhagic Fever in Gabon, 1994—2003*, Elsevier, 2006; Bermejo, M., *Ebola Outbreak Killed 5000 Gorillas, Science,* 2006; Global Forest Watch.

EBOLA, A MAJOR THREAT TO GREAT APES

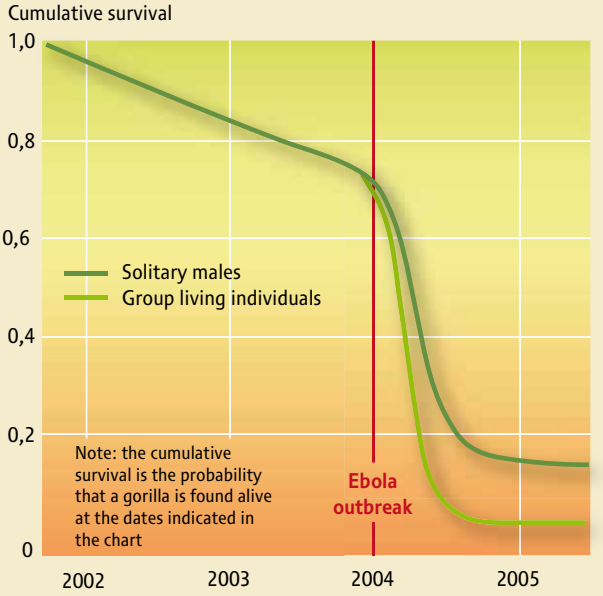
Awareness that health and biodiversity conservation are linked is increasing, in the case of great ape conservation, disease threats have moved to center stage. Ebola hemorrhagic fever (EHF) is thought be a major driver in gorilla and chimpanzee population declines in Africa, rivaling hunting and habitat loss as a major threat to their survival. The health crisis facing these endangered species underlies the need to understand more about this disease, how it affects apes and what can be done to fight the disease.

HF is caused by the Ebolavirus (EBOV), a negative-strand RNA virus of the Family Filoviridae. Although there are five recognized species of EBOV, only two have been implicated in great ape deaths; Zaire ebolavirus (ZEBOV) in the Democratic Republic of Congo, the Republic of Congo and Gabon and Ivory Coast ebolavirus (CIEBOV) in the Ivory Coast. Precise mortality rates in great apes are missing but, based on field observations may reach 90% (Formenty *et al.*, 1998; Walsh *et al.*, 2003; Caillaud *et al.*, 2006; Bermejo *et al.*, 2006) EBOV is transmitted through direct contact with body fluids of infected animals or persons (Jaax *et al.*, 1995; Leroy *et al.*, 2004; Pourrut *et al.*, 2005).

← **Figure 16:** Ebola epidemic outbreaks across the Congo Basin are a significant threat to gorillas, and also impact the few remaining populations less exposed to poaching and habitat loss.

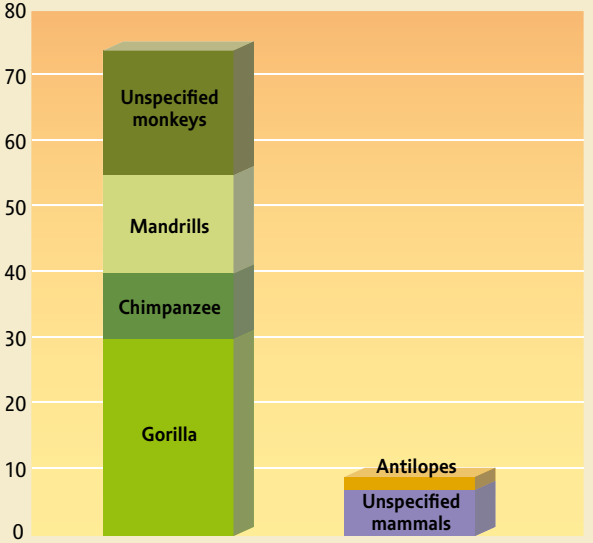
→ **Figure 17:** Ebola is a major threat particularly to the gorillas, with severe casualties following outbreaks. As these come in addition to deaths from poachers and habitat loss, the outbreaks can become detrimental.

Survival probability in Odzala-Kokoua National Park



Ebola wildlife animal victims

Percentage on a sample of 500 individuals reported in Gabon and Congo



Source: Caillaud, D., et al., 2006;Lahm, S., A., 2006.

Therefore, as in humans, apes likely become infected either by direct contact with the EBOV reservoir (presumed to include different bat species)(Leroy *et al.*, 2004; Caillaud *et al.*, 2006), via the touching of infectious other animals (Caillaud *et al.*, 2006; Walsh *et al.*, 2007) or via contact with bodily fluids of an infected cohort (Rouquet *et al.*, 2005; Caillaud *et al.*, 2006; Walsh *et al.*, 2007).

Determining total great ape morbidity and mortality due to EHF is difficult. Great ape population surveys revealed declines in great ape signs ranging from 95–98 % in Minkebé National Park (Gabon), Lossi Sanctuary and Lokoué Bai (Republic of Congo) between 1994 and 2004. Additionally, Walsh *et al.*, 2003) compared ape nest counts and concluded that Gabon's ape population had decreased by almost 50% (Walsh *et al.*, 2003) over 2 decades. Considering the density of ape populations in these regions, and presuming that some epidemics go unnoticed, it would not be unrealistic to consider that tens of thousands of great apes may have been lost in recent years. Based on the calculations, it seems likely, that EBOV is the major driver of these losses (Huijbregts *et al.*, 2003; Walsh *et al.*, 2003; Bermejo *et al.*, 2006; Devos *et al.*, 2008). However, the diagnostic data available for such calculations are scarce and assumptions are mainly based on the fact that great ape declines could be spatially or temporally linked with the few confirmed EBOV outbreaks in wildlife and/or humans (Huijbregts *et al.*, 2003; Walsh *et al.*, 2003; Bermejo *et al.*, 2006; Wittmann *et al.*, 2007; Devos *et al.*, 2008). The World Conservation Union (IUCN) upgraded the western lowland gorilla (*Gorilla gorilla gorilla*) to a "critically endangered" status as a result of this alarming trend (IUCN, 2008), and lists infectious disease as one of the top threats to the species. Indeed, while it is reasonable to imagine EBOV is implicated in observed massive great ape declines, it is obvious that baseline data on background mortality caused by other pathogens are missing.

EBOV has been confirmed in carcasses of only 16 wild great apes thus far (Wittmann *et al.*, 2007); a small number given the thousands of animals presumed to have died from EHF. Producing solid biological evidence of EBOV as the cause of great ape population decreases is extremely challenging. Diagnostic samples are difficult to acquire, due to the vastness and remoteness of the regions in question and the rapid decomposition of carcasses. Samples that are collected from carcasses are often of poor quality, making analyses prone to false-negative results (Rouquet *et al.*, 2005).

