



Democratic Republic of Congo – Environmental and Climate Change Policy Brief

June 5, 2008

This Policy Brief was carried out as a desk study during April to June 2008 and will be used as an input to the Swedish cooperation strategy process.¹ The document aims to summarise the key environmental problems and opportunities for the Democratic Republic of Congo (DRC), related to poverty reduction and economic development and the Swedish government's thematic priority Environment and Climate which includes four focus areas; (i) climate change adaptation, (ii) energy, (iii) environment and security, and (iv) water. Information has been collected from many sources (see list of references). It is worth noting that it has been difficult to find robust environment data for DRC; where data is available variations between different sources are sometimes quite large.

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Introduction

The Democratic Republic of Congo (DRC) is a vast country; the land area is 2,267 thousand km², it has a population of some 58 million, with a high population growth (3.2%). Over 30% of the population lives in urban areas (25% only in Kinshasa), while 70% resides in rural areas. The urban annual growth rate is 3.8%. 360 ethnic groups with 219 languages reside in the country.² The DRC holds the world's largest deposits of cobalt and tantalum, as well as significant reserves of copper, gold, diamonds, and other minerals (zinc, iron, uranium, etc). DRC harbours large ecosystem diversity and rich biodiversity, consisting of the largest fauna and the second largest flora (after South Africa) on the African continent, and the second

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² EC CEP, 2005.

largest tropical forest in the world after the Amazon. Despite its abundance in natural resources, it is one of the poorest countries in the world. In 2005 the GDP per capita was USD 120 (down from USD 380 in 1960) and the HDI was 0.411 (ranked 168 of 177 countries). After years of severe hardship and a decade of armed conflicts, in which an estimated 3.8 million citizens died³ and between 1 and 3.4 million persons were internally displaced (IDPs), poverty increased and access to basic services deteriorated (for selected environmental indicators, see Appendix 1). 16 million people are suffering from hunger and an estimated 1,000 people continue to die each day from hunger, disease, and other causes of instability.⁴ DRC recently started the difficult and winding road towards a fragile peace and development, supported by international cooperating partners. Governmental institutions are extremely weak, corruption is widespread⁵ and the eastern and north-western parts of the country are still experiencing armed conflict. Besides corruption, conflicts and mismanagement, another major constraint to economic development and poverty reduction is the lack of infrastructure such as roads and electricity.

Due to its wealth in natural resources DRC is the focus of vast global attention: from commercial interests as a supplier of raw material and from conservation interests for the vast ecosystem services provided by the forest (including carbon sequestration and being a cradle for biodiversity). Nationally, DRC is interested in developing its resources, which provides a clear opportunity for stability, economic growth and poverty reduction. This, however, depends on how successfully natural resources are managed and it requires firm political will and a delicate balance between short-term gains and long-term sustainable development.

1. Key Environmental Problems and their Causes

DRC is within the tropical Congo Basin rainforest in Central Africa. Almost 60% of DRC's area is constituted by forests, while agricultural land amounts to 10%.⁶ The climate varies from hot and humid in the equatorial river basin; cooler and drier in the southern highlands; and cooler and wetter in the eastern highlands. Key environmental problems in DRC include (not in order of priority and described in detail below): land degradation, deforestation, loss of biodiversity, water pollution, and in Kinshasa air pollution. The conflicts are in themselves a source of environmental degradation. Natural hazards and disasters include seismic activities with landslides, floods and droughts. Climate change is expected to increase frequency of and vulnerability to natural disasters (floods, droughts, and heat waves), and affect land productivity and livelihood opportunities.

Land degradation: The main problem associated with land degradation in DRC is soil erosion, which affects agricultural productivity and food security. Although data is difficult to find, there is generally a strong relationship between soil erosion and population density. Although DRC is a big country, the availability of productive land is a mere 0.69 ha/capita compared to 0.90 ha/capita in Rwanda and 1.12 ha/capita in CAR.⁷ Flood sediments and land pollution constitute other problems.

Causes: Demographics (dense populations including camps for IDP), mining activities, informal logging/fuel wood collection, flooding and land-slides, shifting agriculture,

³ Freedom House, 2006 edition.

⁴ DRC PRSP, 2006; and Freedom House, 2008.

⁵ The DRC scored 1.9 in Transparency International's 2005 Corruption Perception Index, and was ranked 144 out of 159 countries .

⁶ The arable land is according to the DRC PRSP, more than 40% of the total area. However, only 10% is improved agricultural land.

⁷ UNEP, Global Environment Outlook.

conversion of land, poor land-use practices, poor management of solid and liquid waste and transports.

Deforestation:⁸ The Congolese rainforest is of great national as well as global importance. It stores carbon and slows down global climate change and provides a number of ecosystem services including climate regulation, water purification and it helps regulate one of the world's largest river basins, the Congo⁹. Currently the deforestation rate in DRC (0.3%) is lower than the global average (0.5%). However, it is argued that deforestation (logging, conversion of lands) could become a large issue when stability is ensured and infrastructure is developed. In 2002, almost half of the Congolese forests (43.5 million of a total 108 million hectares) were earmarked for industrial logging, locked up in 25-year contracts awarded before and during the war. Since then, 25.5 million hectares of non-compliant logging concessions have been cancelled (see section 4), but over 20 million hectares are still under concession. New concessions are under moratorium until the forest sector regulation is developed. Despite the fact that industrial logging has not yet taken off (due to the instability), deforestation in DRC remains a problem locally, especially around large villages and in overpopulated regions. A large majority of the population use fuel wood for cooking. *Causes:* Shifting agriculture, informal logging/fuel wood collection, artisanal mining, illegal armed groups, weak management capacity, conflicts, demographics, lack of information – and the fragile peace and weak state.

Loss of biodiversity:¹⁰ DRC is a unique reservoir of biodiversity; it ranks fifth in the world for plant and animal diversity¹¹ and it contains more natural World Heritage sites than the rest of Africa combined. The conflicts have had a devastating effect on flora and fauna, leaving only a small population of elephants, gorillas (one of the world's most endangered animals), okapis, and other endangered species. 8% of the forests in DRC are protected area. Biodiversity is linked to future forest use and management. *Causes:* Conflict, deforestation, poaching and bush meat, exploitative natural resources extraction (and as above).

Water availability and pollution: Water is abundant in large parts of DRC. There isn't any network for monitoring surface or drinking water quality why the health status of the water resources is difficult to estimate. However, due to epidemic instances of cholera (for example in Katanga during the first months of 2008) and the high mortality from diarrhoea, it can be concluded that the water quality is inadequate (see section 2.3). *Causes:* Lack of sanitation and wastewater treatment, mining, and primarily in urban areas and refugee camps inadequate solid and hazardous waste management.

