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The Value of the Ethiopian Protected Area System: Message to Policy Makers

Ethiopian Wildlife Conservation Authority (EWCA)





» *Protected areas are an integral part of the fight against poverty.* «

Key Policy Message

The value of protected areas is far greater in terms of environmental services (e.g. climate stabilization, carbon sequestration, provision of clean water, erosion control, etc.) than the value of direct benefits through tourism and employment.

The value of benefits to the national economy by far exceeds the current budget provided by central government of US\$ 1.3 million (ETB 16.1 million, budget 2009/10) and warrants increased investment to raise management effectiveness in order to ensure the continuous flow of services, provided by protected areas.

Protected areas are often centre-pieces of wetlands and watersheds, which need to be effectively managed. Additionally it is necessary to expand the protected area system to include other important wetlands and watersheds, which currently lack any protection status.

Effective management of the protected area system requires adequate funding, which is a direct investment into sustained growth of downstream economies and the national economy.

Protected areas and their effective management are directly linked to the fight against poverty and must become a key strategy of Ethiopia's development agenda.



» Protected areas play an important role in the sustainable development of our national economy. «

foreword

Foreword Director General EWC

Ethiopia is endowed with abundant natural resources which form the basis of most livelihood strategies in rural areas and the economy at large, considering that 85% of the workforce is engaged in the primary sector.

However, human-induced pressure on natural habitats is increasing, causing an unsustainable use of natural resources, overgrazing by a large livestock population, conversion of natural habitat and consequently fragmentation and isolation of remaining natural habitats and forests. The main cause of deforestation in Ethiopia is a growing population and subsequent higher demand for agriculture, livestock production and fuelwood. At the beginning of the 20th century, around 420,000 km² or 35% of Ethiopia's land was covered with forests. Since then at least 90% of these indigenous forests have been lost.

Much of the remaining natural habitat is contained within the Ethiopian Protected Area System, made up of wildlife and forest protected areas. These are unique in terms of their biodiversity and contain high levels of endemism. However, the conservation of our protected areas is not only protecting wild animals and plants. They play an important role in the sustainable development of our national economy by providing environmental services such as a healthy environment in the form of clean water and air, the provision of water for irrigated agriculture and electricity production, the mitigation of climate change, opportunities for climate change adaptation, the continuous provision of medicinal plants and the protection of the gene pool of a globally important commodity, coffee, to name a few. Hence, the benefits provided by protected areas go far beyond the boundaries of protected areas.

In this view, the Ethiopian Government has realized that protected areas are not only about wild animals and plants but about people and their livelihoods. They play a pivotal role in the fight against poverty and sustainable rural development. Consequently, the Government is following a strategy of involving rural communities, the private sector and non-governmental organizations in the management of protected areas in order to increase their management effectiveness and thereby maximize the benefits provided by protected areas to the national economy.

It is against this background that the Government of Ethiopia developed the project "Sustainable Development of the Protected Area System of Ethiopia". The project's goal was set at: "Ethiopia's biodiversity, ecosystems and ecological processes are effectively safeguarded from human-induced pressures and adequately represented in a sustainable protected area system that is contributing significantly to economic development, both locally and nationally". The project commissioned ÖBf Consulting to conduct a study to investigate the economic value of our protected areas.

The Government is pleased to have partnered with the Global Environment Facility and the United Nations Development Programme in developing and implementing this project with the German Agency for Technical Cooperation-International Services. We hope that the outcome will enable Ethiopia to provide for an enabling environment for effective biodiversity conservation, supporting the sustainable utilization of natural resources and ultimately contributing to the growth of the national economy.



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»» *The overall management effectiveness of most protected areas is low, compromising their ability to provide benefits to downstream economies.* ««

The Ethiopian Protected Area System

The Ethiopian Protected Area System

Ethiopia's Protected Area System is larger than the global average, covering 14% of its landmass. The recently created Ethiopian Wildlife Conservation Authority (EWCA) is managing 13 National Parks, Wildlife Sanctuaries and Reserves and regulates as well as administers wildlife utilization in the entire country. Other protected areas, including a number of National Parks, Forest Priority Areas and Controlled Hunting Areas, are managed by various regional authorities in the nine states of the federation.

The biogeography is characterized through the Ethiopian Highland Plateau and the arid Horn of Africa. Both areas are considered as biodiversity hotspots of global importance due to high levels of endemism. Furthermore, the afromontane highlands are the main watershed for the arid lowlands, making the lowlands dependent on the good management and protection of watersheds in the highlands, many of which lie in protected areas. Thus, the overall economic value of the protected area system comprises indirect benefits and environmental services in addition to direct benefits from the usage of protected areas which are currently minimal.

