

## ANNEX 2. SUMMARY ENVIRONMENTAL ANALYSIS BURUNDI STRATEGY STATEMENT

### 1. Approach to Environmental Analysis

Foreign Assistance Act (FAA) Sections 117, 118 and 119 requires that assistance take fully into account the impact of such programs and projects upon the environment and natural resources of developing countries and put priority on conservation and sustainable management of tropical forests. The FAA 118 and 119 requires, among other things, that the assistance put the emphasis on those activities that offer employment and income alternatives to those who otherwise would cause the destruction and loss of forests; help developing countries identify and implement alternatives to extending cultivation into forested areas; and support training programs, educational efforts, and the establishment or strengthening of institutions which increase the capacity of developing countries to formulate forest policies.

The FAA (118 and 119) emphasizes that assistance should be offered to engage in relevant land-use planning, and otherwise improve the management of the recipient country's forests; help end destructive slash-and-burn agriculture by supporting stable and productive farming practices in areas already cleared or degraded and on lands which will eventually be settled, with special emphasis on demonstrating the feasibility of agroforestry and other techniques; and help conserve forests which have not yet been degraded, by helping to increase production on lands already cleared or degraded through support of reforestation, fuel wood, and other sustainable forestry projects and practices.

ADS 201.3.4.11 (Technical Analysis for Strategic Plans) points out that all country level Operating Unit Strategic Plans must include a summary of their analyses of the following issues: (1) the actions necessary to conserve biological diversity, and (2) the extent to which the actions proposed meet the needs thus identified.

A full Tropical Forestry and Biodiversity Analysis (FAA Sect. 117-119) called the *Burundi Environmental Threats and Opportunities Assessment* (ETOA) was done early in 2003 and provided an overview of key trends in Burundi's environment and natural resource sector and highlighted the primary threats and opportunities. A section of the analysis focused in particular on tropical forests and biodiversity. The assessment informed USAID's 2003-2005 Integrated Strategic Plan to support Burundi's transition from conflict to peace. While the socio-economic trend and transition to a more stable and peaceful country are positive, with a recent largely peaceful presidential election much remains to be done to address the main causes of Burundi's civil war, which largely relate to conflicts over access to political and economic resources. To the extent that institutional changes have not yet taken place, including implementation of land reform, functional forest and wildlife conservation agencies, and application decrees, and the like, the above analysis (ETOA) remains valid. The institutions may change in the future and may have impacts on biodiversity and forestry conservation but this appears secondary to the political and stability imperatives currently existing in the country.

### 2. Background

Burundi has a widely varying topography. The western side consists of a series of elongated ridges and include many massifs above 2,500 m. Westward the land descends steeply to 1500 m to meet Lake Tanganyika in the south, or further north, the Rusizi river, which forms the international frontier with DR Congo. The central plateau covers the whole of the center of the country and

generally slopes from west to east and from north to south. The average altitude of the plateau is about 1450 m. Steep slopes on the plateau are frequently eroded due to intense agricultural development. Valley bottoms are often marshy and extensive peat bogs are found along the Akanyary River and its tributaries. The south-eastern edge of the central plateau is marked by another area of higher ground, which falls away steeply south-eastwards to the Kumoso depression, through which flows the Malagarazi river marking the border with Tanzania. In the extreme north is the lowland of Bwery and Bugesera regions, much of which are occupied by lakes Cohoha and Rweru dominated by *Cyperus papyrus*.

Map1: Major drainage systems and topographical variations in Burundi



The considerable variations in topography, soil and climate are responsible for the large number of vegetation-types. Natural vegetation comprises mostly a mosaic of East African evergreen bush land and secondary Acacia wooded grassland in the east and south-east, while the western parts are covered by Afromontane communities with transitional rainforest on the western mountain slopes, overlooking the Rusizi and Lake Tanganyika. The Imbo region is occupied by Hyphaene-Acacia woodland in the Rusizi plain and Bracystegia woodlands along the lake shore. However, agricultural pressure is leading to the rapid disappearance of the country's natural vegetation. Levels of plant endemism are unknown but given the transitional nature of the vegetation are unlikely to be high.

There is a short dry season from December to January and relatively heavy rains from February to May, followed by a long dry season between June and September and substantial rainfall between October and December. Amounts of rainfall vary considerably from region to region but are generally in the range of 500-2000 mm per annum: the mean in the western ranges is higher and lower over the eastern plateaus.