Air pollution:¹² There is no data on, or control of, air pollution but it is becoming a local health risk in some urban areas. Indoor air pollution is today a significant health threat, which disproportionally affects women (see section 2.3). Old vehicles and bad roads leading to traffic congestions in urban areas, and industrial activities, cause the outdoor air pollution, while biofuels for cooking is the main source of indoor air pollution.

⁸ CIFOR et al. 2007 ; State of the Forest 2006; and DRC PRSP, 2006.

⁹ The Congo Basin is shared by Cameroon, Eq. Guinea, Gabon, CAR, Republic of Congo, and DRC.

¹⁰ CIFOR et al. 2007 ; State of the Forest 2006.

¹¹ In DRC there are 480 species of mammals (of which 29 are threatened), 565 species of birds (of which 30 are threatened), 1,000 species of fish, 350 species of reptiles, 220 species of batrachians, and over 10,000 angiosperms, of which 3,000 are endemic. DRC PRSP, 2006.

¹² EC CEP, 2005; The Economist, 15th March 2008.

Conflicts:¹³ During the 1990s, DRC faced increasing violence: looting by armed forces in 1991 and 1993, a first conflict in 1997 (involving seven foreign countries and several militias) and a second conflict between 1998 and 2003. Armed conflicts contribute to environmental degradation as well as to the breakdown of legal and institutional frameworks, which are critical to environmental management. The DRC conflicts were partly caused or fuelled by competition over high-value natural resources such as water, diamonds and gold. Diamonds contributed to funding the conflict between 1998 and 2003. Control over territory was the key factor enabling armed groups to profit from the exploitation of natural resources. Currently the links between the activities of armed groups and natural resource exploitation involves state actors, criminality, corruption and other illicit armed activity. Mining of gold is one of the main sources of income for armed groups, directly as well as from taxation, theft and abuses of small-scale miners and local communities.

The uprooting of rural populations and isolation from their traditional food sources, together with a declining economic situation, continue to be the underlying cause of food insecurity and hunger and contribute to environmental degradation. An example is the 850,000 refugees that live close to the Virunga national park. Fuel wood collection result in deforestation and soil erosion; the absence of latrines pollute waters; cholera epidemics, hydrological diseases and malnutrition are some effects. New conflicts in refugee camps over scarce natural resources are emerging.

Natural hazards and disasters: Seismic activities are common in the East Africa Rift Valley System and the Lake Kivu Basin is the most active region in this Rift (since 1997 the Lake Kivu basin is more active than usual). Earthquakes damage villages and towns in this basin, often generating landslides, injuring or killing people.¹⁴ Periodic droughts in the south and seasonal flooding in the east constitute other natural hazards. Although the frequency of natural disasters has increased during the last decade, and the affected people are vulnerable, it does not seem to constitute a serious problem in DRC.¹⁵

Climate variability and change:¹⁶ Africa is one of the most vulnerable continents to climate variability and change; a situation aggravated by multiple stresses and low adaptation capacity. The most vulnerable people in DRC are identified as the urban poor and small-scale farmers. The most vulnerable sectors are water resources and agriculture. Possibly the forests could be severely affected in the long run. Unlike many other countries water availability is not foreseen to become a serious problem for DRC due to the vast basins and the rainforest; however, there are tendencies of increased number of heat waves and intense rains, leading to flooding and soil erosion, less productive agricultural land, and destruction of roads and other infrastructure. Climate change may become a contributing factor to conflicts in the future, especially related to resource scarcity (e.g. scarcity of productive land). It might also have significant negative impacts on food security and biodiversity (endemic species could succumb and mountain species will see their habitat shrink). In addition, vector borne and waterborne diseases, such as malaria and schistosomiasis, could increase.

¹³ UNSC, 2007; Shah, 2003.

¹⁴ Reliefweb: <http://www.reliefweb.int/rw/RWB.NSF/db900SID/EDIS-7CMNT7?OpenDocument>

¹⁵ 19 natural disasters were reported in DRC between 1974 and 2003. Mean annual number of victims (people killed or affected) in DRC during this period was 114 per 100,000 (compared to Botswana: 13,528; Rwanda: 3,535; and Tanzania: 1,531 per 100,000). Guha-Sapir, et al., 2004.

¹⁶ DRC, NAPA 2006; DRC Initial Communication, 2002; Boko et al. 2007, IPCC ; and Smith et al., 2008.

The rainforest is important nationally to climate change adaptation, through climate regulation and ecosystem resilience, but also globally from a mitigation perspective. Total global deforestation account for 18% of GHG emissions (i.e. more than the entire transport sector, which contributes 14%). The deforestation rate is expected to increase significantly with increased security, improved infrastructure such as roads, and increased export of timber.

2. Effects of the environmental problems

Environmental problems lower the value of and access to productive resources, which increases vulnerability and complicates economic development and the fight against poverty. It also constitutes serious health problems.

2.1 Impacts on Poverty (vulnerability, security, opportunity)¹⁷

Vulnerability

A vast majority of the poor Congolese population depend on agriculture, forestry and Artisanal and Small scale Mining (ASM) for their livelihoods. Environmental degradation and competition (even conflict) over natural resources is hence negatively affecting their livelihood opportunities.

In DRC, more than 70% of the population lives below the poverty line; this is an extremely high figure also in comparison to other central African countries. The incidence of poverty is greater in rural (76%) than in urban areas (61%) and is highest in the provinces of Equateur, Bandundu, and Sud Kivu. Self-employed workers and apprentices are the poorest. The most vulnerable groups are the IDPs, widows, orphans and disabled, street children and child soldiers, people with chronic diseases, and indigenous groups.¹⁸

In rural areas poverty is i.a. perceived as the absence of peace, presence of soil erosion, inability to obtain agricultural inputs, difficult to access safe drinking water, high work demands on women, malnutrition, problems with accessing markets and lack of transport infrastructure. *Hence, poverty in rural areas is closely linked to: the conflicts, availability and quality of natural resources, and livelihood opportunities.* In urban areas poverty is perceived as i.a. lack of money, jobs, electricity, transportation, decent housing, drinking water and sanitation. *In urban areas, therefore, poverty is linked with job opportunities and access to services and infrastructure.*

Around 40 million (almost 70%) of the poorest Congolese depend on the forest for their food, materials, energy and medicine. Some groups, especially the Pygmies, rely on forests almost entirely. Wood and charcoal provide 80% of all domestic energy consumed in the DRC. Small scale informal loggers produce most of the timber used locally. Bush meat is a vital source of food; annual consumption is estimated at over one million tonnes. Hundreds of plants for food, condiments and medicine, are used. The social and cultural significance of forests for forest-residing people is almost immeasurable.¹⁹ *Therefore, future large-scale logging risk to hinder local peoples' access to the forest, which would bring with it livelihood- and human rights problems for poor people, such as indigenous groups.*

¹⁷ DRC, PRSP, 2006.

¹⁸ EC CEP, 2005.

