

## **Annex 1—Environmental Analyses**

### **Essential Procedures**

Sections 118(e) and 119(d) of the Foreign Assistance Act state that:

**Biodiversity:** All country-level Operating Unit Strategic Plans must include a summary of 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.

**Tropical Forestry:** For country-level Strategic Plans that cover countries that have any part of their territory within the tropics, each Strategic Plan must also include (1) a summary of their analyses of the actions necessary to achieve conservation and sustainable management of tropical forests and (2) the extent to which the actions proposed meet the needs thus identified.

These requirements may not be waived, modified, or eliminated by the responsible Bureau for country-level Operating Unit Strategic Plans.

The following summary analyses were provided in an Environmental Threats and Opportunities Assessment (ETOA) conducted by the Mission in February-October 2003. The objective of the ETOA, which was carried out by a multidisciplinary team led by the Environment Officer, was to inform the development of the Mission's 2005-2014 Country Strategic Plan and to meet the requirements of Sections 117, 118 and 119 of the Foreign Assistance Act and USAID Environmental Procedures. Since 2003, there have not been substantial changes in Tanzania's environmental context which would warrant a new ETOA.

This annex filters the in-depth analysis carried out in the ETOA to achieve a two-pronged objective:

- (1) First, it attempts to succinctly portray specific actions and/or conditions that are necessary to enhance protection of tropical forests and biodiversity in Tanzania. This is accomplished by highlighting key prevalent threats and in the due course outlining options for managing these threats.
- (2) Second, the analysis also summarizes and presents the extent to which USAID/Tanzania, by implementing the proposed mix of illustrative activities planned in the strategy statement under the various strategic objectives, will meet those needs.

### **Threats to Tropical Forests**

The key problems presently facing Tanzania's biodiversity-rich environment, including its world class renowned mega-biodiversity sites are: degradation, fragmentation, and loss of habitat for many known (and unknown) globally threatened species. This is the result of many factors, such as growing human population exerting pressure on forest resources and land, poverty leading to unsustainable use of forest resources, under-resourced government institutions, a legacy of outdated environmental policies and legislation, and lack of political will. The socioeconomic situation is characterized by a large and expanding economically impoverished human population.

Despite the biological importance of the Tanzanian natural resources base, legal protection for important ecosystems in general is lacking, weak, or poorly enforced. Strategic management capacity and action planning generally remain weak at both the institutional and policy fronts. Currently a number of initiatives (including institutional, policy and legislative reforms) are ongoing to address the gap.

The biggest threats to Tanzania's forests derive from agricultural expansion, unsustainable fuelwood harvesting (including charcoal), and timber extraction for urban and rural industrial uses. Causal factors include increased forest access (commercial logging, roads), weak institutional capacities (inadequate resources for forest management, lack of good governance) and inappropriate management strategies. Other specific threats identified in this report include:

*Agriculture.* Much of Tanzania is arid, semi-arid, or has poor quality soils. Only 4.24% of the country's land is considered arable, and of that amount only a little over 1% is permanent cropland<sup>1</sup>. In spite of this, over 80% of the Tanzanian work force is employed in agriculture, and with continued population growth, pressure to expand agricultural production is likely to continue into the future. Commercial agriculture has been responsible for some clearance and fragmentation of forests. There are large tea estates in Iringa, Tanga and Kagera on land that was formerly forested.

*Bushfires.* Fires are commonly used by farmers to clear their fields prior to planting. Where population densities are high, vegetation is cleared and burned on the site of future fields. In general, few of these fires spread into forest margins or montane grasslands. Within the forests, fires are started for forest clearance for cultivation and these can get out of control and burn larger areas. Sometimes, wild honey harvesters start forest fires when they smoke the bees to get their honey. Where human population density is lower near the protected area, there is a much higher tendency for the protected area to be subject to wildfires that can have a number of causes and once started will spread into protected areas in an uncontrolled fashion. Occasionally, these fires reach the forests and during dry years they can enter the forest and cause considerable damage.

*Deforestation.* Virtually all of Tanzania's wood fuel comes from forests-over 90% of all round wood harvests are for charcoal and fuelwood<sup>2</sup>. As can be expected, much of the demand for fuelwood is satisfied through deforestation. It is estimated that about 70% of the deforestation in Tanzania is due to fuelwood harvests, directly or indirectly, with about 30% of the deforestation being the result of agricultural land clearing. As the economy matures, deforestation associated with agricultural land use clearing is expected to grow, increasing emissions of greenhouse gases, and reducing the supply of material traditionally available to provide energy.

Deforestation is proceeding at a rate which, if not diminished, would deplete the country's resource base in little over 100 years. Tanzania's current population estimated at around 34.6 million is expected to roughly double in the next 20 years. Given the agrarian lifestyle of the population as well as its reliance on fuel wood and charcoal for cooking, rates of forest loss are likely to increase proportionally. The ability to manage population growth and agricultural expansion will therefore be essential to minimizing loss of biodiversity and forest cover.