Two major montane forest blocks remain at Bururi in the south and Kibira in the north. Kibira is contiguous with the Nyungwe area in Rwanda. One small patch of lower-altitude closed forest survives at Kigwena, along the banks of Lake Tanganyika. Burundi possesses extensive wetlands. The total area of marshland is more than 120,000 ha, almost 5 % of the area of the country. However, a large part of these marshlands has already been drained for agriculture. There are also a number of small lakes in the mountains as well as four substantial ones, including Lake Tanganyika, about 8 % of the surface of which constitutes part of Burundi.

The economy of Burundi is mainly based on subsistence agriculture. Maize, cassava, bananas, sorghum and beans are the principal food crops, while coffee is the main agricultural export product. While land is also heavily grazed by livestock, hillside farming in highly erodible soils and frequent heavy rains has combined to create some of the worst soil-erosion problems in the world. There are no bird species endemic to Burundi.

Until the 1980s, there was no protected-area legislation in Burundi but since then, 8 new protected areas have been declared, bringing the total to 13 which cover 5 % of the country, including areas established in the colonial era.. The main body responsible for conservation is Institut National pour la Conservation de la Nature (INCN) (the National Institute for the Conservation of Nature), which has been renamed Institut National pour L'Environnement et la Conservation de la Nature (INECN) which is part of the Ministry of Land Management, Tourism and the Environment. It is mainly responsible for the management of National Parks, Nature Reserves and Natural Monuments. It is also responsible for organizing scientific studies for biodiversity assessment and conservation.

Burundi has three major conservation areas:

- 1) Kibira- located in north-western Burundi and extending from the border and occupying 130,000 ha. There is a great deal of pressure on parts of the forest as a result of felling of trees and cutting of bamboo, fire and poaching. Since the mid 1990s, it has suffered uncontrolled destruction by armed gangs, bush fires (more than 150ha burnt in September 2000 alone), illegal cutting of wood products, farming, logging, gold panning, poaching, research for medicinal plants, grazing, charcoal production, and security measures, all of which are in the process of disfiguring these Montane forests leaving a bare landscape, and flattening the surrounding areas, creating a scene of devastation.
- 2) Ruvubu National Park: located in north eastern Burundi. Illegal traditional hunting is an issue but has had little serious impact.
- 3) Rusizi National Park: located northwest of Bujumbura against the international frontier with DR Congo. It is made up of a flood plain about 20km wide and 35 km long beside the east bank of the Rusizi River and a smaller area comprising the delta of the Rusizi at the point where it enters Lake Tanganyika.

### **3. Summary of Environmental Analysis**

Fundamental to Burundi's environmental threats is one of the highest population densities in Africa: Burundi has a density of over 300 inhabitants per square kilometer in some areas. It also has a high population growth rate of 3.2 % per annum, and the population is estimated to reach 13.7 million by 2020. Land pressure has led individuals to cultivate on hillsides, where soils are shallow, low in fertility, and easily affected by erosion. Cultivation is also spreading to low-lying wetlands, where

constructed drainage systems accompanied by siltation from surrounding hillsides are destroying many of these ecologically valuable areas. Additionally, much of the original forest cover has been cleared due to extensification of agriculture as well as timber and fuel wood harvesting. Little of Burundi's native fauna or flora remain today; species such as elephants and gorillas have become locally extinct. What habitats and natural flora do remain can be found largely in the national parks of Kibira and Ruvubu, and possibly in some pockets of forest reserves scattered throughout the country in what is called gallery forests, which have not benefited from continuous or effective management over the last decade.

With traditional subsistence practice being the predominant mode of production, it is difficult to attain self sufficiency in producing enough food for a household, much less generate income. Agriculture and natural resources (including forestry, fisheries and livestock) provide the mainstay of the Burundian economy, accounting for over 50% of the GDP, about 90% of the export of goods, and support for about 90% of the labor force. Most of these laborers are subsistence farmers, and 90% of these farmers are women.