¹⁹ CIFOR et al, 2007.

Agriculture is the source of main livelihood for a large share of the population (84% of the women and 62% of the men are active in the agricultural sector) and a majority are subsistence farmers. The agricultural sector suffers from low productivity²⁰ resulting in food insecurity. The many years of economic decline, conflict and displacement of populations have led to a sharp decline in accumulated assets of households. The response have largely been (i) a shift *out of* more complex activities requiring assets and infrastructure (agriculture and livestock), and (ii) a shift *into* activities that require very few assets and are risk adverse in terms of infrastructure (artisanal mining, forestry, petty commerce).²¹ 10% of the population depends on fisheries.²²

DRC has an extremely large Artisanal and Small-scale Mining (ASM) sector – larger than any country in the world – accounting for 80% of the total mining sector today.²³ The World Bank estimates that 10 million people, 16% of the population, are dependent on artisanal mining for their livelihood.²⁴ As the industrial mining sector decreased significantly during the last ten years of conflicts, the number of people involved in ASM increased significantly and is likely to continue to grow. Artisanal mining contributes to various kinds of environmental problems, including soil erosion and pollution of water due to uses of chemicals and heavy metals. Mercury, for example, is used for gold panning, which poses significant health risks to the informal miner and is dangerous to the environment.

Security

Conflicts, poverty and environmental degradation interact and negatively affect agricultural productivity, which results in increasing food insecurity and poverty and exacerbates environmental degradation in a vicious circle. Insecurity and poverty has 'pushed' people into activities with low economic risk but with high human security risks and adverse impacts on the environment as well as on fiscal revenues.

Insecurity has resulted in low agricultural productivity due to i.a. abandonment of farm operations, massive displacements of populations, tenure insecurity, and movement of agriculturalists into other less capital-intensive sectors such as ASM – all which have resulted in low investment rates. In addition there is a situation of soil erosion, low access to markets and agricultural inputs, further inhibiting productivity.

ASM is associated with a variety of human security problems including: complete lack of standards of safety, health, security and environmental protection; extortion and bribes by government officials and criminals; smuggling and clandestine exports of minerals; control of artisanal sites by militias and/or national army; and high incidence of child labour, abuse of vulnerable groups, and disease transmissions. Another security issue relates to the fact that artisanal miners are often present in sites that are to be developed by industrial companies. With increasing stability the formal mining industry is likely to grow and there will be moves towards industrial mining in some areas, notably Katanga and the Kasais, with machines replacing miners. In an environment of greater security and better governance many workers in the mining sector may seek alternative livelihoods in agriculture or in the service delivery sector. ASM families need assistance to diversify from mining to alternative livelihoods.

²⁰ For further information on low agricultural productivity, see section 2.1 Security, and section 2.2.

²¹ INICA, 2007.

²² EC CEP, 2005; CAF 2007-2011.

²³ OECD DAC Environet, Draft December, 2007.

²⁴ World Bank, 2008.

There is a risk for conflict during the transitions.²⁵ In other parts of DRC, like the Kivus, ASM may well remain the most efficient method of extraction. In these cases, supporting this type of mining will be relevant.²⁶

Opportunities

Although peace remains fragile and institutions are in shambles, DRC has a great potential for economic growth and human development. The abundant natural resources could constitute a solid basis for economic development and poverty reduction in DRC, provided there is good governance, effective regulatory frameworks, rigorous environmental and social safeguards, redistribution of wealth and the protection of rights.

Agriculture (including fishery) and ASM are sectors that could contribute to a broad poverty reduction as many of the poor segments of the Congolese society are involved. ASM also provides opportunities to improve human rights. Industrial mining and logging are economic sectors, which could grow rapidly in an atmosphere of better governance and greater security, and provide poverty reduction if adequate policies are in place. Increasing productivity and decreasing clandestine activities would have a strong beneficial impact on public finances.²⁷ Other important economic growth sectors are hydropower and, in the longer run, tourism.

In a longer term there is a large potential for innovative carbon funding for “avoided deforestation” in DRC. Project based transactions, such as Clean Development Mechanism (CDM), Joint Implementation Projects (JIP), or Voluntary programs are possible. However, the creation of these instruments is subject to a lengthy process and the projects themselves require several years to develop, why benefits would be gained only in a longer term.

2.2 Impacts on economic development

The potential for economic growth in DRC is closely linked with development of its natural resources. With population growth, the aspiration for higher standards of living and increasing demands both at national and global level, the pressure on DRC’s natural resources will inevitably increase. DRC must balance the need of making productive use of its natural resources with maintaining its asset base through development investments.

It is debated whether mineral wealth represents a ‘blessing’ or a ‘resource curse’. Paradoxically, some resource rich countries like DRC remain amongst the poorest and have the highest levels of poverty, corruption and conflict. If access to high value mineral resources can be controlled by fractions and elitist groups, the opportunities for conflict and corruption escalate. Once the mineral resources are captured, government and politics are also captured and the resources can form the basis of political patronage and the benefits for pro-poor growth are few. Even without conflicts, volatile world market prices can generate boom and bust circles that can destabilize the economy and negatively affect growth. However it has been shown that the “curse” is not inevitable, it can be addressed through good governance and sound economic policies.²⁸

After uninterrupted drops in GDP between 1991 and 2004, the growth became positive (6.6%) in 2005. The infrastructure in DRC is remarkably bad, with only some 600 km of

²⁵ DFID, 2007; and Consultative Group meeting, May 2007

²⁶ DFID, 2007.

²⁷ DFID, 2007; and OECD DAC Environet, Draft December 2007.

²⁸ OECD DAC Environet, Draft December 2007.

paved roads and about 6% of the population having access to electricity. *Lack of infrastructure is in general a constraint to economic development; electrical energy provision is generally correlated to poverty alleviation and easing of gender imbalances.* There is a huge need for investments to promote economic development, and the wealth in natural resources could constitute a solid basis for economic development and poverty reduction, if exploitation is done wisely, in an atmosphere of good governance. If not, there is a risk that economic development and exploitation of natural resources will be short-sighted and conflict with vulnerable peoples' livelihood opportunities and thus negatively affect the living standards of the poor.

Agriculture is currently the most important sector and accounts for about half of the GDP.²⁹ Agricultural exports have shrunk from 40% of the GDP in 1960 to the present 10% of GDP. The productivity of the sector was lower than other sub-Saharan African countries also prior to the conflicts, and it decreased even further during the war. There are various reasons for the low productivity, including the conflicts and insecurity, lack of access to agricultural inputs and markets, and soil erosion.

