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# Swaziland: 118/119 Biodiversity and Forest Assessment

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# 118/119 Biodiversity and Tropical Forest Assessment for Swaziland

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**The third partner in the Biodiversity Analysis and Technical Support (BATS) activity is the African Biodiversity Collaborative Group (ABCG), an initiative of seven U.S.-based international conservation non-governmental organizations (NGOs) with field programs in Africa.**

The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

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## ACRONYMS

BATS	Biodiversity Analysis and Technical Support
CANGO	Coordinating Assembly of Non-Governmental NGOs
DFID	UK Department for International Development
EIA	Environmental Impact Assessment
FAO	Food and Agriculture Organization
GKOS	Government of the Kingdom of Swaziland
GEF	Global Environment Facility
GNP	Gross National Product
HDI	Human Development Index
IFAD	International Fund for Agricultural Development
IMF	International Monetary Fund
IUCN	World Conservation Union
MCC	Millennium Challenge Corporation
MDG	Millennium Development Goals
NBSAP	National Biodiversity Strategy and Action Plan
NGO	Non-Governmental Organization
PEPFAR	President's Emergency Plan for AIDS Relief
RCSA	Regional Center for Southern Africa (now closed)
RHAP	Regional HIV/AIDS Program
SADC	South African Development Community
SEA	Swaziland Environmental Authority
SEAP	Swaziland Environmental Action Plan
SNTC	Swaziland National Trust Commission
SWEEP	Swaziland Enterprise and Entrepreneurship Program
UNAIDS	Joint United Nations Program in HIV/AIDS
UNDP	United Nations Development Program
UNEP	United Nations Environment Program
UNESCO	United Nations Educational, Scientific and Cultural Organization
WFP	World Food Program

## EXECUTIVE SUMMARY

This report was commissioned by the US Agency for International Development (USAID) Bureau for Africa as part of the Biodiversity Analysis and Technical Support (BATS) program, a two-year program to provide analytical and technical assistance to USAID/Africa. The BATS program supports USAID/Africa's operating units in the design and implementation of assistance to Africa in a manner that conserves natural resources and biodiversity, including tropical forests and other critical habitats. This report fulfills legal requirements under sections 118/119 of the Foreign Assistance Act that require all USAID country plans 1) an analysis of actions to conserve biological diversity and tropical forests, 2) the extent to which current or proposed USAID actions meet those needs. This report should help to formulate Swaziland's development assistance strategy over the next years and plan for biodiversity and forest conservation concerns in the medium to long term.

This report — prepared to provide information and analysis, as requested by the USAID Bureau for Africa and as required by the Foreign Assistance Act — provides details on the extent, threats, and major issues in the biodiversity and forest sectors of Swaziland, as well as information on current U.S. foreign assistance and USAID programming. For countries like Swaziland, which lie entirely outside the tropics, the 118 assessment of tropical forests is not legally required. However, this document includes information and analysis based on the non-tropical forests of Swaziland, and it is recommended that these considerations be taken into account when planning USAID activities. To date, no 118 assessment has been conducted.

Swaziland is landlocked, with South Africa to the west, north and south, and Mozambique to the east. Terrain is diverse, with mountains, savannah, and rainforest.



Swaziland's diverse terrain lends itself to high biodiversity. *Source:* [www.flickr.com](http://www.flickr.com)

The climate is subtropical, with summer rains between October and March. Frost can occur during the winter months in almost all areas.

With more than one million citizens and a growth rate of 2.9 percent, most Swazi live in rural areas.<sup>1</sup> Rural to urban migration is occurring at a rate of 3 percent to 5 percent annually, and urban areas are expected to grow to 70 percent of total population by 2030.<sup>2</sup> Of the total population, 47 percent are under 15 years old, having implications in the future growth rate.

HIV/AIDS has become a national

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<sup>1</sup> FAO, 2007.

<sup>2</sup> Swaziland National Trust Commission.

crisis, with the world's highest national rate at close to 40 percent,<sup>3</sup>. Tens of thousands of children have lost at least one parent to the disease, leaving children without shelter, clothing, food, or money. Almost 60 percent of hospital admissions are due to AIDS-related illness.<sup>4</sup> Most deaths occur in 15- to 49-year-olds, the most productive subset of society carrying significant economic implications. Due to AIDS, life expectancy at birth has dropped to less than 35 years, the lowest in the world.<sup>5</sup>

Swaziland's economy, defined as "lower middle income" by the World Bank, has shifted over the years from an agriculturally-based society to one supported by manufacturing — coal, wood pulp, sugar, soft drink concentrates, textiles, and apparel. In 2006, agriculture — sugarcane, cotton, corn, tobacco, rice, citrus, pineapples, sorghum, peanuts, cattle, goats, and sheep — accounted for 8.6 percent of the gross national product. Industry, including manufacturing, contributed 49.7 percent, and services constituted 41.7 percent. Exports earned \$2.201 billion in 2006 from soft drink concentrates, sugar, wood pulp, cotton yarn, refrigerators, citrus, and canned fruit. Most exports were shipped to South Africa, with the rest split among the European Union, the United States, and Mozambique. Imports amounted to \$2.274 billion in 2006, which included motor vehicles, machinery, transport equipment, food, petroleum products, and chemicals. More than 95 percent of these imports came from South Africa, with the European Union, Japan, and Singapore contributing the rest. As of 2006, Swaziland had an external debt of \$417 million.<sup>6</sup> Per capita gross domestic product in 2006 was about \$5,638,<sup>7</sup> but distribution was unequal and two thirds of Swazi lived below the poverty line of \$1 a day, with increasing joblessness. Remittances from mining work in South Africa contributed substantially to household income.

Rich in flora and fauna, Swaziland's conservation and natural resource management is high priority. The IUCN Red List of threatened species lists almost 700 entries of endangered flora and fauna for Swaziland, including the African lion, rhinoceros and hippopotamus. Swaziland has four nature reserves managed by the Swaziland National Trust Commission, and other wildlife protected areas. Flora and fauna are threatened by anthropogenic activities, such as hunting pressure, overharvesting, and competition for land with domesticated livestock.

More than 5,000 km<sup>2</sup> (29 percent) of Swaziland is forested, of which about 70 percent (3,500km<sup>2</sup>) is natural forest and 30 percent (1,500 km<sup>2</sup>) is plantation. Commercial forests and the forest product processing industry account for about 15 percent of the economy, mainly through export.<sup>8</sup> Mined resources include asbestos, coal, diamonds, iron, talc, gold, tin, copper, nickel and chromium, though extraction is not always economically feasible, and accounts for less than 1.5 percent of gross domestic product.<sup>9</sup>

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<sup>3</sup> USAID.

<sup>4</sup> USAID.

<sup>5</sup> Human Development Index (2006).

<sup>6</sup> Export and import data, *CIA World Factbook*.

<sup>7</sup> Human Development Index (2006).

<sup>8</sup> GKOS – Forestry Section.