Demand for fuel wood and construction wood has caused a high rate of deforestation such that natural forest cover is down to 3.5% of land area, from an original forest cover of 46.3%. Only 5% of the land area is in a national protected area system, which protects only 18% of the tropical forest cover remaining. Deforestation has also forced farmers to use straw and other crop residues for fuel, thereby further damaging soil fertility. These factors have led to a disastrous shortfall in food production, with two-thirds of the population unable to meet even the minimum food energy requirement of 2,100 calories per person per day. Access to clean water is also a problem in rural areas, where only about 49% of the population are considered to have reasonable access. Women in particular bear a large part of the inconveniences imposed by environmental constraints (lack of wood or other fuel sources, water supply). The fact that women have few opportunities for involvement in decision-making tends to perpetuate this situation.

Due to the high population pressure, expansion or "extensification" of agriculture has been increasing into previously uncultivated areas including steep hillsides and valley bottom *marais*. Most of the *marais* are now being cultivated without any proper planning, resulting in some of them drying up. Wetlands protection is important to ensure certain essential ecological services including flood control, clean water supply, ground water table recharge (without which springs would not flow), healthy ecosystems and dynamic biodiversity. Burundi lacks a national level wetlands survey and master plan showing the critical wetlands that need to be maintained to ensure ecologically sustainable development.

Environmental stresses are recognized frequently to be a contributing factor to the conflicts and humanitarian emergencies in Africa. The widespread depletion of soil fertility, inadequate protection of environmental quality and inequitable distribution of economic benefits are all important sources of environmental stress in Africa. There appears to be a trend toward increasing urbanization, accentuated by recent droughts and the insecurity associated with the civil war, including in the IDP and resettlement camps themselves. Food security and health conditions have also been severely impacted, and prospects for sustainable growth have been undermined. Not least is the role of the inequitable distribution of the natural resources including land and means of production. Burundi's main export is coffee which is considered strategic. But, while it is grown by the majority Hutus, processing and marketing is controlled by a small powerful Tutsi elite; this arrangement has been a source of conflict.

The limited national economy of Burundi provides few opportunities for off-farm employment and rapid population growth will continue increasing pressure on the small natural resource base in the country. Extensification of agriculture to marginal and conservation areas, as noted above, is one option being increasingly deployed. Addressing these issues will require addressing economic governance issues to offer the society broader employment options and to reorganize society, not only to minimize conflict but to reduce degradation of the natural resource base. One option is a well-ordered public welfare-oriented society with an appropriate policy and regulatory environment that allows decentralized management of resources and private initiatives to achieve the equitable distribution and use of natural, social and political resources. Burundi unquestionably could come to grips with its resource limitations by focusing on sustainable intensification and equitable access to resources.

Burundi has significant mineral resources, though these are currently largely unexploited. In addition to various precious metals and minerals, phosphate and calcareous deposits exist in Burundi that could be extracted and put to use to improve the fertility of the acid soils. A large rift valley lake, Lake Tanganyika, provides many options for sustainable economic development around trade and fisheries. Burundi's aquatic resources also lend themselves to aquaculture development. Ecotourism has much potential in Burundi as well, especially around the national conservation areas including Kibira National Park, Ruvubu, and Lake Tanganyika.

#### **4. Analysis of the proposed Program structure**

Burundi's Strategy Statement has two main strategic objectives 1) African conflict mitigation capacity reinforced and 2) inclusive governance enhanced. The first strategic objective focuses on activities that are geared towards the consolidation of security to ensure stabilization of the country. Some of the activities will include mitigating the impact of the conflict on the most vulnerable while supporting community-based efforts at reconciliation, and providing food and non-food items to the most vulnerable throughout Burundi, including women and children, people living with HIV/AIDS (PLHAs) and demobilized child soldiers. At the same time, seed fairs, seed banks and FFP-supported Food for Work and Food for Training programs will provide more durable long-term solutions to food insecurity. In addition, local mechanisms for the resolution of land disputes will be strengthened to permit the reintegration of increasing numbers of returnees without a return to violence. The Strategy proposes to address land and natural resource management as a cross-sectoral issue. At the local level, activities will build capacity to manage natural resources in a socially and ecologically sustainable manner through activities that bring ethnically mixed communities together to share improved inputs and environmentally sound agricultural practices that will improve economic and food security. At the same time, NGO partners will engage with environmental and legal advocacy networks at the national level to promote national dialogue with respect to the equitable reform of land laws and environmentally responsible land use policies. The Statement also states that pressure on land must be reduced by the creation of off-farm economic opportunities.