Early detection of wildlife mortality events combined with rapid sampling and diagnostic testing is key for understanding threats to wildlife and needs to be enforced (Gillespie *et al.*, 2008; Gillespies and Chapman, 2008). Strengthening wildlife disease surveillance systems in great ape range states, with the involvement of local communities, represents an important step towards obtaining more data. In addition, improving laboratory capacity and employing field diagnostic techniques also holds promise for identifying causes of mortality. Future EBOV-related research should strive to better understand EBOV natural ecology and geographical distribution. This information, combined with knowledge of infection risk factors and length of immunity for great apes, may shed clues on which ape populations are most at risk for future infections and be used to develop timely, safe and ethically reviewed prophylactic strategies and treatments for the mitigation of ape health threats. For example, vaccination strategies are recommended to reduce the infection rates of ape populations when considered critical for their survival. Several EBOV vaccines have been developed for human use but identifying the ideal candidates for wild great apes is challenging. Highly effective oral vaccines may pose dangers for non-target species and injectable vaccines pose major logistical challenges when considering the need to dart vast numbers of elusive great apes. We must ensure that the initiative is applied in a safe way consistent with the goals and principles conservation.

Great ape health research must take a broad epidemiological approach. Recent health studies have identified other pathogens as threats to the health of increasingly vulnerable great ape populations (Leendertz *et al.*, 2006; Köndgen *et al.*, 2008), reminding us to be careful to avoid missing die offs due to a "new" pathogen while we are hot on the trail of the one we know best. The future of great ape health must be proactive rather than reactive.

INTERVIEW

"It is important we redouble our efforts to save the gorillas"

Dr. Gladys Kalema-Zikusoka

Wildlife veterinarian, founder and CEO, Conservation through Public Health, Uganda

The first time that I saw a mountain gorilla was when I was doing research in Bwindi, as a vet student, and I felt like I was meeting a very close relative. I think it is very important that we redouble our efforts to save the gorillas. There are a lot of issues they are coming up against, such as human population growth, disease, poaching, habitat loss ... We should go beyond the usual people who know about conservation, and go to people who don't care about conservation and get them to start caring about the gorillas. Because as long as we have very high family sizes and population growth and as long as we have inadequate health care, people are still going to want to go into the forest to poach and collect firewood, and even get tempted to poach gorillas. So, I want to urge the whole world to take the gorilla conservation issue very seriously, because it affects us in every way.

The first time I treated a gorilla it was a very intense and emotional experience, because once we darted the gorilla we had to chase away the silverback. And everybody was so scared of doing it, because it was the first time it had ever been done in Uganda. So we didn't have experienced trackers like they do in Rwanda where they have been doing it for some years. Luckily I was with an experienced vet from Kenya Wildlife Service, Dr. Richard Koch and as he was working on the gorilla, I was the one chasing the silverback away!

This was during the scabies outbreak. There was an adult female, a juvenile and a baby, and while Richard was working on the juvenile, because that was the only one we were able to dart, I started going to the silverback and saying "woo, woo" and he looked at me, and he didn't take me seriously. I kept doing it, and then he walked away just a few metres and sat down and looked at us; he didn't really go, he just moved a little further away and watched the whole procedure.

Once he was safely further away, I was able to get back and work with Richard on the gorilla and we treated him with Ivermectin. He recovered; the rest of the group recovered, except the infant who unfortunately died, because we got to it too late. But this made us ask, "where do they get scabies from?" because it was the first time it had ever been recorded in mountain gorillas. Eventually we realised that it came from people and we realised that the people's public health needed to improve if we are going to protect the mountain gorillas, and indeed all the gorillas in Africa.

SCENARIOS OF GORILLAS – THE LAST STAND

Scenarios developed in 2002 on the role of infrastructure development on resource extraction and poaching suggested that great ape habitat and subsequently populations in the greater Congo Basin could decline by to as little as 10% of their original range by 2032. Since then, however, reports and interviews conducted in the region, though difficult to quantify, suggest that poaching for bushmeat is substantially on the rise, so is the extent of logging and cutting for charcoal. Several areas are reporting lowered wildlife abundance, and poachers are even using bicycles to transport meat on trails and poor roads far beyond the main road system.

Partial gorilla, and full chimpanzee carcasses are sold for 20–30 USD on the markets. In some areas smoked gorilla meat has been sold for as little as 25 cents per pound (Raffaele, 1005; Ape Alliance, 2006). Estimates in the late 1990s were that around 4,5000 gorillas were killed annually (Marshall *et al.*, 2000).

The estimates presented earlier around the town of Kindu suggested around 76,000 animals per year extracted from about 6000 km^2 of forest, of which 225 were bonobo carcasses. A recent investigation by the Ape Alliance suggested that apes were now present at around 0.5–2% of all the bushmeat (Ape Alliance, 2006) – which would be equivalent to tens of thousands of chimpanzees, gorillas and bonobos ever year. Great uncertainty exists around these estimates, but it is clear that bushmeat is rising across large parts of the ten gorilla range states, even though great ape meat is still taboo in some areas.

Estimates based on modeling of habitat loss caused by agricultural expansion and logging around the growing road network in 2002, and projections onwards to 2050, suggested that less than 10% of the gorilla habitat would be left by 2032 (UNEP, 2002). However, these estimates did not take into account the rise in logging and widespread burning of charcoal initiated by militias in the national parks, the outbreaks of Ebola and the most likely rising bushmeat trade including significant great ape proportions as reported to feed a now much more rapidly rising population in the Congo Basin (Wilkie and Carpenter, 1999; Fa *et al.*, 2000; Brashares *et al.*, 2004; Ryan and Bell, 2005; Poulsen *et al.*, 2009). Neither did these former estimates take into account the extensive mining and logging, with a subsequent large labor force in need of bushmeat, especially in the logging camps (Brashares *et al.*, 2004; Poulsen *et al.*, 2009). Many of the professional bush meat hunters also benefit heavily from the logging "road" systems established by the loggers, to more easily penetrate and kill great apes, that become easy prey.

It is therefore highly likely, even with the uncertainty in absolute numbers, that the previous estimate given in 2002 suggesting a reduction by 2032 to only 10% of the original range, was far too optimistic. This low may already be reached in a little more than a decade from now.

"I think there is still hope"

Dr. Inogwabini Bila Isia

Congolese conservationist, WWF DRC

I have been working in conservation since 1993 and started with the conservation of gorillas in Eastern DRC. I went to Kahuzi-Biega in 1993 to do the Eastern Lowland Gorilla Survey, and it was at that time that I got in touch with gorillas, which I ended up finding among the best excuses to study, because they are so powerful, but at the same time they are so peaceful. Since then I have been working on gorillas across their range, from DRC all the way to Gabon and the species is among the charismatic species for conservation. The reason is that – besides the fact that they are among our sisters in their genetic lineage – they are a species that does play a great role in their environment, because they do disperse seeds and they do maintain their environment. Back in 1993, when we worked with gorillas, we found that there were at least 14,000 gorillas in Kahuzi-Biega and adjacent forest, but then came the disaster, so now we don't even know how many are left in the wild. We know that they have been declining because of the war in the Eastern DRC. So my hope is that the UN Year of the Gorilla will serve as a beginning of ... an option for people to try to save those gorillas that I have worked on back in 1993. Even though they have decreased, I think there is still hope. If we can put a lot of effort, if we put a little bit of will among the international community I think gorillas can recover.