<sup>9</sup> *Encyclopedia of the Nations: Swaziland*.

Swaziland has taken an active role in designing a strategic action plan for protection of biological diversity. As a signatory of the Convention on Biological Diversity, Swaziland has undertaken the enforcement of its terms, including development of an Environmental Action Plan (2001).<sup>10</sup>

Roughly four percent of the country is under protection, represented in four main public nature reserves – Mlawula, Hawane, Mantenga, and Malolotja. There are privately or communally-owned and managed conservation areas, many used for ecotourism. Several of Swaziland’s protected areas are part of a transboundary peace park, the Lubumbo Conservancy, which extends into South Africa and Mozambique, providing a large area for the migration of big game animals like elephants.

Threats to the Swazi environment are diverse— both plant and animal biodiversity and forests — most stemming from an overload of human activity. Drought and desertification have had detrimental effects on vegetation and animals, and when compounded with poor agricultural management practices, have reduced agricultural output and threatened biodiversity. A growing population is expanding into protected areas and areas of high biodiversity, consuming higher and higher rates of fuel wood and products from the forest, such as medicinal products, building materials, and bush meat. Invasive plant species have become one of the largest threats to protected areas, prompting the Government of the Kingdom of Swaziland (GKOS) to declare a national disaster. Finally, land tenure practices are not conducive to sustainable management practices, leading to a decline in soil fertility and other environmental threats.

Swaziland is a non-presence USAID country, and management is directed through the Southern African Regional Program (ex-RCSA) in Botswana, the Regional HIV/AIDS Program both based in Pretoria South Africa (RHAP), and the U.S. Embassy in Swaziland. A total of \$7.6 million has been requested in the foreign assistance budget for FY08, and of these funds, \$100,000 will be allotted toward peace and security to fund military assistance programs that promote a higher degree of democracy, and \$7.5 million will be directed at child survival and health programming related to HIV/AIDS.

It is apparent that better conservation management practices must be implemented immediately to alleviate threats to biodiversity in Swaziland. Current U.S. Foreign Assistance programming are not addressing these threats sufficiently.

Therefore, the following recommendations are offered to USAID, the donor community and the Government of Swaziland:

- Promote better natural resource management practices in activities directed at the rural population in biologically important areas. Appropriate technologies need to be integrated into agricultural systems, such as terracing and contour planting on hillsides to prevent erosion, sustainable grazing techniques, and introduction of compost and cover crops to improve soil fertility. To this end, supporting local non-

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<sup>10</sup> The full text can be found at: <http://www.ecs.co.sz/seap/>

profit organizations and the U.S. Peace Corps will help target problem areas, and working in areas with the greatest biodiversity impact will help broaden dissemination of sustainable natural resource management practices at the grassroots level.

- Increase clear land tenure security — especially for women.
- Delineate new protected areas and widen the lands under protection. Make sure protected areas are adequate in accommodating large animals, including the IUCN listed species, and that they span diverse ecosystems and unique flora. Ensure protected area laws are enforced, and boundaries protected.
- Work with other development organizations beyond environmental entities. Habitat protection and conservation of natural resources can find secondary support in health, education, and business. Environmental sensitization can be incorporated into education programs and health workers can emphasize the relationship between a healthy environment and healthy communities.

While no money is explicitly set aside in the FY08 congressional budget for biodiversity or environmental conservation, activities under Peace and Security and Investing in People could be reorganized to incorporate conservation and natural resource management elements, which will positively affect the Swazi people on multiple levels.

## INTRODUCTION

Swaziland faces major environmental issues such as land degradation from overgrazing and unsustainable agriculture, erosion, invasive species, and deforestation. It is the smallest country in Africa and landlocked. Swaziland has about 70,000 people living in Mbabane, the capital city. Manzini, to the southeast, is the commercial and industrial center and has a population of 98,000. Map A below shows major cities and towns of Swaziland and the country's position in relation to surrounding countries South Africa and Mozambique.

**Map A. Swaziland**



Source: [www.state.gov](http://www.state.gov)

## ENVIRONMENT AND NATURAL RESOURCE MANAGEMENT IN SWAZILAND

Swaziland has a total area of 17,363 km<sup>2</sup> including 160 km<sup>2</sup> of water. As shown in Table 1, most of this land is used for communal grazing and ranching. The country's vegetation can be categorized into the following three regions:

- Western area — forested mountains up to 1,370 m.
- Mid country — hilly grassland.
- Eastern area — rolling plain covered in low grasses and bushes.

**Table 1. Land Uses in Swaziland<sup>11</sup>**

LAND USES	KM <sup>2</sup>	% OF TOTAL LAND AREA
Small-scale subsistence agriculture	2,140	12.3
Large-scale commercial agriculture	1,040	6.0
Communal grazing	8,670	50.0
Ranching	3,320	19.1
Plantation forestry	1,400	8.1
Parks, wildlife management	670	3.9
Residential, industry, recreation	80	0.5

The country is experiencing poor air quality due to vehicles and emissions from other countries, which lead to a high incidence of pneumonia. Water pollution occurs from industrial and agricultural sources and untreated sewage. Of Swaziland's water resources, 93 percent is used for agriculture, and 2 percent for industrial use. Clean, safe drinking water is available for 41 percent of urban dwellers and 44 percent of the total population.<sup>12</sup>

Total population is 1.1 million. Average population density is 53 people/km,<sup>2</sup> with much higher rates in the cities and lower rates in rural areas. These people exert high anthropogenic pressure on their surroundings with overgrazing, overharvesting of fuel wood, and unsustainable agricultural practices that have led to land degradation that has forced people to settle on marginal lands.

Although Swaziland is one of Africa's wealthiest nations, compared to the rest of the world, it is still very poor.<sup>13</sup> The economy, now based on foreign-controlled manufacturing, is still tied to agriculture for jobs, employing 70 percent of the population.<sup>14</sup> In 2006, agriculture — sugarcane, cotton, corn, tobacco, rice, citrus, pineapples, sorghum, peanuts, cattle, goats, and sheep — accounted for 8.6 percent of the gross national product. Cultivated land is estimated at 1,915 km<sup>2</sup>, 11 percent of total land.<sup>15</sup> Sugarcane is the leading export earner and largest private sector employer.<sup>16</sup>

<sup>11</sup> Swaziland Environmental Action Plan.

<sup>12</sup> *Nations Encyclopedia*.

<sup>13</sup> The 2005 *Human Development Report* ranks Swaziland at 146<sup>th</sup> out of 177 countries.

<sup>14</sup> GKOS.

<sup>15</sup> FAO.

<sup>16</sup> U.S. State Department.

## BACKGROUND ON USAID ACTIVITIES

U.S. support to Swaziland is now directed through both the Southern Africa Regional Program (ex-Regional Center for Southern Africa (RCSA)) and the regional HIV/AIDS program (RHAP) in Pretoria, South Africa, with support from the U.S. Embassy in Swaziland.<sup>17</sup>

USAID/SA<sup>18</sup> programs focus on three main issues:

- Increasing trade and strengthening regional economic ties;
- Mitigating the HIV/AIDS crisis and food insecurity;
- Strengthening democracy to improve stability in the region.