In Ethiopia protected areas comprise National Parks, Wildlife Reserves and Sanctuaries, Forestry Priority Areas and Controlled Hunting Areas, forming the cornerstones of the national conservation strategy. As such,

they are an integral part of sustainable development for Ethiopia in providing protection to centrepieces of wider landscapes and watersheds as source of important ecosystem services. They act as refuges for species and ecological processes that cannot survive in intensely managed landscapes. Although protected areas were often created primarily to conserve biodiversity, they also provide other essential benefits for local communities as well as the national economy at large.

Threats to Biodiversity Conservation in Ethiopia

The overall management effectiveness of most protected areas is low, as many areas are not legally gazetted, receiving inadequate funding, are understaffed and ill-equipped. Hence they often provide low levels of biodiversity conservation.

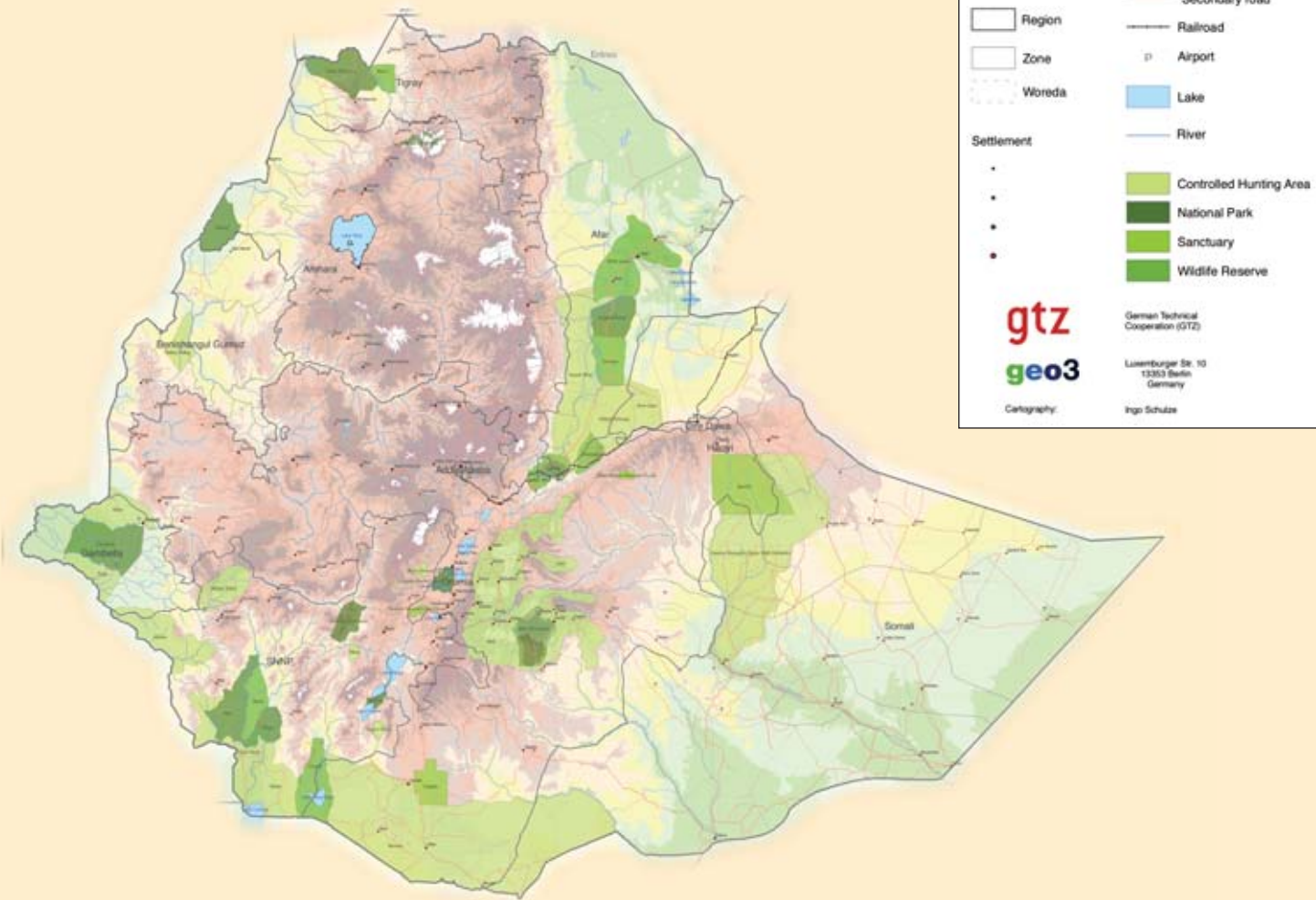
The principal threats to biodiversity of Ethiopia stem from:

- de facto open access of resources leading to degradation of habitats;
- conversion of natural habitat to agricultural land;
- overgrazing by large livestock population;
- weak institutional and financial capacity to manage protected areas, and
- invasive species.