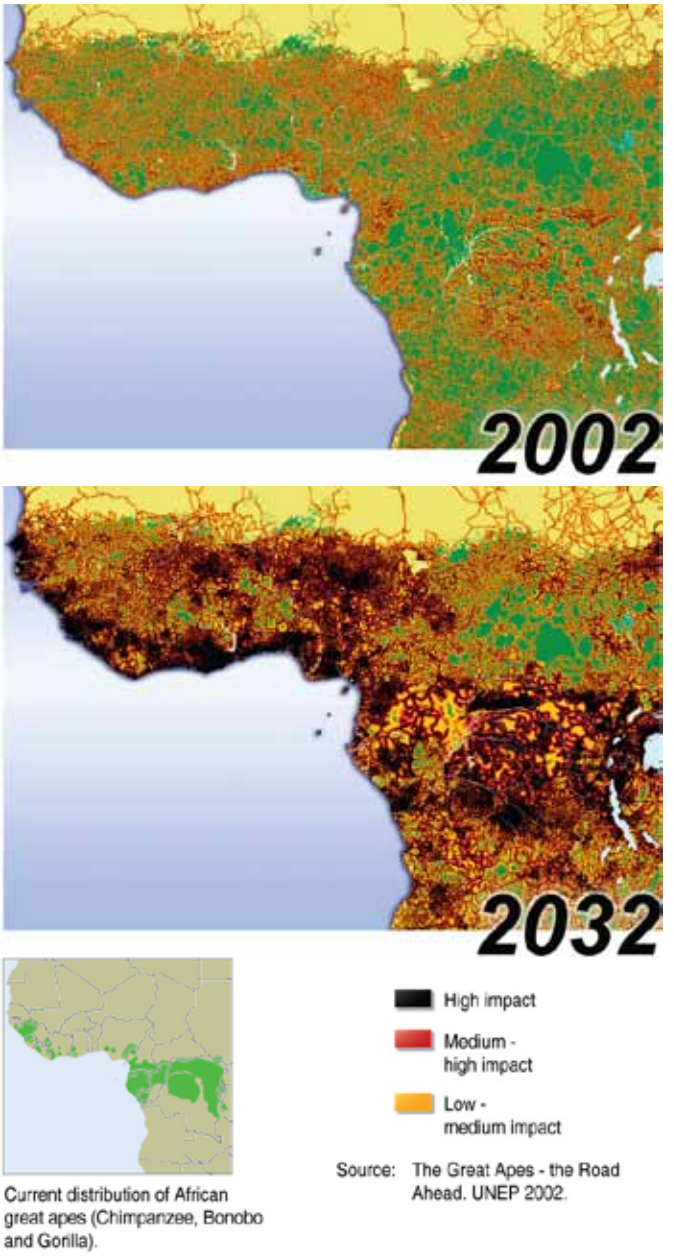


Figure 18: Estimates based on modeling of habitat loss caused by agricultural expansion and logging around the growing road network in 2002, and projections onwards to 2050, suggested that less than 10% of the gorilla habitat would be left by 2032.

COUNTERING ILLEGAL LOGGING, POACHING AND TRADE

LAW ENFORCEMENT CAPACITY BUILDING

INTERPOL has become active in developing programmes for supporting law enforcement of wildlife crime. Project OASIS (Operational Assistance, Services and Infrastructure Support) represents a new vision and logical extension of INTERPOL's role in establishing a global platform for Police cooperation.

The approach focuses on assisting those regions of the world that lack the resources to respond to the challenges of transnational crime. OASIS is all about empowering police through three main functions:

- **Capacity building** – providing the best possible training to police at all levels thereby establishing a highly skilled and dynamic workforce.
- **Infrastructure** – ensuring that police forces have all the necessary tools and technology to communicate securely in real time via INTERPOL's network, and to access its databases.
- **Operations** – supporting major regional operations and providing analytical training in specialized crime areas. Support will be targeted and tangible and the results long-lasting.

This tiered approach of service delivery enables the regions to develop their own sustainable ways of working. It is INTERPOL's concept for global policing in the 21st century and as an integrated strategy it is designed to deploy global counter crime initiatives to our 186 member countries thereby complimenting their national and regional efforts.

Since early 2008 INTERPOL has implemented Project OASIS, as a pilot program, in sub-Saharan Africa. The program is expected to run for a period of four years, ending December 2011.

Funding for this project has been provided by the Ministry of Foreign Affairs of the Federal Republic of Germany.

In recognition that much wildlife crime law enforcement is undertaken by law enforcement agencies that are not associated with a countries national police, the three core functions of this program are therefore extended to these agencies.

Project OASIS for Africa, has been implemented to assist that regions police, as outlined above, however in recognition of the significance of wildlife crime and its effects in that region, and globally, a significant proportion of the program deals exclusively with wildlife crime issues particularly in the areas of capacity building and operational support. This effort, of necessity, entails working closely with 'non-police' law enforcement agencies such as:

- Wildlife services.
- CITES management authorities.
- Customs.
- Park Rangers.
- Immigration and/or Security Services.
- Non Government Organizations (NGO's), particularly in support or capacity building initiatives.

These tend to be the principle organizations responsible for law enforcement in this area of crime. Experience has indicated that the OASIS model could be easily adapted to other regions, either in its entirety or specifically tailored to a specific crime type (wildlife) and / or non police wildlife agencies, the principle differences being staff numbers, expertise and budget requirements.

In considering the adaptation of an OASIS model to deal exclusively with wildlife/environmental crime it is critical to recognize that other more 'mainstream' types of crime are inextricably linked to that crime type and require a level of expertise more usually found within national police agencies. It is therefore highly recommended that any adopted law enforcement model should include the national police agencies in any given region.

When considering the suitability of an OASIS model exclusively for wildlife crime, the first step in the process must be the determination as to whether the model will focus on a region (e.g. South Asia) or a specific species based problem (e.g. tigers), as this will inevitably determine the structure, size and scope of the model to be implemented. The ultimate decision on a 'way forward' will also inevitably define the budget requirements.

It is also highly recommended that any law enforcement initiative should be regionally based rather than species specific, as the overall gains in sustainable capacity and effectiveness as part of a holistic response to wildlife crime are likely to be significantly better

TRAINING OF LAW ENFORCEMENT AND PARK MANAGERS

The College of African Wildlife Management (CAWM), Mweka was established in 1963 following the Arusha Manifesto of 1961. The manifesto, which was proclaimed by Julius K. Nyerere, the first president of Tanzania, highlighted, among other conservation commitments, the need for trained manpower to protect and manage Africa's natural heritage. The College's mandate comes from the Tanzanian Act of parliament No. 8 of 1964 when it was a pioneer institution for wildlife management training in Africa. It has been a leader in this field for the past 47 years.

The College, was established to train wildlife professionals of English speaking African countries (Anglophone countries). It was established to provide experts in African wildlife management, conduct research and to provide consultancy services in areas of management and conservation of African wildlife. The mission of the College is to be a centre of excellence in training research and consultancy in African wildlife management. The College provides high quality training in wildlife management and conservation to meet the demand of African wildlife organizations.