USAID/RHAP focuses on:

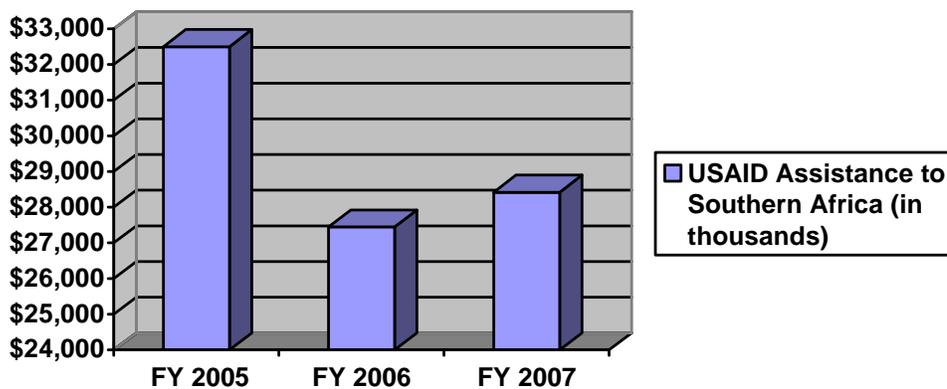
- Prevention of HIV/AIDS;
- HIV/AIDS counseling and testing;
- Human capacity development;
- Prevention of mother-to-child transmission.

The U.S. Embassy focuses on:

- Prevention of HIV/AIDS;
- Strengthening democracy;
- Promoting economic growth;
- Managing people, facilities, support, and resources.

Table 2 shows RCSA's 2005-2007 budget. In response to the HIV/AIDS crisis, the Mission works with community-based organizations, providing prevention training, counseling and testing services, human capacity development and prevention of mother-to-child transmission. USAID's Food for Peace Program has provided emergency food aid to Swaziland during food shortages, and USAID's trade hubs have assisted the

**Table 2. USAID Assistance to Southern Africa**



SOURCE: [www.usaid-rca.org](http://www.usaid-rca.org)

<sup>17</sup> For additional information on these two regional programs, see <http://rca.usaid.gov/> (RCSA) and [www.rhap.org.za](http://www.rhap.org.za) (RHAP).

<sup>18</sup> The USAID/SA office covers Angola, Lesotho, Malawi, Mozambique, Tanzania, Zambia, Botswana, Namibia, South Africa, Swaziland, and Zimbabwe.

manufacturing industry in Swaziland by connecting them to U.S. markets through business linkages, capacity building, and problem solving trade facilitation.

In early 2006, USAID began the Swaziland Enterprise and Entrepreneurship Program (SWEEP), with TechnoServe as the implementing partner. The goal of this five-year program is to drive economic growth and job creation by assisting competitive firms and improving the business environment.<sup>19</sup>

Under a USAID contract, the National Oceanic and Atmospheric Administration and the U.S. Geological Survey developed the Environmental Information for Natural Resource Management program (E-INFORM). This program strengthens the capacity of regional organizations, community groups, NGOs, and government natural resource management authorities in Southern Africa by collecting and analyzing data and information about the region's natural resources. The enhancement of the Southern African Development Community (SADC) Natural Resources Database is the first in the series of E-INFORM activities. The main focus of this activity is to provide technical assistance to the SADC Regional Remote Sensing Unit (SADC-RRSU) to update the regional natural resources database and enhance ecological information dissemination.<sup>20</sup>

#### **CURRENT U.S. GOVERNMENT PROGRAMMING**

Many U.S. Government programs have a presence in Swaziland, primarily dealing with the HIV/AIDS crisis:

- The U.S. Department of Defense assists the Swaziland Defense Force in the formulation and implementation of a workplace HIV/AIDS program.
- The U.S. Department of Labor provides an International HIV/AIDS Workplace Education Program to contribute to the prevention of HIV/AIDS in the world of work, the enhancement of workplace protection, and the reduction of its adverse consequences on social, labor, and economic development.
- The Ambassador's Girls Scholarship Program has committed more than \$200,000 annually toward the provision of basic and quality education for 1,000 girls in Swaziland. The program targets girls who are orphaned, living with HIV/AIDS, or living in abusive situations.
- The Ambassador's Self Help Fund awards money for community development including clean water projects, school construction, and income generation.
- The Democracy and Human Rights Fund supports projects that encourage respect for the rights of women and children.
- The Centers for Disease Control is developing two free-standing VCT centers in rural areas in Swaziland that will include voluntary counseling and testing (VCT).
- The African Development Foundation mitigates the impact of HIV/AIDS and promotes the economic empowerment of people infected.
- The U.S. Peace Corps has supported more than 1,300 volunteers to date, with 58 currently serving in health and HIV/AIDS activities.

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<sup>19</sup> For more information, visit <http://www.technoserve.org/news/SwazilandLaunchPressRelease.htm>

<sup>20</sup> Further information:

[http://www.nric.net/pub\\_project/proj\\_detail.cfm?ProjectID=640&Searchtopic=NRM](http://www.nric.net/pub_project/proj_detail.cfm?ProjectID=640&Searchtopic=NRM)

- The United States has contributed \$6.5 million to the Global Fund to fight AIDS, tuberculosis and malaria.<sup>21</sup>
- The President's Emergency Plan for AIDS Relief (PEPFAR) is directed at programming HIV/AIDS services in prevention and behavior change, counseling and testing, palliative care, HIV/tuberculosis integration, and AIDS treatment services. Swaziland will receive significant support for bilateral HIV/AIDS programs in FY 2008, with programmatic emphasis on a range of interventions related to care, treatment, and prevention.<sup>22</sup>

In 2001, Swaziland became qualified for the African Growth Opportunity Act's wearing apparel provisions.<sup>23</sup> This Act provides beneficiary countries in Sub-Saharan Africa with liberal access to U.S. markets, and as a result, Swaziland's exports to the United States have increased greatly with textiles and apparel accounting for more than 70 percent of exports to the United States.

Swaziland is not a candidate for compact signing with the Millennium Challenge Corporation (MCC). Swaziland is classified as a Lower Middle Income Country (LMIC), and under MCC guidelines, only 25 percent of funding can go toward LMICs. Indicators in FY07 show less than median in all but three categories: primary education expenditures, trade policy, and inflation.<sup>24</sup>

For FY 2008, \$7.6 million in the foreign operations budget has been requested for Swaziland as follows:<sup>25</sup>

- \$100,000 in peace and security to aid in the professional development of law enforcement.
- \$7.5 million in investing in people, which will be used to increase capacity of organizations with a focus on HIV/AIDS.