Historically, the extractive industry was the driver of the economy in DRC. In 1990 it accounted for 75% of export earnings, 25% of the country's GDP and 25% of fiscal revenues. Due to insecurity, the mining industry (with the exception of ASM) basically collapsed during the 1990s. In 2004, the mining sector recovered and in 2005 it accounted for 10% of the GDP.³⁰ However, taxes on e.g. diamonds are low (3.75% in DRC compared to 11% in Angola and 11.25% in Central African Republic) and diamonds are often undervalued, which negatively affects fiscal revenues.³¹ Furthermore, most of the trade and export of high-value minerals is currently informal, with further negative effects on the government income.

The economic importance of industrial logging in DRC is small compared to neighbouring central African countries; in DRC it contributes only to around 0.7% of GNP (compared to 10-13% in CAR). The timber sector is about to recover, and 25% of the total forest area is under concessions. The economic value of industrial timber may be below the combined value of other forest products (food, firewood, bush meat, fodder), but on the other hand it is prone to corruption, which may entice authorities to approve concessions without adequate concerns taken to regulation. This would give little or no benefits to local communities.³² Protecting the rights of indigenous peoples in forest-rich countries will be central in the ongoing debate on Reducing Emissions from Deforestation and Degradation (REDD).

The costs of climate change to DRC will heavily depend on what the world manages to achieve on the mitigation side and on the country's adaptive capacity. According to the Stern review a temperature increase of 5-6 degrees would result in costs of 5-10% of global GDP and for poor countries costs in excess of 10%. If mitigation efforts can reduce global warming to 2 degrees at 2050 costs would be substantially lower.³³ The first and best way for DRC's government to accelerate adaptation is to promote traditional development concerns such as good governance, education and capacity building successfully. A significant increase in the resources dedicated to sustainable development will be needed, since climate impacts

²⁹ The sources vary between 43% to 63%; the PRSP, 2006 states that agriculture contributes to 63% of the GDP, while, according to the CAF 2007-2011, the agricultural sector accounts for 43% of the GDP.

³⁰ André-Dumont, 2007; Yager, 2005.

³¹ Diamond exports in 2005 amounted to USD 870 million in 2005 (Global Witness, 2006b).

³² CIFOR et al, 2007; CAF 2007-2011.

³³ Stern review, 2007.

are raising the costs of economic development and environmental protection efforts that are already under-resourced.

2.3 Impacts on Public Health

Poor environmental quality enhances poverty, causes diseases, affects living standards, food security and livelihood opportunities negatively. Access to water of adequate quality and quantity is of utmost importance for improvement of public health, reducing poverty, and achieving many of the MDGs.

Most development indicators are low in DRC and poverty has increased during the years of conflicts. Access to safe drinking water and sanitation and good nutrition is crucial for a healthy life, and the health status of the population in DRC is alarming. The population is heavily affected by poverty-related, water borne and vector borne diseases such as tuberculosis, diarrhoea, and malaria.³⁴ According to the UN, 46% of the population has access to improved water sources and 30% of the population has access to improved sanitation (the PRSP states that 22% has access to drinking water while 17% of the households have access to hygienic latrines).³⁵ Kinshasa, with 15 million inhabitants, lacks adequate wastewater treatment.

According to WHO estimates, there are more than 150 000 annual deaths in DRC due to: diarrhoea caused by polluted water/bad hygiene (67%)³⁶, indoor air pollution (31%) and outdoor air pollution (2%), see table below. The diarrhoea Disability Adjusted Life Year (DALY)³⁷ is exceptionally high in DRC, only exceeded by Angola, Niger and Sierra Leone. The table shows figures for Burundi, Ethiopia and Mozambique for comparison.

WHO estimates	Water Sanitation & Hygiene		Indoor air pollution		Outdoor air pollution	
Country	Diarrhoea deaths/year	Diarrhoea DALYs/1000 capita per year	Deaths/year	DALYs/1000 capita per year	Deaths/year	DALYs/1000 capita per year
Burundi	8 200	41	6 600	32	200	0,5
DRC	100 300	64	47 100	30	2 900	0,9
Ethiopia	57 000	28	56 700	26	2 000	0.4
Mozambique	26 900	47	9 700	16	900	0,6

Source: WHO³⁸

³⁴ DRC is one of the countries in the world most affected by tuberculosis; 97% of the Congolese population is exposed to endemic malaria and an estimated 150,000 to 250,000 children die from malaria each year; and 4.2 million children under age of 5 suffer from malnutrition (DRC PRSP, 2006)

³⁵ HDR 2007/2008; and DRC PRSP 2006.

³⁶ This figure only includes diarrhoeal diseases. Other water related diseases e.g. river blindness are not included in the estimates. Hence, the total number of deaths related to hygiene, water and sanitation is higher.

³⁷ The Disability Adjusted Life Year or DALY is a health gap measure that extends the concept of potential years of life lost due to premature death (PYLL) to include equivalent years of 'healthy' life lost by virtue of being in states of poor health or disability.

³⁸ http://www.who.int/quantifying_ehimpacts/countryprofilesebd.xls

3. What are key actors doing to manage the environmental problems?

3.1 National and sector strategies

The poverty reduction and growth strategy paper (PRSP) in DRC was developed in a consultative manner, evolving from district to provincial to national levels. The vision of the PRSP is a 2-digit GDP growth rate, equitable distribution of wealth, and achievement of the MDGs by 2015. The strategy is based on five pillars (1. Good governance and consolidating peace; 2. Economic stability and growth; 3. Improving access to social services and reducing vulnerability; 4. Combating HIV/AIDS; 5. Supporting communities). Under Pillar 2, the identified growth sectors include rural development/agriculture, forestry, transportation, mining, and electricity. Under Pillar 3, improvement of water and sanitation is highlighted as one of the top priorities. Environment and climate change adaptation are not explicitly mainstreamed throughout the PRSP, but it is mentioned in some of the sector documents.

Environmental protection is referred to separately in the PRSP under rural development/agriculture and relates to biodiversity conservation, forestry, and the convention on climate change. The budget allocation for the Ministry of Environment was a low 0.9% in 2006, but will according to the PRSP increase to 2.3% in 2008, which is in accordance with the World Bank recommended spending on the environment for developing countries (between 1.4% and 2.5%). The increase will, however, mostly be used for solid and liquid waste management.

The agricultural sector is conceived as important for pro-poor growth and a sector plan has been developed in consultation with cooperating partners. The objective is to restore and exceed the pre-crisis production level. Priority actions include seed-centres, modern crop methods, revitalising the livestock sector, and diversifying production and improving yields. The PRSP foresees a transition from subsistence farming to cash-crop production e.g. coffee, tea, cotton, potatoes, and fruit.