TRAINING PROGRAMMES

CAWM, Mweka offers diverse programmes to suit various needs of the conservation sector in Africa. The College offers both long-term progress and short-term courses, from both 3-year studies and post-graduate courses in Wildlife management to shorter courses in addressing topical issues in wildlife management and tailor-made short courses in wildlife management. Short courses include Protected areas planning and management, Ecotourism planning and management, Wildlife law-enforcement, and Wildlife crime intelligence and investigations. Some courses are taught by the College in collaboration with other organizations such as Lusaka Agreement Task Force, Tanzanian Police Force, IUCN and Conservation International.

The demand for the wildlife conservation training has increased to include francophone African countries and Portuguese speaking countries. An example of a recent outreach programme is in Angola where park managers were trained in conservation planning, resources inventories and anti-poaching tactics.

Recently Training Needs Assessment (TNA) for wildlife conservation organizations was conducted for the Albertine Rift Valley countries. This program enabled, among other things, training people from the Great Lakes countries of Rwanda, Burundi, Democratic Republic of Congo, Uganda and Zambia. The College recognizes that conservation is changing with newly emerging issues. Course programmes respond to these emerging issues to equip future managers with tools to tackle new problems affecting conservation in Africa. Recently TNA enabled the introduction of new curricula to include courses in forest conservation and primate conservation to meet the demands of other countries and conservation initiatives.

PAST PERFORMANCE AND FUTURE PLANS

The College has won several awards including the UNEP-Sasakawa Environmental Prize. The College is recognized as a Centre of Excellence in professional and technical wildlife management training in Africa by the East African Community (EAC) and the Southern African Development Community (SADC).

In its 47 years of existence CAWM, Mweka has trained over 4511 students and professionals from Countries in Africa and beyond. Students have come from 57 Countries worldwide. Responding to the increased demand for wildlife management professionals in many countries the College has increased its programs since its establishment and currently is planning to establish Bachelor degrees in Wildlife Management and Wildlife Tourism. Recently the College admitted Mozambique and Sudanese students to meet the demand of these countries in wildlife professions following decades of civil wars.

The College has introduced short courses such as Wildlife intelligence to facilitate conservation law-enforcement officers in curbing the recent boom in poaching and bushmeat problems in these countries where rampant poverty and uncontrolled weapons as a result of past civil wars. The College recently offered a post-graduate diploma programme specifically dedicated to the bushmeat problem in 2008/2009 academic year. This programme sponsored by the USFWS through the African Biodiversity Collaborative Group trained people from Kenya, Uganda, Sudan and Tanzania on bushmeat problems identification, investigation and combating techniques.

Most wildlife crimes fail to be prosecuted because of lack of evidence to prove the case beyond reasonable doubt. The College

is planning to establish a wildlife forensic laboratory, which will enable training of wildlife managers and rangers in simple DNA technologies. The College has successfully offered a week long course on bushmenat identification using forensics in 2009. When equipped with a forensic laboratory, the College will be able to offer training in this technology which will be important to law-enforcement agencies in combating poaching in African countries.

CHALLENGES

Significant challenge is reduction in student scholarships to students due to economic slow downs worldwide. This is making it increasingly difficult for local and foreign students to access training at this College. Another challenge is equipments. Despite being endowed with state of the art equipments in some areas the College is deficient in others such as molecular technology, night vision goggles, and in particular poor computer and internet access limit student learning. Finally, lack of infrastructures for training hampers the College ability to provide service for more people.

THE ROLE OF TRANS-BOUNDARY INVESTIGATIVE BODIES

Where environmental crimes are trans-boundary in nature they can only be effectively addressed through international co-operation and shared responsibility. Law enforcement agencies and officers often experience difficulties in conducting trans-boundary investigations however the establishment of formal co-operative arrangements can help.

International organizations and trans-boundary investigative support and intelligence bodies such as INTERPOL and the World Customs Organization play a critical role in the effective enforcement of national and international laws where the investigations of environmental crimes cross the borders between countries, as is the nature of the crime.

Where specific problems of trans-boundary offences are identified law enforcement authorities often look to establish collaborative arrangements. Regional Tasking and Co-ordination Groups have offered great potential to develop links within existing law enforcement and conservation structures in Africa where formal regional groups have been created. For example, the Lusaka Agreement on Co-operative Enforcement Operations Directed at Illegal Trade in Wild Fauna and Flora is the only existing practically oriented co-operative enforcement instrument implementing CITES and other biodiversity related agreements at the regional level in Africa. It establishes a unique multinational institution, namely the Lusaka Task Force, to undertake undercover operations to reduce with an ultimate aim to eliminate such illegal trade.

International government organizations and trans-boundary investigative support and intelligence bodies such as INTERPOL and WCO are in a unique position to provide long term access and operational support to regional groups like the Lusaka Task Force via innovative concepts like OASIS (Operational Assistance, Services and Infrastructure Support). For example two of INTERPOL's core functions are to provide the world's environmental law enforcement authorities of member countries with access to operational data services and databases and a secure global law enforcement communication services to exchange information securely and rapidly.

Access to data services and databases such as I-24/7 ensures that law enforcement authorities have the information and assistance they need to prevent and investigate environmental crimes. INTERPOL developed the I-24/7 global law enforcement communications system to connect law enforcement officers in its member countries, enabling authorized users to share crucial data with one another and to access the Organization's databases and services 24 hours a day. Operational law enforcement support services, such as the provision of international forensic capabilities, supports investigators and park rangers in the field whilst undertaking operational activities. A Command and Co-ordination Centre operates 24 hours a day, seven days a week and is essential for emergency support.

The detection of trans-boundary crimes often results from information supplied by informants. The use of local informants, and sharing of information from them between neighbouring law enforcement authorities is also essential to effective enforcement. I-24/7 enables authorized users such investigators and park rangers to make connections between seemingly unrelated pieces of information, thereby facilitating investigations and helping solve crimes. The ability to connect to INTERPOL services in the field can greatly assist law enforcement authorities in their daily crime-fighting activities.

OASIS – Operational Assistance, Services and Infrastructure Support – is INTERPOL's innovative concept for global policing in the 21st century. An integrated strategy, it will deploy global counter-crime initiatives to our 188 member countries, complementing their national and regional efforts. INTERPOL's vision is of a solid, fully international network of technical and operational structures equipping police with cutting-edge systems and skills. A single weak link will jeopardize security in other countries. It is crucial therefore that wealthy countries support those that are more vulnerable by investing in capacity building, infrastructure and police operations, thereby reinforcing global security in all regions.

OASIS is based on a strong belief in the importance of co-operation with the wider international community, both the

public and the private sector, in order to combat the increasing complexities of transnational crime. INTERPOL has started implementation of OASIS in Africa and is committed to adapting and extending the programme to meet the needs of other regions around the world. INTERPOL has had a lengthy presence in Africa, and has noted the need to provide optimum support to this region. While the types of crime committed are common to other regions of the world – such as trafficking in drugs, human beings, weapons and vehicles – there is a pressing need to boost police resources in many African countries.