Wildlife Protected Areas in Ethiopia





» Protected areas provide benefits through: watershed protection, carbon sequestration, biodiversity conservation, provision of forest products, avoiding deforestation. «

benefits
Benefits provided by the Ethiopian Protected Area System

Benefits provided by the Ethiopian Protected Area System

Protected areas provide many resources that can be used to provide direct gains, subsistence resources or less tangible benefits such as climate change mitigation and erosion control. Benefits provided by protected areas can be divided into four categories:

- Providing services to enable people to make a living (e.g. grazing resources, forest products, fish resources, wild food products, etc.)
- Supporting human life (e.g. potable water and clean air, providing water for electricity production and irrigation)
- Regulating other important ecosystem functions and services (e.g. montane forests regulating downstream water flows, carbon sequestration, natural disaster mitigation)
- Having cultural significance and providing opportunities for recreation (e.g. sacred sites, ecotourism and trophy hunting)

Certain benefits and values, such as recreation, tourism, grazing, agriculture, timber and fuelwood, amongst others, accrue directly to a protected area and the communities living within or close to the same. Other benefits accrue indirectly to the national economy and the global community. These benefits largely comprise the pro-

TECTED area's ecological functions, such as watershed protection, soil stabilization and erosion control, provision of clean water and associated filtration and storage functions, climate stabilization and carbon sequestration.

Watershed protection

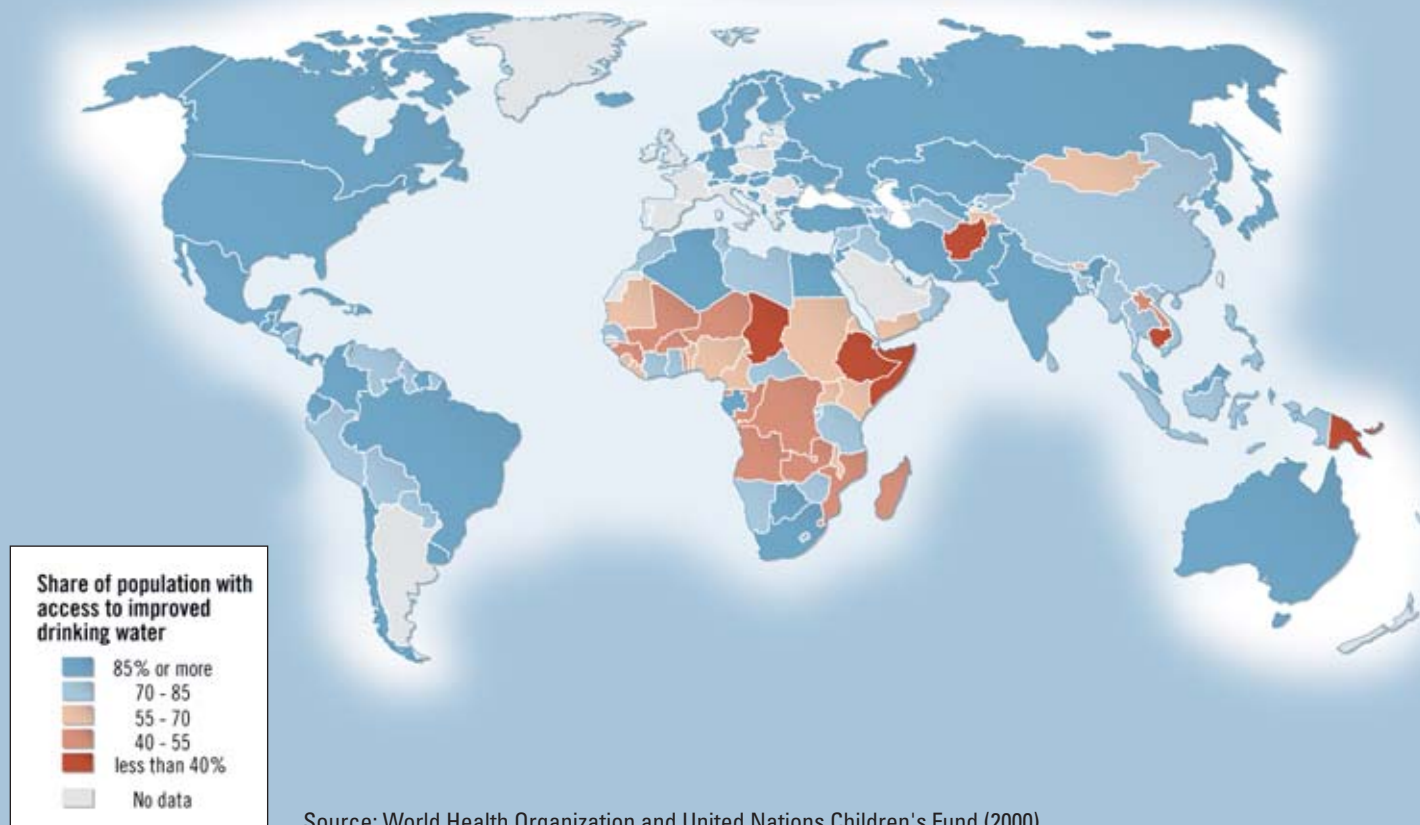
Ethiopia has twelve major watersheds, supporting one of the most populated regions on the sub-continent, with most people being subsistence farmers and pastoralists. The region is known to be prone to severe food production shortages due to highly variable and unreliable rainfall patterns.