Most of the legal instruments that should govern forestry are still incomplete or not yet adopted.³⁹ However, although DRC does not yet have a forest policy formally adopted by the parliament, two steps have been made in this direction: the Forest Code and the Priority Agenda. The 2002 Forest Code sets the framework for more equitable and balanced forest management including protection of the forest and indigenous peoples' interests. The Priority Agenda contains a set of corrective measures intended to clean up the legacy of the past and to regulate the relaunch of the timber sector. It emphasises the application of laws and contracts, transparency as a means of eradicating corruption, and accountability.⁴⁰ The DRC Government stresses its willingness to protect the rainforest and the interests of local communities.⁴¹

The mining industry is mainly regulated through the new Mining Code (2002) and its ancillary Mining Regulation (2003). The Directorate of Mines is in charge of regulations concerning environmental protection. Exploitation permits are subject to prior approval of an Environmental Impact Study (EIS) and an Environmental Management Plan (albeit not for small-scale exploitation permits, which are only subject to codes of conduct).⁴²

³⁹ Counsell, 2006.

⁴⁰ CIFOR et al. 2007.

⁴¹ World Bank press release No. 2008/XXX/AFRVP

⁴² André-Dumont, 2007.

There is a need for new legislation on water as such is lacking today. According to the PRSP a Water and Sanitation Code will be drafted, based on principles for Integrated Water Resources Management. Reconstruction of the water and sanitation sector constitutes one of the highest priorities.

The effects of climate variation and change are associated with uncertainty. DRC has submitted one national communication and a NAPA to UNFCCC, where vulnerability, mitigation and adaptation measures are described. The response to climate change will overlap heavily with traditional development concerns. *Priority adaptation actions* will be focused on i.a. electrification (urban and rural), improving agricultural productivity, and water resources management.⁴³ The PRSP highlights the need of preventing natural disasters, which mainly are associated with droughts, floods and landslides, all which could be exacerbated by climate change (see section 1).

3.2 International cooperating partners and other actors

The Country Assistance Framework (CAF) is an effort to improve donor harmonisation and aid effectiveness in DRC. Currently, 17 multilateral and bilateral donors are participating, and they have committed themselves to incorporate the joint diagnosis, coordinated programming, and common results matrix into their respective donor strategy for DRC. The CAF is based on the PRSP. At a Consultative Partner's meeting in Paris in November 2007, donors pledged USD 4 billion to support DRC's PRSP implementation 2008-2010, or approximately USD 1.3 billion per year. Donors underlined the need for DRC to undertake key economic and structural reforms that will enable economic growth and allow the IMF to provide support through a three-year arrangement under the Poverty Reduction Growth Facility (PRGF). The DRC government will take necessary actions to attain the Heavily Indebted Poor Countries (HIPC) initiative completion point by end of 2008.⁴⁴

The DRC Government and the donors agree that agriculture is one of the most important and straightforward sectors for poverty reduction, as the majority of the Congolese active in the sector tend to be very poor. The CAF suggests that agricultural growth will result from enhanced access to urban markets, demographic growth of the rural population, and productivity improvements. Major constraints are identified as insecurity, poor transport infrastructure, and sector decapitalisation (loss of pre-war assets) and lack of inputs. According to the CAF the traditional land tenure arrangements, similar across the country, seem to work quite well. WB and the AfDB are active in the agriculture sector.

A variety of donors, NGOs and civil society groups are involved in the forest sector, including the WB, EC, DFID, Belgium, WRI, IUCN, Greenpeace and WWF. The EU is interested in Voluntary Partnership Agreements (VPA), which has the focus to licence legal timber production. For this, a clear and complete legal framework should be in place. To make the VPA work it must be well-coordinated and participatory (with a special attention on customary rights), and the international community will need to carefully assess whether the VPA process should be aimed at facilitating international trade in DRC or focus on stimulating pro-poor policy changes – such as widespread adoption of community forestry – that might give greater potential for maximising the development potential of DRC's

⁴³ Initial communication to UNFCCC, 2002; and National Adaptation Plan of Action (NAPA), 2006.

⁴⁴ World Bank, News Release No. 2008/XXX/AFRVP.

forests.⁴⁵ At the CG Paris meeting, DRC made a strong plea to the international community to set up and pilot innovative instruments to pay for carbon and other environmental services provided by the Congolese forests. A consensus emerged at on the need to start funding and implementing the proposed new instruments on a pilot basis as soon as possible. The WB has set aside USD 250 million for preventing deforestation in Brazil, DRC and Indonesia.

The mining sectors are supported by e.g. the WB, DFID, Belgium, and Denmark (DFID is proposing that the WB will be the lead donor in this sector). WB-support is focused on increasing the contribution of large and small-scale mining to economic development, including increasing fiscal receipts, improving governance, building capacity of supervisory institutions, improving conditions for artisanal and small-scale miners, and improving environmental and social conditions in the mining sector. WB, DFID, Belgium, and Denmark are amongst the donors supporting the Community And Small-scale Mining (CASM) initiative.

Improving water and sanitation is deemed to be vital for poverty reduction and developing other economic sectors. The CAF states that rural water programmes should integrate water, sanitation, and health promotion activities. The water and sanitation sector is supported by bilateral (i.a. Belgium and France) and multilateral (WB, UNICEF, EC, AfDB) donors. Support to integrated water resources management is not stated.

The UN is active in both peacekeeping and institutional development. GEF/UNDP supports DRC to fulfil its obligations to UNFCCC in the field of climate change. They have also assisted DRC to perform a Capacity Needs Self-Assessment for Global Environmental Management (2007), with focus on international environmental conventions.⁴⁶

In addition to international donor agencies, foreign companies show vast interest in DRC: Chinese state-owned firms will build or refurbish various railways, roads, and mines around the country at a cost of USD 12 billion, in exchange for the right to mine copper ore of an equivalent value. (This sum is more than three times DRC's annual national budget and roughly ten times the annual aid promised by the consultative group of Western donors until 2010). DRC is positive towards Chinese investments, as there are few 'strings attached' to the cooperation. Also private investments are being prepared; the American mining company Freeport McMoRan has started construction of a USD 650 million copper mine in Katanga. Katanga mining (Toronto) secured a USD 150 million loan for development of another copper mine. BHP Billeton prepares construction of an aluminium smelter at a cost of roughly USD 3 billion. The western companies are cautious, however, due to the bad investment climate in the country including a "totally dysfunctional legal system, a hugely cumbersome bureaucracy and a near-total lack of physical infrastructure."⁴⁷

4. Implementation and monitoring of responses to environmental problems and opportunities

In general, the institutional capacity at national and local level is very weak in DRC. For example, related to climate change adaptation capacity, a reasonably accurate estimation is the HDI, which in DRC is amongst the lowest in the world.

⁴⁵ Counsell, 2006

⁴⁶ DRC and UNDP, 2007.

⁴⁷ Economist, 13th March 2008.

DRC has recently started to develop legislation and institutions, but implementation and enforcement remains a huge challenge. There is presently no monitoring of environmental quality (water, air, land); neither are there any mechanisms for monitoring implementation or enforcement of legislation. Effective environmental protection and climate change adaptation calls for the mainstreaming into a wide range of planning and management processes, at the same time the crosscutting nature makes implementation particularly difficult. There is a need for robust data and ability to analyse it; political will and leverage to influence sector ministries' plans; as well as resources and capacity to support sector ministries in their environmental and climate change mainstreaming efforts.