INTERPOL is the world's largest international police organization, with 188 member countries. Created in 1923, it facilitates cross-border police co-operation, and supports and assists all organizations, authorities and services whose mission is to prevent or combat international crime. INTERPOL's General Secretariat is located in Lyon, France, with six Sub-Regional Bureaus across the world, and Special Representatives at the United Nations in New York and the European Union in Brussels. Each member country maintains a National Central Bureau staffed by national law enforcement officers.

The underlying principle of OASIS is that no country can be left behind. The world's wealthy regions have a responsibility to help the more vulnerable ones to build their police capacity. For instance, the trafficking of wildlife products in Africa is a lucrative trade of environmental concern, often connected to other crimes and with an impact on other regions of the world.

INTERPOL is working with countries in Africa and companies in the private sector to assess the extent of the problem and to devise plans of action. Common to all these problems is a need for tighter border security – imperative in preventing criminals travelling freely and in stemming the flow of illegal products between countries and continents. This can only be achieved if a solid global framework is in place, eliminating any weak spots that could be exploited by criminals.

The United Nations Office on Drugs and Crime (UNODC) is a global leader in the fight against illicit drugs and international crime, and the United Nations lead programme on terrorism. Established in 1997, UNODC has approximately 500 staff members worldwide. Its headquarters are in Vienna and it operates 20 field offices as well as a liaison office in New York and a permanent presence in Brussels.

UNODC works to educate the world about the dangers of drug abuse and to strengthen international action against drug production, trafficking and drug-related crime. In order to achieve this, UNODC carries out a broad range of initiatives, including alternative development projects, illicit crop monitoring and anti-money laundering programmes. UNODC also works to improve crime prevention and to assist with criminal justice reform in a number of countries. Moreover, in 2002, the General Assembly approved an expanded programme of activities for the Terrorism Prevention Branch. This programme focuses on the provision of assistance to countries, upon request, for ratifying and implementing the 12 universal legal instruments against terrorism.

The three pillars of UNODC's work are:

- Research and analytical work to increase knowledge and understanding of drugs and crime issues and expand the evidence-base for policy and operational decisions;
- Normative work to assist States in the ratification and implementation of the international treaties, the development of domestic legislation on drugs, crime and terrorism, and the provision of secretariat and substantive services to the treaty-based and governing bodies; and
- Field-based technical cooperation projects to enhance the capacity of Member States to counteract illicit drugs, crime and terrorism.

With the rise in transnational environmental crime, UNODC welcomes increased collaboration with UN Environment Programme, UN Department of Peace Keeping Operations (UN DPKO), CITES and INTERPOL on these issues.

GORILLA CONSERVATION AT THE INTERGOVERNMENTAL LEVEL

Because many populations of gorilla are trans-boundary, the UNEP Convention on the Conservation of Migratory Species of Wild Animals (CMS) lists gorillas.

In an effort to help preserve the remaining gorilla populations, CMS, in conjunction with GRASP, developed a legally binding agreement, which was negotiated in 2007 and entered into force in 2008. It provides a legal framework that will reinforce and integrate conservation efforts.

Action Plans for the four subspecies of gorillas and their habitats were agreed at the first Meeting of Parties to the Gorilla Agreement in November 2008.

The agreement aims to consolidate efforts of national and international, governmental and non-governmental organisations working for gorilla conservation. Activities include:

- Wildlife law enforcement efforts
- Anti-poaching campaigns
- Reforestation
- Development of eco-tourism
- Community development projects in the regions bordering the areas protected for gorilla conservation
- Programmes of reintroduction of orphaned gorillas into the wild.

CMS itself is a GRASP partner and its main contribution in the coming years will be to facilitate the implementation of the Agreement and Action Plans.

The Gorilla Agreement, as well as the activities derived from its Action Plans, will contribute to promoting the long-term survival of gorillas, their forest habitat and dependent human populations. This should in turn help the States concerned to combine conservation and sustainable economic development.

INTERVIEW

"Gorilla conservation is everybody's responsibility"

Rosette Chantal Rugamba

Former Deputy CEO, Rwanda Development Board, in charge of tourism and conservation in Rwanda

When we heard that 2009 was to be the year of the gorilla, we were very, very excited. It fitted in very well with the Rwanda strategy and policy. Yes, the gorilla is endangered but we want to say that there is some fragile success in Rwanda, that it is not all gloomy, that there is a light at the end of the tunnel with what we are doing here. The gorilla population is growing, we have seen changes in habits, we have seen community involvement – and all aided by government involvement that has created a very conducive environment – not only for the people of Rwanda, but also for the wildlife and the natural habitat. And you really cannot talk about gorilla conservation without talking about its habitat.

Kwita Izina is a Kinyarwandan name which means 'naming', and for the past five years, we chose to use this platform of gorilla naming by making it a public event to highlight to the world that, yes, gorilla conservation is everybody's responsibility. Rwanda and the other countries like Congo and DRC are privileged to be the custodians of these wonderful creatures but the responsibility to conserve them is everybody's.

Since we started gorilla tourism, over 95 nationalities of the world have visited Rwanda for the gorillas. So that goes to say, that the gorilla transcends boundaries. That it is a species that is not only a wonderful species, but a species we can use to really create peace and stability in the world, to protect our environment.

Take the case study of the mountain gorillas in the Virunga ecosystem – gorillas have no passports and they don't know any boundaries so the three countries, Uganda, DRC and Rwanda, chose to work together, united by the gorilla. We created the trans-boundary collaboration, which has been very, very successful partly because it had a bottom-up approach. Our people on the ground were already collaborating, they were sharing the monitoring system, and they understood that every country cannot do it alone, you cannot talk about successful gorilla conservation in Rwanda without thinking what's happening in the other places. It's been endorsed by our governments, our ministers signed a Memorandum of Understanding and we now have a Trans-boundary Collaboration Office which is based in Kigali. This was an area that really was full of conflict, but even amidst the conflict, we all agreed on one principle, that this flagship species has got to be protected, its habitat has got to be protected – and if we can do it, then anybody else can do it.

TRANS-BOUNDARY COLLABORATION – A TOOL TO CONSERVE BIODIVERSITY AND PROMOTE PEACE?

Results from the Virunga Conservation area are largely positive, as demonstrated by the fact that mountain gorilla population numbers have increased over the past 15 years despite on-going civil war in the region while other mammal populations have decreased. This success can be attributed in part to enhanced trans-boundary collaboration between the three countries and the gorillas' revenue-generating potential for the region (Lanjouw et. al 2001, Plumptre, 2007). There are other benefits as well: When the political relationships between the three countries were difficult, technical cooperation between the three protected area authorities did not stop. In fact, by achieving collaboration between countries with difficult relationships, conservation often provides an easy to agree upon common objective for cooperation and peace-building. Another example refers to the 2002 eruption of the volcano Nyiragongo near Goma, DR Congo. Collaboration among different conservation partners in and outside DR Congo quickly helped to bring in humanitarian aid when a large proportion of the city of Goma was destroyed by lava.