## **RATIONALE FOR A BIODIVERSITY ASSESSMENT IN SWAZILAND**

It is stipulated in the U.S. Foreign Assistance Act (FAA) that all USAID operating unit strategic plans include an environmental analysis. Sections 117, 118, and 119 of the FAA require USAID Missions to examine issues of environmental impacts and forest and biodiversity conservation when preparing strategies for development assistance. This assessment is designed to take into consideration the FAA provisions related to:

*Section 117:* Consideration of the impact of proposed activities on the environment and how to implement programs with an aim toward maintaining and restoring natural resources upon which economic growth depends;

*Section 118:* Analysis of the actions to achieve conservation and sustainable management of forests and the extent to which the actions proposed by USAID meet these needs, and;

<sup>21</sup> [www.theglobalfund.org](http://www.theglobalfund.org)

<sup>22</sup> [www.PEPFAR.gov](http://www.PEPFAR.gov)

<sup>23</sup> AGOA Web site: [www.agoa.gov](http://www.agoa.gov)

<sup>24</sup> MCC indicators: [www.mcc.gov](http://www.mcc.gov)

<sup>25</sup> Congressional Budget Justification, Foreign Operations FY08. [www.usaid.gov](http://www.usaid.gov)

*Section 119:* Analysis of the actions to protect endangered species and to conserve biological diversity and the extent to which the actions proposed by USAID meet these needs.

This assessment includes an overview of the status of biodiversity and forest conservation, an overview of the legislative and donor community framework particular to Swaziland, and an analysis of major threats to biodiversity conservation and forests.

This assessment examines how activities in the operational plan for USAID assistance contribute to conservation, and recommends actions and both near-term and long-term programming suggestions. The latter can be presented for consideration to other donors, depending on USAID/Africa funding levels and capacity in the coming years.

Recommendations support environmental sustainability and conservation objectives in a manner consistent with the overall strategy of USAID and in ways that help to address needs identified in this assessment.

## **LEGISLATIVE AND INSTITUTIONAL STRUCTURES AFFECTING BIODIVERSITY AND FORESTRY**

The Kingdom of Swaziland is the last remaining absolute monarchy in Sub-Saharan Africa. King Mswati succeeded his father to the throne in 1987. He signed a new Constitution that went into effect in 2006, Swaziland's first in more than 30 years. The kingdom is composed of four districts — Hhohho, Lubombo, Manzini, and Shiselweni — nine municipal governments, and 55 traditional administrative units.

### **ENVIRONMENTAL POLICIES AND TREATIES**

Swaziland is party to international agreements and conventions pertaining to the environment, including the Convention on Biological Diversity. Since signing this convention, Swaziland has actively implemented the requirements and, with the help of Global Environment Facility and the United Nations Development Program, has addressed the requirements of Article 6 that requires implementation of a National Biodiversity Strategy and Action Plan. The plan was finalized in 2001 and is awaiting cabinet approval.

Other international conventions to which Swaziland is signatory include:

- The Basal Convention on Hazardous Wastes
- The Bamako Convention on the Ban of Import of Hazardous Wastes into Africa
- The Montreal Protocol on Ozone Depletion
- The Convention to Combat Desertification
- The Convention on the International Trade on Endangered Species (CITES)
- PADELIA – Capacity Building and Institutional Strengthening

Swaziland has taken steps toward protecting its natural resources with the signing of conservation conventions and the Convention on Biological Diversity. However, the degree to which the country is actually active in treaties, implements treaty provisions, or enforces international law is unclear due to lack of documentation.

### **ENVIRONMENTAL LEGISLATION**

Since independence in 1968, Swaziland has been actively developing national development plans based on economic growth, sustainable development, self-reliance, equity and participation, and social justice and stability. Not until 1996 did the Economic and Social Recovery Agenda identify the environment as a principal focus that led to completion of the Swaziland Environment Action Plan (SEAP). The SEAP included the National Biodiversity Strategy and Action Plan (NBSAP), completed in 2002, with hopes of preventing further damage to Swaziland's biodiversity. The following acts of Parliament, regulations, and bills addressed environmental concerns:

- The Environmental Management Act (2002) — provides for the enhancement, protection, and conservation of the environment and sustainable management of natural resources.

- The Environmental Audit, Assessment and Review Regulations (2000) — provides the legal framework for environmental assessments and audits for project activities.
- The Swaziland Environment Authority Act (1992) — empowers the regulatory body to protect the environment.
- The Natural Resources Act (1951) — provides for the conservation of natural resources.
- The Flora Protection Act (2000) — protects the indigenous flora.
- The Game Act (1993) — preserves wildlife.
- The Protection of Freshwater Fish Act (1938) — protects freshwater fish.
- The Wild Birds Protection Act (1914) — prohibits the sale and export of the plumage and skins of wild birds and provides for protection of birds.
- The Draft Swaziland Water Bill (2002) — establishes the National Water Authority.
- The Waste Regulations (2000) — regulates solid and liquid waste disposal on land.
- The Water Pollution Control Regulations (1999) — controls and manages air quality.
- The Air Pollution Regulations (2001) — regulates emissions into the atmosphere of commercial or industrial waste, other than special waste.
- The Ozone Depleting Substances Regulations (2003) — controls production and consumption of ozone-depleting substances.
- The Water Act (2003) — monitors water quality.
- The Plant Control Act (1981) — controls the growing and movement of plants.

The Swaziland Environment Authority (SEA) prepares a state of environment report annually that addresses land use and energy, water resources, climate, urban environment and waste, and forestry. SEA's mission is to:

“Ensure that Swaziland's development is environmentally, economically and socially sustainable, by means of promoting sound environmental policies, practices and development, which meets appropriate national and international standards.”

Environmental Impact Assessments (EIAs) are mandatory under the Environment Management Act for every project and conducted under the SEA. The EIA identifies the potential impact on the environment of any proposed project, and recommends actions to mitigate harmful activities. Each developer or manufacturer is expected to commission an EIA before the start of any project, or the project may not proceed.

The National Forest Policy (2002) regulates forestry practices to curtail deforestation and environmental degradation. The National Forest Policy vision statement is: "To achieve efficient, profitable and sustainable management and utilization of forest resources for the benefit of the entire society, and to increase the role of forestry in environmental protection, conservation of plant and animal genetic resources and rehabilitation of degraded land." The vision statement is outlined in the following objectives:

- Forests should be treated as a national asset, forming part of the scarce land and water resources;

- Access to forest resources should be secured for basic needs and requirements;
- Land and tree tenure should be guaranteed by the Constitution;
- The forest and woodland reserves should be conserved and their biodiversity components sustained by maintaining ecosystem and habitat diversity and stability;
- The close link should be recognized between the biodiversity of the forest resources and the Swazi cultural and spiritual needs and rights;
- Community participation, accountability and transparency should be secured in the administration and management of forest trees.