The second strategic objective, SO 2: Inclusive governance enhanced, proposes to strengthen the legitimacy of the new government by building the capacity of the government to set priorities for reforms that benefit all Burundians and engage with civil society in an inclusive manner to implement these reforms. SO2 activities will also improve the effectiveness of governance by improving the ability of the new government to work with civil society and the donor community to provide the fundamental inputs for human development and economic opportunity. The SO will focus on initiatives to respond to the spread of HIV/AIDS, malaria and polio.

These activities may not have direct impact on the biodiversity and tropical issues in Burundi but may have an indirect bearing on the already diminished levels of biodiversity in the country. With stabilization and peace, more refugees and returnees may return home and their resettlement may increase pressure on the land, including the national reserves and national parks. The proposal to address natural resources in a socially and ecologically sustainable manner at the local level through building the capacities of local communities is a good one but it will need to recognize the critical functions of local ecosystems including swamps and gallery forests and address them appropriately. Similarly, the proposal to strengthen the legitimacy of the new government by building the capacity of the new government to set priorities such as responsible land management may enhance the protection of critical forests and wildlife parks as well as generally conserving biodiversity. These activities may also lead to better planning, assessment and survey of the existing biodiversity in the country and adherence to the international protocols, including Convention for Biological Diversity (CBD) and Convention for International Trade on Endangered Species (CITES), by the government.

## **5. Program Intervention Points and Opportunities**

Given the high population density in Burundi and limited options to increase crop productivity in the short term without massive inputs in technology and chemical fertilizer, it is important for USAID to consider off-farm economic options. In spite of the good tropical climate in Burundi, agricultural productivity is low due to low soil fertility, small and declining land size and low-tech subsistence agriculture practiced in Burundi. Expansion and extensification of agriculture does not appear to be a sustainable option given the limited unutilized land in Burundi. It is important to consider options that will contribute to conservation of the remaining natural resources in Burundi while allowing for the community to share the benefits of utilizing these natural resources through schemes that may include bee keeping, ecotourism, and niche marketing of selected and specific natural resources

During the last ISP (2003-2005), four U.S.-based international PVOs (Africare, CARE, Catholic Relief Services (CRS) and World Vision (WV)) were the primary implementing partners, working through the UNDP Community Assistance Umbrella Program (CAUP)<sup>1</sup>, which is being phased out. A new Livelihoods Security Initiative Consortium has been formed, consisting of the same four PVOs, with CARE as serving as the Consortium management entity. These partners will likely continue implementation under the new Strategy Statement period, with a more specific focus on Fragile States conflict mitigation outcomes. The overall goal of the Consortium Livelihood Security Initiative is to reduce the vulnerability of households in targeted communes, with a particular emphasis on female-headed and HIV/AIDS affected households. The program will seek to reach this goal via four objectives over a three year period. The objectives are:

1. Improve agricultural production in targeted communities;
2. Improve health and nutritional status of households in targeted communities;
3. Promote agro-enterprise development and income generating activities in targeted communities; and
4. Reduce community-level conflict over natural resources.

In addition to Consortium activities, basic infrastructure including rehabilitation of rural roads and increasing water access in rural areas will require further investments.

---

<sup>1</sup> The USAID Contribution to CAUP included integrated livelihood and food security projects in the provinces of Ngozi, Kirundo, Muyinga, Gitega and Karuzi in northern and central Burundi.

Land and resource tenure are major issues in Burundi. Claims on, access to and use of land in Burundi is a clear potential and actual conflict flashpoint. The USG should be engaged in the design and implementation of programs that will not exacerbate conflict over land. This should take into consideration the large numbers of landless female-headed households, as well as large numbers of returning refugees and IDPs and demobilized government and rebel soldiers.