High population pressure and associated intensive land use systems have accelerated land degradation and deforestation in fragile environments, characterized by steep topographies, causing ongoing degradation and erosion. Sustainable land and water management is critical to improving human well-being in the Ethiopian highlands, as rapid deterioration in land quality has an impact on the availability of safe drinking water as well as increasing the risk of chronic food insecurity in the region. This sensitive environment forms the basis for most livelihood strategies in rural communities, making them vulnerable, as land degradation proceeds.

A recent study, commissioned by EWCA established that the value of protected areas is far greater in terms of environmental services (e.g. climate stabilization, electricity production, hydrological services, etc.) than the value of direct benefits through tourism and employment.

BENEFIT: The economic value of watershed protection functions of EWCA-managed protected areas. The value of watershed services of protected areas is estimated to be at least US\$ 432 million per annum.





Protected areas conserve natural habitats and processes which are crucial in effective watershed management, such as:

- Reduce flooding by storing excess water and slowing water velocity
- Treat waste water by breaking down and filtering toxins
- Recharge groundwater
- Avoid deforestation and reduce erosion, stabilising soils
- Eliminate impurities and maintain water quality through biological life cycles
- Maintain perennial water levels, storing and releasing water continuously
- Replenish well water levels for human and livestock consumption
- Recycle nutrients
- Reduce sedimentation by slowing surface runoff, thereby lessen silting of dams and stabilising electricity production

Effective watershed management also helps in reducing the cost of electricity production by avoiding excessive sedimentation levels which greatly reduce the lifespan of dams. The successful hydropower production in Ethiopia is dependent on the continuous water flow to fill dams and reservoirs. Excessive deforestation increases the sediment levels of rivers and streams, thereby increasing the material accumulation in dams, effectively reducing power production as well as the lifespan of dams, not to mention the subsequent production losses by the industrial and manufacturing

sector. Sedimentation of dams and reservoirs is reported to incur immense costs on the part of the Ethiopian Electric Power Corporation (EEPCO).

Carbon Sequestration and Climate Change

Protected areas assist in reducing greenhouse gas emissions in the atmosphere by sequestering carbon dioxide from the atmosphere. They serve as effective natural barriers against the impact of climate change, mitigating flooding, changing precipitation patterns, landslides and storm surges and keep natural resources healthy and productive by protecting natural processes. Protected areas are one of the most effective ways to mitigate climate change as well as to adapt to the negative implication caused by climate change.

A recent study emphasises the need for national governments to recognise the importance of integrating maintenance and expansion of protected areas into national climate change strategies.

The Ethiopian Protected Area System has good potential to mitigate climate change by safeguarding the remaining natural forests and wetlands from over exploitation and conversion to other land uses.

Biodiversity

Ethiopia is considered to be rich in biodiversity with 1,408 known species of fauna and at least 6,603 species of flora. 7% of faunal species and 15.1% of floral species are

BENEFIT: A recent study estimates the economic value of carbon stored above and below ground in EWCA-managed protected areas. The value of stored carbon is US\$ 938 million, of which almost US\$ 19 million is lost annually due to deforestation.