## **ENVIRONMENTAL INSTITUTIONS**

In addition to the Swaziland Environment Authority (SEA), three government ministries are directly involved in environmental matters:<sup>26</sup>

- *Ministry of Agriculture and Cooperatives*: Ensures household food security and increased sustainable agricultural productivity through diversification and enhancement of commercial agricultural activities, installation and use of appropriate technologies, and efficient extension services. Ensures stakeholder participation and sustainable development and management of natural resources in Swaziland. The Forestry Section falls under this ministry and is divided into three units — Technical Forest Management issues, Forest Extension, and Herbarium.
- *Ministry of Natural Resources and Energy*: Ensures optimal development, use and management of natural resources — water, minerals, energy, and land — in a sustainable manner, with minimal damage to the environment.
- *Ministry of Tourism, Environment and Communication*: Ensures sustainable and equitable development through promotion of sound environmental principles, conservation of the national heritage, and efficient communication infrastructure.

## **MAJOR NON-GOVERNMENTAL ORGANIZATIONS WORKING IN SWAZILAND**

Because of Swaziland's extremely high HIV/AIDS rate, most non-governmental organizations (NGOs) are devoted to health initiatives. The Coordinating Assembly of Non-Governmental Organizations (CANGO) is the organizing body for all NGOs in Swaziland.<sup>27</sup>

No major international conservation NGOs work in Swaziland, though several work in the Southern African region, including:

- World Wildlife Fund for Nature (WWF).
- Conservation International (CI).
- African Wildlife Foundation (AWF).
- Wildlife Conservation Society (WCS).

<sup>26</sup> For more information on these and other ministries, visit [www.gov.sz](http://www.gov.sz)

<sup>27</sup> CANGO Web site: <http://www.sahims.net/swazirelief>

Active local conservation organizations include:

- Friends of the Earth-Swaziland, Yonge Nawe<sup>28</sup> Environmental Action Group: Works to prevent and reduces the impact of inappropriate environmental, natural resources, and sustainable development practices in Swaziland.
- Swaziland Farmer Development Foundation: Promotes cooperation between private bodies and individuals concerned with the improvement and development of commercial agriculture and household food production.

## DONOR ORGANIZATIONS

International donors active in Swaziland include the following:

- The United Nations Programs
  - *United Nations Development Program (UNDP)*: Encourages programs to be in line with the UN Millennium Development Goals (MDGs) to reduce world poverty in half by 2015. The UNDP-Swaziland's strategy focuses on governance and gender mainstreaming, poverty and HIV/AIDS, and environment management. Within the environment management sector, UNDP:
    - Assists the Swaziland Environmental Authority in developing the National Biodiversity Strategy and Action Plan and allows Swaziland to fulfill its obligations under the Convention on Biological Diversity.
    - Analyzes capacity gaps and needs for Biodiversity, Climate Change and Land Degradation, which will help the government set up an Environmental Conventions Coordination Unit (ECCU) to facilitate information sharing.
    - Promotes knowledge of environmental laws and institutions.
  - *United Nations Environment Program (UNEP)*: Strengthens institutions with the implementation of environmental law.
  - *United Nations Educational, Scientific and Cultural Organization (UNESCO)*: Recently finalized its national plan for Education for All and participates in the support program for HIV/AIDS and education.
  - *Food and Agriculture Organization (FAO)*.
  - *World Food Program (WFP)*.
  - *International Fund for Agricultural Development (IFAD)*: Supported three projects in irrigation and agriculture, providing \$28.3 million in loans.
  - *UNAIDS*: Focuses on leadership and advocacy, strategic information and technical support, tracking, monitoring and evaluation, civil society engagement and mobilization of resources.
- Multilateral Development Banks
  - *The World Bank*: With sizeable funding from USAID/RHAP, the World Bank has awarded grants amounting collectively to \$110,000 to Swazi NGOs that conceptualized innovative proposals to combat HIV/AIDS in Swaziland. These

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<sup>28</sup> For more information: [www.yongenawe.com](http://www.yongenawe.com)

organizations range from non-governmental, community and faith-based organization to the Business Coalition Against HIV and AIDS.

- International Finance Corporation.
- Multilateral Investment Guarantee Agency.
- International Development Association.
- *The African Development Bank*: Loans to promote the economic sector.
- *The Southern African Development Bank*: Accelerates sustainable socio-economic development by funding physical, social, and economic infrastructure.
  
- International Monetary Fund (IMF): Provides advisory support to the central Swaziland bank
  
- International Government Aid: Overall funding has decreased recently as donors focus on lesser developed countries.
  - *UK Department for International Development (DFID)*: Provides \$2.02 million annually to support a rural water project and the CANGO. Swaziland is included in DFID-South Africa's regional work in HIV and AIDS and trade, receiving about \$1 million per year through the European Union's program.
  - *Norwegian Agency for Development Cooperation (NORAD)*: Poverty reduction activities from the Norwegian government.
  - *Germany*: Vocational training.
  - *Italy*: HIV/AIDS.
  - *Sweden*: Capacity building.
  - *Japan*: Fertilizer and agricultural machinery/equipment, rural water supply, financial support for the Swaziland National Museum, capacity building in ministries.
  - *Denmark*: Energy policy, forest policy, solid waste management.
  - *Republic of China*: \$10 million per year for development projects.

## REGIONAL INITIATIVES

Because the country is completely surrounded by South Africa and Mozambique, Swaziland considers transboundary conservation issues in detail. A good example of this is the Lubumbo Conservancy in the northeastern region of Swaziland. Together with Mozambique and South Africa, Swaziland has combined a number of smaller reserves and extended borders to create a transboundary protected area.

## STATUS AND MANAGEMENT OF NATURAL RESOURCES

The Swazi are actively engaged in varying degrees in natural resource use and conservation. The population depends on a healthy environment to provide such commodities as building materials, food, fuel wood, and medicinal products. MCC indicators from FY07 gave Swaziland only 4 percent on land rights and access and 0 percent for natural resource management.<sup>29</sup>

### GENERAL STATUS AND MANAGEMENT OF NATURAL RESOURCES

Swaziland is endowed with many biologically important plant and animal species of which several are endemic. The eastern part of the country lies within the Maputoland Centre of Plant Diversity, which reportedly has the greatest biodiversity in Southern Africa and is one of the world's treasure chests of floral and faunal species endemism. The western area is likewise environmentally important, lying within the Drakensberg Escarpment Endemic Bird Area.

#### Flora

Swaziland has about 2,600 species of flora that have been collected and recorded, each with its own social, economic and cultural value. This vegetation falls into four categories: transitional woodland and bushland, making up more than 60 percent of the country — and scrub woodland and secondary grassland. There is also a very small area of Afromontane vegetation.

#### Fauna

Swaziland is home to approximately 121 species of mammals, 153 amphibians and reptiles, and 350 kinds of birds. The larger animals, both herbivores and carnivores, are found only in nature reserves and game farms. Many of these species — elephants, warthogs, rhinos, impala, zebra, wildebeest and lions — were reintroduced, and their survival depends on the protection afforded by these areas. Others protected in the reserves are hyenas, jackals, leopards, mongoose, vervet monkeys, chacma baboons, and thick-tailed bush babies.