The following are options that may be appropriate to address FAA 118-119 expectations:

- Formulation and implementation of management plans for all protected areas based on good biological and socio-economic information
- Production of a Wetlands Master Plan that provides guidelines on wetlands management
- Revision of the Land Tenure Code (Act) to incorporate the objective of protecting soil against erosion and unsustainable farming practices, as well as the integrated planning of land use
- Land capability classification and environmental assessment and inventory of land use and soil capabilities
- Continued adoption of soil conservation measures and rehabilitation of the degraded hillsides by tree planting and adoption of appropriate technologies.
- Introduction of community-based and participatory resource management practices via enterprise-based, social self-help and other types of associations
- Adoption and strengthening of the National Environmental Assessment and Management legal framework (as part of the governance process) that will require Environmental Impact Assessments for sustainable development.
- Exploration and promotion of non-consumptive utilization of natural resources including exploiting ecotourism potential, bird watching, sustainable fishing and aquaculture practices, etc.
- Incorporating environmental guidelines into sectoral program design and implementation, including provisions for reconstruction and rehabilitation, and the invocation of environmental good practices, such as:
  - Environmental assessment and management course
  - MSE & cleaner production
  - Water & sanitation
  - road construction and rehabilitation
  - improved drainage
  - soil and water conservation
  - integrated pest management

The Burundi program has a biodiversity earmark in FY05 of \$250,000 that provides some programming opportunities to counter the threats facing biodiversity in Burundi. Programming options for these funds are still being considered by the Livelihoods Security Initiative Consortium. The options may include focusing strategically on people-centered biodiversity conservation that links biodiversity conservation directly to sustainable livelihoods. In Burundi, making that direct link is a central challenge if sustainable biodiversity conservation is to be achieved. Communities and protected areas bordering protected areas are among the sites that could be considered. This could entail support to multi-sectoral, community-based organizations (that may comprise beekeeping associations, handicraft associations, fair trade/specialty coffee cooperatives, micro-finance solidarity groups, health groups) or interventions that jointly reinforce improved livelihoods and improved conservation practices.

Improved, community-based water harvesting, agroforestry, and re-forestation, for example, can help to mitigate encroachment into protected areas and associated threats to biodiversity. And improved, community-based income-generating activities including bee-keeping, handicrafts, fair trade/specialty coffee production and eco-tourism can alleviate the extraction of fragile resources from protected areas.

Currently members of the consortium are engaged in similar activities including improved management of soil and water resources; indigenous tree nurseries and out-planting; watershed management activities including erosion control, vegetative cover restoration and gallery forest preservation; and (*marais*) reclamation, as well as development for agriculture which may present opportunities for buffer zones to be rehabilitated (upstream, downstream sections) or protected as native wetlands to enhance ecosystem services.

Other programming opportunities for the biodiversity funds may include peripheral zone protection around Lakes Cohoha, Rweru and Rwihinda; restoring and or protecting patches of natural forest/grasslands as seed/germplasm source for re-vegetation efforts; stepping up ‘feu de brousse’ control efforts – alternatives to slash and burn; ecotourism as an enterprise development opportunity; supporting policy-level interventions linking biodiversity, natural resources management and land use conflict; and commissioning a study to identify realistic and value-added opportunities for future programming which constructively links biodiversity, economic growth, agricultural activities and other livelihood programming.

## References:

Debonnet, G. (1991) Conserving Burundi’s Biological Diversity: Conservation of Wetlands and Forests. INECN. (unpubl. report)

Kitevu, Raymond and Jeremy Lind. 2001. Enhancing the Arusha Agreement: Environmental Aspects of the Burundi Peace Process. *Eco-Conflicts*, vol. 1, No. 2. April 2001. ACTS.

Kamungi, Prisca M., Johnstone Summit Oketch and Chris Huggins. 2005. Land Access and the Return and Resettlement of IDPs and Refugees in Burundi. Pages 195-267 in *From the Ground Up: Land Rights, Conflict and Peace in sub-Saharan Africa*, Chris Huggins and Jenny Clover, eds.. ACTS & ISS. 392 pp. Inst. of Security Studies, Pretoria.

Kanyamibwa, Samuel and Jean-Pierre Van de Weghe- Important bird areas in Africa and associated islands- priority sites for conservation. Edited by Lincoln D. C. Fishpool and Michael I. Evans. Pisces Publications 2001

Oketch, Johnstone Summit and Tara Polzer. 2002. Conflict and Coffee in Burundi. Chapter 3 (pp. 85-157 in: *Scarcity and Surfeit: The Ecology of Africa’s Conflicts*, Jeremy Lind and Kathryn Sturman, Eds. Institute of Security Studies (Pretoria) and African Centre for Technology Studies (Nairobi). 390 p.