Forest sector:⁴⁸ Prior to 2002, almost half of the total forest area was subject to forest concessions, concluded without consultation with local people or the organisations that support them. There was little space left for other uses and it carried the seeds of new conflicts. Since then, the DRC authorities have started a legal review of the existing forest concessions, and new concessions are on hold.⁴⁹ Half of the concessions (25% of forest area) have been cancelled due to non-compliance with the Forest Code. Forest rental fees are gradually increased, unjustified charges (prone to fraud) are gradually being removed, and a legal review of all remaining concessions with the assistance of an independent observer is launched. Certification of forest has begun but is still only in its initial phase. Implementation of the Forest Code is important to the future of DRC's forest and people, but the government's ability to enforce it is low and implementation remains a challenge. Top-level political will is crucial but it appears fluctuant in the line ministry, which reflects the weight of the interests involved.⁵⁰

Furthermore, local forest management practices are disconnected from the policies designed in Kinshasa. Reinforcement at local levels is crucial and urgent. It is necessary to address the strategic questions concerning the balance between various forest users. In addition, there is a risk for increased pressure on the forests when large-scale bio fuel production plans are being implemented. Environmental and social impacts and economic benefits should be taken into account in order to take informed decisions related to land use change.

Mining sector: As high value natural resources are prone to conflict and corruption, increasing transparency and accountability, participation and empowerment should be prioritised. According to the UN Security Council, problems associated with the conflict and exploitation of minerals are best addressed by promoting law-abiding, responsible industries and responsible government oversight with capacity to secure investments, and transparency. There is an urgent need for interventions against all forms of illegal mineral exploitation, in order to encourage and promote the law-abiding extractive industries.⁵¹

Since DRC started participating in the Kimberley Process⁵² 2003, the official diamond exports have increased significantly. However, DRC still lacks the internal controls to ensure

⁴⁸ Counsell, 2006; and CIFOR et al, 2007.

⁴⁹ The World Bank's main advice to the DRC Government is *not* to expand industrial logging, and *not* to allocate any new concessions until satisfactory standards of governance and management are achieved in existing concessions and the country is able to enforce laws (WB DRC FAQ, 2008)

⁵⁰ CIFOR et al, 2007, page xiv.

⁵¹ UNSC, 2007

⁵² The Kimberley Process is an international diamond certification scheme designed to eliminate the trade in conflict diamonds.

that it can track all diamonds – a vital component of the KP.⁵³ The reforms have been slow and have lacked the strong political will necessary to see them through. The Service d'Assistance et d'Encadrement du Small Scale Mining (SAESSCAN) is established to track the diamond flows, but it is barely operational. The majority of recommendations made in October 2004 by the Kimberley Process review visit was not yet implemented 2006.⁵⁴ DRC has also expressed its support to the Extractive Industries' Transparency Initiative, EITI. Implementation is important for increased transparency and fight against corruption.

More than 80% of the mining sector is currently ASM. However, the Mining Code has had little impact on improving the livelihoods of artisanal miners, and very few holds mining cards (e.g. a written test must be passed to receive a mining card). Clauses for protection of artisanal miners are not enforced by the government, as industrial mining contracts are much more lucrative.⁵⁵

Infrastructure: New and highly needed transportation infrastructure is planned. All new infrastructures, e.g. roads, will bring indirect environmental impacts and external effects, such as accelerated deforestation. In order to plan infrastructure wisely and take informed decisions, Strategic Environmental Assessments (SEA) and Environmental Impact Assessments (EIA) are good tools. The capacity of Ministry of Environment to enforce and monitor, and of sector ministries to perform either SEA or EIA is inadequate.

Conflict: The lack of substantial benefits from natural resources exploitation and trade to the grassroots level is identified as a key risk factor for renewed conflict. The future potential of transforming NR exploitation and trade into revenue generation capable of bringing significant numbers of people out of poverty can only be realised if redistribution mechanisms are improved and producers at the bottom of the value chain receive a better share of the final sales price of their goods.⁵⁶ As there is a regional dimension to the conflicts, perhaps also negotiating with neighbours on how to cooperate in a way where value added from minerals is shared would be a way forward.

DRC is a party to the international environmental conventions related to Biodiversity, Climate Change-Kyoto Protocol, Desertification, Endangered Species, Hazardous Wastes, Law of the Sea, Marine Dumping, Ozone Layer Protection, Tropical Timber 83, Tropical Timber 94, and Wetlands.⁵⁷

5. What are the implications for Swedish Development Cooperation?

5.1 Conclusions

If the natural resources in DRC were well managed, the country would be better off than most other countries. Unfortunately, DRC is an example of where the natural resources have been more of a 'curse' than a 'blessing' due to political and economic mismanagement and poor governance. This, however, is not a given but can be changed with political will and implementation of institutional reforms. DRC is also an example of how close the links are between unsustainable exploitation of natural resources, conflicts, poverty, and human rights

⁵³ Congo was removed from the KP in July 2004 because it was exporting diamonds mined in the DRC.

⁵⁴ Global Witness, 2006b.

⁵⁵ INICA, 2007.

⁵⁶ INICA, 2007.

⁵⁷ CIA World Factbook

abuses. Climate variation and change are likely to exacerbate the multiple stresses and increase poverty.

The challenges could, however, be turned into opportunities; there is a high potential for economic growth and poverty reduction. As the important economic growth sectors are related to natural resources, a sustainable and equitable use of the resources is a prerequisite for long-term development. The possibility to utilise natural resources for economic development is related to the overall stability and security in the country, why *improving governance* in general is likely to benefit also natural resources management. On the other hand, inadequate natural resources management complicates economic recovery.

Even when adequate legislation and regulations are in place, there is a risk that the pressure to quickly start exploitation (e.g. mining and forest concessions, or bio-fuel production) is greater than the capacity of the institutions to meet this demand. The vacuum that would follow is a *breeding ground for corruption*, abuse of local communities, and unsustainable exploitation of natural resources. The *tensions between economic development and environmental protection could be facilitated* with support from donors. Furthermore, donors could actively promote increased stakeholder participation and dialogue in all procedures and plans.

DRC is subject to great international interest due to its wealth in natural resources, especially high-value minerals and the rain forests. This interest is a challenge but also an opportunity as DRC could benefit from international knowledge and financial assistance. The on-going *institutional reforms* in DRC, supported by the international cooperating partners, are vital for improving governance and sector performances and pursuing stability and sustainable and equitable development.