### THREATS TO NATURAL RESOURCES

Threats to natural resources result from ignorance of conservation issues, conflicts with local communities, lack of educated staff, and inadequate financial support for conservation. Hindrances to sustainable natural resource management fall under primary anthropogenic causes:

- *Poaching and hunting.* Overharvesting has almost wiped out game populations.
- *Deforestation.* Indigenous forests are harvested for fuel wood and building material. An estimated annual wood consumption exceeds the total sustainable wood supply by 30 percent,<sup>30</sup> exacerbated by frequent forest fires.

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<sup>29</sup> [www.mcc.gov](http://www.mcc.gov)

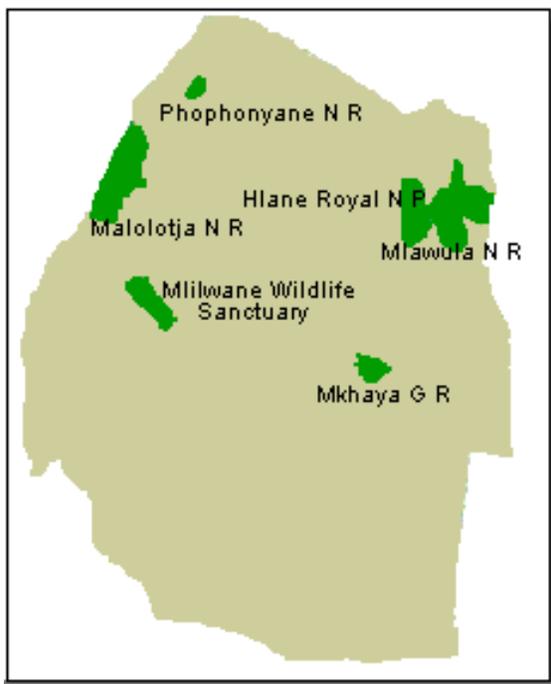
<sup>30</sup> SEAP.

- *Poor land and forest management.* Unsustainable use leads to poor soil quality and declining production.
- *Agriculture.* Large-scale irrigated agriculture, primarily monocultures like sugarcane, pineapple and citrus, has cleared large tracts of land, resulting in destruction of natural vegetation.
- *Population.* An increase in human activity in already fragile areas causes loss of biodiversity, soil erosion, and pollution. Increasing settlements and infrastructure causes loss of arable land.
- *Mining.* Negative impacts from waste accumulation, groundwater contamination, and toxic concentrations of copper, nickel, zinc and chromium.
- *Invasive species.* These species reproduce rapidly and consume nutrients and energy

that indigenous plants need to survive. A number of exotic woody species are rapidly encroaching into endemic ecosystems and habitats.

- *Inadequate size of protected areas.* Large areas are needed for large animals to thrive. Small game reserves do not provide this, causing inbreeding and disruption of normal living.

### Map B. National Parks



### PROTECTED AREAS

Swaziland's first reserve, Hlatikulu, was designated in 1905 and the second, Ubombo, in 1907. These reserves were designed for the protection of large mammal species, however, after less than 15 years, an outbreak of sleeping sickness hit and animals were suddenly seen as a threat to the livestock industry. Both protected areas were degazetted by 1922.

Not until the Game Act in 1953 was the first new reserve proclaimed, Milwane, and the second, Hlane in 1967. In 1972, the Swaziland National Trust Commission (SNTC) was formed to conserve areas and features of Swaziland's natural and cultural heritage.

Today, Swaziland has about four percent of land under protection, represented in the reserves and protected areas in Table 4. The SNTC manages four primary conservation areas: Malolotja, Mlawula, Mantenga and Hawane. Small privately owned areas are generally used for tourism. Map B shows the distribution of the major protected areas throughout the country.

**Table 4. Protected Areas in Swaziland**

NAME	CLASSIFICATION	MANAGEMENT	SIZE (KM <sup>2</sup> )
Lubumbo	Transfrontier	International	4,195 total
○ Hlane	Royal National Park	Big Game Parks	300
○ Mlawula	Nature Reserve	SNTC	165
○ Shewula	Community NR	Community	600
○ Mbuluzi	Game Reserve - private	Private	25
○ Nkhalashane	Ranch	GKOS	Unknown
Hawane	Nature Reserve	SNTC	1.5
Mantenga	Nature Reserve	SNTC	7.25
Malolotja	Nature Reserve	SNTC	180
Mhkaya	Private	Big Game Parks	75
Mlilwane	Private Reserve	Big Game Parks	45.6
Phophonyane	Protected Area	Private	5
Nisela	Private	Private	40

The Lubombo Transfrontier Conservation and Resource Area were designated in June 2000 by the governments of Swaziland, Mozambique, and South Africa. It lies on the border between South Africa's KwaZulu-Natal province, southern Mozambique, and Swaziland. The area, a total of 4,195 km<sup>2</sup> (with 8 percent in Swaziland borders, approximately 335 km<sup>2</sup>), includes the Maputaland Centre of Endemism, which has high biodiversity rates. Within Swaziland's segment lies the Hlane, Mlawula, Shewula, Mbuluzi, and Nkhalashane reserves. This transboundary area provides an uninterrupted protected area for the last naturally occurring elephant population in this area.

#### **THREATS TO PROTECTED AREAS**

Under Swaziland's legislation and management, plant and animal species are protected; however the reality is different. Several threats may undermine intentions to preserve these areas:

- *Transboundary issues.* The Malolotja Natural Reserve and Mlawula Natural Reserve, as well as the Lubumbo Conservancy, share borders with South Africa and Mozambique, creating possible management disputes between governments.
- *Local communities.* Clearing land for fuel wood, timber and building products, grazing pastures, and agricultural fields encroach on protected areas.
- *Droughts and fires.* Frequent droughts and fires damage protected areas, both flora and fauna.
- *Poverty.* Inability to plan for long-term management because of untrained staff and lack of funding.
- *Exploitation.* Illegal exploitation of natural resources by local communities and commercial industry.

## STATUS AND PROTECTION OF ENDANGERED SPECIES

According to the IUCN's Red List, three species in Swaziland are critically endangered, four are endangered, and 21 are vulnerable. The full list is provided in the table at left, and original information is provided on the IUCN Red List Web site at: <http://www.iucnredlist.org> .