BENEFIT: The economic value of biodiversity in EWCA-managed protected areas is estimated to amount to at least US\$ 3.75 million per annum but could be as high as US\$ 112 million per annum.





considered endemic, meaning they do not occur in any other country. 4.6% of faunal species are believed to be threatened.

Ethiopia is the cradle of the coffee gene pool, including many wild coffee land races. The genetic diversity of coffee and wild coffee derivatives, found in Ethiopia, has a tremendous value in terms of breeding potential for a globally important food commodity, grown in many countries.

Important flagship species, endemic to Ethiopia, are the Ethiopian Wolf (*Canis simensis*), Walia Ibex (*Capra walie*), Gelada Baboon (*Theropithecus gelada*), Giant Lobelia (*Lobelia rhyncopetalum*), amongst others. These species are characteristic of the Ethiopian afro-alpine eco-region, reflecting the biodiversity value of the Ethiopian Protected Area System. Other examples for the exceptional biodiversity value of the Ethiopian Protected Area System are the wetlands and floodplains found in Gambella National Park. Ethiopia and the Sudan share the second

largest mammal migration on the continent. Almost one million White-eared Kob (*Kobus kob leucotis*) migrate between the two countries to take advantage of the vast grassland areas and floodplains. The Shoebilled Stork (*Balaeniceps rex*) was present in the Gambella floodplains but its presence has not been confirmed for some time.

Forest products

Forest products comprise of timber and wood products and non-timber forests products (e.g. forest coffee, honey, medicinal plants, pepper, gum, raisin, oils, etc.). It is estimated that more than 90% of Ethiopians depend on fuelwood to meet their household energy needs.

Ethiopia has a long history of honey and beeswax production, with the former having developed into the largest honey industry in Africa, exporting to world markets. Honey and wax are traditionally produced at household level as a cash crop.

BENEFIT: The economic value of the native gene pool of coffee, in regards to future breeding programmes of one of the globally most important traded commodities, is believed to be as high as US\$ 420 million.

BENEFIT: A study in the Bale Mountains established that the economic benefits of forest products amounts to about US\$ 407 per household per annum.





Timber, bamboo, grasses and reeds are the main construction materials used by the majority of the rural population.

Many rural communities have a vast knowledge on medicinal plants. At least 337 plant species are reported to have medicinal properties in the afro-alpine eco-region alone. They are distributed in woodlands and forests followed by the montane grasslands and dry montane forest complex of the plateau all over the country. Other important vegetation types for medicinal plants are the ever-green bushland and rocky areas. It is estimated that more than 85% of the Ethiopian population use and partly depend on medicinal plants as their primary source of healthcare. Hence, medicinal plants are an important component of the national healthcare system, supplementing the modern healthcare service, which is limited and too expensive for the majority of people.

Many plant species, used for traditional medicines are becoming rare and limited in distribution. They are threatened by human-induced and natural factors, such as environ-

mental degradation, agricultural expansion, loss of forest and woodlands, over-harvesting, fire and urbanization.

Deforestation

Ethiopia has one of the highest deforestation rates on the globe, losing about 2% of forest cover per annum, amounting to somewhere between 150,000 and 200,000 hectares.

Deforestation has an obvious impact on people who live in or close to forests decreasing the forest's future capacity to produce timber and other forest products, fodder, fruits and medicinal plants. However, the impact also extends to urban areas in the form of increased prices of fuelwood and timber due to the increasing scarcity of supplies. It is estimated that the impact of accelerating deforestation hits the rural and urban poor, who depend on forest products and medicinal plants without suitable alternatives. Hence, deforestation affects the entire national economy, placing protection of the remaining natural forests on the highest agenda.

BENEFIT: Medicinal plants are of tremendous value to Ethiopians, of whom more than 85% regularly use natural remedies. The value of medicinal plants collected in EWCA-managed protected areas and the value of their associated trade is estimated to amount to US\$ 13.2 million per annum.

COST: The economic loss of deforestation is believed to be around US\$ 660 per hectare per year, amounting to a loss of US\$ 19 million per annum.