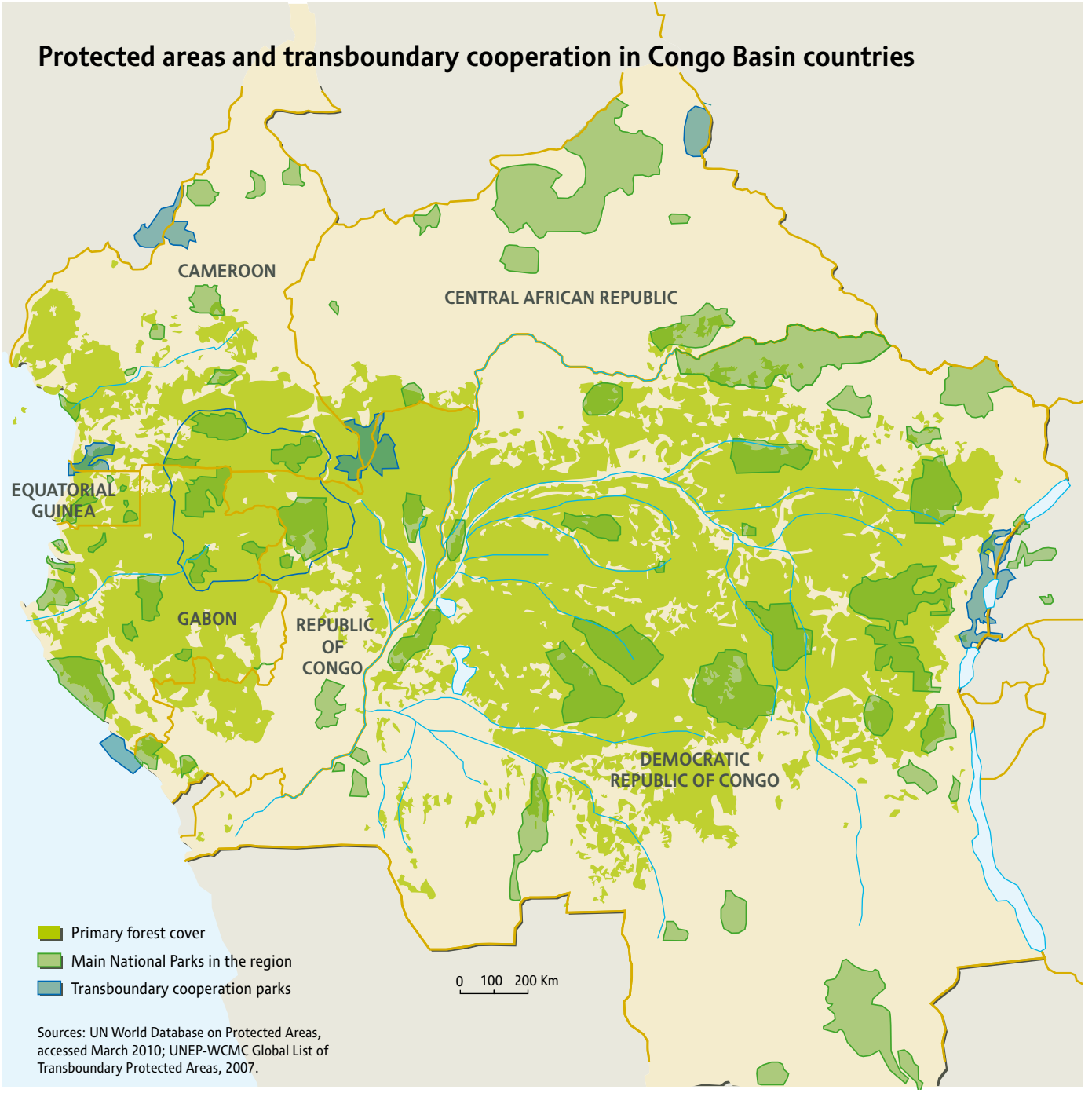
The positive experience with trans-boundary work in the Virungas encouraged the three governments to expand the collaboration on the conservation of mountain gorillas to the entire Virunga landscape including a number of national parks and reserves in the three countries. To facilitate the implementation of the trans-boundary plan, including the creation of a trans-boundary network of protected areas, a trans-boundary core secretariat was established in 2008, based in Kigali, Rwanda.

Another prominent example for trans-boundary collaboration, and equally important for the conservation of gorillas, is the Sangha Tri-national. This landscape encompasses three national parks, Lobéké in Cameroon, Dzanga Ndoki in Central African Republic and Nouabalé Ndoki in the Republic of Congo. Sangha Tri-national was formalized in 2000 when the three governments agreed to cooperatively manage the landscape. Together with the surrounding buffer zones, this landscape is home to the largest populations of forest elephants and gorillas. At the Heads of State Summit, held in Brazzaville, February 2005, the three governments reached an agreement that facilitates cross border anti-poaching operations. The next major step was the establishment of a trust fund in March 2007 to ensure sustained funding for core conservation activities.

The Dja-Minkebe-Odzala Trinational landscape (TRIDOM) comprises four national parks, one faunal reserve and one proposed national park. The four national parks are the Minkebe National Park, Ivindo National Park and Mwagne National Park in Gabon, and the Odzala-Kokoua National Park in Congo, while in Cameroon there is the Dja Faunal Reserve and the proposed Boumba Bek-Nki National Park. The region is home to many species of large mammals, including forest elephants, western gorillas and chimpanzees. In 2005 a TRIDOM agreement for trans-boundary cooperation was finalized between Cameroon, Gabon and the Republic of Congo.

The Cross River Gorillas are the most endangered gorilla subspecies. The creation of the Takamanda National Park in Cameroon represents many years of work led by Wildife Conservation Society and the Ministry of Forestry and Wildlife in

Protected areas and transboundary cooperation in Congo Basin countries



Sources: UN World Database on Protected Areas, accessed March 2010; UNEP-WCMC Global List of Transboundary Protected Areas, 2007.

Community Reserves – a new approach to gorilla conservation

The 70,000 hectare Walikale Community Gorilla Reserve in eastern DRC was established by local villagers and their leaders (mwamis) in 2001 in an attempt to gain benefit for the Walkale community for their guardianship of the nearby gorilla population. According to the mwamis at the time, villagers living near the gorilla National Parks of Virunga and Kahuzi-Biega were perceived to have benefitted from ICCN (Congolese wildlife authority) and NGO projects because of their proximity to gorillas, whereas Walikale missed out by being outside of the national parks system.

The following year the newly formed Walikale Committee invited the Gorilla Organization to support their initiative to protect the area, survey the gorilla population and develop community initiatives. Agreement was reached with the committee and work began there in March 2003.

Initially the project hired and trained rangers to conduct basic surveys of the eastern lowland gorilla (Gorilla berengei graueri) population known to exist there. To date, evidence has been gathered showing there may be as many as 750 gorillas in 80 families in the immediately accessible area of the reserve. Difficulty in gaining access to the most remote areas (the reserve is 4 days walk from Pinga, the nearest town) and insecurity through constant rebel Mai-Mai and Interahamwe activity, coupled with lack of financial resources, mean that only the immediately accessible parts of the reserve have been surveyed, so the indications are that this may yet prove to be one of the richest remaining populations of eastern lowland gorillas in existence.