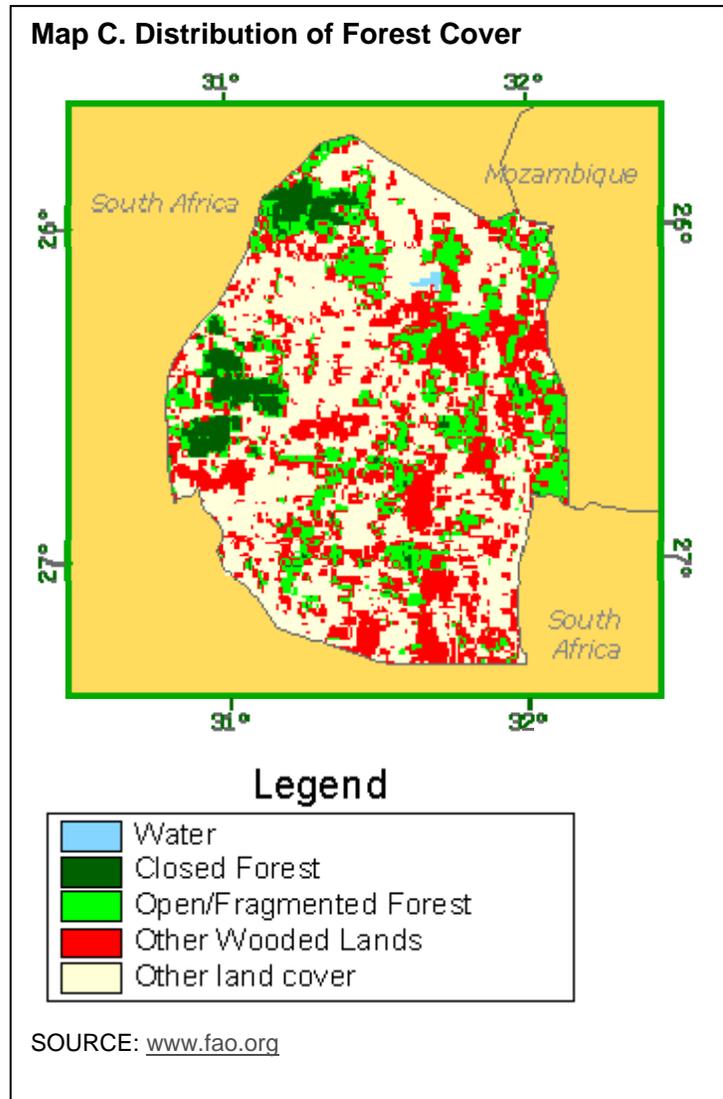
These endangered species are vulnerable to many of the same pressures that protected areas themselves are, such as bush fires, human population pressure, poaching, droughts, and destruction and loss of habitat.

## STATUS AND PROTECTION OF FOREST RESOURCES

IUCN RED LIST
<b>CRITICALLY ENDANGERED (3):</b> BLACK RHINOCEROS <i>ENCEPHALARTOS HEENANII</i> <i>ENCEPHALARTOS LAEVIFOLIUS</i>
<b>ENDANGERED (4):</b> MARLEY'S GOLDEN MOLE LEBOMBO CYCAD AFRICAN WILD DOG PEPPER BARK TREE
<b>VULNERABLE (21):</b> CHEETAH BLACK HARRIER PERCIVAL'S TRIDENT BAT LESSER KESTRAL SOUTHERN BALD IBIS WATTLED CRANE BLUE CRANE CAPE GRIFFON SPOTTED SNOUT BURROWER COMMON HIPPOPOTAMUS BLUE SWALLOW AFRICAN ELEPHANT AFRICAN LION RED STINKWOOD LAPPET FACED VULTURE VARIOUS CYCADS

Forest area in Swaziland is about 5,230 km<sup>2</sup> more than 30 percent of land area. Of this, 1,610 km<sup>2</sup> is plantation and 3,620 km<sup>2</sup> is natural forest.<sup>31</sup> annual round wood production from 1996 to 1998 was 1,494,000 m<sup>3</sup> and accounted for exports of \$60 million.<sup>32</sup> commercial forests and the forest products processing industry account for about 15 percent of the economy, mainly through export.<sup>33</sup> forest cover has increased by more than 3 percent from 1990 to 2000.<sup>34</sup> map c at the right shows the distribution of the land cover and the extent of the forests in Swaziland.

A severe lack of management of indigenous forests has resulted in depletion from overharvesting of wood for fuel, carving, building materials, and furniture. In rural areas, more than 75 percent of Swazis use firewood for cooking and warming houses. Forests are exploited for bark tannin, timber, building poles, and charcoal production.



Several major threats to forest resources are occurring in Swaziland, most notably:

- Land cleared for agriculture, primarily for commercial sugarcane, tobacco and cotton, and local food production.
- Livestock grazing in protected areas.
- Bush fires.
- Drought.
- Domestic, commercial and industrial exploitation – for wood carving, fuel wood, building material and medicines.

<sup>31</sup> FAO.

<sup>32</sup> UNEP.

<sup>33</sup> GKOS – Forestry Section.

<sup>34</sup> World Bank.

- Invasive, exotic species.
- Land settlements due to population expansion.

## **CONSERVATION OUTSIDE OF PROTECTED AREAS**

Conservation outside of protected areas is limited, creating challenges for conservation of rare and endemic plant and animal species. Poor agricultural techniques used on farms next to protected areas have a negative impact on flora and fauna. Bush fires, erosion, runoff into waterways, and desertification from human activity are all preventable threats. The greatest factors are lack of education about good resource management and land tenure instability. Conservation and good management practices outside of protected areas would be beneficial, increasing availability of fuel wood, housing materials, natural medicines, and providing areas for traditional ceremonies.

## **MAJOR THREATS TO BIODIVERSITY AND FOREST CONSERVATION**

Biodiversity in Swaziland faces major threats that continue to intensify. Threats are defined in six broad categories: unawareness, drought and desertification, anthropogenic pressures, degradation and erosion of soils, invasive species, and land tenure policy.

### **UNAWARENESS**

A lack of knowledge of protection and conservation of forests and biodiversity has led to little funding or support from the government and general public. Few educated people are involved with environmental protection or education. In addition, the government has not put adequate monetary or staffing resources into protecting the environment. As discussed before, only 4 percent of land is under protection, far short of the internationally recommended 10 percent.

### **DROUGHT AND DESERTIFICATION**

Drought is an extended period of months or years of a deficiency in water supply. Africa has historically been hard hit, leading to devastating effects on agricultural lands, biodiversity, and poverty and malnutrition. Like the rest of the continent, Swaziland has had droughts. In fact, the FAO recently reported that Swaziland's maize crop of 2007 was severely ravaged by a prolonged dry spell and high temperatures, leading to the lowest annual harvest on record. The 1992 U.N. Conference on Environment and Development in Rio de Janeiro, defined desertification as "land degradation in arid, semi-arid and dry sub-humid areas resulting from various factors, including climatic variations and human activity." Climate change models predict warmer temperatures and less rainfall.

The transformation in habitat caused by drought and desertification is significant to the plants and animals that depend on those environs. Decline and even extinction of species have occurred among those that had previously adapted to the climate. Decline in arable land has caused losses in agricultural productivity leading to poverty, malnutrition and an increase in pressure on already vulnerable lands. Drought and desertification have created soil erosion, reduced soil moisture retention, increased runoff, and reduced productivity.