» *Protected areas are instrumental in the fight against poverty and for the achievement of sustainable livelihoods, especially for the rural poor.* «

livelihoods
Protected Areas and their Value in the Fight against Poverty

Protected Areas and their Value in the Fight against Poverty

Most protected areas are primarily created to conserve biodiversity, but there are many other important values which protected areas are increasingly being expected to deliver, such as social, economic and cultural benefits. Assurances that protected areas will provide such benefits are often crucial for attracting the support needed for their creation and sustenance, however delivering on these promises is seldom easy. Protected area managers and protected area agencies are increasingly being asked to assess the values, benefits and services provided by protected areas in order to warrant core funding for conservation.

The Plan for Accelerated and Sustained Development to End Poverty (PASDEP), representing the development strategy of the Federal Republic of Ethiopia, identifies the main development objectives of the country, including agricultural development-led industrialization, justice system and civil service reform, decentralization, empowerment and capacity building in the public and private sectors.

Of a total population of 85 million people, 85% reside in rural areas. Rural populations are highly dependent on

natural resources and subsistence agriculture is included in the majority of livelihood strategies. The PASDEP recognizes the linkage between environmental degradation and poverty levels and does focus on the conservation of natural resources, including water, soil and energy.

However, the national protected area system is not explicitly accommodated in the programme and has a history of marginalization in the national development context. This marginalization of the sector is evident in the relatively low funding levels from government coffers and secondly, in relatively low attention from multi- and bilateral development assistance, which is tied to the national development strategy.

Therefore, it is necessary to add the linkages between an effective protected area system and poverty reduction in pursuing achievement of the Millennium Development Goals by estimating the value of other environmental services, provided by a representative protected area system as the basis for effective biodiversity conservation.

The Plan for Accelerated and Sustained Development to End Poverty (PASDEP) outlines Ethiopia's pro-poor development agenda and provides the basis for mainstreaming Ethiopia's protected area system into the broader development context.



» *EWCA's Vision: to be a leader in Wildlife Conservation and Wildlife Tourism.* «

Authority
The Ethiopian Wildlife Conservation Authority – EWCA

The Ethiopian Wildlife Conservation Authority – EWCA

The Ethiopian Wildlife Conservation Authority (EWCA), created in 2008, manages 13 National Parks, Wildlife Reserves and Sanctuaries, measuring over 3.75 million hectares of natural habitat, including 1.8 million hectares of forest and woodlands. This represents almost 20% of the total remaining natural forest cover in Ethiopia. Much of the remaining forest is found in Forest Priority Areas and Controlled Hunting Areas, managed by various regional authorities. In protected areas managed by regional authorities, EWCA retains a regulative authority in terms of wildlife utilization (e.g.: quota setting, licensing, issuing permits, etc.).

The institution acts in line with the following values:

- We conserve and manage Ethiopia's wildlife scientifically and responsively.
- We will be evaluated by our customer satisfaction.
- We work for the benefit of Ethiopians.
- We work to maximise the benefit from the sector.
- We shall be accountable for ethical rules.
- We give priorities for gender and youth.
- We ensure sustainable development by engaging in a dynamic and continuing change.

A recent study concluded that in order for EWCA to achieve its vision and effectively fulfil its mandate, the following conditions need to be in place in regard to sustainable financing and effective protected areas management:

- Secure government funding
- Develop a revenue retention scheme
- Develop a donor programme strategy
- Investigate the suitability of a trust fund
- Reduce barriers to effective protected area management
- Engage in partnerships with regional authorities, rural communities and the private sector
- Support local communities and foster local employment
- Explore cost-sharing opportunities
- Explore possibilities for payments for environmental services

Mission Statement:

To sustainably conserve and manage Ethiopian wildlife resources through active participation of local communities for the benefit of Ethiopians in particular and the global community in general and maintain it for the coming generation as a heritage.





» In order to render protected areas capable to play their role in the country's development, effective management has to be in place. «

Capacity building for effective Management

Capacity building to effectively manage the Ethiopian Protected Area System

The Government of the Republic of Ethiopia, with the financial assistance of the Global Environment Facility (GEF) and the United Nations Development Programme (UNDP), is implementing the project: **"Sustainable Development of the Protected Area System of Ethiopia" (SDPASE)** to assist in building the required institutional capacity within EWCA to fulfil its mandate to effectively manage the national protected area system.

Since its launch in 2008, SDPASE has been engaged in a range of activities to help EWCA achieve its conser-

vation objectives. The project specifically concentrates on activities which have a knock-on effect within protected areas management, including protected areas demarcation, maintenance and procurement of equipment, training of scouts using national and international experts, website development and training of EWCA experts within Ethiopia as well as abroad. SDPASE continues to support these activities in the future as they are considered crucial in overcoming the main barriers to effective management of protected areas in Ethiopia.