*Commercial logging.* As Tanzania's forests continue to disappear, illegal commercial logging is one of the main causes of the problem. Not only does the government seem unable to address the present state of things, but forestry officials themselves have been accused of being directly involved in the illegal timber trade. Other suspects in the illegal timber business are timber product dealers, private individuals, saw millers and logging companies<sup>3</sup>. Timber is used in Tanzania for a variety of construction purposes, as well as for the artisanal wood carving industry for which East Africa is particularly known. Most timber used in household construction never enters the formal economy, so reliable statistics do not exist. Statistics for industrial timber use, including fabrication of wood paneling and paper products estimate that approximately 3 million cubic meters of roundwood is harvested and processed per year in Tanzania<sup>4</sup>. Export of timber and other forest products from Tanzania is a small contributor to the economy, however. The total value of forest product exports between 1996 and 1998 were estimated at \$4.7 million, which was outweighed by the value of forest product imports, at approximately \$6 million.

*Roads Construction.* The impact of fragmentation of ecosystems is quite an obvious one as currently being evidenced in the Makuyuni-Ngorongoro road construction which crosses some of the vital wildlife migration corridors. Roads facilitate immigration, forest fragmentation, and commercialization of the bushmeat, timber and non-timber products trade. As roads are improved, more forests become at risk because of increased access for fuelwood and charcoal merchants. For example, Rondo and Kitope Forest Reserve are threatened by the development of a new road to Dar es Salaam. Roads also fuel urbanization and peri-urbanization by attracting clusters of settlement.

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<sup>1</sup> CIA World Fact Book, 2003 statistics. [www.odci.gov](http://www.odci.gov)

<sup>2</sup> <http://www.uccee.org/c2e2/issue9s/Tanzania.htm>

<sup>3</sup> WRM Bulletin 27

<sup>4</sup> WRI, Earth trends, 2003

## **Management Actions to Improve Tropical Forest Conservation**

Specific actions that USAID/Tanzania is planning to do to achieve conservation and sustainable management of tropical forests in Tanzania are hereby highlighted:

1. Policy and institutional reforms to enhance sustainable forest management including completion of ongoing reforms on the wildlife and coastal policies as well as establishment of relevant institutional structures to support effective application of the policies,
2. Empowerment of communities to participate in sustainable management and good governance of conservation enterprises to reduce corruption, increase accountability and derive economic benefits from sustainable operation of natural resource based enterprises such as the Wildlife Management Areas and non-timber forestry products (NFTP's).
3. Effective agricultural extension, more sustainable farming methods, market incentives (e.g. price) and policy controls on agricultural expansion, to help combat agricultural driven degradation of the environment in general and tropical forests in particular.
4. Land use planning efforts to prevent further encroachment of forested areas; including efforts to build adequate human and institutional capacity to implement such plans at the local, district and national levels.
5. Ecological monitoring and data analysis to track the impact on forest cover and other ecological parameters using monitoring approaches.
6. Trans-boundary collaboration for forest planning and management to ensure functional landscape level conservation regimes.
7. Integrated projects with a focus on watershed management, agro forestry, deforestation and other ecosystem services components.

## **Threats to Biodiversity Conservation**

USAID/Tanzania has a long history of active support to Tanzania's endeavors to safeguard biological diversity while contributing to economic growth through ecotourism. USAID's funds are currently being used to improve management practices in the national park network, the national system of game reserves, the coastal and marine ecosystem, and community-based approaches in areas adjacent to protected areas. The Agency's environment program has strengthened Government of Tanzania institutions with policy analysis, strategic planning, and natural resources management approaches to halt degradation in and around national parks, reserves, and marine environments.

Tanzania's biodiversity is threatened by a variety of human activities ranging from the household micro-level to the national and global macro-levels. Foremost, Tanzania's biodiversity resources are threatened by the failure to effectively manage mounting pressures from agricultural expansion, livestock grazing, wild fires and over-exploitation of the resources. As Tanzania develops, given the strong NRM orientation of its economy, increasing, and often competing demands, will increasingly place unsustainable pressures on the natural resources, threatening the base of Tanzania's economic future. Although Tanzania has contributed about 25% of her land area to protected area networks, many of these protected areas have been created without consideration for the needs of the surrounding communities (grazing areas, fuelwood, water etc). As a result, local people lack incentives to respect protected area boundaries, frequently disturb habitats through land clearance and natural resource extraction, and take wildlife for their own uses, such as food, skin and for-profit sales.

The study has identified the following general threats:

1. The highest percentage of terrestrial bio-diversity in Tanzania occurs in protected areas. As such, conflicts over bio-diversity value may occur between the mineral sector and the natural resources sector when minerals also occur in these protected areas.
2. Unplanned human and livestock migrations leading to widespread deforestation and overgrazing.
3. Rapid growth of rural and urban populations which leads to loss of habitats due to settlement, agriculture, grazing, mining and logging.
4. Most bio-diversity hot spots including the Rufiji Delta, Coastal forests and Eastern Arc Mountain catchments remain unprotected and open to wanton destruction.
5. Inadequate or lack of inventories of bio-diversity resources in protected areas hence, little knowledge of their bio-diversity potential.