5.2 Issues for Sida to consider

- The agricultural sector is conceived as the most straightforward sector for broad-based poverty reduction. Support to this sector would affect a large proportion of the rural poor, *enable increased productivity* and food security, as well as *improved land management*. *Access to markets and credits* are areas that could be of interest for Sida. As insecurity is a major constraint to productivity, support could also be focused on assessing whether the land tenure policy is adequately covering the potential conflicts for returning displaced persons. If this is not the case support could be given to adjusting the land tenure policy with this in mind.
- Support to the artisanal miners' social, political and economic rights (including land tenure) could provide *improved living standards* for poor women and men, *prevent conflicts* over land, and *reduce environmental degradation*. Community And Small-scale Mining (CASM) is a global program active in DRC, which could provide an entry point.
- Poor water quality results in grave health consequences for vulnerable groups (especially children, elderly, and people living with HIV/AIDS), which reduces their ability to *participate in all (re)productive areas of life*. Hence, support to Integrated Water Resources Management - especially improving access to safe drinking water and sanitation – is of *strategic importance*. Support could be done through investments, support to on-going sector programmes, or capacity building (institutional, organisational, individual).

- The timber industry has the potential to bring benefits to local people and to the economy, but would require *adequate policies that are properly enforced*. Support to the forestry sector could be to further *develop monitoring and enforcement capacity*, for ensuring *transparent and properly distributed concessions* and that environmental- and rights concerns are catered for. It would also be important to support assessment of dynamic effects on the forests due to new infrastructure, one example being the relationship between new road and increased logging. Strategic Environmental Assessment could be a useful tool in this respect.
- There is a large potential for “avoided deforestation” in DRC. Project based transactions, such as Clean Development Mechanism (CDM), Joint Implementation Projects (JIP), or Voluntary programs are possible. However, the creation of these instruments is subject to a lengthy process of registration and certification by the UN, and the projects themselves require several years to develop, why benefits would be gained only in a longer term. Opportunities to start develop now would be to *assist DRC in fulfilling the requirements for participation* (including a base-line and the concept of additionality). Examples of entry points include a fund mobilised by the WB (to demonstrate projects that sequester or conserve carbon in forest and agro-ecosystems in developing countries), COMIFAC, DFID or AfDB. Here, a careful pro-poor approach should be taken.
- Sustainable, equitable and rational extraction of minerals could become a key driver for economic growth and poverty reduction in DRC in an atmosphere of good governance and political will. Today, mining is uncontrolled – even lawless in parts – and the local population do not benefit from the inherent wealth. With growing private investments the pressure on the government to issue permits, enter into contracts, etc will increase. Sida could consider supporting the implementation of Corporate Social Responsible processes such as the KP and the EITI. The implementation must be supported *by reforms to improve governance over natural resources, and revenue transparency*.
- Sustainable, equitable and efficient natural resources management (including climate change adaptation) is strategically important for economic development and poverty reduction. However, there is a conflict of interest between economic development and environmental protection in the short term. Sida could consider supporting DRC to manage that tension, through institutional support to the Ministry of Environment at national, provincial and local levels. In the longer term, *strategic environmental assessments (SEA) and environmental impact assessments (EIA)*,⁵⁸ highlighted in the Paris Declaration for Aid Effectiveness, could be important decision-making tools for the government and provide valuable information to other stakeholders such as civil society, investors and donors, and promote transparency, accountability and sustainability.
- A peaceful development in DRC has strong regional implications, why it could be beneficial to promote participation in regional processes, such as AU’s peer review mechanism and transboundary integrated land and water resources management.

⁵⁸ See also Sida’s rule on Environmental Assessment (EA), where EA is the method applied by Sida to achieve environmental integration into Swedish development cooperation. It is also the method that, according to the Paris agenda, shall be used internationally to achieve environmental integration into development cooperation. An environmental assessment can help identify relevant questions on the environmental sustainability of the intervention, at an early stage of the planning process. If used correctly, it is also an effective instrument to follow up and evaluate the results.

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Appendix 1. Selected environmental indicators for DRC

Selected Environmental Indicators	DRC	Sub-Saharan Africa group	Low income group	Sweden
Indicator				
Urban population (% of total)	32.1	35.2	30.0	84.2
Urban population growth (average annual %, 1990–2005)	3.8	4.2	3.1	0.4
Population growth (average annual %, 1990–2005)	2.8	2.5	2.0	0.4
Population density, rural (people/sq.km of arable land)	557	373	589	53
Agricultural land (% of land area)	10	44	45	8
Forest area (% of land)	58.9	26.5	23.9	67.1
Annual deforestation (% change 1990-2005)	0.3	0.6	0.5	0.0
Irrigated land (% of cropland)	0.1	3.6	24.3	4.3
Fertilizer consumption (100 grams/ha of arable land)	16	139	668	1,000
Nationally protected areas (% of total land area)	8.6	11.3	10.0	10.9
Energy use per capita (kg oil equiv)	296	703	513	5,998
CO ₂ emissions per capita (metric tons)	0.0	0.8	0.8	5.9
Internal freshwater resources per capita (cu.m)	15,639	5,229	3,149	18,949
Access to improved water source (% of total population)	46	56	75	100
Access to improved sanitation (% of total population)	30	37	38	100
Under-five mortality rate (per 1,000 live births)	205	163	114	4

Source: World Bank, 2007, *The Little Green Data Book*

Appendix 2: Key issues - Democratic Republic of Congo

March 25, 2008

Developmental challenges

- After years of conflict and political and economic mismanagement, DRC is one of the poorest countries in the world, in terms of GDP per capita as well as HDI. Governmental institutions are extremely weak, corruption is widespread, the eastern and north-western parts of the country are still experiencing armed conflict (often related to access to natural resources and control over territory) and the economy was virtually collapsed during 1990's.
- DRC holds at its disposal vast natural resources (water, high-value minerals, forest, and mega-biodiversity), which potentially could contribute to a much needed economic growth and poverty reduction, but that also needs protection. Population growth, the aspiration for higher standards of living and increasing demands at the global level will inevitably increase the pressures on DRC's natural resources.
- Due to its wealth in natural resources DRC is the focus of vast global attention: from commercial interests as a supplier of raw material and from conservation interests as a cradle for biodiversity as well as for its impact on climate change. Nationally, DRC is interested in developing its resources, which provides a clear opportunity for stability, economic growth and poverty reduction. This, however, depends on how successfully current reforms are implemented and it requires firm political will and a delicate balance between short-term gains and long-term sustainable development.
- There are strong links between poverty, security, human rights, economic development and natural resources in DRC. Poor environmental quality and poor natural resources management cause unhealth, low productivity, and complicates economic recovery.