The project currently employs 34 rangers, who monitor the gorillas, collect GPS data to produce a base map of the area and, in association with Max Planck Institute, collect stool samples for DNA analysis at MPI in Germany. In addition, the project has, through its local partner organization PROMIDOWAL, built basic schools in two villages and provided teaching materials and salaries for the teachers. The project also supports the Walikale committee in overseeing its affairs.

From the outset the Gorilla Organization sought to engage the authorities in DRC in gaining better official recognition for the reserve, in particular through the UNESCO Man and Biosphere Reserve programme , which seemed infinitely more appropriate for the area than designation as a national park. Covering quite a relatively large area, Walikale includes existing villages and farms as well as artisanal gold, cassiterite and coltan mining. As a negotiated dialogue process, the Man and Biosphere Programme takes account of such considerations and affords environmental protection alongside protection of livelihoods through negotiated zoning. In light of the prevailing lack of security, however, the MAB application process is on hold, but when the time is right it could help bring new resources to this innovative community conservation initiative.

Jillian Miller, CEO Gorilla Organization, September 2009

Cameroon. The new park forms part of an important trans-boundary protected area with Nigeria´s Cross River National Park, safeguarding an estimated 115 gorillas – a third of the Cross River Gorilla population – along with other rare species.

The most recent trans-boundary initiative involving gorilla ranges states is the Mayombe Initiative. Angola, the Democratic Republic of Congo, and the Republic of Congo, with support from the United Nations Environment Programme signed a tri-partite declaration in 2009, confirming their commitment to establish a trans-boundary protected area, including important gorilla habitat in Cabinda and adjacent forests in the other two countries.

These initiatives follow a global trend towards more trans-boundary protected areas. In 1990 there existed 59 trans-boundary protected areas worldwide, a number which has grown to 227 by 2007 (UNEP-WCMC, 2007). A lot of the more technical experience from the earlier trans-boundary initiatives such as the Virungas is captured in the technical plans for the implementation of the CMS gorilla agreement (see p. 74).

← **Figure 19:** Trans-boundary collaboration in parks in the greater Congo Basin.

CONCLUSIONS AND RECOMMENDATIONS

Continued trans-boundary collaboration in law enforcement has proved effective in reversing the loss of the critically endangered mountain gorillas and other species in the parks, in spite of major challenges involved. Substantially upgrading and expanding such support, training and trans-boundary coordination involving also where required UN forces in controlling trans-boundary transport outside the protected areas would provide a critical option for success. This is also due to the facts that the rangers have the local knowledge and experience in working off the road system inside the parks, but limited mandate once the resources are extracted from, the protected areas. However, substantial control of the road system and particularly all border crossings is vital for reducing the pressure on the parks – as well the allocation and extraction and export of resources through the multinational companies present in the region.

In order to halt this development it is essential law enforcement, resources and training of the rangers is substantially increased. This includes direct support to international bodies dealing with law enforcement issues such as INTERPOL and expanded mandate to MONUC to assist in and hinder illegal trans-boundary transport of resources across the borders. Without halting the financing and primary motivation of the militias and the companies involved the conflict is most unlikely stop, and hence, neither will the destruction of the national parks and the gorillas. It is also essential to support law enforcement to control the bushmeat trade across the entire range of the ten gorilla states – and address the rapidly rising food security issue.

Furthermore, it is imperative that investigative bodies are truly cross-boundary in nature and involve the entire chain from investigating the complicit timber and mineral companies procuring the resources and based in among other Asia, the EU and North America, to their subsidiaries or "consultancy" firms based in Greater Congo Basin in the region, down to close coordination with both law enforcement in the parks, as well as the UN forces present. Unravelling the continued financing of the militias and corrupt officials is imperative to stabilizing the region and involves traditional law enforcement investigations and the agencies specialized in environmental crime and smuggling, including, but not limited to UNEP, INTERPOL, CITES, UNODC and WCO. Companies that obtain illegally harvested or smuggled natural resources including, but not limited to, timber, charcoal or minerals, are not only involved in issues related to corporate responsibility, transparency or ethical questions, they become complicit in transnational crime and risk investigation and prosecution

RECOMMENDATIONS

1 **Strengthen** MONUC by expanding its mandate to secure full control of border crossings, by any means necessary, with regard to the export of illegally exploited natural resources, that are financing the conflict, in full collaboration with and assisting the national customs authority to intervene and halt trans-national environmental crime, in close coordination with appropriate national and international bodies.

2 **Enhance** support for close coordination and trans-boundary collaboration among parks in DRC, Burundi, Rwanda, Tanzania, Uganda and Kenya, including coordination with MONUC, the Lusaka Agreement Task Force and relevant law enforcement agencies.

3 **Mobilize** resources for trans-boundary collaboration and coordination, including all aspects of transnational environmental crime and investigation from source to end-user outside the region – including investigations of complicit companies in recipient countries, especially but not limited to the EU, USA, People's Republlic of China and the rest of Asia – in order to monitor the origin and halt the purchase of illegally exploited and smuggled minerals and timber from the Congo Basin.

4 **Mobilize** funding for judicial training and cross-boundary training of judicial staff in national and transnational environmental crime in gorilla range states to assist in bringing successful prosecutions.