## **ANTHROPOGENIC PRESSURES**

Population increase is high (2.9 percent), and people exert great pressure on surrounding lands, which will continue to increase if practices do not change — primarily overharvesting of fuel wood and building materials, settlement encroachment on protected areas, and urban sprawl with its associated pollutants and garbage.

Swaziland has the highest national rate of HIV/AIDS in the world (almost 40 percent), which has implications on land tenure and biological conservation measures. Orphaned children are frequently left in charge of younger siblings, and, faced with extreme poverty, are unable to harvest fuel wood or food in a sustainable manner. In 2005, there were an estimated 70,000 such orphans in the country of only one million people, and the number is expected to rise to 120,000 by 2010.<sup>35</sup>

## **DEGRADATION AND EROSION OF SOILS**

Inappropriate land management practices have led to depletion of nutrients in the soil, extreme erosion, and loss of topsoil. Inadequate fallow periods between crops, overgrazing of livestock, especially in communal areas, and farming on steep slopes without contouring, all contributed to soil degradation.

People living in poverty are concerned with their immediate survival rather than possible environmental concerns looming ahead. Farmers are forced to overgraze on what little land they lease, on already degraded communal grazing lands, or in illegally protected areas for lack of other options.

## **INVASIVE SPECIES**

Alien invasive species compete with native species and rapidly encroach into endemic ecosystems and habitats. This destruction and competition for nutrients kill off native plant and animal biodiversity and decrease agricultural output. In 2005, the government declared invasive species a national disaster and committed \$1.4 million to eradication and management.

## **LAND TENURE POLICY**

Resolving land tenure insecurity is critical to resource management practices. When farmers have no future rights to their land for agriculture or grazing, they see no purpose in using sustainable practices. This leads to overgrazing and planting crops in unhealthy soil. Land in Swaziland is owned by either the Swazi Nation Land (SNL) which is held in trust by King Mswati, the Crown Land is land over which the government holds title, and Private Freehold or Title Deed Land. Swazi Nation Land is leased to households by the king, but only males may file claim for the land.

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<sup>35</sup> U.S. Embassy, Swaziland.

## **PROPOSED ACTIONS AND RECOMMENDATIONS FOR USAID PROGRAMMING**

The scope of this assessment has been limited to U.S.-based research and document review, using public information such as the 2008 Congressional Budget Justification for Foreign Operations and USAID-supported activities in Swaziland in recent years. However, this analysis allows for some recommendations for USAID to contribute to biodiversity and forestry conservation consistent with U.S. goals and objectives. But, it should be noted that there was limited information on USAID programming, so recommendations are general and contingent on the specifics of the programming.

Given the importance of transboundary protected areas, the high prevalence of HIV/AIDS, and the need for appropriate technology education, there is great potential for USAID to have an impact on biodiversity conservation in Swaziland. Although USAID does not have an office in Swaziland, the author proposes that the regional offices in Pretoria, with the help of the U.S. Embassy in Swaziland, begin to focus on how USAID can support conservation through NGOs and through the government of Swaziland, or how the Agency can initiate new programs with an environmental focus. Specific recommendations for proposed program elements are detailed below.

### **PEACE AND SECURITY: INTERNATIONAL MILITARY EDUCATION AND TRAINING**

For FY 2008, \$100,000 has been requested for military assistance programs to promote a higher degree of professionalism in the Swazi Defence Force through education about the role of the military in a democracy. Funds will be used to train the Umbutfo Swaziland Defence Force (USDF), a set of almost 4,000 men and women, to be an apolitical, professional force, respectful of human rights, and capable of participating in regional peacekeeping. The USDF's primary activities are border security, HIV/AIDS activities among its own ranks, internal security, and duties pertaining to the Royal Family.

Although peace and security are not directly tied to conservation, the absence of peace and security has the potential to affect environmental activities. Protected areas need law enforcement along borders, especially in transboundary protected areas. The threat from conflict is pronounced in forest regions that may serve as a hideout for rebel groups, although this is not a threat at this time.

Therefore, USAID should work with organizations implementing the peace and security activities and conservation in Swaziland. Together, these organizations can identify and target those areas that need security and natural resource protection the most. The added security will protect conservation areas from poaching and illegal timber harvesting, illegal settlement or agricultural use.

### **INVESTING IN PEOPLE: CHILD SURVIVAL AND HEALTH PROGRAMS FUND**

The FY 2008 Foreign Aid Budget calls for \$7.5 million to increase capacity of organizations focusing on HIV/AIDS. U.S. assistance is directed at prevention and behavior change, counseling and testing, palliative care, HIV/tuberculosis integration,

and AIDS treatment. Assistance will support capacity building for local NGOs and organizations in developing and strengthening human capacity.

The Swazi are suffering greatly from the HIV/AIDS crisis, which directly affects conservation because of the great loss of human capacity to manage natural resources and control land use effectively. “The conservation community cannot rely purely on the health sector for solutions for HIV/AIDS: it needs to engage actively with partners in a multi-sector approach to reduce impacts.”<sup>36</sup> Conservation organizations are losing highly trained staff members to HIV/AIDS, as well as experiencing a loss in productivity due to staff taking time off to attend funerals. Many AIDS-affected households are turning to natural resources for alternative incomes, medicinal plant harvesting to treat side effects of AIDS, and timber harvesting for coffins are on the rise. Unsustainable, intensive farming is also increasing due to the loss of family members and decline in household income.

USAID can effect environmental conservation through HIV/AIDS work in a number of ways:

- Promote HIV/AIDS education throughout environmental conservation organizations to reduce the spread of infection among employees;
- Work with health organizations to improve natural resource management;
- Educate families about appropriate technologies to increase their food production and care for the soil;
- Promote alternatives to overharvesting of medicinal plants and timber.

## CONCLUSION

The case for conservation in Swaziland is compelling, considering the large mammals, endangered, or vulnerable species, and highly biodiverse ecosystems, like the Maputaland Centre of Endemism. Swaziland has made positive steps toward conservation and protection, but still faces serious challenges in protecting its biodiversity and forests.

U.S. foreign assistance to Swaziland will alleviate the HIV/AIDS epidemic and increase the capacity of the Swazi Defence Force. While these two areas do not include direct environmental funding, and are not addressed in current U.S. foreign assistance programming, USAID can find related activities to aid conservation and mitigate possible negative environmental impacts.

Therefore, the following general recommendations are offered as specific USAID programming is considered and planned:

- Ensure that agricultural projects encourage sustainable management practices.

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<sup>36</sup> Oglethorpe, Judy, and Nancy Gelman, 2007. *HIV and Conservation: Impacts and Ways to Reduce Them*.

- When working with rural communities, focus on those living near or in biologically diverse areas/protected areas. Promote and encourage better natural resource management practices, as well as increase clear land tenure security.
- Look for projects that have the potential for cross-cutting programming, such as incorporating environmental awareness into health and education activities. Work with other development organizations who are concentrating on issues other than the environment.
- Actively monitor possible negative environmental impacts of programming, and employ Regulation 216 in conducting environmental impact assessments for projects.

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