Key Environmental Problems and their Causes

- The most important environmental problems are:
 - Pollution of water (also locally of indoor and outdoor air, and land).
 - Soil erosion and land degradation.
 - Loss of biodiversity: only a small population of elephants, gorillas, okapis, and other endangered species remain.
 - The deforestation rate in DRC is 0.3% and 4-500 000 hectares of forest are degraded annually. Industrial logging has not yet taken off, but there are concessions in place for about 25% of the total forest area.
 - The most vulnerable sectors to climate variability and change in DRC are water resources and agriculture, and the forests could possibly be severely affected in the long run. The most vulnerable groups are small-scale farmers and the urban poor.
- The environmental problems are mainly caused by mining, informal logging, shifting agriculture, poaching and bush meat, bad land-use practices, and lack of sewage and wastewater treatment facilities. The conflicts have resulted in a situation of unsustainable and lawless extraction of minerals including theft and abuse of communities. The uprooting of rural populations and isolation from their traditional food sources together with political and economic mismanagement, contribute to environmental degradation.

Links between environmental problems and poverty and economic development

- *Poor environmental quality enhances poverty, causes diseases, affects living standards and livelihood opportunities negatively*
 - Some 70% of the Congolese population live below the poverty line, which is a very high figure compared to other central African countries. The DRC health situation is bad with extremely high number of deaths due to diarrhoea, and high number of deaths due to indoor pollution.
 - A large majority of poor men and women depend on natural resources for their livelihoods: 70% are dependent on forests and agriculture, 10% on fisheries. Some indigenous groups are relying on the forest almost entirely; for food, energy, materials and medicine.

- *Inadequate natural resources management complicates economic recovery*
 - The agricultural sector is the largest sector contributing to 63% of the GDP. Agricultural exports contribute today with 10% of GDP, compared with 40% in 1960. Productivity is low due to i.a. soil erosion and lack of access to agricultural inputs and markets. Poor households have responded to the insecurity in DRC by shifting from complex activities requiring assets, such as agriculture and livestock, into activities that require very few assets, such as artisanal mining and forestry.
 - Although DRC houses the second largest tropical forest in the world, the contribution of the timber sector to the country's GDP is a mere 0.7% (compared to 11-13% in CAR).
 - Industrial mining, which used to contribute to 75% of export earnings, collapsed during the 1990s but is starting to recover. Most of the mineral trade and export is informal. Artisanal mining is very large compared to other countries, accounting for 80% of the mining sector, and associated with corruption, conflict, human rights abuses, environmental degradation and regional instability. Taxes on diamond exports are low (3.75% in DRC compared to 11% in Angola), omitting significant fiscal revenues.
 - Energy: DRC has a great hydropower potential but today only 2.5% of the potential is installed.

- Global interest: international actors are interested in DRC's natural resources. One example is that the Chinese will build or refurbish various railways, roads, and mines around the country at a cost of USD 12 billion, in exchange for the right to mine copper ore of an equivalent value. New - highly needed - infrastructure is likely to lead to increased deforestation if not properly planned. The extractive industry (mining and forest concessions) needs to be regulated and monitored.

Risks

- If the political will to implement institutional reforms is not there the current opportunity - provided by the fragile peace - could be another lost opportunity.

- Even if adequate legislation and regulations are in place, there is a risk that the pressure to quickly start exploitation (e.g. mining and forest concessions, or bio-fuel production) is greater than the capacity of the institutions to meet this demand. The vacuum that would follow is a breeding ground for corruption, abuse of local communities, and unsustainable exploitation of natural resources.

- If communities do not find that they gain from the exploitation of the country's wealth there is a risk for new unrest and conflicts.
- Risks, associated with climate variability and change, include increased frequency of heat waves; intense rains leading to flooding and soil erosion, destruction of roads and other infrastructure; less productive agricultural land; and loss of biodiversity.

Opportunities

- The abundant natural resources could constitute a solid base for economic development and poverty reduction, provided an atmosphere of good governance, effective regulatory frameworks, rigorous but realistic environmental and social safeguard, and greater security. This would have a strong beneficial impact on public finance and, with adequate redistribution mechanisms in place, on poverty reduction.
- Investments in the quality of water, lands and forests may increase security, which is likely to contribute to improved agricultural productivity and land management.
- Climate change responses will overlap heavily with traditional development concerns and provide an opportunity to increase efficiency of the developmental efforts.

Key actors and intuitional capacity

- In 2006 the DRC government published a PRSP, which emphasises the role of i.a. agriculture, mining, and forestry sectors to economic growth.
- Water and sanitation is singled out as one of the highest priorities in the PRSP.
- Institutional capacity for natural resources management and climate change adaptation is assessed to be very weak in general. For the DRC government to be able to adequately balance short-term gains with long-term development there is an overall need to strengthen institutions, increase transparency, accountability and participation as well as, importantly, increase monitoring and enforcement capacity to secure environmental concerns.
- Implementation, monitoring and evaluation plans for the poverty reduction strategy have not yet been defined (April 2007).

Issues for Sida to consider

Sustainable, equitable and efficient natural resources management and climate change adaptation measures are strategically important for economic development and poverty reduction, which *calls for mainstreaming of environment and climate concerns into a wide range of planning and management processes*. Strategic environmental assessments (SEA) and environmental impact assessments (EIA) - with integrated analyses of costs, benefits and alternative uses - could be important decision-making tools for the government and provide valuable information to other stakeholders such as civil society, investors and donors.

Sida could consider the following:

- Support to the agricultural sector would enable increased productivity and food security, as well as improved land management. Support could be i.a. through sector plans and

programs, or through a sound land tenure policy.

- Poor water quality results in grave health consequences for vulnerable groups (especially children, elderly, and people living with HIV/AIDS), which reduces their ability to participate in all (re)productive areas of life. Hence, support to Integrated Water Resources Management - especially improving access to safe drinking water and sanitation – is of strategic importance. Support could be done through investments, support to sector programmes, or capacity building (institutional, organisational, individual).
- Support to good governance and transparency, especially in the mining sectors, is important for stability, economic growth, and improved livelihood opportunities. In some parts of DRC, there will be moves towards industrial mining in some parts of DRC (e.g. Katanga and the Kasais). Continued participation in international processes (such as KP and EITE) would provide opportunities for increased transparency, accountability and increased fiscal revenues.

Artisanal mining may well remain the most efficient method of extraction in the Kivus. Support to the artisanal miners' social, political and economic rights could provide improved living standards for poor women and men.

- The timber industry has the potential to bring benefits to local people and to the economy, but would require adequate policies that are properly enforced. The economic value of industrial timber may be below that of other forest products, but on the other hand it is prone to corruption. Support to the forestry sector could be to ensure transparent and properly distributed concessions and that environmental- and rights concerns are properly catered for.
- The capacity and strength of the environmental monitoring and enforcement authority is crucial for sustainable natural resources management. Sida could consider (long-term) institutional support to e.g. the Ministry of Environment, to build up necessary capacities on national, provincial and local levels.
- A peaceful development in DRC has strong regional implications, why it could be beneficial to support also regional processes, such as AU's peer review mechanism and transboundary integrated land and water resources management.