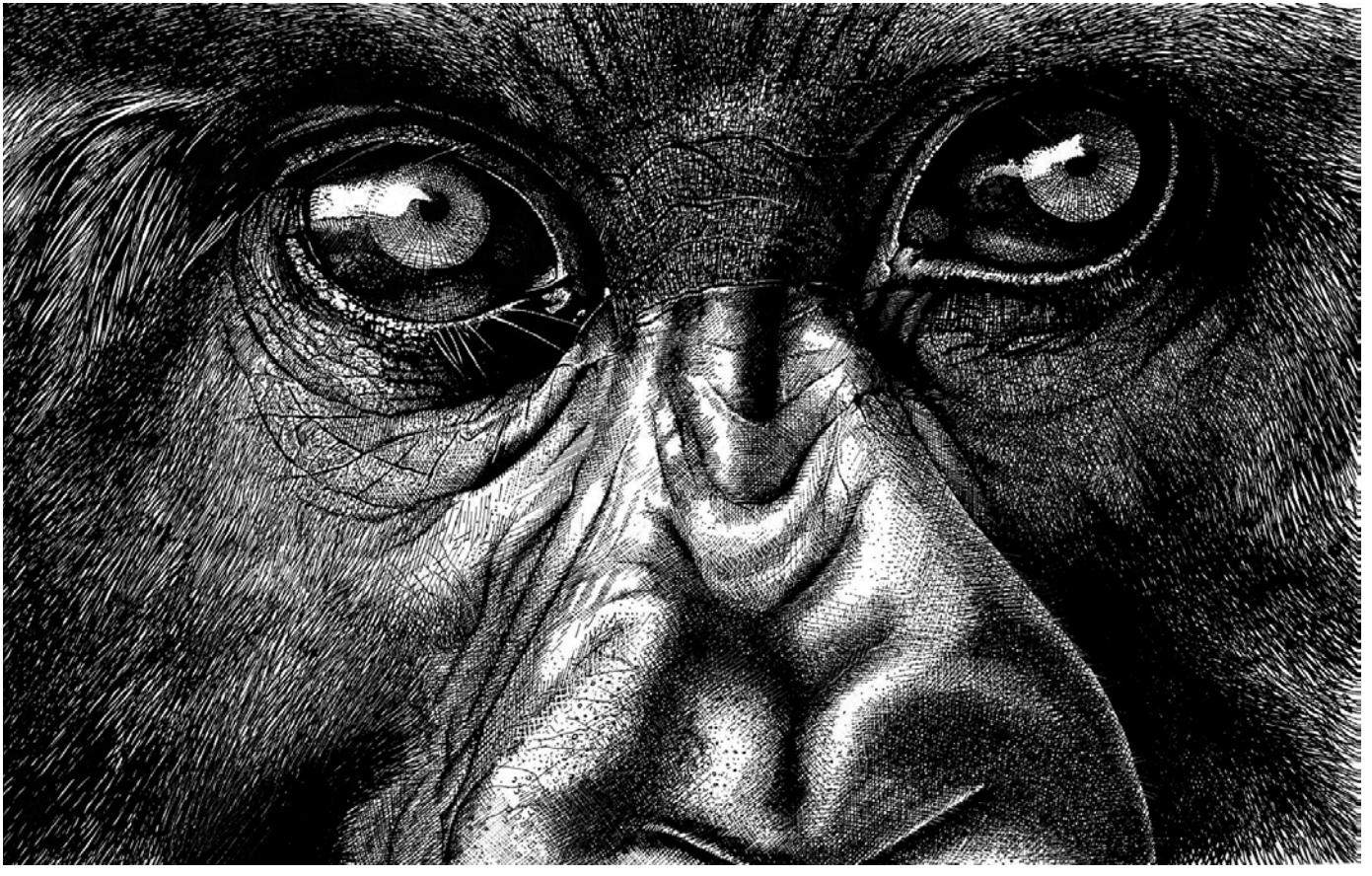
5 **Strengthen** long term training programmes in law enforcement for park rangers and wildlife managers across the region including those working outside of parks, for example in community reserves, with particular reference to anti-poaching, monitoring, scene of crime investigation and intelligence gathering.

6 **Promote** the essential role that local, national and international law enforcement and anti-corruption plays in ensuring the success of rainforest protection and climate mitigation efforts under REDD+ and source specific finance for these measures through UNEP, UNODC, LATF and INTERPOL.

7 **Establish** a fund for supporting trans-boundary investigation and collaboration on trans-national environmental crime.

8 **Strengthen** the collaboration of UNEP, UNODC, UN Department of Peace Keeping Operations (DPKO), CITES, World Customs Organization (WCO) and INTERPOL on transnational environmental crime – including illegal trade in valuable natural resources such as minerals, wood products and wildlife – by, for example, secondment of experienced officers to help investigate cases and bring about prosecutions.

9 **Strengthen** funding for gorilla research and survey data. The report, compiling some of the most recent data and information from a variety of sources, clearly highlights the lack of accurate survey data in parts of the regions within the 10 gorilla range states.



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LAYOUT

GRID-Arendal

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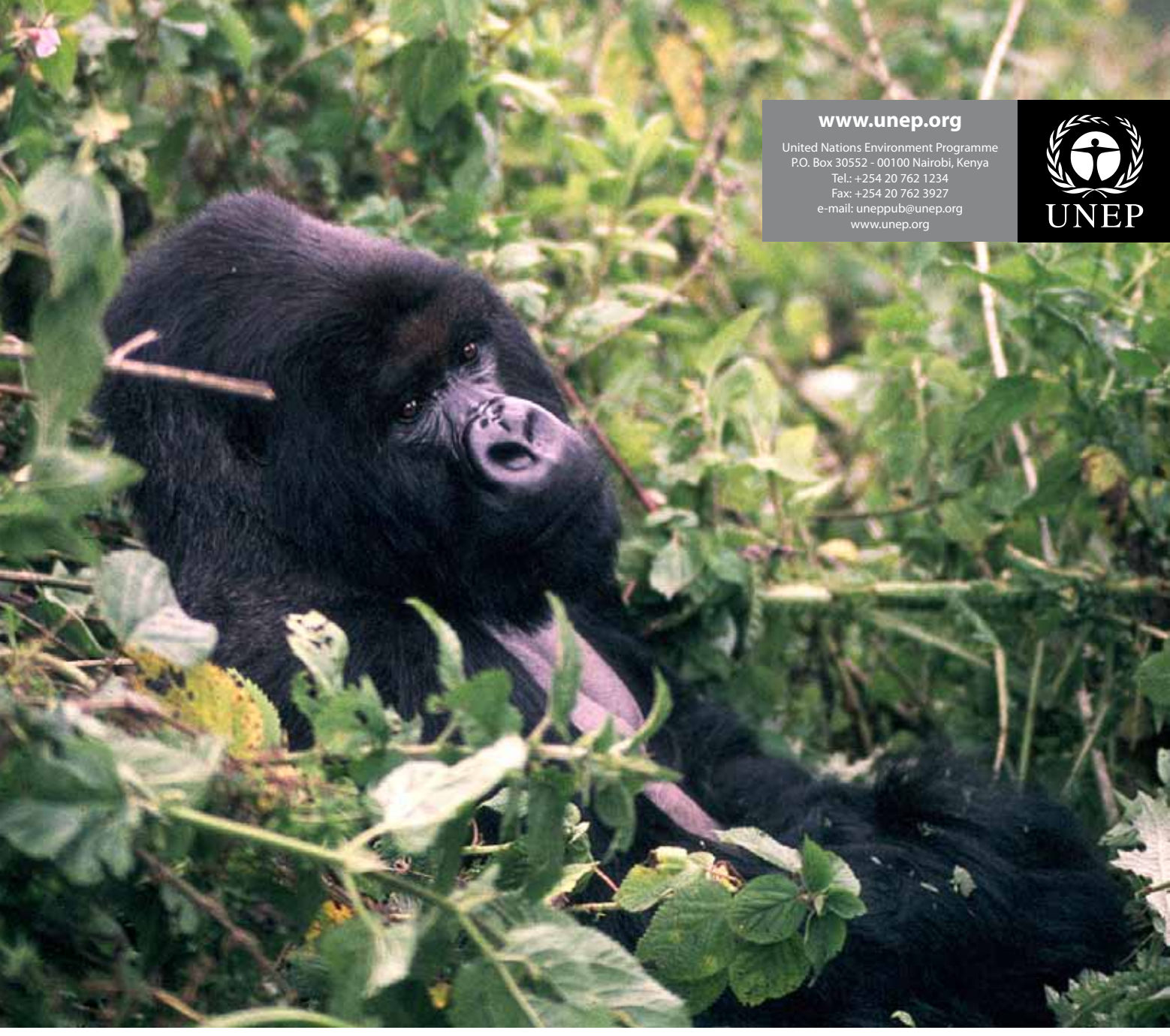

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