6. Inadequate experts in the field of zoology, entomology, ecology, and botany particularly in high learning institutions, thus many species disappear unnoticed.
7. Not many studies have been done on ecosystems, such as wetlands and coastal forests (especially mangroves nor on traditional use of mushrooms and medicinal plants.
8. There is a lack of catalogue and field guides for some plant and animal families.
9. Improper execution of the established planning process and regulations in the country,
10. There is lack of umbrella environmental legislation, and
11. Poor interaction between communities and institutions responsible for biodiversity conservation.

In addition to these general threats, the study identifies further specific threats:

*Agricultural expansion.* The greatest threats to Tanzania's biodiversity are in the areas of highest population density. These threats are likely to be compounded by globalization through intense development and international investment, bringing improvement to communications and opening up previously inaccessible areas to economic exploitation including large scale commercial agriculture.

*Artisanal Mining.* Unlike large-scale mining operations such as the Bulyankhulu Gold Mining etc. that are usually preceded by comprehensive environmental assessment and backed up by parallel environmental impacts mitigation plans, artisanal mining in Tanzania still has a long way to go towards environmental safety. Tanzania's biodiversity is directly threatened through the pressures exerted by the explosion of artisanal miners' populations on flora and fauna in prospective mining areas. Furthermore, lack of proper environmental health and safety procedures, adequate working tools, appropriate technology and basic infrastructural facilities in the informal gold mining sector of Tanzania have led to mercury pollution, and other forms of pollution leading to environmental degradation, and subsequently biodiversity losses. Recognizing that informal mining employs a large percentage of women, especially in downstream activities, Tanzania government is keen to devise a holistic long-term strategy for transforming artisanal mining into sustainable small mining by improving the legal and regulatory conditions of artisanal mining and ensuring that appropriate institutions are established and adequately financed. USAID's future role in the sector will seek to stem further mining-related loss of biodiversity by supporting NGO/ Private sector participation by helping with training of artisanal miners to operate in environmentally sound manner. USAID will play a catalytic role by disseminating best practices and experiences, financing policy reforms and targeted actions, and standards-setting programs.

*Hunting and bushmeat trade.* Hunting is historically responsible for the absence of several large mammals (buffalo, rhino, elephant, leopard, and bushbuck) from large areas in the biodiversity hotspots where they used to roam. The local bushmeat trade threatens smaller mammals. Although this trade is not on the scale found in West and Central Africa, local consumption of game meat can threaten rare wildlife. For example, the endangered Aders' duiker has been reduced to very low population levels by local hunters in Jozani Forest in Zanzibar. Bushmeat hunting is also attributable to an increase of refugee populations in North Eastern Tanzania as a result of the conflicts in neighboring Burundi, Rwanda and the DRC.

*Habitat loss.* Biodiversity is threatened by several direct and underlying processes which have led to the clearing of forest land at a rate of 400,000 hectares per year during the past two decades. These processes relate, in part, to the conversion from forest to commercial agriculture and mining because of export-oriented policies widely applied at the national and global levels. Habitat fragmentation and loss caused principally by agriculture and infrastructure development is the greatest threat to biodiversity. Many of Tanzania's large emblematic species depend on large areas of unbroken forest. Any activity that facilitates the movement of people and establishment of agriculture will lead to habitat loss. Road building will certainly dictate the geographic direction of major habitat loss.

### **USAID's Future Actions to Improve Tanzania's Effectiveness of Biodiversity Conservation**

USAID's current program has set the stage by identifying an appropriate balance between conservation and development through policy and legislative reform, capacity strengthening, and pilot activities. The proposed strategy will implement programs that will capitalize investment in these areas, helping Tanzania to attain and maintain that balance, while achieving significant results in areas of both

biodiversity conservation and improved livelihoods. USAID's new program will demonstrate ample opportunities for conserving biodiversity on the following specific targets:

1. *Support for Improved Biodiversity/Natural Resource Management Policies at the National and Local Levels* by capitalizing on the enabling environment so far established through USAID's coastal, wildlife and other policy interventions. Particularly, field-application of key natural resource policies e.g. providing increased tenure security for community natural resources (for example through assistance to communities in drawing community natural resources management plans, etc).
2. *Promotion of Sustainable Livelihoods* by building on the foundation and opportunities established by USAID's previous investment and increasing the attention to improving rural livelihoods, while retaining biodiversity conservation as a core goal.
3. *Intensification and Improved Management for Agricultural Production* through promotion of mariculture, aquaculture, agro-forestry, pastoral techniques, and high yielding seed varieties. These interventions will be accompanied with deliberate efforts to prevent encroachment into areas of critical biodiversity and protect the health of land and the broader environment as the key means towards peoples' improved health and livelihoods.
4. *Inventory and improve protection of key areas of biodiversity* (in current and/or new protected areas) by establishing ecological monitoring and data/ information management capacity to support science-based management action.
5. *Integrate protected areas with other surrounding land uses* by developing/ implementing management plans for protected areas and creating multiple use buffer zones where local populations participate in sustainable management of natural resources.
6. *Curb poaching and illegal bush-meat hunting* – through both protection and incentives.
7. *Strengthen institutions* and public-private-community linkages to establish the needed human, institutional and financial capacity for sustainable management of biodiversity in Tanzania.

